

**San Francisco Bay Regional Water Quality Control Board**

**ORDER No. R2-2019-0015  
NPDES No. CA0037834**

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

**Table 1. Discharger Information**

<b>Discharger</b>	City of Palo Alto
<b>Facility Name</b>	Palo Alto Regional Water Quality Control Plant and wastewater collection system
<b>Facility Address</b>	2501 Embarcadero Way Palo Alto, CA 94303 Santa Clara County
<b>CIWQS Place Number</b>	247457

**Table 2. Discharge Locations**

<b>Discharge Point</b>	<b>Effluent Description</b>	<b>Discharge Point Latitude (North)</b>	<b>Discharge Point Longitude (West)</b>	<b>Receiving Water</b>
001	Advanced Secondary-Treated Municipal Wastewater	37.4592°	-122.1108°	South San Francisco Bay
002	Advanced Secondary-Treated Municipal Wastewater	37.4406°	-122.1130°	Matadero Creek

**Table 3. Administrative Information**

This Order was adopted on:	April 10, 2019
This Order shall become effective on:	June 1, 2019
This Order shall expire on:	May 31, 2024
CIWQS Regulatory Measure Number	429934
The Discharger shall file a Report of Waste Discharge for updated WDRs in accordance with California Code of Regulations, title 23, and as an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	August 31, 2023
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, Michael Montgomery, 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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Michael Montgomery, Executive Officer

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## I. FACILITY INFORMATION

Information describing the City of Palo Alto Regional Water Quality Control Plant and wastewater collection system (collectively, Facility) is summarized in Table 1 and 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 a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States as listed in Table 2 subject to the WDRs in this Order.
- 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 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, G, H, and I are also incorporated into this Order.
- C. Cease and Desist Order No. R2-2015-0011.** This Order replaces Order No. R2-2014-0024. The Regional Water Board issued Cease and Desist Order No. R2-2015-0011 because it believed the Discharger could not comply with the pH requirements in Order No. R2-2014-0024. The Discharger complied with Cease and Desist Order No. R2-2015-0011 and is expected to be able to comply with this Order's pH requirements (see Fact Sheet section II.D). Therefore, Cease and Desist Order No. R2-2015-0011 is no longer necessary and will be rescinded.
- D. 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.
- E. 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. R2-2014-0024 (previous order) and Cease and Desist Order No. R2-2015-0011 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 than that described in this Order is prohibited.
- B. 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 of this Order.

Diverting wastewater around the plant’s fixed film reactors or dual media filters is not considered a bypass (1) during essential maintenance, (2) for process control to ensure efficient operation, (3) during wet weather when the primary effluent flow exceeds the fixed film reactors’ process capacity of 39 MGD, or (4) when the plant’s activated sludge treatment units’ effluent flow exceeds the filter process capacity of 39 MGD; provided that, under any of these circumstances, the discharge complies with the effluent and receiving water limitations contained in this Order. The Discharger shall operate the Facility as designed and in accordance with the Operation and Maintenance Manual developed for the plant. This means that the Discharger shall optimize storage and shall fully utilize the plant’s advanced treatment units, if applicable. The Discharger shall report diversions of flows around fixed film reactors or dual media filters in routine monitoring reports and shall conduct monitoring of these discharges as specified elsewhere in this Order.

- C. Average dry weather influent flow in excess of 39 MGD is prohibited. Average dry weather influent flow shall be determined from three consecutive dry weather months (May 1 to October 31) each year, with compliance measured at Monitoring Location INF-001 as described in the Monitoring and Reporting Program (MRP) (Attachment E).
- D. Any sanitary sewer overflow that results in a discharge of untreated or partially-treated wastewater to waters of the United States is prohibited.

### IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

- A. **Effluent Limitations.** The Discharger shall comply with the following effluent limitations at Discharge Point Nos. 001 and 002, with compliance measured at Monitoring Location EFF-001 as described in the MRP:

**Table 4. Effluent Limitations for Discharge Point Nos. 001 and 002**

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C) (BOD <sub>5</sub> )	mg/L	10	---	20	---	---
Total Suspended Solids (TSS)	mg/L	10	---	20	---	---
pH <sup>(1)</sup>	s.u.	---	---	---	6.5	8.5
Oil and Grease	mg/L	5	---	10	---	---
Turbidity	NTU	---	---	---	---	10
Ammonia, Total	mg/L as N	2.7	---	9.5	---	---
Copper, Total Recoverable	µg/L	21	---	32	---	---
Nickel, Total Recoverable	µg/L	25	---	31	---	---
Cyanide, Total	µg/L	6.2	---	11	---	---
Dioxin-TEQ	µg/L	1.4 x 10 <sup>-8</sup>	---	2.8 x 10 <sup>-8</sup>	---	---

Abbreviations:

mg/L	= milligrams per liter
mg/L as N	= milligrams per liter as nitrogen
µg/L	= micrograms per liter
NTU	= nephelometric turbidity units
s.u.	= standard units

Footnote:

<sup>(1)</sup> If the Discharger monitors pH continuously, pursuant to 40 C.F.R. section 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.

**B. Percent Removal.** The average monthly percent removal of biochemical oxygen demand (BOD<sub>5</sub>) and total suspended solids (TSS) at Discharge Point Nos. 001 and 002 shall not be less than 85 percent (i.e., in each calendar month, the arithmetic mean of BOD<sub>5</sub> and TSS, by concentration, for effluent samples collected at Monitoring Locations EFF-001 as described in the MRP shall not exceed 15 percent of the arithmetic mean of the BOD<sub>5</sub> and TSS, by concentration, for influent samples collected at Monitoring Location INF-001 as described in the MRP at approximately the same times during the same period).

**C. Enterococcus Bacteria.** The discharge at Discharge Point Nos. 001 and 002 shall meet the following enterococcus bacteria effluent limitations, with compliance measured at Monitoring Location EFF-001, as described in the MRP:

1. The six-week rolling geometric mean of enterococcus bacteria, calculated weekly, shall not exceed 30 CFU/100 mL; and
2. The 90<sup>th</sup> percentile of all enterococcus bacteria samples collected in a calendar month shall not exceed 110 CFU/100 mL.

**D. Fecal Coliform Bacteria.** The discharge at Discharge Point Nos. 001 and 002 shall meet the following fecal coliform bacteria effluent limitations, with compliance measured at Monitoring Location EFF-001, as described in the MRP:

1. The median of all fecal coliform bacteria samples in a calendar month shall not exceed 98 MPN/100 mL; and
2. The 11-sample 90th percentile of all fecal coliform bacteria samples shall not exceed 300 MPN/100 mL.

**E. Whole Effluent Acute Toxicity.** The discharge at Discharge Point Nos. 001 and 002 shall meet the following acute toxicity effluent limitations, with compliance measured at Monitoring Location EFF-001, as described in the MRP:

1. A three-sample median of not less than 90 percent survival; and
2. A single-sample maximum 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 show less than 90 percent survival.

- **Single-sample maximum.** A 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 solely by ammonia and that the ammonia in the discharge complies with the ammonia effluent limits in Table 4 of this Order, then such toxicity shall not constitute a violation of the acute toxicity effluent limitations.

## V. RECEIVING WATER LIMITATIONS

- A. The discharges shall not cause the following conditions to exist in the South San Francisco Bay or Matadero Creek 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. Changes in turbidity that cause nuisance or adversely affect beneficial uses, or increases 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 Resources Control Board (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, or will cease to have, a reasonable potential to cause or contribute to adverse impacts on water quality or beneficial uses of the receiving waters.
- b. If new or revised water quality objectives or total maximum daily loads (TMDLs) come into effect for San Francisco Bay or 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 Characterization Study and Report

**a. Study Elements.** The Discharger shall characterize and evaluate the discharge from Discharge Point Nos. 001 and 002, as required by the MRP, to verify that the reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. The Discharger shall evaluate on an annual basis if concentrations of any of the priority pollutants listed in Attachment G, Table B, 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 exceedance of 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 report the identity of pollutants detected at or above applicable water quality objectives (see Fact Sheet Table F-8 for the objectives) in the transmittal letter for the self-monitoring report associated with the month in which samples were collected.
- ii. Annual Reporting.** The Discharger shall summarize the annual data evaluation and source investigation in the annual self-monitoring report.

### 3. Pollutant Minimization Program

- a. The Discharger shall continue to improve its existing Pollutant Minimization Program to promote minimization of pollutant loadings to the treatment plant 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 websites. 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.** The 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 Publicly-Owned Treatment Works (POTWs)

- a. Pretreatment Program.** The Discharger shall implement and enforce its approved pretreatment program in accordance with federal pretreatment regulations (40 C.F.R. part 403); pretreatment standards promulgated under CWA sections 307(b), 307(c), and 307(d); pretreatment requirements specified under 40 C.F.R. section 122.44(j); and the requirements in Attachment H, "Pretreatment Requirements." The Discharger's responsibilities include, but are not limited to, the following:
  - i.** Enforcement of the National Pretreatment Standards of 40 C.F.R. sections 403.5 and 403.6;
  - ii.** Implementation of its pretreatment program in accordance with legal authorities, policies, procedures, and financial provisions described in the National Pretreatment Program (40 C.F.R. part 403);
  - iii.** Submission of reports to the State Water Board and the Regional Water Board as described in Attachment H; and
  - iv.** Evaluation of the need to revise local limits under 40 C.F.R. section 403.5(c)(1) and, within 180 days following the effective date of this Order, submission of a report describing the changes, with a plan and schedule for implementation. To ensure no significant increase in copper discharges, and thus compliance with antidegradation requirements, the Discharger shall not consider eliminating local limits for copper.
- b. Sludge and Biosolids Management**
  - i.** Sludge and biosolids treatment and storage shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.
  - ii.** Sludge and biosolids treatment and storage facilities shall be adequate to divert surface runoff from adjacent areas, to protect site boundaries from erosion, and to prevent conditions that would cause drainage from stored materials. Adequate protection is defined as protection from at least a 100-year storm and the highest possible tidal state that may occur.
  - iii.** This Order does not authorize permanent onsite sludge or biosolids storage or disposal. A Report of Waste Discharge shall be filed and the site brought into compliance with applicable regulations prior to commencement of any such activity.
- c. Collection System Management.** The Discharger shall properly operate and maintain its collection system (see Attachments D and G, section I.D), report any noncompliance with respect to its collection system (see Attachment D, section V.E.1, and Attachment G,

sections V.E.1 and V.E.2), and mitigate any discharges in violation of this Order associated with its collection system (see Attachments D and G, section I.C).

State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order No. WQ 2013-0058-EXEC, contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows. While the Discharger must separately comply with both the statewide WDRs and this Order, the statewide WDRs more clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer overflows. Implementing the requirements for operation and maintenance and mitigation of sanitary sewer overflows set forth in the statewide WDRs (and any subsequent order updating these requirements) shall satisfy the corresponding federal NPDES requirements specified in Attachments D and G of this Order for the collection systems. Following the reporting requirements set forth in the statewide WDRs (and any subsequent order updating these requirements) shall satisfy the NPDES reporting requirements for sanitary sewer overflows specified in Attachments D and G.

## 5. Other Special Provisions

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

**Table 5. Copper Action Plan**

Task	Compliance Date
<p><b>1. Implement Copper Control Program</b> Continue implementing existing program to reduce identified copper sources, including, as applicable, taking the following actions:</p> <ul style="list-style-type: none"> <li>a. Providing education and outreach to the public (e.g., focusing on proper pool and spa maintenance and plumbers' roles in reducing corrosion);</li> <li>b. If corrosion is a significant copper source, working cooperatively with local water purveyors to reduce and control water corrosivity, as appropriate, and ensuring that local plumbing contractors implement best management practices to reduce corrosion in pipes; and</li> <li>c. Educating plumbers, designers, and maintenance contractors for pools and spas to encourage best management practices that minimize copper discharges.</li> </ul>	<p>Implementation shall be ongoing; documentation of implementation should be included with annual pollution prevention report due February 28.</p>
<p><b>2. Implement Additional Measures</b> If the Regional Water Board notifies the Discharger that the three-year rolling mean dissolved copper concentration in South San Francisco Bay exceeds 4.2 µg/L, then within 90 days of the notification, evaluate the effluent copper concentration trend and, if it is increasing, develop and begin implementation of additional measures to control copper discharges. Report the conclusion of the trend analysis and provide a schedule for any new actions to be taken within the next 12 months.</p>	<p>With next annual pollution prevention report due February 28 (at least 90 days following notification)</p>
<p><b>3. Report Status</b> Submit an annual report documenting copper control program implementation that evaluates the effectiveness of the actions taken, including any additional actions required by Task 2 above, and provides a schedule for actions to be taken within the next 12 months.</p>	<p>With annual pollution prevention report due February 28 each year</p>

- b. Cyanide Action Plan.** The Discharger shall continue to implement monitoring and surveillance, pretreatment, source control and pollution prevention for cyanide in accordance with the following tasks and time schedule.

**Table 6. Cyanide Action Plan**

Task	Compliance Date
<p><b>1. Review Potential Cyanide Sources</b> Submit an up-to-date inventory of potential cyanide sources. If no cyanide source is identified, Tasks 2 and 3, below, are not required unless the Discharger receives a request to discharge detectable levels of cyanide to the sewer. In this case, notify the Executive Officer and implement Tasks 2 and 3.</p>	<p>With annual pollution prevention report due February 28, 2020</p>
<p><b>2. Implement Cyanide Control Program</b> Implement a control program to minimize cyanide discharges consisting, at a minimum, of the following elements:</p> <ul style="list-style-type: none"> <li><b>a.</b> Inspect each potential source to assess the need to include that source in the control program.</li> <li><b>b.</b> Inspect sources included in the control program annually. Inspection elements may be based on U.S. EPA guidance, such as <i>Industrial User Inspection and Sampling Manual for POTWs</i> (EPA 831-B-94-01).</li> <li><b>c.</b> Develop and distribute educational materials regarding the need to prevent cyanide discharges to sources included in the control program.</li> <li><b>d.</b> Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs.</li> </ul> <p>If the plant influent cyanide concentration exceeds 10 µg/L, the Discharger shall collect a follow-up sample within 5 days of becoming aware of the laboratory results. If the results of the follow-up sample also exceed 10 µg/L, then a “significant cyanide discharge” is occurring.</p>	<p>Implementation shall be ongoing; documentation of implementation should be included with annual pollution prevention report due February 28.</p>
<p><b>3. Implement Additional Cyanide Control Measures</b> 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, commence actions to identify and abate cyanide sources responsible for the elevated ambient concentrations, report on the progress and effectiveness of the actions taken, and provide a schedule for actions to be taken within the next 12 months.</p>	<p>With next annual pollution prevention report due February 28 (at least 90 days following notification)</p>
<p><b>4. Report Status of Cyanide Control Program</b> 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 within the next 12 months.</p>	<p>With annual pollution prevention report due February 28 each year</p>

- c. Plant Upgrades.** Prior to placing upgraded secondary treatment units or the Advanced Water Purification System listed in Fact Sheet section II.E into service, the Discharger shall submit the following documentation:
- i.** Documentation that the reliability, capability, and performance of the plant upgrades will maintain compliance with waste discharge requirements (i.e., the Discharger shall evaluate the hydraulic and organic loading capacities of the treatment facilities by appropriate combinations of desk-top analyses and treatment process stress testing to simulate design peak loading conditions under both dry weather and wet weather design flow conditions);

- ii.** Certification that plant upgrades have been constructed as designed, have been tested, and are ready for use;
- iii.** Demonstration of compliance with all applicable provisions of CEQA (California Public Resources Code Division 13, Chapter 3, Section 21100 et seq.);
- iv.** Updates to the Operations and Maintenance Manual and Contingency Plan to include the plant upgrades; and
- v.** Specific date the Discharger proposes to commence use of the upgraded treatment plant.

Under Water Code section 13385(j)(1)(D), the Discharger may, at least 30 days in advance of operating the upgraded treatment plant, submit a startup operations plan. The plan would describe the actions the Discharger will take during a specific period that requires adjusting and testing new treatment plant units, including steps to prevent violations of this Order. If the Discharger pursues this option, it should define the shortest reasonable time required for the period of adjusting and testing, which is not to exceed 90 days for biological treatment units and 30 days for any other treatment unit.

## **ATTACHMENT A – DEFINITIONS**

### **Arithmetic Mean ( $\mu$ )**

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:

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

### **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 reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in 40 C.F.R. part 136, Attachment B.

### **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 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 ( $\sigma$ )**

Measure of variability calculated as follows:

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

where:

x is the observed value;

$\mu$  is the arithmetic mean of the observed values; and

n is the number of samples.

### **Toxicity Reduction Evaluation (TRE)**

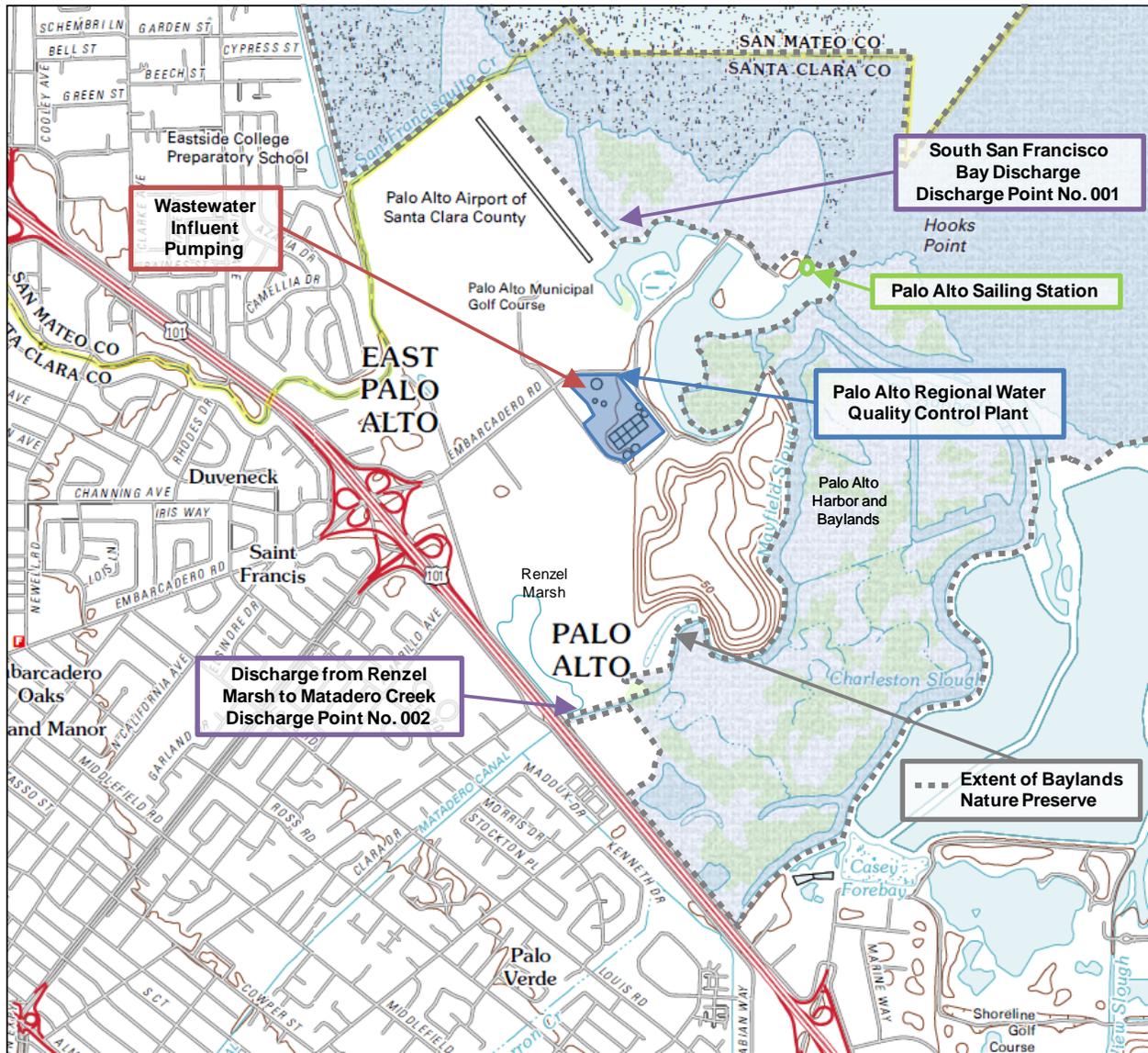
Study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of 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

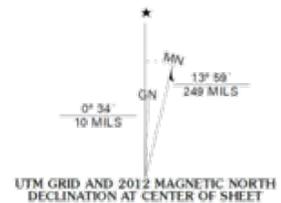
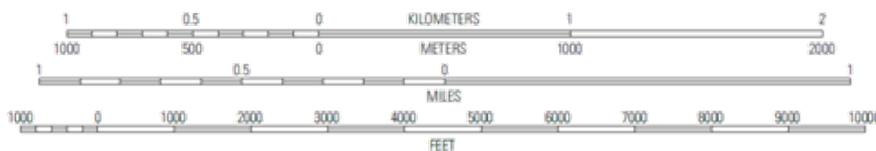
Figure B-1. Vicinity Map



**Figure B-2. Topographic Vicinity Map (including extent of Baylands Nature Preserve)**



Scale: 1 inch = 24,000 inches (2,000 feet). Contour interval: 10 feet.  
North American Vertical Datum of 1988.

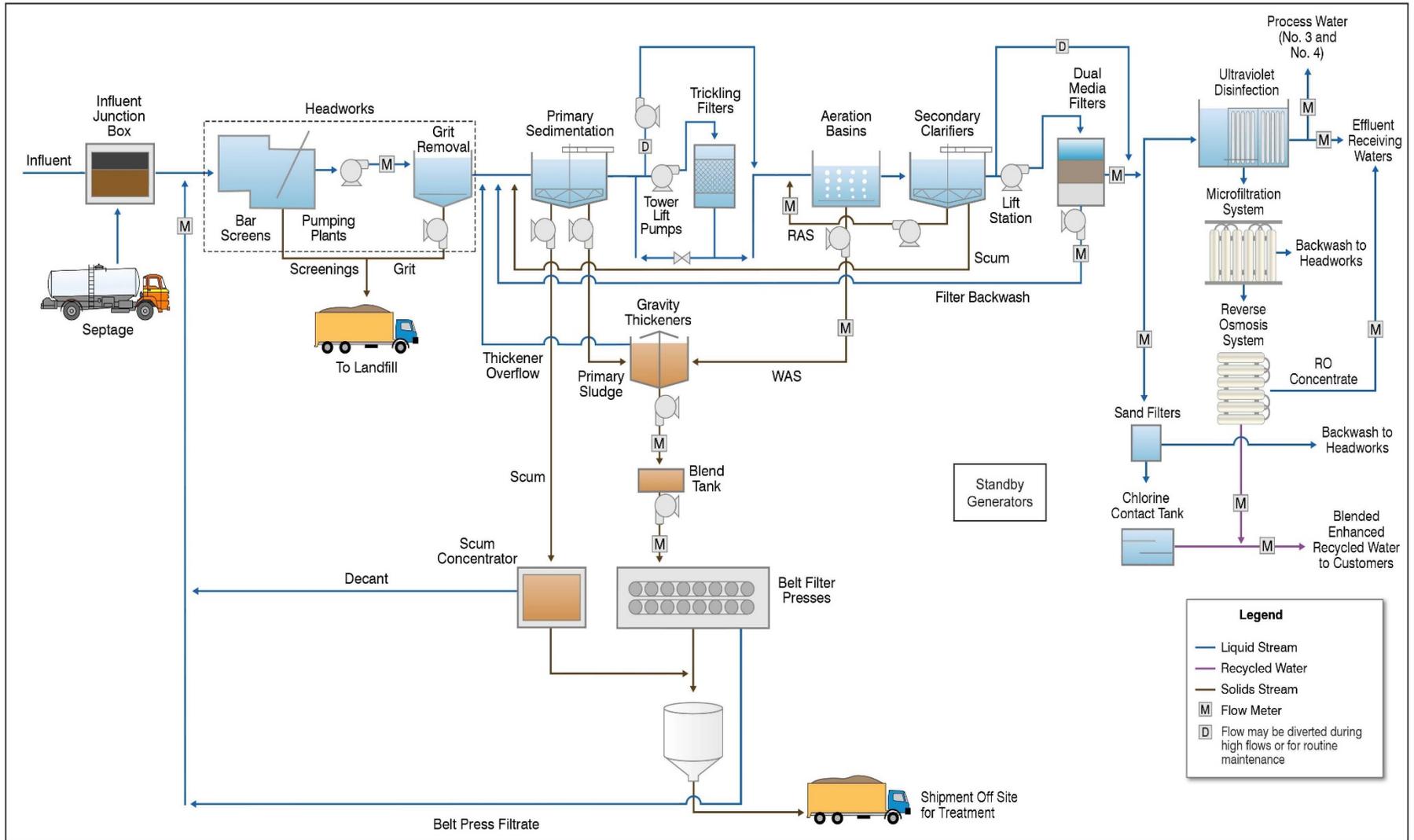


**Notes:**

This map is an excerpt from the 2012 USGS 7.5 Minute Maps for the Palo Alto and Mountain View Quadrangles. There are no spring or drinking water wells located within 1/4 mile of the facility.

**ATTACHMENT C – PROCESS FLOW DIAGRAM**

**Figure C. Plant Process Flow Schematic**



Note: This schematic does not reflect all Facility changes planned over the permit term.

## **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 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 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 include 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 prior notice, if possible at least 10 days before the date of the bypass. The notice shall be sent to the Regional Water Board. As of December 21, 2020, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(i).)

**b. Unanticipated bypass.** The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the Regional Water Board. As of December 21, 2020, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (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));



high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or

2. The method has the lowest ML of the analytical methods approved under 40 C.F.R. part 136 or required under 40 C.F.R. chapter 1, subchapter N, for the measured pollutant or pollutant parameter.

In the case of pollutants or pollutant parameters for which there are no approved methods under 40 C.F.R. part 136 or otherwise required under 40 C.F.R. chapter 1, subchapter N, monitoring must be conducted according to a test procedure specified in this Order for such pollutants or pollutant parameters. (40 C.F.R. §§ 122.21(e)(3), 122.41(j)(4), 122.44(i)(1)(iv).)

#### **IV. STANDARD PROVISIONS—RECORDS**

- A. 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, V.B.5, and V.B.6 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).)
6. Any person providing the electronic signature for documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R § 122.22(e).)

### **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. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (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. chapter 1, subchapter N, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR reporting form specified by the Regional Water Board or State 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 report shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The report 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.

For noncompliance related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (i.e., combined sewer overflow, sanitary sewer overflow, or bypass event), type of overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volume untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the event, and whether the noncompliance was related to wet weather.

As of December 21, 2020, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted to the Regional Water Board and must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J. The reports shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. The Regional Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours:
  - 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).)

#### **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. For noncompliance related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Regional Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (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).)

#### **J. Initial Recipient for Electronic Reporting Data**

The owner, operator, or duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 C.F.R. part 127 to the initial recipient defined in 40 C.F.R. section 127.2(b). U.S. EPA will identify and publish the list of initial recipients on its website and in the Federal Register, by state and by NPDES data group [see 40 C.F.R. § 127.2(c)]. U.S. EPA will update and maintain this list. (40 C.F.R. § 122.41(l)(9).)

### **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, 13350, 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 ( $\mu\text{g}/\text{L}$ ) (40 C.F.R. § 122.42(a)(1)(i));
  - b. 200  $\mu\text{g}/\text{L}$  for acrolein and acrylonitrile; 500  $\mu\text{g}/\text{L}$  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 ( $\mu\text{g}/\text{L}$ ) (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)

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## 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), 122.44(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.
- C. The Discharger shall ensure that results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address:  
  
 State Water Resources Control Board  
 Quality Assurance Program Officer  
 Office of Information Management and Analysis  
 1001 I Street, Sacramento, CA 95814
- D. The Discharger shall implement a Quality Assurance-Quality Control Program for any onsite field tests (e.g., turbidity, pH, temperature, dissolved oxygen, conductivity, disinfectant residual) analyzed by a noncertified laboratory. The Discharger shall keep a manual onsite containing the steps followed in this program and must demonstrate sufficient capability to adequately perform these field tests (e.g., qualified and trained employees, properly calibrated and maintained field instruments). The program shall conform to U.S. EPA guidelines or other approved procedures.

### 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**

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Influent	INF-001	Any point in the treatment plant headworks at which all waste tributary to the treatment system is present and proceeding any phase of treatment.
Effluent	EFF-001	A point following all treatment where all waste tributary to Discharge Point Nos. 001 and 002 is present, but prior to discharge.
Effluent	EFF-002	A point following all treatment but prior to discharge, where only effluent to be discharged to Discharge Point No. 002 is present.
Receiving Water	RSW-001	A point in South San Francisco Bay located at the Palo Alto Sailing Station

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Receiving Water	RSW-002	A point in Matadero Creek within 500 feet downgradient of Discharge Point No. 002
Biosolids	BIO-001	Biosolids (treated sludge)
Incinerator Ash	ASH-001	Representative sample of incinerator ash

### III. INFLUENT MONITORING REQUIREMENTS

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

**Table E-2. Influent Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow <sup>[1]</sup>	MG/MGD	Continuous	Continuous/D
Biochemical Oxygen Demand (5-day @ 20°C)(BOD <sub>5</sub> ) <sup>[2]</sup>	mg/L	C-24	1/Week
Total Suspended Solids (TSS) <sup>[2]</sup>	mg/L	C-24	1/Week
Cyanide, Total <sup>[3]</sup>	µg/L	Grab	1/Month

Unit Abbreviations:

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

Sample Types and Frequencies:

Continuous = measured continuously  
Continuous/D = measured continuously, and recorded and reported daily  
C-24 = 24-hour composite sample  
Grab = Grab sample  
1/Week = once per week  
1/Month = once per month

Footnotes:

- <sup>[1]</sup> The following flow information shall be reported in monthly self-monitoring reports:
- Daily average flow (MGD)
  - Total monthly flow volume (MG)
- <sup>[2]</sup> BOD<sub>5</sub> and TSS samples shall be collected concurrently with effluent samples.
- <sup>[3]</sup> The Discharger may, at its option, analyze for cyanide as weak acid dissociable cyanide using protocols specified in 40 C.F.R. part 136, or an equivalent method in the latest Standard Method edition.

### IV. EFFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor treatment plant effluent at Monitoring Location EFF-001 as follows:

**Table E-3. Effluent Monitoring at Monitoring Location EFF-001**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow <sup>[1]</sup>	MGD/MG	Continuous	Continuous/D
Temperature	°C	Grab	1/Month
BOD <sub>5</sub> <sup>[2]</sup>	mg/L	C-24	1/Week <sup>[10]</sup>
TSS <sup>[2]</sup>	mg/L	C-24	1/Week <sup>[10]</sup>
pH <sup>[3]</sup>	standard units	Continuous or Grab	Continuous/D or 1/Day <sup>[10]</sup>
Oil and Grease	mg/L	Grab	1/Quarter
Turbidity	NTU	Grab	1/Week <sup>[10]</sup>
Ammonia, Total	mg/L as N	C-24	1/Month

Parameter	Units	Sample Type	Minimum Sampling Frequency
Copper, Total	µg/L	C-24	1/Month <sup>[10]</sup>
Cyanide, Total <sup>[4]</sup>	µg/L	Grab	1/Month <sup>[10]</sup>
Nickel, Total	µg/L	C-24	1/Month <sup>[10]</sup>
Dioxin-TEQ	µg/L	Grab	2/Year
Fecal Coliform <sup>[5]</sup>	MPN/100 mL <sup>[9]</sup>	Grab	1/Quarter
Enterococcus <sup>[6]</sup>	CFU/100 mL <sup>[9]</sup>	Grab	1/Week <sup>[10]</sup>
Acute Toxicity <sup>[7]</sup>	% Survival	Continuous or C-24	1/Quarter
Chronic Toxicity <sup>[8]</sup>	TU <sub>c</sub>	C-24	1/Quarter
Priority Pollutants <sup>[11]</sup>	µg/L	Grab	2/Year

Unit Abbreviations:

MGD = million gallons per day  
 MG = million gallons  
 °C = degrees Celsius  
 mg/L = milligrams per liter  
 NTU = nephelometric turbidity units  
 mg/L as N = milligrams per liter as nitrogen  
 µg/L = micrograms per liter  
 MPN/100 mL = most probable number per 100 mL  
 CFU/100 mL = colony forming units per 100 mL  
 TU<sub>c</sub> = chronic toxicity units

Sample Types and Frequencies:

C-24 = 24 hour composite  
 Grab = Grab sample  
 Continuous = measured continuously  
 Continuous/D = measured continuously, and recorded and reported daily  
 1/Day = once per day  
 1/Week = once per week  
 1/Month = once per month  
 1/Quarter = once per calendar quarter  
 2/Year = twice per year

Footnotes:

- <sup>[1]</sup> The following flow information shall be reported in monthly self-monitoring reports:
- Daily average flow (MGD)
  - Total monthly flow volume (MG)
- The Discharger shall also provide start and end times, and duration, of any flow diversion around fixed film reactors or dual media filters as described in Fact Sheet section IV.A.1. In addition, the Discharger shall report total flow (MG) for any such flow diversions lasting at least 6 hours. These data shall be submitted as an attachment to the self-monitoring reports (SMRs) and not be commingled with routine monitoring data.
- <sup>[2]</sup> BOD<sub>5</sub> and TSS effluent samples shall be collected concurrently with influent samples. BOD<sub>5</sub> and TSS percent removal shall be reported for each calendar month in accordance with section IV.B of this Order.
- <sup>[3]</sup> If pH is monitored continuously, the minimum and maximum values for each day shall be reported in self-monitoring reports.
- <sup>[4]</sup> The Discharger may, at its option, analyze for cyanide as weak acid dissociable cyanide using protocols specified in 40 C.F.R. Part 136, or an equivalent method in the latest Standard Method edition.
- <sup>[5]</sup> The minimum monitoring frequency shall be once per quarter. If the fecal coliform effluent limitation is exceeded, the Discharger shall conduct 2/Week accelerated sampling for at least three consecutive months. If full compliance is demonstrated after the three month period, the Discharger may return to the 1/Quarter sampling frequency.
- <sup>[6]</sup> U.S. EPA Method 1600 or an equivalent method, such as IDEXX Enterolert, is suggested to measure culturable enterococci.
- <sup>[7]</sup> Acute toxicity tests shall be performed in accordance with MRP section V.A.
- <sup>[8]</sup> Chronic toxicity tests shall be performed in accordance with MRP section V.B.
- <sup>[9]</sup> Results may be reported as either Most Probable Number (MPN)/100 mL if the laboratory method used provides results in MPN/100 mL or Colony Forming Units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL. These units are approximately equivalent measures of bacteria concentration.

<sup>[10]</sup> Monitoring shall occur at least once per event when diverting flows around fixed film reactors or dual media filters for at least 6 hours, as described in Fact Sheet section IV.A.1. The sample collection shall be grab. These data shall be submitted as an attachment to the SMRs and not included with routine monitoring data.

<sup>[11]</sup> The Discharger shall monitor for the pollutants listed in Attachment G, Table B.

The Discharger shall monitor treatment plant effluent at Monitoring Location EFF-002 as follows:

**Table E-4. Effluent Monitoring at Monitoring Location EFF-002**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow <sup>[1]</sup>	MGD/MG	Continuous	Continuous/D
Standard Observations <sup>[2]</sup>	---	---	1/Month

Unit Abbreviations:

MGD = million gallons per day

MG = million gallons

Sampling Frequency

Continuous/D = measured continuously, and recorded and reported daily

1/Month = once per month

Footnotes:

<sup>[1]</sup> The following flow information shall be reported in monthly self-monitoring reports:

- Daily average flow (MGD)
- Total monthly flow volume (MG)

<sup>[2]</sup> Standard observations are specified in Attachment G section III.C. These observations shall occur where Renzel Marsh Pond water is discharged to Matadero Creek.

## V. TOXICITY TESTING REQUIREMENTS

### A. Acute Toxicity

1. Compliance with the acute toxicity effluent limitations for Discharge Point Nos. 001 and 002 shall be evaluated at Monitoring Location EFF-001 by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays at Monitoring Location EFF-001. 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*, 5<sup>th</sup> Edition (EPA-821-R-02-012). If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification.
2. Alternatively, compliance with the acute toxicity effluent limitations may be evaluated at Monitoring Location EFF-001 by measuring survival of test organisms exposed to 96-hour, 100 percent effluent using one of the most recently promulgated 96-hour critical life stage toxicity tests as described in Appendix E-2. These are *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, currently first edition (EPA/600/R-95-136), *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, currently third edition (EPA-821-R-02-014), and *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, currently fourth edition (EPA-821-R-02-013). If these protocols prove unworkable, the Executive Officer may require that acute toxicity bioassays be performed using the acute toxicity protocol.

3. Test organisms shall be fathead minnow (*Pimephales promelas*). The Executive Officer may specify a more sensitive organism or, if testing a particular organism proves unworkable, the most sensitive organism available.
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 adjust the pH of 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 reports 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. 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 consecutive or alternating days.
- b. **Test Species.** The test species shall be fathead minnow (*Pimephales promelas*) unless a more sensitive species is identified. 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. Upon completion of the chronic toxicity screening, the Discharger shall use the most sensitive species to conduct subsequent monitoring.

- c. **Frequency.** Chronic toxicity monitoring shall be as specified below:
  - i. The Discharger shall monitor routinely once per quarter.

- ii. The Discharger shall accelerate monitoring to monthly after exceeding a three-sample median of 2 TU<sub>c</sub> or a single-sample maximum of 1 TU<sub>c</sub>. Based on the TU<sub>c</sub> 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 the trigger in ii, above.
  - iv. If accelerated monitoring confirms consistent toxicity in excess of the 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 the trigger in ii, above, or, based on the TRE results, the Executive Officer determines that accelerated monitoring would no longer provide useful information.
- iv. Monitoring conducted pursuant to a TRE shall satisfy the requirements for routine and accelerated monitoring while the TRE is underway.
- d. **Methodology.** Sample collection, handling, and preservation shall be in accordance with U.S. EPA protocols. Bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in Appendix E-2. These are *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, currently first edition (EPA/600/R-95-136), *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, currently third edition (EPA-821-R-02-014) and *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, currently fourth edition (EPA-821-R2-02-013). 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. The adjustment shall not remove the influence of other substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration must be obtained prior to any such adjustment.

- e. **Dilution Series.** The Discharger shall conduct tests at 100%, 50%, 25%, 12.5%, and 6.25%. 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 with self-monitoring reports and shall include the following, at a minimum, for each test:

- i.** Sample data
  - 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<sub>25</sub> or EC<sub>25</sub> (see MRP Appendix E-1). If the IC<sub>25</sub> or EC<sub>25</sub> cannot be statistically determined, the NOEL shall equal 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<sub>15</sub>, IC<sub>25</sub>, IC<sub>40</sub>, and IC<sub>50</sub> values (or EC<sub>15</sub>, EC<sub>25</sub>, EC<sub>40</sub>, and EC<sub>50</sub>) as percent effluent
  - vii.** TU<sub>c</sub> values (100/NOEL and upper and lower confidence intervals)
  - viii.** Mean percent mortality ( $\pm$ s.d.) after 96 hours in 100% effluent (if applicable)
  - ix.** IC<sub>50</sub> or EC<sub>50</sub> values for reference toxicant tests
  - x.** Available water quality measurements for each test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, 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 as TU<sub>c</sub>'s.

### **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 the chronic toxicity trigger in section V.B.1.c.ii, 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 the trigger in section V.B.1.c.ii, above, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all Executive Officer comments.
- 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, 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 a toxicity source evaluation.
- v. Tier 5 shall consist of a toxicity control evaluation, including options for modifications of in-plant treatment processes.
- vi. Tier 6 shall consist of implementation of selected toxicity control measures, and follow-up 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 (i.e., compliance with the trigger in section V.B.1.c.ii).
- 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 trigger.
- 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 water, sediment, and biota. The Discharger shall also monitor receiving waters at Monitoring Locations RSW-001 and RSW-002 as follows:

**Table E-5. Receiving Water Monitoring**

Parameter	Units	Sample Type	Minimum Sampling Frequency
Salinity	ppt	Grab	1/Quarter
Hardness <sup>[1]</sup>	mg/L as CaCO <sub>3</sub>	Grab	1/Quarter
Temperature	°C	Grab	1/Quarter
pH	standard units	Grab	1/Quarter
Total Ammonia Nitrogen	mg/L	Grab	1/Quarter
Standard Observations <sup>[2]</sup>	--	--	1/Quarter

Unit Abbreviations:

- ppt = parts per thousand
- mg/L = milligrams per liter
- mg/L as CaCO<sub>3</sub> = milligrams per liter as Calcium carbonate
- °C = degrees Celsius

Sampling Frequency:

1/Quarter = once per calendar quarter

Footnote:

[1] Hardness monitoring is not required at Monitoring Location RSW-001.

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

## VII. PRETREATMENT AND BIOSOLIDS MONITORING REQUIREMENTS

The Discharger shall comply with the following pretreatment monitoring requirements for influent at Monitoring Location INF-001, effluent at Monitoring Location EFF-001, incinerator ash at Monitoring Location ASH-001 until it decommissions its incinerator, and biosolids at Monitoring Location BIO-001 once biosolids are generated. The Discharger shall report summaries of analytical results in annual and semi-annual pretreatment reports in accordance with Attachment H. If instructed to do so, the Discharger shall report ash and biosolids analytical results with its electronic self-monitoring reports by manual entry, by EDF/CDF, or as an attached file.

**Table E-6. Pretreatment, Incinerator Ash, and Biosolids Monitoring**

Constituents	Sampling Frequency				Sample Type		
	Influent INF-001 <sup>[1]</sup>	Effluent EFF-001 <sup>[1]</sup>	Incinerator Ash ASH-001	Biosolids BIO-001	Influent and Effluent	Incinerator Ash <sup>[2]</sup>	Biosolids <sup>[3]</sup>
VOC <sup>[4]</sup>	2/Year	2/year	--	1/year	Grab	--	Grab
BNA <sup>[5]</sup>	2/year	2/year	--	1/year	Grab	--	Grab
Metals <sup>[6]</sup>	1/Month	1/Month	2/Year	1/year	C-24 <sup>[10]</sup>	Grab	Grab
Chromium (VI) <sup>[7]</sup>	1/Month	1/Month	2/Year	1/year	Grab	Grab	Grab
Mercury	1/Month	1/Month <sup>[8]</sup>	2/Year	1/year	Grab	Grab	Grab
Cyanide, Total <sup>[9]</sup>	1/Month	1/Month	2/Year	1/year	Grab	Grab	Grab

Footnotes:

- [1] Influent and effluent monitoring conducted in accordance with MRP Tables E-2 and E-3 may be used to satisfy these pretreatment monitoring requirements.
- [2] The incinerator ash sample shall be a composite of the incinerator ash to be disposed. Incinerator ash collection and monitoring shall comply with the requirements specified in Attachment H, Appendix H-4. The Discharger shall also comply with the incinerator ash monitoring requirements of 40 C.F.R. part 503.
- [3] The biosolids sample shall be a composite of the biosolids to be disposed. Biosolids collection and monitoring shall comply with the requirements specified in Attachment H, Appendix H-4.
- [4] VOC: volatile organic compounds.
- [5] BNA: base/neutrals and acid extractable organic compounds.
- [6] The metals are arsenic, cadmium, copper, lead, nickel, selenium, silver, and zinc.
- [7] The Discharger may choose to monitor and report total chromium instead of hexavalent chromium. Samples collected for total chromium measurements may be 24-hour composites.
- [8] The Discharger shall use ultra-clean sampling (USEPA Method 1669) and ultra-clean analytical methods (USEPA Method 1631) for mercury monitoring.
- [9] The Discharger may, at its option, analyze for cyanide as weak acid dissociable cyanide using protocols specified in 40 C.F.R. Part 136, or an equivalent method in the latest Standard Method edition
- [10] If an automatic compositor is used, the Discharger shall obtain 24-hour composite samples through flow-proportioned composite sampling. Alternatively, 24-hour composite samples may consist of discrete grab samples combined (volumetrically flow-weighted) prior to analysis or mathematically flow-weighted

## VIII. REPORTING REQUIREMENTS

### A. General Monitoring and Reporting Requirements

The Discharger shall comply with all standard provisions (Attachments D and G) related to monitoring, reporting, and recordkeeping.

### B. Self-Monitoring Reports (SMRs)

1. **SMR Format.** The Discharger shall electronically submit SMRs using the State Water Board’s California Integrated Water Quality System (CIWQS) website at [http://www.waterboards.ca.gov/water\\_issues/programs/ciwqs](http://www.waterboards.ca.gov/water_issues/programs/ciwqs). 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 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 Attachment G section V.C.1.f. See also Provision VI.C.2 (Effluent Characterization Study and Report) of this Order for requirements to submit reports with the annual SMR.

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

**Table E-7. 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 <sup>[1]</sup>	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 & 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 <sup>[2]</sup>
Volume and Duration of Blended Discharge <sup>[3]</sup>		Required for all blended effluent discharges
Analytical Method		Not required (Discharger may select "data unavailable") <sup>[1]</sup>
Collection Time Analysis Time		Not required (Discharger may select "0:00") <sup>[1]</sup>

Footnotes :

- <sup>[1]</sup> 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.
- <sup>[2]</sup> 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).
- <sup>[3]</sup> 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.

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

**Table E-8. Monitoring Periods**

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
Continuous/D	Order effective date	All times
1/Hour	Order effective date	Every hour on the hour
1/Day	Order effective date	Any 24-hour period that reasonably represents a calendar day for sampling purposes (e.g., beginning at midnight and continuing through 11:59 p.m.)
2/Week 1/Week	First Sunday following or on Order effective date	Sunday through Saturday
5/Month 1/Month	First day of calendar month following or on Order effective date	First day of calendar month through last day of calendar month

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
1/Quarter	Closest January 1, April 1, July 1, or October 1 following or on Order effective date <sup>[1]</sup>	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
2/Year	Closest January 1 or July 1 before or after Order effective date <sup>[1]</sup>	January 1 through June 30 July 1 through December 31
1/Year	Closest January 1 before or after Order effective date <sup>[1]</sup>	January 1 through December 31
Once	Order effective date	Once during the permit term within 12 months prior to applying for permit reissuance

Footnote:

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

**5. RL and MDL Reporting.** The Discharger shall report with each sample result the Reporting Level (RL) and Method Detection Limit (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.

**6. 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 RL

### **C. Discharge Monitoring Reports (DMRs)**

DMRs are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMRs together with SMRs using the Electronic Self-Monitoring Reports module eSMR 2.5 or the latest upgraded version. Electronic DMR submittal shall be in addition to electronic SMR submittal. Information about electronic DMR submittal is available at the DMR website at [http://www.waterboards.ca.gov/water\\_issues/programs/discharge\\_monitoring](http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring).

**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<sub>25</sub> or EC<sub>25</sub>. If the IC<sub>25</sub> or EC<sub>25</sub> 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-Kärber. EC<sub>25</sub> 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<sub>25</sub> is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as USEPA's Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

**II. Chronic Toxicity Screening Phase Requirements**

- A. The Discharger shall perform screening phase monitoring:
  - 1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, or
  - 2. Prior to permit reissuance. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.
- B. Design of screening phase shall, at a minimum, consist of following elements:
  - 1. Use of test species specified in Appendix E-2, attached, and use of the protocols referenced in those tables, or as approved by the Executive Officer.
  - 2. Two stages:
    - a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Appendix E-2 (attached).



## 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	<i>(Skeletonema costatum)</i> <i>(Thalassiosira pseudonana)</i>	Growth rate	4 days	1
Red alga	<i>(Champia parvula)</i>	Number of cystocarps	7–9 days	3
Giant kelp	<i>(Macrocystis pyrifera)</i>	Percent germination; germ tube length	48 hours	2
Abalone	<i>(Haliotis rufescens)</i>	Abnormal shell development	48 hours	2
Oyster Mussel	<i>(Crassostrea gigas)</i> <i>(Mytilus edulis)</i>	Abnormal shell development; percent survival	48 hours	2
Echinoderms - Urchins Sand dollar	<i>(Strongylocentrotus purpuratus, S. franciscanus)</i> <i>(Dendraster excentricus)</i>	Percent fertilization or larval development	1 hour or 72 hours	2
Shrimp	<i>(Americamysis bahia)</i>	Percent survival; growth	7 days	3
Shrimp	<i>(Holmesimysis costata)</i>	Percent survival; growth	7 days	2
Topsmelt	<i>(Atherinops affinis)</i>	Percent survival; growth	7 days	2
Silversides	<i>(Menidia beryllina)</i>	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	<i>(Pimephales promelas)</i>	Survival; growth rate	7 days	4
Water flea	<i>(Ceriodaphnia dubia)</i>	Survival; number of young	7 days	4
Alga	<i>(Selenastrum capricornutum)</i>	Final cell density	4 days	4

**Toxicity Test Reference:**

- 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 <sup>[1]</sup>	
		Ocean	Marine/Estuarine
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 <sup>[2]</sup> Marine/Estuarine	0 4	1 or 2 3 or 4	3 0
Total number of tests	4	5	3

**Footnotes:**

- 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.
  - Freshwater refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.
  - Estuarine refers to receiving water salinities that fall between those of marine and freshwater, as described above.
- The freshwater species may be substituted with marine species if:
  - The salinity of the effluent is above 1 ppt greater than 95 percent of the time, or
  - The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

## ATTACHMENT F - FACT SHEET

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## ATTACHMENT F – FACT SHEET

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 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**

<b>WDID</b>	2 438011001
<b>CIWQS Place ID</b>	247457
<b>Discharger</b>	City of Palo Alto
<b>Name of Facility</b>	Palo Alto Regional Water Quality Control Plant and City of Palo Alto wastewater collection system
<b>Facility Address</b>	2501 Embarcadero Way
	Palo Alto CA 94303
	Santa Clara County
<b>Facility Contact, Title, Phone</b>	James Allen, Plant Manager, (650) 329-2243
<b>Authorized Person to Sign and Submit Reports</b>	James Allen, Plant Manager, (650) 329-2243
<b>Mailing Address</b>	Same as Facility Address
<b>Billing Address</b>	Same as Facility Address
<b>Type of Facility</b>	Publicly Owned Treatment Works (POTW)
<b>Major or Minor Facility</b>	Major
<b>Threat to Water Quality</b>	1
<b>Complexity</b>	A
<b>Pretreatment Program</b>	Yes
<b>Reclamation Requirements</b>	Order No. 93-160
<b>Nutrients Requirements</b>	NPDES Permit No. CA0038873
<b>Mercury and PCB Requirements</b>	NPDES Permit No. CA0038849
<b>Facility Permitted Flow</b>	39 million gallons per day (MGD) (average dry weather flow design capacity with advanced secondary treatment)
<b>Facility Design Flow</b>	39 MGD (average dry weather flow design capacity with advanced secondary treatment)
	80 MGD (peak wet weather flow design capacity with secondary treatment)
<b>Watershed</b>	Santa Clara Hydrologic Unit
<b>Receiving Waters</b>	South San Francisco Bay and Matadero Creek
<b>Receiving Water Type</b>	Marine (South San Francisco Bay) and Estuarine (Matadero Creek)

- A. The City of Palo Alto (Discharger) owns and operates the Palo Alto Regional Water Quality Control Plant and the City of Palo Alto wastewater collection system (collectively, the Facility). The Facility provides advanced secondary treatment of wastewater collected from its service area and discharges the majority of the treated wastewater to South San Francisco Bay via an unnamed channel. The balance of the treated wastewater is diverted to Matadero Creek via Renzel Marsh Pond.

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

- B.** The Discharger is regulated pursuant to NPDES Permit No. CA0037834. It was previously subject to Order No. R2-2014-0024 (previous order). The Discharger filed a Report of Waste Discharge and submitted an application for reissuance of its Waste Discharge Requirements (WDRs) and NPDES permit on October 30, 2018.

The Discharger is authorized to discharge subject to the WDRs in this Order at the discharge locations described in Table 2 of this Order. Regulations at 40 C.F.R. section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the effective period for the discharge authorization. Pursuant to California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all requirements for continuation of expired permits (40 C.F.R § 122.6[d]).

- C.** Order No. R2-2016-0008 amended the previous order to provide for an alternate monitoring program and remains in effect with this Order. The discharge is also regulated under NPDES Permit Nos. CA0038849 and CA0038873, which establish requirements on mercury and polychlorinated biphenyls (PCBs) and nutrients from wastewater discharges to San Francisco Bay. This Order does not affect those permits.
- D.** When applicable, State law requires dischargers to file a petition with the State Water Resources Control Board (State Water Board), Division of Water Rights, and receive approval for any change in the point of discharge, place of use, or purpose of use of treated wastewater that decreases the flow in any portion of a watercourse. The State Water Board retains separate jurisdictional authority to enforce such requirements under Water Code section 1211. This is not an NPDES permit requirement.

## II. FACILITY DESCRIPTION

### A. Wastewater and Biosolids Treatment and Controls

- 1. Location and Service Area.** The plant is located at 2501 Embarcadero Way, Palo Alto. The plant provides advanced secondary treatment of domestic, commercial, and industrial wastewater collected from the cities of Los Altos, Los Altos Hills, Palo Alto, and Mountain View; the East Palo Alto Sanitary District; and the unincorporated area of the Stanford University Campus. The service area population is approximately 236,000.
- 2. Collection System.** The City of Palo Alto wastewater collection system consists of approximately 200 miles of pipes ranging from 4 inches to 72 inches in diameter and one small lift station. Outside the City of Palo Alto, wastewater is conveyed to the plant by satellite collection systems owned and operated by the East Palo Alto Sanitary District, Stanford University, and the cities of Mountain View, Los Altos, and Los Altos Hills.

Each satellite collection system is responsible for an ongoing program of maintenance and capital improvements for sewer lines and pump stations within its respective jurisdiction to

ensure adequate capacity and reliability. The responsibilities include managing overflows, controlling inflow and infiltration, and implementing collection system maintenance.

**3. Wastewater Treatment.** Wastewater treatment processes at the plant, as detailed below, include screening and grit removal, primary sedimentation, biological treatment (fixed film reactors and activated sludge), secondary clarification, filtration (dual media filter), and disinfection. The hydraulic capacity of all treatment units is 80 MGD, except for the fixed film reactors and dual media filters, which have a capacity of 40 MGD. The plant's design flow rate is 39 MGD, determined by the process capacity of the fixed film reactors and the dual media filters. From March 2015 through February 2018, the plant's annual average daily flow was 19.8 MGD, and the maximum daily flow was 47.4 MGD.

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

**b. Primary Treatment.** Following preliminary treatment, wastewater is pumped into rectangular primary clarifiers to remove floatable and settleable materials.

**c. Biological Treatment.** All wastewater receives biological treatment in a two-step process that uses fixed film growth reactors to reduce biochemical oxygen demand (BOD), followed by activated sludge treatment. Primary-treated effluent flows up to 39 MGD are treated in the fixed film reactors, and flows in excess of 39 MGD are routed around the reactors and combined with reactor effluent prior to activated sludge treatment. Removal of ammonia (nitrification) is achieved in the activated sludge aeration basins. Mixed liquor from the aeration basins flows to secondary clarifiers for solids removal via settling. The majority of settled solids are returned to the aeration basins as "return activated sludge." "Waste activated sludge" is treated as described in Fact Sheet section II.A.4, below.

The Discharger is undertaking treatment upgrades that will reconstruct the activated sludge process and eliminate the fixed film reactors. The plant will continue to provide advanced secondary treatment with nitrification. Attachment C provides flow schematics for the current treatment plant.

**d. Filtration Process.** Following biological treatment, the wastewater undergoes advanced secondary treatment via filtration. There are 12 parallel dual media filters. Filter backwash water is returned to the primary sedimentation basins. The filters process secondary-treated effluent flows up to 39 MGD. Flows above 39 MGD are routed around the filters and combined with filter effluent prior to disinfection.

**e. Disinfection.** The plant uses ultraviolet (UV) disinfection. Following disinfection, the final effluent is discharged to South San Francisco Bay via an unnamed channel or to Matadero Creek via Renzel Marsh Pond. A portion of the effluent is diverted for further treatment for reclamation use, as described in Fact Sheet section II.A.5, below.

**4. Sludge and Biosolids Management.** Solids from primary sedimentation tanks and aeration tanks are sent to the sludge thickening facilities, gravity-thickened, and dewatered by belt presses. Currently, thickened and dewatered solids are incinerated in one of two multiple hearth incinerators, ash is hauled offsite to a hazardous waste landfill, and belt press filtrate, scrubber

water, and other flows from the incinerator building are returned to the plant headworks. Upon completion of the Biosolids Conversion Project, the solids will be hauled offsite for additional treatment and disposal, and belt press filtrate will be returned to the plant headworks.

- 5. Reclamation.** Approximately 695 acre-feet per year or 0.62 MGD of final effluent undergoes additional filtration and chlorination prior to distribution as tertiary unrestricted recycled water. The Discharger sends this water to the Palo Alto Golf Course, Palo Alto parks, the California Department of Transportation, and the City of Mountain View recycled water system. The water is also distributed by truck for landscape irrigation, dust control, soil compaction, and collection system cleaning. These reclamation activities are regulated under Regional Water Board Order No. 93-160.

The Discharger's planned Advanced Water Purification System will improve recycled water quality by adding additional filtration and reverse osmosis for up to 1.125 MGD of the recycled water flow. Up to 0.2 MGD of reverse osmosis concentrate will be blended with advanced-secondary effluent prior to discharge.

- 6. Stormwater Management.** All stormwater from within the plant is collected and directed to the headworks for treatment; therefore, no stormwater requirements are necessary.

## **B. Discharge Points and Receiving Waters**

Approximately 95 percent of the treated effluent not recycled is discharged through Discharge Point No. 001 to an unnamed channel that leads to South San Francisco Bay. The remaining 5 percent (approximately 1 MGD) enters Renzel Marsh Pond, where it flows via a sluice gate to Matadero Creek at Discharge Point No. 002. Matadero Creek flows into Mayfield Slough within the Palo Alto Flood Basin, which then flows into South San Francisco Bay at the Flood Basin tide gates. Matadero Creek flows vary with the seasons; flows can be less than 0.03 MGD during summer. Below Discharge Point No. 002, Matadero Creek and Mayfield Slough are tidally-influenced. (The tide gates constrict, but do not preclude, tidal flows from entering and exiting the Flood Basin.)

Renzel Marsh Pond is an environmental enhancement project the Discharger initiated in 1992 to bring freshwater to the area to improve a deteriorated habitat near the plant and to mitigate saltwater influx into Matadero Creek. The project created a 15-acre freshwater pond from previously dry land. With a constructed berm around the pond to prevent stormwater inflows, treated effluent is the only flow to the pond. Because Renzel Marsh Pond was built in a former upland (dry) environment and is exclusively maintained by the plant's discharge with a controlled outfall to Matadero Creek, the receiving water for Discharge Point No. 002 is Matadero Creek.

The Discharger's planned Discharge Infrastructure Improvements Project will increase the pump station capacity to Renzel Marsh Pond to approximately 3 MGD. Discharge to Renzel Marsh Pond and Matadero Creek (Discharge Point No. 002) may increase as a result of this change (See Fact Sheet section IV.C.4.b.)

### C. Previous Requirements and Monitoring Data

The table below presents the previous order’s effluent limitations and representative monitoring data from the previous order term:

**Table F-2. Previous Effluent Limitations and Monitoring Data**

Parameter	Units	Effluent Limitations			Monitoring Data	
		Monthly Average	Weekly Average	Maximum Daily	Long-Term Average	Highest Daily Discharge
Biochemical Oxygen Demand 5-day @ 20°C (BOD <sub>5</sub> )	mg/L	10	---	20	2.1	10.2
Total Suspended Solids (TSS)	mg/L	10	---	20	1.2	22.2
BOD <sub>5</sub> percent removal	%	≥ 85	---	---	99.4	99.1 <sup>[1]</sup>
TSS percent removal	%	≥ 85	---	---	99.7	99.3 <sup>[1]</sup>
pH	standard units	6.5 – 8.5			---	6.0 – 7.4 <sup>[2]</sup>
Oil and Grease	mg/L	5	---	10	---	2.3
Turbidity	NTU	---	---	10	---	15
Ammonia, Total as N	mg/L	2.7	---	9.5	---	1.6
Copper, Total Recoverable	µg/L	21	---	36	---	22
Nickel, Total Recoverable	µg/L	26	---	31	---	5.9
Cyanide, Total	µg/L	6.2	---	14	---	3.1
Dioxin-TEQ	µg/L	1.4 x 10 <sup>-8</sup>	---	2.8 x 10 <sup>-8</sup>	---	0 <sup>[3]</sup>
Enterococcus	MPN/100 mL	35 <sup>[4]</sup>	---	---	---	45.7
Fecal Coliform	MPN/100 mL	[5]			---	130
Acute Toxicity	% survival	[6]			---	100 <sup>[7]</sup>
Chronic Toxicity	TU <sub>c</sub>	No chronic toxicity in discharge as discharged			---	<1

Unit abbreviations:

mg/L= milligrams per liter  
µg/L= micrograms per liter  
NTU = nephelometric turbidity units  
MPN per 100 mL= most probable number per 100 milliliters

Footnotes:

- [1] Lowest monthly average.
- [2] Range of lowest and highest pH values. pH violations were addressed through Cease and Desist Order No. R2-2015-0011.
- [3] Dioxin-TEQ was calculated in accordance with Attachment G section V.C.1.c.3 of the previous order.
- [4] The enterococcus bacteria limitation was expressed as the geometric mean of all samples in a calendar month.
- [5] The median of all fecal coliform samples collected in a calendar month was not to exceed 98 MPN/100 mL. The 90<sup>th</sup> percentile value of the last eleven fecal coliform samples was not to exceed 301 MPN/100 mL.
- [6] The three-sample median was not to be less than 90% survival; the single-sample maximum was not to be less than 70% survival.
- [7] Lowest percent survival.

### D. Compliance Summary

**1. Treatment Plant.** The Discharger violated its effluent limitations 37 times during the previous order term, between August 2014 to November 2018. Thirty-one of these were pH violations subject to Cease and Desist Order No. R2-2015-0011, as detailed below:

**Table F-3. Effluent Limit Violations**

Exceedance Date	Exceeded Parameter	Units	Effluent Limitation	Reported Value
11/30/2014	pH, Instantaneous Minimum	standard units	8.5 – 6.5	6.4
12/01/2014	pH, Instantaneous Minimum	standard units	8.5 – 6.5	6.4
09/2015 – 10/2016	31 exceedances of pH, Instantaneous Minimum <sup>[1]</sup>	standard units	8.5 – 6.5	6.0 – 6.4
04/27/2015	Fecal Coliform, Monthly Median	MPN/100 mL	98	110
07/09/2015	Turbidity, Instantaneous Maximum	ug/L	10	15
07/09/2015	Total Suspended Solids, Maximum Daily	ug/L	20	22
07/10/2015	Total Suspended Solids, Maximum Daily	ug/L	20	22

Footnote:

<sup>[1]</sup> Cease and Desist Order No. R2-2015-0011 established an interim instantaneous minimum pH effluent limitation of 6.0. Because the Discharger complied with the interim limitation, these violations were not subject to the mandatory minimum penalties required by Water Code sections 13385(h) and (i).

The instantaneous maximum pH violations on November 30 and December 1, 2014, occurred due to increased influent ammonia concentrations and loads, combined with a decrease in groundwater and rainwater infiltration. In February 2015, the Regional Water Board issued Cease and Desist Order No. R2-2015-0011 with interim pH control measures. Between September 2015 and October 2016, 31 additional pH violations occurred. In April 2017, the Discharger completed the required actions under the Cease and Desist Order to comply with pH effluent limitations.

The Discharger believes the monthly median fecal coliform violation on April 27, 2015, occurred due to a miscalibration of the flow meter to the UV disinfection system. The Discharger recalibrated the flow meter and re-trained staff to evaluate data in a timely fashion to inform management of any violations.

The turbidity and total suspended solids (TSS) violations on July 9 and 10, 2015, occurred due to an unexpected bypass of the dual media filtration system caused by the failure of an inflatable plug which had been installed for clearwell cleaning and maintenance. This led to flooding of the dual media filtration basement. The bypass lasted approximately three days, during which an estimated 51.2 million gallons was discharged without filtration.

- 2. Collection System.** The table below shows the Discharger’s collection system’s sanitary sewer overflow (SSO) rates (total SSOs per 100 miles of collection system) for Category 1 SSOs over the last five years, the length and age of the collection system, and comparable data for the San Francisco Bay Region and the State. Category 1 SSOs are those that reach waters of the United States and thus may violate Prohibition III.D of this Order.

**Table F-4. Collection System and Category 1 SSO Rates (SSO per 100 miles)**

(Values based on CIWQS data analysis completed in December 2018)

	Length (miles)	Average Pipe Age (years)	Total Category 1 <sup>[1]</sup> SSO Rate <sup>[2]</sup>				
			2013	2014	2015	2016	2017
Discharger	217 <sup>[3]</sup>	41	0.9	0.5	0	0.5	0.9
San Francisco Bay Region	17,700 <sup>[4]</sup>	45	1.1	1.5	0.68	1.2	1.7
State of California	89,100 <sup>[4]</sup>	52	0.65	0.69	0.47	0.58	0.84

Footnotes:

- <sup>[1]</sup> Category 1 SSOs are those that reached surface water or a drainage channel tributary to a surface water, or reached a municipal separate storm sewer system and were not fully captured and disposed of properly.
- <sup>[2]</sup> The State Water Board's *Enrollee's Guide to the SSO Database* defines "Total number of SSOs per 100 miles of Sewer" as "...the number of SSOs, for which the reporting enrollee is responsible, for every 100 miles of pipe or sewer lines in an enrollee's sanitary sewer system. Due to the large variation in facility specific characteristics, this metric should only be viewed as a rough comparison of the operation and maintenance performance of enrollees and their sanitary sewer systems."
- <sup>[3]</sup> Length shown based on force main and gravity sewer data. Discharger also responsible for 86 miles of sewer laterals.
- <sup>[4]</sup> The average pipe age for the State of California is estimated based on the percentages of piping constructed during each decade as reported by enrollees under State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order No. WQ 2013-0058-EXEC.

The Category 1 SSO rates for the Discharger's collection system were generally below the average rates for collection systems in the San Francisco Bay Region. At most two Category 1 SSOs occurred per year (in 2013 and 2017). The average age of the Discharger's collection system is comparable to the average age of collection systems in the San Francisco Bay Region.

## **E. Planned Changes**

During the term of this Order, the Discharger anticipates several plant improvements (some of which are already underway):

- Biosolids Conversion Project, including construction of a sludge dewatering and truck loadout facility to replace the sewage sludge incinerators with a new biosolids handling system (estimated completion early 2019);
- Secondary treatment upgrades, including removal of the fixed film reactors and reconstruction and rehabilitation of the activated sludge aeration basins (estimated schedule 2018-2022);
- Advanced Water Purification System to improve recycled water quality using microfiltration followed by reverse osmosis to reduce the level of total dissolved solids (estimated schedule 2019-2021);
- Primary sedimentation tank rehabilitation, including installation of protective coating and replacement of worn rotating arms. (estimated schedule 2018-2020);
- Headworks facility replacement, including replacing influent pumping, electrical and controls system, screening equipment, grit handling equipment, and force main to the primary treatment units, as well as modifications to the headworks building and yard piping (estimated schedule 2020-2024);
- Discharge infrastructure improvements, including construction of a new 63-inch high-density polyethylene outfall to South San Francisco Bay. This parallel outfall line is needed due to the age of the existing outfall and to increase outfall capacity during peak wet-weather flow, peak tide, and future sea-level rise scenarios (estimated schedule 2019-2022).

This Order authorizes these changes subject to conditions set forth in Provision VI.C.5.c.

### III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

#### A. Legal Authorities

This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260) for discharges to waters of the State. 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 authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order.

#### B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (CEQA), 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 establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Because of the marine influence on South San Francisco Bay, total dissolved solids levels in the receiving water exceed 3,000 mg/L and thereby meet an exception to State Water Board Resolution No. 88-63. Beneficial uses applicable to South San Francisco Bay and Matadero Creek are as follows:

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

Discharge Point	Receiving Water	Beneficial Uses	
001	South San Francisco Bay	Industrial Service Supply (IND) Commercial and Sport Fishing (COMM) Shellfish Harvesting (SHELL) Estuarine Habitat (EST) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE)	Fish Spawning (SPWN) Wildlife Habitat (WILD) Water Contact Recreation (REC-1) Non-contact Water Recreation (REC-2) Navigation (NAV)
002	Matadero Creek	Cold Freshwater Habitat (COLD) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Fish Spawning (SPWN)	Warm Freshwater Habitat (WARM) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2)

**2. Bacteria.** The State Water Board adopted the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* on August 7, 2018, which became effective on March 22, 2019. This plan establishes new enterococcus bacteria water quality objectives and

related implementation provisions for discharges to marine and estuarine receiving waters that support the water contact recreation beneficial use.

- 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.
- 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 require 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 No. 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 No. 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 No. 68-16. (See Fact Sheet section IV.D.1.)
- 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. (See Fact Sheet section IV.D.2.)
- 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. Sludge and Biosolids.** U.S. EPA administers 40 C.F.R. Part 503, Standards for the Use or Disposal of Sewage Sludge, which regulates the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a municipal wastewater treatment facility. This Order does not authorize any act that violates those requirements. The Discharger is responsible for meeting all applicable requirements of 40 C.F.R. Part 503.

#### **D. Impaired Waters on CWA 303(d) List**

In April 2018, 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.

Matadero Creek is not listed as impaired, but South San Francisco Bay is listed as impaired by chlordane, DDT, dieldrin, dioxin compounds, invasive species, furan compounds, mercury, PCBs, dioxin-like PCBs, and selenium. 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 mercury and PCBs TMDLs apply to this discharge and are implemented through NPDES Permit No. CA0038849.

As shown in Fact Sheet section IV.C.3, the discharge is not a significant source of chlordane, DDT, or dieldrin because these pollutants have not been detected in the discharge. The discharge is not a source of invasive species because it is disinfected. This Order contains dioxin-TEQ effluent limitations to ensure that dioxins and furans in effluent are kept below water quality objectives.

#### **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 at location or in manner different than 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 (No bypass to waters of United States):** This prohibition is based on 40 C.F.R. section 122.41(m) (see Attachment D section I.G).

This Order does not consider diverting wastewater around fixed film reactors or dual media filters to be a bypass during essential maintenance or for process control to ensure efficient operation, or during wet weather when the primary effluent flow exceeds the fixed film reactors' process capacity of 39 MGD or when the activated sludge treatment units' effluent flow exceeds the filter process capacity of 39 MGD, as long as the discharge also complies with the effluent and receiving water limitations contained in this Order and the Discharger operates the facility as designed and in accordance with the Operation & Maintenance Manual developed for the plant. This means that the Discharger is to optimize storage and use of equalization units and fully utilize the advanced treatment units. Because the plant provides two phases of biological treatment (fixed film reactors followed by activated sludge), diverting wastewater around the fixed film reactors does not prevent the plant from providing full secondary treatment to all wastewater. Likewise, because the dual media filters provide advanced secondary treatment, diverting flows around them does not prevent the plant from providing full secondary treatment. During the previous order term, the Discharger reported five wet weather flow diversions around the fixed film reactors or dual media filters. The longest diversion lasted 37 hours and 46 minutes, and 25 million gallons were diverted. No effluent or receiving water limitations were exceeded during these diversions.

- c. **Discharge Prohibition III.C (No average dry weather flow in excess of design capacity):** This Order prohibits average dry weather influent flows greater than the plant's design average dry weather treatment capacity (i.e., its historical and tested treatment reliability) of 39 MGD. Exceeding this flow could result in lower treatment reliability and greater potential to violate water quality requirements.
- d. **Discharge Prohibition III.D (No sanitary sewer overflows to waters of the United States):** Basin Plan Table 4-1 (Discharge Prohibition 15) and the CWA prohibit the discharge of wastewater to surface waters, except as authorized under an NPDES permit. Publicly-owned treatment works must achieve secondary treatment at a minimum and any more stringent limitations necessary to meet water quality standards (33 U.S.C. § 1311[b][1][B] and [C]). A sanitary sewer overflow that results in the discharge of raw sewage or wastewater not meeting this Order's effluent limitations to waters of the United States is therefore prohibited under the Basin Plan and the CWA.

## 2. Exception to Shallow Water and Dead-End Slough Discharge Prohibition

Basin Plan Table 4-1 (Discharge Prohibition 1) prohibits discharges not receiving a minimum of 10:1 initial dilution to (a) provide an added degree of protection from continuous effects of waste discharge, (b) provide a buffer against the effects of abnormal discharges caused by temporary upsets and malfunctions, (c) minimize public contact with undiluted wastes, and (d) reduce aesthetic impacts of waste discharges. Basin Plan section 4.2 provides for exceptions to the prohibition 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 further states:

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

South San Francisco Bay is surrounded by extensive mudflats, sloughs, marshes, and salt ponds, and is generally confined and shallow, except for a deep central channel. Discharges to the unnamed channel (Discharge Point No. 001) and to Matadero Creek (Discharge Point No. 002) do not receive 10:1 initial dilution. In 1988, the Regional Water Board found that these discharges met the exception to the Basin Plan prohibition based on the discharge providing a net environmental benefit. In 1990, the State Water Board disagreed, concluding that the Discharger had failed to demonstrate a net environmental benefit. Nonetheless, it acknowledged that relocating the discharge north of the Dumbarton Bridge was not economically or environmentally sound. It also concluded that discharges could meet an exception to the prohibition because the Discharger could ensure an "equivalent level of protection," if the discharge received advanced secondary treatment and nitrification. Attachment I provides more details regarding this history.

The Regional Board continues to grant an exception to the discharge prohibition on the basis of the following findings:

- a. Moving the Discharger's outfalls to deep water (i.e., north of the Dumbarton Bridge) would be an inordinate burden because such relocation would require pipeline construction through protected wetlands, which would be costly and disturb wetland habitats.
- b. The Discharger continues to provide an equivalent level of environmental protection by providing advanced secondary treatment, including a higher level of BOD and TSS removal and nitrification, and by maintaining its pretreatment and pollution prevention programs.

The Discharger also continues to pursue wastewater reclamation projects to reduce its discharge volumes. The recycled water it produces has increased from 129 million gallons in 2008 to 233 million gallons in 2018.

The Discharger continues to provide environmental benefits by maintaining Renzel Marsh Pond to support freshwater marsh habitat and provide resting habitat for migratory and local birds. The discharge from Renzel Marsh Pond into Matadero Creek also mitigates flows from adjacent Renzel Salt Marsh into the creek and supports habitat for the salt marsh harvest mouse and Ridgway’s rail.

## 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 the Secondary Treatment Standards at 40 C.F.R. section 133 as summarized below. The Basin Plan contains additional requirements for certain pollutants.

**Table F-6. Secondary Treatment Standards**

Parameter	Monthly Average	Weekly Average
Biochemical Oxygen Demand, 5-day @ 20°C <sup>[2]</sup>	30 mg/L	45 mg/L
Carbonaceous Biochemical Oxygen Demand, 5-day @ 20°C <sup>[1,2]</sup>	25 mg/L	40 mg/L
Total Suspended Solids <sup>[2]</sup>	30 mg/L	45 mg/L
pH	6.0 – 9.0 standard units	

Unit Abbreviation:

mg/L= milligrams per liter

Footnotes:

<sup>[1]</sup> Carbonaceous biochemical oxygen demand limitations may be substituted for biochemical oxygen demand limitations.

<sup>[2]</sup> The monthly average percent removal, by concentration, is not to be less than 85 percent.

San Francisco Bay south of the Dumbarton Bridge is a unique water body, with limited capacity to assimilate wastewater. Due to limited circulation, wastewater discharges to this area may take several months to reach the ocean. In addition, the unique wetlands and ambient conditions of South San Francisco Bay sometimes result in natural dissolved oxygen levels lower than the Basin Plan’s receiving water limit of a minimum of 5.0 mg/L. The limited assimilative capacity of South San Francisco Bay necessitates effluent BOD<sub>5</sub> and TSS limitations that are more stringent than those required for secondary treatment.

The Discharger constructed advanced waste treatment facilities in the late 1970s and has consistently met limits on BOD<sub>5</sub> and TSS that are more stringent than secondary treatment standards. The advanced secondary treatment system also provides ammonia removal. A performance-based effluent limitation for total ammonia ensures that the plant continues to provide adequate nitrification; such treatment is also necessary to qualify for an exception to Basin Plan Discharge Prohibition 1, as described above in Fact Sheet section IV.A.2, and to

ensure that the effluent continues to pose no reasonable potential to cause exceedance of the Basin Plan's ammonia water quality objectives in the receiving waters.

## 2. Effluent Limitations

- a. **BOD<sub>5</sub> and TSS.** The BOD<sub>5</sub> and TSS effluent limitations are a monthly average of 10 mg/L and a daily maximum of 20 mg/L. These limitations, including the 85 percent removal requirements, are technologically feasible standards for the advanced wastewater treatment technologies used at the plant and are unchanged from the previous order.
- b. **Oil and Grease.** The oil and grease effluent limitations are a monthly average of 5 mg/L and a daily maximum of 10 mg/L. These effluent limitations are technologically feasible for this plant and unchanged from the previous order.
- c. **pH.** Basin Plan Table 4-2 requires pH effluent limitations for shallow water discharges to be a minimum of 6.5 and a maximum of 8.5 standard units.
- d. **Turbidity.** The turbidity effluent limitation, an instantaneous maximum of 10 nephelometric turbidity units, is unchanged from the previous order to ensure the performance of the plant's ultraviolet disinfection system.

## C. Water-Quality Based Effluent Limitations (WQBELs)

### 1. Scope and Authority

This Order contains WQBELs 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 to protect designated uses of receiving waters as specified in the Basin Plan.

### 2. Beneficial Uses and Water Quality Criteria and Objectives

Discharge Point No. 001 discharges to South San Francisco Bay, and Discharge Point No. 002 discharges to Matadero Creek. Fact Sheet section III.C.1, above, identifies South San Francisco Bay and Matadero Creek beneficial uses. Water quality criteria and objectives to protect these beneficial uses are described below:

- a. Basin Plan Objectives.** The Basin Plan specifies numerous water quality objectives, including numeric objectives for 10 priority pollutants and un-ionized ammonia, and narrative objectives for toxicity and bioaccumulation.
- i. Ammonia.** Basin Plan section 3.3.20 contains water quality objectives for un-ionized ammonia of 0.025 mg/L (as nitrogen) as an annual median and 0.4 mg/L (as nitrogen) as a maximum for South San Francisco Bay.
- ii. Dioxin-TEQ.** The narrative bioaccumulation objective (Basin Plan section 3.3.2) 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 Lower 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 for 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 water quality-based effluent limits for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme” (Fed. Reg. Vol. 65, No. 97, pages 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 2005, and a set of bioaccumulation equivalency factors (BEFs) U.S. EPA developed for the Great Lakes region (40 C.F.R. § 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 2005 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  $1.4 \times 10^{-8}$  µg/L for the protection of human health when aquatic organisms are consumed. This 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.

- iii. Chronic Toxicity.** The narrative toxicity objective (Basin Plan section 3.3.18) 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.... 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 U.S. EPA’s *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. This document applies here as guidance because it directly addresses effluent characterization for toxicity

- 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 South San Francisco Bay and Matadero Creek because neither water body is a source of drinking water.
- 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 South San Francisco Bay.
- d. Bacteria Water Quality Objectives.** The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* establishes enterococci bacteria water quality objectives to limit cases of gastrointestinal illness from water contact recreation. The enterococci bacteria objectives apply to marine and estuarine waters.
- e. Sediment Quality Objectives.** The *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* contains the following 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.

- f. 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.

South San Francisco Bay is a saltwater environment based on salinity data generated through the Regional Monitoring Program (RMP). Salinity data collected at the Coyote Creek monitoring station (BA10) between 1993 and 2001 indicate that the salinity was greater than 10 ppt roughly 97 percent of the time. South San Francisco Bay is therefore classified as saltwater.

Matadero Creek is an estuarine environment based the Discharger's receiving water monitoring data from March 2011 to August 2018, which indicates that Matadero Creek salinity is less than 1 ppt 100 percent of the time at the point of discharge but increases shortly downstream due to South San Francisco Bay mixing. The salinity at 1,250 feet downstream of the discharge, for example, is less than 1 ppt only 30 percent of the time. Matadero Creek is therefore estuarine.

The reasonable potential analysis and WQBELs for Discharge Point Nos. 001 and 002 are based on the lower of the freshwater and saltwater criteria and objectives.

- g. Receiving Water Hardness and pH.** Ambient hardness and pH data were used to calculate freshwater water quality objectives that are hardness or pH dependent. The data were collected at monitoring station RSW-002 in Matadero Creek upstream from Discharge Point No. 002 where the creek passes beneath the Bayshore Freeway. A hardness of 348 mg/L as CaCO<sub>3</sub> was used to determine the water quality objectives. This is the geometric mean of 48 hardness measurements the Discharger collected at Matadero Creek from August 2014 through August 2018. During the same period, the minimum and average pH in Matadero Creek were 6.6 and 7.5.
- h. 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.

Basin Plan Table 7.2.1-1 provides site-specific translators for copper and nickel for South San Francisco Bay. For the previous order, Regional Water Board staff also developed

site-specific translators for chromium (VI), zinc, and lead using data from the Dumbarton Bridge RMP station (BA30). This Order also relies on those translators. CTR default translator were used for all other metals.

**Table F-7. Site-Specific Translators for South San Francisco Bay**

Pollutant	Average Monthly Effluent Limit Translator	Maximum Daily Effluent Limit Translator
Copper	0.53	0.53
Nickel	0.44	0.44
Zinc	0.24	0.56
Chromium (VI)	0.037	0.089
Lead	0.060	0.15

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

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

**a. Available Information.** The reasonable potential analysis for this Order is based on effluent monitoring data the Discharger collected from August 2014 through August 2018 and ambient background data summarized in *San Francisco Bay California Toxics Rule Priority Pollutant Ambient Water Monitoring Report* (2017), which includes data collected through the RMP at Dumbarton Bridge (BA30) from March 1993 through August 2015, supplemented by 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).

SIP section 1.4.3 requires that background water quality data be representative of the ambient receiving water that will mix with the discharge. For the priority pollutants, the Dumbarton Bridge RMP monitoring station (BA30), relative to other RMP stations, best fits SIP guidance for establishing background conditions at Discharge Point Nos. 001 and 002. For ammonia, receiving water data collected under the previous order were used.

This Order does not contain WQBELs for constituents that do not demonstrate reasonable potential; however, the MRP 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.

**b. Priority Pollutants and Dioxin-TEQ**

**i. Methodology.** SIP section 1.3 sets forth the methodology used for this Order for assessing whether a priority pollutant has reasonable potential to exceed a water quality objective. SIP section 1.3 applies to priority pollutants and is used here for dioxin-TEQ as guidance. 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:

- (a) **Trigger 1** is activated if the maximum effluent concentration is greater than or equal to the lowest applicable water quality objective ( $MEC \geq$  water quality objective).
- (b) **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.
- (c) **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, no, or unknown) for each pollutant. Basin Plan section 4.7.2.1 requires copper and nickel WQBELs for all individual NPDES permits for municipal wastewater discharges in South San Francisco Bay. Basin Plan section 4.7.2.2 requires cyanide WQBELs for all individual NPDES permits for municipal wastewater treatment facilities that discharge to San Francisco Bay. Dioxin-TEQ has reasonable potential because South San Francisco Bay is 303(d)-listed for dioxin-TEQ.

**Table F-8. Reasonable Potential Analysis**

CTR No.	Priority Pollutants	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL <sup>[1]</sup> (µg/L)	B or Minimum DL <sup>[1]</sup> (µg/L)	RPA Results <sup>[2]</sup>
1	Antimony	4,300	0.44	1.3	No
2	Arsenic	36	1.58	5.1	No
3	Beryllium	No Criteria	<0.06	0.11	U
4	Cadmium	3.0	1.48	0.17	No
5a	Chromium (III)	575	0.58	15	U
5b	Chromium (VI)	180	0.58	15	No
<b>6</b>	<b>Copper</b>	<b>13</b>	<b>22</b>	<b>8.6</b>	<b>Yes</b>
7	Lead	135	1.51	4.2	No
8	Mercury (303(d) listed) <sup>[4]</sup>	---	---	---	---
<b>9</b>	<b>Nickel</b>	<b>27</b>	<b>6.0</b>	<b>16</b>	<b>Yes</b>
10	Selenium (303(d) listed)	5	2.1	0.63	No
11	Silver	2.2	0.2	0.12	No
12	Thallium	6.3	<0.05	0.16	No
13	Zinc	161	92	21.0	No
<b>14</b>	<b>Cyanide</b>	<b>2.9</b>	<b>3.1</b>	<b>0.6</b>	<b>Yes</b>
15	Asbestos <sup>[4]</sup>	---	---	---	---
16	2,3,7,8-TCDD (303(d) listed)	1.4E-08	<5.2E-07	2.70E-10	No
	<b>Dioxin-TEQ (303(d) listed)</b>	<b>1.4E-08</b>	<b>&lt;2.2E-6</b>	<b>4.10E-08</b>	<b>Yes</b>
17	Acrolein	780	<1.7	<0.5	No

CTR No.	Priority Pollutants	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL <sup>[1]</sup> (µg/L)	B or Minimum DL <sup>[1]</sup> (µg/L)	RPA Results <sup>[2]</sup>
18	Acrylonitrile	0.66	<0.69	<0.02	No
19	Benzene	71	<0.18	<0.05	No
20	Bromoform	360	<0.15	<0.15	No
21	Carbon Tetrachloride	4.4	<0.16	0.07	No
22	Chlorobenzene	21,000	<0.18	<0.18	No
23	Chlorodibromomethane	34	0.2	0.057	No
24	Chloroethane	No Criteria	<0.38	<0.38	U
25	2-Chloroethylvinyl ether	No Criteria	<0.28	<0.28	U
26	Chloroform	No Criteria	0.6	<0.19	U
27	Dichlorobromomethane	46	0.3	<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	<0.21	No
31	1,2-Dichloropropane	39	<0.18	<0.05	No
32	1,3-Dichloropropylene	1,700	<0.16	<0.16	No
33	Ethylbenzene	29,000	<0.26	<0.26	No
34	Methyl Bromide	4,000	<0.17	<0.3	No
35	Methyl Chloride	No Criteria	<0.23	<0.3	U
36	Methylene Chloride	1,600	<0.3	<0.4	No
37	1,1,2,2-Tetrachloroethane	11	<0.1	<0.05	No
38	Tetrachloroethylene	8.85	<0.19	<0.05	No
39	Toluene	200,000	0.7	<0.19	No
40	1,2-Trans-Dichloroethylene	140,000	<0.22	<0.22	No
41	1,1,1-Trichloroethane	No Criteria	<0.19	<0.19	U
42	1,1,2-Trichloroethane	42	<0.16	<0.05	No
43	Trichloroethylene	81	<0.2	<0.2	No
44	Vinyl Chloride	525	<0.25	<0.25	No
45	2-Chlorophenol	400	<0.7	<0.7	No
46	2,4-Dichlorophenol	790	<0.9	<0.9	No
47	2,4-Dimethylphenol	2,300	<0.8	<0.8	No
48	2-Methyl- 4,6-Dinitrophenol	765	<0.6	<0.6	No
49	2,4-Dinitrophenol	14,000	<0.9	<0.7	No
50	2-Nitrophenol	No Criteria	<0.8	<0.8	U
51	4-Nitrophenol	No Criteria	<0.5	<0.5	U
52	3-Methyl 4-Chlorophenol	No Criteria	<0.8	<0.8	U
53	Pentachlorophenol	4.5	<0.6	<0.6	No
54	Phenol	4,600,000	<0.5	<0.5	No
55	2,4,6-Trichlorophenol	6.5	<0.97	<0.97	No
56	Acenaphthene	2700	<0.01	0.003	No
57	Acenaphthylene	No Criteria	<0.02	0.001	U
58	Anthracene	110,000	<0.01	0.002	No
59	Benzidine	0.00054	<5	<0.0003	No
60	Benzo(a)Anthracene	0.049	<0.02	0.011	No
61	Benzo(a)Pyrene	0.049	<0.01	0.045	No

CTR No.	Priority Pollutants	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL <sup>[1]</sup> (µg/L)	B or Minimum DL <sup>[1]</sup> (µg/L)	RPA Results <sup>[2]</sup>
62	Benzo(b)Fluoranthene	0.049	<0.01	0.057	No
63	Benzo(ghi)Perylene	No Criteria	<0.02	0.015	Ud
64	Benzo(k)Fluoranthene	0.049	<0.01	0.021	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	<0.9	<0.3	U
66	Bis(2-Chloroethyl)Ether	1.4	<0.7	<0.3	No
67	Bis(2-Chloroisopropyl)Ether	170,000	<0.6	<0.6	No
68	Bis(2-Ethylhexyl)Phthalate	5.9	0.9	<0.93	No
69	4-Bromophenyl Phenyl Ether	No Criteria	<0.7	<0.23	U
70	Butylbenzyl Phthalate	5,200	<0.7	0.052	No
71	2-Chloronaphthalene	4,300	<0.9	<0.3	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	<0.9	<0.3	U
73	Chrysene	0.049	<0.01	0.022	No
74	Dibenzo(a,h)Anthracene	0.049	<0.02	0.009	No
75	1,2-Dichlorobenzene	17,000	<0.27	<0.27	No
76	1,3-Dichlorobenzene	2,600	<0.18	<0.18	No
77	1,4-Dichlorobenzene	2,600	<0.18	<0.18	No
78	3,3 Dichlorobenzidine	0.077	<5	<0.0002	No
79	Diethyl Phthalate	120,000	<0.7	0.3	No
80	Dimethyl Phthalate	2,900,000	<0.9	<0.24	No
81	Di-n-Butyl Phthalate	12,000	<0.6	2.2	No
82	2,4-Dinitrotoluene	9.1	<0.7	<0.27	No
83	2,6-Dinitrotoluene	No Criteria	<0.8	<0.29	U
84	Di-n-Octyl Phthalate	No Criteria	<0.5	<0.38	U
85	1,2-Diphenylhydrazine	0.54	<0.7	0.005	No
86	Fluoranthene	370	<0.03	0.039	No
87	Fluorene	14,000	<0.01	0.005	No
88	Hexachlorobenzene	0.00077	<0.7	0.0005	No
89	Hexachlorobutadiene	50	<0.6	<0.3	No
90	Hexachlorocyclopentadiene	17,000	<0.7	<0.31	No
91	Hexachloroethane	8.9	<0.6	<0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.049	<0.02	0.0780	No
93	Isophorone	600	<0.93	<0.3	No
94	Naphthalene	No Criteria	<0.02	0.007	U
95	Nitrobenzene	1,900	<0.9	<0.25	No
96	N-Nitrosodimethylamine	8.1	<0.5	<0.3	No
97	N-Nitrosodi-n-Propylamine	1.4	<0.8	<0.0002	No
98	N-Nitrosodiphenylamine	16	<0.5	<0.001	No
99	Phenanthrene	No Criteria	<0.01	0.014	U
100	Pyrene	11000	<0.02	0.056	No
101	1,2,4-Trichlorobenzene	No Criteria	<0.19	<0.6	U
102	Aldrin	0.00014	<0.004	0.0000085	No

CTR No.	Priority Pollutants	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL <sup>[1]</sup> (µg/L)	B or Minimum DL <sup>[1]</sup> (µg/L)	RPA Results <sup>[2]</sup>
103	Alpha-BHC	0.013	<0.005	0.00002	No
104	Beta-BHC	0.046	<0.004	0.001	No
105	Gamma-BHC	0.063	<0.004	0.001	No
106	Delta-BHC	No Criteria	<0.004	0.002	U
107	Chlordane (303(d) listed)	0.00059	<0.02	0.0001	No
108	4,4'-DDT (303(d) listed)	0.00059	<0.004	0.0002	No
109	4,4'-DDE (linked to DDT)	0.00059	<0.003	0.001	No
110	4,4'-DDD	0.00084	<0.004	0.001	No
111	Dieldrin (303d listed)	0.00014	<0.004	0.0003	No
112	Alpha-Endosulfan	0.0087	<0.004	0.00003	No
113	beta-Endosulfan	0.0087	<0.005	0.00005	No
114	Endosulfan Sulfate	240	<0.005	0.0001	No
115	Endrin	0.0023	<0.005	0.0001	No
116	Endrin Aldehyde	0.81	<0.005	0.005	No
117	Heptachlor	0.00021	<0.005	0.00002	No
118	Heptachlor Epoxide	0.00011	<0.004	0.0002	No
119-125	PCBs sum (303(d) listed) <sup>[3]</sup>	---	---	---	---
126	Toxaphene	0.0002	<0.3	4.8E-07	No

Abbreviations:

- B = background concentration
- C = water quality criterion or objective
- DL = detection level
- MEC = maximum effluent concentration
- RPA = reasonable potential analysis
- DNQ = detected, but not quantified
- µg/L = micrograms per liter
- mg/L = milligrams per liter

Footnotes:

- <sup>[1]</sup> The MEC and ambient background concentration are the actual detected concentrations unless preceded by a “<” sign, in which case the value shown is the minimum detection level (DL).
- <sup>[2]</sup> 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 (U) if no criteria have been promulgated or data are insufficient.
- <sup>[3]</sup> 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.
- <sup>[4]</sup> Asbestos sampling is only required for discharges to waters with the municipal or domestic supply (MUN) beneficial use.

**c. Ammonia**

- i. Methodology.** Ammonia is a toxic pollutant, but not a priority pollutant as defined in the CTR; therefore Regional Board staff used the procedure outlined in the *Technical Support Document for Water Quality-based Toxics Control* (Technical Support Document) (EPA/505/2-90-001, March 1991) to determine if ammonia in the discharge has a reasonable potential to cause water quality objectives to be exceeded in the receiving water. According to the Technical Support Document, the reasonable potential analysis can be performed based on the receiving water concentration projected using effluent data or actual measured receiving concentrations. Both

values may be compared directly with the Basin Plan un-ionized objectives. The following summarizes the steps using effluent data:

- Step 1. Determine the number of total observations (n) for a set of effluent data and determine the highest value from that data set (the maximum effluent concentration or MEC).
- Step 2. Determine the coefficient of variation (CV) from the data set. For a data set where  $n < 10$ , the CV is estimated to equal 0.6. For a data set where  $n \geq 10$ , 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%. The 95% confidence interval was used for evaluating reasonable potential for ammonia for this Order.

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

Then  $C_{P_n}$  and  $C_{\text{upper bound}}$  corresponding to the MEC percentile ( $P_n$ ) and the selected upper bound percentile (typically 99<sup>th</sup> percentile) need to be calculated using the following equation.

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

In this equation,  $\sigma^2 = \ln(\text{CV}^2 + 1)$ , 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 to be:

$$R = C_{\text{upperbound}}/C_{P_n}$$

- 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).

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

- 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.

For purposes of this discharge, no dilution was assumed for ammonia, i.e., dilution ratio=1; therefore, the RWC is the same as the projected upper bound concentration, i.e.,  $\text{RWC} = \text{MEC} \times R$ .

- ii. Ammonia Objectives.** Basin Plan section 3.3.20 contains water quality objectives for un-ionized ammonia of 0.025 mg/L as an annual median and 0.4 mg/L as a maximum for South San Francisco Bay (including Matadero Creek, a tributary to South San Francisco Bay). 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, which applies to waters with salinities greater than 10 parts per thousand (U.S. EPA, 1989, *Ambient Water Quality Criteria for Ammonia (Saltwater)*–1989, EPA Publication 440/5-88-004):

$$\text{For salinity} > 10 \text{ ppt: fraction of NH}_3 = \frac{1}{1 + 10^{(pK - pH)}}$$

Where:

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

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

$S$  = Salinity (parts per thousand)

$T$  = Temperature (Kelvin)

$P$  = Pressure (one atmosphere)

$$\text{For salinity} < 1 \text{ ppt: fraction of NH}_3 = \frac{1}{1 + 10^{(pK - pH)}}$$

Where:

$$pK = 0.09018 + 2729.92/T$$

$T$  = Temperature (Kelvin)

### iii. Analysis

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.

**(a) RPA Based on Effluent Data.** Effluent un-ionized ammonia concentrations were calculated using the pH and temperature data collected on the same days as the ammonia samples were collected, from August 2014 to August 2018. There were 123 data points (n=123). The MEC was 0.013 mg/L when expressed as un-ionized ammonia (as nitrogen). The confidence interval was set at 95 percent. The percentile represented by the MEC ( $P_n$ ) was calculated to be 0.976, indicating that the MEC represents the 97.6th percentile of all observed ammonia effluent data. With the upper bound set at the 99th percentile, the R value was determined to be 1.25 ( $C_{pn}$  was 1.92 and  $C_{\text{upper bound}}$  was 2.39). For purpose of this analysis, no dilution was assumed; therefore, the projected receiving water concentration was 0.015 mg/L, which is less than the Basin Plan un-ionized ammonia acute objective of 0.40 mg/L.

Annual medians of the effluent data were compared with the chronic objective, which is an annual median. The highest running annual median of 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, 0.0036 mg/L, is less than the annual median objective of 0.025 mg/L.

Therefore, the effluent data do not indicate reasonable potential for either Discharge Point No. 001 or 002.

- (b) RPA Based on Receiving Water Data.** Receiving water monitoring data were collected for total ammonia, pH, salinity, and temperature at monitoring location RSW-002, a point in Matadero Creek within 500 feet downstream of Discharge Point No. 002. A total of 81 receiving water samples, from March 2011 to August 2018, were converted to un-ionized ammonia as described above. The maximum un-ionized ammonia concentration (0.039 mg/L) was less than the maximum water quality objective (0.40 mg/L). The highest running annual median un-ionized ammonia concentration (0.004 mg/L) was less than the annual median objective (0.025 mg/L).

Therefore, the receiving water data do not indicate reasonable potential for Discharge Point No. 002.

- (c) Conclusion.** While effluent and receiving water data for ammonia support finding no reasonable potential, there would be reasonable potential if the Discharger were to discontinue nitrifying its effluent. During the previous order term, the Discharger successfully operated the plant to treat ammonia to below the Basin Plan objectives. However, without regulatory assurance that nitrification will continue, the un-ionized ammonia in the effluent could increase. Therefore, total ammonia effluent limitations from the previous order are retained to avoid backsliding and to ensure that the Discharger maintains its nitrification performance.
- d. Enterococcus Bacteria.** The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* requires enterococcus bacteria effluent limitations for discharges to marine and estuarine receiving waters that support the water contact recreation beneficial use.
- e. Fecal Coliform Bacteria.** Basin Plan Table 4-2A requires total coliform effluent limitations for discharges to receiving waters that support the shellfish harvesting beneficial use. Footnote c allows substitution with fecal coliform limits provided that doing so will not result in unacceptable adverse impacts on beneficial uses (i.e., shellfish harvesting).
- f. Acute Toxicity.** Basin Plan section 4.5.5.3.1 requires acute toxicity monitoring and limitations, implying there is reasonable potential for the discharge to cause or contribute to exceedances of the acute toxicity water quality objective.

- g. Chronic Toxicity.** The Discharger conducted monthly chronic toxicity tests during the previous order term. The maximum single-sample chronic toxicity result was  $<1.0 \text{ TU}_c$ , which is less than the translated chronic toxicity objective ( $1.0 \text{ TU}_c$ ). Therefore, there is no reasonable potential for chronic toxicity in the receiving water, and no WQBEL is required.
- h. 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 determined to have reasonable potential to cause or contribute to exceedances of water quality objectives. With the exception of acute toxicity, fecal coliform bacteria, and enterococcus bacteria, the WQBEL calculations for discharges at Discharge Point Nos. 001 and 002 are based on the procedures in SIP section 1.4.

- a. 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 daily limits instead of weekly limits because daily limits 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).
- b. Mixing Zones and Dilution Credits.** Basin Plan section 4.6.1.2 states that dilution credits may be granted to shallow water dischargers on a discharge-by-discharge and pollutant-by-pollutant basis based on SIP section 1.4.2, which stipulates that granting mixing zones is discretionary and dilution credits may be limited or denied on a pollutant-by-pollutant basis.

The Discharger submitted a dilution study, *Dilution Credit Verification and Effects of Increased Flows to Matadero Creek*, in October 2018 to update a January 2014 study, *Dilution Study for Palo Alto Regional Water Quality Control Plant's Discharge to South San Francisco Bay and Matadero Creek*. The updated analysis reflects increased discharge to Matadero Creek, from 1.05 MGD to 3 MGD. No other changes were made to the dilution model.

The updated study concluded that, at Discharge Point No. 001, dilution of 2:1 (two parts total water [mixed effluent plus receiving water] to one part effluent) is achieved within

200 feet beyond the unnamed channel inlet to South San Francisco Bay. Dilution of 3.5:1 is achieved approximately 700 feet beyond the channel inlet. At Discharge Point No. 002, dilution of 3.25:1 is achieved in Matadero Creek approximately 7,800 feet downstream of the outfall. Dilution of 3.5:1 is achieved in Matadero Creek approximately 7,900 feet downstream of the outfall.

For Discharge Point Nos. 001 and 002, this Order grants a cyanide dilution credit of 3.25:1 based on Basin Plan Table 4-6 and grants a copper dilution credit of 3.5:1. No other parameters receive a dilution credit.

**Table F-9. Updated Mixing Zone for Discharge Point No. 002**

Parameter	Dilution Factor	Current (1.05 MGD)		Projected (3.0 MGD)	
		Area (acres)	Length (feet)	Area (acres)	Length (feet)
Cyanide	3.25:1	12.7	5,800	24.5	7,800
Copper	3.5:1	13.6	6,200	25.3	7,900

Abbreviation:

MGD = million gallons per day

- i. **Copper Mixing Zone at Discharge Point No. 001.** Granting a roughly 30-acre copper mixing zone extending about 700 feet from Discharge Point No. 001 is consistent with SIP section 1.4.2.2.A because such a mixing zone does not do any of the following:
  - (a) **Compromise the integrity of the entire water body.** South San Francisco Bay, located south of the Dumbarton Bridge, encompasses about 11,600 acres. The mixing zone is about 30 acres, which is only about 0.2 percent of the entire water body. Therefore, the mixing zone will not compromise the integrity of the entire water body.
  - (b) **Cause acutely toxic conditions to aquatic life passing through the mixing zone.** The mixing zone will not cause acutely toxic conditions to aquatic life because Provision IV.D of this Order contains acute toxicity limits to ensure no less than 70 percent survival of test organisms subjected to whole effluent without dilution. During the previous order term, no acute toxicity effluent limitation violations occurred. These results indicate that organisms passing through the mixing zone are unlikely to experience acute toxicity.
  - (c) **Restrict the passage of aquatic life.** The unnamed channel’s only outlet is to South San Francisco Bay, so aquatic life do not pass through it on their way to any other location. Furthermore, the discharge will not cause acutely toxic conditions to aquatic life, so it will not threaten aquatic life moving in and out of the mixing zone. Moreover, copper at the concentration discharged does not affect water clarity, so it has no potential to create a physical or visual barrier that could restrict the passage of aquatic life.
  - (d) **Adversely impact biologically sensitive or critical habitats, including, but not limited to, habitats of species listed under federal or State endangered species laws.** Two protected birds live near the outfall: California Ridgway’s Rail (listed as State and federally endangered) and California Black Rail (listed as State

threatened). Other sensitive bird species in the vicinity include saltmarsh common yellowthroat and the burrowing owl (not listed as State or federally endangered or threatened, but declining in population throughout California). Copper is of greatest potential risk to aquatic organisms; it is unlikely to harm bird species living within the mixing zone.

- (d) Produce undesirable or nuisance aquatic life.** Copper is not a biostimulant or plant nutrient so it is not expected to cause growth of undesirable or nuisance aquatic species. In addition, this Order contains receiving water limitations that prohibit bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.
- (f) Result in floating debris, oil, or scum.** Copper is not an oil, does not float, and does not cause scum. At the concentrations discharged, it is completely dispersed in the water. Moreover, this Order contains receiving water limitations that prohibit floating debris, oil, or scum in the receiving water.
- (g) Produce objectionable color, odor, taste, or turbidity.** At the concentrations discharged, copper does not exhibit objectionable color, odor, taste, or turbidity.
- (h) Cause objectionable bottom deposits.** At the concentrations discharged, copper is completely dispersed in the water. Moreover, this Order contains receiving water limitations that prohibit bottom deposits to the extent that such deposits cause nuisance or adversely affect beneficial uses.
- (i) Cause nuisance.** The mixing zone will not cause a nuisance as defined by Water Code section 13050(m) because copper, at the concentrations discharged, is not indecent or offensive to the senses.
- (j) Dominate the receiving water body or overlap a mixing zone from different outfalls.** The mixing zone occupies a relatively minor portion of South San Francisco Bay. The Regional Water Board has not established any other mixing zone in the vicinity. The mixing zone will therefore not dominate the receiving water body or overlap any other mixing zone.
- (k) Be allowed at or near any drinking water intake.** The mixing zone is within a marine environment and not at or near a drinking water intake.

SIP section 1.4.2.2 requires that mixing zones be as small as practicable. Since a mixing zone extending from Discharge Point No. 001 through the unnamed channel and approximately 700 feet into South San Francisco Bay accounts for no more than 30 acres or 0.2 percent of the South San Francisco Bay's surface, and because the Discharger is able to comply with limits based on the dilution corresponding to such a mixing zone, such a mixing zone is considered as small as practicable.

Consistent with SIP section 1.4.2.2.B, this mixing zone protects beneficial uses and complies with all regulatory requirements. San Francisco Bay is in attainment with

copper water quality objectives. Ambient copper concentrations have remained essentially unchanged since 1993.

- ii. **Copper and Cyanide Mixing Zones at Discharge Point No. 002.** Granting roughly 25-acre copper and cyanide mixing zones extending up to 7,900 feet from Discharge Point No. 002 is consistent with SIP section 1.4.2.2.A because such mixing zones do not do any of the following:
- (a) **Compromise the integrity of the entire water body.** Matadero Creek originates in the foothills of the Santa Cruz Mountains at Los Altos Hills, flows northeasterly for more than 8 miles, and then flows into Mayfield Slough, which flows to South San Francisco Bay. Mixing zones, extending up to 7,900 feet down Matadero Creek from Discharge Point No. 002 account for no more than 20 percent of the full stream length. Moreover, these mixing zones represent only a tiny portion of 11,600-acre South San Francisco Bay. Therefore, the mixing zones will not compromise the integrity of either water body.
  - (b) **Cause acutely toxic conditions to aquatic life passing through the mixing zone.** The mixing zones will not cause acutely toxic conditions to aquatic life because Provision IV.D of this Order contains acute toxicity limits to ensure no less than 70 percent survival of test organisms subjected to whole effluent without dilution. During the previous order term, no acute toxicity effluent limitation violations occurred. These results indicate that organisms passing through the mixing zone are unlikely to experience acute toxicity.
  - (c) **Restrict the passage of aquatic life.** The mixing zones will not restrict the passage of aquatic life because the discharge will not cause acutely toxic conditions. Moreover, copper and cyanide at the concentrations discharged do not affect water clarity, so they have no potential to create a physical or visual barrier that could restrict the passage of aquatic life.
  - (d) **Adversely impact biologically sensitive or critical habitats, including, but not limited to, habitats of species listed under federal or State endangered species laws.** Two protected birds live near the outfall: California Ridgway's Rail (listed as State and federally endangered) and California Black Rail (listed as State threatened). Other sensitive bird species in the vicinity include saltmarsh common yellowthroat and the burrowing owl (not listed as State or federally endangered or threatened, but declining throughout California). Copper and cyanide are of greatest potential risk to aquatic organisms; they are unlikely to harm bird species living within the mixing zones.
  - (e) **Produce undesirable or nuisance aquatic life.** Copper and cyanide are not biostimulants or plant nutrients so they are not expected to cause growth of undesirable or nuisance aquatic species. In addition, this Order contains receiving water limitations that prohibit bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses.
  - (f) **Result in floating debris, oil, or scum.** Copper and cyanide are not oils, do not float, and do not cause scum. At the concentrations discharged, they are

completely dispersed in the water. Moreover, this Order contains receiving water limitations that prohibit floating debris, oil, or scum in the receiving water.

- (g) **Produce objectionable color, odor, taste, or turbidity.** At the concentrations discharged, copper and cyanide do not exhibit objectionable color, odor, taste, or turbidity.
- (h) **Cause objectionable bottom deposits.** At the concentrations discharged, copper and cyanide are completely dispersed in the water. They do not cause bottom deposits. Moreover, this Order contains receiving water limitations that prohibit bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses
- (i) **Cause nuisance.** The mixing zones will not cause a nuisance as defined by Water Code section 13050(m) because copper and cyanide, at the concentrations discharged, are not indecent or offensive to the senses.
- (j) **Dominate the receiving water body or overlap a mixing zone from different outfalls.** The Regional Water Board has not established any other mixing zone in the vicinity. Therefore, the mixing zones will not dominate the receiving water body or overlap any other mixing zone.
- (k) **Be allowed at or near any drinking water intake.** The mixing zones are within an estuarine environment and not at or near a drinking water intake.

SIP section 1.4.2.2 requires that mixing zones be as small as practicable. Projected mixing zones extending up to 7,900 feet down Matadero Creek from Discharge Point No. 002 account for no more than 20 percent of the roughly 8-mile long creek. Moreover, the Discharger is able to comply with limits based on the dilution factors corresponding to such mixing zones. The sizes of these mixing zones correspond to the same dilution credits as those used for Discharge Point No. 001 and result in the same limits. Since the same effluent is discharged at both discharge points, it is more efficient to subject the Discharger to one set of limits for the same effluent, particularly when relatively little effluent is discharged to Discharge Point No. 002 compared to Discharge Point No. 001. Providing smaller dilution credits at Discharge Point No. 002 would effectively impose duplicative and more stringent limitations there than on Discharge Point No. 001, which is unnecessary to protect water quality. Therefore, these mixing zones are considered as small as practicable.

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

Tissue samples taken from San Francisco Bay fish show the presence of these pollutants at concentrations greater than screening levels (*Contaminant*

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

- c. **WQBEL Calculations.** The following table shows the WQBEL calculations for copper, nickel, cyanide, and dioxin-TEQ. The copper and cyanide WQBELs are calculated as required by SIP section 1.4. This same methodology is used as guidance to calculate the dioxin-TEQ WQBELs:

**Table F-10. WQBEL Calculations**

<b>PRIORITY POLLUTANTS</b>	<b>Copper</b>	<b>Nickel</b>	<b>Cyanide</b>	<b>Dioxin TEQ (303d listed)</b>
<b>Units</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>	<b>ug/L</b>
Basis and Criteria type	Basin Plan SSO	Basin Plan SSO	Basin Plan SSO	CTR HH
Criteria -Acute	-----	-----	-----	-----
Criteria -Chronic	-----	-----	-----	-----
SSO Criteria -Acute	10.8	62.4	9.4	-----
SSO Criteria -Chronic	6.9	11.9	2.9	-----
Water Effects ratio (WER)	1	1	1	1
Lowest WQO	13.0	27.0	2.9	1.4E-08
Site Specific Translator - MDEL	0.53	0.44	-----	-----
Site Specific Translator - AMEL	0.53	0.44	-----	-----
Dilution Factor (D)	2.5	0	2.25	0
No. of samples per month	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	N
HH criteria analysis required? (Y/N)	N	Y	Y	Y
Applicable Acute WQO	20.4	141.8	9.4	-----
Applicable Chronic WQO	13.0	27.0	2.9	-----
HH criteria		4.6E+03	2.2E+05	1.40E-08
Background (Maximum Conc for Aquatic Life calc)	8.6	16	0.60	

Background (Average Conc for Human Health calc)		5.6	0.60	4.1E-08
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	N	Y
ECA acute	49.8	141.8	29.2	-----
ECA chronic	24.1	27.0	8.1	-----
ECA HH		4.6E+03	2.2E+05	1.40E-08
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	N	N	N	Y
Avg of effluent data points	9.78	3.98	1.37	1.2E-06
Std Dev of effluent data points	2.84	0.80	0.49	1.28E-06
CV calculated	0.29	0.20	0.36	N/A
CV (Selected) - Final	0.29	0.20	0.36	0.6
ECA acute mult99	0.54	0.64	0.48	-----
ECA chronic mult99	0.72	0.80	0.67	-----
LTA acute	26.8	91.1	13.9	-----
LTA chronic	17.4	21.5	5.4	-----
minimum of LTAs	17.4	21.5	5.4	-----
AMEL mult95	1.3	1.2	1.3	1.55
MDEL mult99	1.9	1.6	2.1	3.11
AMEL (aq life)	21.8	25.3	7.2	-----
MDEL(aq life)	32.4	33.5	11.4	-----
MDEL/AMEL Multiplier	1.5	1.33	1.60	2.0
AMEL (human hlth)	-----	4,600	715,000	1.4.E-08
MDEL (human hlth)	-----	-----	1,140,000	2.8.E-08
minimum of AMEL for Aq. life vs HH	21.8	25.3	7.2	1.4E-08
minimum of MDEL for Aq. Life vs HH	32.4	33.5	11.4	2.8E-08
Current limit in permit (30-day average)	21	26	6.2	1.4E-08
Current limit in permit (daily)	36	31	14	2.8E-08
Final limit - AMEL	21	25	6.2	1.4E-08
Final limit - MDEL	32	31	11	2.8E-08
Max Effl Conc (MEC)	22	5.9	3.1	2.7E-06

- d. Acute Toxicity.** This Order includes acute toxicity effluent limitations based on Basin Plan Table 4-3. 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.

- e. **Enterococcus Bacteria.** The enterococcus effluent limitations are based on the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy*, which requires these limitations for discharges to receiving waters with the water contact recreation beneficial use.
- f. **Fecal Coliform Bacteria.** Basin Plan Table 4-2A requires limitations for total coliform bacteria for discharges to receiving waters with the shellfish harvesting beneficial use. Basin Plan Table 4-2A, footnote c, allows substituting total coliform bacteria limitations with fecal coliform bacteria limitations provided that it can be conclusively demonstrated that the substitution will not result in unacceptable adverse impacts on the beneficial uses.

The fecal coliform effluent limits in this Order will not result in unacceptable adverse impacts because they are derived from the fecal coliform water quality objectives listed in Basin Plan Table 3-1. The limits (median fecal coliform density not to exceed 98 MPN/100 mL and 90<sup>th</sup> percentile not to exceed 300 MPN/100 mL) allow effluent fecal coliform concentrations to be seven times the Basin Plan objectives (median fecal coliform density not to exceed 14 MPN/100 mL and 90<sup>th</sup> percentile not to exceed 43 MPN/100 mL). An April 14, 2014, study demonstrates that effluent fecal coliform bacteria at Discharge Point Nos. 001 and 002 are attenuated by at least 7:1 before leaving the Palo Alto Baylands Nature Preserve (which surrounds the outfalls) and entering the main body of South San Francisco Bay (see Fact Sheet section IV.C.4.a and the vicinity map in Attachment B). The study takes into account natural bacterial die-off in the receiving water and amends the fecal coliform bacteria attenuation shown in the Discharger's January 2014 *Dilution Study for Palo Alto Regional Water Quality Control Plant's Discharge to South San Francisco Bay and Matadero Creek*.

Harvesting shellfish for human consumption is prohibited within the preserve. In March 2014, a supervising ranger with the preserve confirmed that the only shellfish harvesting within the preserve is performed by researchers for scientific purposes. Because fecal coliform discharged at Discharge Point No. 001 would be diluted to concentrations achieving the Basin Plan water quality objectives before reaching any portion of South San Francisco Bay where shellfish harvesting for human consumption could potentially occur, the fecal coliform limits in this Order will not result in unacceptable adverse impacts on the shellfish harvesting beneficial use.

#### D. Discharge Requirement Considerations

- 1. **Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16. Although this Order does not allow for an increase in permitted flow, a reduced level of treatment, or any increase in effluent limitations relative to those in the previous order, the Order does allow the Discharger to increase flows to Renzel Marsh and Discharge Point No. 002 (with a commensurate decrease in discharge to Discharge Point 001) and authorizes the Discharger to blend up to 0.2 MGD

of reverse osmosis concentrate from the planned Advanced Water Purification System with fully treated effluent prior to discharge, thus slightly increasing the concentration of the discharge. This increased volume of discharge to Renzel Marsh and the more concentrated discharge due to increased water recycling do not increase the mass of pollutants discharged, affect the level of treatment, or change the requirement for the discharge to meet waste discharge requirements that both ensure that pollution or nuisance will not occur and ensure the highest water quality consistent with the maximum benefit to the people of the state. Increased water recycling is consistent with the maximum benefit of the people of the state.

2. **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. The requirements of this Order are at least as stringent as those in the previous order.
3. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and WQBELs for individual pollutants. The technology-based requirements implement minimum, applicable federal technology-based requirements. In addition, this Order contains more stringent WQBELs 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 in accordance with the CWA and regulations adopted thereunder.

## 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 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 the 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 MRP establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. For more background regarding these requirements, see Fact Sheet section VII. Regional Water Board Order No. R2-2016-0008 allows the Discharger to opt into certain alternative monitoring requirements.

## **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 evaluate monitoring data to verify that the reasonable potential analysis conclusions of this Order remain valid. This requirement is authorized pursuant to 40 C.F.R. section 122.41(h) and 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 Publicly-Owned Treatment Works (POTWs)**

**a. Pretreatment Program.** This provision is based on 40 C.F.R. part 403. The Discharger implements a pretreatment program due to the nature and volume of industrial influent to the plant. This provision lists the Discharger's responsibilities regarding its pretreatment

program and requires compliance with the provisions in Attachment H, “Pretreatment Requirements.”

- b. Sludge and Biosolids Management.** This provision is based on Basin Plan section 4.17. “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.
- c. Collection System Management.** The Discharger’s collection system (see Fact Sheet section II.A.2) is part of the Facility regulated through this Order. This provision requires compliance with Attachments D and G and states that these requirements may be satisfied by separately complying with State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order No. WQ 2013-0058-EXEC and any subsequent order updating these requirements. These statewide WDRs require public agencies that own or operate sanitary sewer systems with one or more miles of sewer lines to enroll for coverage and comply with requirements to develop sanitary sewer management plans and report sanitary sewer overflows, among other provisions and prohibitions. The statewide WDRs contain requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows that are more extensive and, therefore, more stringent than the standard provisions in Attachments D and G. Compliance with the statewide WDRs will satisfy the corresponding requirements in Attachments D and G.

## 5. Other Special Provisions

- a. 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 compiled by the San Francisco Estuary Institute for 2011-2015 indicate no degradation of San Francisco Bay water quality with respect to copper (<https://www.sfei.org/documents/2015-update-copper-rolling-average>).
- b. 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 10 µg/L. This threshold is retained from the previous order, which is about two times the highest cyanide concentration (5.1 µg/L) found in the plant’s influent samples during the previous two order term. Because the Discharger has observed no influent cyanide concentrations greater than 10 µg/L, if influent concentrations two times this level were observed, there could be a significant cyanide source.
- c. Plant Upgrades.** This provision is based on 40 C.F.R. section 122.41(1). It specifies conditions that must be met before the Discharger brings its upgraded treatment plant online. It is necessary for the Regional Water Board to know when the upgraded plant begins treating wastewater and to ensure that the plant upgrades can effectively and reliably comply with the requirements of this Order.

The option to submit a startup operations plan is based on Water Code section 13385(j)(1)(D), which exempts the Discharger from mandatory minimum penalties for violations within a defined startup adjustment and testing period under specific conditions. This option is necessary if the Discharger wants to demonstrate that it adequately satisfied the conditions necessary for exemption from mandatory minimum penalties associated with any potential violations during the upgraded plant's startup period.

Pursuant to Water Code section 13385(j)(1)(D), the Discharger is exempt from mandatory minimum penalties for violations within the defined startup adjustment and testing period if the Discharger can demonstrate the following:

- i. Compliance with its operations plan,
- ii. Violations resulted from the operation of the new or upgraded wastewater treatment units, and
- iii. Violations could not have reasonably been avoided.

## VII. RATIONALE FOR 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 and to evaluate compliance with Prohibition III.C, which prohibits average dry weather influent flow greater than 39 MGD. Influent BOD<sub>5</sub> and TSS monitoring is necessary to evaluate compliance with this Order's 85 percent removal requirements. 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 understand Facility operations. Monitoring for other parameters is necessary to evaluate compliance with this Order's effluent limitations and to conduct future reasonable potential analyses.
3. **Toxicity Testing.** Acute and chronic toxicity tests are necessary to evaluate compliance with this Order's effluent limitations and to conduct future reasonable potential analyses. Chronic toxicity tests are also necessary to evaluate whether chronic toxicity exceeds the trigger for accelerated monitoring and Toxicity Reduction Evaluations based on Basin Plan sections 4.5.5.3.2 and 4.5.5.3.3 and Basin Plan Table 4-5.

Because the Discharger elected to participate in the *Alternate Monitoring and Reporting Requirements for Municipal Wastewater Dischargers for the Purpose of Adding Support to the San Francisco Bay Regional Monitoring Program* (Order No. R2-2016-0008) and there was no significant change in the nature of the effluent, the Discharger did not conduct a chronic toxicity screening phase study for this permit reissuance. The MRP specifies that the

fathead minnow (*Pimephales promelas*) is to be used for chronic toxicity testing unless a more sensitive species is identified.

4. **Receiving Water Monitoring.** RMP participation is necessary to characterize the receiving water and the effects of the discharge on it. The RMP involves collecting data on pollutants and toxicity in San Francisco Bay water, sediment, and biota. The Discharger is also required to monitor the unnamed channel and Matadero Creek to provide data necessary for reasonable potential analyses and effluent limit development.
5. **Pretreatment, Biosolids, and Incinerator Ash Monitoring.** The pretreatment, biosolids, and incinerator ash monitoring requirements for influent, effluent, biosolids, and incinerator ash are necessary to evaluate compliance with the Discharger’s U.S. EPA-approved pretreatment program. Biosolids and incinerator ash monitoring is also required pursuant to 40 C.F.R. part 503.
6. **Other Monitoring Requirements.** Pursuant to CWA section 308, U.S. EPA requires dischargers to participate in a Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program. The program annually evaluates the analytical abilities of laboratories that perform or support NPDES permit-required monitoring. The program applies to discharger laboratories and contract laboratories. There are two options to comply: (1) dischargers can obtain and analyze DMR-QA samples, or (2) pursuant to a waiver U.S. EPA issued to the State Water Board, dischargers can submit results from the most recent Water Pollution Performance Evaluation Study. Dischargers must submit results annually to the State Water Board, which then forwards the results to U.S. EPA.

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

**Table F-11. Monitoring Requirements Summary**

Parameter <sup>[1]</sup>	Influent INF-001	Effluent EFF-001	Effluent EFF-002	Alternate Effluent EFF-001	Receiving Water RSW-001, RSW-002	Biosolids BIO-001	Incinerator Ash ASH-001
Flow Rate	Continuous/ D	Continuous/ D	Continuous/ D	Continuous/ D	---	---	---
BOD <sub>5</sub>	1/Week	1/Week	---	1/Week	---	---	---
TSS	1/Week	1/Week	---	1/Week	---	---	---
BOD <sub>5</sub> and TSS percent removal	---	1/Month	---	1/Month	---	---	---
pH	---	Continuous/ D or 1/D	---	Continuous/ D or 1/D	1/Quarter	---	---
Oil and Grease	---	1/Quarter	---	1/Quarter	---	---	---
Turbidity	---	1/Week	---	1/Week	---	---	---
Fecal Coliform	---	1/Quarter	---	1/Quarter	Support RMP	---	---
Enterococcus Bacteria	---	1/Week	---	1/Week	Support RMP	---	---
Ammonia, Total	---	1/Month	---	1/Month	1/Quarter	---	---
Acute Toxicity	---	1/Quarter	---	1/Quarter	Support RMP	---	---

Chronic Toxicity	---	1/Quarter	---	1/Quarter	Support RMP	---	---
Copper	---	1/Month	---	1/Month	Support RMP	---	---
Nickel	---	1/Month	---	1/Month	Support RMP	---	---
Chromium (IV)	1/Month	1/Month	---	1/Month	Support RMP	1/Year	2/Year
Cyanide	1/Month	1/Month	---	1/Month	Support RMP	1/Year	2/Year
Dioxin-TEQ	---	2/Year <sup>[4]</sup>	---	Once	Support RMP	---	---
Standard Observations	---	---	1/Month	---	1/Quarter	---	---
Salinity	---	---	---	---	1/Quarter	---	---
Hardness	---	---	---	---	1/Quarter	---	---
Temperature	---	1/Month	---	1/Month	1/Quarter	---	---
VOC	2/Year	2/Year <sup>[4]</sup>	---	Once	---	1/Year	---
BNA	2/Year	2/Year <sup>[4]</sup>	---	Once	---	1/Year	---
Metals <sup>[2]</sup> and Other Elements	1/Month	1/Month	---	1/Month	---	1/Year	2/Year
Priority Pollutants <sup>[3]</sup>	---	2/Year <sup>[5]</sup>	---	2/Year (except Once for VOCs, BNAs, and chlorinated pesticides)	---	---	---

Sampling Frequencies:

- Continuous/D = measured continuously, and recorded and reported daily
- 1/Hour = once per hour
- 1/Week = once per week
- 1/Month = once per month
- 1/Quarter = once per quarter
- 2/Year = twice per year
- 1/Year = once per year
- Once = once per permit term

Footnotes:

- [1] The Discharger must also comply with the monitoring requirements in the Mercury and PCBs Watershed Permit (NPDES Permit No. CA0038849) and the Nutrients Watershed Permit (NPDES Permit No. CA0038873).
- [2] The metals are arsenic, cadmium, copper, lead, nickel, selenium, silver, and zinc.
- [3] The Discharger shall monitor for the pollutants listed in Attachment G, Table B
- [4] While the Discharger elects to participate in the Alternate MRP (Order No. R2-2016-0008), the monitoring frequency is once per permit term.
- [5] While the Discharger elects to participate in the Alternate MRP (Order No. R2-2016-0008), the monitoring frequency for VOCs, BNAs, and chlorinated pesticides is once per permit term.

**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 the Silicon Valley Community Newspaper. 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 William Burrell.

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 13, 2019**.

- 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: **April 10, 2019**  
Time: 9:00 a.m.  
Location: Elihu Harris State Office Building  
1515 Clay Street, 1<sup>st</sup> Floor Auditorium  
Oakland, CA 94612

Contact: William Burrell, (510) 622-2317, [William.Burrell@waterboards.ca.gov](mailto:William.Burrell@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.

If the dates or venues of the public hearing changes, the Regional Water Board's web address, <http://www.waterboards.ca.gov/sanfranciscobay>, will contain links to the updated agenda reflecting changes in dates and locations.

- D. Reconsideration of WDRs.** 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](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 William Burrell at (510) 622-2317 or [William.Burrell@waterboards.ca.gov](mailto:William.Burrell@waterboards.ca.gov).

## **ATTACHMENT G**

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

November 2017

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## REGIONAL STANDARD PROVISIONS, AND MONITORING AND REPORTING REQUIREMENTS

### APPLICABILITY

This document supplements the requirements of Federal Standard Provisions (Attachment D). For clarity, these provisions are arranged using to the same headings as those used in 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** – Supplement to Attachment D, Provision I.C.

- 1. Contingency Plan.** The Discharger shall maintain a Contingency Plan as prudent in accordance with current 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 (see Provision I.C.2, below) into one document. In accordance with Regional Water Board Resolution No. 74-10, discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as described below may 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, provide for the following:
  - a. Sufficient personnel for continued facility operation and maintenance during employee strikes or strikes against contractors providing services;
  - b. Maintenance of adequate chemicals or other supplies, and spare parts necessary for continued facility operations;
  - c. Emergency standby power;
  - d. Protection against vandalism;
  - e. Expeditious action to repair failures of, or damage to, equipment, including any sewer lines;
  - f. Reporting of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges; and
  - g. Maintenance, replacement, and surveillance of physical condition of equipment and facilities, including any sewer lines.

- 2. Spill Prevention Plan.** The Discharger shall maintain a Spill Prevention Plan to prevent accidental discharges and to minimize the effects of any such discharges. The Spill Prevention Plan shall do the following:
  - a. Identify the possible sources of accidental discharge, untreated or partially-treated waste bypass, and polluted drainage;
  - b. State when current facilities and procedures became operational and evaluate their effectiveness; and
  - c. Predict the effectiveness of any proposed facilities and procedures and provide an implementation schedule with interim and final dates when the proposed facilities and procedures will be constructed, implemented, or operational.

**D. Proper Operation and Maintenance – Supplement to Attachment D, Provision I.D**

- 1. Operation and Maintenance Manual.** The Discharger shall maintain an Operation and Maintenance 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 Operation and Maintenance Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The Operation and Maintenance 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 maintain a Wastewater Facilities Status Report and regularly review, revise, or update it, as necessary. 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 Title 23, section 3680, 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 – Addition to 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. 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 shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.

## **II. STANDARD PROVISIONS – PERMIT ACTION – Not Supplemented**

## **III. STANDARD PROVISIONS – MONITORING**

### **A. Sampling and Analyses – Supplement to Attachment D, Provisions III.A and III.B**

1. **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. **Minimum Levels.** For the 126 priority pollutants, the Discharger should use the analytical methods listed in Table B unless the Monitoring and Reporting Program (MRP, Attachment E) requires a particular method or minimum level (ML). All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.
3. **Monitoring Frequency.** The MRP specifies the minimum sampling and analysis schedule.
  - a. **Sample Collection Timing**
    - i. The Discharger shall collect influent samples on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated in the MRP. The Executive Officer may approve an alternative influent sampling plan if it is representative of plant influent and complies with all other permit requirements.
    - ii. The Discharger shall collect effluent samples on days coincident with influent sampling, unless otherwise stipulated by the MRP. If influent sampling is not required, the Discharger shall collect effluent samples on varying days selected at random, unless otherwise stipulated in the MRP. The Executive Officer may approve an alternative effluent sampling plan if it is representative of plant discharge and in compliance with all other permit requirements.

- iii. The Discharger shall collect effluent grab samples during periods of daytime maximum peak flows (or peak flows through secondary treatment units for facilities that recycle effluent).
  - iv. Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay the MRP requires. During the course of the bioassay, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event that a bioassay result does not comply with effluent limitations, the Discharger shall analyze the retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limitations.
    - (a) The Discharger shall perform bioassays on final effluent samples; when chlorine is used for disinfection, bioassays shall be performed on effluent after chlorination and dechlorination; and
    - (b) The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet effluent limitations.
- b. Conditions Triggering Accelerated Monitoring**
- i. **Average Monthly Effluent Limitation Exceedance.** If the results from two consecutive samples of a constituent monitored in a particular month exceed the average monthly effluent limitation for any parameter (or if the required sampling frequency is once per month or less and the monthly sample exceeds the average monthly effluent limitation), 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 complies with the average monthly effluent limitation.
  - ii. **Maximum Daily Effluent Limitation Exceedance.** If a sample result exceeds a maximum daily effluent limitation, the Discharger shall, within 24 hours after the result is received, increase its sampling frequency to daily until the results from two samples collected on consecutive days show compliance with the maximum daily effluent limitation.
  - iii. **Acute Toxicity.** If final or intermediate results of an acute bioassay indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay is less than 70 percent), the Discharger shall initiate a new test as soon as practical or as described in applicable State Water Board plan provisions that become effective after adoption of these Regional Standard Provisions. The Discharger shall investigate the cause of the mortalities and report its findings in the next self-monitoring report.
  - iv. **Chlorine.** 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 limitation is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring.

- v. **Bypass.** Except as indicated below, if a Discharger bypasses any portion of its treatment facility, it shall monitor flows and collect samples at affected discharge points and analyze samples for all constituents with effluent limitations on a daily basis for the duration of the bypass. The Discharger need not accelerate chronic toxicity monitoring. The Discharger also need not collect and analyze samples for mercury, dioxin-TEQ, and PCBs after the first day of the bypass. The Discharger may satisfy the accelerated acute toxicity monitoring requirement by conducting a flow-through test or static renewal test that captures the duration of the bypass (regardless of the method specified in the MRP). If bypassing disinfection units only, the Discharger shall only monitor bacteria indicators daily.
  - (a) **Bypass for Essential Maintenance.** If a Discharger bypasses a treatment unit for essential maintenance pursuant to Attachment D section I.G.2, the Executive Officer may reduce the accelerated monitoring requirements above if the Discharger (i) monitors effluent at affected discharge points on the first day of the bypass for all constituents with effluent limitations, except chronic toxicity; and (ii) identifies and implements measures to ensure that the bypass will continue to comply with effluent limitations.
  - (b) **Approved Wet Weather Bypasses.** If a Discharger bypasses a treatment unit or permitted outfall during wet weather with Executive Officer approval pursuant to Attachment D section I.G.4, the Discharger shall monitor flows and collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Discharger shall analyze daily for TSS using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limitations using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Discharger shall also analyze daily the retained samples for all other constituents with effluent limitations, except oil and grease, mercury, PCBs, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger shall analyze the retained samples for one approved bypass for all other constituents with effluent limitations, except oil and grease, mercury, PCBs, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

## B. Standard Observations – Addition to Attachment D

- 1. **Receiving Water Observations.** The following requirements only apply when the MRP requires standard observations of receiving waters. 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** — color, source, and size of affected area.
  - c. **Odor** — presence or absence, characterization, source, and distance of travel.
  - d. **Beneficial Water Use** — estimated number of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities.



## **B. Records of Monitoring** – Supplement to Attachment D, Provision IV.B

Monitoring records shall include the following:

- 1. Analytical Information.** Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.
- 2. Disinfection Process.** For the disinfection process, records shall include the following:
  - a.** For bacteriological analyses:
    - i.** Wastewater flow rate at the time of sample collection; and
    - ii.** Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in the MRP).
  - b.** For the chlorination process (when chlorine is used for disinfection), at least daily average values for the following:
    - i.** Chlorine residual of treated wastewater as it enters the chlorine contact basin (mg/L);
    - ii.** Chlorine dosage (kg/day); and
    - iii.** Dechlorination chemical dosage (kg/day).
- 3. Wastewater Treatment Process Solids.** For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:
  - a.** 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
  - b.** Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
- 4. Treatment Process Bypasses.** For all treatment process bypasses, including wet weather blending, records shall include the following:
  - a.** Chronological log of treatment process bypasses;
  - b.** Identification of treatment processes bypassed;
  - c.** Beginning and ending dates and times of bypasses;
  - d.** Bypass durations;
  - e.** Estimated bypass volumes; and
  - f.** Description of, or reference to other reports describing, the bypasses, their cause, the corrective actions taken (except for wet weather blending explicitly approved within the permit and in compliance with any related permit conditions), and any additional monitoring conducted.

- 5. Treatment Plant Overflows.** The Discharger shall retain a chronological log of overflows at the treatment plant, including the headworks and all units and appurtenances downstream, and records supporting the information provided in accordance with Provision V.E.2, below.

**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 – Supplement to Attachment D, Provision V.C**

- 1. Self-Monitoring Reports.** For each reporting period established in the MRP, the Discharger shall submit a self-monitoring report to the Regional Water Board in accordance with the requirements listed in the MRP and below:

**a. Transmittal Letter.** Each self-monitoring report shall be submitted with a transmittal letter that includes the following:

- i.** Identification of all violations of effluent limitations or other waste discharge requirements found during the reporting period;
- ii.** Details regarding the violations, such as parameters, magnitude, test results, frequency, and dates;
- iii.** Causes of the violations;
- iv.** Corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedules for implementation (the Discharger may refer to previously submitted reports that address the corrective actions);
- v.** Explanation for any data invalidation. Data should not be submitted in a self-monitoring report if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate a measurement after submitting it in a self-monitoring report, the Discharger 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. The formal 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), and a discussion of the corrective actions taken or planned (with a time schedule for completion) to prevent recurrence of the sampling or measurement problem;



- iv. Dioxin-TEQ.** The Discharger shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the 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 (MLs) to zero. The Discharger shall calculate and report dioxin-TEQ using the following formula, where the MLs, toxicity equivalency factors (TEFs), and bioaccumulation equivalency factors (BEFs) are as provided in Table A:

$$\text{Dioxin-TEQ} = \Sigma (C_x \times \text{TEF}_x \times \text{BEF}_x)$$

where:  $C_x$  = measured or estimated concentration of congener  $x$   
 $\text{TEF}_x$  = toxicity equivalency factor for congener  $x$   
 $\text{BEF}_x$  = 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)	2005 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	0.0003	0.01
2,3,7,8-TCDF	10	0.1	0.8
1,2,3,7,8-PeCDF	50	0.03	0.2
2,3,4,7,8-PeCDF	50	0.3	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	0.0003	0.02

- e. 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 may require additional time to complete analytical processes and report results. In these cases, the Discharger shall describe the circumstances in the self-monitoring report and include the data for these parameters and relevant discussions of any violations in the next self-monitoring report due after the results are available.

- f. Annual Self-Monitoring Reports.** By the date specified in the MRP, the Discharger shall submit an annual self-monitoring report covering the previous calendar year. The report shall contain the following:
- i.** Comprehensive discussion of treatment plant performance, including documentation of any blending or other bypass events, 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 the performance and reliability of wastewater collection, treatment, or disposal practices;
  - ii.** List of approved analyses, including the following:
    - (a)** List of analyses for which the Discharger is certified;
    - (b)** List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory need not be submitted but shall be retained onsite); and
    - (c)** List of “waived” analyses, as approved;
  - iii.** Plan view drawing or map showing the Discharger’s facility, flow routing, and sampling and observation station locations; and
  - iv.** Results of facility report reviews. The Discharger shall regularly review, revise, and update, as necessary, the Operation and Maintenance Manual, Contingency Plan, Spill Prevention Plan, and Wastewater Facilities Status Report so these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall describe or summarize its review and evaluation procedures, recommended or planned actions, and estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure that they remain up-to-date.

**D. Compliance Schedules – Not supplemented**

**E. Twenty-Four Hour Reporting – Supplement to Attachment D, Provision V.E**

**1. Oil or Other Hazardous Material Spills**

- a.** Within 24 hours of becoming aware of a spill of oil or other hazardous material not contained onsite and completely cleaned up, the Discharger shall report as follows:
  - i.** If the spill exceeds reportable quantities for hazardous materials listed in 40 C.F.R. part 302. The Discharger shall call the California Office of Emergency Services (800-852-7550).
  - ii.** If the spill does not exceed reportable quantities for hazardous materials listed in 40 C.F.R., part 302, the Discharger shall call the Regional Water Board (510-622-2369).

- b.** The Discharger shall submit a written report to the Regional Water Board within five working days following either of the above telephone notifications unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:
  - i.** Date and time of spill, and duration if known;
  - ii.** Location of spill (street address or description of location);
  - iii.** Nature of material spilled;
  - iv.** Quantity of material spilled;
  - v.** Receiving water body affected, if any;
  - vi.** Cause of spill;
  - vii.** Estimated size of affected area;
  - viii.** Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);
  - ix.** Corrective actions taken to contain, minimize, or clean up the spill;
  - x.** Future corrective actions planned to prevent recurrence, and implementation schedule; and
  - xi.** Persons or agencies notified.

## **2. Unauthorized Municipal Wastewater Treatment Plant Discharges<sup>1</sup>**

- a. Two-Hour Notification.** For any unauthorized discharge that enters a drainage channel or surface water, the Discharger shall, as soon as possible, but not later than two hours after becoming aware of the discharge, notify the California Office of Emergency Services (800-852-7550) and the local health officer or director of environmental health with jurisdiction over the affected water body. Notification shall include the following:
  - i.** Incident description and cause;
  - ii.** Location of threatened or involved waterways or storm drains;
  - iii.** Date and time that the unauthorized discharge started;
  - iv.** Estimated quantity and duration of the unauthorized discharge (to the extent known), and estimated amount recovered;

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<sup>1</sup> 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.

- v. Level of treatment prior to discharge (e.g., raw wastewater, primary-treated wastewater, or undisinfected secondary-treated wastewater); and
  - vi. Identity of person reporting the unauthorized discharge.
- b. Five-Day Written Report.** Within five business days following the two-hour notification, the Discharger shall submit a written report that includes, in addition to the information listed in Provision V.E.2.a, above, the following:
- i. Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;
  - ii. Efforts implemented to minimize public exposure to the unauthorized discharge;
  - iii. Visual observations of the impacts (if any) noted in the receiving waters (e.g., fish kill, discoloration of receiving water) and extent of sampling if conducted;
  - iv. Corrective measures taken to minimize the impact of the unauthorized discharge;
  - v. Measures to be taken to minimize the potential for a similar unauthorized discharge in the future;
  - vi. Summary of Spill Prevention Plan or Operation and Maintenance Manual modifications to be made, if necessary, to minimize the potential for future unauthorized discharges; and
  - vii. Quantity and duration of the unauthorized discharge, and the amount recovered.

**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** – Addition to Attachment D

More definitions can be found in Attachment A of this NPDES Permit.

**A. Arithmetic Calculations –**

- 1. Geometric Mean.** 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:

$$\text{Geometric Mean} = \text{Anti log} \left( \frac{1}{N} \sum_{i=1}^N \text{Log}(C_i) \right)$$

or

$$\text{Geometric Mean} = (C_1 \times C_2 \times \dots \times C_N)^{1/N}$$

Where “N” is the number of data points for the period analyzed and “C” is the concentration for each of the “N” data points.

- 2. Mass Emission Rate.** The rate of discharge expressed in mass. The 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<sub>i</sub>” and “C<sub>i</sub>” 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<sub>i</sub>” is the concentration measured in the composite sample and “Q<sub>i</sub>” is the average flow rate occurring during the period over which the samples are composited. The daily concentration of a constituent measured over any calendar day shall be determined from the flow-weighted average of the same constituent in the combined waste streams as follows:

$$C_d = \text{Average daily concentration} = \frac{1}{Q_t} \sum_{i=1}^N Q_i C_i$$

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<sub>t</sub>” is the total flow rate of the combined waste streams.

- 3. Removal Efficiency.** 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):

$$\text{Removal Efficiency (\%)} = 100 \times [1 - (\text{Effluent Concentration} / \text{Influent Concentration})]$$

- B. Blending** – the practice of bypassing biological treatment units and recombining the bypass wastewater with biologically-treated wastewater.
- C. Composite Sample** – 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 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 protocol.
- D. Duplicate Sample** – a second sample taken from the same source and at the same time as an initial sample (such samples are typically analyzed identically to measure analytical variability).
- E. Grab Sample** – an individual sample collected during a short period not exceeding 15 minutes. Grab samples represent only the condition that exists at the time the sample is collected.
- F. Overflow** – the intentional or unintentional spilling or forcing out of untreated or partially-treated waste from a transport system (e.g., through manholes, at pump stations, or at collection points) upstream of the treatment plant headworks or from any part of a treatment plant.
- G. Priority Pollutants** – those constituents referred to in 40 C.F.R. part 122 as promulgated in the Federal Register, Vol. 65, No. 97, Thursday, May 18, 2000, also known as the California Toxics Rule.
- H. Untreated waste** – raw wastewater.

**Table B**  
List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method <sup>2</sup>	Minimum Levels <sup>3</sup> (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) <sup>4</sup>	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) <sup>5</sup>												
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 <sup>-</sup> C or I				5								
15	Asbestos (only required for dischargers to MUN waters) <sup>6</sup>	0100.2 <sup>7</sup>												
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										
26	Chloroform	601	0.5	2										
75	1,2-Dichlorobenzene	601	0.5	2										
76	1,3-Dichlorobenzene	601	0.5	2										

<sup>2</sup> 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.

<sup>3</sup> 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.

<sup>4</sup> 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 µg/l).

<sup>5</sup> 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 µg/l).

<sup>6</sup> MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.

<sup>7</sup> 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 <sup>2</sup>	Minimum Levels <sup>3</sup> (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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 Dichloromethane	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 Benzo(b)fluoranthene	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										
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	Benzdine	625		5										

CTR No.	Pollutant/Parameter	Analytical Method <sup>2</sup>	Minimum Levels <sup>3</sup> (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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) <sup>8</sup>	625		1										
88	Hexachlorobenzene	625	5	1										
89	Hexachlorobutadiene	625	5	1										
90	Hexachlorocyclopentadiene	625	5	5										
91	Hexachloroethane	625	5	1										
93	Isophorone	625	10	1										
94	Naphthalene	625	10	1	0.2									
95	Nitrobenzene	625	10	1										
96	N-Nitrosodimethylamine	625	10	5										
97	N-Nitrosodi-n-Propylamine	625	10	5										
98	N-Nitrosodiphenylamine	625	10	1										
99	Phenanthrene	625		5	0.05									
101	1,2,4-Trichlorobenzene	625	1	5										
102	Aldrin	608	0.005											
103	α-BHC	608	0.01											
104	β-BHC	608	0.005											
105	γ-BHC (Lindane)	608	0.02											
106	δ-BHC	608	0.005											
107	Chlordane	608	0.1											
108	4,4'-DDT	608	0.01											
109	4,4'-DDE	608	0.05											
110	4,4'-DDD	608	0.05											
111	Dieldrin	608	0.01											
112	Endosulfan (alpha)	608	0.02											
113	Endosulfan (beta)	608	0.01											
114	Endosulfan Sulfate	608	0.05											
115	Endrin	608	0.01											
116	Endrin Aldehyde	608	0.01											
117	Heptachlor	608	0.01											
118	Heptachlor Epoxide	608	0.01											
119-125	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5											
126	Toxaphene	608	0.5											

<sup>8</sup> 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.

**ATTACHMENT H – PRETREATMENT REQUIREMENTS**

CALIFORNIA REGIONAL WATER QUALITY CONTROL  
BOARD  
SAN FRANCISCO BAY REGION

**ATTACHMENT H**  
**PRETREATMENT PROGRAM PROVISIONS**  
For  
**NPDES POTW WASTEWATER DISCHARGE PERMITS**

March 2011  
*(Corrected May 2011)*

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## **Attachment H: Pretreatment Program Provisions**

- A.** The Discharger shall be responsible and liable for the performance of all Control Authority pretreatment requirements contained in 40 CFR 403, including any regulatory revisions to Part 403. Where a Part 403 revision is promulgated after the effective date of the Discharger's permit and places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within six months from the issuance date of this permit or six months from the effective date of the Part 403 revisions, whichever comes later.

(If the Discharger cannot complete the required actions within the above six-month period due to the need to process local adoption of sewer use ordinance modifications or other substantial pretreatment program modifications, the Discharger shall notify the Executive Officer in writing at least 60 days prior to the six-month deadline. The written notification shall include a summary of completed required actions, an explanation for why the six month deadline cannot be met, and a proposed timeframe to complete the rest of the required actions as soon as practical but not later than within twelve months of the issuance date of this permit or twelve months of the effective date of the Part 403 revisions, whichever comes later. The Executive Officer will notify the Discharger in writing within 30 days of receiving the request if the extension is not approved.)

The United States Environmental Protection Agency (U.S. EPA), the State and/or other appropriate parties may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements as provided in the Clean Water Act (Act).

- B.** The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d) and 402(b) of the Act with timely, appropriate and effective enforcement actions. The Discharger shall cause nondomestic users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.
- C.** The Discharger shall perform the pretreatment functions as required in 40 CFR 403 and amendments or modifications thereto including, but not limited to:
- 1.** Implement the necessary legal authorities to fully implement the pretreatment regulations as provided in 40 CFR 403.8(f)(1);
  - 2.** Implement the programmatic functions as provided in 40 CFR 403.8(f)(2);
  - 3.** Publish an annual list of nondomestic users in significant noncompliance as provided per 40 CFR 403.8(f)(2)(viii);
  - 4.** Provide for the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3); and
  - 5.** Enforce the national pretreatment standards for prohibited discharges and categorical standards as provided in 40 CFR 403.5 and 403.6, respectively.

- D.** The Discharger shall submit annually a report to U.S. EPA Region 9, the State Water Board and the Regional Water Board describing its pretreatment program activities over the previous calendar year. In the event that the Discharger is not in compliance with any conditions or requirements of the Pretreatment Program, the Discharger shall also include the reasons for noncompliance and a plan and schedule for achieving compliance. The report shall contain, but is not limited to, the information specified in Appendix H-1 entitled, “Requirements for Pretreatment Annual Reports.” The annual report is due each year on February 28.
- E.** The Discharger shall submit a pretreatment semiannual report to U.S. EPA Region 9, the State Water Board and the Regional Water Board describing the status of its significant industrial users (SIUs). The report shall contain, but is not limited to, information specified in Appendix H-2 entitled, “Requirements for Pretreatment Semiannual Reports.” The semiannual report is due July 31 for the period January through June. The information for the period July through December of each year shall be included in the Annual Report identified in Appendix H-1. The Executive Officer may exempt the Discharger from the semiannual reporting requirements on a case by case basis subject to State Water Board and U.S. EPA’s comment and approval.
- F.** The Discharger shall conduct the monitoring of its treatment plant’s influent, effluent, and sludge (biosolids) as described in Appendix H-4 entitled, “Requirements for Influent, Effluent and Sludge (Biosolids) Monitoring.” (The term “biosolids,” as used in this Attachment, shall have the same meaning as wastewater treatment plant “sludge” and will be used from this point forward.) The Discharger shall evaluate the results of the sampling and analysis during the preparation of the semiannual and annual reports to identify any trends. Signing the certification statement used to transmit the reports shall be deemed to certify the Discharger has completed this data evaluation. A tabulation of the data shall be included in the pretreatment annual report as specified in Appendix H-4. The Executive Officer may require more or less frequent monitoring on a case by case basis.

## APPENDIX H-1

### REQUIREMENTS FOR PRETREATMENT ANNUAL REPORTS

The Pretreatment Annual Report is due each year on February 28 and shall contain activities conducted during the previous calendar year. The purpose of the Annual Report is to:

- Describe the status of the Discharger's pretreatment program; and
- Report on the effectiveness of the program, as determined by comparing the results of the preceding year's program implementation.

The report shall contain, at a minimum, the following information:

#### A. Cover Sheet

The cover sheet shall include:

1. The name(s) and National Pollutant Discharge Elimination Discharge System (NPDES) permit number(s) of the Discharger(s) that is part of the Pretreatment Program;
2. The name, address and telephone number of a pretreatment contact person;
3. The period covered in the report;
4. A statement of truthfulness; and
5. The dated signature of a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for overall operation of the publicly-owned treatment works (POTW) (40 CFR 403.12(m)).

#### B. Introduction

This section shall include:

1. Any pertinent background information related to the Discharger and/or the nondomestic user base of the area;
2. List of applicable interagency agreements used to implement the Discharger's pretreatment program (e.g., Memoranda of Understanding (MOU) with satellite sanitary sewer collection systems); and
3. A status summary of the tasks required by a Pretreatment Compliance Inspection (PCI), Pretreatment Compliance Audit (PCA), Cleanup and Abatement Order (CAO), or other pretreatment-related enforcement actions required by the Regional Water Board or the U.S. EPA. A more detailed discussion can be referenced and included in the section entitled, "Program Changes," if needed.

### **C. Definitions**

This section shall include a list of key terms and their definitions that the Discharger uses to describe or characterize elements of its pretreatment program, or the Discharger may provide a reference to its website if the applicable definitions are available on-line.

### **D. Discussion of Upset, Interference and Pass Through**

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

1. A description of what occurred;
2. A description of what was done to identify the source;
3. The name and address of the nondomestic user responsible;
4. The reason(s) why the incident occurred;
5. A description of the corrective actions taken; and
6. An examination of the local and federal discharge limits and requirements for the purposes of determining whether any additional limits or changes to existing requirements may be necessary to prevent other Upset, Interference or Pass Through incidents.

### **E. Influent, Effluent and Biosolids Monitoring Results**

The Discharger shall evaluate the influent, effluent and biosolids monitoring results as specified in Appendix H-4 in preparation of this report. The Discharger shall retain the analytical laboratory reports with the Quality Assurance and Quality Control (QA/QC) data validation and make these reports available upon request.

This section shall include:

1. Description of the sampling procedures and an analysis of the results (see Appendix H-4 for specific requirements);
2. Tabular summary of the compounds detected (compounds measured above the detection limit for the analytical method used) for the monitoring data generated during the reporting year as specified in Appendix H-4;
3. Discussion of the investigation findings into any contributing sources of the compounds that exceed NPDES limits; and
4. Graphical representation of the influent and effluent metal monitoring data for the past five years with a discussion of any trends.

## **F. Inspection, Sampling and Enforcement Programs**

This section shall include at a minimum the following information:

1. Inspections: Summary of the inspection program (e.g., criteria for determining the frequency of inspections and inspection procedures);
2. Sampling Events: Summary of the sampling program (e.g., criteria for determining the frequency of sampling and chain of custody procedures); and
3. Enforcement: Summary of Enforcement Response Plan (ERP) implementation including dates for adoption, last revision and submission to the Regional Water Board.

## **G. Updated List of Regulated SIUs**

This section shall contain a list of all of the federal categories that apply to SIUs regulated by the Discharger. The specific categories shall be listed including the applicable 40 CFR subpart and section, and pretreatment standards (both maximum and average limits). Local limits developed by the Discharger shall be presented in a table including the applicability of the local limits to SIUs. If local limits do not apply uniformly to SIUs, specify the applicability in the tables listing the categorical industrial users (CIUs) and non-categorical SIUs. Tables developed in Sections 7A and 7B can be used to present or reference this information.

1. CIUs - Include a table that alphabetically lists the CIUs regulated by the Discharger as of the end of the reporting period. This list shall include:
  - a. Name;
  - b. Address;
  - c. Applicable federal category(ies);
  - d. Reference to the location where the applicable Federal Categorical Standards are presented in the report;
  - e. Identify all deletions and additions keyed to the list submitted in the previous annual report. All deletions shall be briefly explained (e.g., closure, name change, ownership change, reclassification, declassification); and
  - f. Information, calculations and data used to determine the limits for those CIUs for which a combined waste stream formula is applied.
2. Non-categorical SIUs - Include a table that alphabetically lists the SIUs not subject to any federal categorical standards that were regulated by the Discharger as of the end of the reporting period. This list shall include:
  - a. Name;

- b. Address;
- c. A brief description of the type of business;
- d. Identify all deletions and additions keyed to the list submitted in the previous annual report. All deletions shall be briefly explained (e.g., closure, name change, ownership change, reclassification, declassification); and
- e. Indicate the applicable discharge limits (e.g., different from local limits) to which the SIUs are subject and reference to the location where the applicable limits (e.g., local discharge limits) are presented in the report.

## **H. SIU (categorical and non-categorical) Compliance Activities**

The information required in this section may be combined in the table developed in Section 7 above.

- 1. Inspection and Sampling Summary:** This section shall contain a summary of all the SIU inspections and sampling activities conducted by the Discharger and sampling activities conducted by the SIU over the reporting year to gather information and data regarding SIU compliance. The summary shall include:
  - a. The number of inspections and sampling events conducted for each SIU by the Discharger;
  - b. The number of sampling events conducted by the SIU. Identify SIUs that are operating under an approved Total Toxic Organic Management Plan;
  - c. The quarters in which the above activities were conducted; and
  - d. The compliance status of each SIU, delineated by quarter, and characterized using all applicable descriptions as given below:
    - (1) Consistent compliance;
    - (2) Inconsistent compliance;
    - (3) Significant noncompliance;
    - (4) On a compliance schedule to achieve compliance (include the date final compliance is required);
    - (5) Not in compliance and not on a compliance schedule; and
    - (6) Compliance status unknown, and why not.
- 2. Enforcement Summary:** This section shall contain a summary of SIU compliance and enforcement activities during the reporting year. The summary may be included in the summary table developed in section 8A and shall include the names and addresses of all SIUs affected by

the actions identified below. For each notice specified in enforcement action “i” through “iv,” indicate whether it was for an infraction of a federal or local standard/limit or requirement.

- a. Warning letters or notices of violations regarding SIUs’ apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;
- b. Administrative Orders regarding the SIUs’ apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;
- c. Civil actions regarding the SIUs’ apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;
- d. Criminal actions regarding the SIUs’ apparent noncompliance with or violation of any federal pretreatment categorical standards and/or requirements, or local limits and/or requirements;
- e. Assessment of monetary penalties. Identify the amount of penalty in each case and reason for assessing the penalty;
- f. Order to restrict/suspend discharge to the Discharger; and
- g. Order to disconnect the discharge from entering the Discharger.

**3. July-December Semiannual Data:** For SIU violations/noncompliance during the semiannual reporting period from July 1 through December 31, provide the following information:

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

## **I. Baseline Monitoring Report Update**

This section shall provide a list of CIUs added to the pretreatment program since the last annual report. This list of new CIUs shall summarize the status of the respective Baseline Monitoring Reports (BMR). The BMR must contain the information specified in 40 CFR 403.12(b). For each new CIU, the summary shall indicate when the BMR was due; when the CIU was notified by the Discharger of this requirement; when the CIU submitted the report; and/or when the report is due.

## **J. Pretreatment Program Changes**

This section shall contain a description of any significant changes in the Pretreatment Program during the past year including, but not limited to:

1. Legal authority;
2. Local limits;
3. Monitoring/ inspection program and frequency;
4. Enforcement protocol;
5. Program's administrative structure;
6. Staffing level;
7. Resource requirements;
8. Funding mechanism;
9. If the manager of the Discharger's pretreatment program changed, a revised organizational chart shall be included; and
10. If any element(s) of the program is in the process of being modified, this intention shall also be indicated.

## **K. Pretreatment Program Budget**

This section shall present the budget spent on the Pretreatment Program. The budget, either by the calendar or fiscal year, shall show the total expenses required to implement the pretreatment program. A brief discussion of the source(s) of funding shall be provided. In addition, the Discharger shall make available upon request specific details on its pretreatment program expense amounts such as for personnel, equipment, and chemical analyses.

## **L. Public Participation Summary**

This section shall include a copy of the public notice as required in 40 CFR 403.8(f)(2)(viii). If a notice was not published, the reason shall be stated.

## **M. Biosolids Storage and Disposal Practice**

This section shall describe how treated biosolids are stored and ultimately disposed. If a biosolids storage area is used, it shall be described in detail including its location, containment features and biosolids handling procedures.

## **N. Other Pollutant Reduction Activities**

This section shall include a brief description of any programs the Discharger implements to reduce pollutants from nondomestic users that are not classified as SIUs. If the Discharger submits any of this program information in an Annual Pollution Prevention Report, reference to this other report shall satisfy this reporting requirement.

## **O. Other Subjects**

Other information related to the Pretreatment Program that does not fit into any of the above categories should be included in this section.

## **P. Permit Compliance System (PCS) Data Entry Form**

The annual report shall include the PCS Data Entry Form. This form shall summarize the enforcement actions taken against SIUs in the past year. This form shall include the following information:

1. Discharger's name,
2. NPDES Permit number,
3. Period covered by the report,
4. Number of SIUs in significant noncompliance (SNC) that are on a pretreatment compliance schedule,
5. Number of notices of violation and administrative Orders issued against SIUs,
6. Number of civil and criminal judicial actions against SIUs,
7. Number of SIUs that have been published as a result of being in SNC, and
8. Number of SIUs from which penalties have been collected.

## APPENDIX H-2

### REQUIREMENTS FOR JANUARY-JUNE PRETREATMENT SEMIANNUAL REPORT

The pretreatment semiannual report is due on July 31 for pretreatment program activities conducted from January through June unless an exception has been granted by the Regional Water Board's Executive Officer (e.g., pretreatment programs without any SIUs may qualify for an exception to the pretreatment semiannual report). Pretreatment activities conducted from July through December of each year shall be included in the Pretreatment Annual Report as specified in Appendix H-1. The pretreatment semiannual report shall contain, at a minimum the following information:

#### A. Influent, Effluent and Biosolids Monitoring

The influent, effluent and biosolids monitoring results shall be evaluated in preparation of this report. The Discharger shall retain analytical laboratory reports with the QA/QC data validation and make these reports available upon request. The Discharger shall also make available upon request a description of its influent, effluent and biosolids sampling procedures. Violations of any parameter that exceed NPDES limits shall be identified and reported. The contributing source(s) of the parameters that exceed NPDES limits shall be investigated and discussed.

#### B. Significant Industrial User (SIU) Compliance Status

This section shall contain a list of all SIUs that were not in consistent compliance with all pretreatment standards/limits or requirements for the reporting period. For the reported SIUs, the compliance status for the previous semiannual reporting period shall be included. Once the SIU has determined to be out of compliance, the SIU shall be included in subsequent reports until consistent compliance has been achieved. A brief description detailing the actions that the SIU undertook to come back into compliance shall be provided.

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

1. Name and facility address of the SIU;
2. Indicate if the SIU is subject to Federal Categorical Standards; if so, specify the category including the subpart that applies;
3. For SIUs subject to Federal Categorical Standards, indicate if the violation is of a categorical or local standard;
4. Indicate the compliance status of the SIU for the two quarters of the reporting period; and
5. For violations/noncompliance identified in the reporting period, provide:
  - a. The date(s) of violation(s);
  - b. The parameters and corresponding concentrations exceeding the limits and the discharge limits for these parameters; and

- c. A brief summary of the noncompliant event(s) and the steps that are being taken to achieve compliance.

### **C. Discharger's Compliance with Pretreatment Program Requirements**

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

1. Date of latest PCA or PCI report;
2. Date of the Discharger's response;
3. List of unresolved issues; and
4. Plan(s) and schedule for resolving the remaining issues.

### **APPENDIX H-3**

#### **SIGNATURE REQUIREMENTS FOR PRETREATMENT ANNUAL AND SEMIANNUAL REPORTS**

The pretreatment annual and semiannual reports shall be signed by a principal executive officer, ranking elected official, or other duly authorized employee who is responsible for the overall operation of the Discharger (POTW - 40 CFR section 403.12[m]). Signed copies of the reports shall be submitted to the State Water Board and the Regional Water Board through the electronic self-monitoring report (eSMR) module of the California Integrated Water Quality System (CIWQS). Signed copies of the reports shall also be submitted electronically to U.S. EPA at [R9Pretreatment@epa.gov](mailto:R9Pretreatment@epa.gov) or as instructed otherwise.

## APPENDIX H-4

### REQUIREMENTS FOR INFLUENT, EFFLUENT AND BIOSOLIDS MONITORING

The Discharger shall conduct sampling of its treatment plant’s influent, effluent and biosolids at the frequency shown in **the pretreatment requirements table** of the Monitoring and Reporting Program (MRP, Attachment E). When sampling periods coincide, one set of test results, reported separately, may be used for those parameters that are required to be monitored by both the influent and effluent monitoring requirements of the MRP and the Pretreatment Program. The Pretreatment Program monitoring reports as required in Appendices H-1 and H-2 shall be transmitted to the Pretreatment Program Coordinator.

#### A. Reduction of Monitoring Frequency

The minimum frequency of Pretreatment Program influent, effluent, and biosolids monitoring shall be dependent on the number of SIUs identified in the Discharger’s Pretreatment Program as indicated in Table H-1.

<b>Table H-1: Minimum Frequency of Pretreatment Program Monitoring</b>	
Number of SIUs	Minimum Frequency
< 5	Once every five years
> 5 and < 50	Once every year
> 50	Twice per year

If the Discharger’s required monitoring frequency is greater than the minimum specified in Table H-1, the Discharger may request a reduced monitoring frequency for that constituent(s) as part of its application for permit reissuance if it meets the following criteria:

The monitoring data for the constituent(s) consistently show non-detect (ND) levels for the effluent monitoring and very low (i.e., near ND) levels for influent and biosolids monitoring for a minimum of eight previous years’ worth of data.

The Discharger’s request shall include tabular summaries of the data and a description of the trends in the industrial, commercial, and residential customers in the Discharger’s service area that demonstrate control over the sources of the constituent(s). The Regional Water Board may grant a reduced monitoring frequency in the reissued permit after considering the information provided by the Discharger and any other relevant information.

#### B. Influent and Effluent Monitoring

The Discharger shall monitor for the parameters using the required sampling and test methods listed in **the pretreatment table** of the MRP. Any test method substitutions must have received prior written Executive Officer approval. Influent and effluent sampling locations shall be the same as those sites specified in the MRP.

The influent and effluent samples should be taken at staggered times to account for treatment plant detention time. Appropriately staggered sampling is considered consistent with the requirement for collection of effluent samples coincident with influent samples in Section III.A.3.a(2) of

Attachment G. All samples must be representative of daily operations. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto. For effluent monitoring, the reporting limits for the individual parameters shall be at or below the minimum levels (MLs) as stated in the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2000) [also known as the State Implementation Policy (SIP)]; any revisions to the MLs shall be adhered to. If a parameter does not have a stated ML, then the Discharger shall conduct the analysis using the lowest commercially available and reasonably achievable detection levels.

The following report elements should be used to submit the influent and effluent monitoring results. A similarly structured format may be used but will be subject to Regional Water Board approval. The monitoring reports shall be submitted with the Pretreatment Annual Report identified in Appendix H-1.

1. Sampling Procedures, Sample Dechlorination, Sample Compositing, and Data Validation (applicable quality assurance/quality control) shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto. The Discharger shall make available upon request its sampling procedures including methods of dechlorination, compositing, and data validation.
2. A tabulation of the test results for the detected parameters shall be provided.
3. Discussion of Results – The report shall include a complete discussion of the test results for the detected parameters. If any pollutants are detected in sufficient concentration to upset, interfere or pass through plant operations, the type of pollutant(s) and potential source(s) shall be noted, along with a plan of action to control, eliminate, and/or monitor the pollutant(s). Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

### **C. Biosolids Monitoring**

Biosolids should be sampled in a manner that will be representative of the biosolids generated from the influent and effluent monitoring events except as noted in (3. below. The same parameters required for influent and effluent analysis shall be included in the biosolids analysis. The biosolids analyzed shall be a composite sample of the biosolids for final disposal consisting of:

1. Biosolids lagoons – 20 grab samples collected at representative equidistant intervals (grid pattern) and composited as a single grab, or
2. Dried stockpile – 20 grab samples collected at various representative locations and depths and composited as a single grab, or
3. Dewatered biosolids - daily composite of 4 representative grab samples each day for 5 days taken at equal intervals during the daily operating shift taken from a) the dewatering units or b) each truckload, and shall be combined into a single 5- day composite.

The U.S. EPA manual, POTW Sludge Sampling and Analysis Guidance Document, August 1989, containing detailed sampling protocols specific to biosolids is recommended as a guidance for sampling procedures. The U.S. EPA manual Analytical Methods of the National Sewage Sludge

Survey, September 1990, containing detailed analytical protocols specific to biosolids, is recommended as a guidance for analytical methods.

In determining if the biosolids are a hazardous waste, the Discharger shall adhere to Article 2, "Criteria for Identifying the Characteristics of Hazardous Waste," and Article 3, "Characteristics of Hazardous Waste," of Title 22, California Code of Regulations, sections 66261.10 to 66261.24 and all amendments thereto.

The following report elements should be used to submit the biosolids monitoring results. A similarly structured form may be used but will be subject to Regional Water Board approval. The results shall be submitted with the Pretreatment Annual Report identified in Appendix H-1.

- Sampling Procedures and Data Validation (applicable quality assurance/quality control) shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto. The Discharger shall make available upon request its biosolids sampling procedures and data validation methods.
- Test Results – Tabulate the test results for the detected parameters and include the percent solids.
- Discussion of Results – Include a complete discussion of test results for the detected parameters. If the detected pollutant(s) is reasonably deemed to have an adverse effect on biosolids disposal, a plan of action to control, eliminate, and/or monitor the pollutant(s) and the known or potential source(s) shall be included. Any apparent generation and/or destruction of pollutants attributable to chlorination/dechlorination sampling and analysis practices shall be noted.

The Discharger shall also provide a summary table presenting any influent, effluent or biosolids monitoring data for non-priority pollutants that the Discharger believes may be causing or contributing to interference, pass through or adversely impacting biosolids quality.

## **ATTACHMENT I – ACTIONS TO COMPLY WITH STATE WATER BOARD ORDER No. WQ 90-5**

In response to the State Water Board's Water Quality Control Policy for the Enclosed Bays and Estuaries of California (the Bays and Estuaries Policy, adopted in May 1974), which included a general prohibition against the discharge of municipal and industrial wastewaters to enclosed bays and estuaries, the Regional Water Board included the following discharge prohibitions in Basin Plan Table 4-1:

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

Any wastewater which has particular characteristics of concern to San Francisco Bay south of the Dumbarton Bridge.

These prohibitions essentially preclude discharges of treated wastewater from the wastewater treatment plants of Palo Alto, San Jose/Santa Clara, and Sunnyvale. In 1973, these dischargers formed the South Bay Dischargers Authority to address the possibility of relocating their outfalls to a location north of the Dumbarton Bridge. They also investigated whether they could justify exceptions to the discharge prohibitions based on providing net environmental benefits. The Basin Plan states that an exception may be considered where net environmental benefits will be derived from a discharge. Based on results of studies conducted between 1981 through 1986 showing net environmental benefits, the three South Bay dischargers petitioned the Regional Water Board for exceptions to the discharge prohibitions in 1987.

At the same time, the Regional Water Board was establishing water quality objectives for many toxic pollutants. It amended the Basin Plan in 1986 to establish several such water quality objectives. Due to the unique hydrodynamic environment of South San Francisco Bay and presence of substantial non-point pollution sources, the 1986 Basin Plan amendment exempted South San Francisco Bay from the new objectives and required development of site-specific water quality objectives.

In 1988, the Regional Water Board found that the Sunnyvale (Order No. 88-176) and Palo Alto (Order No. 88-175) discharges would provide net environmental benefits and enhance water quality. It therefore granted exceptions to the Basin Plan discharge prohibitions, provided that they conduct several studies addressing salt marsh conversion, site-specific water quality objectives and effluent limitations for metals, ammonia removal, and avian botulism control. The Regional Water Board found that the San Jose/Santa Clara (Order No. 89-012) discharges did not provide a net environmental benefit and did not enhance water quality. It cited, in particular, the conversion of extensive salt marsh habitat to brackish and freshwater marsh. The Regional Water Board concluded, however, that there could be net environmental benefits if the Discharger provided mitigation for the loss of salt marsh habitat. On January 18, 1989, the Regional Water Board issued Cease and Desist Order No. 89-013, establishing a time schedule for either compliance with the Basin Plan prohibitions or mitigation for the loss of salt marsh habitat.

In addition to providing the exceptions to the Basin Plan's discharge prohibitions, the three reissued permits established a process to develop site-specific water quality objectives and effluent limitations for metals. Interim limitations, based on objectives in the 1982 Basin Plan, were established and were to be replaced by performance-based interim limitations after one year. Ultimately, final effluent limitations

were to be established based on the 1986 Basin Plan objectives or site-specific objectives based on studies mandated by the permits.

Responding to objections from environmental groups, the State Water Board adopted Order No. WQ 90-5 on October 4, 1990. It addressed three issues: (a) the conditional exceptions to the Basin Plan discharge prohibitions granted to Sunnyvale and Palo Alto and denied to San Jose/Santa Clara, (b) regulation of toxic pollutants, and (c) mitigation for the loss of salt marsh habitat. The State Water Board concluded that all three South Bay dischargers had failed to demonstrate that exceptions to the Basin Plan discharge prohibitions were warranted on the basis of net environmental benefits. The State Water Board explained that the impact of nutrients in South San Francisco Bay remained unresolved, that avian botulism was negatively affecting wildlife and estuarine habitat, and that metals discharges were contributing or threatening to contribute to impairment of San Francisco Bay. In addition, discharges from the San Jose/Santa Clara plant, specifically, had a substantial adverse impact on rare and endangered species resulting from the loss of salt marsh habitat.

The State Water Board did acknowledge that relocation of the discharges to a location north of the Dumbarton Bridge was not economically or environmentally sound. The State Water Board strongly encouraged the Regional Water Board and the South Bay Dischargers Authority to pursue wastewater reclamation as a means to reduce discharges to San Francisco Bay, and concluded that exceptions to the Basin Plan discharge prohibitions could be granted because the Basin Plan states that an exception may be considered where an inordinate burden would be placed on the discharger relative to the beneficial uses protected and an equivalent level of environmental protection can be achieved by alternate means. It set forth specific conditions: (a) the permits were to include numeric, water quality-based effluent limitations for toxic pollutants; (b) the dischargers were to continue their efforts to control avian botulism; and (c) the dischargers were to properly protect rare and endangered species by limiting flows discharged to San Francisco Bay to not more than 120 million gallons per day (average dry weather flow)—or to flows that would not further adversely affect rare or endangered species—and provide for the creation or restoration of 380 acres of wetlands.

Actions the State and Regional Water Boards and South Bay dischargers took before and after the State Water Board adopted Order No. WQ 90-05 are described chronologically below to clarify the origin of some provisions in this Order.

Regional Water Board Order No. 90-034 (February 21, 1990) amended Order No. 88-175.

- Established interim performance based limits for arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, silver, zinc, cyanide, phenolic compounds, PAHs, and selenium. Interim limits were to remain effective while site-specific objectives were being developed, and site-specific limits were to be in place by December 31, 1991. (The Basin Plan had not established water quality objectives for metals in South San Francisco Bay, and the Discharger was obligated to assist in gathering data for development of site-specific objectives and effluent limitations.)
- Established interim limits for the same pollutants to maintain ambient conditions in South San Francisco Bay until site-specific objectives and site-specific limits could be put in place by December 31, 1991. (Interim limits were needed for metals because of the lack of assimilative capacity in San Francisco Bay, although metals loadings to San Francisco Bay had diminished since 1975.)

Regional Water Board Order No. 90-069 (May 16, 1990) amended Order No. 88-175.

- By August 1, 1991, required implementation of additional source control measures, including pretreatment program improvements, to reduce toxic pollutants in influent wastewater.
- By December 1, 1990, required submittal of an interim report regarding additional source control measures.

State Water Board Order No. WQ 90-05 was adopted on October 4, 1990.

Regional Water Board Order No. 91-068 (April 17, 1991) amended Order No. 88-175 to comply with State Water Board Order No. 90-5.

- Granted exceptions to the Basin Plan prohibitions based on “equivalent protection” if certain conditions were satisfied: (1) WQBELs for toxic pollutants were to be included in the facility’s discharge permit, (2) the discharge permit was to include mass limits for toxic pollutants, and (3) a chronic toxicity limitation is included in the permit.
- Amended permit to state that water quality objectives for South San Francisco Bay exist and are appropriate to use when developing water quality-based effluent limitations. Stated that the Discharger was conducting studies to develop site-specific objectives for copper, lead, mercury, and nickel. Stated that the Regional Water Board was developing bay-wide objectives for copper and nickel. Also contained a requirement to conduct a TRE/TIE for chronic toxicity prior to permit expiration, and that a chronic toxicity limitation would be adopted with the next permit issuance.
- Established new interim concentration-based limits for arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, silver, zinc, and selenium, and new interim mass-based limitations for arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, silver, zinc, selenium, cyanide, phenols, and PAHs.

Regional Water Board Order No. 93-085 (July 21, 1993) reissued the Palo Alto permit.

- Consistent with the requirements of State Water Board Order No. 90-5, contained water quality-based effluent limits for toxics, and mass limits for metals, and therefore granted exceptions to the Basin Plan discharge prohibitions.
- Addressed chronic toxicity by incorporating all permit amendments contained in the Blanket Chronic Toxicity Order (Regional Water Board Order No. 92-104).

Regional Water Board Cease and Desist Order No. 93-083 (July 21, 1993) was adopted.

- Addressed significant violations of copper and nickel effluent limitations established by Order No. 91-068 occurring between May 1991 and August 1992, and included compliance schedules to enforce compliance with the copper and nickel requirements of Order No. 93-085.

Regional Water Board Order No. 98-054 (June 17, 1998) reissued the Palo Alto permit.

- Based copper and nickel effluent limitations on treatment plant performance to maintain ambient conditions in South San Francisco Bay. Based all other toxic pollutant limitations (i.e., those for mercury, nickel, selenium, and tributyltin) on the 1995 Basin Plan or U.S. EPA criteria.
- Continued exceptions to the Basin Plan discharge prohibitions, stating that effluent limitations were substantially equivalent to the effluent limitations in the 1993 NPDES permit, and that the permit required studies to develop water quality-based mass limits for metals, measures to maximize reclamation and minimize effluent discharge, and continued operation of the plant at a high degree of reliability.
- Established requirements to participate in Total Maximum Daily Load development. (The Regional Water Board expected copper and nickel site-specific objectives to be developed during the term of the order.)
- Established compliance with the Basin Plan narrative objective for chronic toxicity to be demonstrated through monitoring and required accelerated monitoring upon exceedance of chronic toxicity “triggers.”

Regional Water Board Order No. R2-2002-0061 (May 22, 2002) adopted a Basin Plan amendment establishing copper and nickel site-specific objectives for San Francisco Bay south of Dumbarton Bridge.

State Water Board Resolution No. 2002-0151 (October 17, 2002) granted State Water Board approval of the copper and nickel site-specific objectives for South San Francisco Bay, which U.S. EPA subsequently approved on January 21, 2003.

Regional Water Board Order No. R2-2003-0078 (August 20, 2003) reissued the Palo Alto permit.

- Contained requirements to comply with Copper and Nickel Action Plans.
- Established water quality-based effluent limitations based on the California Toxics Rule and the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, both of which became effective on May 18, 2000.
- Continued exceptions to the Basin Plan discharge prohibitions based on findings regarding the establishment of water quality-based effluent limitations and continuing a marsh reclamation program (which was unrelated to State Water Order 90-5).

State Water Board Resolution No. 2006-0052 (August 9, 2006) granted State Water Board approval to establish new mercury water quality objectives and to amend the Total Maximum Daily Load and implementation plan for mercury in San Francisco Bay.

State Water Board Resolution No. 2006-0086 (December 13, 2006) granted State Water Board approval of cyanide site-specific objectives for San Francisco Bay North of the Dumbarton Bridge.

State Water Board Resolution No. 2007-0042 (June 13, 2007) granted State Water Board approval of copper site-specific objectives for San Francisco Bay North of the Dumbarton Bridge.

Regional Water Board Order No. R2-2009-0032 (April 8, 2009) reissued the Palo Alto permit.

- Required implementation of copper and cyanide action plans.
- Found that all the historical requirements of both the State and Regional Water Boards had been met.

Regional Water Board Order No. R2-2014-0024 (June 11, 2014) reissued the Palo Alto permit.

- Updated permit requirements to reflect current conditions.