

California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400, Oakland, CA 94612
(510) 622-2300

**NOTICE OF APPLICATION, OPPORTUNITY TO COMMENT, AND PUBLIC HEARING
FOR
DISCHARGE PERMIT**

**Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc., Permanente Plant
24001 Stevens Creek Blvd., Cupertino, Santa Clara County**

Board staff has prepared a draft National Pollutant Discharge Elimination System permit for the above discharger in accordance with the Clean Water Act and Porter-Cologne Water Quality Control Act.

The discharger operates the Permanente Plant, a limestone quarry and cement manufacturing facility. The draft permit addresses wastewater from quarrying and cement manufacturing, and industrial stormwater. Wastewater is treated to remove selenium and other pollutants before discharge to Permanente Creek. Industrial stormwater is treated by settling ponds before discharge to Permanente Creek.

The deadline for receipt of comment on the tentative permit is 5:00 p.m. on May 3, 2019. Comments must be sent to the attention of **John H. Madigan**. Persons wishing to file written comments on any aspect of this matter must do so no later than this deadline so that such comments may be considered.

The Board will consider adopting the draft permit during a meeting to commence at **9:00 a.m. on June 12, 2019**, in the Auditorium at 1515 Clay Street, Oakland. Interested persons are invited to express their views at this hearing.

Pursuant to California Code of Regulations Title 23 section 2050(c), any party who challenges the Board's action through a petition to the State Water Resources Control Board under Water Code section 13320 will be limited to raising only those substantive issues that were raised before the Board at the hearing or in timely submitted correspondence.

All documents related to the draft permit may be inspected at the Board office. The draft permit and developments on this matter are available at www.waterboards.ca.gov/sanfranciscobay. Board staff responses to comments will be posted on that website a week prior to the hearing. Contact **John H. Madigan** at **(510) 622-2405** or **John.Madigan@waterboards.ca.gov**, if you have questions.



GAVIN NEWSOM
GOVERNOR



JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

San Francisco Bay Regional Water Quality Control Board

**TENTATIVE ORDER No. R2-2019-XXXX
NPDES No. CA0030210**

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

Table 1. Discharger Information

Discharger	Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc.
Facility Name	Permanente Plant
Facility Address	24001 Stevens Creek Blvd. Cupertino, CA, 95014 Santa Clara County
CIWQS Place Number	273205

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Treated quarry dewatering water, Crusher Slope Drainage Area stormwater, Cement Plant Reclaim Water System wastewater, Rock Plant aggregate wash water, Truck Wash water, subsurface flow from the East Materials Storage Area (EMSA) (intercepted by the EMSA French drain, EMSA catchment and drainage swales, and any additional related infrastructure), non-stormwater, and stormwater, discharged from Final Treatment System (FTS)-Upper	37.31713°	-122.11165°	Permanente Creek
002	Settled stormwater from slope north of Pond 13B, discharged from Pond 13B	37.31674°	-122.10167°	Permanente Creek
004	Settled stormwater from rain falling directly on Rock Plant, discharged from Pond 17	37.31431°	-122.08893°	Permanente Creek
005	Settled stormwater from former Aluminum Plant, entry road, and nearby hillside, discharged from Pond 20	37.31899°	-122.087159°	Permanente Creek
006	Settled stormwater from EMSA, discharged from Pond 30	37.32241°	-122.08551°	Permanente Creek
007	Same sources as Discharge Point No. 001, discharged from FTS-Lower	37.31778°	-122.08750°	Permanente Creek

Table 3. Administrative Information

This Order was adopted on:	
This Order shall become effective on:	August 1, 2019
This Order shall expire on:	July 31, 2024
CIWQS Regulatory Measure Number	##
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:	November 4, 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 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.

 Michael Montgomery, Executive Officer

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I. FACILITY INFORMATION

Information describing the Lehigh Southwest Cement Company's (Discharger's) Permanente Plant (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 the following:

- 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 (Attachment F) contains background information and rationale for the requirements in this Order, and is hereby incorporated into and constitutes findings for this Order. Attachments A through E, G, and S are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** No provisions and requirements in this Order are included to implement State law only.
- D. Cease and Desist Order.** The Regional Water Board adopted Cease and Desist Order No. R2-2014-0011 (later amended through Order No. R2-2017-0031) to enforce foreseeable violations of Order No. R2-2014-0010 (later amended through Order No. R2-2017-0030) (previous order). The Cease and Desist Order required full compliance with the previous order by October 1, 2017, and this Order rescinds the previous order. Therefore, the Cease and Desist Order is no longer needed and can be rescinded.
- E. Technical Information Requirement.** On August 1, 2018, the Executive Officer ordered the Discharger to provide technical information about Facility discharges and their effects on Permanente and Stevens creeks pursuant to Water Code section 13267. The Monitoring and Reporting Program (MRP) (Attachment E) incorporates and updates those information requirements; therefore, the August 1, 2018, order is no longer needed and can be rescinded.
- F. Notification of Interested Parties.** The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe these WDRs and rescind the Cease and Desist Order, and provided an opportunity to submit written comments and recommendations. The Fact Sheet provides details regarding the notification.
- G. 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. R2-2014-0010, as amended by Order No. R2-2017-0030; Cease and Desist Order No. R2-2014-0011, as amended by Order No. R2-2017-0031; and the August 1, 2018, order pursuant to Water Code section 13267 are rescinded upon the effective date of this Order, except for enforcement purposes, and, in order to meet the provisions of California 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 rescinded orders.

III. DISCHARGE PROHIBITIONS

- A. Discharge of treated or untreated wastewater at a location or in a manner different than described in this Order is prohibited.
- B. Combined discharge greater than 138,000 gallons per hour (gph), as determined on an hourly basis, from Discharge Point Nos. 001 and 007 is prohibited.
- C. Discharge from Discharge Point Nos. 002, 004, 005, and 006 is prohibited except as a result of precipitation or as necessary to discharge retained stormwater.
- D. Discharge of kiln exhaust cooling water is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Discharge Point Nos. 001 and 007

The Discharger shall comply with the following effluent limitations at Discharge Point Nos. 001 and 007, with compliance measured at Monitoring Locations EFF-001 and EFF-007 as described in the MRP.

Table 4. Effluent Limitations – Discharge Point Nos. 001 and 007

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Oil and Grease	mg/L	10	20	---	---
pH ^[1]	s.u.	---	---	6.5	8.5
Settleable Matter	mL/L-hr	0.10	0.20	---	---
Total Residual Chlorine	mg/L	---	---	---	0.0
Total Suspended Solids (TSS) ^[2]	lbs/d	---	58	---	---
Antimony	µg/L	6.0	12	---	---
Chromium (VI)	µg/L	6.0	16	---	---
Selenium	µg/L	3.0	8.2	---	---
Total Dissolved Solids (TDS)	mg/L	1,000	1,800	---	---

Unit Abbreviations:

- µg/L = micrograms per liter
- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter-hour
- lbs/d = pounds per day
- s.u. = standard units

Footnotes:

- [1] If the Discharger monitors pH continuously, pursuant to 40 C.F.R. § 401.17 the Discharger shall be in compliance with this pH limitation provided that both of the following conditions are satisfied: (i) the total time during which the pH is outside the required range shall not exceed 7 hours and 26 minutes in any calendar month; and (ii) no individual excursion from the required pH range shall exceed 60 minutes
- [2] Limit applies to the combined discharge from Discharge Point Nos. 001 and 007.

B. Discharge Point Nos. 002, 004, 005, and 006

The Discharger shall comply with the following effluent limitations at Discharge Point Nos. 002, 004, 005, and 006, with compliance measured at Monitoring Locations EFF-002, EFF-004, EFF-005, and EFF-006 as described in the MRP.

Table 5. Effluent Limitations – Discharge Point Nos. 002, 004, 005, and 006

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Oil and Grease	mg/L	10	20	---	---
pH	s.u.	---	---	6.5	8.5
Settleable Matter	mL/L-hr	0.10	0.20	---	---
TSS	mg/L	---	50	---	---

Unit Abbreviations:

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

C. Acute Toxicity (Discharge Point Nos. 001 and 007)

Discharges at Discharge Point Nos. 001 and 007 shall comply with the following effluent limitations, with compliance measured at Monitoring Locations EFF-001 and EFF-007 as described in the MRP:

1. Three-sample median value of not less than 90 percent survival; and
2. Single-sample value of not less than 70 percent survival.

These acute toxicity limitations are defined as follows:

- **Three-sample median.** A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit if one 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 exclusively by ammonia and that the ammonia in the effluent would not cause toxicity in the receiving water when discharged (e.g., due to the pH of the receiving water), then such toxicity does not constitute a violation of this effluent limitation.

V. RECEIVING WATER LIMITATIONS

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

1. Floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses;
 2. Alteration of suspended sediment in such a manner as to cause nuisance or adversely affect beneficial uses, or detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life;
 3. Suspended material in concentrations that cause nuisance or adversely affect beneficial uses;
 4. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 5. Alteration of temperature beyond present natural background levels;
 6. 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 7.0 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 or contribute to a violation of any water quality standard for receiving waters adopted by the Regional Water Board or the 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 Attachment G (*Regional Standard Provisions, and Monitoring and Reporting Requirements for NPDES Wastewater Discharge Permits*).
3. For discharges from Discharge Point Nos. 002, 004, 005, and 006, the Discharger shall comply with all applicable provisions of Attachment S (*Stormwater Provisions, Monitoring, and Reporting Requirements*) as modified below. Specifically, Attachment S section I.G is replaced as follows:

Action Levels and Advanced Best Management Practices (BMPs).

If the Discharger samples any parameter in excess of an action level in Table A, the Discharger shall review the Stormwater Pollution Prevention Plan (SWPPP) to identify appropriate modifications to existing BMPs or additional BMPs as necessary to reduce pollutant discharge concentrations to levels below the action level. The Discharger shall revise the SWPPP accordingly before the next storm, if possible, or as soon as practical, and in no event later than three months following the exceedance.

Table A
 Stormwater Action Levels

Parameter	Unit	Instantaneous Action Level	Annual Action Level
Antimony	µg/L	640	---
Chromium (VI)	µg/L	16	---
Selenium	µg/L	---	5.0
Visible Oil	---	Presence	
Visible Color	---	Presence	

Footnote:

^[1] Values below or above this range require action.

If, upon subsequent monitoring, the pollutants measured in Table A continue to exceed their respective action levels, the Discharger shall further evaluate its BMPs and update its SWPPP accordingly to include advanced BMPs in addition to the minimum BMPs described in Provision I.F, above. The Discharger shall, to the extent feasible, implement and maintain any advanced BMPs identified pursuant to

Provision I.E.8, above, as necessary to reduce or prevent discharges of pollutants in stormwater discharges in a manner that reflects best industry practice considering technological availability and economic practicability and achievability. Advanced BMPs may include one or more of the following:

- **Exposure Minimization BMPs.** These include storm resistant shelters (either permanent or temporary) that prevent the contact of stormwater with identified industrial materials.
- **Stormwater Containment and Discharge Reduction BMPs.** These include BMPs that divert, infiltrate, reuse, contain, retain, or reduce the volume of stormwater runoff.
- **Treatment Control BMPs.** These include mechanical, chemical, biologic, or any other treatment technology that will meet the treatment design standard.

B. Monitoring and Reporting

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

C. Special Provisions

1. Reopener Provisions

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

- a. If present or future investigations demonstrate that the discharges governed by this Order have or will have a reasonable potential to cause or contribute to adverse impacts on water quality or beneficial uses of the receiving waters.
- b. If new or revised water quality objectives or total maximum daily loads (TMDLs) come into effect for San Francisco Bay and contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order may be modified as necessary to reflect the updated water quality objectives and wasteload allocations in the TMDLs. Adoption of the effluent limitations in this Order is not intended to restrict in any way future modifications based on legally adopted water quality objectives or TMDLs or as otherwise permitted under federal regulations governing NPDES permit modifications.
- c. If translator, dilution, or other water quality studies provide a basis for determining that a permit condition should be modified.
- d. If State Water Board precedential decisions, new policies, new laws, or new regulations are adopted.
- e. If an administrative or judicial decision on a separate NPDES permit or waste discharge requirements addresses requirements similar to this discharge.

- f. If receiving water monitoring (i.e., new information) indicates that new or revised permit conditions are needed to resolve selenium impairment of Permanente Creek.
- 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 discharges from Discharge Point Nos. 001 and 007, 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 process streams, and monitoring of influent sources. The Discharger shall establish remedial measures addressing any increase resulting in reasonable potential to cause or contribute to an excursion above applicable water quality criteria. This requirement may be satisfied by including the constituent 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 criteria (see Fact Sheet Table F-6 for the criteria) 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 data evaluation and source investigation in the annual self-monitoring report.

3. Pollutant Minimization Program

- a. 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.
 - b. If triggered by the reasons set forth in Provision VI.C.3.a, 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; and
 - iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy.

4. Receiving Water Data Reporting

The Discharger shall submit receiving water data for chronic toxicity and all parameters listed in MRP Tables E-4, E-5, and E-6 monitored at Monitoring Locations RSW-001, RSW-002, RSW-004, RSW-005, RSW-006, and RSW-007 to the California Environmental Data Exchange Network (CEDEN) to the extent that CEDEN accommodates the data type.

5. Dry Season Discharge Requirements

When discharging treated quarry water, as necessary, during each dry season (May 1 through October 31), the Discharger shall discharge at least 450 gallons per minute from the FTS-Upper (Discharge Point No. 001) before discharging any additional flow from the FTS-Lower (Discharge Point No. 007).

6. Selenium in Fish Tissue Reasonable Potential Study

The Discharger shall submit a study plan and schedule to evaluate reasonable potential for selenium using U.S. EPA's proposed California fish tissue selenium criterion (fish tissue criterion).¹ The objectives of the study shall be as follows:

- Determine if the Discharger can collect sufficient representative fish tissue data from Permanente Creek to evaluate reasonable potential using U.S. EPA's proposed fish tissue criterion;

¹ *Water Quality Standards; Establishment of a Numeric Criterion for Selenium for the State of California*, Fed. Reg. Vol. 83, No. 239, December 13, 2018, pages 64059-64078

- If the Discharger cannot collect such fish tissue data, determine if the Discharger can collect and use an alternative form of data;
- Collect sufficient representative fish tissue data, or an alternative form of data if necessary, from Permanente Creek to evaluate reasonable potential using U.S. EPA's proposed fish tissue criterion; and
- Recommend a reasonable potential finding based on the above with the application for permit reissuance.

The study plan and schedule shall include the following:

- a.** By November 30, 2019, the Discharger shall submit a study plan and schedule for implementation. The study plan shall provide for the following:
- Initial data-collection and evaluation;
 - Interim report;
 - Follow-up data collection and analysis; and
 - Final report.

The study plan and schedule shall be acceptable to the Executive Officer, who will confirm that the study plan meets these conditions and fulfills the objectives set forth above.

- b.** Unless the Executive Officer objects to the study plan and proposes changes necessary to meet the conditions in section VI.6.a., above, by December 30, 2019, the Discharger shall begin implementing the study plan and schedule.
- c.** By the date set forth in the study plan and schedule, the Discharger shall submit an interim report that:
- i.** Determines if the Discharger can collect sufficient representative fish tissue data from Permanente Creek to evaluate reasonable potential for selenium to exceed the proposed fish tissue criterion; and
 - ii.** Provides a plan and schedule for collecting representative fish tissue data from Permanente Creek and conducting a reasonable potential analysis, or, if such fish tissue data are unavailable, for collecting an alternative form of data and conducting a reasonable potential analysis (e.g., using the U.S. EPA Mechanistic Modeling Approach [U.S. EPA, August 8, 2018, Draft]).

Fish tissue monitoring shall conform to U.S. EPA guidance.² The interim report and schedule shall be acceptable to the Executive Officer, who will confirm that they meet the conditions set forth in items i and ii above.

- d.** Unless the Executive Officer objects to the interim report and proposes changes necessary to meet the conditions in section VI.6.c, above, by the date set forth in the interim report and schedule, the Discharger shall begin implementing the interim report plan and schedule.

² *Technical Support for Fish Tissue Monitoring for Implementation of EPA's 2016 Selenium Criterion* (U.S. EPA, EPA 820-F-16-007, September 2016, Draft)

- e. With the Report of Waste Discharge required in Table 3 of this Order, the Discharger shall provide a final report that includes the results of the sampling effort, a recommended finding regarding reasonable potential, and all supporting data and analysis.

Subsequent revisions to U.S. EPA criteria and guidance cited above shall be incorporated into all data collection and analysis, and into the interim and final reports to the extent possible.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

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

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

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 wasteload 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, Appendix 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 (σ)

Measure of variability calculated as follows:

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

where:

x is the observed value;

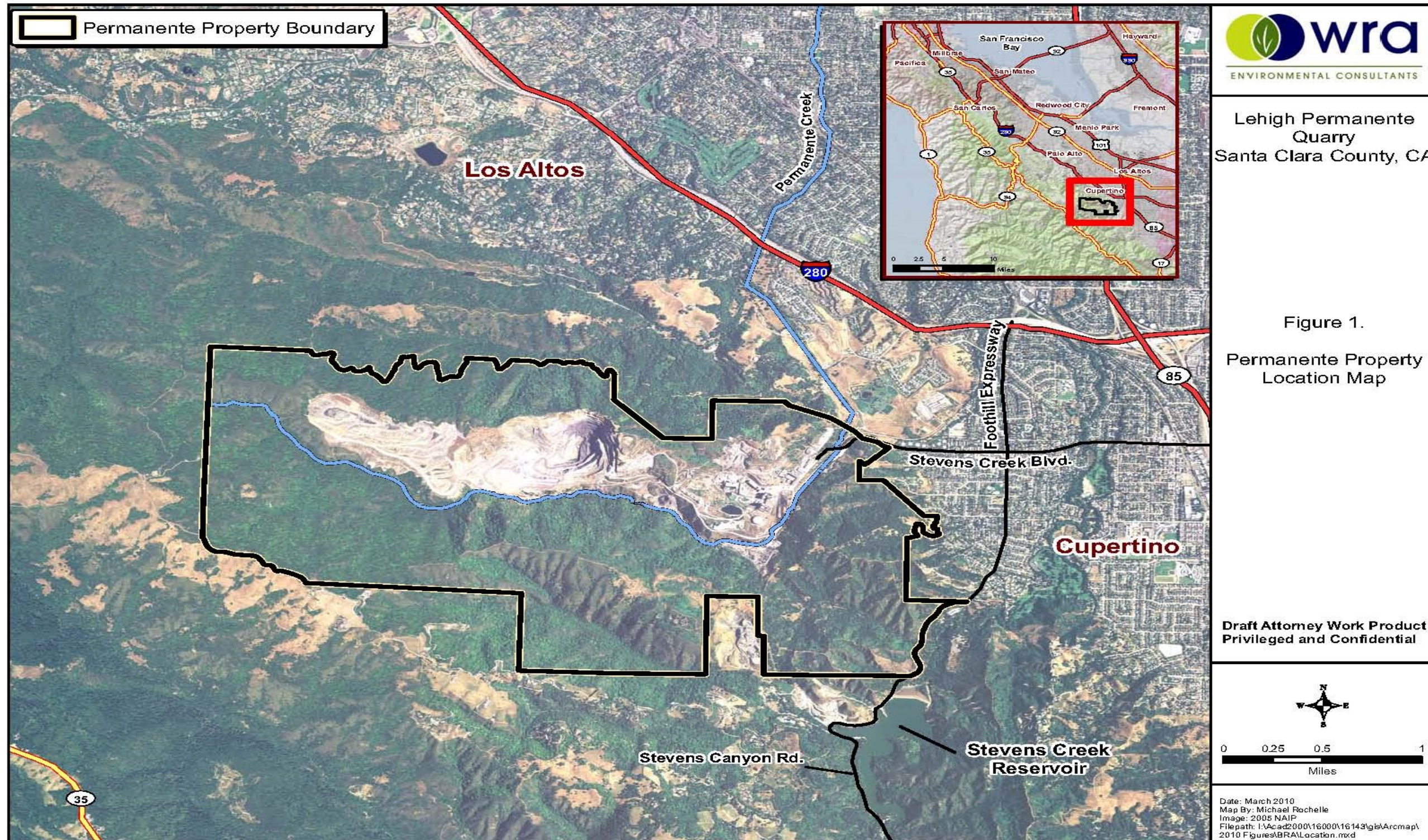
μ is the arithmetic mean of the observed values; and

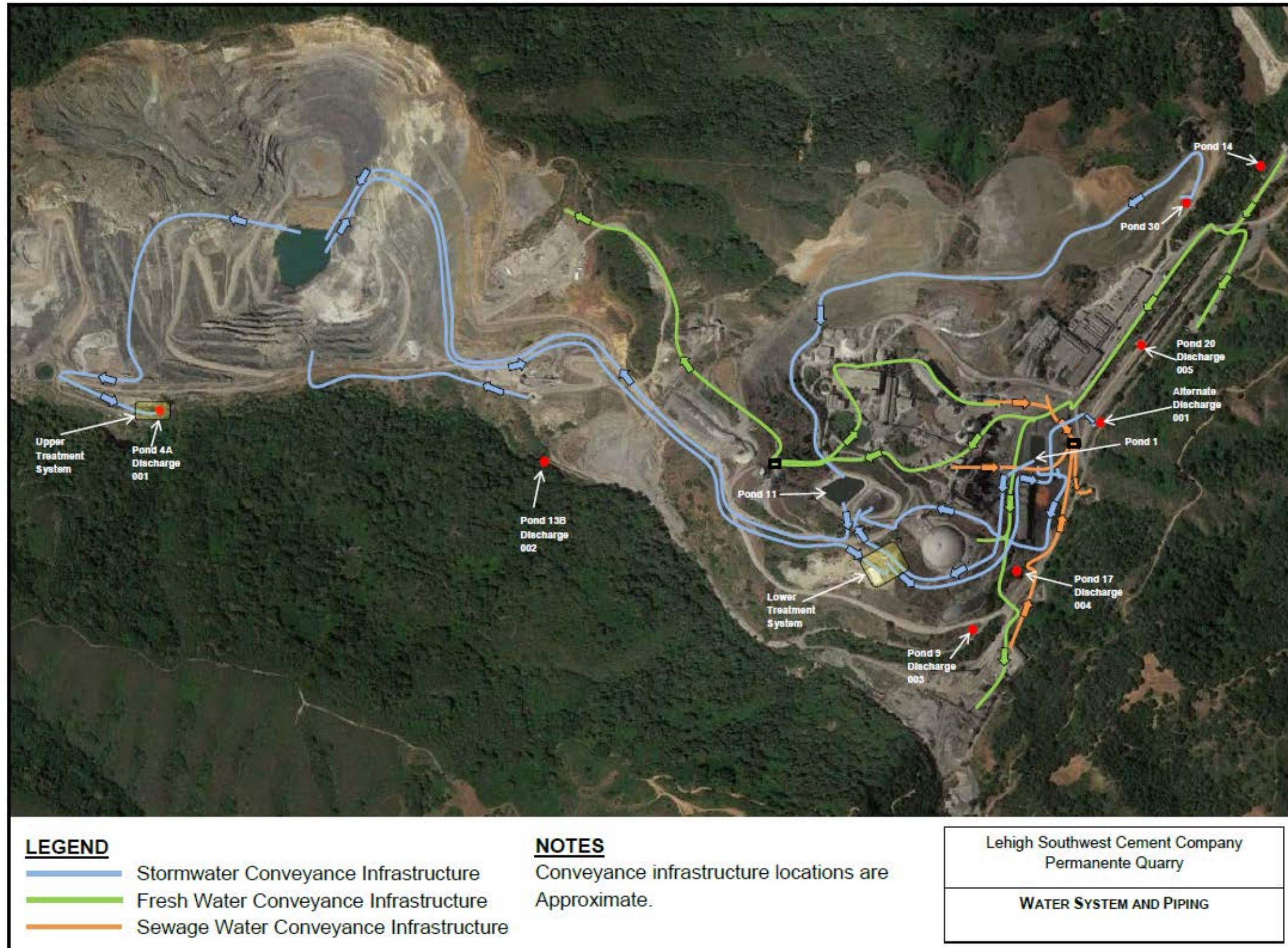
n is the number of samples.

Toxicity Reduction Evaluation (TRE)

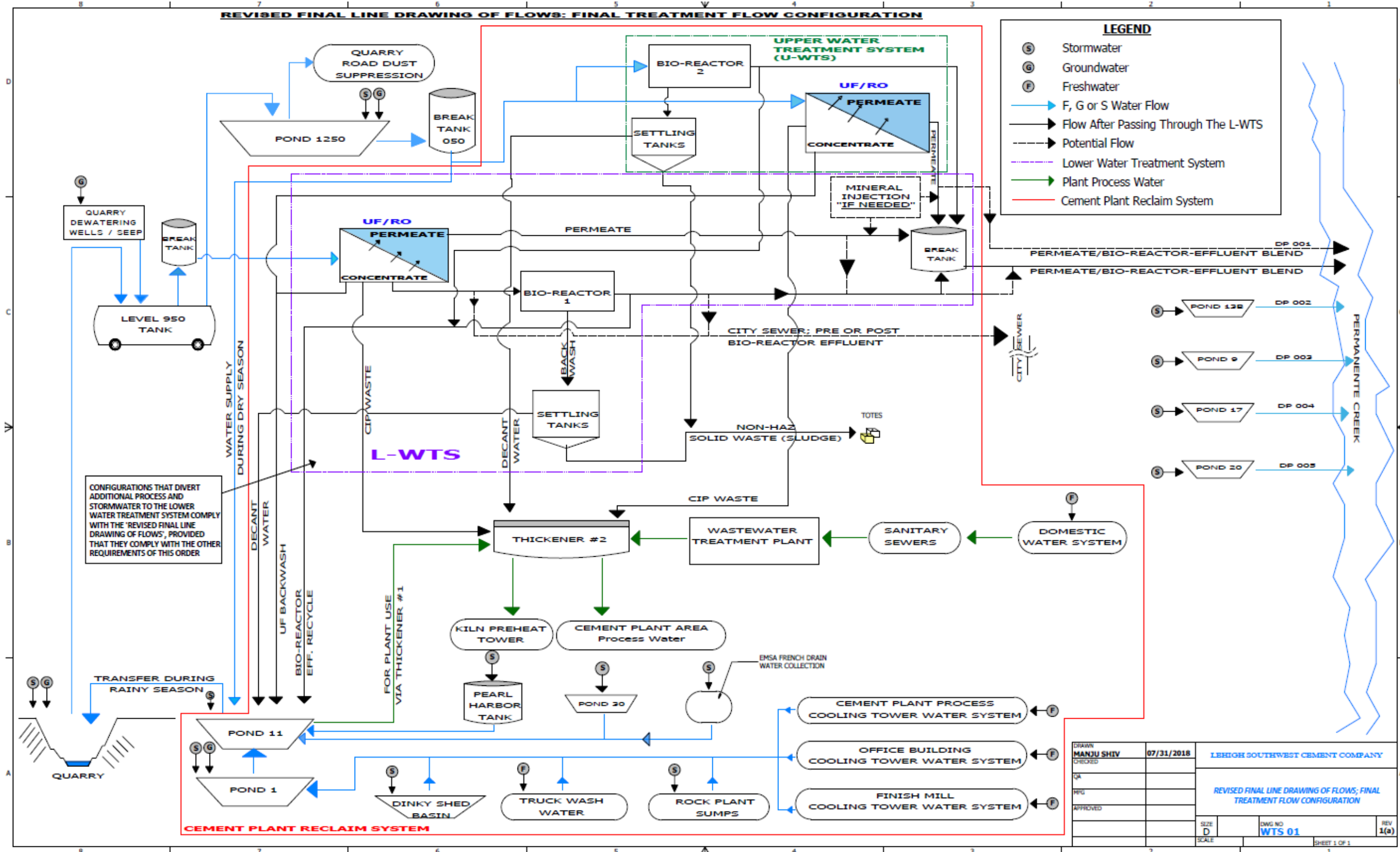
Study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of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

ATTACHMENT B – FACILITY MAPS





ATTACHMENT C – PROCESS FLOW DIAGRAM



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS—PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the 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 includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of state or local law or regulations. (40 C.F.R. § 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, U.S. EPA, or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i); Wat. Code, §§ 13267, 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2); Wat. Code, §§ 13267, 13383);
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

G. Bypass

1. Definitions

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

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

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

- a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of

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

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

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

5. Notice

a. **Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit 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 Provisions—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 ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(1)(i));
 - b. 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ 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 40 C.F.R. 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 ($\mu\text{g/L}$) (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 40 C.F.R. 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)* or *Stormwater Provisions, Monitoring, and Reporting Requirements (Attachment S)*, 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.
- E. Where applicable, monitoring data must be Surface Water Ambient Monitoring Program (SWAMP) comparable. Minimum data quality shall be consistent with the latest version of the *SWAMP Quality Assurance Program Plan (QAPP)*, currently the 2017 version (SWAMP, May 2017), for applicable parameters, including data quality objectives; field and laboratory blanks; field duplicates; laboratory spikes; and clean techniques using the most recent SWAMP Standard Operating Procedures. To achieve SWAMP comparable and acceptable data quality, monitoring under this Order shall be consistent with the “Regulation” intended data use of the SWAMP QAPP (SWAMP, May 2017, page 54). The data shall be collected under this Order’s terms, conditions, and requirements. All laboratories performing analytical work are required to be NELAP or ELAP certified. In addition, methods shall be compliant with 40 C.F.R. 136 where applicable. At a minimum, method minimum quality control samples and acceptance criteria

specified in the following SWAMP Measurement Quality Objectives apply to monitoring conducted under this Order:

- *Conventional Parameters in Fresh and Marine Water* (SWAMP, 2013)
- *Field Measurements in Fresh and Marine Water* (SWAMP, 2013),
- *Inorganic Analytes in Fresh and Marine Water* (SWAMP, 2013), and
- *Chronic Freshwater Toxicity Testing* (SWAMP, August 22, 2018).

SWAMP documents on the above topics can be found at the *SWAMP – Quality Assurance* webpage

(https://www.waterboards.ca.gov/water_issues/programs/swamp/quality_assurance.html) and *SWAMP - Quality Control and Sample Handling Guidelines* webpage

(https://www.waterboards.ca.gov/water_issues/programs/swamp/mqo.html).

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Locations

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description ^[1]
Effluent	EFF-001	A point in the outfall from the Final Treatment System-Upper (FTS-Upper), following treatment and prior to the receiving water, at which all waste tributary to the outfall is present. <i>Latitude 37.31703° Longitude -122.11165°</i>
Effluent	EFF-002	A point in the outfall from Pond 13B (Discharge Point No. 002), prior to the receiving water, at which all waste tributary to the outfall is present. <i>Latitude 37.31674° N Longitude -122.10167°</i>
Effluent	EFF-004	A point in the outfall from Pond 17 (Discharge Point No. 004), prior to the receiving water, at which all waste tributary to the outfall is present. <i>Latitude 37.31431 Longitude -122.10167</i>
Effluent	EFF-005	A point in the outfall from Pond 20 (Discharge Point No. 005), prior to the receiving water, at which all waste tributary to the outfall is present. <i>Latitude 37.32016° Longitude -122.08944°</i>
Effluent	EFF-006	A point in the outfall from Pond 30 (Discharge Point No. 006), prior to the receiving water, where all runoff from the East Materials Storage Area tributary to the outfall is present. <i>Latitude 37.32314° Longitude -122.08553°</i>
Effluent	EFF-007	A point in the outfall from the Final Treatment System-Lower (FTS-Lower), following treatment and prior to the receiving water, at which all waste tributary to the outfall is present. <i>Latitude 37.31778° Longitude -122.08750°</i>
Receiving Water	RSW-001	A point in Permanente Creek within 300 feet upstream of in-stream Pond 13. <i>Latitude 37.31662° Longitude -122.10251° (approximate)</i>
Receiving Water	RSW-001A	A point in Permanente Creek 200 feet or less downstream from the confluence of Wild Violet Creek and Permanente Creek. <i>Latitude 37.3198854° Longitude -122.1305567°</i>
Receiving Water	RSW-002	A point in Permanente Creek within 50 feet downstream of Discharge Point No. 002. <i>Latitude 37.31649° Longitude -122.10161° (approximate)</i>

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description ^[1]
Receiving Water	RSW-004	A point in Permanente Creek within 50 feet downstream of Discharge Point No. 006. <i>Latitude 37.32217° Longitude -122.08436°</i>
Receiving Water	RSW-005	A point in Permanente Creek at Rancho San Antonio Open Space Upper Bridge (South Meadow Trailhead). <i>Latitude 32.32941° Longitude -122.08586°</i> <i>CEDEN Name: 205PER070</i>
Receiving Water	RSW-006	A point in Permanente Creek at Heritage Oaks Park. <i>Latitude 37.35954° Longitude -122.08717°</i> <i>CEDEN Name: 205PER045</i>
Receiving Water	RSW-007	A point in Permanente Creek at Crittenden Middle School. <i>Latitude 37.41247° Longitude -122.08679°</i> <i>CEDEN Name: 205PER020</i>

Footnote:

^[1] Latitude and longitude information is approximate for administrative purposes.

III. EFFLUENT MONITORING REQUIREMENTS

A. The Discharger shall monitor effluent at Monitoring Locations EFF-001 and EFF-007 as follows:

Table E-2. Effluent Monitoring—Monitoring Locations EFF-001 and EFF-007

Parameter	Units	Sample Type ^[1]	Minimum Sampling Frequency
Flow ^[2]	MGD	Continuous	Continuous/Day
Oil and Grease	mg/L	Grab	1/Quarter
pH ^[3]	standard units	Continuous or Grab	Continuous/Day or 1/Day
Settleable Matter	mL/L-hr	Grab	1/Month
Temperature	°C	Grab	1/Month
Total Residual Chlorine	mg/L	Grab	1/Day ^[3]
Total Suspended Solids (TSS)	mg/L	Grab	1/Week
Antimony	µg/L	Grab	1/Month
Chromium (VI)	µg/L	Grab	1/Month
Mercury	µg/L	Grab	1/Month
Nickel	µg/L	Grab	1/Month
Selenium	µg/L	Grab	2/Month
Priority Pollutants ^[6]	µg/L	Grab	1/Year
Total Dissolved Solids (TDS)	mg/L	Grab	1/Week
Acute Toxicity ^[4]	% Survival	C-24	1/Quarter
Chronic Toxicity ^[5]	TUc	C-24	1/Quarter
Standard Observations ^[7]	---	---	1/Day

Unit Abbreviations:

- TUc = chronic toxicity units
- °C = degrees Celsius
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter-hour
- MGD = million gallons per day
- % Survival = percent survival

Sample Type:

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

Sampling Frequency:

Continuous/Day = measured continuously, and recorded and reported at least daily
 1/Day = once per day
 1/Week = once per week
 1/Month = once per month
 2/Month = twice per month
 1/Quarter = once per quarter
 1/Year = once per year

Footnotes:

- [1] Grab samples shall be collected during daylight hours.
- [2] Flow shall be monitored continuously and the following information shall be reported in monthly self-monitoring reports:
- Daily average flow (gpd)
 - Total monthly flow volume (MG)
- Flow shall also be recorded simultaneously with sample collection for antimony, chromium (VI), and nickel.
- [3] pH and total residual chlorine shall be monitored once per day, Monday through Friday, at Monitoring Locations EFF-001 and EFF-007. If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in self-monitoring reports.
- [4] Acute bioassay tests shall be performed in accordance with MRP section V.A.1.
- [5] Chronic bioassay tests shall be performed in accordance with MRP section V.A.2.
- [6] The Discharger shall monitor for the pollutants listed in Attachment G, Table B.
- [7] Standard observations are listed in Attachment G section III.B.2.

B. The Discharger shall monitor effluent at Monitoring Locations EFF-002, EFF-004, EFF-005, and EFF-006 as follows:

Table E-3. Effluent Monitoring—Monitoring Locations EFF-002 and EFF-004 through EFF-006

Parameter	Units	Sample Type ^[1]	Minimum Sampling Frequency
Conductivity	µmhos/cm	Grab	1/Quarter
Flow ^[2]	MG	Continuous	1/Month
Oil and Grease ^[3]	mg/L	Grab	1/Quarter
pH	standard units	Grab	1/Quarter
Settleable Matter	mL/L-hr	Grab	1/Quarter
TSS	mg/L	Grab	1/Quarter
Antimony	µg/L	Grab	1/Quarter
Chromium (VI)	µg/L	Grab	1/Quarter
Mercury	µg/L	Grab	1/Quarter
Nickel	µg/L	Grab	1/Quarter
Selenium	µg/L	Grab	1/Month ^[4]
Visual Observations ^[5]	---	---	Each Occurrence

Unit Abbreviations:

µg/L = micrograms per liter
 µmhos/cm = micromhos per centimeter
 mg/L = milligrams per liter
 mL/L-hr = milliliters per liter-hour
 MG = million gallons

Sample Type:

Continuous = measured continuously
 Grab = grab sample

Sampling Frequency:

- Each Occurrence = each significant stormwater discharge, defined as a continuous discharge of stormwater for a minimum of one hour, or an intermittent discharge of stormwater for a minimum of three hours, in a 12-hour period. Visual observations are only required in daylight during scheduled facility operating hours.
- 1/Month = once per month
 1/Quarter = once per quarter

Footnotes:

- [1] Grab samples shall be collected during daylight hours.
- [2] Flow shall be monitored continuously at all monitoring locations. The following information shall be reported in monthly self-monitoring reports for all monitoring locations:
- Daily average flow (gpd)
 - Total monthly flow volume (MG)
- [3] At Monitoring Location EFF-006, total organic carbon may be substituted for oil and grease.
- [4] Selenium samples shall be collected at EFF-002, EFF-004, EFF-005, and EFF-006 during the first significant stormwater discharge of the wet season (November 1 through April 30) that occurs in daylight during scheduled Facility operating hours.
- [5] Visual observations are listed in Attachment S section II.A.

IV. RECEIVING WATER MONITORING REQUIREMENTS

The Discharger shall monitor receiving water at Monitoring Locations RSW-001, RSW-002, and RSW-004 through RSW-006 according to the following requirements:

- The Discharger shall sample all receiving water monitoring locations on the same day, unless impractical for safety reasons, or due to limited hours of daylight.
- The Discharger shall collect the first receiving water samples of each wet season (November 1 through April 30) after the first storm that causes a “significant stormwater discharge,” defined as follows:
 - a continuous discharge of stormwater for a minimum of one hour, or
 - an intermittent discharge of stormwater for a minimum of three hours in a 12-hour period.

In addition, the Discharger shall monitor as indicated in Tables E-4 through E-6 below.

A. Monitoring Locations RSW-001 and RSW-001A

The Discharger shall monitor receiving water at Monitoring Locations RSW-001 and RSW-001A as follows:

Table E-4. Receiving Water Monitoring - Monitoring Locations RSW-001 and RSW-001A

Parameter	Units	Sample Type	Minimum Sampling Frequency ^[1]
Chloride ^[2]	mg/L	Grab	1/Quarter
Conductivity	µmhos/cm	Grab	^[3]
Dissolved Oxygen	mg/L and % Saturation	Grab	^[3]
Flow	cfs	Monthly	^[3]
Total Hardness as Calcium Carbonate (CaCO ₃) ^[4]	mg/L	Grab	1/Quarter
pH	Standard Units	Grab	^[3]
Settleable Matter	mL/L-hr	Grab	1/Quarter
Sulfate ^[2]	mg/L	Grab	1/Quarter
Temperature	°C	Grab	^[3]

Parameter	Units	Sample Type	Minimum Sampling Frequency ^[1]
TSS	mg/L	Grab	^[3]
Turbidity	NTU	Grab	1/Quarter
Antimony	µg/L	Grab	1/Quarter
Chromium (VI)	µg/L	Grab	1/Quarter
Chronic Toxicity ^[1, 2, 5]	TUc	Grab	1/Quarter
Mercury	µg/L	Grab	1/Quarter
Nickel	µg/L	Grab	1/Quarter
Selenium	µg/L	Grab	^[3]
Priority Pollutants ^[6]	µg/L	Grab	2/Year
TDS	mg/L	Grab	1/Quarter
Trace Metals ^[2, 7]	µg/L	Grab	1/Quarter
Standard Observations ^[8]	---	---	1/Month

Unit Abbreviations:

- TUc = chronic toxicity units
- cfs = cubic feet per second
- °C = degrees Celsius
- µg/L = micrograms per liter
- µmhos/cm = micromhos per centimeter
- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter-hour
- % Saturation = percent saturation

Sampling Frequencies:

- 1/Month = once per month
- 1/Quarter = once per quarter
- 2/Year = twice per year

Footnotes:

- ^[1] Samples shall be collected on the same day as effluent monitoring at Monitoring Locations EFF-001 and EFF-007 at least once per year.
- ^[2] To be monitored at Monitoring Location RSW-001. Monitoring is not required at RSW-001A.
- ^[3] The monitoring frequency at Monitoring Location RSW-001 shall be monthly during the wet season (November 1 through April 30) and twice during the dry season (May 1 through October 31). The monitoring frequency at Monitoring Location RSW-001A shall be quarterly.
- ^[4] Hardness shall be monitored at Monitoring Location RSW-001A. Hardness monitoring is not required at Monitoring Location RSW-001.
- ^[5] Chronic bioassay tests shall be performed in accordance with MRP section V.B.
- ^[6] The Discharger shall monitor for the pollutants listed in Attachment G, Table B
- ^[7] Trace metals are total recoverable antimony, arsenic, cadmium, total chromium, chromium (VI), copper, molybdenum, nickel, thallium, vanadium, and zinc. Trace metals shall be monitored concurrently with chronic toxicity. Quarterly monitoring for antimony, chromium (VI), and nickel with trace metals satisfies the quarterly monitoring requirements set forth here.
- ^[8] Standard observations are listed in Attachment G section III.C.1.

B. Monitoring Location RSW-002

The Discharger shall monitor receiving water at Monitoring Location RSW-002 as follows:

Table E-5. Receiving Water Monitoring—Monitoring Location RSW-002

Parameter	Units	Sample Type	Minimum Sampling Frequency
Dissolved Oxygen	mg/L and % Saturation	Grab	1/Quarter
Flow	cfs	Monthly	1/Quarter
pH	Standard Units	Grab	1/Quarter

Parameter	Units	Sample Type	Minimum Sampling Frequency
Settleable Matter	mL/L-hr	Grab	1/Quarter
Temperature	°C	Grab	1/Quarter
TSS	mg/L	Grab	1/Quarter
Turbidity	NTU	Grab	1/Quarter
Antimony	µg/L	Grab	1/Quarter
Chromium (VI)	µg/L	Grab	1/Quarter
Mercury	µg/L	Grab	1/Quarter
Nickel	µg/L	Grab	1/Quarter
Selenium	µg/L	Grab	1/Quarter
TDS	mg/L	Grab	1/Quarter
Standard Observations ^[1]	---	---	1/Month

Unit Abbreviations:

- cfs = cubic feet per second
- °C = degrees Celsius
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter-hour
- % Saturation = percent saturation

Sampling Frequencies:

- 1/Month = once per month
- 1/Quarter = once per quarter

Footnote:

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

C. Monitoring Locations RSW-004 through RSW-007

The Discharger shall monitor receiving water at Monitoring Locations RSW-004 through RSW-007 (when water is present) as follows:

Table E-6. Receiving Water Monitoring—Monitoring Locations RSW-004 through RSW-007

Parameter	Units	Sample Type	Minimum Sampling Frequency ^[1]
Chloride ^[2]	mg/L	Grab	1/Quarter
Dissolved Oxygen	mg/L and % Saturation	Grab	^[3]
Flow	cfs	Monthly	^[3]
Total Hardness as CaCO ₃ ^[2]	mg/L	Grab	1/Quarter
pH	Standard Units	Grab	^[3]
Settleable Matter	mL/L-hr	Grab	1/Quarter
Sulfate ^[2]	mg/L	Grab	1/Quarter
Temperature	°C	Grab	^[3]
TSS	mg/L	Grab	^[3]
Turbidity	NTU	Grab	1/Quarter
Antimony	µg/L	Grab	^[4]
Chromium (VI)	µg/L	Grab	^[4]
Chronic Toxicity ^[2, 5]	TUc	Grab	1/Quarter
Mercury ^[6]	µg/L	Grab	1/Quarter
Nickel	µg/L	Grab	^[4]
Selenium	µg/L	Grab	^[3]

Parameter	Units	Sample Type	Minimum Sampling Frequency ^[1]
TDS	mg/L	Grab	1/Quarter
Trace Metals ^[2, 7]	µg/L	Grab	1/Quarter
Standard Observations ^[8]	---	---	1/Month

Unit Abbreviations:

- TUc = chronic toxicity units
- cfs = cubic feet per second
- °C = degrees Celsius
- µg/L = micrograms per liter
- mg/L = milligrams per liter
- mL/L-hr = milliliters per liter-hour
- % Saturation = percent saturation

Sampling Frequencies:

- 1/Month = once per month
- 1/Quarter = once per quarter

Footnotes:

- ^[1] At Monitoring Location RSW-004, samples shall be collected on the same day as effluent monitoring at Monitoring Locations EFF-001 and EFF-007 at least once per year, and on the same day as effluent monitoring at Monitoring Locations EFF-004 through EFF-006 at least once per year if possible.
- ^[2] Chloride, total hardness as CaCO₃, sulfate, chronic toxicity, and trace metals shall be monitored at Monitoring Locations RSW-004 and RSW-005. Monitoring is not required at Monitoring Locations RSW-006 and RSW-007.
- ^[3] Monitoring frequency shall be monthly during the wet season (November 1 through April 30) and twice during the dry season.
- ^[4] Antimony, chromium (VI), and nickel shall be monitored concurrently with chronic toxicity at Monitoring Locations RSW-004 and RSW-005. Monitoring is not required at Monitoring Locations RSW-006 and RSW-007.
- ^[5] Chronic bioassay tests shall be performed in accordance with MRP section V.B.
- ^[6] Mercury shall be monitored at Monitoring Location RSW-005. Mercury monitoring is not required at Monitoring Locations RSW-004, RSW-006, and RSW-007.
- ^[7] Trace metals are total recoverable arsenic, cadmium, chromium, copper, molybdenum, thallium, vanadium, and zinc. Trace metals shall be monitored concurrently with chronic toxicity.
- ^[8] Standard observations are listed in Attachment G section III.C.1.

V. TOXICITY TESTING REQUIREMENTS

The Discharger shall monitor acute and chronic toxicity at Monitoring Locations EFF-001 and EFF-007, and chronic toxicity at Monitoring Locations RSW-001, RSW-004, and RSW-005.

A. Monitoring Locations EFF-001 and EFF-007

1. Acute Toxicity

- a. Compliance with the acute toxicity effluent limitations shall be evaluated by measuring survival of test organisms exposed to 96-hour static renewal bioassays.
- b. Test organisms shall be rainbow trout (*Oncorhynchus mykiss*). The Executive Officer may specify a more sensitive organism or, if testing a particular organism proves unworkable, the most sensitive organism available.
- c. All bioassays shall be performed according to the most up-to-date protocols in 40 C.F.R. part 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms*, 5th Edition (EPA-821-R-02-012).

- d. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment. The Discharger may manually adjust the pH of whole effluent acute toxicity samples prior to performing bioassays to minimize ammonia toxicity interference.
- e. Bioassay water monitoring shall include, on a daily basis, residual chlorine, pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If a violation of an acute toxicity limit occurs, the bioassay test shall be repeated with new fish as soon as practical and shall be repeated until a test fish survival rate of 90 percent or greater is observed. If the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new fish and shall continue as soon as practical until an acceptable test is completed (i.e., control fish survival rate is 90 percent or greater).

2. Chronic Toxicity

a. Monitoring Requirements

- i. **Sampling.** The Discharger shall collect 24-hour composite effluent samples at Monitoring Locations EFF-001 and EFF-007 on consecutive or alternating days for critical life stage toxicity testing as indicated below.
- ii. **Test Species.** The test species shall be water flea (*Ceriodaphnia dubia*) 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 after implementation of the final treatment system. If there is no significant change in the nature of the effluent, the Discharger shall conduct a screening test for each discharge point 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.

- iii. **Frequency.** Chronic toxicity monitoring shall be as specified below:

(a) The Discharger shall monitor routinely as indicated in Table E-2.

(b) The Discharger shall accelerate monitoring to monthly after exceeding either a single-sample maximum of 2.0 TUC or a three-sample median of 1.0 TUC. The Executive Officer may specify a different frequency to ensure that accelerated monitoring provides useful information.

- (c) The Discharger shall return to quarterly monitoring if accelerated monitoring if accelerated monitoring does not exceed either trigger in (b), above.
 - (d) If accelerated monitoring confirms consistent toxicity in excess of either trigger in (b), above, the Discharger shall continue accelerated monitoring and initiate toxicity reduction evaluation (TRE) procedures in accordance with section IV.A.2.c, below.
 - (e) The Discharger shall return to routine monitoring after implementing appropriate elements of the TRE, and either the toxicity drops below the triggers in (b), above, or, based on the TRE results, the Executive Officer determines that accelerated monitoring would no longer provide useful information.
 - (f) Monitoring conducted pursuant to a TRE satisfies the requirements for routine and accelerated monitoring while the TRE is underway.
- iv. Methodology.** Sample collection, handling, and preservation shall be in accordance with U.S. EPA protocols. In addition, bioassays shall be conducted in compliance with *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 and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger's request with justification, provided that the revised protocols are equally protective. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the chronic toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment.
- v. Dilution Series.** The Discharger shall conduct tests at 100%, 75%, 50%, 25%, 12.5%, and 0%. The "%" represents percent effluent as discharged. Test sample pH may be controlled to the level of the effluent sample as received by the laboratory.

b. Reporting Requirements

- i. The Discharger shall provide toxicity test results for the current reporting period in the self-monitoring report and shall include the following, at a minimum, for each test:
 - (a) Sample date
 - (b) Test initiation date
 - (c) Test species
 - (d) End point values for each dilution (e.g., number of young, growth rate, percent survival)
 - (e) No Observable Effect Level (NOEL) values in percent effluent. The NOEL shall equal the IC25 or EC25 (see MRP Appendix E-1). If the IC25 or EC25 cannot be

statistically determined, the NOEL shall equal to the No Observable Effect Concentration (NOEC) derived using hypothesis testing. The NOEC is the maximum percent effluent concentration that causes no observable effect on test organisms based on a critical life stage toxicity test.

- (f) IC15, IC25, IC40, and IC50 values (or EC15, EC25, EC40, and EC50) as percent effluent
- (g) TUc values (100/NOEL) and upper and lower confidence intervals.
- (h) Mean percent mortality (\pm s.d.) after 96 hours in 100% effluent (if applicable)
- (i) IC50 or EC50 values for reference toxicant tests
- (j) Available water quality measurements for each test (e.g., pH, residual chlorine, dissolved oxygen, temperature, conductivity, hardness, salinity, and ammonia)

c. Toxicity Reduction Evaluation (TRE)

- i. 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.
- ii. Within 30 days of exceeding either chronic toxicity trigger in section IV.A.2.a.iii.(b), 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.
- iii. Within 30 days of completing an accelerated monitoring test observed to exceed either chronic toxicity trigger in section IV.A.2.a.iii.(b), above, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all comments from the Executive Officer.
- iv. 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:
 - (a) Tier 1 shall consist of basic data collection (routine and accelerated monitoring).
 - (b) Tier 2 shall consist of evaluation of treatment process optimization, including operational practices and in-plant process chemicals.
 - (c) Tier 3 shall consist of a toxicity identification evaluation (TIE).
 - (d) Tier 4 shall consist of evaluation of options for additional effluent treatment processes.
 - (e) Tier 5 shall consist of evaluation of options for modifications of in-plant treatment processes.
 - (f) Tier 6 shall consist of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.

- v. The Discharger may end the TRE at any stage if monitoring finds there is no longer consistent toxicity (i.e., chronic toxicity drops below both triggers in section IV.A.2.a.iii.(b), above).
- vi. 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.
- vii. 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 triggers in section IV.A.2.a.iii.(b), above.
- viii. 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.

B. Monitoring Locations RSW-001, RSW-004, and RSW-005

1. Monitoring Requirements

- a. **Sampling.** The Discharger shall collect samples for chronic toxicity testing as indicated in Tables E-4 and E-6.
- b. **Test Species.** The test species at Monitoring Locations RSW-001 and RSW-004 shall be water flea (*Ceriodaphnia dubia*) and algae (*Selenastrum capricornutum*). The test species at Monitoring Location RSW-005 shall be water flea, algae, and fathead minnow (*Pimephales promelas*).
- c. **Methodology.** The Discharger shall use single-concentration toxicity tests (i.e., 100% ambient water collected on the sampling day as a single grab). Once a toxicity test has concluded, the Discharger shall evaluate organism performance (control vs. ambient sample) using Surface Water Ambient Monitoring Program's (SWAMP's) standard statistical protocol, which involves the examination of significant differences in test organism performance by a one-tailed t-test ($\alpha = 0.05$) or Test for Significant Toxicity (TST), and a categorization of the performance of organisms exposed to the ambient sample as either greater or less than 80 percent of the control performance (*SWAMP Toxicity Work Group Recommendation for Evaluating Toxicity Data*, SWAMP, 2014; *Introduction to Toxicity Test Methodology and Applications*, SWAMP, 2016; *Final Quality Assurance Program Plan*, SWAMP, 2017). For purposes of receiving water testing, a sample is considered toxic only when there is a significant t-test or TST result and performance below the 80 percent threshold of the control is observed.

2. Reporting Requirements

- a. The Discharger shall provide toxicity test results for the current reporting period in the self-monitoring report and shall include the following, at a minimum, for each test:
 - i. Sample date
 - ii. Test initiation date
 - iii. Test species
 - iv. End point values for each dilution (e.g., number of young, growth rate, percent survival)
 - v. No Observable Effect Concentration (NOEC) values, derived using hypothesis testing, in percent effluent. 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. TUC values (100/NOEC)
 - vii. Mean percent mortality (\pm s.d.) after 96 hours in 100% effluent (if applicable)
 - viii. IC50 or EC50 values for reference toxicant tests
 - ix. Available water quality measurements for each test (e.g., pH, residual chlorine, dissolved oxygen, temperature, conductivity, hardness, salinity, and ammonia)

3. Accelerated Monitoring and Toxicity Reduction Evaluation (TRE)

If toxicity is observed at Monitoring Locations RSW-001 or RSW-004 and the Discharger is not currently conducting a TRE for discharges from Discharge Point Nos. 001 or 007, the Discharger shall accelerate to monthly sampling and testing with the affected species at monitoring locations where toxicity was observed. The Discharger shall undertake this accelerated monitoring for at least two monitoring events. The Discharger may return to routine sampling if toxicity is not observed during the two additional monitoring events. If toxicity is observed during either of the two additional monitoring events, the Discharger shall conduct a TIE.

If toxicity is observed at Monitoring Location RSW-005 and the Discharger is not currently conducting a TRE for discharges from Discharge Point Nos. 001 or 007, the Discharger shall assess whether the toxicity could be due to stormwater discharged from Discharge Point Nos. 002, 004, 005, or 006. The Discharger may also evaluate other possible sources, such as contaminated runoff entering the creek downstream of the Facility, that may be causing the toxicity.

VI. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all standard provisions (Attachments D, G, and S) 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 (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 to 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 sections V.C.1.f of Attachment G. See also Provision VI.C.2 (Effluent Characterization Study and Report) of this Order and Attachment S to this Order as modified by MRP section VII.A for requirements to submit reports with the annual SMR.
 - c. **Specifications for Submitting SMRs to CIWQS** — The Discharger shall submit analytical results and other information using one of the following methods:

Table E-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 ^[1]	Discharger may use this method for all results or keep records
Cyanide Arsenic Cadmium Chromium Copper Lead Mercury Nickel Selenium Silver Zinc Dioxins and Furans (by U.S. EPA Method 1613)	Required for all results ^[2]	
Antimony Beryllium Thallium	Not required (unless identified in influent, effluent, or	Discharger may use this method and submit results with application for permit

Parameter	Method of Reporting	
	EDF/CDF data upload or manual entry	Attached File
Other Pollutants (by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625)	receiving water monitoring tables), but encouraged ^[1]	reissuance, unless data are submitted by CDF/EDF upload
Analytical Method	Not required (Discharger may select "data unavailable") ^[1]	
Collection Time Analysis Time	Not required (Discharger may select "0:00") ^[1]	

Footnotes:

- ^[1] The Discharger shall continue to monitor at the minimum frequency specified in this MRP, keep records of the measurements, and make the records available upon request.
- ^[2] These parameters require EDF/CDF data upload or manual entry regardless of whether monitoring is required by this MRP or other provisions of this Order (except for biosolids, sludge, or ash provisions).

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

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

Table E-8. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
Continuous	Permit effective date	All times
1/Day	Permit effective date	Midnight through 11:59 p.m. or any 24-hour period that reasonably represents a calendar day for purposes of sampling
1/Week	Sunday following permit effective date or on permit effective date if on Sunday	Sunday through Saturday
1/Month	First day of calendar month following or on Order effective date	First day of calendar month through last day of calendar month
2/Month	First day of calendar month following permit effective date or on permit effective date if on first day of month	First day of calendar month through last day of calendar month
1/Quarter	Closest January 1, April 1, July 1, or October 1 before or after Order effective date ^[1]	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 ^[1]	January 1 through June 30 July 1 through December 31
1/Year	Closest January 1 before or after Order effective date ^[1]	January 1 through December 31

Footnote:

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

4. 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.

5. Compliance Determination. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and in the Fact Sheet and Attachments A, D, and G. For purposes of reporting and administrative enforcement by the Regional Water Board and State Water Board, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

C. Discharge Monitoring Reports (DMRs)

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.

**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 IC₂₅ or EC₂₅. If the IC₂₅ or EC₂₅ 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. EC₂₅ 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 IC₂₅ is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as U.S. EPA's Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

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

2. Two stages:
 - a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Appendix E-2 (attached).
 - b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results.
 3. Appropriate controls.
 4. Concurrent reference toxicant tests.
 5. Dilution series of 100%, 50%, 25%, 12.5%, 6.25%, and 0 %, where “%” is percent effluent as discharged, or as otherwise approved the Executive Officer if different dilution ratios are needed to reflect discharge conditions.
- C. The Discharger shall submit a screening phase proposal. The proposal shall address each of the elements listed above. If within 30 days, the Executive Officer does not comment, the Discharger shall commence with screening phase monitoring.

**APPENDIX E-2
 SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS**

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

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	<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:

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

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

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

- ^[1] (a) Marine refers to receiving water salinities greater than 10 parts per thousand (ppt) at least 95 percent of the time during a normal water year.
 (b) Freshwater refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.
 (c) Estuarine refers to receiving water salinities that fall between those of marine and freshwater, as described above.

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

ATTACHMENT F - FACT SHEET

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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 this Order, the Regional Water Board incorporates this Fact Sheet as findings supporting the issuance of this Order.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility:

Table F-1. Facility Information

WDID	2 43I006267
CIWQS Place ID	273205
Discharger	Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc.
Facility Name	Permanente Plant
Facility Address	24001 Stevens Creek Blvd. Cupertino, CA 95014
	Santa Clara County
Facility Contact, Title, Phone	Tressa Jackson, Area Environmental Manager, Lehigh Southwest Cement Company, 408-996-4233
Authorized Person to Sign and Submit Reports	Keith Krugh, Plant Manager, Lehigh Southwest Cement Company, 408-996-4231
Mailing Address	Lehigh Southwest Cement Company 24001 Stevens Creek Blvd. Cupertino, CA 95014
Billing Address	Same as Mailing Address
Facility Type	Industrial, SIC Codes 3241 (Hydraulic cement production), 1422 (Crushed and broken limestone)
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	N
Reclamation Requirements	Order No. 94-038
Permitted Flow	138,000 gallons per hour (gph) (Discharge Point Nos. 001 and 007, combined)
Design Flow	167,000 gph (Discharge Point Nos. 001 and 007, combined)
Watershed	Santa Clara Basin
Receiving Water	Permanente Creek
Receiving Water Type	Inland Surface Water (Fresh)

- A. Lehigh Southwest Cement Company operates the Permanente Plant (Facility), a limestone quarry and cement production facility that also produces construction aggregate. Hanson Permanente Cement, Inc., owns the property on which the Facility is located at 24001 Stevens Creek Road. Together, Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc., are hereinafter referred to as the “Discharger.” Site operations commenced in 1939.

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 Facility discharges wastewater to Permanente Creek, a water of the United States tributary to San Francisco Bay within the Santa Clara Basin watershed. The Facility also discharges stormwater runoff associated with industrial activities to Permanente Creek. Attachment B provides a map of the Facility and area around the Facility. Attachment C provides a site flow and treatment process schematic for the Facility.

The Discharger is regulated pursuant to National Pollutant Discharge Elimination System (NPDES) Permit No. CA0030210. The Discharger was previously subject to Order No. R2-2014-0010, which the Regional Water Board amended through Order No. R2-2017-0030 (together, the 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 August 1, 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 federal NPDES regulation requirements for continuation of expired permits.

- C.** The Discharger is also subject to Regional Water Board Order No. 94-038 for treatment and onsite discharge and reuse (or reclamation) of treated sanitary wastewaters. This Order does not affect Order No. 94-038.
- 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

The Discharger mines and processes minerals at the Facility and produces Portland cement and construction aggregate from limestone and other stone quarried onsite. It produces several types of wastewater, including quarry dewatering water, truck and equipment wash water, aggregate crushing and washing water, cement manufacture process wastewater, and industrial stormwater. This Order addresses all wastewater (including industrial stormwater) associated with quarrying, crushed rock mining and processing, and cement manufacture at the Facility.

The Facility consists of an active mining area, a quarry pit, a cement manufacturing plant, several crushers and mills, a pre-calcining tower, and roads and a conveyor system for transporting mined raw materials. Wastewater and industrial stormwater are collected and managed through a system of berms, ditches, pipes, and ponds. The ponds discharge to Permanente Creek at several locations. Runoff also occurs as sheet flow from undisturbed areas.

A. Discharge Points and Receiving Waters

The Facility discharges to Permanente Creek, a freshwater stream tributary to San Francisco Bay. All the Facility’s discharges are shallow water discharges. The discharge points are located in the Santa Clara Basin watershed, as indicated below:

Table F-2. Outfall Locations

Discharge Point	Latitude (North)	Longitude (West)	Receiving Water
001	37.31713°	-122.11165°	Permanente Creek
002	37.31674°	-122.10167°	Permanente Creek
004	37.31431°	-122.08893°	Permanente Creek
005	37.31899°	-122.08716°	Permanente Creek
006	37.32241°	-122.08551°	Permanente Creek
007	37.31778°	-122.08750°	Permanente Creek

B. Existing Wastewater Treatment and Controls

The Facility’s industrial wastewater treatment system, called the Final Treatment System (FTS), consists of two treatment trains, the Upper Treatment System (FTS-Upper), located near Pond 4A at the quarry pit crest, and the Lower Treatment System (FTS-Lower), located near Pond 11 and the Cement Plant (see Attachment B, Water System and Piping figure). Each treatment train includes ultrafiltration/reverse osmosis (UF/RO) units to remove dissolved solids and bioreactors to remove selenium and other metals. The bioreactors are a proprietary anaerobic attached growth system with a final filtration step. The FTS-Upper treatment capacity is 66,000 gallons per hour (gph); the FTS-Lower treatment capacity is 72,000 gph. The FTS-Upper discharges at Discharge Point No. 001; the FTS-Lower discharges at Discharge Point No. 007.

During normal operations, the Discharger pumps quarry dewatering water and stormwater collected in the quarry pit either to Pond 1250, then to the FTS-Upper; or to Tank 950, then to the FTS-Lower (see Attachment C). The Discharger may also use water from Pond 1250 for dust suppression on quarry roads. The Discharger directs process wastewater from the Cement Plant, Rock Plant, and Truck Wash, and stormwater from the Dinky Shed basin and Cement Plant area, to Pond 1, then to Pond 11. (The Dinky Shed basin collects stormwater from the Rock Plant access road and surrounding areas, along with stormwater from nearby roads.) The Discharger sends industrial stormwater from the Pond 30 area and Eastern Materials Storage Area (EMSA), subsurface flow intercepted by the EMSA French drain, bioreactor and UF/RO backwash water, and UF/RO concentrate directly to Pond 11. The Discharger either reclaims water collected in Pond 11 for use as process water or sends it to the quarry pit for treatment at either the FTS-Upper or FTS-Lower. During the rainy season, the Discharger may use the quarry pit as equalization storage to store water for later treatment and discharge.

The Discharger discharges stormwater that does not require treatment at the FTS to Permanente Creek at four other locations: Discharge Point Nos. 002 (from Pond 13B), 004 (from Pond 17), 005 (from Pond 20), and, as necessary, 006 (from Pond 30). Stormwater flows to these discharge points from the areas listed in Table 1 and are treated using stormwater Best Management Practices (BMPs). The Discharger has eliminated all process and industrial stormwater discharges to Pond 9; therefore, this Order no longer authorizes discharges from former Discharge Point No. 003 (Pond 9).

C. Summary of Existing Requirements and Monitoring Data

The table below presents the previous order’s effluent limitations and representative monitoring data from the previous order term. There were no discharges from Discharge Point Nos. 002 or 007, so those discharge points are omitted from the table. The table includes metals data for Discharge Point Nos. 003 through 006, although those discharge points did not have effluent limits for metals.

Table F-3. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitations				Monitoring Data (05/14–07/18)
		Monthly Average	Daily Maximum	Instantaneous Minimum	Instantaneous Maximum	Highest Daily Discharge
<i>Discharge Point No. 001 (Pond 4A)</i>						
Total Suspended Solids (TSS)	mg/L	---	---	---	---	270
	lbs/d	---	58	---	---	289
Oil and Grease	mg/L	10	20	---	---	ND (<1.7)
pH	s.u.	---	---	6.5	8.5	6.2 – 9.7
Total Residual Chlorine	mg/L	---	---	0.0	---	0.14
Settleable Matter	mL/L-hr	0.10	---	---	---	3.0
Chromium (VI)	µg/L	8.0	16	---	---	47
Mercury	µg/L	0.020	0.041	---	---	0.036
Nickel	µg/L	82	160	---	---	410
Selenium	µg/L	4.1	8.2	---	---	61
Thallium	µg/L	1.7	3.4	---	---	0.42
Total Dissolved Solids (TDS)	mg/L	1,000	2,000	---	---	1,400
Turbidity	NTU	5.0	10	---	---	137
Acute Toxicity	% Survival	[1]				100
Chronic Toxicity	TUc	[2]				61
<i>Discharge Point No. 003 (Pond 9)</i>						
TSS	mg/L	---	50	---	---	110
Oil and Grease	mg/L	10	20	---	---	ND (<1.7)
pH	s.u.	---	---	6.5	8.5	6.5 – 8.5
Settleable Matter	mL/L-hr	0.10	0.20	---	---	0.30
Chromium (VI)	µg/L	---	---	---	---	7.7
Mercury	µg/L	---	---	---	---	0.085
Nickel	µg/L	---	---	---	---	22
Selenium	µg/L	---	---	---	---	20
Thallium	µg/L	---	---	---	---	0.36
Turbidity	NTU	---	40	---	---	69
<i>Discharge Point No. 004 (Pond 17)</i>						
TSS	mg/L	---	50	---	---	1,700
Oil and Grease	mg/L	10	20	---	---	ND (<1.7)
pH	s.u.	---	---	6.5	8.5	7.1 – 8.8
Settleable Matter	mL/L-hr	0.10	0.20	---	---	0.90
Chromium (VI)	µg/L	---	---	---	---	27

Parameter	Units	Effluent Limitations				Monitoring Data (05/14–07/18)
		Monthly Average	Daily Maximum	Instantaneous Minimum	Instantaneous Maximum	Highest Daily Discharge
Mercury	µg/L	---	---	---	---	0.056
Nickel	µg/L	---	---	---	---	41
Selenium	µg/L	---	---	---	---	110
Thallium	µg/L	---	---	---	---	0.25
Turbidity	NTU	---	40	---	---	788
Discharge Point No. 005 (Pond 20)						
TSS	mg/L	---	50	---	---	11,000
Oil and Grease	mg/L	10	20	---	---	ND (<1.7)
pH	s.u.	---	---	6.5	8.5	6.1 – 10
Settleable Matter	mL/L-hr	0.10	0.20	---	---	80
Chromium (VI)	µg/L	---	---	---	---	150
Mercury	µg/L	---	---	---	---	5.2
Nickel	µg/L	---	---	---	---	1,200
Selenium	µg/L	---	---	---	---	57
Thallium	µg/L	---	---	---	---	5.2
Turbidity	NTU	---	40	---	---	2,355
Discharge Point No. 006 (Pond 30)						
TSS	mg/L	---	50	---	---	7,100
Oil and Grease	mg/L	---	---	---	---	ND (<1.7)
pH	s.u.	---	---	6.5	8.5	7.6 – 8.5
Settleable Matter	mL/L-hr	0.10	0.20	---	---	80
Chromium (VI)	µg/L	---	---	---	---	3.4
Mercury	µg/L	---	---	---	---	2.5
Nickel	µg/L	---	---	---	---	890
Selenium	µg/L	---	---	---	---	81
Thallium	µg/L	---	---	---	---	3.2
Turbidity	NTU	---	---	---	---	38

Unit Abbreviations:

TUc = chronic toxicity units
 mg/L = milligrams per liter
 µg/L = micrograms per liter
 mL/L-hr = milliliters per liter-hour
 NTU = nephelometric turbidity units
 ND = non-detected
 % Survival = percent survival
 s.u. = standard units

Footnotes:

- [1] The previous order imposed acute toxicity limits of a minimum single-sample survival percentage of 70 percent and a minimum three-sample median percent survival of 90 percent.
- [2] The previous order did not impose chronic toxicity effluent limits. It did impose accelerated chronic toxicity monitoring triggers of a single-sample maximum of 2.0 TUc and a three-sample median of 1.0 TUc.

D. Compliance Summary

The Discharger's compliance record is summarized below:

1. **Cease and Desist Order.** Cease and Desist Order R2-2014-002, as amended through Order No. R2-2017-0031, required tasks and a schedule for the Discharger to comply with the previous order by October 1, 2017. The tasks were corrective actions for foreseeable future violations and included the following:
 - Pilot-testing an Interim Treatment System (ITS) to treat Facility process wastewater, quarry water, and industrial wastewater discharges as necessary to meet the previous order's effluent limits, particularly for selenium, at Discharge Point No. 001.
 - Operating the ITS for up to 400 gallons per minute.
 - Constructing a Final Treatment System (FTS), based on the ITS, to treat all Facility discharges as necessary to comply with the previous order's effluent limits.
 - Reconfiguring Facility flows to send all water needing treatment to the FTS and Discharge Point No. 001, and to discharge only stormwater not needing further treatment at Discharge Point Nos. 002 through 006.
 - Installing and operating the FTS.

The Cease and Desist Order also imposed interim limits while the Discharger completed these tasks.

2. Administrative Civil Liabilities

- a. **Administrative Civil Liability (ACL) No. R2-2017-1001.** On January 12, 2017, the Regional Water Board issued ACL No. R2-2017-1001, fining the Discharger \$465,500 for numerous violations of the previous order's effluent limits and Cease and Desist Order interim limits that occurred in 2014 and 2015. The violations involved total suspended solids (TSS), settleable matter, turbidity, pH, and total residual chlorine discharged at Discharge Point Nos. 001, 003, 005, and 006.
- b. **ACL No. R2-2017-1023.** On August 14, 2017, the Regional Water Board issued ACL No. R2-2017-1023, fining the Discharger \$375,000 for numerous violations of the previous order's effluent limits and Cease and Desist Order interim limits that occurred in 2016. The violations involved selenium, total dissolved solids (TDS), nickel, settleable matter, turbidity, and pH discharged at Discharge Point Nos. 001 and 005.
- c. **ACL No. R2-2018-1007.** On August 27, 2018, the Regional Water Board issued ACL No. R2-2018-1007, fining the Discharger \$301,000 for violations that occurred from January 1 through October 1, 2017 (the date the Cease and Desist Order required full compliance with the previous order). The violations involved the following:
 - numerous violations of the previous order's effluent limits and Cease and Desist Order interim limits for selenium, TDS, nickel, TSS, settleable matter, turbidity, and pH discharged at Discharge Point Nos. 001, 004, and 005;
 - 21 violations of Cease and Desist Order interim limits on selenium, nickel, TDS, and turbidity in ITS effluent; and

- 15 unauthorized discharges from Pond 1 to Permanente Creek (violations of the previous order’s discharge prohibitions).

3. Compliance Since October 1, 2017. The Discharger’s performance improved substantially after completing the Cease and Desist Order tasks. Since October 1, 2017, the Discharger violated the previous order effluent limits just three times:

Table F-4. Numeric Effluent Limitation Violations Since October 1, 2017

Violation Date	Discharge Point No.	Parameter	Unit	Effluent Limitation	Reported Concentration
11/16/2017	005	TSS, Maximum Daily	mg/L	50	140
12/21/2017	001	Selenium, Maximum Daily	µg/L	8.2	15
03/22/2018	004	Turbidity, Maximum Daily	NTU	50	52

The Discharger also discharged 2,250 gallons of untreated truck wash water from Discharge Point No. 005 on May 8, 2018. This unauthorized discharge was caused by leaking fittings on a pipeline that was to convey truck wash water to Pond 1 and then to the FTS. The fittings had been loosened during pipeline maintenance and not re-tightened. The Discharger noticed the leaking fittings about one hour after completing the maintenance, tightened the fittings, and stopped the leak.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

A. Legal Authorities. This Order serves as WDRs pursuant to Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA, and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as an NPDES permit authorizing the Discharger to discharge into waters of the United States at the discharge locations described in Table 2 subject to the WDRs in this Order.

B. California Environmental Quality Act. Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (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 San Francisco Bay Regional Water Board (Regional Water Board) adopted *The Water Quality Control Plan for the San Francisco Bay Basin* (hereinafter Basin Plan) that 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, State Water Board Resolution 88-63 established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Permanente Creek does not meet any of the exceptions under State Water

Board Resolution 88-63. Therefore, the municipal or domestic supply beneficial use applies. Beneficial uses applicable to Permanente Creek are as follows:

Table F-5. Beneficial Uses

Discharge Points	Receiving Water	Beneficial Uses
001	Permanente Creek	Groundwater recharge (GWR)
002		Cold freshwater habitat (COLD)
004		Warm freshwater habitat (WARM)
005		Preservation of rare, threatened or endangered species (RARE)
006		Fish spawning (SPWN)
007		Wildlife habitat (WILD)
		Contact water recreation (REC-1)
	Non-contact water recreation (REC-2)	
	Municipal and domestic water supply (MUN)	

2. **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.
3. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria 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.
4. **Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 requires that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy through State Water Board Resolution 68-16, which is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16. (See Fact Sheet § IV.D.1 Antidegradation.)
5. **Domestic Water Quality.** In accordance with Water Code section 106.3, it is the policy of the State of California is that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order complies with that policy by requiring discharges to meet maximum contaminant

levels (MCLs) designed to protect human health and ensure that water is safe for domestic use.

6. **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 § IV.D.2 Anti-Backsliding.)
7. **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 beneficial uses, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all applicable Endangered Species Act requirements.
8. **Mercury Provisions.** On May 2, 2017, the State Water Board adopted Resolution 2017-0027, which approved *Final Part 2 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California—Tribal and Subsistence Fishing Beneficial Uses and Mercury Provisions* (Mercury Provisions), thereby establishing water quality objectives for mercury in most State waters. The Mercury Provisions (section III.D.3) supersede the freshwater mercury water quality objectives in Basin Plan Table 3-4. Requirements of this Order implement the Mercury Provisions.

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 necessary, the Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for waters on the 303(d) list to establish wasteload allocations for point sources and load allocations for nonpoint sources and thus achieve the water quality standards. Permanente Creek is listed as impaired due to selenium, diazinon, toxicity, and trash:

1. **Selenium.** Available information suggests that Facility discharges are the predominant source of selenium in Permanente Creek. The Regional Water Board intends to resolve the selenium impairment by adopting this Order, which contains effluent limitations and requires implementation of BMPs sufficient to achieve water quality standards in Permanente Creek. This Order also contains monitoring and reporting requirements to allow the Regional Water Board to evaluate progress toward achieving the water quality standards and eliminating the impairment.
2. **Diazinon and Toxicity.** On May 16, 2007, U.S. EPA approved a TMDL for diazinon (a pesticide) and pesticide-related toxicity in urban creeks as set forth in Basin Plan section 7.1.1. The TMDL allocates the entire wasteload allocations for diazinon and pesticide-related toxicity to municipal stormwater. Available data do not indicate that Facility discharges contain diazinon or pesticide-related toxicity. As explained in Fact Sheet section IV.C.3.f, Facility discharges do not pose a reasonable potential to cause or contribute to exceedance of the Basin Plan's toxicity objective. Nevertheless, this Order requires toxicity

monitoring to ensure that any potential sources of toxicity other than pesticides are identified and resolved.

3. **Trash.** Facility discharges are not a source of trash to Permanente Creek. The Regional Water Board addressed the trash impairment when it reissued the Municipal Separate Storm Sewer System NPDES permit (NPDES Permit No. CAS612008).

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

A. Discharge Prohibitions

1. Prohibitions in this Order

- a. **Discharge Prohibition III.A** (No discharge other than as described in this Order): This prohibition is based on 40 C.F.R. section 122.21(a), duty to apply, and Water Code section 13260, which requires filing an application and Report of Waste Discharge before discharges can occur. Discharges not described in the permit application and Report of Waste Discharge, and subsequently in this Order, are prohibited.
- b. **Discharge Prohibition III.B** (No flow above 167,000 gph at Discharge Point Nos. 001 and 007 combined): This prohibition ensures that wastewater flows do not exceed the design capacity of the wastewater treatment system.
- c. **Discharge Prohibition III.C** (No discharge other than that due to precipitation at Discharge Point Nos. 002 and 004 through 006): This prohibition ensures that these discharge points only discharge stormwater.
- d. **Discharge Prohibition III.D** (No discharge of kiln exhaust cooling water): This prohibition ensures that elevated temperature wastewater will not be discharged to Permanente Creek. During normal plant operations all kiln exhaust cooling water is evaporated. Because this Order includes this prohibition, an effluent temperature limitation is unnecessary.

2. **Exception to Shallow Water Discharge Prohibition.** Basin Plan Table 4-1, Discharge Prohibition 1, prohibits discharges not receiving a minimum of 10:1 initial dilution. Basin Plan section 4.2 provides for exceptions under certain circumstances:

- An inordinate burden would be placed on the Discharger relative to the beneficial uses protected, and an equivalent level of environmental protection can be achieved by alternate means;
- A discharge is approved as part of a reclamation project;

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

The Basin Plan further states:

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

This Order grants an exception for discharges to Permanente Creek for the following reasons:

- a. An inordinate burden would be placed on the Discharger relative to the beneficial uses protected to require the discharge to achieve 10:1 dilution in Permanente Creek. Upstream flow in Permanente Creek is insufficient to achieve 10:1 dilution consistently throughout the year, and constructing and operating a deepwater outfall to provide consistent dilution (e.g., in San Francisco Bay) would require construction and operation of a discharge pipe several miles long.
- b. For treated wastewater discharges from Discharge Point Nos. 001 and 007, the Discharger will provide an equivalent level of environmental protection through advanced treatment to minimize pollutants and comply with this Order's stringent effluent limitations. Furthermore, the Discharger will be able to contain untreated or partially treated wastewater in the quarry pit in case of possible treatment upset, allowing it to be re-routed for treatment prior to discharge.
- c. For stormwater discharges from Discharge Point Nos. 002 and 004 through 006, Provision VI.A.3 of this Order and Attachment S require the Discharger to provide an equivalent level of environmental protection by developing and implementing BMPs reflecting best industry practice considering technological availability and economic practicability to comply with effluent limits and minimize pollutants in stormwater.

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 this Order authorizes must meet minimum federal technology-based requirements based on U.S. EPA-promulgated Effluent Limitations Guidelines for the Cement Manufacturing Point Source Category at 40 C.F.R. section 411 and the Mining Point Source Category at 40 C.F.R. section 436. The effluent limitations established by these codes and their applicability to the discharges permitted by this Order are summarized below and in Table F-5:

- Regulations at 40 C.F.R. section 411 subpart A (Nonleaching Subcategory) apply to process wastewater from nonleaching cement manufacturing directed to Discharge Point Nos. 001 and 007.
- Regulations at 40 C.F.R. section 411 subpart C (Materials Storage Piles Runoff Subcategory) apply to Discharge Point Nos. 001, 002, and 004 through 007 because these

discharges contain runoff from raw materials, intermediate products, finished products, or waste materials.

- Regulations at 40 C.F.R. section 436 subparts B (Crushed Stone Subcategory) and C (Construction Sand and Gravel Subcategory) apply to Discharge Point Nos. 001 and 007 because these discharges contain mine dewatering water or wastewater associated with mining and processing crushed stone, such as the limestone used in cement manufacturing and the construction aggregate produced at the Facility.

The requirements of these Effluent Limit Guidelines are summarized below. The Basin Plan contains additional requirements for certain pollutants.

Table F-6. Technology-Based Requirements for Cement Manufacturing and Mining

Parameter	Maximum Daily Effluent Limitation
<i>40 C.F.R. section 411 subpart A (applicable to Discharge Point Nos. 001 and 007)</i>	
Total Suspended Solids (TSS) (process wastewater)	0.0050 pounds per 1,000 pounds product
Temperature ^[1]	Not to exceed 3°C rise above inlet temperature
<i>40 C.F.R. section 411 subpart C (applicable to Discharge Point Nos. 001, 002, and 004 through 007)</i>	
TSS (runoff) ^[2]	50 mg/L
pH	6.0 – 9.0 standard units
<i>40 C.F.R. section 436 subparts B and C (applicable to Discharge Point Nos. 001 and 007)</i>	
pH	6.0 – 9.0 standard units

Footnotes:

- ^[1] Because Facility cooling water is evaporated after use and not discharged, this Order does not implement this limit.
- ^[2] Untreated overflow from facilities designed, constructed, and operated to treat the volume of runoff from materials storage associated with a 10-year 24-hour rain event is not subject to this limitation. Because none of the Facility’s ponds meet these conditions, all discharges covered by this Order are subject to this limitation.

2. Effluent Limitations

Rationales for this Order’s technology-based effluent limitations are presented below:

a. Discharge Point Nos. 001 and 007

Discharges from Discharge Point Nos. 001 and 007 are subject to the Effluent Limitation Guidelines as set forth in Table F-6.

- i. Total Suspended Solids (TSS).** The TSS effluent limitation applies to the combined discharge from Discharge Point Nos. 001 and 007, monitored at Monitoring Locations EFF-001 and EFF-007, and is based on the rate of cement production in accordance with 40 C.F.R. section 411 subpart A (Non-leaching Subcategory). The Discharger’s Report of Waste Discharge reports its production rate as 11,520,000 pounds (lbs) of Portland cement per day. The maximum daily TSS limit is therefore calculated as follows:

$$11,520,000 \text{ lbs cement /day} \times 0.005 \text{ lbs TSS} / 1,000 \text{ lbs cement} = 58 \text{ lbs/day TSS}$$

This Order does not contain the TSS effluent limitations in Basin Plan Table 4-2 because the Basin Plan states, “[the TSS limits] will not be used to preempt Effluent Guideline Limitations.”

- ii. **Oil and Grease.** The oil and grease effluent limitations are based on Basin Plan Table 4-2.
- iii. **pH.** The pH effluent limitations are based on Basin Plan Table 4-2, which is more stringent than 40 C.F.R. sections 411 and 436.
- iv. **Total Residual Chlorine.** The total residual chlorine effluent limitation is based on Basin Plan Table 4-2. Chlorine may be present when potable water is used onsite as make-up Primary Crusher wash water, Rock Plant wash water, Truck Wash water, or dust suppression water.
- v. **Settleable Matter.** The settleable matter effluent limitations are based on Basin Plan Table 4-2.

b. Discharge Point Nos. 002, 004, 005, and 006

Discharges from Discharge Point Nos. 002, 004, 005, and 006 are subject to the Effluent Limitation Guidelines in 40 C.F.R. section 411 subpart C (Materials Storage Piles Runoff Subcategory).

- i. **Total Suspended Solids (TSS).** The TSS effluent limitation is based on 40 C.F.R. section 411, Subpart C (Materials Storage Piles Runoff Subcategory). This Order does not contain the TSS effluent limitations in Basin Plan Table 4-2 because the Basin Plan states, “[the TSS limits] will not be used to preempt Effluent Guideline Limitations.”
- ii. **Oil and Grease.** The oil and grease effluent limitations are based on Basin Plan Table 4-2.
- iii. **pH.** The pH effluent limitations are based on Basin Plan Table 4-2, which is more stringent than 40 C.F.R. sections 411 and 436.
- iv. **Settleable Matter.** The settleable matter effluent limitations are based on Basin Plan Table 4-2.

C. Water Quality-Based Effluent Limitations

1. Scope and Authority

This Order contains water quality-based effluent limitations (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 protect designated uses of receiving waters as specified in the Basin Plan. When numeric effluent limitations are infeasible, 40 C.F.R. part 122.44(k) allows WQBELs to be expressed narratively, such as through BMPs.

2. Beneficial Uses and Water Quality Criteria and Objectives

Discharge Point Nos. 001, 002, and 004 through 007 discharge to Permanente Creek. Fact Sheet section III.C.1, above, identifies the beneficial uses of Permanente Creek. 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, such as numeric objectives for 10 priority pollutants and un-ionized ammonia, and narrative objectives for toxicity and bioaccumulation. Because Permanente Creek has the MUN beneficial use based on State Water Board Resolution No. 88-63 (see Fact Sheet § III.C.1), drinking water standards (i.e., maximum contaminant levels) also apply as water quality objectives.
 - i. **Ammonia.** Basin Plan section 3.3.20 contains a water quality objective for un-ionized ammonia of 0.025 mg/L as an annual median for San Francisco Bay region receiving waters. 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 of the receiving water.

To translate the un-ionized ammonia objectives into total ammonia criteria, pH, salinity, and temperature data collected at Monitoring Location RSW-001A from March 2016 through July 2018 were used. The un-ionized fraction of total ammonia was calculated using the following equation, which applies to waters with salinities less than 1 part per thousand (ppt) (*Ambient Water Quality Criteria for Ammonia (Saltwater)*–1989, EPA Publication 440/5-88-004, 1989):

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

Where:

$$pK = 0.09018 + 2729.92/(T)$$

$T = \text{temperature in Kelvin}$

The median un-ionized ammonia fraction was then used to express the annual average un-ionized objective as a chronic total ammonia criterion. This approach is consistent with U.S. EPA guidance on translating dissolved metal water quality objectives to total recoverable metal water quality criteria (U.S. EPA, 1996, *The Metals*

Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion, EPA Publication 823-B96-007). The equivalent chronic total ammonia criterion is 1.2 mg/L.

- 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 WQBELs 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 1.4×10^{-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 (TUc). At 1.0 TUc, there is no observable detrimental effect when the indicator organism is exposed to 100 percent effluent; therefore, 1.0 TUc 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* (Technical Support Document) (EPA/505/2-90-001, March 1991; see section 3.3.3, *Step 3: Decision Criteria for Permit Limit Development*), U.S. EPA recommends that 1.0 TUc 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.

- iv. Temperature.** Permanente Creek supports warm water and cold water habitat beneficial uses; therefore, the temperature water quality objectives in Basin Plan section 3.3.17 apply:
- The natural receiving water temperature of inland surface waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.
 - The temperature of any cold or warm freshwater habitat shall not be increased by more than 5°F [degrees Fahrenheit] (2.8°C [degrees Celsius]) above natural receiving water temperature.
- b. Mercury Provisions Objectives.** The Mercury Provisions specify water column criteria for mercury depending on water body type and beneficial uses. Permanente Creek is a flowing water body that supports cold freshwater habitat; warm freshwater habitat; preservation of rare, threatened, or endangered species; and wildlife habitat beneficial uses. Mercury Provisions section IV.D.2.b, Table 1, establish an annual average total mercury criterion of 0.012 µg/L for Permanente Creek water.
- c. California Toxics Rule 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 CTR criteria applicable to “water and organisms” apply to Permanente Creek because it is considered a potential source of drinking water, as described in Fact Sheet section III.C.1, above.
- d. National Toxics Rule 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 Permanente Creek.

- e. Receiving Water Salinity.** Basin Plan section 4.6.2 (like the CTR and NTR) states that the salinity characteristics (i.e., freshwater versus 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.

Permanente Creek is an inland freshwater stream as confirmed by salinity data collected in from 2014 through 2018. No salinity greater than 1 ppt was detected in any sample. Permanente Creek is therefore classified as freshwater, and the reasonable potential analysis and WQBELs are based on freshwater water quality criteria and objectives.

- f. Receiving Water Hardness.** Ambient hardness data are used to calculate freshwater water quality objectives that are hardness dependent. The water quality objectives for this Order are based on a hardness of 280 mg/L as CaCO₃, which is the geometric mean of observed hardness at the confluence of Wild Violet Creek and Permanente Creek (Monitoring Location RSW-001A as defined in the Monitoring and Reporting Program).

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

Assessing whether a pollutant has reasonable potential to cause or contribute to exceedances of a water quality objective is the fundamental step in determining whether a WQBEL is required. The reasonable potential analysis presented below applies to Discharge Point Nos. 001 and 007, where process wastewaters are actively generated and discharged. These process wastewater discharges are subject to numeric WQBELs where reasonable potential is indicated. Stormwater discharges from Discharge Point Nos. 002 and 004 through 006 are subject to narrative WQBELs.

- a. Methodology.** State Implementation Policy 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, ammonia, total dissolved solids, turbidity, chloride, and phenols, 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). State Implementation Policy 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:
- i. 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).
 - ii. 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.

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

The Mercury Provisions (section IV.D.2.c) modify SIP section 1.3 for mercury. The maximum effluent concentration and ambient background concentration are maximum annual averages, calculated as the arithmetic mean over each calendar year, with non-detect results estimated as half the method detection limit.

b. Effluent Data. The reasonable potential analysis for this Order is based on effluent data from Discharge Point No. 001 that the Discharger collected from October 2017 through July 2018, after the FTS was installed. In some instances, data collected before the FTS was installed are also considered. For Mercury, effluent data from Discharge Point No. 001 collected from May 2014 through July 2018 are considered because they are reasonably representative relative to the mercury water quality objective and allow calculation of annual averages.

All the Facility's process wastewaters, including those currently discharged from Discharge Point No. 001, will be treated by the FTS and discharged from Discharge Point Nos. 001 and 007. Therefore, while the reasonable potential analysis is based on data from Discharge Point No. 001, the analysis conclusions and any resulting limits apply to both Discharge Point Nos. 001 and 007.

c. Ambient Background Data. The reasonable potential analysis for this Order is based on background data collected from May 2014 through July 2018 at Monitoring Location RSW-001A. This location was chosen based on its accessibility, geological appropriateness, likely perennial flow, and lack of chemical influences from the Facility or other land uses (*Background Monitoring Locations Plan and Reporting, Water Code section 13267 Order No. R2-2013-1005, Order Item No. 6, Golder Associates, March 6, 2013*).

d. Reasonable Potential Analysis. The maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in the analysis are presented in the following table, along with the reasonable potential analysis results (yes or no) for each pollutant. The pollutants that exhibit reasonable potential are antimony, chromium (VI), selenium, and TDS.

Chromium (VI) and TDS have reasonable potential because they were discharged in excess of their water quality objectives during the previous order term. While these pollutants have not been discharged in excess of their water quality objectives since the Discharger installed the FTS, sufficient information is not yet available to fully assess FTS performance and reliability. The Discharger has operated the FTS for less than twelve months during two relatively mild rainy seasons (the Discharger does not operate the FTS during the dry season). Thus, these pollutants have a reasonable potential to be discharged at a concentration that could cause or contribute to an exceedance of water quality objectives in Permanente Creek.

Table F-7. Reasonable Potential Analysis

CTR #	Pollutant	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL ^{[1][2]} (µg/L)	B or Minimum DL ^{[1][2]} (µg/L)	Result ^[3]
1	Antimony	6.0	7.3	< 0.11	Yes
2	Arsenic	10	7	0.94	No
3	Beryllium	4.0	0.42	< 0.14	No
4	Cadmium	2.5	1.3	< 0.11	No
5a	Chromium (III)	50	41	< 5.0	No
5b	Chromium (VI)	11	4.7	0.66	Yes
6	Copper	22	6.5	1.5	No
7	Lead	12	0.13	1.7	No
8	Mercury ^[4]	0.012	0.0075	0.0063	No
9	Nickel	100	41	2.6	No
10	Selenium	5.0	15	0.68	Yes
11	Silver	24	< 0.020	0.15	No
12	Thallium	1.7	< 0.10	< 0.10	No
13	Zinc	287	160	8.5	No
14	Cyanide	5.2	< 1.4	88	No
15	Asbestos	7,000,000	< 0.19	< 0.19	No
16	2,3,7,8-TCDD (Dioxin)	1.30E-08	< 1.3E-07	< 1.4E-07	U
17	Acrolein	320	< 1.0	< 1.0	No
18	Acrylonitrile	0.059	< 0.15	< 0.40	U
19	Benzene	1.0	< 0.053	< 0.050	No
20	Bromoform	4.3	< 0.050	< 0.050	No
21	Carbon Tetrachloride	0.25	< 0.050	< 0.050	No
22	Chlorobenzene	70	< 0.050	< 0.050	No
23	Chlorodibromomethane	0.40	< 0.053	< 0.053	No
24	Chloroethane	No Criteria	< 0.055	< 0.053	U
25	2-Chloroethylvinyl Ether	No Criteria	< 0.20	< 0.20	U
26	Chloroform	No Criteria	< 0.050	< 0.050	U
27	Dichlorobromomethane	0.56	< 0.050	< 0.050	No
28	1,1-Dichloroethane	5.0	< 0.050	< 0.050	No
29	1,2-Dichloroethane	0.38	< 0.059	< 0.059	No
30	1,1-Dichloroethylene	0.057	< 0.050	< 0.050	No
31	1,2-Dichloropropane	0.52	< 0.072	< 0.050	No
32	1,3-Dichloropropylene	0.50	Unavailable	< 0.24	U
33	Ethylbenzene	300	< 0.50	< 0.050	No
34	Methyl Bromide	48	< 0.12	< 0.066	No
35	Methyl Chloride	No Criteria	< 0.050	< 0.050	U
36	Methylene Chloride	4.7	< 0.11	< 0.080	No
37	1,1,2,2-Tetrachloroethane	0.17	< 0.076	< 0.076	No
38	Tetrachloroethylene	0.80	< 0.053	< 0.053	No
39	Toluene	150	< 0.050	< 0.050	No
40	1,2-Trans-Dichloroethylene	10	< 0.060	< 0.050	No
41	1,1,1-Trichloroethane	200	< 0.055	< 0.055	No
42	1,1,2-Trichloroethane	0.60	< 0.085	< 0.077	No
43	Trichloroethylene	2.7	< 0.063	< 0.063	No
44	Vinyl Chloride	0.50	< 0.068	< 0.068	No
45	Chlorophenol	120	< 0.65	< 0.37	No
46	2,4-Dichlorophenol	93	< 0.60	< 0.26	No
47	2,4-Dimethylphenol	540	< 0.52	< 0.30	No
48	2-Methyl-4,6-Dinitrophenol	13	< 2.2	< 0.34	No
49	2,4-Dinitrophenol	70	< 2.4	< 0.20	No
50	2-Nitrophenol	No Criteria	< 0.42	< 0.28	U
51	4-Nitrophenol	No Criteria	< 1.7	< 0.66	U

CTR #	Pollutant	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL ^{[1][2]} (µg/L)	B or Minimum DL ^{[1][2]} (µg/L)	Result ^[3]
52	3-Methyl-4-Chlorophenol	No Criteria	1.6	< 0.42	U
53	Pentachlorophenol	0.28	< 0.45	< 0.43	U
54	Phenol	21,000	< 0.37	< 0.20	No
55	2,4,6-Trichlorophenol	2.1	< 0.43	< 0.34	No
56	Acenaphthene	1,200	< 0.48	< 0.22	No
57	Acenaphthylene	No Criteria	< 0.64	< 0.20	U
58	Anthracene	9,600	< 0.79	< 0.20	No
59	Benzidine	0.00012	< 5.3	< 2.7	U
60	Benzo(a)Anthracene	0.0044	< 0.52	< 0.30	U
61	Benzo(a)Pyrene	0.0044	< 0.73	< 0.20	U
62	Benzo(b)Fluoranthene	0.0044	< 0.66	< 0.41	U
63	Benzo(ghi)Perylene	No Criteria	< 0.94	< 0.48	U
64	Benzo(k)Fluoranthene	0.0044	< 0.80	< 0.31	U
65	Bis(2-Chloroethoxy)Methane	No Criteria	< 0.58	< 0.27	U
66	Bis(2-Chloroethyl)Ether	0.031	< 0.52	< 0.68	U
67	Bis(2-Chloroisopropyl)Ether	1,400	< 0.73	< 0.30	No
68	Bis(2-Ethylhexyl)Phthalate	1.8	< 1.1	< 0.20	No
69	4-Bromophenyl Phenyl Ether	No Criteria	< 0.69	< 0.20	U
70	Butylbenzyl Phthalate	3,000	< 0.59	< 0.26	No
71	2-Chloronaphthalene	1,700	< 0.50	< 0.23	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	< 0.68	< 0.20	U
73	Chrysene	0.0044	< 0.73	< 0.26	U
74	Dibenzo(a,h)Anthracene	0.0044	< 0.92	< 0.26	U
75	1,2-Dichlorobenzene	600	< 0.050	< 0.050	No
76	1,3-Dichlorobenzene	400	< 0.050	< 0.050	No
77	1,4-Dichlorobenzene	5.0	< 0.050	< 0.050	No
78	3,3-Dichlorobenzidine	0.040	< 0.88	< 0.41	U
79	Diethyl Phthalate	23,000	< 0.85	< 0.20	No
80	Dimethyl Phthalate	313,000	< 0.55	< 0.25	No
81	Di-n-Butyl Phthalate	2,700	< 0.74	< 0.20	No
82	2,4-Dinitrotoluene	0.11	< 0.99	< 0.26	U
83	2,6-Dinitrotoluene	No Criteria	< 0.74	< 0.41	U
84	Di-n-Octyl Phthalate	No Criteria	< 0.85	< 0.31	U
85	1,2-Diphenylhydrazine	0.040	< 0.70	< 0.34	U
86	Fluoranthene	300	< 0.70	< 0.20	No
87	Fluorene	1,300	< 0.73	< 0.20	No
88	Hexachlorobenzene	0.00075	< 0.71	< 0.20	U
89	Hexachlorobutadiene	0.44	< 0.59	< 0.24	U
90	Hexachlorocyclopentadiene	50	< 0.26	< 0.30	No
91	Hexachloroethane	1.9	< 0.52	< 0.32	No
92	Indeno(1,2,3-cd) Pyrene	0.0044	< 0.92	< 0.26	No
93	Isophorone	8.4	< 0.51	< 0.31	No
94	Naphthalene	No Criteria	< 0.62	< 0.20	U
95	Nitrobenzene	17	< 0.55	< 0.26	No
96	N-Nitrosodimethylamine	0.00069	< 0.45	< 0.56	U
97	N-Nitrosodi-n-Propylamine	0.0050	< 0.80	< 0.56	U
98	N-Nitrosodiphenylamine	5.0	< 0.80	< 0.27	No
99	Phenanthrene	No Criteria	< 0.60	< 0.20	U
100	Pyrene	960	< 0.62	< 0.26	No
101	1,2,4-Trichlorobenzene	5.0	< 0.67	< 0.24	No
102	Aldrin	0.00013	< 0.00025	< 0.0019	No
103	alpha-BHC	0.0039	< 0.00022	< 0.0018	No
104	beta-BHC	0.014	< 0.00041	< 0.0019	No

CTR #	Pollutant	C or Governing Criterion or Objective (µg/L)	MEC or Minimum DL ^{[1][2]} (µg/L)	B or Minimum DL ^{[1][2]} (µg/L)	Result ^[3]
105	gamma-BHC	0.019	< 0.00019	< 0.0011	No
106	delta-BHC	No Criteria	< 0.00027	< 0.0012	U
107	Chlordane	0.00057	< 0.076	< 0.048	No
108	4,4-DDT	0.00059	< 0.00016	< 0.0011	No
109	4,4-DDE	0.00059	< 0.0018	< 0.0014	No
110	4,4-DDD	0.00083	< 0.00033	< 0.0018	No
111	Dieldrin	0.00014	< 0.0012	< 0.00078	No
112	alpha-Endosulfan	0.056	< 0.00031	< 0.00086	No
113	beta-Endosulfan	0.056	< 0.00027	< 0.0018	No
114	Endosulfan Sulfate	110	< 0.00051	< 0.0012	No
115	Endrin	0.036	< 0.00017	< 0.0025	No
116	Endrin Aldehyde	0.76	< 0.00051	< 0.0017	No
117	Heptachlor	0.00021	< 0.00023	< 0.00050	No
118	Heptachlor Epoxide	0.00010	< 0.00020	< 0.00080	No
119-125	PCBs sum	0.00017	Unavailable	Unavailable	U
126	Toxaphene	0.00020	< 0.084	< 0.20	No
	Total Ammonia (mg/L N)	1.2	0.13	Unavailable	No
	Total Dissolved Solids (mg/L)	1,000	810	289	Yes
	Turbidity (NTU)	5.0	5.0	3.6	No
	Chloride (mg/L)	500	Unavailable	12	U
	Phenols	1.0	< 0.037	< 0.20	No
	Trihalomethanes (Total)	80	< 0.050	< 0.050	No

Footnotes:

- ^[1] The maximum effluent concentration 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).
- ^[2] The maximum effluent concentration or ambient background concentration is “Unavailable” when there are no monitoring data for the constituent.
- ^[3] RPA Results = Yes, if MEC ≥ WQC, B > WQC and MEC is detected, or Trigger 3
= No, if MEC and B are < WQC or all effluent data are undetected
= Undetermined (U), if no criteria have been promulgated or data are insufficient.
- ^[4] The Mercury Provisions supersede Basin Plan Table 3-4 (see Fact Sheet § III.C.9). In accordance with the Mercury Provisions, the water quality objective (C), MEC, and B are annual averages calculated as described in Fact Sheet section IV.C.3.a.

e. 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.

f. Chronic Toxicity. From October 2017 through April 2018, the Discharger obtained four chronic toxicity results from Monitoring Location EFF-001 that were representative of the discharge. (Results obtained during January, March, and April 2018 are omitted as unrepresentative because the FTP’s peroxide injection system was not operating correctly during those months.) None of those results exceed 1.0 TUc. Therefore, none exceeded the translated chronic toxicity water quality objective of 1.0 TUc (see Fact Sheet section IV.C.2.a.iii), and there is no reasonable potential for the discharge to cause or contribute to exceedances of the chronic toxicity water quality objective.

g. Temperature. Permanente Creek supports warm and cold water habitat beneficial uses; Basin Plan temperature objectives therefore apply. Temperature data from effluent Monitoring Location EFF-001 and receiving water Monitoring Locations RSW-001, 001A, and 002 through 004 indicate that Facility discharges did not impact receiving

water temperature before or after the FTS was installed. The Monitoring and Reporting Program requires monitoring of background, effluent, and downstream receiving water temperatures to support future reasonable potential analysis.

4. Water Quality-Based Effluent Limitation Calculations

For Discharge Point Nos. 001 and 007, numeric WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of water quality objectives. Except for acute toxicity (discussed below), these WQBELs are based on the procedure specified in SIP section 1.4, as required for priority pollutants and as guidance for the other pollutants.

WQBELs for Discharge Point Nos. 002 and 004 through 006 are narrative based on Basin Plan section 4.8 and 40 C.F.R. part 122.44(k). These WQBELs are set forth in Provision VI.A.3 and Attachment S, as amended. U.S. EPA’s *NPDES Permit Writers’ Manual* (EPA-833-K-10-001, September 2010, page 9-4) indicates that numeric effluent limits are infeasible “when the types of pollutants vary greatly over time.” For many pollutants at Discharge Point Nos. 002 and 004 through 006, numeric WQBELs are infeasible because the pollutants in stormwater vary greatly over time. Storms occur irregularly, unpredictably, uncontrollably, and occasionally in large volumes for short periods, so the resulting types of pollutants mobilized by storm runoff vary greatly.

a. Dilution Credits. SIP section 1.4.2 allows dilution credits under certain circumstances. Because neither Discharge Point No. 001 nor 007 is submerged, has a diffuser, or achieves any dilution, no dilution credit is used in the calculation of WQBELs.

b. Calculations. The following table shows the WQBEL calculations:

Table F-8. WQBEL Calculations

PRIORITY POLLUTANTS	Antimony	Chromium (VI)	Selenium	Total Dissolved Solids
Units	µg/L	µg/L	µg/L	mg/L
Basis and Criteria type	Title 22 Primary MCL	BP & CTR FW Aquatic Life	CTR Chronic	Title 22 Secondary MCL
Criteria -Acute	-----	16	20	-----
Criteria -Chronic	-----	11	5.0	-----
Water Effects Ratio (WER)	1	1	1	1
Lowest WQO	6.0	11	5.0	1,000
Dilution Factor (D) (if applicable)	0	0	0	0
No. of samples per month	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	N	Y	Y	N
HH criteria analysis required? (Y/N)	Y	N	N	Y
Applicable Acute WQO		16	20	
Applicable Chronic WQO		11	5.0	
HH criteria	6.0			1,000

PRIORITY POLLUTANTS	Antimony	Chromium (VI)	Selenium	Total Dissolved Solids
Units	µg/L	µg/L	µg/L	mg/L
Background (Maximum Conc for Aquatic Life calc)	0.11	0.66	0.68	
Background (Average Conc for Human Health calc)	0.11			289
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	Y	N
ECA acute		16	20	
ECA chronic		11	5.0	
ECA HH	6.0			1,000
Number of data points <10 or at least 80% of data reported non detect? (Y/N)	Y	N	N	N
Avg of effluent data points	4.6	0.71	1.6	430
Std Dev of effluent data points	3.2	0.87	2.8	193
CV calculated	N/A	1.2	1.8	0.45
CV (Selected) – Final	0.60	1.2	1.8	0.45
ECA acute mult99		0.17	0.13	
ECA chronic mult99		0.32	0.23	
LTA acute		2.8	2.5	
LTA chronic		3.5	1.1	
minimum of LTAs		2.8	1.1	
AMEL mult95	1.6	2.2	2.6	1.4
MDEL mult99	3.1	5.8	7.8	2.5
AMEL (aq life)		6.0	3.0	
MDEL(aq life)		16	8.9	
MDEL/AMEL Multiplier	2.0	2.7	3.0	1.8
AMEL (human hlth)	6.0			1,000
MDEL (human hlth)	12			1,758
minimum of AMEL for Aq. life vs HH	6.0	6.0	3.0	1,000
minimum of MDEL for Aq. Life vs HH	12	16	8.9	1,758
Previous order limit (30-day average)	-----	8.0	4.1	1,000
Previous order limit (daily)	-----	16	8.2	2,000
Final limit – AMEL	6.0	6.0	3.0	1,000
Final limit – MDEL	12	16	8.2	1,800

5. 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 exceeding the acute toxicity limitations in this Order, and that the ammonia in the discharge complies with the ammonia effluent limitations in this Order, then such toxicity does not constitute a violation of the effluent limitations for whole effluent acute toxicity.

D. Discharger Requirement Considerations

1. **Anti-backsliding.** This Order complies with the anti-backsliding provisions of CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l), which generally require effluent limitations in a reissued permit to be as stringent as those in the previous order. The requirements of this Order are at least as stringent as those in the previous order, except for WQBELs for nickel, thallium, and turbidity at Discharge Point No. 001, and technology-based requirements for turbidity at Discharge Point Nos. 002, 004, and 005.
 - a. This Order does not retain the previous order's nickel, mercury, thallium, or turbidity WQBELs at Discharge Point No. 001 because effluent data for those pollutants no longer indicate reasonable potential to exceed of water quality objectives. Not retaining those limits is consistent with State Water Board Order No. WQ 2001-16.
 - b. This Order does not retain the previous order's technology-based effluent limit for turbidity at Discharge Point Nos. 002, 004, and 005 because that limit was based on inapplicable guidance. The Discharger enrolled the Facility under the *General Waste Discharge Requirements for Discharges of Process Wastewaters from Aggregate Mining, Sand Washing, and Sand Offloading Facilities to Surface Waters* (NPDES General Permit No. CAG982001) (Sand and Gravel Permit), which imposed a turbidity limit based on aggregate mining facilities within San Francisco Bay Region. The previous order imposed the same turbidity limit based on the Sand and Gravel Permit. However, the discharges should have been subject to the Effluent Limitations Guidelines for cement manufacturing, as discussed in Fact Sheet section IV.B.1. Backsliding is therefore permissible under CWA section 402(o)(2)(B)(ii) and 40 C.F.R. section 122.44(l).
2. **Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. It does not authorize lowering water quality as compared to the level of discharge authorized in the previous order, which is the baseline by which to measure whether degradation will occur. This Order does not allow for a reduced level of treatment or increased volume of discharge, nor does it increase effluent limitations relative to the previous order.
3. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based effluent limits and WQBELs for individual pollutants. The technology-based requirements implement minimum, applicable federal technology-based requirements. In addition, this Order contains more stringent effluent limitations as necessary to meet water quality standards, including selenium effluent limitations intended to achieve water quality standards for selenium in Permanente Creek, as discussed in Fact Sheet section III.D. 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.1 and V.A.2 of this Order are based on Basin Plan narrative and numeric water quality objectives. The receiving water limitation in section V.A.3 of this Order requires compliance with water quality standards.

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

Attachment G contains regional standard provisions that supplement the federal standard provisions in Attachment D. In accordance with 40 C.F.R. section 123.25(a)(12), states may omit or modify the federal standard conditions to impose more stringent requirements. This Order omits federal conditions that address enforcement authority specified in 40 C.F.R. sections 122.41(j)(5) and (k)(2) because the State's enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates Water Code section 13387(e) by reference.

Attachment S contains stormwater provisions consistent with the State Water Board's *General Permit for Stormwater Discharges Associated with Industrial Activities* (NPDES No. CAS000001) (Industrial General Permit), including requirements for the Discharger to prepare a Stormwater Pollution Prevention Plan, to evaluate BMP performance using stormwater action levels (stormwater action levels are not effluent limitations), and to submit an annual stormwater report. This Order modifies Attachment S to include stormwater action levels appropriate for this Facility. For each toxic pollutant with an effluent limit at Discharge Point Nos. 001 and 007 but no stormwater action level in the Industrial General Permit, this Order establishes the lowest water quality objective as the stormwater action level. It does not retain the stormwater action level for conductivity of 200 micromhos per centimeter ($\mu\text{mhos/cm}$) from the previous order because, based on monitoring data collected at Monitoring Location RSW-001A, background

conductivity exceeds the stormwater action level. Electrical conductivity at Monitoring Location RSW-001A ranged from 279 to 630 $\mu\text{mhos/cm}$ with an average value of 492 $\mu\text{mhos/cm}$.

B. Monitoring and Reporting

Pursuant to 40 C.F.R. section 122.48, NPDES permits must specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383, and 40 C.F.R. sections 122.41(h) and (j), authorize the Regional Water Board to require technical and monitoring reports. This Order establishes monitoring and reporting requirements, contained in the Monitoring and Reporting Program (Attachment E), that implement federal and State requirements. For more background regarding these requirements, see Fact Sheet section VII.

C. Special Provisions

1. Reopener Provisions

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

2. Effluent Characterization Study and Report

This Order does not include effluent limitations for priority pollutants that do not demonstrate reasonable potential, but this provision requires the Discharger to 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 SIP section 2.4.5.

4. Receiving Water Data Reporting

This Order requires the Discharger to upload receiving water data to the California Environmental Data Exchange Network (CEDEN) to the extent that CEDEN accommodates the data type. This requirement ensures that the public can access these data through CEDEN's database, and that the State and Regional Water Boards can use these data to evaluate whether Permanente Creek meets water quality standards pursuant to CWA section 303(d).

5. Dry Season Discharge Requirements

This provision is necessary to maintain existing aquatic habitat beneficial uses between Discharge Point Nos. 001 and 007. Aquatic habitat beneficial uses within this reach include cold freshwater habitat (e.g., trout) and preservation of rare, threatened, or endangered species (e.g., California red-legged frogs).

6. Selenium in Fish Tissue Reasonable Potential Study

This provision may be necessary to conduct future reasonable potential analyses for the Discharger's selenium discharges to Permanente Creek because U.S. EPA has proposed new water quality standards for California for selenium in freshwater (*Water Quality Standards; Establishment of a Numeric Criterion for Selenium for the State of California*, Fed. Reg. Vol. 83, No. 239, December 13, 2018, pages 64059-64078). If U.S. EPA or the State of California promulgates these draft standards (or similar standards), subsequent reasonable potential analyses would need to be based on the new standards. As drafted, the proposed standards would establish tiered water quality criteria. Proposed fish tissue criteria would supersede water column criteria and could serve as the basis for a reasonable potential analysis. The required study would be conducted in phases. The requirements recognize and reflect the potentially limited availability of fish to sample and analyze.

VII. MONITORING AND REPORTING PROGRAM (MRP)

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

A. MRP Requirements Rationale

The MRP's monitoring and reporting requirements are based on California Water Code section 13267 and are necessary to inform the next permit reissuance; to collect data needed to evaluate progress toward resolving the selenium impairment of Permanente Creek, as discussed in Fact Sheet section III.D; and to ensure that any potential toxicity in Permanente Creek other than pesticides is identified and resolved, as discussed in Fact Sheet section III.D. The reports required by the MRP are necessary to accomplish the foregoing and to ensure compliance with this Order. The Discharger is subject to these requirements because it owns and operates the Facility, which discharges wastes subject to this Order. The burden, including costs, of the monitoring and reporting, bears a reasonable relationship to the need to achieve water quality standards for selenium and aquatic toxicity in Permanente Creek, and to ensure permit compliance.

- 1. Effluent Monitoring.** Effluent flow monitoring is necessary at Monitoring Locations EFF-001 and EFF-007 to evaluate compliance with Prohibition III.B and to understand Facility operations. Effluent flow monitoring is necessary at Monitoring Locations EFF-002, EFF-004, EFF-005, and EFF-006 to evaluate the Discharger's management of Facility stormwater. Monitoring for the other parameters is necessary at Monitoring Locations EFF-001, EFF-002, EFF-004, EFF-005, EFF-006, and EFF-007 to evaluate compliance with this Order's effluent limitations and to conduct future reasonable potential analyses. Monitoring is also needed at Monitoring Locations EFF-002, EFF 004, EFF-005, and EFF 006 to evaluate the effectiveness of the Discharger's stormwater BMPs by comparing discharge concentrations with stormwater action levels.
- 2. Receiving Water Monitoring.** Receiving water monitoring is necessary to characterize the receiving water (e.g., to provide background values for future reasonable potential analyses) and the effects of the discharges on the receiving water (i.e., to determine compliance with

receiving water limitations). Monitoring Location RSW-001A represents background water quality based on the *Background Monitoring Report* (Golder Associates, March 22, 2013), which found that Monitoring Location RSW-001A is unaffected by Facility operations, is accessible for sampling, and has similar geologic conditions as the discharge locations. Monitoring Locations RSW-001, RSW-002, and RSW-004 represent conditions immediately downstream of the discharge points. Monitoring Locations RSW-005, RSW-006, and RSW-007 represent conditions farther downstream of the Facility.

By including Monitoring Locations RSW-005, RSW-006, and RSW-007 within this Order’s MRP, the Order updates receiving water monitoring requirements the Executive Officer imposed through an August 1, 2018, order to provide technical information pursuant to Water Code section 13267. In doing so, this Order contains monitoring and reporting requirements to allow the Regional Water Board to evaluate progress toward resolving the selenium impairment of Permanente Creek.

3. **Toxicity Testing.** Acute toxicity tests are necessary to evaluate compliance with acute toxicity effluent limitations. Chronic toxicity tests are necessary for future reasonable potential analysis and to evaluate whether chronic toxicity triggers the need for a Toxicity Reduction Evaluation. By including chloride, total hardness as CaCO₃, sulfate, chronic toxicity, and trace metals monitoring at Monitoring Locations RSW-004 and RSW-005 within this Order’s MRP, the Order updates receiving water monitoring requirements the Executive Officer imposed through an August 1, 2018, order to provide technical information pursuant to Water Code section 13267. In doing so, this Order contains monitoring and reporting requirements to allow the Regional Water Board to evaluate progress toward resolving the toxicity impairment of Permanente Creek.

4. **Other Monitoring Requirements.** Pursuant to CWA section 308, U.S. EPA requires major and selected minor 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-9. Monitoring Requirements Summary

Parameter	Effluent EFF-001 and EFF-007	Effluent EFF-002 and EFF-004 through EFF-006	Receiving Water RSW-001 and RSW-001A	Receiving Water RSW-002	Receiving Water RSW-004 through RSW-007
Chloride	---	---	1/Quarter ^[1]	---	1/Quarter ^[2]
Conductivity	---	1/Quarter	[3]	---	---
Dissolved Oxygen	---	---	[3]	1/Quarter	[3]
Flow	Continuous/D ^[4]	1/Month ^[4]	[3]	1/Quarter	[3]

Parameter	Effluent EFF-001 and EFF-007	Effluent EFF-002 and EFF-004 through EFF-006	Receiving Water RSW-001 and RSW-001A	Receiving Water RSW-002	Receiving Water RSW-004 through RSW-007
Hardness	---	---	1/Quarter ^[5]	---	1/Quarter ^[2]
Oil and Grease	1/Quarter	1/Quarter ^[6]	---	---	---
pH	Continuous/D or 1/Day ^[7]	1/Quarter	[3]	1/Quarter	[3]
Settleable Matter	1/Month	1/Quarter	1/Quarter	1/Quarter	1/Quarter
Sulfate	---	---	1/Quarter ^[1]	---	1/Quarter ^[2]
Temperature	1/Month	---	[3]	1/Quarter	[3]
Total Residual Chlorine ^[7]	1/Day	---	---	---	---
TSS	1/Week	1/Quarter	[3]	1/Quarter	[3]
Turbidity	---	---	1/Quarter	1/Quarter	1/Quarter
Acute Toxicity	1/Quarter	---	---	---	---
Antimony	1/Month	1/Quarter	1/Quarter	1/Quarter	1/Quarter
Chromium (VI)	1/Month	1/Quarter	1/Quarter	1/Quarter	1/Quarter
Chronic Toxicity	1/Quarter	---	1/Quarter ^[1]	---	1/Quarter ^[2]
Mercury	1/Month	1/Quarter	1/Quarter	1/Quarter	1/Quarter ^[8]
Nickel	1/Month	1/Quarter	1/Quarter	1/Quarter	1/Quarter
Selenium	2/Month	1/Month ^[9]	[3]	1/Quarter	[3]
TDS	1/Week	---	1/Quarter	1/Quarter	1/Quarter
Trace Metals ^[10]	---	---	1/Quarter ^[1]	---	1/Quarter ^[2]
Other priority pollutants ^[11]	1/Year	---	2/Year	---	---
Standard Observations ^[12]	1/Day	---	1/Month	1/Month	1/Month
Visual Observations ^[13]	---	Each Occurrence	---	---	---

Unit Abbreviations:

µg/L = micrograms per liter
 µmhos/cm = micromhos per centimeter
 mg/L = milligrams per liter
 mL/L-hr = milliliters per liter-hour
 MG = million gallons
 NTU = nephelometric turbidity units

Sampling Frequencies:

Each Occurrence = each significant stormwater discharge, defined as a continuous discharge of stormwater for a minimum of one hour, or an intermittent discharge of stormwater for a minimum of three hours, in a 12-hour period. Visual observations are only required in daylight during scheduled facility operating hours.

Continuous/Day = measured continuously, recorded and reported at least daily

1/Day = once per day

1/Week = once per week

1/Month = once per month

2/Month = twice per month

1/Quarter = once per quarter

2/Year = twice per year

1/Year = once per year

Footnotes:

- [1] To be monitored at Monitoring Location RSW-001. Monitoring is not required at RSW-001A.
- [2] Chloride, total hardness as CaCO₃, sulfate, chronic toxicity, and trace metals are to be monitored at Monitoring Locations RSW-004 and RSW-005 only.
- [3] The monitoring frequency is to be monthly during the wet season (November 1 through April 30) and twice during the dry season (May 1 through October 31).
- [4] The following flow information is to be reported:
- Daily average flow (gpd)
 - Total monthly flow volume (MG)

- [5] Hardness shall be monitored at Monitoring Location RSW-001A. Hardness monitoring is not required at Monitoring Location RSW-001
- [6] At Monitoring Location EFF-006, total organic carbon may be substituted for oil and grease.
- [7] pH and total residual chlorine are to be monitored once per day, Monday through Friday, at Monitoring Locations EFF-001 and EFF-007. If pH is monitored continuously, the minimum and maximum pH values for each day are to be reported in self-monitoring reports.
- [8] Mercury shall be monitored at Monitoring Location RSW-005. Mercury monitoring is not required at Monitoring Locations RSW-004, RSW-006, and RSW-007.
- [9] Selenium samples are to be collected at Monitoring Locations EFF-002, EFF-004, EFF-005, and EFF-006 during the first significant stormwater discharge of the wet season (November 1 through April 30) that occurs in daylight during scheduled Facility operating hours.
- [10] Trace metals are total recoverable, arsenic, cadmium, total chromium, , copper, molybdenum, thallium, vanadium, and zinc. They are to be monitored concurrently with chronic toxicity.
- [11] The Discharger is to monitor for the pollutants listed in Attachment G, Table B
- [12] Standard observations are listed in Attachment G section III.B.2.
- [13] Visual observations are to be as required by Attachment S section II.A.

VIII. PUBLIC PARTICIPATION

The Regional Water Board considered the issuance of this Order that will serve as an NPDES permit for the Facility. As a step in the Order adoption process, Regional Water Board staff developed a tentative Order and encouraged public participation in the Order 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 *Cupertino Courier*. 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 John H Madigan, P.E. 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 May 3, 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: June 12, 2019
Time: 9:00 a.m.
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612
Contact: John H. Madigan, (510) 622-2405, John.Madigan@waterboards.ca.gov

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

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

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

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

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

- E. Information and Copying.** The Report of Waste Discharge, related supporting documents, and comments received are on file and may be inspected at the address above at any time between 9:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling (510) 622-2300.
- F. Register of Interested Persons.** Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference the Facility, and provide a name, address, and phone number.
- G. Additional Information.** Requests for additional information or questions regarding this Order should be directed to John H. Madigan, (510) 622-2405, John.Madigan@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.
 - e. Hydrographic Condition** — time and height of high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time).

- 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;
- vi.** Description of blending, if any. If the Discharger blends, it shall describe the duration of blending events and certify whether the blending complied with all conditions for blending;
- vii.** Description of other bypasses, if any. If the Discharger bypasses any treatment units (other than blending), it shall describe the duration of the bypasses and effluent quality during those times; and
- viii.** Signature. The transmittal letter shall be signed in accordance with Attachment D, Provision V.B.

- b. Compliance Evaluation Summary.** Each self-monitoring report shall include a compliance evaluation summary that addresses each parameter for which the permit specifies effluent limitations, the number of samples taken during the monitoring period, and the number of samples that exceed the effluent limitations.
- c. More Frequent Monitoring.** If the Discharger monitors any pollutant more frequently than required by the MRP, the Discharger shall include the results of such monitoring in the calculation and reporting of the data submitted in the self-monitoring report.
- d. Analysis Results**
- i. Tabulation.** Each self-monitoring report shall include tabulations of all required analyses and observations, including parameters, dates, times, sample stations, types of samples, test results, method detection limits, method minimum levels, and method reporting levels (if applicable), signed by the laboratory director or other responsible official.
- ii. Multiple Samples.** Unless the MRP specifies otherwise, when determining compliance with effluent limitations (other than instantaneous effluent limitations) and more than one sample result is available, the Discharger shall compute the arithmetic mean. If the data set contains one or more results that are “Detected, but Not Quantified (DNQ) or “Not Detected” (ND), the Discharger shall instead compute the median in accordance with the following procedure:
- (a) The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
- (b) The median of the data set shall be determined. If the data set has an odd number of data points, the median is the middle value. If the data set has an even number of data points, the median is the average of the two values around the middle, unless one or both of these values is ND or DNQ, in which case the median shall be the lower of the two results (where DNQ is lower than a quantified value and ND is lower than DNQ).
- iii. Duplicate Samples.** The Discharger shall report the average of duplicate sample analyses when reporting for a single sample result (or the median if one or more of the duplicates is DNQ or ND [see Provision V.C.1.c.ii, above]). For bacteria indicators, the Discharger shall report the geometric mean of the duplicate analyses.
- 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
 TEF_x = toxicity equivalency factor for congener x
 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 Discharges³

- 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;
 - 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;

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

- 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_i” and “C_i” are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the “N” grab samples that may be taken in any calendar day. If a composite sample is taken, “C_i” is the concentration measured in the composite sample and “Q_i” is the average flow rate occurring during the period over which the samples are composited. The daily concentration of a constituent measured over any calendar day shall be determined from the flow-weighted average of the same constituent in the combined waste streams as follows:

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

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_t” 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 ⁴	Minimum Levels ⁵ (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) ⁶	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) ⁷												
9	Nickel	249.2					50	5	20	1	5			1000
10	Selenium	200.8 or SM 3114B or C						5	10	2	5	1		1000
11	Silver	272.2					10	1	10	0.25	2			1000
12	Thallium	279.2					10	2	10	1	5			1000
13	Zinc	200 or 289					20		20	1	10			
14	Cyanide	SM 4500 CN ⁻ C or I				5								
15	Asbestos (only required for dischargers to MUN waters) ⁸	0100.2 ⁹												
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										

⁴ 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.

⁵ 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.

⁶ 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).

⁷ 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).

⁸ MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.

⁹ 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 ⁴	Minimum Levels ⁵ (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 Benzofluoranthene	610 HPLC		10	10									
63	Benzo(ghi)Perylene	610 HPLC		5	0.1									
64	Benzo(k)Fluoranthene	610 HPLC		10	2									
74	Dibenzo(a,h)Anthracene	610 HPLC		10	0.1									
86	Fluoranthene	610 HPLC	10	1	0.05									
87	Fluorene	610 HPLC		10	0.1									
92	Indeno(1,2,3-cd) Pyrene	610 HPLC		10	0.05									
100	Pyrene	610 HPLC		10	0.05									
68	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5										
70	Butylbenzyl Phthalate	606 or 625	10	10										
79	Diethyl Phthalate	606 or 625	10	2										
80	Dimethyl Phthalate	606 or 625	10	2										
81	Di-n-Butyl Phthalate	606 or 625		10										
84	Di-n-Octyl Phthalate	606 or 625		10										
59	Benzidine	625		5										

CTR No.	Pollutant/Parameter	Analytical Method ⁴	Minimum Levels ⁵ (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) ¹⁰	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											

¹⁰ 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 S

STORMWATER PROVISIONS, MONITORING, AND REPORTING REQUIREMENTS

November 2017

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STORMWATER PROVISIONS

APPLICABILITY

These stormwater provisions only apply to facilities that do not direct all stormwater flows from process areas to a wastewater treatment plant's headworks or do not enroll in NPDES Permit No. CAS000001 (General Permit for Stormwater Discharges Associated with Industrial Activities).

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Stormwater Pollution Prevention Plan (SWPPP). The Discharger shall prepare a SWPPP that includes the following elements:

1. Facility name and contact information;
2. Site map;
3. List of industrial materials;
4. Description of potential pollution sources;
5. Assessment of potential pollutant sources;
6. Minimum Best Management Practices (BMPs);
7. Advanced BMPs, if applicable;
8. Monitoring implementation plan;
9. Annual comprehensive facility compliance evaluation; and
10. Date SWPPP initially prepared and dates of each SWPPP amendment.

The SWPPP shall be designed in accordance with good engineering practices to achieve the following objectives:

- Identify and evaluate all pollutant sources that may affect stormwater discharge quality;
- Identify, assign, and implement control measures and management practices to reduce or prevent pollutants in stormwater discharges; and
- Identify and describe conditions or circumstances that may require revisions to the SWPPP.

The SWPPP shall be retained onsite, revised whenever necessary, and made available upon request of any Regional Water Board representative. The SWPPP may be combined with the Spill Prevention Plan (see Attachment G Provision I.C.2).

B. Site Map. The Discharger shall prepare one or more site maps that include notes, legends, a north arrow, and other data as appropriate to ensure the map is clear, legible and understandable, including the following:

1. The facility boundary, stormwater drainage areas within the facility boundary, and portions of any drainage area impacted by discharges from surrounding areas (the maps shall include the flow direction of each drainage area, on-facility surface water bodies, areas of soil erosion, and locations of nearby water bodies [e.g., rivers, lakes, wetlands] or municipal storm drain inlets that may receive the facility's industrial stormwater discharges and authorized non-stormwater discharges);
2. Locations of stormwater collection and conveyance systems, associated discharge locations, and direction of flow (the maps shall include sample locations if different than the discharge locations);
3. Locations and descriptions of structural control measures (e.g., catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers) that affect industrial stormwater discharges, authorized non-stormwater discharges, and run-on;
4. Identification of all impervious areas, including paved areas, buildings, covered storage areas, or other roofed structures;
5. Locations where materials are directly exposed to precipitation and the locations where identified significant spills or leaks have occurred; and
6. Areas of industrial activity (the maps shall identify all industrial storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage and maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and material reuse areas, and other areas of industrial activity that may have potential pollutant sources).

C. List of Industrial Materials. The SWPPP shall contain a list of industrial materials handled at the facility and the locations where each material is stored, received, shipped, and handled, as well as the typical quantities and handling frequency.

D. Potential Pollutant Sources. The Discharger shall describe and assess potential stormwater pollutant sources, including the following:

1. **Industrial Processes.** Industrial processes may include manufacturing, cleaning, maintenance, recycling, and disposal. The SWPPP shall describe the type, characteristics, and approximate quantity of industrial materials used and areas protected by containment structures and the corresponding containment capacity.
2. **Material Handling and Storage Areas.** The SWPPP shall describe the type, characteristics, and quantity of industrial materials handled or stored; shipping, receiving, and loading procedures; spill and leak prevention and response procedures; and areas protected by containment structures and the corresponding containment capacity.
3. **Dust and Particulate Generating Activities.** The SWPPP shall describe the discharge locations, source type, and characteristics of the dust or particulate pollutant.
4. **Significant Spills and Leaks.** The Discharger shall evaluate the facility for areas where spills and leaks can occur. The SWPPP shall list any industrial materials spilled or leaked in significant quantities and discharged from the facility's stormwater conveyance system

within the previous five years, including but not limited to any chemicals identified in 40 C.F.R. section 302 as reported on U.S. EPA Form R and any oil and hazardous substances discharged in excess of reportable quantities (40 C.F.R. §§ 110, 117, and 302). The SWPPP shall also list any industrial materials spilled or leaked in significant quantities that had the potential to be discharged from the facility's stormwater conveyance system within the previous five years. For each listed industrial material spill and leak, the SWPPP shall include the location, characteristics, and approximate quantity of the material spilled or leaked; the approximate quantity of the material discharged; the cleanup or remedial actions taken or planned; the approximate quantity of remaining material that could be discharged; and the preventive measures taken to ensure that spills or leaks do not reoccur.

- 5. Non-Stormwater Discharges.** The SWPPP shall describe all non-stormwater discharges, including the source, quantity, frequency, characteristics, and associated drainage area, and indicate whether these discharges are authorized or unauthorized.
- 6. Erodible Surfaces.** The SWPPP shall describe any facility locations where soil erosion may be caused by industrial activity, contact with stormwater, authorized and unauthorized non-stormwater discharges, or run-on from areas surrounding the facility.

E. Assessment of Potential Pollutant Sources. The SWPPP shall include a narrative assessment of all areas of industrial activity with potential industrial pollutant sources, including, at a minimum, the following:

1. Facility areas with likely sources of pollutants;
2. Pollutants likely to be present in industrial stormwater discharges;
3. Approximate quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each industrial material handled, produced, stored, recycled, or disposed;
4. Degree to which the pollutants associated with such materials may be exposed to, and mobilized by, contact with stormwater;
5. Direct and indirect pathways by which pollutants may be exposed to stormwater;
6. Sampling, visual observation, and inspection records;
7. Effectiveness of existing BMPs to reduce or prevent pollutants in industrial stormwater discharges; and
8. Estimated effectiveness of implementing, to the extent feasible, minimum BMPs to reduce or prevent pollutants in industrial stormwater discharges.

Based upon the assessment, the SWPPP shall identify facility areas where the minimum BMPs described in Provision I.F, below, will not adequately reduce or prevent pollutants in stormwater discharges and any necessary advanced BMPs, as described in Provision I.G, below, for those areas.

F. Minimum Best Management Practices (BMPs). The Discharger shall, to the extent feasible, implement and maintain the following BMPs:

- 1. Good Housekeeping.** The Discharger shall do the following:
 - a. Observe all outdoor areas associated with industrial activity, including stormwater discharge locations, drainage areas, conveyance systems, waste handling and disposal areas, and perimeter areas affected by off-facility materials or stormwater run-on to determine housekeeping needs. Any identified debris, waste, spills, tracked materials, or leaked materials shall be cleaned and disposed of properly;
 - b. Minimize or prevent material tracking;
 - c. Minimize dust generated from industrial materials or activities;
 - d. Ensure that all facility areas impacted by rinse or wash waters are cleaned as soon as possible;
 - e. Cover all stored industrial materials that can be readily mobilized by contact with stormwater;
 - f. Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper) that can be transported or dispersed by the wind or contact with stormwater;
 - g. Prevent disposal of any rinse or wash waters or industrial materials into the stormwater conveyance system;
 - h. Minimize stormwater discharges from non-industrial areas (e.g., stormwater flows from employee parking areas) that contact industrial areas of the facility; and,
 - i. Minimize authorized non-stormwater discharges from non-industrial areas (e.g., potable water, fire hydrant testing) that contact areas of the sanitary or industrial facility.
- 2. Preventative Maintenance.** The Discharger shall (1) identify all equipment and systems used outdoors that may spill or leak pollutants, (2) observe the identified equipment and systems to detect leaks or identify conditions that may result in the development of leaks, (3) establish an appropriate schedule for maintenance of identified equipment and systems, and (4) establish procedures for prompt maintenance and repair of equipment and maintenance of systems when conditions exist that may result in the development of spills or leaks.
- 3. Spill and Leak Prevention and Response.** The Discharger shall (1) establish procedures and controls to minimize spills and leaks; (2) develop and implement spill and leak response procedures to prevent industrial materials from discharging through the stormwater conveyance system (spilled or leaked industrial materials shall be cleaned promptly and disposed of properly); (3) identify and describe all necessary and appropriate spill and leak response equipment, locations of spill and leak response equipment, and spill or leak response equipment maintenance procedures; and (4) identify and train appropriate spill and leak response personnel.
- 4. Material Handling and Waste Management.** The Discharger shall do the following:
 - a. Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with stormwater during a storm;

- b. Contain all stored non-solid industrial materials or wastes (e.g., particulates, papers, shredded paper) that can be transported or dispersed by the wind or contact with stormwater;
 - c. Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use;
 - d. Divert run-on and stormwater generated from within the facility away from all stockpiled materials;
 - e. Clean all spills of industrial materials or wastes that occur during handling in accordance with spill response procedures; and,
 - f. Observe and clean, as appropriate, any outdoor material or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes.
- 5. Erosion and Sediment Control.** The Discharger shall (1) implement effective wind erosion controls; (2) provide effective stabilization for inactive areas, finished slopes, and other erodible areas prior to a forecasted storms; (3) maintain effective perimeter controls and stabilize site entrances and exits to sufficiently control discharges of erodible materials; and (4) divert run-on and stormwater generated from within the facility away from erodible materials.
- 6. Employee Training.** The Discharger shall ensure that all personnel implementing the SWPPP are properly trained with respect to BMP implementation, BMP effectiveness evaluations, visual observations, and monitoring activities. The Discharger shall identify which personnel need to be trained, their responsibilities, and the type of training they are to receive and maintain documentation of completed training and the personnel that received the training with the SWPPP.
- 7. Quality Assurance and Record Keeping.** The Discharger shall (1) develop and implement management procedures to ensure that appropriate personnel implement all SWPPP elements; (2) develop methods of tracking and recording BMP implementation; and (3) maintain BMP implementation records, training records, and records related to any spills and clean-up related response activities for a minimum of five years.
- G. Action Levels and Advanced BMPs.** If the Discharger samples total suspended solids (TSS), oil and grease, or pH in excess of an action level in Table A, the Discharger shall review the SWPPP to identify appropriate modifications to existing BMPs or additional BMPs as necessary to reduce pollutant discharge concentrations to levels below the action level. The Discharger shall revise the SWPPP accordingly before the next storm, if possible, or as soon as practical, and in no event later than three months following the exceedance.

Table A
Stormwater Action Levels

Parameter	Unit	Instantaneous Action Level	Annual Action Level
Total Suspended Solids	mg/L	400	100
Oil & Grease	mg/L	25	15
pH	standard units	6.0-9.0 ^[1]	---

Footnote:

^[1] Values below or above this range require action.

If, upon subsequent monitoring, the pollutants measured in Table A continue to exceed their respective action levels, the Discharger shall further evaluate its BMPs and update its SWPPP accordingly to include advanced BMPs in addition to the minimum BMPs described in Provision I.F, above. The Discharger shall, to the extent feasible, implement and maintain any advanced BMPs identified pursuant to Provision I.E.8, above, as necessary to reduce or prevent discharges of pollutants in stormwater discharges in a manner that reflects best industry practice considering technological availability and economic practicability and achievability. Advanced BMPs may include one or more of the following:

1. **Exposure Minimization BMPs.** These include storm resistant shelters (either permanent or temporary) that prevent the contact of stormwater with identified industrial materials.
2. **Stormwater Containment and Discharge Reduction BMPs.** These include BMPs that divert, infiltrate, reuse, contain, retain, or reduce the volume of stormwater runoff.
3. **Treatment Control BMPs.** These include mechanical, chemical, biologic, or any other treatment technology that will meet the treatment design standard.

H. BMP Descriptions. The SWPPP shall identify each BMP being implemented at the facility, including the following:

1. The pollutants the BMP is designed to reduce or prevent;
2. The frequency, times of day, or conditions when the BMP is scheduled for implementation;
3. The locations within each area of industrial activity or industrial pollutant source where the BMP shall be implemented;
4. The individual responsible for implementing the BMP;
5. The procedures, including maintenance procedures, and instructions to implement the BMP effectively; and
6. The equipment and tools necessary to implement the BMP effectively.

I. Annual Comprehensive Facility Compliance Evaluation. The Discharger shall conduct one annual facility evaluation for each reporting year (July 1 to June 30). If the Discharger conducts an annual evaluation fewer than 8 months, or more than 16 months, after it conducts the previous annual evaluation, it shall document the justification for doing so. The Discharger shall revise the

SWPPP, as appropriate, and implement the revisions within 90 days of the annual evaluation. At a minimum, the annual evaluations shall consist of the following:

1. A review of all sampling, visual observation, and inspection records conducted during the previous reporting year;
2. An inspection of all areas of industrial activity and associated potential pollutant sources for evidence of, or the potential for, pollutants entering the stormwater conveyance system;
3. An inspection of all drainage areas previously identified as having no exposure to industrial activities and materials;
4. An inspection of equipment needed to implement the BMPs; and
5. An assessment of any other factors needed to comply with the requirements of the Annual Stormwater Report (see Provision III.A, below).

II. STANDARD PROVISIONS – MONITORING

A. Visual Observations

1. Monthly Visual Observations

- a. At least once per month, the Discharger shall visually observe each drainage area for the following:
 - i. The presence or indication of prior, current, or potential unauthorized non-stormwater discharges and their sources;
 - ii. Authorized non-stormwater discharges, sources, and associated BMPs; and
 - iii. Outdoor industrial equipment and storage areas, outdoor industrial activities areas, BMPs, and all other potential sources of industrial pollutants.
- b. The monthly visual observations shall be conducted during daylight hours of scheduled facility operating hours and on days without precipitation.
- c. The Discharger shall provide an explanation in the Annual Stormwater Report for uncompleted monthly visual observations (see Provision III.A, below).

2. Sampling Event Visual Observations. Sampling event visual observations shall be conducted at the same time sampling occurs at a discharge location. At each discharge location where a sample is obtained, the Discharger shall observe the discharge of stormwater associated with industrial activity.

- a. The Discharger shall ensure that visual observations of stormwater discharged from containment sources (e.g., secondary containment or storage ponds) are conducted at the time that the discharge is sampled.

- b. If the Discharger employs volume-based or flow-based treatment BMPs, it shall sample any bypass that occurs while the visual observations and sampling of stormwater discharges are conducted.
 - c. The Discharger shall visually observe and record the presence or absence of floating and suspended materials, oil and grease, discolorations, turbidity, odors, trash/debris, and sources of any discharged pollutants.
 - d. If a discharge location is not visually observed during the sampling event, the Discharger shall record which discharge locations were not observed during sampling or that there was no discharge from the discharge location.
 - e. The Discharger shall provide an explanation in the Annual Stormwater Report for uncompleted sampling event visual observations (see Provision III.A, below).
3. **Visual Observation Records.** The Discharger shall maintain records of all visual observations. Records shall include the date, approximate time, locations observed, presence and probable source of any observed pollutants, name of persons who conducted the observations, and any response actions and/or additional SWPPP revisions necessary in response to the visual observations.
4. **SWPPP Revisions.** The Discharger shall revise its BMPs as necessary when the visual observations indicate pollutant sources have not been adequately addressed.

B. Sampling and Analysis

- 1. The Discharger shall collect and analyze stormwater samples as specified in the MRP.
- 2. Samples shall be (i) representative of stormwater associated with industrial activities and any commingled authorized non-stormwater dischargers; or (ii) associated with the discharge of contained stormwater.
- 3. On a facility-specific basis, the Discharger shall also analyze additional parameters that serve as indicators of the presence of all industrial pollutants identified in the pollutant source assessment. These additional parameters may be modified (added or removed) in accordance with any updated SWPPP pollutant source assessment.

III. STANDARD PROVISIONS – REPORTING

- A. Annual Stormwater Report.** The results of the Discharger’s Annual Comprehensive Facility Compliance Evaluation shall be reported in the Annual Stormwater Report to the Regional Water Board no later than July 30. The Discharger shall include in the Annual Stormwater Report the following:
- 1. A compliance checklist that indicates whether the Discharger has complied with or addressed all applicable requirements of the SWPPP;
 - 2. An explanation for any non-compliance requirements within the reporting year, as indicated in the compliance checklist;

3. An identification, including page numbers and sections, of all revisions made to the SWPPP within the reporting year; and
4. The date(s) of the annual evaluation.

IV. DEFINITIONS

B. Authorized Non-Stormwater Discharges – Non-stormwater discharges are authorized if they meet the following conditions:

1. Fire-hydrant and fire prevention or response system flushing;
2. Potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems;
3. Drinking fountain water and atmospheric condensate, including refrigeration, air conditioning, and compressor condensate;
4. Irrigation drainage and landscape watering, provided that all pesticides, herbicides, and fertilizers have been applied in accordance with manufacturer's labels;
5. Uncontaminated natural springs, groundwater, foundation drainage, footing drainage;
6. Seawater infiltration where the seawater is discharged back into the source; or,
7. Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the facility, but not intentional discharges from cooling towers (e.g., "piped" cooling tower blowdown or drains).

C. Stormwater – stormwater runoff, snow melt runoff, and surface runoff and drainage, excluding infiltration and runoff from agricultural land.