

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

STAFF SUMMARY REPORT (John Madigan)
MEETING DATE: July 10, 2019

ITEM: 7

SUBJECT: **Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc., Permanente Plant, Cupertino, Santa Clara County – Reissuance of NPDES Permit**

CHRONOLOGY: March 2014 – NPDES permit and cease and desist order adopted
July 2017 – NPDES permit and cease and desist order amended

DISCUSSION: This Revised Tentative Order (Appendix A) would reissue the NPDES permit for Lehigh's Permanente Plant, a limestone and rock quarry that has produced cement and construction aggregate since 1939. The plant discharges quarry dewatering water, cement manufacture process wastewater, truck and equipment wash water, aggregate crushing and washing water, and industrial stormwater to upper Permanente Creek.

The Revised Tentative Order would continue the surface water component of the Regional Water Board's comprehensive effort to protect and restore surface and groundwater quality at and downstream of the facility. It would maintain stringent limits on selenium and other metals in Lehigh's wastewater and require Lehigh to continue directing significant volumes of stormwater to treatment. In addition, it would update monitoring requirements and incorporate requirements of a 13267 order that required Lehigh to provide technical information about its discharges' effects on Permanente Creek.

The Revised Tentative Order would also rescind a 2014 cease and desist order that required full permit compliance by October 1, 2017. That order is no longer needed because Lehigh completed required corrective actions, including constructing a wastewater treatment system and reconfiguring facility flows to send all water needing treatment to the treatment system.

We received numerous comments (Appendix B) on the tentative order. Several raised concerns that Lehigh discharges pollutants from unaddressed sources, such as air deposition, and threatens Santa Clara Valley groundwater, an important drinking water resource. Others questioned the effectiveness of Regional Water Board enforcement. As we explain in our Response to Comments (Appendix C), the Revised Tentative Order protects drinking water, and our enforcement efforts have significantly improved permit compliance and water quality. We anticipate receiving testimony from the commenters during the hearing.

The Regional Water Board had scheduled to consider this permit reissuance at its June 12, 2019, meeting, which was later cancelled. To reflect this delay, we propose the following revisions to the Revised Tentative Order originally prepared for the June Board meeting:

- Change the effective date (Table 3) from August 1, 2019, to September 1, 2019.
- Change the expiration date (Table 3) from July 31, 2024, to August 31, 2024.
- Change the deadline for filing Report of Waste Discharge (Table 3) from November 4, 2023, to December 5, 2023.
- Change the public hearing date (Fact Sheet section VIII.C) from June 12, 2019, to July 10, 2019.

**RECOMMEN-
DATION:**

Adopt the Revised Tentative Order with the changes above

CIWQS:

CW-273205

APPENDICES:

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

Appendix A
Revised Tentative Order



GAVIN NEWSOM
GOVERNOR



JARED BLUMENFELD
SECRETARY FOR
ENVIRONMENTAL PROTECTION

San Francisco Bay Regional Water Quality Control Board

**REVISED 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	Potential discharge of settled stormwater from rain falling directly on Rock Plant and runoff from adjacent hillside, discharged from Pond 17	37.31431°	-122.08893°	Permanente Creek
005	Settled stormwater from former Aluminum Plant, entry road, nearby hillside, and rain falling in the Rock Plant area, 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

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
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 167,000 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	3.7	8.2	---	---

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.

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 (DO) 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 ^[1]
Antimony	µg/L	640	---
Chromium (VI)	µg/L	16	---
Selenium	µg/L	---	5.0
Visible Oil	---	Presence	
Visible Color	---	Presence	

Footnote:

^[1] Comparisons with Annual Action Levels shall be evaluated using data collected over each 12-month period from July 1 through the following June 30.

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 the following parameters collected at the following monitoring locations to the California Environmental Data Exchange Network (CEDEN) to the extent that CEDEN accommodates the data type:

- *Monitoring Location RSW-001*: selenium, pH, temperature, DO, electrical conductivity (EC), turbidity, TSS, chloride, sulfate, trace metals (antimony, arsenic cadmium, total chromium, chromium [VI], copper, molybdenum, nickel, thallium, vanadium, and zinc), and chronic toxicity.
- *Monitoring Location RSW-004*: selenium, pH, temperature, DO, EC, turbidity. Parameters monitored quarterly with chronic toxicity: total hardness, TSS, chloride, sulfate, trace metals (antimony, arsenic cadmium, total chromium, chromium [VI], copper, molybdenum, nickel, thallium, vanadium, and zinc), and chronic toxicity.
- *Monitoring Location RSW-005*: selenium, pH, temperature, DO, EC, turbidity. Parameters monitored quarterly with chronic toxicity: total hardness, TSS, chloride, sulfate, trace metals (antimony, arsenic cadmium, total chromium, chromium [VI], copper, molybdenum, nickel, thallium, vanadium, and zinc), and chronic toxicity.
- *Monitoring Location RSW-006*: selenium, pH, temperature, DO, EC, and turbidity.
- *Monitoring Location RSW-007*: selenium, pH, temperature, DO, EC, and turbidity.

Data and results shall be submitted annually by March 1.

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;
- 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

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

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.
- 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.

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)

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;

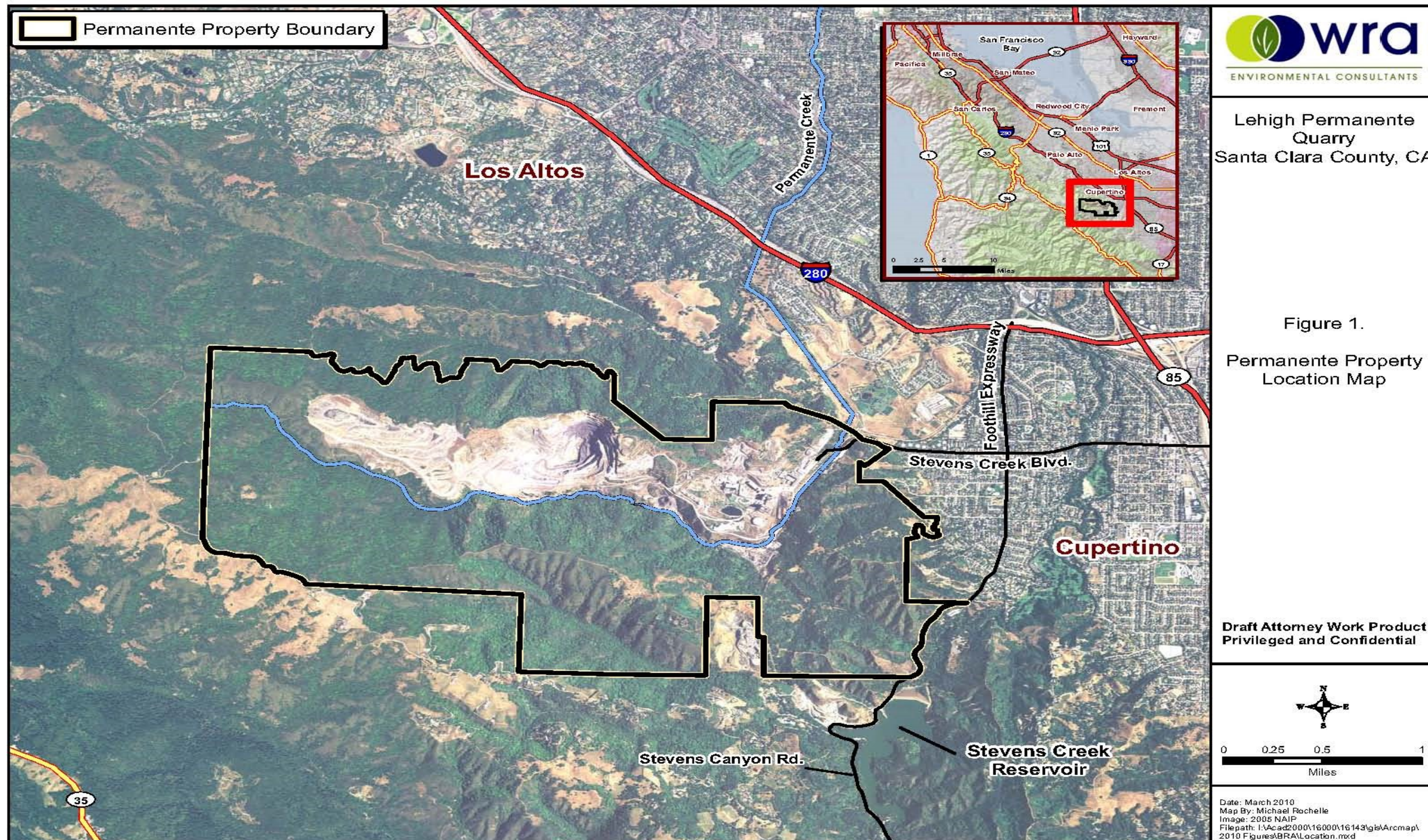
μ is the arithmetic mean of the observed values; and

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





LEGEND

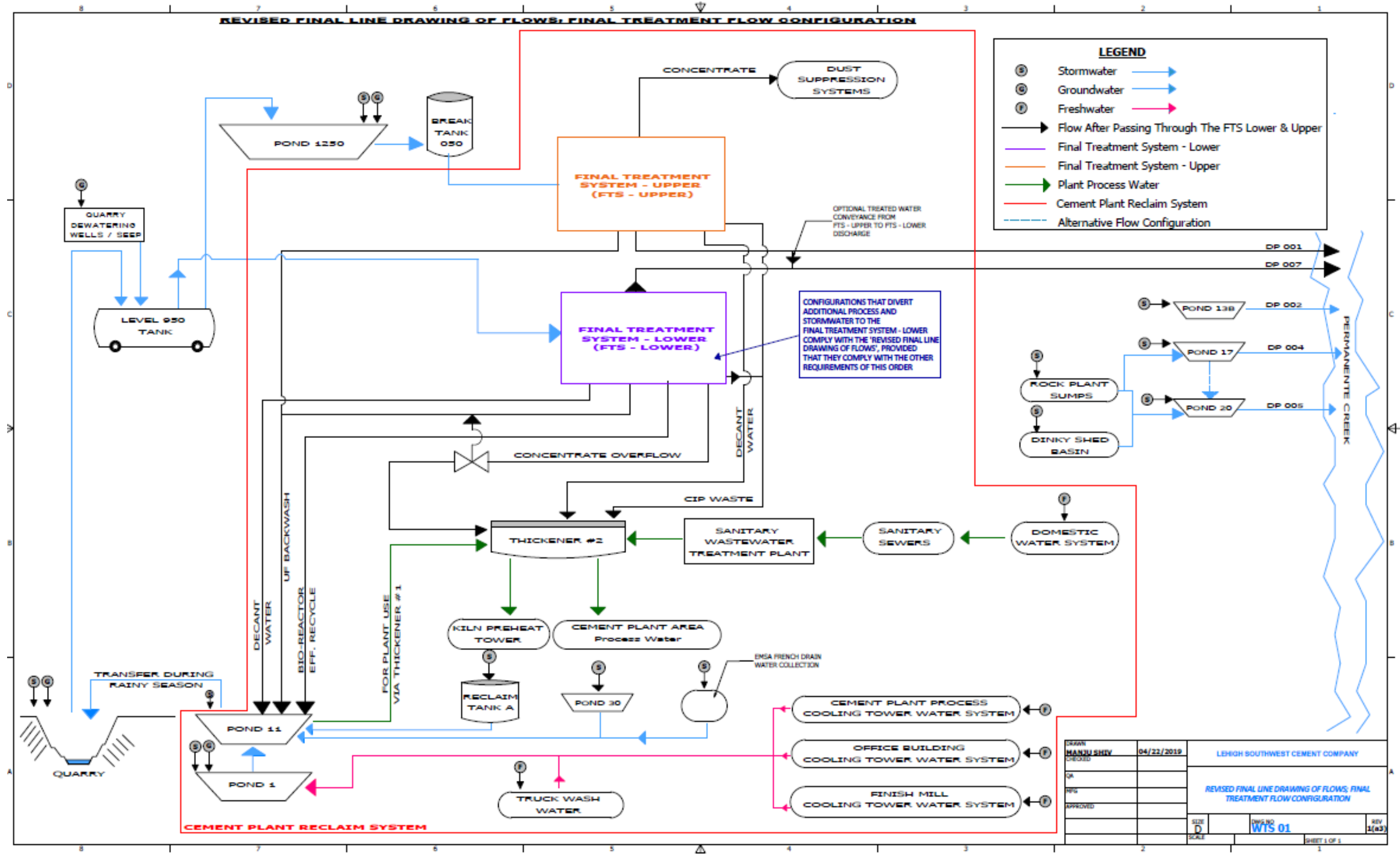
- Stormwater Conveyance Infrastructure
- Fresh Water Conveyance Infrastructure
- Sewage Water Conveyance Infrastructure

NOTES

Conveyance infrastructure locations are Approximate.

Lehigh Southwest Cement Company Permanente Quarry
WATER SYSTEM AND PIPING

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. For parameters reported to the California Environmental Data Exchange Network (CEDEN), 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 and 50 feet upstream of Pond 14. <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: PER070</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: PER045</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: PER020</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/Quarter
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/Quarter
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)
- [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/Year
Nickel	µg/L	Grab	1/Quarter
Selenium	µg/L	Grab	^[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
 1/Year = once per year

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] The selenium monitoring frequency shall be 1/month during the wet season (November 1 through April 30) and twice during the dry season. 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-001A, 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/Year
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/Year
pH	Standard Units	Grab	^[3]
Settleable Matter ^[4]	mL/L-hr	Grab	1/Year

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

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
- 1/Year = once 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 1/Year.
- [4] Hardness and settleable matter shall be monitored at Monitoring Location RSW-001A. Hardness and settleable matter 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 when there is discharge at Discharge Point 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
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/Year
Nickel	µg/L	Grab	1/Quarter
Selenium	µg/L	Grab	1/Quarter
TDS	mg/L	Grab	1/Year
Standard Observations ^[1]	---	---	1/Quarter

Unit Abbreviations:

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

Sampling Frequencies:

1/Quarter = once per quarter
 1/Year = once per year

Footnote:

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

C. Monitoring Location RSW-004

The Discharger shall monitor receiving water at Monitoring Location RSW-004 as follows:

Table E-6. Receiving Water Monitoring—Monitoring Location RSW-004

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

Parameter	Units	Sample Type	Minimum Sampling Frequency ^[1]
Trace Metals ^[5]	µg/L	Grab	1/Quarter
Standard Observations ^[6]	---	---	^[2]

Unit Abbreviations:

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

Sampling Frequencies:

- 1/Quarter = once per quarter
- 1/Year = once 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, and on the same day as effluent monitoring at Monitoring Locations EFF-004 through EFF-006 at least once per year if possible.
- ^[2] Monitoring frequency shall be monthly during the wet season (November 1 through April 30) and twice during the dry season.
- ^[3] Antimony, chromium (VI), and nickel shall be monitored concurrently with chronic toxicity.
- ^[4] Chronic bioassay tests shall be performed in accordance with MRP section V.B.
- ^[5] Trace metals are total recoverable arsenic, cadmium, chromium, copper, molybdenum, thallium, vanadium, and zinc. Trace metals shall be monitored concurrently with chronic toxicity.
- ^[6] Standard observations are listed in Attachment G section III.C.1.

D. Monitoring Locations RSW-005 through RSW-007

The Discharger shall monitor receiving water at Monitoring Locations RSW-005 through RSW-007 as follows:

Table E-7. Receiving Water Monitoring—Monitoring Locations RSW-005 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	1/Quarter
Flow	cfs	Monthly	1/Quarter
Total Hardness as CaCO ₃ ^[2]	mg/L	Grab	1/Quarter
pH	Standard Units	Grab	1/Quarter
Sulfate ^[2]	mg/L	Grab	1/Quarter
Temperature	°C	Grab	1/Quarter
TSS	mg/L	Grab	1/Quarter
Turbidity	NTU	Grab	1/Quarter
Antimony	µg/L	Grab	^[3]
Chromium (VI)	µg/L	Grab	^[3]
Chronic Toxicity ^[2, 4]	TUc	Grab	1/Quarter
Mercury ^[5]	µg/L	Grab	1/Year
Nickel	µg/L	Grab	^[3]
Selenium	µg/L	Grab	1/Quarter
TDS	mg/L	Grab	1/Year
Trace Metals ^[2, 6]	µg/L	Grab	1/Quarter
Standard Observations ^[7]	---	---	1/Quarter

Unit Abbreviations:

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

Sampling Frequencies:

1/Quarter	= once per quarter
1/Year	= once per year

Footnotes:

- [1] Monitoring at Monitoring Location RSW-005 is required only if flow from the Facility continues to this location. Monitoring at Monitoring Locations RSW-006 and RSW-007 is required only when flow from upper Permanente Creek continues to these locations.
- [2] Chloride, total hardness as CaCO₃, sulfate, chronic toxicity, and trace metals shall be monitored at Monitoring Location RSW-005. Such monitoring is not required at Monitoring Locations RSW-006 and RSW-007.
- [3] Antimony, chromium (VI), and nickel shall be monitored concurrently with chronic toxicity at Monitoring Location RSW-005. Such monitoring is not required at Monitoring Locations RSW-006 and RSW-007.
- [4] Chronic bioassay tests shall be performed in accordance with MRP section V.B.
- [5] Mercury shall be monitored at Monitoring Location RSW-005. Mercury monitoring is not required at Monitoring Locations RSW-006 and RSW-007.
- [6] Trace metals are total recoverable arsenic, cadmium, chromium, copper, molybdenum, thallium, vanadium, and zinc. Trace metals shall be monitored concurrently with chronic toxicity.
- [7] 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 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 V.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 V.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 V.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 V.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 V.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, RSW-004, and RSW-005 shall be water flea (*Ceriodaphnia dubia*) and algae (*Selenastrum capricornutum*).
- 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. Toxicity Reduction Evaluation (TRE)

- a. **Monitoring Locations RSW-001 and RSW-004.** The Discharger shall conduct a TIE when it observes toxicity at Monitoring Location RSW-001 or RSW-004 and the following circumstances exist:
 - i. the Discharger is not currently conducting a TRE for discharges from Discharge Point Nos. 001 or 007,
 - ii. discharges from Discharge Point Nos. 001 or 007 are not otherwise identifiable as causes of the observed toxicity (e.g., are not toxic concurrently with the receiving water), and
 - iii. the percent effect in the receiving water sample is at least 50 percent and statistically significant.

The Discharger shall conduct the TIE using the same sample and affected species. The Discharger shall also follow MRP section V.A.2.c to investigate toxicity at Discharge Point Nos. 001 and 007.

The Discharger shall select TIE treatments based on weight of evidence (e.g., nature of the toxicity observed, historical TIE results, and concurrent analytical test results for metals, minerals, suspended solids; etc.). The Discharger shall describe its rationale for TIE treatment selection in the appropriate SMR.

The Discharger may conduct the TIE using a single species if more than one species exhibits toxicity and the same cause is suspected. The Discharger may also conduct the TIE on a sample from one monitoring location if toxicity is observed at both monitoring locations and there is continuous flow between them. The Discharger shall describe its rationale for species and monitoring location selection in the appropriate SMR.

The Discharger is not required to conduct a TIE if the cause of toxicity can be identified based on weight-of-evidence using previous TRE or TIE data (e.g., there is a consistent chemical signal associated with the observed toxicity). The Discharger shall report its rationale for not conducting a TIE and identifying the cause of toxicity in the appropriate SMR.

If the percent effect in the receiving water sample is less than 50 percent but statistically significant, the Discharger shall analyze possible causes of toxicity based on available data (e.g., trace metals, mineral content, turbidity, or test-related quality assurance or quality control data) and report the results in the appropriate SMR.

- b. Monitoring Location RSW-005.** If the Discharger observes toxicity at Monitoring Location RSW-005 and 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-8. 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 Other Pollutants (by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625)	Not required (unless identified in influent, effluent, or receiving water monitoring tables), but encouraged ^[1]	Discharger may use this method and submit results with application for permit reissuance, unless data are submitted by CDF/EDF upload
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-9. 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

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
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	167,000 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	Instant-aneous Minimum	Instant-aneous 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 R2-2014-0002, 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 five 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 ^[1]	Selenium, Maximum Daily	µg/L	8.2	15
03/22/2018	004	Turbidity, Maximum Daily	NTU	50	52
04/24/2019	001 ^[2]	Selenium, Maximum Daily	µg/L	8.2	9.3
		Selenium, Average Monthly	µg/L	4.1	9.3

Footnotes:

^[1] This violation was detected in the effluent from the Upper FTS.

^[2] This violation was detected in the effluent from the Lower FTS.

On May 21, 2019, the Regional Water Board issued Order No. R2-2019-1014, fining the Discharger \$6,000 for the November and December 2017, and March 2018 violations above. Enforcement for the April 2019 violations is pending.

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
40 C.F.R. section 411 subpart A <i>(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
40 C.F.R. section 411 subpart C <i>(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
40 C.F.R. section 436 subparts B and C <i>(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:

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

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 = 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 form 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, for most inorganics, and from December 2014 through April 2017, the latest data available, for most organics. 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), and selenium.

We find that chromium (VI) has a reasonable potential to be discharged at a concentration that could cause or contribute to an exceedance of water quality objectives in Permanente Creek by Trigger 3, above, based on a combination of factors. While chromium (VI) has not been discharged in excess of its 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 normal rainy seasons (the Discharger does not operate the FTS during the dry season). The FTS is complex and, while capable of meeting stringent limits for metals, has not been used to meet effluent limitations as stringent as those in this Order or the previous order at other sites. Standard operating procedures are therefore unavailable from the manufacturer and the Discharger has had to refine its treatment operations to meet these limits. Chromium (VI) is potentially toxic if insufficiently treated, and the discharge receives no dilution. Moreover, chromium (VI) is a potential drinking water contaminant, and Permanente Creek’s beneficial uses include municipal supply and groundwater recharge (see Fact Sheet Table F-5), which are of particular community concern. Also, the Discharger has a history of compliance problems, despite its improved performance.

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

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]
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
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

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]
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
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	No
	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 $MEC \geq WQC$, $B > WQC$ 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
Units	µg/L	µg/L	µg/L
Basis and Criteria type	Title 22 Primary MCL	BP & CTR FW Aquatic Life	CTR Chronic
Criteria -Acute	-----	16	20
Criteria -Chronic	-----	11	5.0
Water Effects Ratio (WER)	1	1	1
Lowest WQO	6.0	11	5.0
Dilution Factor (D) (if applicable)	0	0	0
No. of samples per month	4	4	4
Aquatic life criteria analysis required? (Y/N)	N	Y	Y
HH criteria analysis required? (Y/N)	Y	N	N
Applicable Acute WQO		16	20
Applicable Chronic WQO		11	5.0
HH criteria	6.0		
Background (Maximum Conc for Aquatic Life calc)	0.11	0.66	0.68
Background (Average Conc for Human Health calc)	0.11		
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	Y
ECA acute		16	20
ECA chronic		11	5.0
ECA HH	6.0		
Number of data points <10 or at least 80% of data reported non detect? (Y/N)	Y	N	N
Avg of effluent data points	4.6	0.71	1.1
Std Dev of effluent data points	3.2	0.87	1.0
CV calculated	N/A	1.2	0.89
CV (Selected) – Final	0.60	1.2	0.89
ECA acute mult99		0.17	0.23
ECA chronic mult99		0.32	0.41
LTA acute		2.8	4.5

PRIORITY POLLUTANTS	Antimony	Chromium (VI)	Selenium
Units	µg/L	µg/L	µg/L
LTA chronic		3.5	2.0
minimum of LTAs		2.8	2.0
AMEL mult95	1.6	2.2	1.8
MDEL mult99	3.1	5.8	4.4
AMEL (aq life)		6.0	3.7
MDEL (aq life)		16	9.0
MDEL/AMEL Multiplier	2.0	2.7	2.4
AMEL (human hlth)	6.0		
MDEL (human hlth)	12		
minimum of AMEL for Aq. life vs HH	6.0	6.0	3.7
minimum of MDEL for Aq. Life vs HH	12	16	9.0
Previous order limit (30-day average)	-----	8.0	4.1
Previous order limit (daily)	-----	16	8.2
Final limit – AMEL	6.0	6.0	3.7
Final limit – MDEL	12	16	8.2

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, mercury, thallium, TDS, 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, TDS, 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 or U.S.EPA's 2015 *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP)*, this Order establishes the lowest acute 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	Receiving Water RSW-005 through RSW-007
Chloride	---	---	1/Year ^[1]	---	1/Quarter	1/Quarter ^[2]
Conductivity	---	1/Quarter	[3]	---	---	---
Dissolved Oxygen	---	---	[3]	1/Quarter	[3]	[3]
Flow	Continuous/D ^[4]	1/Month ^[4]	[3]	1/Quarter	[3]	[3]
Hardness	---	---	1/Year ^[5]	---	1/Quarter	1/Quarter ^[2]
Oil and Grease	1/Quarter	1/Quarter ^[6]	---	---	---	---
pH	Continuous/D or 1/Day ^[7]	1/Quarter	[3]	1/Quarter	[3]	[3]
Settleable Matter	1/Month	1/Quarter	1/Year ^[5]	---	---	---
Sulfate	---	---	1/Quarter ^[1]	---	1/Quarter	1/Quarter ^[2]
Temperature	1/Month	---	[3]	1/Quarter	[3]	[3]
Total Residual Chlorine ^[7]	1/Day	---	---	---	---	---
TSS	1/Week	1/Quarter	[3]	1/Quarter	[3]	[3]
Turbidity	---	---	1/Year	1/Quarter	1/Quarter	1/Quarter
Acute Toxicity	1/Quarter	---	---	---	---	---
Antimony	1/Month	1/Quarter	1/Year	1/Quarter	1/Quarter	1/Quarter

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	Receiving Water RSW-005 through RSW-007
Chromium (VI)	1/Month	1/Quarter	1/Year	1/Quarter	1/Quarter	1/Quarter
Chronic Toxicity	1/Quarter	---	1/Quarter ^[1]	---	1/Quarter	1/Quarter ^[2]
Mercury	1/Quarter	1/Year	1/Year	1/Year	---	1/Year ^[8]
Nickel	1/Month	1/Quarter	1/Year	1/Quarter	1/Quarter	1/Quarter
Selenium	2/Month	^[3]	^[3]	1/Quarter	^[3]	^[3]
TDS	1/Quarter	---	1/Year	1/Year	1/Year	2/Year
Trace Metals ^[10]	---	---	1/Quarter ^[1]	---	1/Quarter ^[2]	1/Quarter ^[2]
Other priority pollutants ^[11]	1/Year	---	1/Year	---	---	---
Standard Observations ^[12]	1/Day	---	^[3]	1/Quarter	1/Quarter	^[3]
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
- 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 and settleable matter shall be monitored at Monitoring Location RSW-001A. Hardness and settleable matter 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-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.

Appendix B
Comment Letters

Lehigh Hanson
HEIDELBERGCEMENT Group

24001 Stevens Creek Blvd.
Cupertino, CA 95014
(408) 996-4000

May 3, 2019

VIA ELECTRONIC MAIL

Mr. John H. Madigan
Water Resources Control Engineer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

Re: ***Lehigh Southwest Cement Company - Permanente Plant
Comments on Tentative Order for Lehigh Southwest Cement Company, Permanente
Plant, Santa Clara County, NPDES Permit No. CA0030210***

Dear Mr. Madigan:

Lehigh Southwest Cement Company appreciates the opportunity to provide its comments on the Tentative Order for the Permanente Plant, NPDES Permit No. CA0030210. Those detailed comments are enclosed as Attachment A. As noted in our comments, we are also providing an updated Process Flow Diagram for inclusion in the Tentative Order, which is enclosed as Attachment B.

Lehigh appreciates Regional Water Board staff efforts to prepare the Tentative Order. Please do not hesitate to contact me or Tressa Jackson to discuss Lehigh's comments further if you have any questions.

Sincerely,



Erika Guerra
Environmental & Land Resources Director

Cc: Tressa Jackson, Area Environmental Manager, Lehigh Southwest Cement Company
Nicole Granquist, Downey Brand LLP

ATTACHMENT A

LEHIGH SOUTHWEST CEMENT COMPANY
COMMENTS ON
TENTATIVE WASTE DISCHARGE REQUIREMENTS
FOR THE
PERMANENTE PLANT
SANTA CLARA COUNTY

Submitted May 3, 2019

Cover Sheets

① p. 1, Table 2. Discharge Locations—Discharge Point 005 Effluent Description. In August 2018, Lehigh submitted a confirming letter to the Regional Water Board describing modifications to the storm water flows from the Rock Plant area, to facilitate those flows being discharged via the storm water discharge location of Pond 20 (Discharge Point 005). Directing flows to this location, where significant storm water treatment infrastructure had been installed, secures improved water quality (the limited area around Pond 17 (Discharge Point 004) cannot accommodate such infrastructure). Lehigh requests that the effluent description for Discharge Point 005 be modified to include the flow description for Discharge Point 004. This will authorize, as previously agreed, the discharge of stormwater from rain falling on the Rock Plant area from Discharge Point 005. Please note that Discharge Point 004 is not being abandoned, Lehigh will retain this location as a potential discharge point or an area where run on from the adjacent hillside may be directed. The requested changes to the effluent description are as follows.

Settled stormwater from former Aluminum Plant, entry road, ~~and~~ nearby hillside, and rain falling in the Rock Plant area discharged from Pond 20

Discharge Prohibition

② p. 5, item B. Combined Discharge Rate—Locations 001 and 007. Lehigh seeks to maintain the discharge rate authorized in the existing NPDES Permit (167,000 gallons per hour (gph)), which is the volume identified in the tentative NPDES permit's Fact Sheet (Table F-1) as the Design Flow.

Effluent Limitations and Discharge Requirements

③ p. 5, Table 4. Effluent Limitations—Selenium. Lehigh recognizes that effluent limitations for selenium will be issued in the new NPDES permit, and the procedure to calculate the new limits, based on the effluent data available collected since October 2017, has resulted in an Average Monthly Effluent Limitation (AMEL) of 3.0 µg/L and Maximum Daily Effluent Limitation (MDEL) of 8.2 µg/L. The procedure for calculating these limits is derived from the State Water Board's 2005 *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Plan or SIP). However, as

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explained below, one data point used by the Regional Water Board to calculate the effluent limits is not representative of Lehigh's discharge; it is appropriate for the Regional Water Board to exercise the discretion provided to them by the SIP that allows unrepresentative data to be omitted from the dataset used to calculate effluent limits.

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The data in question is a selenium sample collected on 12/21/2017 (15 µg/L), during the FTS-Upper initial start-up (while the system was in place by October 1, 2017 as required, due to weather conditions and the fact that quarry discharge is weather-dependent, discharge from the new system did not occur until December 2017). All other selenium measurements in the dataset (October 2017–July 2018) ranged non-detect <0.19 to 3.8 µg/L (Figure 1), demonstrating that the 12/21/2017 sample varied substantially from other measurements. Importantly, the 12/21/2017 sample was not collected under conditions that are representative of FTS operations. The 12/21/2017 sample was collected within approximately two weeks of initiating discharge to Permanente Creek from Lehigh's newly constructed FTS-Upper, while operations were still being optimized. On 12/21/2017, aerated water from the bioreactor's backwash cycle was being flushed from the system as normal. The flushing is necessary to stabilize the biological reactions after a backwash cycle where increased selenium can potentially occur until the aerated water is flushed out, which takes between 30 to 45 minutes. The aerated water is typically recirculated and sent back to the headworks; however, in this instance it was not recirculated. The discharge of aerated water coincided with collection of the selenium sample for the week. Not only was the discharge of aerated water (at the time of sample collection) of relatively short duration, it was the root cause of the elevated selenium in the sample. Of course, since that time, discharge of aerated water following system backwash has been rectified and not repeated. The selenium measurement on the following day 12/22/2017 (0.72 µg/L), as well as all subsequent measurements, confirms the issue on 12/21/2017 has been addressed.

In accordance with Section 1.2 of the SIP, Regional Boards have the discretion to determine if any data are inappropriate for use in implementing the SIP. The SIP states the following:

“When implementing the provisions of this Policy, the RWQCB shall use all available, valid, relevant, representative data and information, as determined by the RWQCB. The RWQCB shall have discretion to consider if any data are inappropriate or insufficient for use in implementing this Policy. Instances where such consideration is warranted include, but are not limited to, the following: evidence that a sample has been erroneously reported or is not representative of effluent or ambient receiving water quality; questionable quality control/quality assurance practices; and varying seasonal conditions.” (SIP, Section 1.2)

Because the effluent discharged on 12/21/2017 is not representative of effluent quality produced by Lehigh, Lehigh requests that the Regional Water Board exercise the discretion provided by the SIP by omitting the measurement from the dataset when calculating effluent limitations for Discharge Point No. 001 and 007. Taking such action is also consistent with the Regional Water Board's obligation to act “reasonably” in accordance with Water Code sections 13000 and 13263.

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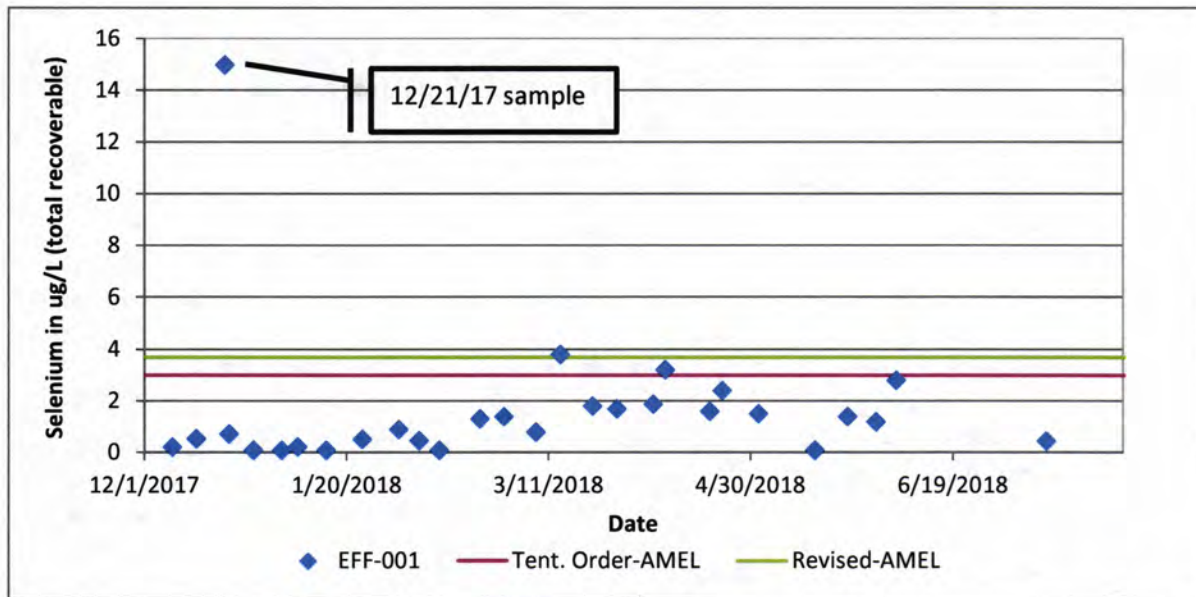


Figure 1. Selenium concentrations in EFF-001 samples used to calculate effluent limitations in the tentative NPDES Permit relative to the tentative order's AMEL and the AMEL calculated by omitting the 12/21/2017 selenium measurement.

p. 5, Table 4. Effluent Limitations—Antimony, Chromium (VI).

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Full-treatment of the discharge from Discharge Point 001, commencing on October 1, 2017, marked a state-change in discharge quality. Data collected before October 1, 2017, is no longer representative of the discharge, and, per well-established policy, is to be disregarded when Regional Water Board staff conduct prospective reasonable potential analysis, consistent with Section 1.2 of the SIP. Nonetheless, effluent limitations for antimony and chromium were included in the tentative NPDES Permit, using data generated before full treatment was implemented and prior to October 1, 2017.¹ If this data were excluded, as appropriate, no reasonable potential would exist for either constituent. Lehigh requests that the reasonable potential analysis be re-performed, excluding the now non-representative data, and that the tentative NPDES Permit's effluent limitations be adjusted to exclude antimony and chromium. If data are collected in the future that demonstrate Lehigh's discharge has reasonable potential, the Regional Water Board can reopen the NPDES Permit to include an effluent limitation for the relevant pollutant at that time.

¹ Lehigh has provided the Regional Water Board metals test results for the seven (7) chronic toxicity samples collected from the FTS-Upper (EFF-001) to date. In these samples, antimony ranged ND<0.5 to 1.1 µg/L. The data demonstrate that the treated discharge does exhibit reasonable potential to exceed the 6 µg/L MCL for antimony. Chromium (VI) data in CIWQS through July 2018 range DNQ 0.067 to 4.7 µg/L (n=27), which do not demonstrate reasonable potential to exceed applicable aquatic life criteria of 11 µg/L. For this reason, Lehigh requests that effluent limitations for antimony and Chromium (VI) be removed from Table 4. Further, Lehigh would disagree that the data generated since October 1, 2017 occurred during "mild rainy seasons." (See tentative NPDES Permit at F-20).

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p. 5, Table 4. Effluent Limitations—Total Dissolved Solids (TDS).

5 The tentative NPDES permit found that the discharge has reasonable potential to cause or contribute to an exceedance of applicable water quality objectives for TDS. As such, an AMEL (1,000 mg/L) and MDEL (1,800 mg/L) for TDS have been proposed. The water quality objective used to conduct the Reasonable Potential Analysis (RPA) for TDS, the Secondary Maximum Contaminant Level (SMCL) issued in the California Code of Regulations (Title 22), was selected for protection of downstream municipal water supplies (i.e., groundwater). The SMCL for TDS was developed by the USEPA as consumer acceptance levels to protect treated domestic drinking water supplies served by community water providers from adverse aesthetic qualities (i.e., taste). The SMCL is divided into three levels—a Recommended Level (< 500 mg/L), an Upper Level (1,000 mg/L), and a Short Term Level (1,500 mg/L)—and the Upper Level was utilized as the threshold for the RPA. Data collected and summarized in the tentative NPDES permit for EFF-001 demonstrate that the discharge does not have reasonable potential to exceed the 1,000 mg/L Upper Level. The Maximum Effluent Concentration (MEC) for TDS is 810 mg/L.

TDS is not a toxic pollutant and is therefore not subject to the SIP's RPA approach. The Regional Board can use their discretion and other applicable guidance/data when conducting the RPA. Data collected by Santa Clara Valley Water District in 2017² demonstrates that all public water supply and private domestic wells tested throughout the region met the TDS SMCL Recommended Level (<500 mg/L). Further, statistical trend analysis indicated that all wells directly downgradient of Lehigh property in the shallow or principal aquifer had stable TDS concentrations for the period 2003–2017 (Figure 24, SCVWD 2017). These data indicate Lehigh's discharge does not exhibit reasonable potential to cause or contribute to an exceedance of the SMCL in community sources of drinking water. Thus, Lehigh requests that effluent limitations for TDS be removed from the permit.

6 p. 5, Table 4. Effluent Limitations—Settleable Matter. An effluent limitation for Settleable Matter applicable to Discharge Point No. 001 and 007 has been included in the tentative NPDES permit, but all 27 samples of the EFF-001 discharge collected during October 2017–July 2018 were non-detect (method detection limit = 0.1 mL/L). Before full treatment of all discharges at EFF-001, nearly all of Settleable Matter measurements on the discharge were also below detection (66 of 67 samples during September 2014–September 2017). This indicates the discharge does not exhibit reasonable potential to exceed the Basin Plan objective for Settleable Matter. Although Table 4-2 lists applicable effluent limitations for Settleable Matter, the Basin Plan goes on to state that “Effluent limits are not necessary for substances that do not pose any risk to beneficial uses or are shown not to be present in discharge” (Basin Plan, Section 4.7.5). Therefore, effluent limitations for Settleable Matter and routine discharge monitoring for this parameter is no longer appropriate, and Lehigh requests that they be removed.

7 p. 6, Table 5. Effluent Limitations for Discharge Point Nos. 002, 004, 005, and 006—Settleable Matter. The Basin Plan objectives applied to Lehigh's stormwater outfalls, 0.1 ml/l-hr as a 30-

² Santa Clara Valley Water District. 2017. Annual Groundwater Report for Calendar Year 2017.

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day average and 0.2 ml/l-hr as a daily maximum (Basin Plan, Table 4-2), were intended to apply to discharges from “treatment facilities,” not to discharges from “sedimentation and similar cases” (footnote g, Table 4-2, Basin Plan). Water discharged at Lehigh’s stormwater outfalls is not treated with the FTS-Upper or FTS-Lower systems, but rather they are subject to sedimentation controls/BMPs. Therefore, the Settleable Matter thresholds for “treatment facilities” are not necessarily applicable to Lehigh’s stormwater discharges. For discharges associated with “sedimentation and similar cases,” footnote g of the Basin Plan’s Table 4-2 indicates that such discharges “should generally not contain more than 1.0 ml/l-hr of Settleable Matter.” Furthermore, Lehigh invested heavily in sedimentation BMPs that minimize the discharge of Settleable Matter at EFF-004, EFF-005 and EFF-006.

- Discharge Point No. 002. Station did not discharge during current permit term. No Settleable Matter measurements were made.
- Discharge Point No. 004. Operations at the rock plant were optimized during the permit term and non-stormwater sources (rock wash water) were eliminated. A diversion pipeline was installed to collect run-on from the area above rock plant and reroute it directly to the discharge point, minimizing sediment mobilization from run-on. At EFF-004, Settleable Matter concentrations ranged from <0.1 (below detection) to 0.9 ml/l-hr during September 2014–July 2018. (n=14).
- Discharge Point No. 005. Several improvements occurred during the 2016/17 stormwater year, including lining of the swale that collects stormwater runoff above this point, as well as installation of numerous of gravel-reinforced rock grabions to slow the flow and settle solids. At EFF-004, Settleable Matter concentrations ranged from <0.1 (below detection) to 0.9 ml/l-hr during January 2016–July 2018 (n=16).
- Discharge Point No. 006. Reclamation of the East Material Storage Area (EMSA) was completed in 2014/15 and these activities stabilized surface materials and minimized mobilization of solids. Further, water from Pond 30 was rerouted from the discharge location for treatment through the FTS-Upper following the 2016/17 wet season so as to better control the concentration of pollutants in this water. At EFF-006, Settleable Matter concentrations ranged from <0.1 (below detection) to 0.2 ml/l-hr during January 2015–July 2018 (n=20).

Based on the data provided above, the discharges do not exhibit reasonable potential to exceed the applicable Basin Plan objective of 1 ml/l-hr. Thus, Lehigh requests that the effluent limitation for Settleable Matter and associated discharge monitoring be removed for these discharge locations. If the limitations are not removed, Lehigh requests that they be based on the 1 ml/l-hr threshold from the Basin Plan, Table 4-2, footnote g. Note that the total suspended solids effluent limitation in the tentative NPDES permit will be retained, ensuring that Lehigh’s discharges do not contain elevated levels of solids.

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p. 8, Table A. Stormwater Action Levels—Annual Action Level Determination. An annual action level has been proposed for selenium, but an averaging period has not specified in Table A. For consistency with Attachment S, which requires the annual site evaluation during the period July 1–June 30, it is appropriate for footnote 1 to Table A to be modified to indicate the

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8 annual action level for selenium applies to the July 1–June 30 period. The current text of footnote 1 applies to pH, which has been removed from Table A, because it is now an effluent limitation. Since the footnote no longer needs to apply to pH, it can be modified to address the selenium averaging period.

Footnote:

[1] ~~Values below or above this range require action~~ Compliance with Annual Action Levels shall be evaluated using data collected during July 1 through June 30 of the ensuing year.

9 p. 8, item 3. Action Levels and Advanced Best Management Practices—SWPPP Update Timeframe. This section requires Lehigh to update the SWPPP no more than three months after an action level is exceeded, which could occur any time during the stormwater year. The use of action levels to trigger SWPPP revision is consistent with the State’s Industrial General Stormwater Permit (Industrial General permit or IGP, Order No. 2014-0057-DWQ), but contrary to Lehigh’s tentative NPDES permit, the IGP requires SWPPP revisions to be complete within six months following June 30, the end of the stormwater year, rather than after every exceedance. Requiring the SWPPP to be updated once during the year, as allowed by the IGP, provides sufficient time to revise the document, limits the potential for multiple revisions to the SWPPP before all refined/new BMPs are fully implemented, and provides time to initiate BMP implementation before the beginning of the next wet season. As such, Lehigh request that if the actions levels have been exceed during the period July 1–June 30 of the following year, a revised SWPPP must be submitted by October 1st. The following changes would accommodate this request.

Action Levels and Advanced Best Management Practices (BMPs). If the Discharger samples any parameter in excess of an action level in Table A during the period July 1 through June 30 of the ensuing calendar year, 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 review and revise the SWPPP accordingly by October 1, which is three months following the July 1–June 30 period ~~before the next storm, if possible, or as soon as practical, and in no event later than three months following the exceedance.~~

10 p. 20, Attachment C. Process Flow Diagram. Lehigh is enclosing an updated Process Flow Diagram to include in the tentative NPDES permit package.

Attachment E – Monitoring and Reporting Program

11 p. E-2, Item I.E. General Monitoring Provisions—SWAMP comparable. To accommodate the request below regarding CEDEN reporting and SWAMP comparability, it is appropriate to modify this item as follows.

For parameters reported to CEDEN ~~Where applicable~~, monitoring data must be Surface Water Ambient Monitoring Program (SWAMP) comparable...

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p. E-4, Table E-1. Monitoring Locations—RSW-004 Description. The current location of RSW-004 requires sampling personnel to climb down a steep embankment to the creek and to carry heavy, large-volume samples (for toxicity testing) considerable distance while avoiding a number of hazards (wild oak, brush and fallen trees). Since there are no discharges to the creek between Discharge Point No. 006 and Pond 14 (a 500 foot segment), Lehigh requests that the RSW-004 station be described as anywhere within this segment. This will allow sampling at a more accessible location. The following changes would accommodate this request.

A point in Permanente Creek within 50 feet downstream of Discharge Point No. 006 and 50 feet upstream of Pond 14.

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p. E-4, Table E-1. Monitoring Locations—RSW-005 and RSW-006 CEDEN Names. Lehigh has established a CEDEN reporting program template for monitoring through the State Water Board using names for stations listed in the 2018 Water Code section 13267 Order. The CEDEN names designated in the tentative NPDES permit for these stations (“205PER070” and “205PER045”) are inconsistent with Lehigh’s CEDEN template and the 13267 Order. To avoid confusion, Lehigh believes it is appropriate to retain the CEDEN location names Lehigh has already established for RSW-005 and RSW-006 as follows:

- RSW-005: PER070
- RSW-006: PER045

Were the request below to omit station RSW-007 not granted, Lehigh also requests that the CEDEN name for RSW-007 be designated “PER020.”

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p. E-4, Table E-1. Monitoring Locations—RSW-007. Monitoring requirements have been brought into the tentative NPDES permit from the 2018 Water Code section 13267 Order. The tentative NPDES permit includes a station that was not included in the 2018 13267 Order—RSW-007 (PER020). Lehigh does not have permission from Santa Clara Valley Water District to monitor at PER020, and will need to amend its encroachment permit with the District before monitoring can be initiated. The tentative NPDES permit does not provide the time necessary to gain access to PER020. Further, in discussions with Regional Water Board staff when the 2018 13267 Order was issued, Regional Water Board staff previously agreed to remove monitoring at station PER020 from the Order. Lehigh is unaware of new information generated in the last year that supports a need for Lehigh to now monitor at PER020. Contrarily, during the 2013–2015 selenium impact study conducted by Lehigh (RBI 2015³), selenium levels at a station at PER010 were consistently below the water quality objective of 5 µg/L.

As recently as 2/11/2019, Regional Water Board Basin Planning staff collected metals and toxicity samples from PER020; yet on this date, Lehigh’s sampling contractor (Golder Associates) confirmed via site visit that Permanente Creek was dry just below the Stevens Creek division channel, meaning the water sourced to PER020 on 2/11/2019 (and sampled by Regional Water Board staff) was not from Lehigh (P. Bedore personal communication to T. Yin, 3/20/2019). This observation is common because flows in upper Permanente Creek are typically

³ RBI. 2015. *Permanente Quarry and Cement Plant Selenium Impact Assessment Study: Final Report*. June 2015.

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diverted to Stevens Creek. If there is a need to develop water quality information for Permanente Creek below the Stevens Creek diversion channel, dischargers in lower Permanente Creek watershed should help bear that responsibility. As such, Lehigh requests that monitoring at station PER020 be omitted from the new NPDES permit.

15 p. E-4, Table E-2 and various—Monitoring for Mercury. The tentative NPDES permit does not contain effluent limitations or storm water action levels for mercury, but routine monitoring for mercury has been included for effluent and receiving water stations. Mercury in Lehigh's discharges and receiving water is not at levels that have reasonable potential to exceed water quality objectives. Monitoring for mercury requires low-level analysis and special USEPA sampling techniques (clean hands-dirty hands sampling) not required of other constituents. This technique requires that two samplers/personnel be on hand to collect mercury at all of the discharge and receiving water stations, which significantly increases the labor expenditures for sampling. This can be avoided if mercury is not included in the routine sampling. Therefore, Lehigh requests that routine monitoring for mercury in discharges and receiving water be removed. This applies to Table E-2, Table E-3, Table E-4, Table E-5, and Table E-6. Mercury would still be tested as part of the effluent characterization analysis for priority pollutants, allowing reasonable potential to be assessed during the next permitting cycle.

16 p. E-5, Table E-2, Monitoring Locations EFF-001 and EFF-007—Total Dissolved Solids (TDS). It is unnecessary for TDS to be monitored with a weekly frequency to determine compliance with the SMCL, the water quality objective upon which the effluent limits are based. It is appropriate to decrease the TDS monitoring frequency to monthly (or even quarterly), consistent with all other parameters that have effluent limitations. If the request above to remove effluent limitations for TDS is granted, routine TDS monitoring at EFF-001 and EFF-007 will be unnecessary; TDS will be tested during the priority pollutant scan.

17 p. E-6 and others, Table E-4, Table E-5; Table E-6, Monitoring Locations RSW-001A through RSW-007—Total Dissolved Solids (TDS). Routine monitoring of TDS in the receiving water is also unnecessary. As noted above, Lehigh's discharge does not exhibit reasonable potential with regards TDS, making effluent limitations unnecessary. Therefore, Lehigh requests that the corresponding TDS receiving water monitoring be removed for all receiving water locations.

18 p. E-5, Table E-2, Footnote 2. Monitoring Locations EFF-001 and EFF-007—Simultaneous Flow Recording. Since the effluent limitations for antimony and chromium (VI) do not require compliance based on a flow-weighted average, and the permit does not include an effluent limitation for nickel, it is not necessary for flow to be recorded simultaneously with sample collection for these metals. It is appropriate to revise this footnote as follows:

[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.~~

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p. E-5, Table E-3. Monitoring Locations EFF-002 and EFF-004 through EFF-006—Selenium Sampling Frequency. Selenium monitoring for the stormwater outfalls is designated as monthly (year round), but this not consistent with the frequency for the corresponding receiving water station, RSW-004 (Table E-5). Storm and receiving water monitoring frequency should be consistent, and consistent with weather conditions, which can be done by reducing the outfall monitoring frequency to twice during the dry season, rather than monthly throughout the entire year. Lehigh's stormwater outfalls discharge primarily during the wet season, during which monthly testing would still be required.

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p. E-6 and various, Tables E-4, E-5, and E-6. Receiving Water Monitoring at all Stations—Monitoring for Settleable Matter. Settleable Matter testing in the receiving water is not necessary. Currently, Lehigh monitors Settleable Matter at RSW-001A, while the tentative NPDES permit requires Settleable Matter to be monitored at all receiving water stations. This increase in monitoring is unnecessary given comments above regarding Settleable Matter levels at the discharge locations (all discharges). Settleable Matter need only be measured in the discharges to determine compliance with effluent limitations, were they retained. A measure of solids in the water column will be available for receiving water sites via measurement of total suspended solids. As such, Lehigh requests that receiving water stations not include Settleable Matter testing.

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p. E-6, Table E-4. Receiving Water Monitoring Locations RSW-001 and RSW-001A—Frequency of Testing at RSW-001A. The tentative NPDES permit has increased the monitoring frequency at RSW-001A, the background station, over that required by the current NPDES permit. However, water quality at this station is well characterized, justifying a decrease in monitoring frequency. **Table 1** shows the current NPDES permit's monitoring frequency, the frequency required under the tentative NPDES permit, and the frequency warranted given the amount and results of data on-hand. Not only has Lehigh monitored at RSW-001A for compliance with the current NPDES permit, this station has been monitored for the on-going groundwater study required by the Regional Water Board (initiated in 2015; see quarterly groundwater submittals for Lehigh in Geotracker), the 2013 13267 Order Selenium Impact Study (RBI 2015), and 2016 13267 Order selenium monitoring. Lehigh also conducted a study of receiving water stations under the 2011 and 2013 Water Code section 13267 Orders for CTR priority pollutants. Regional Water Board staff recognized that sufficient data was being or had been generated for this station, agreeing with Lehigh that monitoring at station RSW-001A was unnecessary for the 2018 13267 Order.

Since September 2015, Lehigh has monitored five (5) receiving water stations above Discharge Point No. 001 quarterly for priority pollutants for the Regional Water Board-required groundwater study. Fourteen (14) monitoring events have been conducted to date (see reports in Geotracker). Monitoring of these stations will continue for compliance with Lehigh's WDRs (R2-2018-0028). Since a wealth of monitoring data is available for RSW-001A and creek stations above Discharge Point No. 001, it is appropriate to reduce the monitoring frequency of most constituents in the tentative NPDES permit to annual and to omit monitoring for CTR priority pollutants at this frequency (CTR priority pollutants will be separately monitored via the priority pollutant scan). As such, Lehigh requests that the monitoring frequency for various constituents at RSW-001A be modified consistent with the "Requested Frequency" column of Table 1 (below).

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Table 1. Receiving Water Monitoring Frequency at RSW-001A.

Parameter	Current NPDES Permit	Tentative NPDES Permit	Requested Frequency
Chloride	1/Quarter	Not Required	None
Conductivity	1/Quarter	2 / Dry Season 1/Month Wet Season	1/Year
Dissolved Oxygen	1/Quarter	2 / Dry Season 1/Month Wet Season	1/Year
Flow	Not Required	2 / Dry Season 1/Month Wet Season	1/Year
Total Hardness as Calcium Carbonate (CaCO ₃)	1/Quarter	1/Quarter	1/Year
pH	1/Quarter	2 / Dry Season 1/Month Wet Season	1/Year
Settleable Matter	1/Quarter	1/Quarter	1/Year
Temperature	1/Quarter	2 / Dry Season 1/Month Wet Season	1/Year
TSS	1/Quarter	2 / Dry Season 1/Month Wet Season	1/Year
Turbidity	Not Required	1/Quarter	1/Year
Antimony	Not Required	1/Quarter	1/Year
Chromium (VI)	1/Quarter	1/Quarter	1/Year
Mercury	1/Quarter	1/Quarter	1/Year
Nickel	1/Quarter	1/Quarter	1/Year
Selenium	1/Quarter	2 / Dry Season 1/Month Wet Season	1/Year
Priority Pollutants	2/Year	2/Year	None
TDS	1/Quarter	1/Quarter	None
Standard Observations	1/Month	1/Month	1/Year

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p. E-6, Table E-4. Receiving Water Monitoring Locations RSW-001 and RSW-001A—Frequency of Testing at RSW-001. Adjustments to the constituents and frequencies for monitoring at RSW-001, the receiving water station nearest downstream of EFF-001, are appropriate. For the reasons stated above for RSW-001A, it is not necessary to monitor all CTR constituents at RSW-001. Further, priority pollutant monitoring is not required at downstream receiving water stations for municipal wastewater treatment plants, who themselves can have identifiable sources of priority pollutants in their sewersheds. Lehigh does not have sources of VOCs, SVOCs, or pesticides to Discharge Point No. 001. Priority pollutant data from EFF-001 is sufficient to conduct reasonable potential analysis. Further, TSS has been newly added to RSW-001 to accommodate TSS testing required by the 13267 Order, albeit at a higher testing frequency (monthly during wet season) than required by the Order (quarterly at PER085 with toxicity samples). The increase in TSS monitoring at RSW-001 is unnecessary. Specifically, Lehigh requests the following:

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- CTR priority pollutant monitoring at RSW-001 be removed. If priority pollutant monitoring is retained for RSW-001, Lehigh requests that the frequency be decreased to 2/Permit term.
- TSS monitoring be decreased to quarterly.

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p. E-6, Table E-4 and various. Receiving Water Monitoring—Frequency of Standard Observations. Standard Observations at receiving water stations are required more frequently than other parameters listed in Tables E-4, E-5, and E-6, meaning Lehigh is required to monitor for standard observations during months when the sites are not monitored for water quality. This requires special site visits just to make standard observations. This monitoring is also required at off-site receiving water stations (RSW-005 through -007) far afield from Lehigh. Lehigh may not even contribute any discharge to that location within the month that standard observations are required (e.g., months when there are no discharges at EFF-001/007), making Lehigh responsible for taking observations of waterbodies they are not impacting. Further, there is no indication from historic observations that it is necessary for Lehigh to monitor standard observations at the prescribed frequency. As such, it is appropriate to limit standard observation sampling frequency to “each monitoring event” for all receiving water sites. This will require Lehigh to take standard observations every time the station is monitored for other parameters, limiting the additional site visits (on and off-site) just to collect standard observations.

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p. E-7, item B. Monitoring Location RSW-002—Monitoring Frequency. Station RSW-002 has historically been used to assess the influence of EFF-002 on the receiving water. It is appropriate to continue doing so, but we request that monitoring only be required at RSW-002 when there is a discharge from EFF-002. If there is no discharge from EFF-002, then monitoring at RSW-002 is duplicative of the monitoring at RSW-001. There were no discharges from EFF-002 during the current NPDES permit term.

Table 2. Comparison of recent parameter concentrations at RSW-001 and RSW-002 (since FTS-Upper operational).

Date	Station	Cr(VI) (µg/L)	Hg (µg/L)	Ni (µg/L)	Se (µg/L)
4/6/18	RSW-001	0.56	0.00069	6.6	4.6
	RSW-002	0.34	0.00094	8.0	4.1
2/28/18	RSW-001	0.38	0.00080	7.6	4.1
	RSW-002	0.35	0.00076	11	4.2

The specific changes that would address this request are as follows.

The Discharger shall monitor receiving water at Monitoring Location RSW-002, during quarters in which there is discharge at EFF-002, as follows:

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p. E-8, Table E-6. Receiving Water Monitoring—Location RSW-005, RSW-006, RSW-007 Monitoring Frequency. Monitoring at off-site receiving water stations for many constituents is required twice during the dry season and monthly during the wet season, which is greater than the quarterly sampling required by the 2018 Water Code section 13267 Order. Lehigh specifically requested, and Regional Water Board staff agreed to, a quarterly monitoring

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frequency for off-site stations in the 2018 Water Code section 13267 Order. Since monitoring at RSW-005 through RSW-007 was brought into the tentative NPDES permit because of requirements in the 13267 Order (with the 2018 13267 Order being rescinded), it is appropriate to retain the quarterly monitoring frequency. Lehigh has conducted quarterly monitoring at RSW-005 and RSW-006 under the 2018 13267 Order and circumstances have not changed since the monitoring initiated that warrants an increase in monitoring frequency to monthly in the wet season. The same goes for the new receiving water station, RSW-007 (if it is not omitted). Note that Lehigh has monitored RSW-005 and RSW-006 for compliance pursuant to three 13267 Orders issued during the past six years, resulting a high degree of characterization for these sites. Specifically, Lehigh requests a quarterly monitoring frequency for off-site stations year round.

By granting a quarterly monitoring frequency for off-site creek stations, Lehigh will still generate high-frequency data for Permanente Creek at RSW-004 (monthly during the wet season and twice during the dry season), the farthest downstream receiving water station on Lehigh property. Monitoring monthly during the wet season at RSW-004 is sufficient to provide the Regional Water Board a temporal distribution of water quality data and evaluate Lehigh's influence on the creek at the edge of their property, absent the influence of off-site factors that can affect downstream stations. It is not necessary to generate high-frequency data at off-site stations because RSW-004 is representative of creek water quality at the edge of Lehigh's property. Lehigh is supportive of the monitoring frequency at RSW-004 (as proposed in the tentative NPDES permit), but believes such frequency is not warranted for off-site stations.

26

p. E-8, item C. Monitoring Locations RSW-004 through RSW-007—Monitoring when Water is Present. Monitoring at off-site creek stations (RSW-005, -006, and -007) required in this section of the tentative NPDES permit has been included to incorporate monitoring from the 2018 Water Code section 13267 Order. However, the tentative NPDES permit does not use the specific language that the Regional Water Board included in the 13267 Order requiring off-site monitoring only when water is *continuing* from Lehigh property to the off-site station. Rather, the tentative NPDES permit simply states that monitoring is required when water is present. Regional Water Board staff agreed to the language in the final 2018 13267 Order and it is an important qualification because Lehigh's discharge is not the only source of water to off-site locations. There are numerous stormwater outfalls in the greater Cupertino and Los Altos urban watersheds that contribute water to off-site stations or water could be present even though water is not continuing from Lehigh's property. Because of this, Regional Water Board staff previously agreed that it was not appropriate to obligate Lehigh to monitor off-site creek stations (for the 13267 Order) when the discharge was not continuing off site. Notwithstanding the request above to omit monitoring at RSW-007, the requested changes to qualify when off-site monitoring shall occur is as follows.

The Discharger shall monitor receiving water at Monitoring Locations RSW-004 through RSW-007. Monitoring at RSW-004 is required only (when water is present), while monitoring at RSW-005 through RSW-007 is required only when water is present and flow is continuing to the station from the Discharger's facility. Monitoring shall be conducted as follows

27

p. E-8, Table E-6. Monitoring Locations RSW-004 through RSW-007—Chromium (VI), Nickel, Antimony at RSW-005. The 2018 Water Code section 13267 Order required trace metal

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27 monitoring at off-site receiving water stations concurrently with the collection of toxicity samples. Since Lehigh is monitoring chromium (VI), nickel, and antimony at RSW-004, which provides a direct measure of receiving water concentrations immediately downstream of Lehigh's outfalls, it is not necessary for these constituents to be monitored again downstream at RSW-005. As such, Lehigh requests that chromium (VI), nickel, and antimony testing be omitted for RSW-005, with the exception of quarterly trace metal testing that will continue to occur concurrent with chronic toxicity sampling.

p. E-11, item (c). Chronic Toxicity—Frequency. The following sentence regarding accelerated monitoring should be corrected as follows.

28 (c) The Discharger shall return to quarterly monitoring if accelerated monitoring ~~if accelerated monitoring~~ does not exceed either trigger in (b), above.

p. E-11, item (d) and various. Chronic Toxicity—Section Citations. The following references to the Chronic WET Monitoring Trigger section should be corrected as follows.

- p., E-11, item (d). Reference to section IV.A.2.c should be changed to section V.A.2.c.
- p. E-12, item c.ii. Reference to section IV.A.2.a.iii.(b) should be changed to section V.A.2.a.iii.(b)
- p. E-12, item c.iii. Reference to section IV.A.2.a.iii.(b) should be changed to section V.A.2.a.iii.(b)
- p. E-13, item v. Reference to section IV.A.2.a.iii.(b) should be changed to section V.A.2.a.iii.(b)
- p. E-13, item vii. Reference to section IV.A.2.a.iii.(b) should be changed to section V.A.2.a.iii.(b)

29 p. E-13, item B.1.b. Test Species—Fathead Minnow Testing at RSW-005. This item specifies that all three USEPA freshwater test species are to be used for chronic toxicity testing at RSW-005. Lehigh requests that the fathead minnow species be omitted. Monitoring conducted by Lehigh in Q1 2019 (2/11/2019 PER070/RSW-005 sample) did not identify toxicity to this species. The Regional Water Board's Basin Planning Department is collecting toxicity samples from Permanente and Stevens Creeks and they have omitted fathead minnow from their 2019 testing due to expense and low priority. Lehigh monitored with fathead minnow for four consecutive quarters in 2013 at four stations—Pond 4A, Pond 9, Pond 13, and Pond 14—all before the final treatment system was installed, and there was no toxicity to fathead minnow. The chronic toxicity screening assessment Lehigh conducted in 2018 for the FTS-Upper also identified the effluent to be not toxic to this species. Finally, the 2018 Water Code section 13267 Order allowed for fathead minnow testing to cease after one year, subject to approval by Regional Water Board staff; the tentative NPDES permit does not provide for this allowance. In contrast, the tentative NPDES permit requires fathead minnow testing to occur for the full 5-year permit term, which is three years longer than required by the 13267 Order. For these reasons, we request that monitoring with fathead minnow be removed from station RSW-005. If fathead

ATTACHMENT A

29 minnow testing were to be retained, then it is appropriate to allow testing with fathead minnow to cease after testing with this species for two monitoring events with Executive Officer approval. The two monitoring events will complete the one year of fathead minnow monitoring required by the 13267 Order before Lehigh was eligible to request that fathead minnow no longer be tested. However, the information on-hand is sufficient to make this determination now.

30 p. E-14, item e. Accelerated Monitoring and Toxicity Reduction Evaluation (TRE). If toxicity in the creek is observed, this item requires accelerated and TIE testing for receiving water samples in the event that toxicity observed is unrelated to discharges from EFF-001 and EFF-007. Lehigh recommends changes to this section that help utilize testing resources to quickly and effectively meet this objective. Specifically, we recommend that accelerated testing be omitted in lieu of solely requiring a TIE for the follow-up test when sufficient toxicity is observed in receiving water samples.

Ambient storm water monitoring programs and regional monitoring programs do not typically use accelerated testing, rather they have routine monitoring schedules and set aside budget to conduct TIE testing when samples exceed a TIE toxicity trigger (BASMAA 2011⁴). Pollutants from storm water outfalls can be flushed from the watershed, limiting the utility of accelerated testing. Having a sample that is “sufficiently toxic” is also necessary to expect success in tracking changes in toxicity through a TIE. In fact, USEPA (1996)⁵ noted “[f]rom our experience, it may be difficult, but not impossible, to conduct a TIE when the toxic units of a sample from the Initial Toxicity Test using the most sensitive species are <2 (i.e., LC50>50%).” Thus, regional monitoring programs, such as the Sacramento-San Joaquin Delta Regional Monitoring Program (Section 13.2.5 of the program QAPP; SFEI 2018⁶ and BASMAA 2011), utilize a TIE trigger of less than or equal to 50% ambient sample response relative to control response. Lehigh has the potential to generate significant information from conducting TIEs during the five year permit term, this will mutually benefit the Regional Board and Lehigh. As such, when ambient samples are toxic and the effect is below the 50% TIE trigger, Lehigh proposes to evaluate the information on-hand, such as analytical testing data and discharge flow data, to determine if a source/cause can be identified. This evaluation can then be used to inform future TIEs on subsequently collected samples.

To limit duplicative testing, it is appropriate to focus TIE work on one sample/station in the event that toxicity observed at RSW-004 is, say, sourced to RSW-001. A TIE is one element of a TRE, with the overarching goal to identify the cause of toxicity and control it. If Lehigh is successful in conducting TIE work, identifying likely or possible causes of toxicity, it would be appropriate to limit subsequent TIE testing if the same source of toxicity affects future samples. Further, Lehigh has shown recent success in conducting targeted TIEs (1–3 TIE treatments) on FTS-Upper effluent (identifying peroxide as cause of toxicity) and the receiving water (identifying particulates as cause of toxicity to *C. dubia* and mineral content/ratios as a cause of

⁴ BASMAA Regional Monitoring Coalition. 2011. Multi-Year Work Plan FY 2009-10 through FY 2014-15. February 1, 2011.

⁵ USEPA. 1996. *Marine Toxicity Identification Evaluation (TIE): Phase 1 Guidance Document*. EPA-600-R-96-054. National Health and Environmental Effects Research Laboratory. Narragansett, Rhode Island. September 1996.

⁶ SFEI 2018. *Delta Regional Monitoring Program Quality Assurance Project Plan (QAPP)*. Version 4.2. Prepared by San Francisco Estuary Institute-Aquatic Science Center. November 19, 2018.

ATTACHMENT A

30 toxicity to *S. capricornutum*); thus, it is also appropriate to allow selection of TIE treatments that are expected to be the most effective and provide the most information. Considering the issues discussed above and the Regional Board's objectives, Lehigh requests the following changes to this item.

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, and these discharges are not otherwise identifiable as the cause of receiving water toxicity (e.g., concurrent effluent and receiving water toxicity), the Discharger shall accelerate to monthly sampling and testing conduct a TIE test on the same sample with the affected species at monitoring locations where toxicity was observed. Provisions in Attachment E section V.C. shall be followed to investigate toxicity at Discharge Point No. 001 and 007. 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.

A TIE is only required if the organism response in the ambient sample is less than or equal to 50% of the control response in the initial baseline test. If the organism response in the ambient sample is greater than 50% of the control response in the initial baseline test, and the difference is statistically significant, the Self-Monitoring Report shall comment on possible causes of toxicity based on the available data (e.g., trace metals, mineral content, turbidity, or toxicity-test related quality assurance/control issues).

TIE testing may be carried out with one test species in the event that more than one species exhibits toxicity and the same cause of toxicity is suspected; the rationale for species selection shall be communicated in the Self-Monitoring Report. If toxicity at RSW-004 is sourced to station RSW-001 (e.g., both samples are toxic and there is contiguous flow between stations), then TIE testing need only be conducted using sample from one of the two stations. TIE treatments shall be selected based on weight of evidence (e.g., nature of the toxicity observed in the initial test; historical TIEs conducted at Lehigh; concurrent analytical test results for metals, minerals, suspended solids; etc.). TIE testing is not required on future routine samples in which the cause of toxicity can be identified based on weight-of-evidence from previous TRE/TIE information (e.g., a consistent chemical signal associated with the observed toxicity); in this case, the cause of toxicity shall be communicated in the Self-Monitoring Report.

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.

31 p. 11, item 4. Receiving Water Data Reporting—Parameters reported to CEDEN. The CEDEN reporting requirement from the 2018 Water Code section 13267 Order has been included in the

ATTACHMENT A

31 tentative NPDES permit, but the permit's language expands CEDEN reporting to all parameters monitored in the receiving water. Further, station RSW-002 was not monitored under the 13267 Order, yet CEDEN reporting has been designated for this station in the tentative NPDES permit. This significantly increases Lehigh's reporting burden because Lehigh uses two separate labs to conduct 13267 Order testing (costlier, CEDEN-capable lab) and testing of other parameters for the NPDES permit and WDRs (ELAP certified lab). Both labs are certified by the State and perform high-quality testing, but CEDEN reporting/SWAMP equivalency is costlier because the QA/QC standards are higher than required for NPDES permitting. Also, the 13267 Order did not specify a CEDEN reporting deadline so that Lehigh could upload CEDEN data in large batches rather than every month, and it is appropriate to provide for this in the permit. Therefore, we request changes to the tentative NPDES permit to limit SWAMP-compatibility/CEDEN reporting to the parameters that were contained in the 13267 Order, and for the CEDEN reporting deadline to be clarified.

4. Receiving Water Data Reporting

The Discharger shall submit designated 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. Data must be submitted annually, 60 days following the end of the calendar year. Parameters which must be reported to CEDEN are as follows.

- RSW-001: Selenium, pH, temperature, dissolved oxygen, electrical conductivity, turbidity. Parameters monitored quarterly with chronic toxicity: total suspended solids, chloride, sulfate, Trace Metals, and chronic toxicity.
- RSW-004: Selenium, pH, temperature, dissolved oxygen, electrical conductivity, turbidity. Parameters monitored quarterly with chronic toxicity: total hardness, total suspended solids, chloride, sulfate, Trace Metals, and chronic toxicity.
- RSW-005: Selenium, pH, temperature, dissolved oxygen, electrical conductivity, turbidity. Parameters monitored quarterly with chronic toxicity: total hardness, total suspended solids, chloride, sulfate, Trace Metals, and chronic toxicity.
- RSW-006: Selenium, pH, temperature, dissolved oxygen, electrical conductivity, and turbidity.
- RSW-007: Selenium, pH, temperature, dissolved oxygen, electrical conductivity, and turbidity.

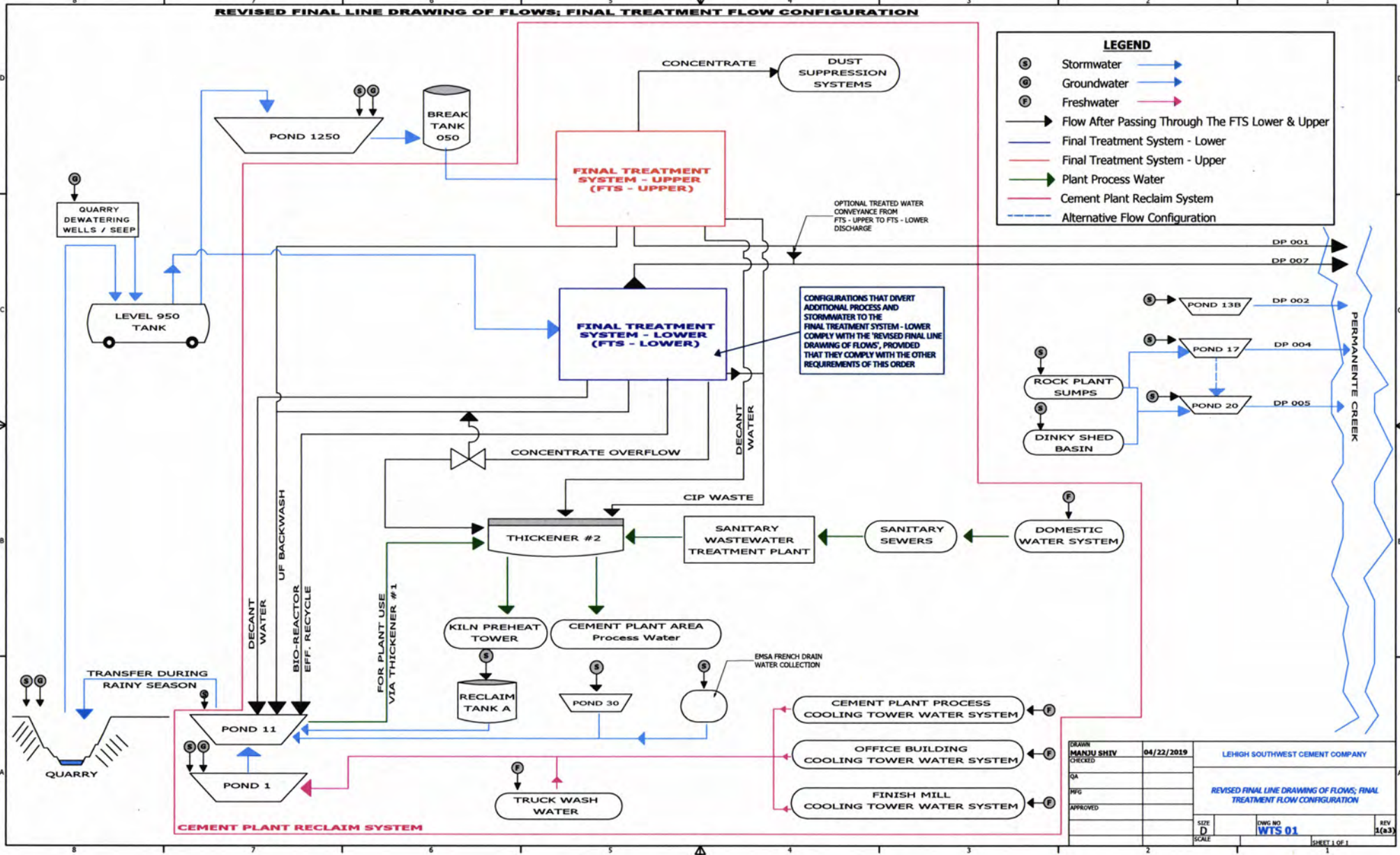
Attachment F - Fact Sheet

32 p. F-26, item D.1. Anti-backsliding—Mercury. Since mercury effluent limitations are not retained in the new NPDES permit, it is appropriate to list mercury in the initial discussion of anti-backsliding, as shown below.

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- 32
- 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, mercury, thallium, and turbidity at Discharge Point No. 001, and technology-based requirements for turbidity at Discharge Point Nos. 002, 004, and 005.

REVISED FINAL LINE DRAWING OF FLOWS; FINAL TREATMENT FLOW CONFIGURATION



LEGEND

- (S) Stormwater
- (G) Groundwater
- (F) Freshwater
- Flow After Passing Through The FTS Lower & Upper
- Final Treatment System - Lower
- Final Treatment System - Upper
- Plant Process Water
- Cement Plant Reclaim System
- - - Alternative Flow Configuration

CONFIGURATIONS THAT DIVERT ADDITIONAL PROCESS AND STORMWATER TO THE FINAL TREATMENT SYSTEM - LOWER COMPLY WITH THE 'REVISED FINAL LINE DRAWING OF FLOWS', PROVIDED THAT THEY COMPLY WITH THE OTHER REQUIREMENTS OF THIS ORDER

DRAWN	MANJU SHIV	04/22/2019	LEHIGH SOUTHWEST CEMENT COMPANY
CHECKED			
QA			REVISED FINAL LINE DRAWING OF FLOWS; FINAL TREATMENT FLOW CONFIGURATION
RFQ			
APPROVED			
SIZE	D	DWG NO	WTS 01
SCALE			REV 1(a3)
			SHEET 1 OF 1

From: [REDACTED]
To: Madigan.John@Waterboards
Subject: Comments on Lehigh Tentative Order
Date: Friday, May 3, 2019 4:49:51 PM

Dear John,

My name is Danielle Burnett-Foster and I am a resident of Cupertino on Camino Vista Dr., 95014. We have two children. I am writing to express my **opposition to the Lehigh** quarry's permit to expand and continue its operations after its egregious record of water treatment. As you are well aware, their process of production results in toxic by-products, specifically the neurotoxin, mercury.

Please protect the health of our family, our community, and the entire web of life that depends on clean water. We are counting on you.

Thank you.

Danielle Burnett-Foster

[REDACTED]

[REDACTED]

From: Rhoda Fry, [REDACTED]
Date: May 3, 2019
RE: Comments on Lehigh Tentative Order to Reissue NPDES Permit CA0030210
To: John Madigan, San Francisco Bay Regional Water Quality Control Board,
John.Madigan@waterboards.ca.gov

Dear Mr. Madigan,

Thank you for providing the opportunity to comment on the Lehigh Tentative Order to Reissue NPDES Permit CA0030210. Some of the following comments may not be applicable to the permit, however, I hope that you can incorporate them in other work that the Water Boards does pertaining to Lehigh.

① **Company Name:** Since the bankruptcy of Hanson Permanente, which I had written about to the Water Boards previously, the company names Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc. have ceased to exist. Please make sure that the correct company name is on the permit. These companies change names so frequently that I would also request that once you figure out what the right name is, that its parent company, HeidelbergCement Group, be mentioned in the permit as well.

We had also requested mention of HeidelbergCement previously. The Water Boards' portrayal of this company in previous documents appears to have been that of a small company that has changed names over time, rather than a multinational company that is self-proclaimed as Number 1 in aggregates, number 2 in cement, and number 3 in ready-mixed concrete worldwide.¹

② **Proposed New Quarry:** Lehigh Hanson is proposing a new quarry in Cupertino. We have learned from experience that remediation is not as effective as prevention. How can the Water Boards prevent water pollution for the proposed new quarry? The current water pollution remediation occurred only because of citizen-initiated lawsuits.

③ **A Toxic Industrial Legacy:** In addition to cement, the site left a toxic industrial legacy from both the Permanente Cement Company and the co-located and separately traded Permanente Metals Corporation / Kaiser Aluminum. This legacy has not been fully documented by the Water Boards and must be considered, especially when the suggestion of moving waste piles is raised; the EMSA contains 75 acres of waste, and the WMSA contains 175 acres with 48 million tons of material destined to be quarry pit fill). The presence of Thallium in the Water Boards documentation is an indicator of industrial activities. As mentioned in previous commentary, we would ask that the Water Boards also look for radioactive materials as there had been a World War II weapons laboratory onsite run by the metallurgist, Fritz Johann Hansgirk, whose work had been utilized by the Manhattan Project. While the Water Boards had previously dismissed

¹ HeidelbergCement Group: www.heidelbergcement.com/en/company

3 this concern, please find attached a photograph at the site from Life Magazine with the words "Danger Radium." The evidence of the following industrial activities is attached.²

- ↓
- Cement
 - "Plastite" containing 6% asbestos (to be used as plaster or stucco with production of 500 tons per month)
 - Magnesium
 - Ferrosilicon
 - Incendiary Bombs
 - Phosphate Fertilizer (made with Idaho rock and Almaden Serpentine)
 - Aluminum products
 - Research facility dating to World War II
 - Underground tanks and facilities containing toxic materials (not demonstrated by attached)
 - Buildings removed without final inspection (could they be in the waste piles?)³

4 **Consequences of Water Treatment:** During the course of water treatment, is there anything that is removed from the water that is beneficial to aquatic life? The NPDES permit focuses what should be taken out of the water, however what should be in the water is not taken into consideration in a significant way. What are the consequences of the use and disposal of these chemicals employed by the water treatment plant: sodium hypochlorite (bleach); citric acid; anti-sealant; bio-reactor with a biological nutrient that creates sulfides; hydrogen peroxide; waste of solid backwash (including metals and settled biological matter disposed offsite)?

5 **Consequences of Dewatering:** Due to dewatering, the Permanente Creek can run dry. Why is so much water being taken out of the creek? Are the pollutants just being diluted? What are the hydrological consequences of removing so much water and then reintroducing it at high rates? How was this number determined? Page 5: "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."

6 **Please Provide EPA Drinking Water Standards and Other Water Standards:**

Please update the document to provide a comparison between what is being proposed with various water standards. For example, the EPA drinking water limit for Antimony is .006 mg/L as compared with the NPDES maximum of 640 µg/L (or .64 mg/L).⁴

² Historical Kaiser Cement and Permanente Metals Corporation / Kaiser Aluminum documentation on the Santa Clara County website, pdf pages 44, 47, 49, 76, 103, 109 are at the end of this document
www.sccgov.org/sites/dpd/DocsForms/Documents/Lehigh_VEST_20110104_Letter_AppD_CorporateRecords.pdf

³ Buildings removed without final inspection. Excerpt of Santa Clara County document attached.

⁴ EPA drinking water standards: <https://www.epa.gov/ground-water-and-drinking-water/national-primary-drinking-water-regulations>

Other Comments:

7

1. What would it take to reduce the water pollution to non-detected?
2. Page 6: What is the source of the ammonia?
3. Please document the differences between the current NPDES permit and previous NPDES permits as to maximum pollutants, gallons per hour, etc...
4. Page 58: why are there discharge points that do not have effluent limits for metals?
5. Page 60: the civil liabilities for non-compliance have been staggering, among them \$465,500 in 2017. It appears that the fines are merely a cost of doing business for Lehigh. Additionally, it appears that the Water Boards are selling permits to pollute. Why is our water quality for sale?
6. Page 61: thank you for providing the amounts exceeded as compared to the amounts allowed in table F-4.
7. Page 63: the Water Boards must not allow limitations to be relaxed.



Headaches for Hitler: The camera's eye catches a portion of a day's production stacked in a corner of the ingot handling room of the Permanente foundry. After laboratory analysis, this magnesium will be shipped by boxcar and truck and soon will be transformed into airplane parts or into incendiary bombs. *Joe Baltran* daubs varicolored spots of paint on the ingots to indicate different types of alloys, as *Lawrence Schroyer*, jeep operator, warps another stack onto the scale platform.

In the Thick of the Fight

Ever hear any of these statements?

"Permanente? Why they closed that place when Dr. Hansgirg left. He kept his process secret; carried it around in his head; never wrote it down."

"Yeah, I hear they had so many explosions out there they had to shut down. Cost the taxpayers millions of dollars."

"A fella was tellin' me they haul in magnesium from another plant so they'll have some around when visitors show up."

These rumors are false, of course, but they have gone the rounds and lately have found their way into print; as recently as last January a national magazine stated flatly that our plant was a failure.

Busy with the job of making our plant operate more successfully, Permanente has accepted each new abuse in silence and dug in a little deeper. Now, a short two years after ground for the plant was broken, our critics have their answer. We are producing magnesium—stacks of it—and the government is losing no time in converting it into incendiary bombs and feather-light parts for airplanes.

Just how much magnesium Permanente is turning out is a wartime secret, but two things can be announced—that production last month was at an all-time high, up 75 per cent from the best previous month, and that the tremendous West Coast aircraft industry now looks to Permanente for its major supply of magnesium.

This means that our metal is taking to the air in Boeing's Flying Fortresses, Lockheed's swift P-38's, the many Douglas planes, and other sky fighters.

And in the field of chemical warfare, Permanente has likewise come into its own. Cylinders of pure magnesium from our foundry are being converted into incendiary bombs;

tracer bullets of Permanente mag guide the sights of our gunners; and flares of the same material light the activities of night fighters.

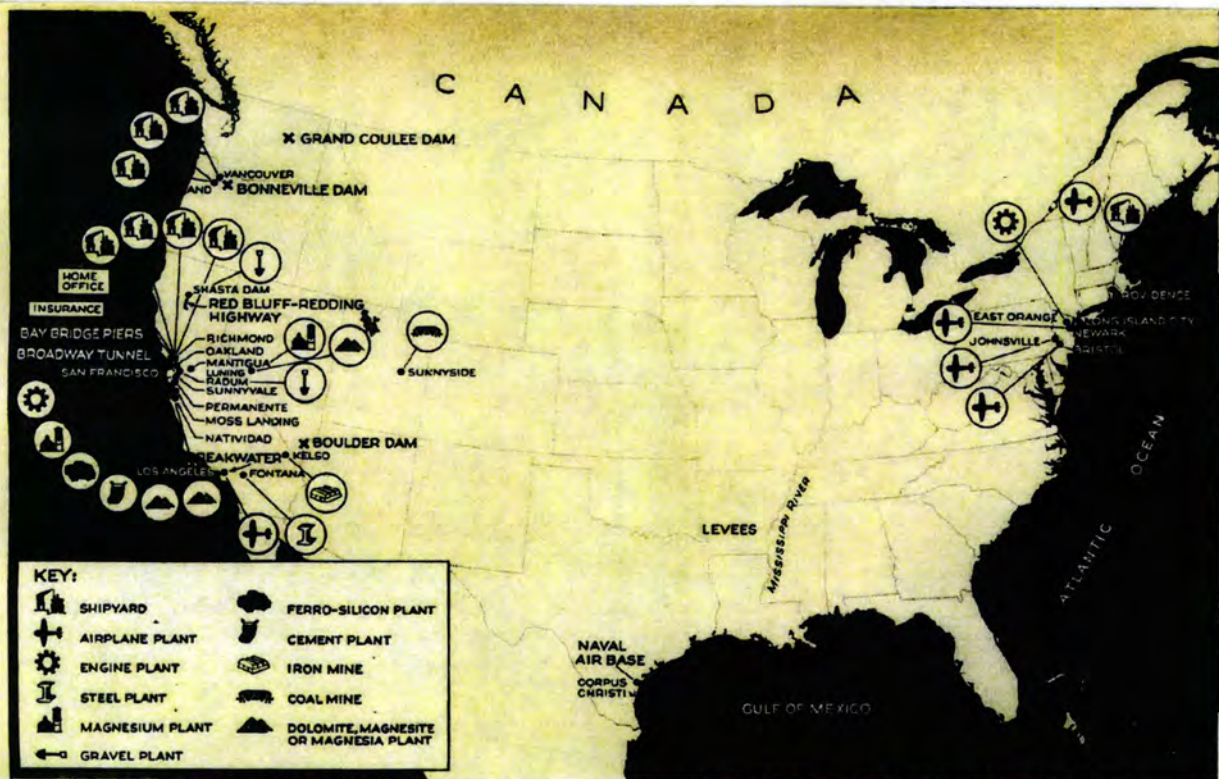
Now that Permanente has reached large-scale production, it is interesting to review briefly its history. Permanente has telescoped an industrial era into its two years of life. When Mr. Kaiser and his associates first proposed to build a plant using the carbothermic method for extracting magnesium, there were some who said the process, because of its newness, should be thoroughly tested in a small pilot plant. But this would take at least a year, probably more, and the country was already facing a shortage of the lightweight metal for the construction of war planes.

In February 1941, an RFC loan for the project was approved, and six months later the first unit of the large and intricate plant was placed in operation.

At this point, major defects in the original design began to come to light and, while the pilot plant supporters were wagging their heads, Permanente had to knuckle down to a make-or-break period of development and correction. It was a period marked by temporary shutdowns, by long hours and sleepless nights for the company's engineers and operators, and by the heartbreak of a fresh set of difficulties when it was thought the last kink had been ironed out.

Permanente has survived this period of trial and is stronger for it. If we had taken the easy way, all we would have now would be an insignificant pilot plant manned by a handful of scientists. By taking the hard way, we have built a full-fledged producing unit and, at the same time, we have built a crew of capable, experienced operators.

Instead of being on the fringe of the fight, we're in the thick of it.



SYMBOLS LOCATE HENRY KAISER'S PLANTS, ALL, WITH EXCEPTION OF GRAVEL PITS, BUILT SINCE 1915. ALSO IDENTIFIED IN LARGE LETTERS ARE PRE-WAR KAISER ACHIEVEMENTS

THE KAISER EMPIRE

IT NOW REACHES ACROSS THE CONTINENT

The massive enterprise of Henry J. Kaiser now embraces a transcontinental empire (see map). Last month, the West Coast shipbuilder became an East Coast aircraft producer. At the behest of the U. S. Navy, Mr. Kaiser took over the stumbling Brewster Aeronautical Corp., a \$275,000,000 bottleneck of dive bombers and fighters. On his own, he bought up the Fleetwing Aircraft Co., and assumed therewith its \$95,000,000 trainer plane contracts. While thus achieving his fondest ambition, Mr. Kaiser undertook a chore for the Maritime Commission. In Providence, R. I. he and his associates will direct the refurbishing of a shipyard for production of corvettes.

For his fellow citizens, who have witnessed the spectacular development of his war-born empire, Henry Kaiser is an affirmation of the chief reason why they are sure that they cannot lose this war. The U. S. citizen makes no extreme claims for the brilliance of his generals and diplomats or even for the military prowess of his still unbloated armies. But in his capacity to produce, to tackle any kind of industrial production and, in no time at all, bury his enemy under sheer tonnage, he is sure he has no peer. This conviction had weakened somewhat during the past decade. In the current renaissance of U. S. enterprise it has found new life, and Henry Kaiser, Jack of all industries, is its image.

The Kaiser legend is well-known. The dam-building sand-and-gravel man, who laid his first keel in the spring of 1941, has become the world's biggest and fastest shipbuilder. Simultaneously he has swept into such diverse fields as cement, magnesium, steel and aircraft. The map above pins the legend down to its component shipyards, plants, quarries and mines, and locates the major projects of the Henry J. Kaiser Co. when, before the war, it was engaged merely in general construction. Not shown are the projects of Henry Kaiser's "Western Group" partners, who share in Kaiser's interests and share their own interests with Kaiser.

Newest operating unit on the western side of the

empire is the steel mill at Fontana. It is the first complete steel plant, from blast furnace to rolling mill, in California. Ore and coal come from Kaiser mines in Kelso, Calif. and Sunnyside, Utah. The Portland, Ore. shipyards are operated by Kaiser's able son Edgar. One of them holds most of the Liberty shipbuilding records. Another, on April 5, is launching the first Kaiser aircraft transport carrier. Heart of the empire is the San Francisco region, with the home office in Oakland and four shipyards on the bay. To the south in San Jose Valley is Permanente, Kaiser's brightest, new industrial center, producing cement, magnesium and the alloy metal, ferro-silicon.

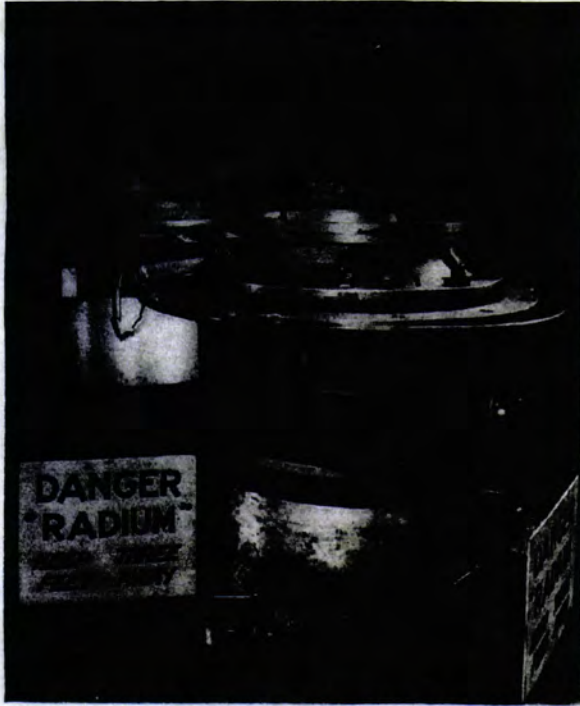
These heterogeneous enterprises make Henry Kaiser one of the nation's biggest employers of labor. With about 250,000 workers, Kaiser maintains uniquely realistic relations. He fights turnover and absenteeism by getting housing, recreation and medical facilities for them. He willingly signs closed-shop agreements, largely with the A. F. of L., but vigorously fights C. I. O. efforts to upset them. While he fights the C. I. O. in the West, he signs up 20,000-plus C. I. O. workers in his new Eastern aircraft plants.

The essence of the Kaiser legend is Kaiser himself. He not only builds ships faster than anyone else does, but says he will beforehand. Bigwigs sometimes object to the amount of space he gets himself in the press as "the can-do man." In neglect of the oak-paneled reserve of U. S. big industry, he goes directly to the public at large to propose that he be commissioned to build cargo airplanes, to suggest that war bonds be pledged for post-war products, to declare that his enemies are smearing him.

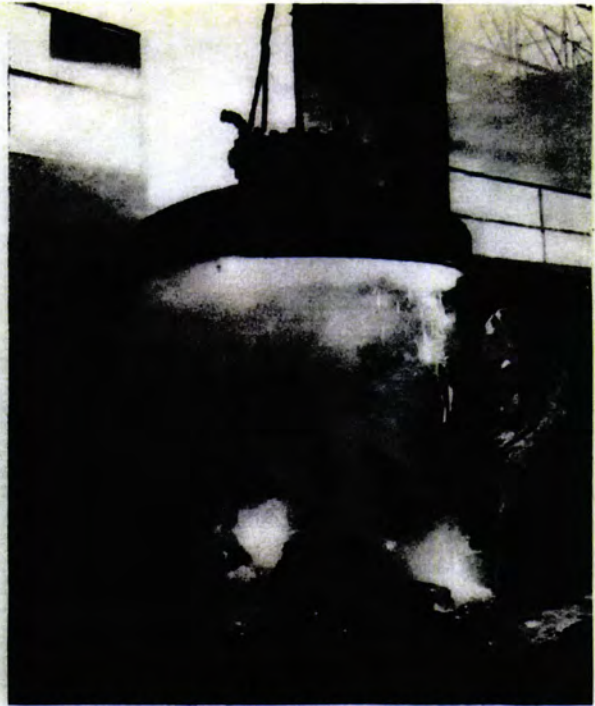
There are those, particularly among Kaiser's fellow industrialists, who behold in him not a Paul Bunyan but a P. T. Barnum. Since the Government is his chief banker and customer, they wonder how he will be able to survive in a wide consumer market when the war ends. For that day, as indicated on pages 76 and 77, Kaiser himself can hardly wait.



Henry J. Kaiser is here flanked by portraits of his sons, Shipbuilder Edgar (left) and Henry Jr., handy man in the Oakland home office.



ELECTRODE SLEEVE OR GLAND, HERE BEING X-RAYED, KEEPS MAGNESIUM VAPOR IN FURNACE



SPARKS OF SODIUM FLARE BRILLIANTLY AS WORKER OPENS MAGNESIUM BOTTLE

MAGNESIUM

Until his recent arrival in the aircraft business, magnesium was Henry Kaiser's favorite enterprise. This new metal, lighter than aluminum, is a prime aircraft material now, with a host of potential uses in post-war production.

Magnesium, however, has let Kaiser in for his severest headaches. In his eagerness to get into the field, he staked his operations on a process which was scoffed at by established magnesium producers, and indicated that he would start delivering on the customary Kaiser schedule. That was in 1941. His process had bugs in it which took his engineers nearly a year to lick. The Permanente magnesium plant

did not get into production until last November and is not yet running at capacity.

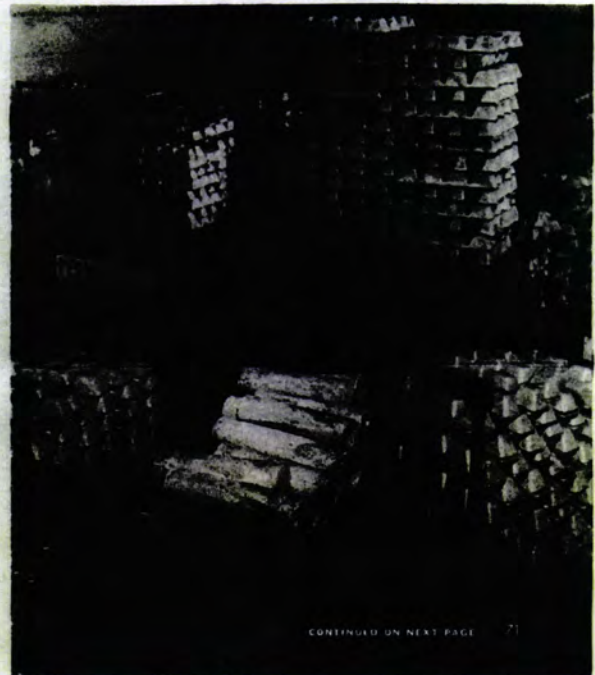
Magnesium is a violent metal, only recently domesticated for purposes other than fireworks and military arson. The first plant built in Austria on Kaiser's Hansgirg process was abandoned after explosion. At Permanente, Kaiser's engineers got the Hansgirg process under control and then were held up by failure of a furnace part which broke down in the heat. Permanente now has one that works (above, left).

Henry Kaiser has great plans for magnesium. Its technology dates back only a decade or so, but already in some alloys it challenges aluminum. With aluminum and plywood it will compete in automobile, plane and house construction, wherever a light, strong material is required. It can be extracted from magnesite and dolomite deposits, and it can also be extracted from sea water. The Kaiser set-up covers the field well, with both kinds of quarries and a sea-water plant at Moss Landing, Calif.

SPARKLING CRYSTALS OF PURE MAGNESIUM CLING TO LID AND SIDES (BELOW) OF RETORT



CRYSTALS HAVE BEEN MELTED DOWN INTO INGOTS AND ARE READY FOR SHIPMENT

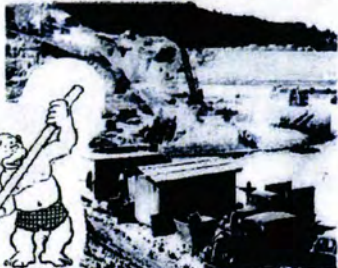


CONTINUED ON NEXT PAGE 71

5th ANNIVERSARY



June 30, 1939, 11 days after ground-breaking, Permanente looked like this. Silos now stand in left foreground. Below, first thickener tank in skeleton stage.



August 12, conveyor starts its six-mile stretch.



August 15, forms are ripped off first kiln block.



THE PERMANENTE NEWS

PERMANENTE

An Industrial Giant Grows Up on Black Mountain

Five years ago this month (June 19, 1939), the world's largest cement plant started taking shape in the canyon now known as Permanente. It was followed, two years later, by the world's largest Carbothermic magnesium plant. Those early days are etched in the memories of but a few present-day Permanente employees, but the fruit of their labor stands for all to see.

The construction of the Shasta Dam at Redding converted quiet Permanente Creek into a beehive of industrial activity. Winning the bid on mighty Shasta, PCC's job was to build a mill and start fulfilling a contract that called for 6,000,000 barrels of cement eight months after ground-breaking. It is history now that this was achieved on Christmas Day, 1939, two months ahead of schedule.

The accomplishment represented a period of feverish construction, with men and machines gnawing at the very foundations of Black Mountain to build roads, flatten hilltops, and erect the giant of the cement industry. By the time the early summer's green on the surrounding hills had turned to a drier brown, a huge industrial unit appeared like magic. Mighty rotary kilns were

hauled in sections up precipitous roads, in some of the most spectacular feats of modern engineering.

A whole railroad flatcar was taken up to the kiln level by motor trucks and trailers to use in placing kiln sections into position for assembly. All of this was done quickly and without fuss by Henry J. Kaiser's ace engineer, the late Harry Davis, who was on the job day and night and drove himself relentlessly. One of the major operations was excavation, the removal of hundreds of thousands of yards of earth. Countless equipment of specialized nature was used in the dirt moving—shovel dippers, dragline buckets, bulldozers, etc.

Permanente received its name from the creek flowing down from the Santa Cruz mountains. It was named, according to legend, by the Spaniards because it did not dry up in the summer. The site was selected for the cement plant, but in January 1941 the magnesium plant was conceived and Permanente's industrial significance grew twofold. Now scattered throughout the world, our products are defenders of democracy—in peace, they will be aggressors.

August 26, ninety-foot cement silos start skyward.



JUNE 1944



PCC SCORES KNOCKOUT WITH DEVELOPMENT OF PLASTITE

Permanente Cement Company has struck a knockout blow at another war problem. This time on the home front, where the development of Plastite by PCC has reduced building difficulties due to the shortage of construction materials.

Plastite, the brain child of Dick Grant, is now being manufactured and shipped out of Permanente at the rate of 500 tons a month. It is an asbestos cement, used in plaster or stucco wall construction. It is unique because it can be applied directly to gyp board or paper, thus eliminating the need for lath or wire.

Plastite, packaged in 100-pound sacks like those being hand-trucked by Anthony Machado (above), is weather resistant, fireproof, vermin-proof, can be applied faster, and has greater strength than common plasters. It is composed of 90 per cent cement, 6 per cent asbestos fiber, and adhesive, plastering, and water-repellent agents. PCC has produced 11,000 barrels since January, and federal agencies have specified large quantities of Plastite for war housing.

VALLEY of HEART'S DELIGHT

(This is the third of a series of articles describing the various Permanente plants and the manner in which they are located).

IF CALIFORNIA is all that the chamber of commerce folders say it is, then Permanente is paradise. Nestled in the western foothills of Santa Clara County, the original Permanente plant is situated in a modest portion of the state known as "The Valley of Heart's Delight". This name, no doubt, was conceived by early Spanish settlers who first discovered the region's natural conveniences, i.e., unusual climate and usual sunshine, long summer and short winter, fertile soil and sterile air, large fruit and small taxes, friendly Indians and unfriendly rattlesnakes.

The Spanish themselves named Permanente, according to legend, after an ever-flowing stream located on the plant property, but natives of the area are solidly firm in their belief that Mother Nature herself christened the spot as her "permanent" resting place—with an extra "e" for excellence. Although the Indians have since disappeared (contrary to Eastern belief), and the rattlesnakes reserve their appearances for jubilees and centennials, the Santa Clara Valley has not lost any of its old charm. Reminiscent of the padre trail are Missions Santa Clara and San Jose, standing nearby. And in the Santa Cruz Mountains, which range between Permanente and the Pacific, the world's oldest sentinels—towering redwood trees—lend further testimony that this is God's country. Within a 50-mile radius of San Jose, which is the largest city in the vicinity (80,000), Permanente employees enjoy the wonders of seashore, mountains, valleys and bayside all rolled into one.

San Jose is the world's largest canning center and one of the fastest growing industrial areas on the Pacific Coast. Its fame as an agricultural and residential mecca is now being augmented by an influx of heavy industry. The city is situated at the foot of San Francisco Bay, 50 miles south of the Golden Gate metropolis and its two famous bridges, and within telescope-view of "Dusty" Rhoades' Oakland office.

Permanente is the home of three plants, two of them owned by The Permanente Metals Corporation. The third, the Permanente Cement Company plant, was built in 1939 and led to the construction of the magnesium plant two years later. The cement plant requires approximately 20,000,000 cubic feet of natural gas per day to fire its kilns, so with typical Kaiser knack, engineers selected Permanente as the site of the magnesium plant and utilized natural gas instead of hydrogen as the shock chilling agent required to recover magnesium dust in the Carbothermic process. At the same time, by rejecting the spent gas to the cement plant, the need for a costly purification system was eliminated and the fuel value of the kiln gas was increased by the addition of carbon monoxide picked up in the magnesium process.

Commended early in the war by the Truman Investigating Committee for its production of magnesium at a time when it was most critically needed, Permanente

went on to produce more than 20,000,000 pounds of the vital metal and 82,000,000 pounds of "goop" incendiary material by V-J Day. At that time, operations were curtailed to permit process changes now nearing completion. In brief, the former batch method of making magnesium is being replaced by a continuous method which will enable Permanente to compete with Dow Chemical, only other private producer. The determination of Kaiser and his associates to remain in the magnesium field was indicated in November, 1945, when the stockholders paid off in full—six years before maturity—an RFC loan of \$28,475,000 covering the magnesium operation and allied plants at Moss Landing and Natividad, California.

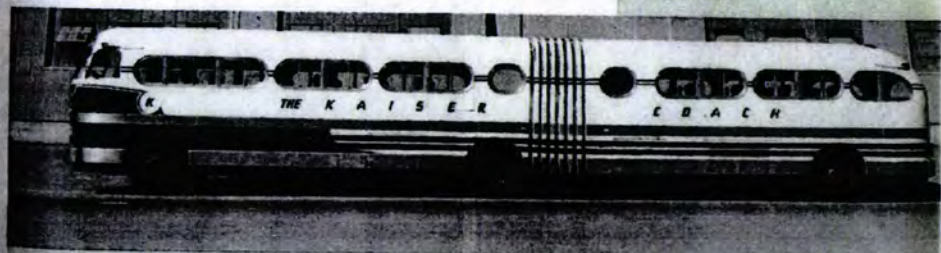
Meanwhile, Permanente has been active in light metals development with construction of the Kaiser Coach and Truck Train, and expansion of its Ferro Alloys plant, which has added sorely needed fertilizer phosphate to its list of products.



TAPPING one of the Ferro Alloys furnaces at Permanente is a spectacular operation, above. Molten ferro-silicon or phosphate flows into sand pit where it is allowed to cool into slab.



SLABS are then stockpiled, before crushing. Ferro-silicon is broken into coal-size chunks for bulk shipment, while phosphate is finely pulverized and sacked.



Above, THE KAISER COACH.

Magnesium and Aluminum "Team Up" to Produce New Highway Marvels.

Below, KAISER TRUCK TRAIN.



The PERMANENTE News THIS MONTH

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STAFF

Editorial Director—Stub Stollery
Editor—Chan Young
Associate Editor—Howard Holmes
Production—Frank Hewitt
Art—Ed McLellan, Director
Tom Borden, Owen Welsh
Ed Domingos, Lois McMillan
Photography—Jack Wilkes,
Roscoe Laing, Francis Julais
Charles Libby, Jr.
Research—Elva Priestley,
Gertrude Philbrook

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THE PERMANENTE METALS CORPORATION
KAISER BUILDING, OAKLAND, CALIFORNIA

ON THE COVER

Patterns in the night are formed by Natividad's big kilns and buildings under glowing lights, and are dramatically captured by Photographer Jack Wilkes. From a huge deposit running into millions of tons, the exceptionally pure crystalline dolomite is moved by conveyor belts to stockpiles, and then fed to the kilns.

TO THE PAST . . .

Tom Moodie pecked out A-L-U-M-I-N-U-M . . . the magic word for the northwest, the nation, and a new world of motion and light metal.

The word poured from his typewriter like the feeling in his soul . . . it was his job, the northwest, the nation . . . perhaps even the physical future of the world—it wasn't too long ago that they talked the same way about steel.

Aluminum . . . Tom Moodie had seen it in the skies in the shape of deadly bombers during the war . . . then he had seen the shape of peaceful things to come . . . baby buggies, garden tools, homes, and pots and pans—all made of aluminum.

Tom Moodie was no ordinary man . . . in his seventy years he had seen many things . . . as a tramp printer, when he set the headlines that screamed "Maine Sunk in Manila Bay" . . . and again later when he wrote the lines that told of agony in the Argonne, misery on the Marne, and Pershing's push . . . and as governor of North Dakota, a job he lost because he wasn't content to sit in one place long enough to establish residence.



MR. ALUMINUM and TOM MOODIE

Fifty of those seventy years were spent as a working newspaperman . . . a half-century span which crossed Wadina, Minneapolis, New Orleans, San Francisco, Wahpeton, Williston, and Spokane . . . fifty years of writing, breathing, believing.

And for all his years, Tom Moodie's mind moved as fast as the times . . . when he came to Spokane as a reporter for the *Chronicle*, he was one

of the first to grasp the meaning of aluminum. He wrote about it, breathed it, believed it . . . and helped bring it to the northwest.

His copy reflected his vision and sincerity . . . his words set men to thinking . . . thinking of aluminum . . . for the northwest, the nation, the world . . . and led them to believe in aluminum.

His words caught fire . . . the man on the street fanned the flames . . . "We need aluminum!" he said . . . "We can work there!" another added . . . "We can use it!" said a manufacturer . . . "We like it!" added the public.

The blaze swept across the northwest, the nation, the world.

Today, Tom Moodie is dead . . . but he had the faith, and means, to express himself . . . a faith that today is very much alive.

Some of us do not have the means to express ourselves, but now we can all see what Tom Moodie saw . . . a bright, new age of light metal . . . and one which has outgrown its wartime shoes to stand on its own feet . . . in production, in peacetime usefulness, in popularity.

And Tom Moodie died dreaming . . . he wanted to "go out" like the last stanza of *Thanatopsis* . . . looking to the future:

"So live, that when thy summons comes to join
The innumerable caravan which moves
To that mysterious realm where each shall take
His chamber in the silent halls of death
Thou go not, like a quarry-slave at night,
Scourged to his dungeon; but, sustained and soothed
By an unfaltering trust, approach thy grave
Like one who wraps the drapery of his couch
About him, and lies down to pleasant dreams."

THE PERMANENTE NEWS

TO THE FUTURE

**new spokane rod and bar
mill will help ease
wire and cable shortage . . .
permanente to be site
of foil plant . . . sixth pot
line at mead started**

HIGH power transmission wires, stretching for countless miles throughout the land, are in more ways than one indicative of the expansion recently announced by The Permanente Metals Corporation—the awarding of contracts for the world's most modern aluminum rod and bar mill, to be located at Spokane, Washington; the establishment of an aluminum foil plant at Permanente, California; and the activation of the sixth potline at Kaiser Aluminum's Mead reduction plant.

Not only will the largest volume of rod and bar production be used in electrical conductor wire and cable, now in great national demand, but that same cable will be used to carry a toast to the future across the nation. For the expansions represent another phase in Permanente's determination to fully integrate its aluminum enterprise and to make available to U. S. manufacturers all types of lightweight metal products.

The contracts awarded to the United Engineering and Foundry Company of Pittsburgh for construction of rod and bar machinery represent the ultimate in the aluminum industry and bring to the northwest its second major aluminum fabricating facility.

The new unit, which will require the eventual employment of several hundred men, will be capable of processing over 120 million pounds of metal annually—more than the entire industry produced in the United States in 1946. With a finishing speed of 2,200 feet per minute, the machinery will be able to roll a single

ingot into a 3/8-inch rod more than 2,000 feet long. The mill, scheduled for completion next March, will produce rectangular, square and hexagon bar up to two-inch maximum, and rod in all sizes from 3/8 to 7/8-inch diameter. Permanente is also planning the fabrication of wire, cable, screw machine stock, flattened wire, welding and brazing rod, and rivet stock.

With existing buildings available at the magnesium plant near San Jose, and the proximity of the site to major west coast foil markets in San Francisco and Los Angeles, the company has chosen Permanente for the location of its German aluminum foil plant purchased under the reparations agreement. First of its kind west of the Mississippi, the mill will fill the foil requirements of the Pacific Coast's electronic, radio, refrigeration, air conditioning and packaging industries, and add a new source of supply for manufacturers throughout the Nation. The operation will mean employment for 150 to 200 men.

Now cooking on the "sixth burner," the Mead reduction plant at Spokane is turning out an additional 3,000,000 pounds of pig per month. The final potline, completely rehabilitated, went into operation March 15 when more power was made available. In turn, Baton Rouge will be required to step up its production schedule of alumina by nearly 6,000,000 pounds per month.

And so the trend is ever upward and onward for Kaiser Aluminum . . . a toast to tomorrow for yesterday's achievements!

APRIL 1948

EXHIBIT A

County of Santa Clara
Department of Planning and Development
County Government Center, East Wing
70 West Hedding Street, 7th Floor
San Jose, California 95110



	Administration	Development Services	Fire Marshal	Planning
Phone:	(408) 299-6740	(408) 299-5700	(408) 299-5760	(408) 299-5770
Fax:	(408) 299-6757	(408) 279-8537	(408) 287-9308	(408) 288-9198

February 10, 2011

RE: Public records request for demolition permit for:

Site Address: 0 Stevens Creek Blvd./24001 Stevens Creek Blvd., Cupertino

Assessor Parcel No.: 351-10-005

Present Jurisdiction: County

<u>Bldg. Permit #</u>	<u>Date</u>	<u>Description</u>	<u>Status</u>
19658	06/25/74	Demolish	Incomplete
76991	02/27/98	Demolish Storage Bldg.	Incomplete
76992	02/27/98	Demolish Office Bldg.	Incomplete
76993	02/27/98	Demolish Office Bldg.	Incomplete
76994	02/27/98	Demolish Office Bldg.	Incomplete
76995	02/27/98	Demolish Storage Bldg.	Incomplete
76996	02/27/98	Demolish Storage Bldg.	Incomplete
76997	02/27/98	Demolish Office Bldg.	Incomplete
76998	02/27/98	Demolish Office Bldg.	Incomplete
76999	02/27/98	Demolish Office Bldg.	Incomplete

Respectfully,

Michael L. Harrison,
Acting Building Official

Attachment

*Please see other side

EXHIBIT A

COMPLETED: The project has received a final inspection by office.

INCOMPLETE: The project has not received a final inspection by this office. If the last inspection was made more than six months, ago, the building permit will have to be renewed by the owner or agent.

JURISDICTION: If the parcel was annexed to a city, information regarding construction will have to be obtained from the noted city.

NO PERMIT: A building permit has not been issued by this office, for work at this address. In order to legalize construction, the owner or his agent has to apply for a building permit. For more information, please ask for a building permit information handout.

PRIOR TO: Buildings constructed prior to 1947 were
1947 not required to have a permit.

To: San Francisco Bay Regional Water Quality Control Board - John H. Madigan

Tentative Order Number: R2-2019-XXXX - NPDES Number: CA 0030210

Regarding: Comments from the public Due May 32, 2019 at 5:00 PM

From: Cathy Helgerson – CAP – Citizens Against Pollution – [REDACTED]

Table 1. No comment

Table 2. Discharge Location Discharge point 001 Effluent Description – States – Treated quarry dewatering water, Crusher Slope Drainage Area storm water, 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- storm water, and storm water, discharged from Final Treatment System (FTS)-Upper

Comment: The water that is coming from the dewatering of the quarry is suspected from coming from the water table/aquifer below the Silicon Valley and this water is polluted there is a seepage report mentioning this and the types of pollution. The water is being pulled up by extraction wells this dewatering of the quarry is to repair the pollution that has been allowed to flow from the Steven Creek Reservoir to the recharge pond behind the 7-11 Store. This water is allowed to flow down into the water table/aquifer and is eventually pulled up through the Lehigh Quarry pit via extraction wells the water is then piped up to the Lehigh Wastewater Treatment Plant. This water is treated with chemicals and the public is not even sure what is treated and what chemicals are used to treat this water and that should be public information and more detail should be put into this permit.

It is mentioned that the Cement Plant Reclaim Water System wastewater, Rock Plant aggregate wash water, Truck Wash Water is ending up in the Quarry and dewatering is taking place this water is then sent to the Lehigh Wastewater Treatment Plant and finally released into the Permanente Creek. The water is not treated down to zero pollution levels. The EMSA has had a great problem with selenium and it is difficult for the public to understand just exactly what level is the selenium being treated down to by the Lehigh Wastewater Treatment Plant? The Permanente Creek Restoration Project has been held up due to the treating of the water in the quarry and Treatment Plant.

The pollution levels are set high by the EPA and State Regional Water Quality Control Department so high as to not interfere with Lehigh Hanson Cement and Quarry and the Stevens Creek Quarry business and it seems that they are always under the limit. If they are caught in violation they may or may not pay a fine but if they do it is just a way of doing business and they go out and violate again and again. The public has grown tired of trying to understand why they are subjected to such disregard of their wellbeing there seems to be no regard for the cumulative effect and chemical cocktail effect of all of this pollution and what is it doing to our Water, Air and Soil and hurting humans and animals alike.

Some of the ponds at Lehigh Hanson are not being directed to the quarry or the treatment plant at all and the water is being allowed to flow into the Permanente Creek. This water is polluted but because of

→ 4) the diluted effect from the storms and the addition of the storm water this time of year the registered levels are under the required limits by the EPA and the State Regional Water Quality Control Department. The public is not as foolish as to think that during other times when the water is low the pollution maybe very high and that nothing is being done about it because of the tests conducted during the rainy season have proved compliance. There is really no compliance of any kind our drinking water is being polluted and there needs to be an end to it.

5) I would like to see that Lehigh Hanson Cement and Quarry and the Stevens Creek Quarry both be shut down once and for all and a State or Federal park be created so that our children and their children can enjoy the beauty of the land. There really is no real reclamation of any kind the land is a waste land once the Lehigh Cement and Quarry and the Steven Creek Quarry are through with it how anyone can fool us with a reclamation plan. The next use of the land could be to build homes on this land but of course it would have to be cleaned of any pollution this would take a great effort but Santa Clara County would still be able to gain property tax revenue.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICAITONS

Item C. pg. 6 Acute Toxicity (Discharge Point No. 001 and 007)

Refer to last paragraph – 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), than such toxicity does not constitute a violation of this effluent limitation.

6) **Comment:** The ammonia in the water is a result of the Lehigh Hanson Cement Plant's discharge of polluted water into the Permanente Creek and the Ponds. The Cement Plant uses ammonia to try and hold down the Nitrogen Oxide levels this ammonia is to help with corrosion of the kiln. The ammonia is at high levels and is polluting the wastewater form the Cement Plant and also the air is highly polluted with this ammonia. The Bay Area Air Quality Management Department held stake holder meetings in order to discuss the amount of ammonia that they were going to allow Lehigh to use I tried to tell them it was way too much and they would not listen.

7) The San Jose Water and the California Water Service Company are using ammonia and chlorine to clean the water that they are taking up from the aquifer below the Silicon Valley and this is really bad. The water is not treated for all of the pollution especially the selenium and mercury coming from the Steven Creek Reservoir. The water from the Steven Creek Reservoir is being polluted by the Steven Creek Quarry especially from the recycled concrete they are recycling which directs the storm water that washes over the recycled concrete into the Stevens Creek Reservoir. There are many forms of pollution coming from the Lehigh Hanson Cement and Quarry and the Steven Creek Quarry that should be addressed and they are not. Santa Clara Valley Water District will do nothing to stop this pollution into the Reservoir and I have tried over and over again to get the agencies to do something and stop this pollution form polluting not only the Reservoir but the creeks as well.

V. RECEIVING WATER LIMITATIONS – Read item A. 1-9 – Reference item 9 especially states as follows: 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.

⑧ **Comment:** Lehigh Hanson Cement and Quarry has been in constant violation of all of the above and more why has the State Regional Water Quality Control Department allowed them to keep their permit is a wonder. It seems that this polluter can keep violating the Clean Water Act, Clean Air Act and Clean Soil requirements and keep on operating the public is asking how you can allow this by giving them this permit you are giving them a permit to pollute. Giving Lehigh Hanson Cement and Quarry and the Stevens Creek Quarry a fine if they violate the law is not enough it seems they are never closed down for their crimes. The fine if given is just a way for them to continue to do business and they will just pay the fine and keep destroying the world we live in. I would like to see real enforcement close them down once and for all because they will never be able to operate without polluting our Air, Water and Soil.

VI. PROVISIONS – A. Standard Provisions – 1. The Discharger shall comply with all “Standard Provisions” in Attachment D. go to pg. D-1

ATTACHMENT D – STANDARD PROVISIONS – I. STANDARD PROVISION – 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 combination thereof – Read more.

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. – Read more

Note: Items B, C, D, E & F

⑨ **Comment:** The permit must comply with the Standard Provisions and if necessary if there is noncompliance that 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 combination than the State Regional Water Quality Control Board must enforce the law but so far all I have seen is a leniency on the part of the agencies that are supposed to protect the public from continued violations of the Clean Water Act (CWA). This type of disregard for enforcement in order to allow the polluter to continue to operate and continue to pollute the public is inexcusable and should not be tolerated. I do not mean allowing Lehigh Hanson Cement and Quarry or the Steven Creek Quarry to pay a fine after they have committed a serious offence against the Clean Water Act, Clean Air Act and also polluted the Soil and just walk away. It seems to me that the agencies are afraid of lawsuits from Lehigh’s mother company Heidelberg Cement who operate 139 cement plants with an annual cement capacity of 175 million tonnes, more than 1,500 ready-mixed concrete productions sites, over 600 aggregate quarries, and 740 mining sites.

④ They employ 60,000 Employees at 3,000 locations in more than 60 countries and are a billion dollar company who really do not need the Lehigh Hanson Cement and Quarry and could easily close down this facility. California has 3 quarries and this Cupertino location is one of the worst polluters and needs to be totally retrofitted. There has been a great deal of dust from the cement plant and all of that dust is going into the ponds, Permanente Creek and the Stevens Creek this needs to end and there needs to be massive enforcement carried out. Lehigh Hanson is getting ready to apply for a new quarry and if they do and Santa Clara County allows them to file their application we the public are all in danger of another 100 years of pollution the people cannot live with this pollution any longer.

What good are all of these provisions if in fact there is no real enforcement and the polluter can pollute over and over again all you are giving them is a permit to pollute I suppose it all looks good on paper and does fool the public but how long can this go on? Lehigh does not care about the public and our health issues nor does it care about their employees who also suffer from health issues what a terrible shame.

3. For discharges from Discharge Point Nos. 002, 004, 005, and 006, the Discharger shall comply with all applicable provisions of Attachment S (Storm water 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) read more:

⑩ **Comment:** It is a real funny thing about Best Management Practices the Discharger polluter Lehigh Hanson is supposed to decide what is the Best Management Practices the State Regional Water Quality Control Board seems to think they are going to pick the most advanced practice available and that they will need to adjust their discharge levels below the action level how can we leave this all up to Lehigh Hanson? It seems that a company would probably try and use the most inexpensive BMP or the least expensive parts or machinery if they had to comply with regulations. I was a buyer in the Electrical Mechanical Semiconductor Industry for 30 years and I can tell you that most of the time the decision on what to buy was based on cost.

⑪ Table A -Storm water Action Levels only cover some of the pollution not all of it so who is going to find out what else is wrong? The State Regional Water Quality Control Board needs to do their own testing leaving Lehigh to do their own is having the fox watch over the chicken coup there is no real enforcement with this method. I want to mention here that all of this looks like the State Regional Water Quality Control Board may be doing their job and everyone hopes they are but when it really comes down to it how can we be sure that Lehigh Hanson and Steven Creek Quarry are operating honestly. The polluter receiving a slap on the hands if they are caught in noncompliance and sometimes paying a fine seems to be the norm, so Lehigh or SCQ are told by the agencies and SCC please get in compliance, so what happens when they stall and drag their feet the agencies wait and the public suffers. Many of these times there is no one available at the Santa Clara County or with the agencies to keep monitoring the polluters it takes a constant ongoing process and the polluters know and just keep polluting. This is especially true about the Lehigh Cement and Quarry and the Stevens Creek quarry who for decades have been in noncompliance over and over again.

C. Special Provisions – 1. Reopener Provisions States the following: 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.

Comment: Lehigh Hanson Cement and Quarry and the Stevens Creek Quarry have continually been in violation and truly have caused adverse impacts on water quality over and over again from the day that they first began doing business the public has and is continually suffering from this pollution.

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 waste load 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.

Comment: The problem here is who decides what effluent limitations are and how decides what may be modified as necessary to reflect the updated water quality objectives and waste load allocations in the TMDLs? The agencies and Santa Clara County want to make sure that Lehigh Hanson Cement and Quarry and the Stevens Creek Quarry continue to operate and have mentioned this is all because of property tax revenue and sales tax revenue that SCC receives which is a great deal of money from both polluters. The agencies do not want to face a lawsuit from these polluters and the polluters cannot operate without polluting that is well known. There will never be new technologies coming out if our Government does not realize that the people cannot live in a seriously polluted society giving the polluters all kinds of leeway is a grave mistake and this needs to end. Shutting them down forcing them to clean up their act or face closure it what is necessary and so I ask that this permit have the strictest of regulations and that these regulations and laws be abided by whole heartedly.

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

Comment: It is extremely evident that during rainy season the storm water that is going into the ponds and the quarry at both Lehigh Hanson and the Steven Creek Quarry is diluted and that this dilution of the storm water allows the levels of pollution to be altered. I am concerned about this because it seems that the State Regional Water Quality Control Board is more concerned about taking reports from both polluters at the time when this storm water is highly diluted. My question is how about the rest of the year when they are releasing the polluted water from the cement plant, the ponds and the quarries into the creeks no one seems to register the high levels of pollution then. The ponds are used to funnel the polluted water to the creeks this has been going on for many decades and it is still occurring seems to be dirty pool if you ask me and the public. If the permit only allows them to pollute in this way in order to

keep their door open and allow them to continue to do business than how can the Air, Water and Soil be protected. I say that the public is not protected and that this permit is and has allowed Lehigh Hanson Cement and Quarry and the Stevens Creek Quarry to continue to pollute the public to death.

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

Comment: The agencies may develop all of the above on paper but I have to wonder if in fact that they would implement anything that would really stop these polluters from polluting by closing them down. I believe that there is no real methods out there that will eliminate all of the pollution that Lehigh Hanson Cement and Quarry and the Stevens Creek Quarry have exposed the public to. The levels of pollution are set by the U. S. Government Agency EPA and the local agencies they will never stop the polluters from polluting. Lehigh Hanson Cement and Quarry Company and the Steven Creek Quarry Company will go on polluting and the public will be sick from this pollution and even suffer death this is a terrible tragedy. There is a solution new Lehigh Hanson Cement and Quarry is running out of limestone to mine for cement and they want to put in an application for a new pit please stop them the destruction from this new pit will be astronomical and extremely horrifying. I have been accused of being too emotional by the Santa Clara Planning Board well thank you for that someone has to be emotional because it seems that they are not taking the pollution from these polluters seriously. I have accused SCC Planning of being out of compliance and they are and so is the Santa Clara County Board who has allowed Lehigh Hanson Cement and Quarry and the Stevens Creek Quarry to get away with murder.

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

Comment: I should suspect that reopening an order with an administrative or judicial decision on extended waste discharges from an illegal dumping or illegal reporting should definitely call for a closing of the polluters business. It is unclear here exactly what this mention of a separate NPDES permit can you make it more evident as to what you mean? The polluters should be also held and prosecuted for their crimes. I would like to see that stated in the permit and it should be mentioned many times over and over.

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.

Comment: The Selenium impairment problem with Permanente Creek has not been solved because the EMSA should have never been allowed to happen and it seems that Santa Clara County is at fault here. I complained from the very beginning when they were first dumping overburden on the site and SCC Planning would not listen to me and the public complaining. It is well known now to the public that this was allowed to happen in order to cover up the pollution that is under the EMSA and all of this will eventually come out when Lehigh Hanson Cement and Quarry Company must start their Reclamation. The pollution under the EMSA needs to be cleaned up and the selenium is also coming from the Cement Plant emissions that are ending up in the Permanente Creek. There are many other pollutants that are coming from the Lehigh Hanson Cement Plant and Quarry, the ponds and the quarry itself that are all

going into the Permanente Creek but it seems that this will be allowed to continue. There is no way the public will allow another Lehigh Hanson Company to mine a new pit.

g. Or as otherwise authorized by law.

Comment: I am sorry to say where has the law been for 100 years and counting the Lehigh Hanson Cement and Quarry, the Lehigh Southwest Cement and Quarry, and the Lehigh Permanente Cement and Quarry have never been shut down for their law breaking and it seems they have been protected by the agencies that should have held them accountable. The does no one any good unless the laws are carried out and just giving them a permit does not give them the right to pollute the public to death and cement manufacturing and quarry mining are not more important than human and animal life.

It States: The Discharger Lehigh Hanson Company may request a permit modification based on any of the circumstances above. With any such request, the Discharger Lehigh Hanson Company shall include anti degradation and anti-backsliding analyses.

Comment: The Discharger Lehigh Hanson Company may not request a permit modification without bringing this matter up before the Governing Agencies and without the notification to the public who should be allowed to oppose and comment on such a request. This is very important because once a permit is issued the Discharger Lehigh Hanson Company and the Steven Creek Quarry Company should not be allowed to request a change. The reason that the permit is initially reviewed and authorized is to make sure that the Discharger Lehigh Hanson Company and the Stevens Creek Quarry Company are in compliance and the public is allowed to comment. It is simply not acceptable to allow them to come in and make a request for a change that probably should have been brought up to begin with.

2. Effluent Characterization Study and Report –

a. Study Elements. Read more

Comment: I am concerned that Discharger Lehigh Hanson Company is only evaluating annually if concentrations of any pollutants listed in Attachment G, Table B, significantly increase over past performance. It states that the investigation may include, but need not be limited to, and increase in monitoring frequency, monitoring of process streams, and monitoring of influent sources. The Discharger Lehigh Hanson shall establish remedial measures addressing any increase resulting in reasonable potential to cause or contribute to an excursion above applicable water quality criteria.

My question here is how can Discharger Lehigh Hanson Company Minimize the pollutant once the pollutant has been allowed to flow into the streams the damage is done how to the fish or aquatic life. The real issue here is why did the Discharger Lehigh Hanson Company allow this to happen in the first place should they not have known what the pollution was and how it would harm the stream?

b. Reporting Requirements – i. Routing Reporting. The Discharger shall report identify 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.

21 **Comment:** It seems difficult for me to even imagine how the Discharger Lehigh Hanson Company can control the pollution and letting them self-monitor after they have collected samples which goes on a report annually is not enough. Why should they even try to correct any problems even if they honestly report them with this system they can stay in noncompliance all year long and this could seriously affect the aquatic life but it could also affect human life as well.

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 effluent limitation (e.g., sample results reported as detected by not qualified (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 the 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 MDL using definitions in Attachment A and Reporting protocols described in MRP.

22 **Comment:** The issue here is pollution and the Best Available Technology does not solve the problem especially when reporting is concerned. The pollution or effluent limitation may come in right under the MDL – Method Detection Level let's say by a few numbers and therefore the pollutant is listed as an ND or Non Detect but this is still harmful to the aquatic life and to human life. The limits should not be listed as a Non-detect because there was pollution there Non –Detect makes it look like there was nothing there and that is not the case even thou it was under the set perimeters it is still harmful. The cumulative effect in the body and the mixing of the pollutants cause an even more dangerous affect to the human, animal and aquatic life these pollutants once released into the aquifer and then brought up by the San Jose Water Company and the California Water Service Company are harmful. These two water companies do not treat the water for all of the contaminants and they especially do not treat the water that has selenium in it. The water they use is pulled up from the aquifer below the Silicon Valley this water comes down from the Steven Creek Reservoir which is contaminated with Mercury and other pollution because of the recycled concrete that they are processing. They are using the Stevens Creek Reservoir as their personal toilet and the Santa Clara Valley Water District seems to think that is ok. The water companies use ammonia and chlorine which bleaches he water and only kills the bacterial not the hazardous pollution. There needs to be a better system of treatment of polluted water but why not start with not dumping the pollution in the Permanente Creek to begin with Lehigh needs to find another way to dispose of their polluted water. The water from any place at the Hanson Cement Plant, the Quarry and the Stevens Creek Quarry and any place on the sites should be cleaned and that is just not happening. It seems that this permit is allowing storm water in the ponds to be directed to the Permanente Creek without being cleaned we must remember that the water is not the only thing that

has been polluted the ground itself is polluted with pollution from the Cement Plant. The air is highly polluted with all kinds of pollution and whatever is in the air is also going to get into Permanente Creek and the ponds.

B. If triggered by the reasons set forth in Provision VI.C3.a, above, the Discharger's Pollution Minimization Program shall include, but not be limited to the following actions and submittals:
i., ii, iii, & iv. read.

Comment: The Pollutant Minimization Program cannot work ii. The Executive Officer may approve alternative measures when influent monitoring is unlikely to produce useful analytical data; the real question here is can anyone expect the polluter Lehigh Hanson Company to report the truth if in fact it will shut them down and it is evident that they cannot operate without polluting. In looking further in this report the fines paid are just a way for Lehigh Hanson Company to do business and this just does not seem to be a solution. The fines are used down at the estuary in San Francisco and nothing is returned here locally to improve the Air, Water and Soil pollution. iv. I have yet to see a control strategy and I have to say I blame the State Regional Water Quality Control Enforcement Department and Santa Clara County for the lack of compliance on their part.

4. Receiving Water Data Reporting, Dry Season Discharge Requirements and 6. Selenium in Fish Tissue Reasonable Potential Study read more.

Comment: Lehigh the Discharger is causing chronic toxicity which is coming from their Cement Plant processing and this water is dumped into the ponds or into the quarry pit this must end. The water cannot be treated at the Lehigh Wastewater Treatment plant properly because it does not treat the water for all of the pollution that is in it. The process of Treatment only treats the bacterial problems not the pollution which they hope will not damage the fish/aquatic life that is why they are instructed to test the fish for levels of pollution. I will mention here that how do we know what fish they are testing and where do the fish come from there is a great deal of room for deception here. The problem of the selenium coming down from the EMSA should have been resolved and it seems that there is still a very serious problem. The U.S. EPA should do their own testing because of the seriousness of the situation but it hard for anyone to get them to do the job that is necessary to protect the public I know I have tried for 14 years and counting and still they totally ignore the problem and think that the local agencies and Santa Clara County should be able to handle this and they cannot. There needs to be a complete Superfund Site Cleanup by the EPA and I have mentioned this over and over Lehigh qualified in 2012 they did a Superfund Site Investigation but they refused to come in and clean up the pollution. I believe they did tell the agencies to clean up this mess or we will and so far we still have all kinds of pollution. I requested this Superfund Site Investigation and also requested that the Stevens Creek Quarry be also Investigated and the EPA did conduct and investigation the qualified but I was told not enough people lived around the SCQ so they would not do a Superfund Site Investigation. I believe they also included SCQ in their request that the local agencies and the local SRWQCB clean up this mess or we will come in and do it for you. I want to remind everyone here that the aquifer is polluted and it seems to me that Lehigh is bringing up the pollution from the aquifer and using extraction wells to pull up the polluted water. The Lehigh Wastewater Treatment Plant is supposed to clean this water and release it into the

Permanente Creek so why do we need to test the fish should it be a given that the Lehigh Wastewater Treatment Plant is doing their job. The problem may be that all of the water on the site is not going to the 2 treatment plants that it is being released into the Permanente Creek without being treated at all, and that the ponds are being diluted by the rains so all concerned hope that the testing will bring the levels down so that they do not need to treat the water in the Lehigh Hanson Treatment Plant. I am extremely concerned about this and I do believe that the same is taking place at the Steven Creek Quarry. The ponds are being diluted by the rains and the State Regional Water Quality Control Enforcement Division will be receiving water testing reports that were conducted by Steven Creek Quarry. The hope is that the water will be diluted and that this water can be released into the Rattle Snake Creek and the Swizz Creek and also into the Stevens Creek Reservoir. The water coming over the recycled concrete will also be released into the Steven Creek Reservoir but of course now that the Steven Creek Reservoir is full and the pollution has been diluted no one will really know what is really going on.

Note: I would like to skip over to the following:

Attachment F – Fact Sheet F-8 Item 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 Lehigh Hanson \$465,500.00 dollars 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 \$375,000.00 dollars 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 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 \$301,000.00 dollars 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 IT effluent; and

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

25

Comment: I am completely appalled by the lack of real enforcement the Lehigh Hanson Cement and Quarry continued to violate the law over and over again and were never closed down instead they were made to pay fines. The fines were not really fines but fees that they had to pay in order to continue to do business. The State Regional Water Quality Control Board and Enforcement Division calls them fines but just like the Air Resource Board who require fees to be paid each year by companies which allows them to pollute. These fees are based on the pounds of pollution and they are charged per pound and this adds up to hundreds of thousands dollars per year. The Air Resource Board will not say what the pollution is and they will not provide copies on the web that can be printed up of these reports. This money is then divided up and given out to the local districts in order for them to pay for their operations. I am horrified by the thought of how much pollution is allowed to be disbursed into the Air and the fact of the matter is that the Air Resource Board is in violation of the Clean Air Act and no one including the EPA Region 9 will do anything about this. It seems to me that the fines that are paid by Lehigh Hanson Cement and Quarry Company and the Stevens Creek Company are in reality fees and these fees are funneled over to the Estuary in San Francisco. What exactly is done with this money I am not sure of but I can guess it is just to fund the agency itself and very little is done to clean up the SF Bay Area.

I would also like to talk about a Definition called Dilution Credit that reads – Amount of Dilution Credit – Amount of dilution granted to a discharger 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. Note: Listed under Attachment A- Definitions A-1

26

Comment: What is this all about seems like a bunch of baloney set up to aid the Discharger Lehigh Hanson Cement and Quarry and allow them to pollute. The dilution granted what happens to cumulative effect the pollution that the public has been subjected to prior to the dilution of the water during rainy seasons. The water also that is taken up from the Lehigh Hanson Quarry which has reached the aquifer or water table dilution seems to be an easy fix for some but not for me. The water taken up was brought up because it is polluted and contaminated with all kinds of pollution from the Stevens Creek Reservoir and this has been an awful problem. The Steven Creek Quarry is polluting this water and using it for their personal toilet. The State Regional Water Quality Control Enforcement Division and the Santa Clara Valley Water District, San Jose Water and California Water Service Company and possibly the City of Cupertino cannot hide this from the public any more.

Summary: I would have like to have commented more on this report but it really would be no use to anyone unless the Clean Water, Clean Air and Soil rules and laws are abided by and they are not. The public suffers over and over again with all kinds of serious health issues and many people die from these health problems. I can only hope and pray that someday things will change but for now I do not see any hope.

God Help us.

From: [REDACTED]
To: [Madigan, John@Waterboards](mailto:Madigan,John@Waterboards)
Cc: [REDACTED]
Subject: Comments on Lehigh Tentative Order
Date: Friday, May 3, 2019 7:46:36 AM

Dear Mr. Madigan,

My name is Sarah Khan and I have been a resident of Cupertino since 2006. I live right at the intersection of Stevens Creek and Foothill Boulevard and am directly impacted by the Lehigh plant daily.

Since moving to Cupertino, I have observed numerous actions the plant has taken which indicate that they are not only unconcerned with the neighborhoods surrounding the plant, but also unconcerned with the impact to the environment. I have seen local traffic get worse, live with a grinding sound caused by fans which run 24 hours, and moreover have had progressively worse allergies and breathing issues (which I had never had before moving to Cupertino), which I can only attribute to the dust from the plant that falls on our yard and coats our landscape regularly.

I'm not usually someone who gets involved with local politics but I cannot stand by and see this plant expand without sharing my point of view. The decreasing quality of life we've all experienced over the past 15 years particularly due to decisions made by management at the Lehigh plant has been really, really depressing for me to see.

Please consider my perspective as your organization considers how to proceed with Lehigh's proposal to expand.

Best,

Sarah Khan
[REDACTED]

From: [REDACTED]
To: Madigan, John@Waterboards
Subject: Lehigh Tentative Order No. R2-2019-XXXX NPDES No. CA0030210
Date: Monday, April 29, 2019 1:42:24 PM

Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, California 94612

April 29 2019

Attention: John H. Madigan, P.E.

In response to Regional Water Quality Control Board Tentative Order No. R2-2019-XXXX NPDES No. CA0030210 for Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc.'s Permanente Plant discharge to Permanente Creek, Cupertino, California I would like to submit proposed permit concerns.

① In modifying the existing storm water permit to accommodate drinking water standards it is to be hoped that compliance with California Safe Drinking Water Act Articles is mandatory in regards protected beneficial uses of the waters of the state that need be protected against quality degradation. This includes chemical, physical, biological, bacteriological, radiological and other properties and characteristics of water which affect its use.

② It is therefore of concern that one sees in Bay Area Air Quality Management District Toxic Inventory 2015 list that Lehigh operations feature so prominently in high levels of emissions of 1,3-butadiene, Acetaldehyde, Arsenic (all), Benzene, Beryllium (all) pollutant, Cadmium, Chlorinated dioxins & furans (Calif TCDD equiv, Chromium (hexavalent), Formaldehyde, Hydrogen Chloride (HCl), Manganese, Mercury, Naphthalene, Nickel pollutant, PAHS (benzo(a)pyrene equiv), and Polychlorinated biphenyl (PCB).

These contaminants do not appear to have been tested for in storm water discharges in NPDES Permit No, CA0030210 in this past year, even though adjacent WMSA and EMSA hills of overburden and Permanente Creek drainages have decades of deposition of toxic air particles to wash into Permanente Creek's watershed.

This reissued permit needs to test water treatment plant discharge for toxic levels of these elements on a continuous monitoring regimen, for 24 hours a day, seven days a week, 52 weeks for a year before it can be determined that these discharges are not a hazard to drinking water supplies of North Santa Clara County.

There is mention of testing levels in this proposed permit but do not find continuous testing protocols that guarantee what can be called "safe and healthy" water quality objectives. And, there does not appear to be a remedial action level trigger for cessation or diversion of flows if critical spike in particularly lethal element like Benzene is registered in discharge. Can continuous testing of prime toxic contaminants be put into Table E-3?

③ As induction of above-regulatory cap levels of toxic substances into deep ground water aquifers is cumulative and irremediable and likely to be in perpetuity, it would be important to have capability to divert treatment plant discharge flows to Cupertino sanitary sewers until toxic levels are remedied. In addition it is necessary to avoid biological impacts to Rancho San Antonio's wildlife who use Permanente Creek as water source.

④ By surface mail will submit California Department of Water Resources map of groundwater cascade and aquifer delineation that illustrate percolation potential of Permanente Creek to supply drinking water resources to Santa Clara Valley aquifers as well as its attendant capability of contamination of region's water supply

5

Another factor that bears on safety considerations in permit is proximity of Monte Vista and Berrocal Faults, the latter passing through Lehigh site near water treatment plant. The present water treatment plant differs to a considerable degree from facility presented In November, 2017 Santa Clara County Planning public hearing. In earlier plans there were seven large holding tanks adjacent to plant that might be hazard in an earthquake, depending on what they contained. Water treatment chemicals are undesignated in permit but could be toxic?

6

The schematic of drainage conduits and groundwater pumping have evolved considerably from that earlier version, if I remember accurately, to an extent that CEQA Law and Guidelines might be implemented to clarify environmental impacts to water flows, both quantity and quality.



To cite CEQA on WATER Will the proposal result in:

- a. Changes in currents, or the course of direction of water movements, in either marine or fresh waters?
- b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?
- c. Alterations in the course or flow of flood waters?
- d. Changes in the amount of surface water in any waterbody?
- e. Discharge into surface waters or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity?
- f. Alteration of the direction or rate of flow of ground waters?
- g. Change in the quantity of groundwaters, either through direct addition or withdrawals, or through interception of an aquifer by cuts or excavation?
- h. Substantial reduction in the amount of water otherwise available for public water supplies?
- i. Exposure of people or property in water related hazards such as flooding or tidal waves?

Believe all of these impacts to water and public water resources exist in proposed water treatment collection and discharge of cement plant waters to Permanente Creek and need to be addressed in this permit reissue.

Would like to submit comment at this time and follow with specifics after more careful consideration of permit.

Thank you,

Libby Lucas, [REDACTED]

CAUTION: This email originated from outside of the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

From: [REDACTED]
To: Madigan, John@Waterboards
Subject: Lehigh Tentative Order No.R2-2019-XXXX NPDES Np. CA0030210
Date: Thursday, May 2, 2019 4:17:01 PM

Regional Water Quality Control Board

Attention: John H. Madigan, P.E.

To continue comment on the Regional Quality Control Board's reissue of NPDES No. CA0030210 to Lehigh Southwest Cement Company and Hanson Permanente Cement Inc's Permanente Plant for discharges to Permanente Creek, In Cupertino, California I would submit further concerns with proposed permit criteria.

7 In assessing results of screening discharges for beneficial uses and drinking water quality criteria in regards contaminant levels it is also critical to consider interaction of certain chemicals that can magnify toxic impacts to human health as well as to biological resources.

To list contaminants of concern: Antimony, Chromium (VI), Mercury, Nickel, and Selenium, as noted in permit, and as cited by BAAQMD to be present at chronic levels in Lehigh air emissions: 1,3-butadiene, Acetaldehyde, Arsenic (all), Benzene, Beryllium (all) pollutant, Cadmium, Chlorinated dioxins & furans (Calif TDD equiv., Formaldehyde, Hydrogen Chloride (HCl), Manganese, Mercury (all) pollutant, Naphthalene, Nickel pollutant, PAHS (benzo(a)pyrene equiv.), and Polychlorinated biphenyl (PCB).

As an example, believe Nickel and Selenium have exacerbated impacts when combined. Ammonia, Dioxin-TEQ, Chronic Toxicity, Hardness, Salinity, and Temperature are assessed in permit for water quality criteria.

All of these elements need to be included in screening of treatment plant outflow at northerly discharge point to Permanente Creek on continuous, 24 hour, 7 days/week, and 52 weeks/year to assure drinking water quality.

Another consideration is this treated storm water from EMSA and WMSA sites represents roughly 250 acres, only one twentieth of Permanente Creek 7.8 square mile watershed on which cumulative deposition of Lehigh airborne contaminants have occurred over recent decades of cement facility operation. Permanente Creek's high percolation drinking water aquifers have routinely absorbed residual contaminants from entire watershed.

8 In reviewing CA0030210 discharge data this past year recall that northerly discharge point tp Permanente Creek was extended through Santa Clara Valley Water District flood basin diversion site to former cemetery infiltration gallery reach in creek bed. This is historic endangered Red-Legged Frog habitat, per H.T. Harvey survey, so altered discharge point would have been reviewed by Fish and Wildlife biologist. Was this reported?
Are contaminants just listed likely to have had debilitating effects on resident populations of Red-Legged Frog?

The previous Sierra Club suit addressed biological integrity of Permanente Creek in regards selenium levels in discharge and continuity of stream in-channel flows for historic run of trout. Does discharge extension through SCVWD flood project affect continuity of flows or treatment plant discharge affect chemistry of flows for trout?

In past submitted graphic data to RWQCB on Santa Clara unconfined aquifer delineation and profile, State Water Resources groundwater cascade in west valley foothills, Rancho San Antonio Red-Legged Frog habitat, and Berrocal and Monte Vista earthquake faults and adjacent landslides. Will resubmit by mail as appropriate and as locate best legible examples, and hope this is acceptable with permit comment deadline.

The magnitude of sediment loads and sizeable landslides that distinguish Permanente Creek's watershed is a constraint to drinking water quality and stream potential of percolation to aquifers and groundwater reserves, but am unclear how best to address this concern in regards proposed storm water permit.

As it is such a dynamic watershed Permanente Creek needs management with most conservative protocols to safeguard water resources, wildlife, residents, and droves of county recreation users drawn to its open space.

Thank you again for considering these concerns,

Libby Lucas, [REDACTED]

From: [REDACTED]
To: [Madigan, John@Waterboards](mailto:Madigan,John@Waterboards)
Subject: Lehigh Tentative Order No. R2-2019-XXXX NPDES No. CA0030210
Date: Friday, May 3, 2019 4:01:23 PM

Regional Water Quality Control Board

May 3, 2019

Attention: John Madigan

To continue on comments to reissue NPDES Permit No. CA0030210 for Lehigh Southwest Cement Company and Hanson Permanente Cement Inc.'s Permanente Plant's discharge to Permanente Creek, the following is text to support data of maps and charts, related to earlier submittals, that you will receive by surface mail.

9
This is old data but sufficiently specific that feel it demands an equivalent level of integrity in scientific reporting and investigation of operations at Lehigh Quarry. Monte Bello Ridge and Black Mountain are natural resources of pre-historic value and deserve conservative preservation and exemplary protocols in management.

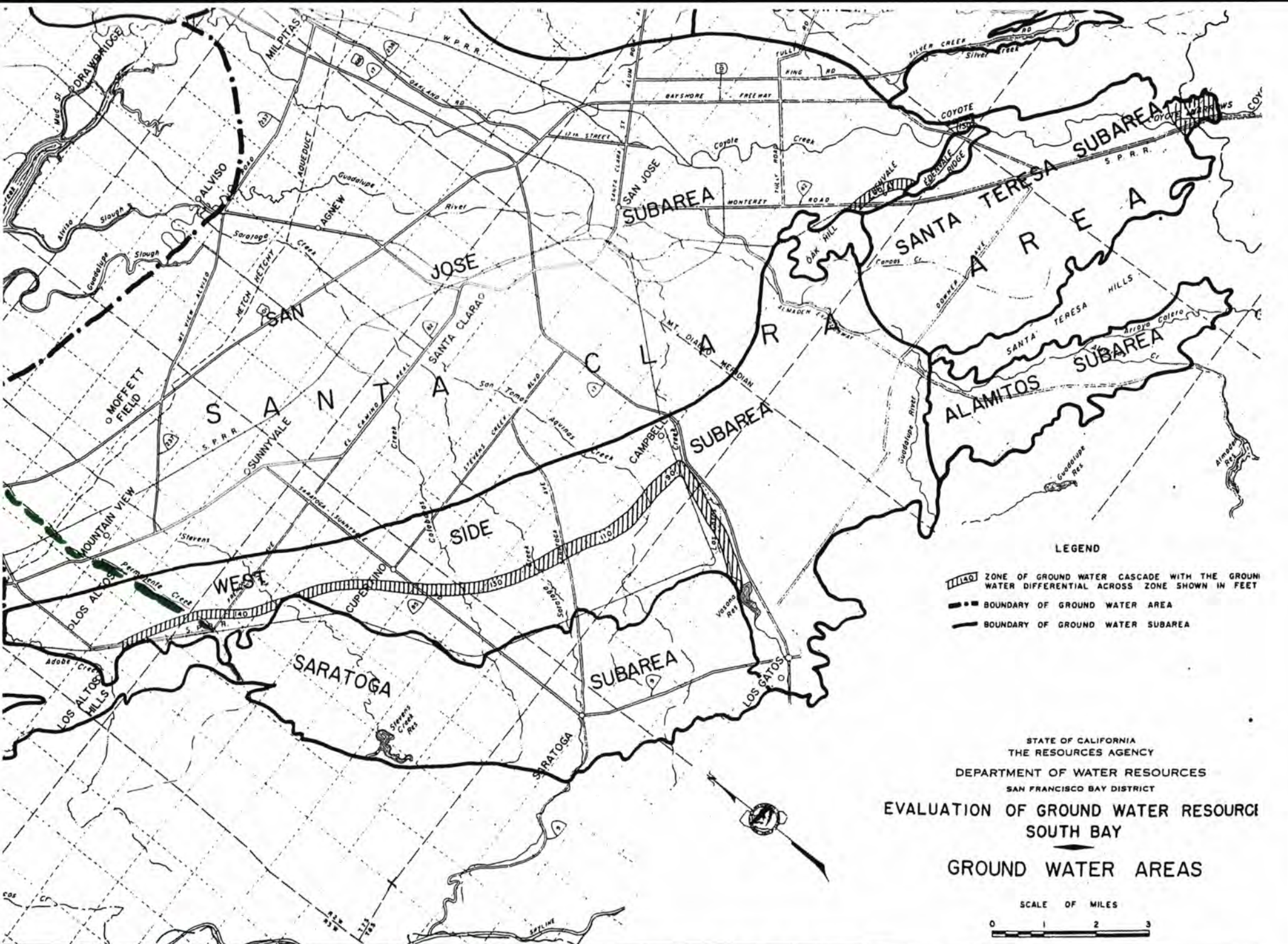
- 1- California Department of Water Resources - Groundwater Cascade at Permanente Creek in South Bay
- 2- Santa Clara Formation Aquifer profile of recharge conditions on west side of Santa Clara Valley between Mountain View and Sunnyvale from foothills to San Francisco Bay (trajectory Permanente Creek underflow).
- 3- Lines of Equal Elevation in Water Wells depicting concentrations at Permanente and Stevens Creeks.
- 4- RWQCB South Bay Groundwater map of toxic plumes adjacent Permanente and Stevens Creeks at Bay.
- 5- Permanente Creek Geology includes Berrocal, Monte Vista and San Andreas earthquake faults & landslides
- 6- Berrocal Fault runs through Lehigh Quarry adjacent to water treatment plant site
- 7- Profile San Andres, Berrocal and Loma Prieta/Shannon Fault Zones showing depth and proximity of faults.
- 8-11 Southern Hemisphere Origin of Cretaceous Laytonville Limestone of California (Permanente Quarry)
- 12-14 USGS Report 89-4130 on Sediment Yield in Upper Permanente Creek Basin in dry and wet years.
- 15- Santa Clara Conservation District historic flow data for Permanente Creek in routine and dry years.
- 16-17 Drinking Water Quality Table of elements Lehigh discharges should include in testing for continuously.
- 18-19 Bay Area Air Quality Management District toxic inventory list Lehigh emissions needing test in discharge
- 20- Legible Lehigh Quarry map of Ponds but no discharge points or extension to SCVWD flood basin bypass
- 21- H.T. Harvey records endangered Red-Legged Frog habitat at discharge point at Gate of Heaven Cemetery

Then enclosed find copies of my three comments on general concerns. Did not begin to address each chart of elements to be tested for as find infrequency of sampling unscientific as well as criteria of 'reasonable' testing. In this day of sophisticated scientific instruments and data retrieval and ease of instantaneous communication, there is no reason not to have continuous testing for all elements in discharges that might affect human health.

Toxic plumes and super fund sites take decades to bring into minimal compliance, if ever possible. Avoidance of irremedial degradation of water resources has always been paramount concern of groundwater scientists in Santa Clara County and RWQCB need not lower the bar.

Please ensure this discharge permit adheres to highest drinking water quality criteria with stringent protocols.

Thank you, Libby Lucas, [REDACTED]



PERMANENT CLACK - GROUND WATER CASCADE

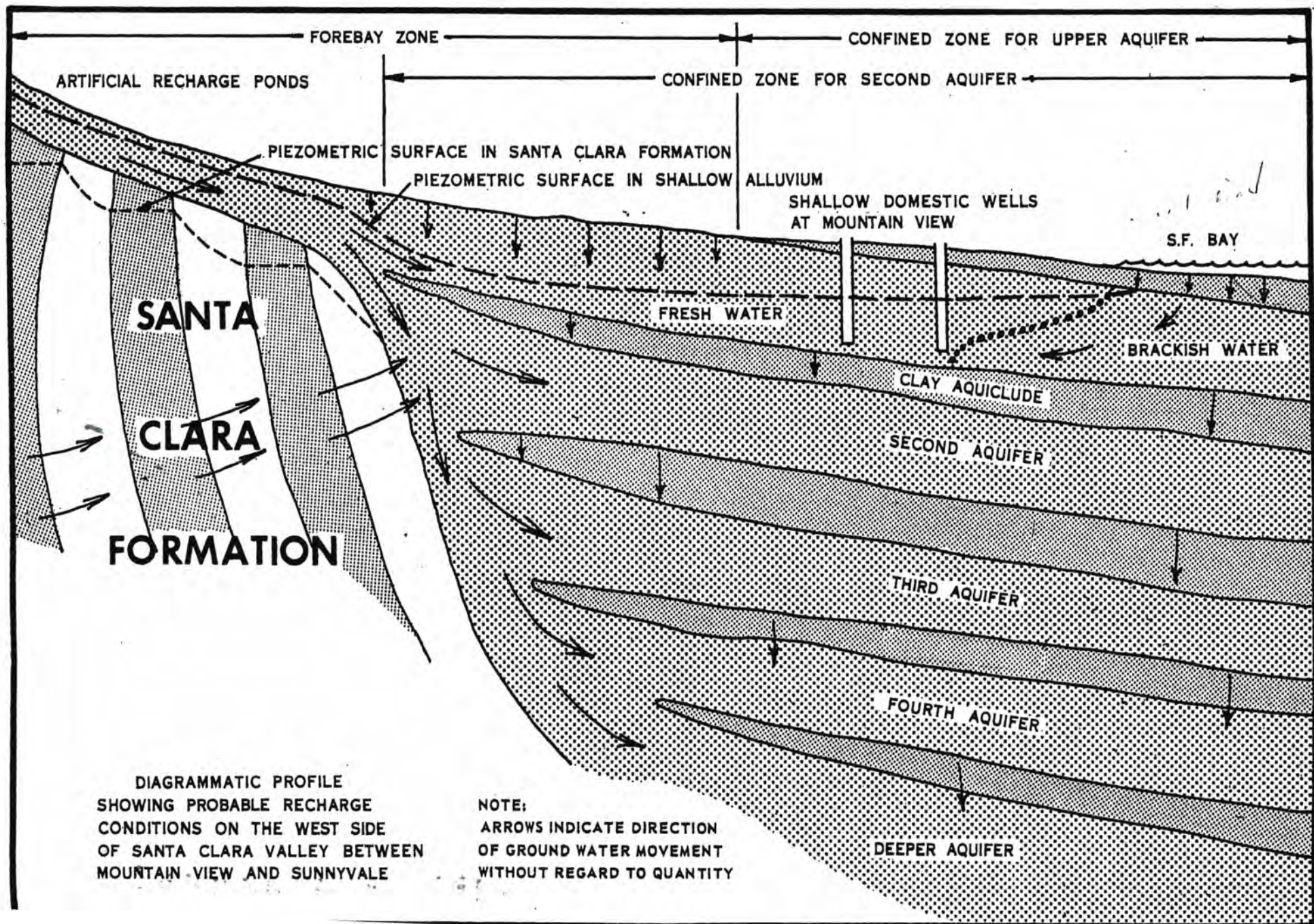
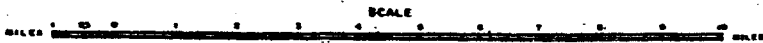
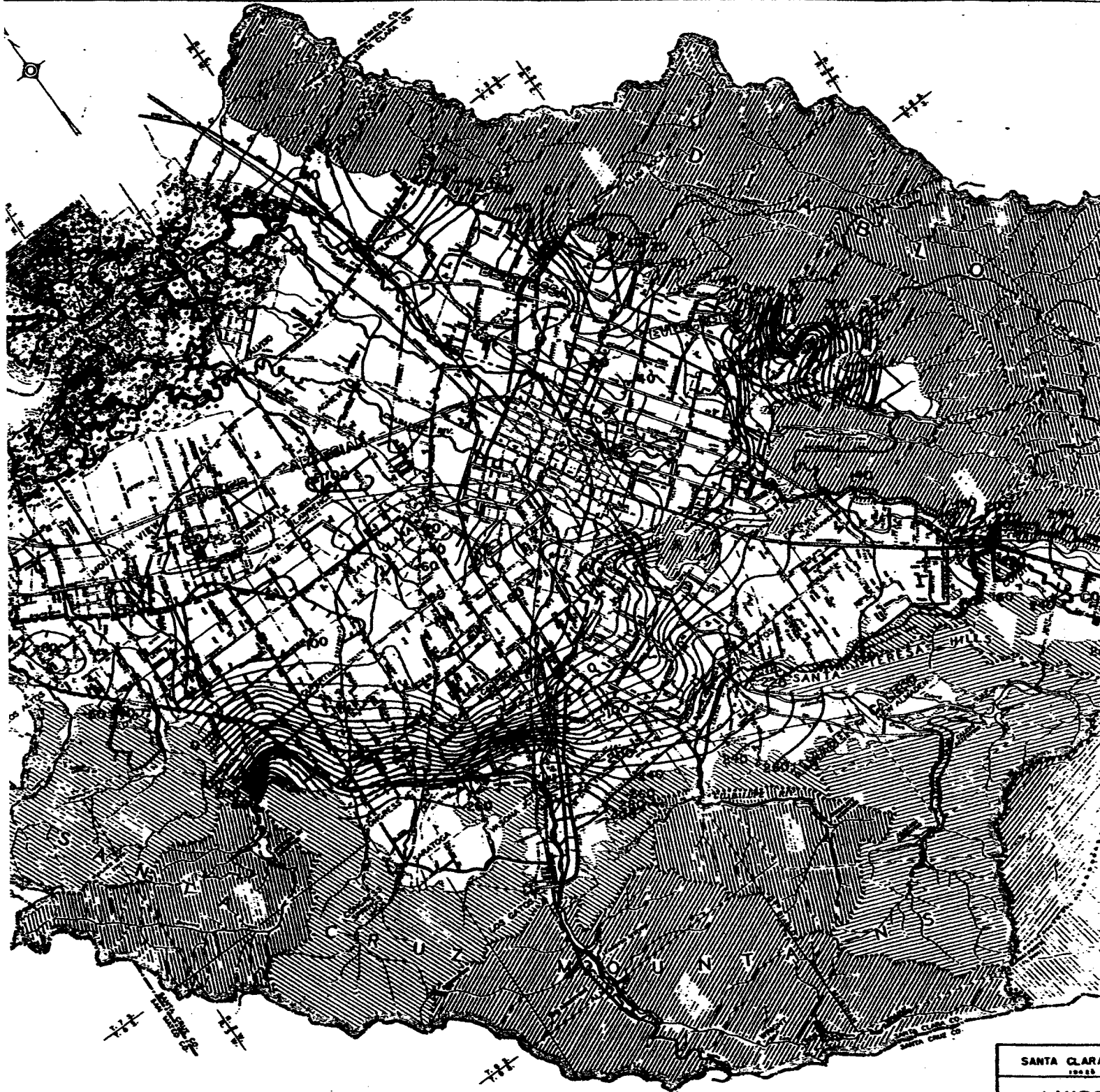


FIGURE 13



SANTA CLARA
1902-03
LINES
HYDROGRAPHIC



CONCENTRATION OF WELLS
AT PERMANENTE AND STEVENS CREEKS

LINES OF EQU
ELEVATION
WATER - 3 -
WELLS



South Bay Groundwater

RIDGE - TOXIC PLUMES

Geology

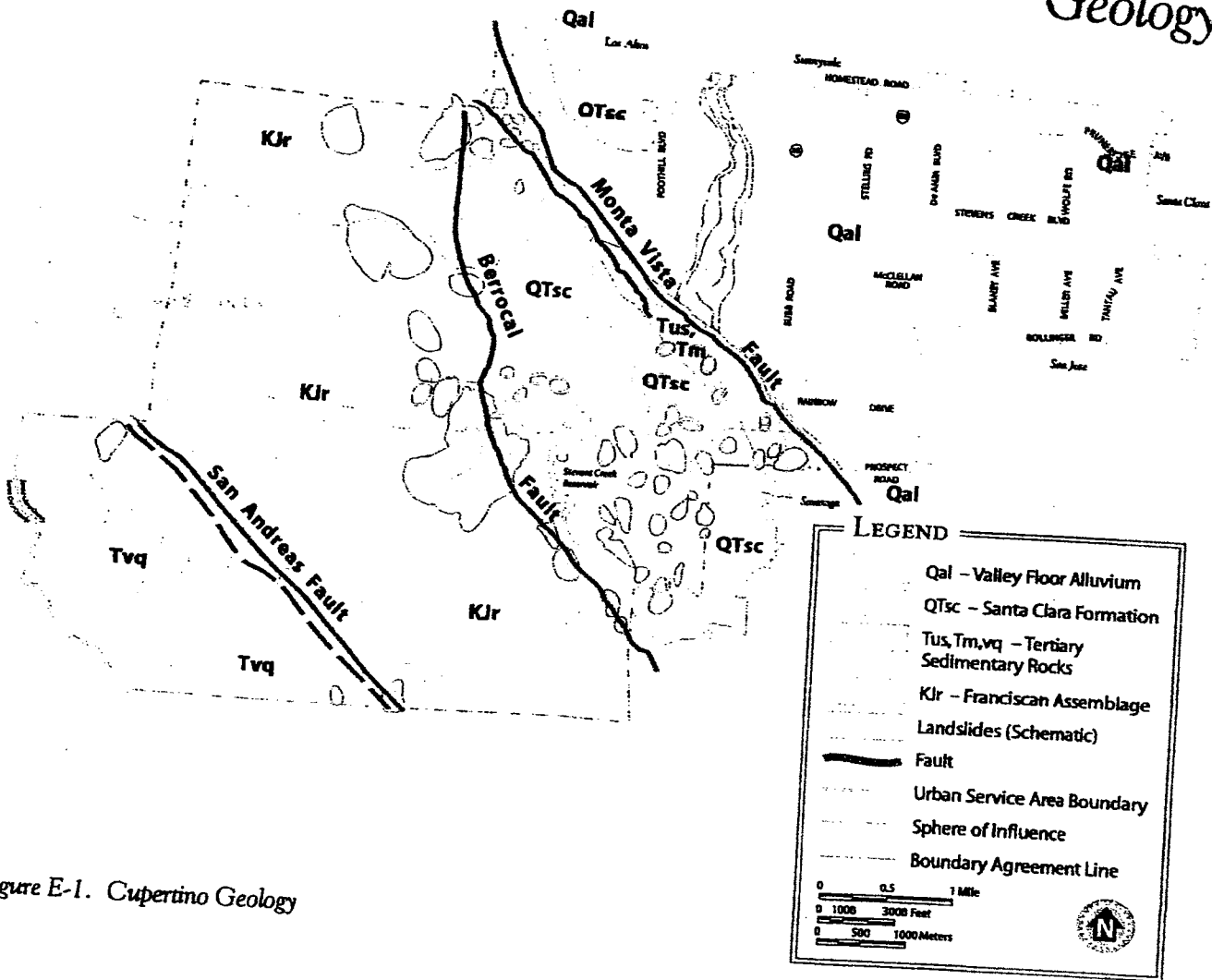
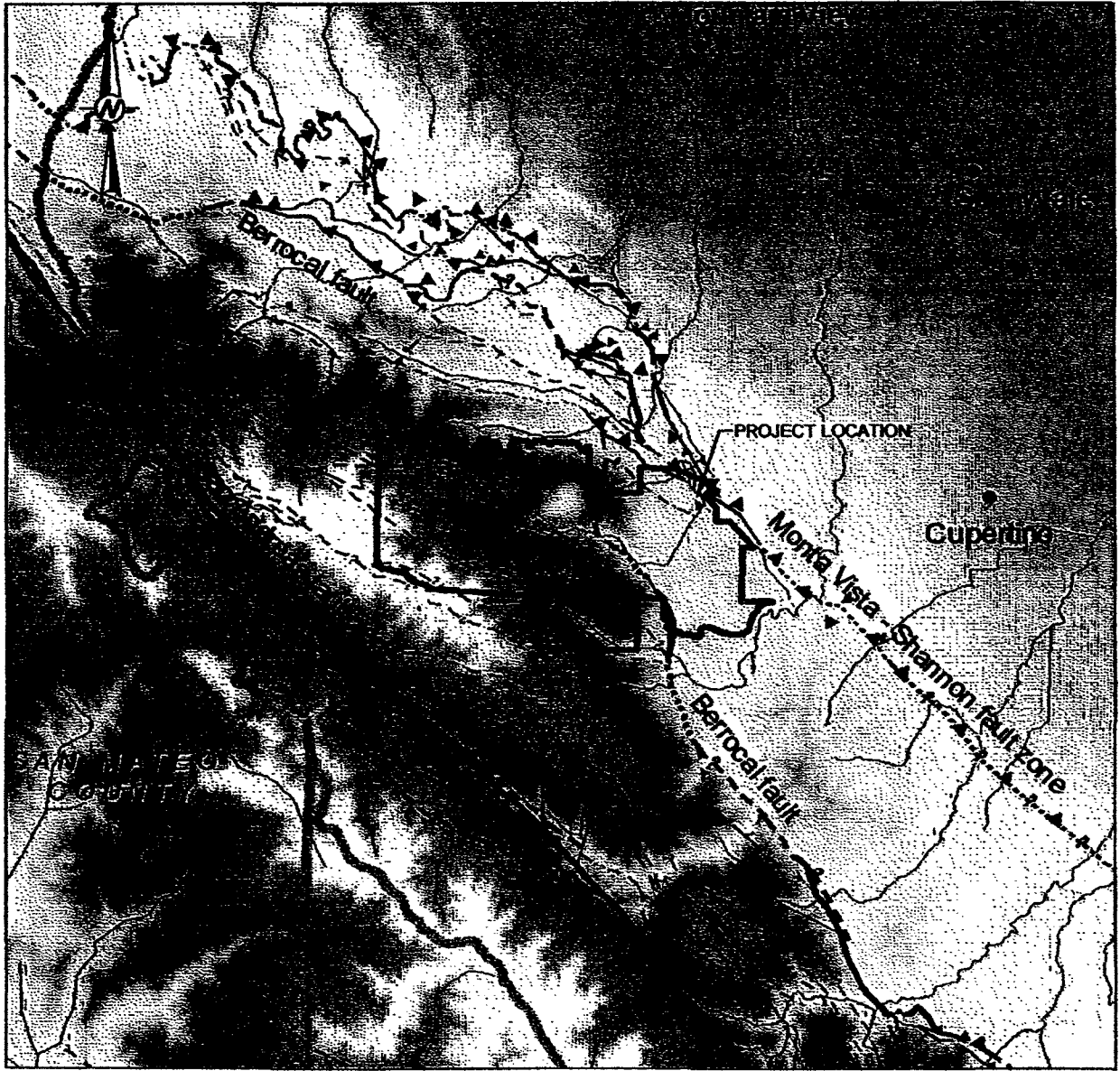


Figure E-1. Cupertino Geology



NOTES

- 1. TOPOGRAPHIC MAP OBTAINED FROM THE USGS NATIONAL MAP (www.nationalmap.org).
- 2. IMAGE NOT TO SCALE.

LEGEND

- ?---?--- INFERRED FAULT
- ▲▲▲▲▲ THRUST (TEETH IN DIP DIRECTION)
- CONCEALED FAULT
- SITE BOUNDARY

CLIENT
 LEHIGH HANSON SOUTHWEST CEMENT
 PERMANENTE PLANT
 SANTA CLARA COUNTY, CALIFORNIA

CONSULTANT



YYYY-MM-DD 2015-02-20
 PREPARED JHR
 DESIGN CDJ
 REVIEW NK
 APPROVED WLF

PROJECT
 GEOTECHNICAL REPORT
 FOR THE EXPANSION OF POND 30

TITLE
 LOCATION MAP

PROJECT No. CONTROL Rev.
 1417878 0002 0

FIGURE
 1

Path: \\nas02\nas02014\proj\17878\figh\pond_30\PERM\COUNTDOWN202001_1417878_0002_POD_0001.dwg | File Name: 1417878_0002_POD_0001.dwg

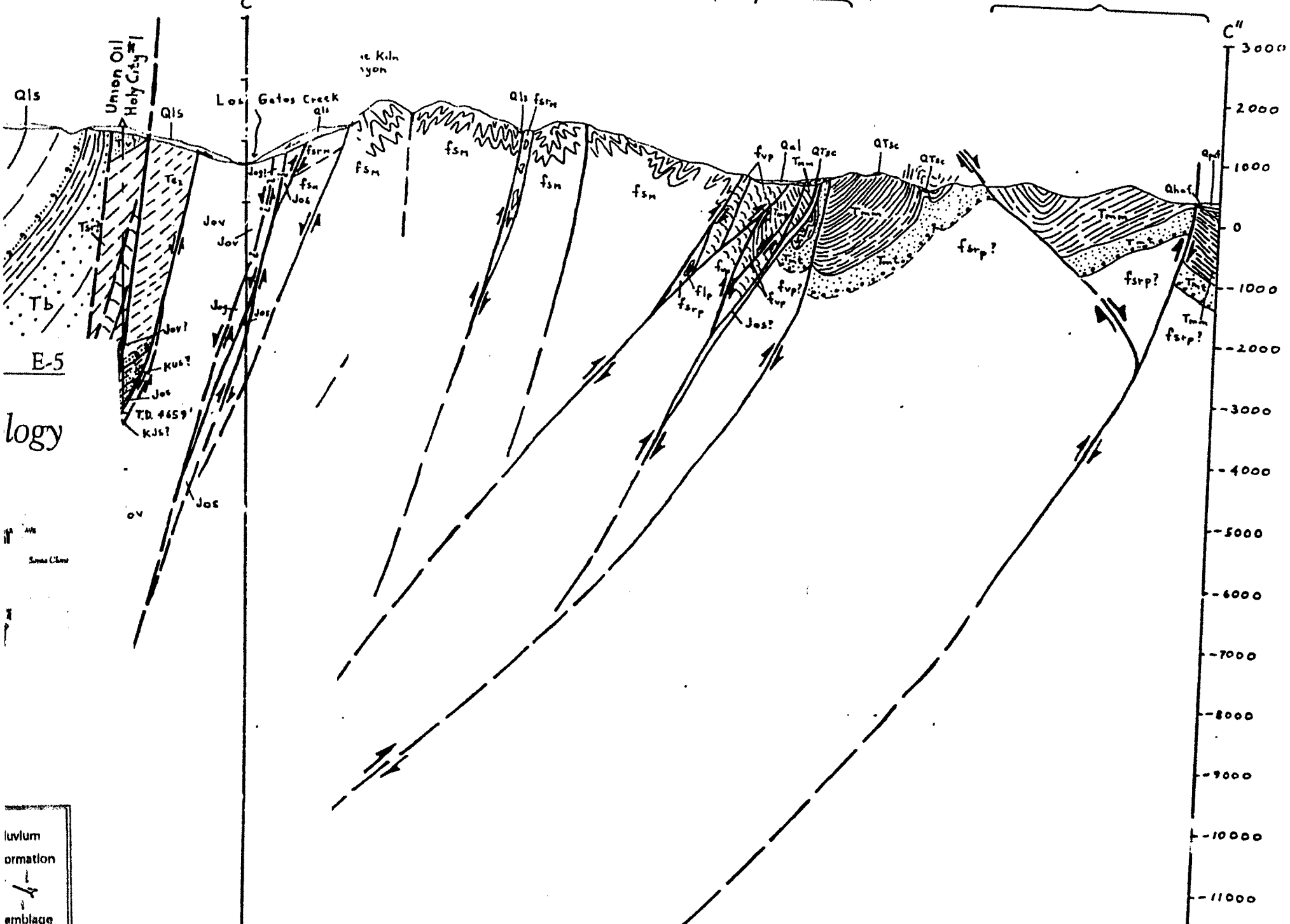
14 IF THIS REQUIREMENT DOES NOT MATCH WHAT IS BEING THE GREAT THEY HAVE BEEN RECEIVED FROM URGENT

SAN ANDREAS FAULT ZONE

N
ONE

BERROCAL
FAULT ZONE

SHANNON
FAULT ZONE



E-5

logy

Scale (feet)

(uvium
 ormation
 emblage

likely, is an active volcano. One of the difficulties associated with such an explanation is why a volcanic eruption would cause the balloon to sink. The more likely explanation is some form of mountain or lee wave. Such waves can produce intense perturbations in the terrestrial atmosphere well above the tropopause (12), and gravity waves forced by topography are important momentum sources in the stratosphere and mesosphere (13).

Although the appropriate calculations have not yet been done for Venus, Schubert and Walterscheid (14) have shown that for vertically dependent Venusian static stability and mean zonal wind profiles certain gravity waves forced at the surface are capable of reaching the atmosphere at or above cloud level. They did not consider waves that are stationary with respect to the surface, but their calculations did indicate that at a given wave frequency there were particular horizontal wave numbers for which amplitudes could be considerably amplified in the upper atmosphere relative to the surface forcing. There is no a priori reason to believe that such would not be the case as well for stationary waves.

An estimate of the terrain slope required to produce vertical winds of the magnitudes observed at the balloon float altitudes can be obtained as follows. The vertical wind at the surface is the product of the surface horizontal wind, u , and the terrain slope, α , which is the ratio of terrain height to horizontal scale. Suppose that there are particular gravity waves for which $R_w = 1$, where R_w is the ratio of the quantity $\rho^{1/2}|u|$ at the balloon float altitude to that at the surface. Values of R_w up to order 10 were computed under certain conditions by Schubert and Walterscheid (14). Using R_w we can estimate what terrain slope is required at a given value of the surface wind in order that vertical winds at the balloon altitude are of the order of 2 to 3 m sec⁻¹. Choosing $u = 1$ m sec⁻¹ (15, 16) and $R_w = 1$ gives a value for α of about 0.3, which is equivalent to a 1-km rise in 3 km. This is a slope much steeper than that indicated by the topography envelope given in Fig. 1 but one that is realized over horizontal distances of several miles in rugged terrestrial mountain ranges. A value for R_w of 10 gives a value for α of about 0.03, which is a modest slope for high mountain ranges. Thus mountain forcing of the cloud

level atmosphere appears to be feasible, but obviously more work needs to be done before we can be confident that such an effect actually exists.

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Southern Hemisphere Origin of the Cretaceous Laytonville Limestone of California

J. A. TARDUNO, M. McWILLIAMS, W. V. SLITER, H. E. COOK, M. C. BLAKE, JR., I. PREMOLI-SILVA

New paleomagnetic, paleontologic, and stratigraphic data from outcrops of the Laytonville Limestone (101 to 88 million years old) support a Southern Hemisphere origin. A paleomagnetic megaconglomerate test is statistically significant and suggests magnetization at $14^\circ \pm 5^\circ$ south, predating Late Cretaceous to Eocene (70 to 50 million years ago) accretion. Rapid Kula plate movement or the existence and demise of a now vanished oceanic plate (or both) are required to accommodate the greater than 50° of poleward displacement implied by the paleomagnetic data. This rapid motion brings into question the validity of a "speed limit" for absolute plate velocity based on present-day plate motions.

PIONEERING WORK OF ALVAREZ *et al.* (1) centered on a paleomagnetic and paleontologic study of two blocks of red pelagic limestone contained in the Franciscan central mélangé belt near Laytonville, California. Study of the abundant foraminifera of the Laytonville Limestone determined that the northern LL-2 block is middle Cenomanian in age [97 to 95 million years old (Ma)] (2) whereas the southern LL-1 block is latest Albian in age (101 Ma). Evolutionary trends in the foraminiferal species within the LL-2 section were thought to be distinctive enough to determine stratigraphic polarity. The 101- to 95-Ma interval

is entirely contained within the Cretaceous normal polarity superchron; therefore, the paleolatitude of Laytonville Limestone deposition could be determined specifically by paleomagnetic analysis, assuming magnetization shortly after deposition. In their paleomagnetic analysis, Alvarez *et al.* concluded that the Laytonville Limestone acquired its magnetization at $17^\circ \pm 7^\circ$ (95 percent confidence interval) south paleolatitude.

Some workers expressed doubt as to whether the foraminiferal trends visible in the sections were distinct enough to permit determination of stratigraphic polarity (3). At the heart of the debate was the assumption

that the implied convergence rates of 24 to 60 cm per year between the plate carrying the Laytonville Limestone and North America were unrealistically high. This was especially so because if it is arbitrarily assumed that the Laytonville Limestone outcrop LL-2 is overturned, the results of Alvarez *et al.* can be neatly incorporated into extant northern Pacific basin plate models (3).

We report new paleomagnetic and paleontologic data from previously unstudied outcrops of Laytonville Limestone. The new outcrops occur as blocks containing as much as 25 m of continuous section enclosed in mélangé, and are located close to the outcrops studied by Alvarez *et al.* (Fig. 1B). Several distinct biozone boundaries are crossed within individual continuous blocks, providing unambiguous facing directions. Together with new data from the outcrops originally studied by Alvarez *et al.*, these new studies confirm a Southern Hemisphere origin for the Laytonville Limestone.

The Franciscan Complex in northern California consists of three major tectonic belts

J. A. Tarduno and M. McWilliams, Department of Geophysics, Stanford University, Stanford, CA 94305.
W. V. Sliter, H. E. Cook, M. C. Blake, Jr., U.S. Geological Survey, Menlo Park, CA 94025.
I. Premoli-Silva, Dipartimento di Scienze della Terra, Università di Milano, Italia.

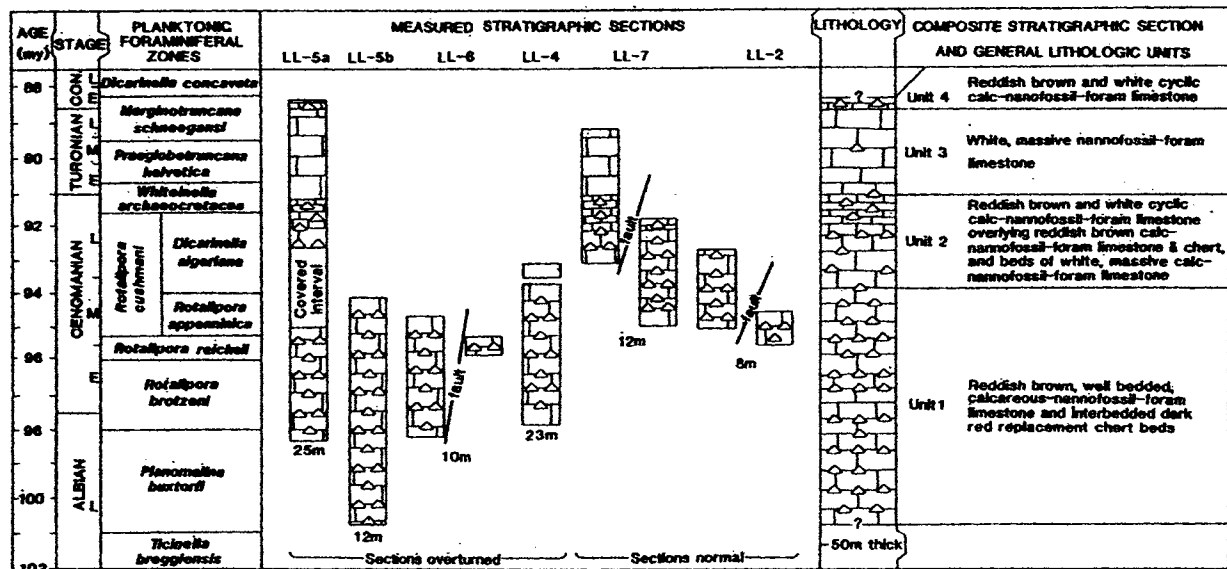


Fig. 2. Six measured stratigraphic sections of Laytonville Limestone with foraminiferal dating. LL-5a is a composite section. Foraminiferal dating is after Sliter (7) and Sigal (8). The geologic time scale is after Harland *et al.* (9).

Locality LL-7 is early Cenomanian to late Turonian in age. The oldest samples are from the lower part of the *R. appenninica* subzone, and the youngest samples fall within the *M. schneegeansi* zone. Faunal overlap within the *D. algeriana* subzone of the *R. cushmani* zone indicates the presence of a fault. The faunal succession from both faulted sequences shows locality LL-7 to be right side up.

The fauna indicates deposition in middle to lower bathyal depths (500 to 2000 m) above the calcite compensation depth. Rare benthic foraminifera consisting of calcareous and agglutinated species, such as *Osangu-laria*, *Gyrogonoides*, *Globorotalites*, *Dorothia*, and *Gaudryina*, thin-shelled bivalve fragments, rare aptychi, siliceous sponge spicules, and a lack of abyssal fauna are the basis of the bathyal interpretation. Reworking of age diagnostic forms is not observed.

A composite 50-m-thick stratigraphic sequence (Fig. 2) has been established for the Laytonville Limestone from six measured sections that exhibit stratigraphic and biostratigraphic overlap. This section can be divided into four lithologic units that are differentiated on the basis of their color, presence or absence of chert beds, bedding characteristics, and homotaxial position.

The Laytonville limestones exhibit excellent preservation of foraminifera and contain abundant low amplitude bedding-parallel microstylolites and slightly compacted burrows. A comparison of these textures and diagenetic features with those of 700-m-thick pelagic limestone cores from the Deep

Sea Drilling Project (9) suggests that the Laytonville Limestone was less than 400 m thick when it was accreted.

All four lithologic units resemble well-documented deep-sea pelagic carbonates typical of the equatorial Pacific region within 10° to 20° latitude (9-11). The Laytonville Limestone clearly does not resemble high-latitude, low-calcium carbonate-bearing pelagic clays or marls, and contains only trace amounts of terrestrial constituents. Thus, the lithology of the Laytonville Limestone is compatible with a low-latitude origin removed from a source of continental detritus. Net accumulation rates for the Laytonville Limestone are on the order of 2 to 6 m per million years. These rates are rather low for pelagic carbonates deposited in the equatorial zone of high productivity and above the calcite compensation depth (12). No adjustments, however, have been made for compaction, stylolization, and chertification, which have undoubtedly reduced the thickness (7).

Forty-two independently oriented field-drilled paleomagnetic cores were collected from six of the Laytonville Limestone blocks. Stepwise thermal demagnetization isolated a stable magnetization having blocking temperatures ranging from 250° to 580°C, suggestive of a titanomagnetite remanence carrier (Fig. 3).

The Laytonville Limestone blocks may have rotated with respect to each other during emplacement in the mélange, and therefore the paleomagnetic inclinations are evaluated independently. Statistical analysis

of the magnetizations using only inclination data (13) yields a positive "megaconglomerate" test ($P < 0.01$) (Fig. 4). These magnetizations show a 30-fold better grouping after tectonic correction, as compared with the *in situ* magnetic directions ($K_2/K_1 = 30$), indicating magnetization before Late Cretaceous-Eocene (14) accretion. Assuming magnetization shortly after deposition, these inclinations suggest that the Laytonville Limestone was deposited at a mean latitude of $14^\circ \pm 5^\circ$ (95 percent confidence interval) south, over the depositional interval of 97 to 89 Ma.

Our paleomagnetic analysis makes a basic assumption concerning contemporaneous deposition and magnetization of the Laytonville Limestone. If the Laytonville Limestone was either magnetized after initial deposition during a reversed polarity chron, such as chron 33R (2), or remagnetized before incorporation into the mélange, the paleolatitude interpretation would be in error. Detailed paleomagnetic analysis of similar pelagic limestones (15, 16) has shown that magnetizations carried in titanomagnetite record the geomagnetic field present shortly after deposition. From this comparison, and since no evidence of remagnetization is present, magnetization long after initial deposition seems unlikely.

The only effect to steepen the measured paleolatitude that cannot be discarded is slope deposition. Carbonate sequences deposited on slopes as low as 2° to 4° commonly exhibit slides, slumps, sediment-gravity flow deposits, high sedimentation rates,

(Fig. 1A) that have been further subdivided into tectonostratigraphic terranes (4). The eastern belt contains metasedimentary and metavolcanic rocks of the blueschist facies (Yolla Bolly and Pickett Peak terranes) that were accreted to the continental margin during two collision events at about 125 and 90 Ma (5). The central belt is a tectonic mélange consisting of oceanic terranes plus numerous smaller blocks of altered basalt (greenstone), radiolarian chert, pelagic limestone, and high-grade blueschist in a sheared matrix of argillite, lithic graywacke, and radiolarian tuff. The structure of the central belt is dominated by high-angle, strike-slip faults and is interpreted to be a right-lateral transform mélange that was active following the 90-Ma collision event and before deposition of early Eocene strata (50 Ma) that overlap the eastern and central belts in southwest Oregon (6). The coastal belt consists of deformed graywacke and mudstone, contains fossils as young as upper Eocene,

and is believed to represent an accretionary complex formed above a subduction zone between 40 and 24 Ma (5).

The Laytonville Limestone blocks occur along the western margin of the central belt, a few kilometers north of the hamlet of Laytonville (Fig. 1B). To date, seven large blocks of Laytonville Limestone have been mapped. Most of these consist entirely of limestone; however, one locality (LL-5) consists of vesicular basalt (greenstone), limestone, and arkosic graywacke.

Study of foraminifera from five additional outcrops of Laytonville Limestone (LL-4, LL-5a, LL-5b, LL-6, and LL-7), extends the age range (7, 8) of the original study by Alvarez *et al.* (Fig. 2). Locality LL-5 shows the maximum range in age and thus serves as a comparative standard for the other sections. The locality consists of two linear outcrops, LL-5a and LL-5b (Fig. 1B). Locality LL-5b is a continuous section that ranges from late Albian to middle Cenomanian in age. The section begins in the lower part of the *Planomalina buctorfi* zone and extends to the *Rotalipora appenninica* subzone of the *R. cushmani* zone. Outcrop LL-5a consists of several sections separated by a covered interval. The lower section is late Albian to middle Cenomanian in age and ranges from a biostratigraphic position just below the boundary of the *P. buctorfi* and *R. brotzeni* zones and extends just into the *R. appenninica* subzone. The upper sections range from the *Dicarinella algeriana* subzone and extend to the upper part of the *Marginostrucana schneegeani* zone, for an age range of late Cenomanian to early Cenozoic. Both LL-5a and LL-5b are overturned, based on the paleontological data. Continuous sections at localities LL-4 and LL-6 range from latest Albian to Cenomanian in age; both are overturned. A fault is indicated at locality LL-6 by the biostratigraphic overlap that repeats a portion of the *R. reicheli* zone.

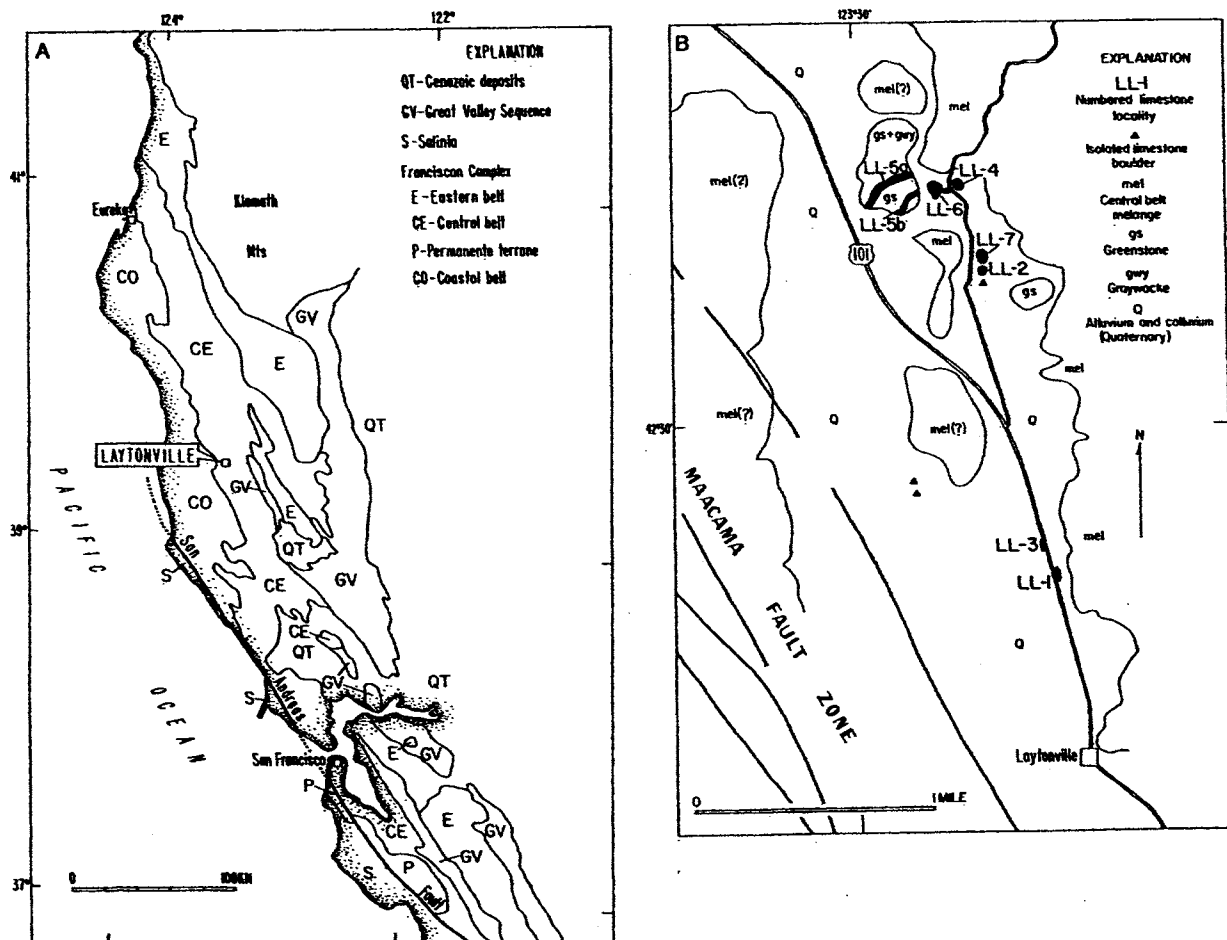


Fig. 1. (A) Geologic map of California showing the three major tectonic belts of Franciscan rocks of the northern Coast Ranges that have been further subdivided into tectonostratigraphic terranes, Salinia, and the Great Valley sequence. (B) Geologic map of the Laytonville Limestone localities.

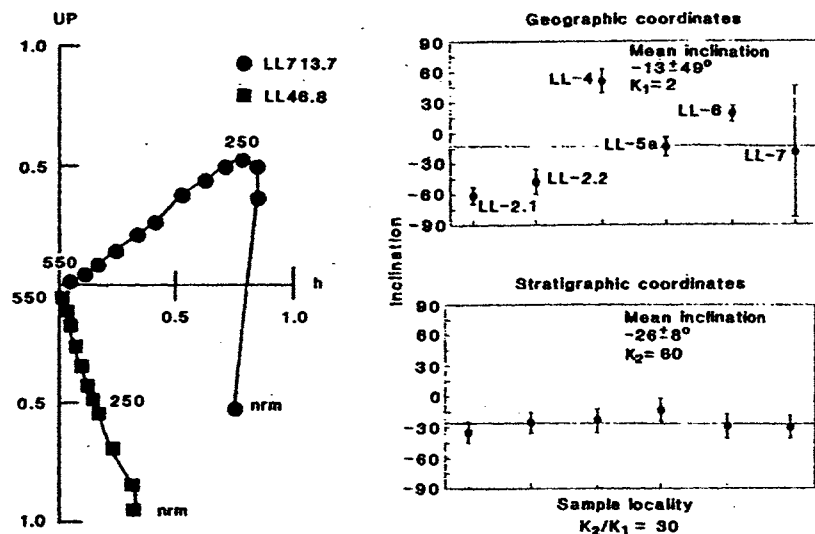


Fig. 3 (left). Plot of vertical versus horizontal component of magnetization in geographic coordinates from two specimens of Laytonville Limestone during thermal demagnetization. Sample LL46.8 is from an overturned block (LL4); sample LL713.7 is from a block that is right side up (LL7). Both samples are normalized to their respective maximum remanent magnetizations, which have intensities of approximately 10^6 emu/cm³. A stable component of magnetization is located between 250° and 550°C. Abbreviations: nrm, natural remanent magnetization; h, horizontal. Fig. 4 (right). Paleomagnetic results from the Laytonville Limestone. Each data point represents a mean of four to ten paleomagnetic samples. In this analysis, LL-2 has been divided into two blocks, separated by the fault. Inclinations have a 30 times better grouping after tectonic correction to horizontal as compared with the in situ directions, comprising a positive megaconglomerate test. A mean paleolatitude of $14^\circ \pm 5^\circ$ south is indicated by the data. Error bars show the 95 percent confidence interval.

and mixing of the age diagnostic foraminifera (17–19). Since such features are not observed in the Laytonville Limestone, we can assume that the depositional slope was low.

Paleomagnetic results from the Calera Limestone of the Franciscan Permanente terrane, presently located to the south of Laytonville (Fig. 1A), suggest deposition at 18° to 25° north during Albian to Turonian times (105 to 90 Ma) on the Farallon Plate (3, 20). When coupled with those of the coeval Calera Limestone, these new paleomagnetic results from the Laytonville Limestone require a complex history of accretion and postaccretionary translation in the formation of the Franciscan central mélangé belt.

Using the apparent polar wander path of North America (21, 22), and assuming reasonable geologic accretion ages between 70 and 50 Ma (14), the Laytonville Limestone paleomagnetic data imply northward components of relative plate velocity of approximately 30 to 14 cm per year, respectively. These high minimum plate velocities suggest the Laytonville Limestone was carried on a plate other than the relatively slow-moving Farallon Plate. If the lower velocity estimate is correct, the Laytonville Limestone may have been carried on the Kula

Plate, which has a large northward component of velocity during these times (23).

If the higher velocity estimates are correct and the modeled Kula Plate motions (23) are accurate, the paleomagnetic results from the Laytonville Limestone demand a modification of an exclusive Pacific-Farallon-Kula plate system. In this case, the Laytonville Limestone would have originated on a hidden plate that has subsequently subducted. Such a plate, which we call the Escondido Plate, would have had velocities higher than any observed or recorded plate. These high absolute plate velocities could be additional evidence for a decoupling of oceanic plates from the underlying mantle as inferred by intraplate stress studies (24). The observation that present-day plates do not move at such velocities is most likely a sampling problem (25, 26), since such rapid motions would only hasten the plate's demise. These rapid motions would also explain the relatively shallow burial depth interpreted for the Laytonville Limestone, since the plate would have resided in the equatorial zone of high productivity only for a very limited time.

In either plate scenario, we can only speculate that to drive the high minimum velocities, the plate that carried the Laytonville Limestone was attached to an old, dense

subducting oceanic slab. The rapid northerly transport calls for highly oblique subduction relative to North America, which could have triggered coeval strike-slip faulting. This faulting may have played a major part in the transport of the numerous blocks and slabs of previously accreted Eastern Franciscan belt, Coast Range ophiolite, and Great Valley sequence to their present location within the Franciscan central belt mélangé.

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27. We thank W. Alvarez, D. Howell, D. L. Jones, N. Sleep for helpful discussions and A. Montanari, D. Bice, M. Remschneider, M. Fones, F. Hochstaedter, and A. Casas for assistance in the field. This research was supported by NSF grant EAR-8408035 and Petroleum Research Fund grant 13646-AC2 to M.McW.

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SCIENCE, VOL. 231

SEDIMENT
YIELD

**EFFECTS OF LIMESTONE QUARRYING AND CEMENT-PLANT OPERATIONS ON
RUNOFF AND SEDIMENT YIELDS IN THE UPPER PERMANENTE CREEK BASIN,
SANTA CLARA COUNTY, CALIFORNIA**

By K. Michael Nolan and Barry R. Hill

U.S. GEOLOGICAL SURVEY

Water-Resources Investigations Report 89-4130

**Prepared in cooperation with the
SANTA CLARA VALLEY WATER DISTRICT**



3013-32

**Sacramento, California
1989**

available to augment peak flows. PRMS simulations are in basic agreement with the findings of Harr and others (1975), Harr (1976), and Ziemer (1981), which were discussed earlier in this report.

PRMS results indicate that by removing much of the native vegetation in HRU P5, land use in Permanente Creek may have increased subsurface and ground-water flow during dry periods. The ground cover of HRU P5 was described as bare ground because, in addition to the many impervious surfaces, a high percentage of HRU P5 is covered by spoil piles, rilled areas, and other areas where vegetation has been removed or buried (fig. 3). The increased transpiration that occurs when bare soil is replaced with shrubs in the PRMS simulation results in a significant decrease in subsurface and ground-water flow during some periods. Effects of this additional transpiration are particularly pronounced during dry years, when increased transpiration apparently removes sufficient water from the upper soil zone to reduce significantly the number of days the soil zone fills with water. This, in turn, reduces the flow of water from the soil zone to the subsurface and ground-water reservoirs.

SEDIMENT YIELD

Measured Sediment Discharge

Total sediment discharge was measured at stations 11166575 and 11166578 during water years 1985-87 using standard practices of the U.S. Geological Survey (Guy and Norman, 1970). At station 11166575, total sediment discharge was measured during low and moderate flows using a DH-48 hand-held sampler on the downstream side of the weir installed to stabilize the stage-discharge relation at that site. These samples represent total sediment discharge because the sampler

nozzle could be lowered to the bottom of the weir. When water discharges were larger and material that was too coarse to enter the DH-48 nozzle was moving, suspended-sediment discharge and bedload discharge were measured separately upstream of the weir. Suspended-sediment samples were collected using a DH-48 suspended-sediment sampler, and bedload samples were collected using a Helley-Smith bedload sampler. Bedload discharge for the peak discharge in 1986 was estimated using the Meyer-Peter and Mueller bedload equation (U.S. Bureau of Reclamation, 1960). Daily values of sediment discharge for 1985, 1986, and 1987 for both stations are published by the U.S. Geological Survey (Anderson, Markham, Shelton, Trujillo, and Grillo, 1987, 1988; Anderson, Markham, Shelton, and Trujillo, 1988). Total sediment loads and yields for individual water years are summarized in table 5. The average annual yield from the Permanente Creek basin was almost 15 times higher than the average annual yield measured from the West Fork basin.

TABLE 5.--*Measured sediment load and sediment yields at gaging stations Permanente Creek near Monta Vista (11166575) and West Fork Permanente Creek near Monta Vista (11166578)*

[Data are summarized from reports by Anderson, Markham, Shelton, Trujillo, and Grillo, 1987, 1988; Anderson, Markham, Shelton, and Trujillo, 1988. ton/mi², tons per square mile]

Water year	Station 11166575		Station 11166578	
	Sediment load (tons) (1)	Sediment yield (ton/mi ²) (2)	Sediment load (tons) (3)	Sediment yield (ton/mi ²) (4)
1985	796	206	1.2	0.4
1986	53,240	13,792	2,870	963
1987	140	36	0	0
Total	54,176	14,034	2,871	963
Average	18,100	4,680	957	321

TABLE 18.--Mean daily values of total sediment yield measured during days when mean daily streamflow exceeded 1 cubic foot per second per square mile at the Permanente Creek and West Fork Permanente Creek gaging stations

[(ft³/s)/mi², cubic feet per second per square mile.
(ton/d)/mi², tons per day per square mile]

Date	Streamflow [(ft ³ /s)/mi ²]	Sediment yield [(ton/d)/mi ²]	Date	Streamflow [(ft ³ /s)/mi ²]	Sediment yield [(ton/d)/mi ²]
Permanente Creek near Monta Vista (11166575)					
11-12-84	2.41	32.6	3-11-86	5.95	61.9
11-13-84	2.41	18.4	3-12-86	5.18	113
11-27-84	2.49	54.9	3-13-86	4.92	114
2- 8-85	2.85	31.9	3-14-86	4.14	85.2
3-26-85	2.23	17.4	3-15-86	6.48	154
12- 2-85	1.89	5.96	3-16-86	8.29	128
1-31-86	2.59	50.5	3-17-86	5.70	42.2
2-12-86	2.25	2.41	3-18-86	4.40	21.2
2-14-86	21.2	1,560	3-19-86	4.40	19.2
2-15-86	36.0	2,430	3-20-86	4.40	18.9
2-16-86	17.1	598	3-21-86	3.89	16.1
2-17-86	42.0	2,095	3-22-86	3.89	15.8
2-18-86	37.8	1,873	3-23-86	3.63	14.2
2-19-86	45.3	2,520	3-24-86	3.37	13.2
2-20-86	12.4	387	3-25-86	2.85	12.2
2-21-86	6.74	177	3-26-86	2.85	11.9
2-22-86	4.92	134	3-27-86	2.85	11.9
2-23-86	3.89	93.0	3-28-86	2.46	1.67
2-24-86	3.37	78.8	3-29-86	2.85	2.07
2-25-86	2.85	39.9	3-30-86	2.85	2.05
2-26-86	2.43	38.1	3-31-86	2.41	1.24
2-27-86	2.15	29.5	4- 1-86	2.20	.73
2-28-86	1.96	22.3	4- 2-86	2.05	.60
3- 1-88	1.89	16.3	4- 3-86	1.92	.54
3- 2-86	1.81	10.9	4- 4-86	1.86	3.11
3- 3-86	1.73	5.70	4- 5-86	1.81	4.15
3- 6-86	1.81	.98	4- 6-86	1.84	3.37
3- 7-86	1.99	25.4	4- 7-86	1.97	.83
3- 8-86	5.44	91.71	4- 8-86	2.07	1.84
3- 9-86	4.14	105	4- 9-86	2.15	2.85
3-10-86	11.1	438	4-10-86	1.71	3.11

STATION # 32

1955-1956

Year on Form

Santa Clara Valley Water Conservation District

PERMANENTE

Daily discharge, in normal feet, of

PERMANENTE CREEK AT HOLLY RANCH, LAYOLA

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
1		0.0	5.8	29	*44	12	3.9	1.1	0.3	0.0		0.0
2			0.6	32	*31	4.5	3.6	1.8	0.3			0.0
3			0.4	23	*30	7.5	2.4	2.0	0.3			0.0
4			0.4	14	29	19	2.0	2.0	0.3			0.0
5			0.7	18	27	26	2.5	1.7	0.2			0.0
6			0.3	21	26	33	2.8	1.3	0.3			0.0
7			0.0	25	24	6.3	2.5	1.2	0.3			0.0
8			3.0	23	22	12	2.1	3.7	0.3			0.0
9			0.5	23	21	12	1.6	2.2	0.2			0.0
10			0.0	23	20	11	1.5	3.4	0.4			0.0
11			0.0	7.6	19	11	2.9	6.2	0.3			0.0
12			0.0	2.6	19	11	0.6	7.6	0.3			0.0
13			0.0	0.0	17	11	0.2	8.3	0.2			0.0
14			0.0	8.7	12	10	0.1	7.1	0.2			0.0
15			0.0	0.6	13	10	2.7	1.1	0.3			0.0
16			0.0	2.8	17	10	2.8	1.1	0.3	0.0		0.0
17			0.0	30	24	10	2.8	1.1	0.1	0.1		0.0
18			0.1	23	30	9.5	2.2	0.8	0.0	0.1		0.0
19			25	18	38	10	1.7	0.3		0.1		0.0
20			18	17	38	9.5	0.6	0.5		0.1		0.0
21			6.2	17	21	9.5	0.5	0.6		0.1		0.0
22			58	17	16	9.5	1.4	0.6		0.0		0.0
23			141	17	9.7	7.5	2.7	0.6				0.0
24		0.0	90	*26	9.0	7.5	2.4	0.6				0.0
25		0.1	60	*30	11	6.2	1.5	0.6				0.0
26		0.1	78	*35	15	5.8	2.0	0.6				0.0
27		0.1	66	*41	19	5.4	2.5	0.7				0.0
28		0.1	44	*47	23	5.1	1.8	0.3				0.0
29		0.0	35	*51	20	5.1	1.2	0.3				0.0
30		0.0	31	*57		3.9	1.2	0.5	0.0			0.0
31			29	*63		3.8		0.4		0.0		0.0

0.0 0.4 693.2 742.3 644.7 314.6 58.7 60.3 4.6 0.5 0.0 1.3

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Acq-Feet	0	1	1375	1472	1279	624	116	120	9	1	0	3

* Estimated

Year on Form
Acq-Feet 5,000

Form H-19A

STATION # 32

1956-1957

Year on Form

Santa Clara Valley Water Conservation District

PERMANENTE

Daily discharge, in normal feet, of

PERMANENTE CREEK AT HOLLY RANCH, LAYOLA

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
1	0.0	0.1		0.0	*0.2	1.2	0.3	0.1	0.1	0.1	0.0	0.0
2		0.1			*0.2	1.1	0.2	0.5	0.1	0.1		0.0
3		0.1			*0.2	1.0	0.2	0.1	0.1	0.1		0.0
4		0.1			*0.2	1.0	0.4	0.1	0.2	0.2		0.0
5		0.1			*0.2	0.9	0.2	0.1	0.2	0.1		0.0
6		0.1			*0.2	1.0	0.1	0.2	0.2	0.1		0.0
7		0.1			*0.2	1.0	0.2	0.1	0.2	0.1		0.0
8		0.0			0.3	0.9	0.2	0.1	0.1	0.1		0.0
9		0.0			0.2	1.8	0.2	0.1	0.3	0.1		0.0
10		0.1			0.1	3.9	5.4	0.0	0.2	0.0		0.1
11		0.0		0.0	0.1	4.0	3.7	0.1	0.1	0.1		0.0
12				6.0	0.1	6.0	0.2	0.1	0.1	0.1		0.7
13				4.5	0.1	6.2	0.2	0.1	0.1	0.1		0.3
14				0.9	0.1	12	0.5	0.1	0.2	0.1		0.0
15				0.1	*0.1	16	0.3	0.1	0.1	0.1		0.0
16	0.0			0.1	*0.1	8.7	0.4	0.1	0.1	0.1		0.0
17	0.1			0.1	*0.1	3.6	1.4	0.1	0.1	0.2		0.0
18	0.1			0.1	*0.1	2.8	0.4	0.3	0.1	0.0		0.0
19	0.1			0.1	*0.1	2.6	0.3	0.1	0.1	0.1		0.1
20	0.1			2.3	*0.1	1.2	0.3	0.1	0.1	0.0		0.0
21	0.1			0.1	*0.1	0.4	0.3	0.2	0.1	0.0		0.0
22	0.1			0.1	0.6	0.4	0.2	0.2	0.0			0.0
23	0.1			0.1	6.4	0.3	0.2	0.2	0.0			0.0
24	0.1			0.1	13	0.3	0.2	0.2	0.0			0.0
25	0.1			0.1	32	0.2	0.1	0.2	0.1			0.1
26	0.1			0.1	1.9	0.2	0.1	0.2	0.1		0.0	0.0
27	0.1			0.0	1.9	0.3	0.1	0.2	0.1		0.0	0.0
28	0.1			0.0	2.3	0.4	0.1	0.2	0.1		0.0	0.1
29	0.2			*0.1		0.3	0.1	0.2	0.2			0.0
30	0.2			*0.1		0.2	0.1	0.1	0.1			0.1
31	0.1			*0.1		0.2		0.1		0.0		0.0

1.7 0.8 0.0 15.1 *61.2 80.1 16.6 4.6 3.6 1.9 0.1 1.5

Month	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept
Acq-Feet	3	2	0	30	121	199	33	9	7	4	0	3

* Estimated

Year on Form
Acq-Feet 372

Form H-19A

HISTORIC PERMANENTE CREEK FLOWS

DRAINAGE AREA
4,850 ac

2014 Water Quality Table

Other Regulated Substances

Metals

Metals	Year Tested	Unit	AL	PHG (MCLG)	Exceeded Standard?	90 th Percentile	Samples > AL	Source of Substance
Copper	2013	ppm	1.3	0.3	No	0.32	1 of 33	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	2013	ppb	15	0.2	No	ND	1 of 33	Internal corrosion of household plumbing systems; discharge from industrial manufacturers; erosion of natural deposits

Secondary Drinking Water Standards and Unregulated Compounds

SCVWD Data¹

Los Altos System

INORGANIC CHEMICALS

No COBALT OR IRON IN 2013 exceeded standard by 50%
460
* Iron is present at levels that exceed 15 SMCL of 300 ppb

Inorganic Chemicals	Year Tested	Unit	SMCL	PHG (MCLG)	Exceeded Standard?	Range	Average	Range	Average	Source of Substance
Boron	2014	ppm	NL=1	n/a	No	ND-0.35	0.11	n/a	n/a	Erosion of natural deposits
Bromide	2014	ppm	n/a	n/a	No	0.07-0.13	0.11	n/a	n/a	Erosion of natural deposits
Calcium	2012-2014	ppm	n/a	n/a	No	26-48.9	38	59-120	85.65	Erosion of natural deposits
Chloride	2012-2014	ppm	500	n/a	No	41-166	80	35-80	56	Erosion of natural deposits; seawater influence
Color	2012-2014	Units	15	n/a	No	ND-11	6	ND	ND	Naturally occurring organic matter
Hardness	2012-2014	ppm	n/a	n/a	No	130-224	183	260-440	331	Erosion of natural deposits
Magnesium	2012-2014	ppm	n/a	n/a	No	16-21	19	22-42	28	Erosion of natural deposits
Manganese	2012-2014	ppb	50	n/a	No	ND	ND	ND-32	1.8	Leaching from natural deposits
Molybdenum	2013-2014	ppb	n/a	n/a	No	ND-3	1	ND-4.5	0.7	Erosion of natural deposits
Odor	2012-2014	Units	3	n/a	No	1-2	1	ND	ND	Naturally occurring organic matter

secondary maximum continuous level -

¹Santa Clara Valley Water District supply data is reported from 2014 results. The years prior to 2014 reflect Cal Water data.

* Iron is present at levels that exceed 15 SMCL of 300 ppb exceeding the SMCL does not pose health risk

The Iron SMCL was set to protect you against unpleasant aesthetic effect such as color, taste, odor and the coloring of plumbing fixtures & clothes.

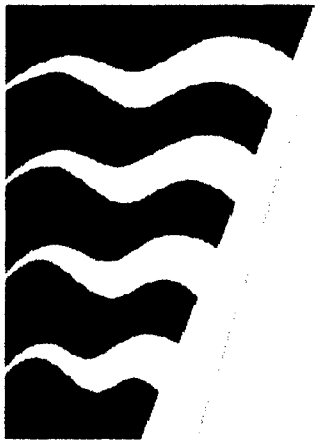
2013 Water Quality Table (Continued)

Chemical	Year Tested	Unit	SMCL	PHG (MCLG)	Exceeded Standard?	Range	Average	Range	Average or Value	Source of Substance
Boron	2013	ppb	NL=1	n/a	No	137-222	165	ND	ND	Erosion of natural deposits
Bromide	2013	ppm	n/a	n/a	No	ND-0.08	ND	ND	ND	Erosion of natural deposits
Calcium	2011-2013	ppm	n/a	n/a	No	18-27	21	59-120	85	Erosion of natural deposits
Calcium (as CaCO3)	2013	ppm	n/a	n/a	No	45-67	52	ND	ND	Erosion of natural deposits
Chloride	2011-2013	ppm	500	n/a	No	7.6-7.8	7.7	35-80	56	Erosion of natural deposits; seawater influence
Chromium 6+	2011-2013	ppb	n/a	0.02	No	ND	ND	ND-2.6	1	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Cobalt	2013	ppm	n/a	n/a	No	ND	ND	n/a	1	Erosion of natural deposits
Hardness	2011-2013	ppm	n/a	n/a	No	91-125	104	260-440	329	Erosion of natural deposits
Iron ⁴	2011-2013	ppb	300	n/a	Yes	ND	ND	ND-460	27	Leaching from natural deposits; industrial wastes
Magnesium	2011-2013	ppm	n/a	n/a	No	13-15	13	22-42	28	Erosion of natural deposits
Manganese	2011-2013	ppb	50	n/a	No	ND	ND	ND-32	2	Leaching from natural deposits
Molybdenum	2011-2013	ppb	n/a	n/a	No	ND-2	ND	ND-5	1	Erosion of natural deposits
pH	2011-2013	Units	n/a	n/a	No	6-8	7	6-8	7	Inherent characteristic of water
Phosphate	2013	ppm	n/a	n/a	No	0.9-1	1	ND	ND	Erosion of natural deposits
Potassium	2013	ppm	n/a	n/a	No	3-3.2	3.1	ND	ND	Erosion of natural deposits
Silica	2013	ppm	n/a	n/a	No	9-13	11	ND	ND	Erosion of natural deposits
Sodium	2013	ppm	n/a	n/a	No	62-70	67	23-44	32	Erosion of natural deposits; seawater influence

⁴Iron is present at levels that exceed the SMCL of 300 ppb. The iron SMCL was set to protect you against unpleasant aesthetic effects, such as color, taste, odor, and the staining of plumbing fixtures and clothing when washed. Exceeding this SMCL does not pose a health risk.

TABLE KEY

- µS/cm measure of specific conductance
- n/a not applicable
- ND not detected
- NTU nephelometric turbidity unit
- pCi/L picoCuries per liter (measure of radioactivity)
- ppm parts per million (milligrams per liter)
- ppb parts per billion (micrograms per liter)
- ppt parts per trillion (nanograms per liter)
- SMCL secondary maximum contaminant level



BAY AREA
AIR QUALITY
MANAGEMENT
DISTRICT

TOXIC INVENTORY 2015

Sorted by County by City by Plant Name

Emissions above Regulation 2, Rule 5 (version 1/6/2010)

Chronic Trigger Levels in Table 2-5-1

Modified by Rhoda Fry: show only Santa Clara County, no diesel (eliminates 21 pages)
removed Zipcode, UTM1, UTM2, SIC adjust column width & font size, highlighted Lehigh

City	Plant Name	Plant Number	Address	Pollutant	Emissions lbs/year
Coyote	Metcalfe Energy Center	12183	One Blanchard Road	Ammonia (NH3) pollutant	7.903E+04
Coyote	Metcalfe Energy Center	12183	One Blanchard Road	Benzene	3.391E+01
Coyote	Metcalfe Energy Center	12183	One Blanchard Road	Formaldehyde	1.252E+03
Coyote	Metcalfe Energy Center	12183	One Blanchard Road	PAHs (benzo[a]pyrene equiv)	1.066E-01
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	1,3-butadiene	5.163E+01
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Acetaldehyde	3.556E+03
Cupertino	Apple, Inc	18604	Apple Campus 2	Arsenic (all)	8.542E-03
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Arsenic (all)	4.590E-01
Cupertino	Apple, Inc	18604	Apple Campus 2	Benzene	9.808E+00
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Benzene	8.635E+02
Cupertino	Seagate Technology, LLC	20675	10200 So De Anza Blvd	Benzene	8.020E+00
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Beryllium (all) pollutant	7.876E-02
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Cadmium	3.097E-01
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Chlorinated dioxins & furans (Calif TCDD equ	3.922E-05
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Chromium (hexavalent)	8.570E-04
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Formaldehyde	1.776E+03
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Hydrogen Chloride (HCl)	1.021E+04
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Manganese	1.788E+01
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Mercury (all) pollutant	4.816E+01

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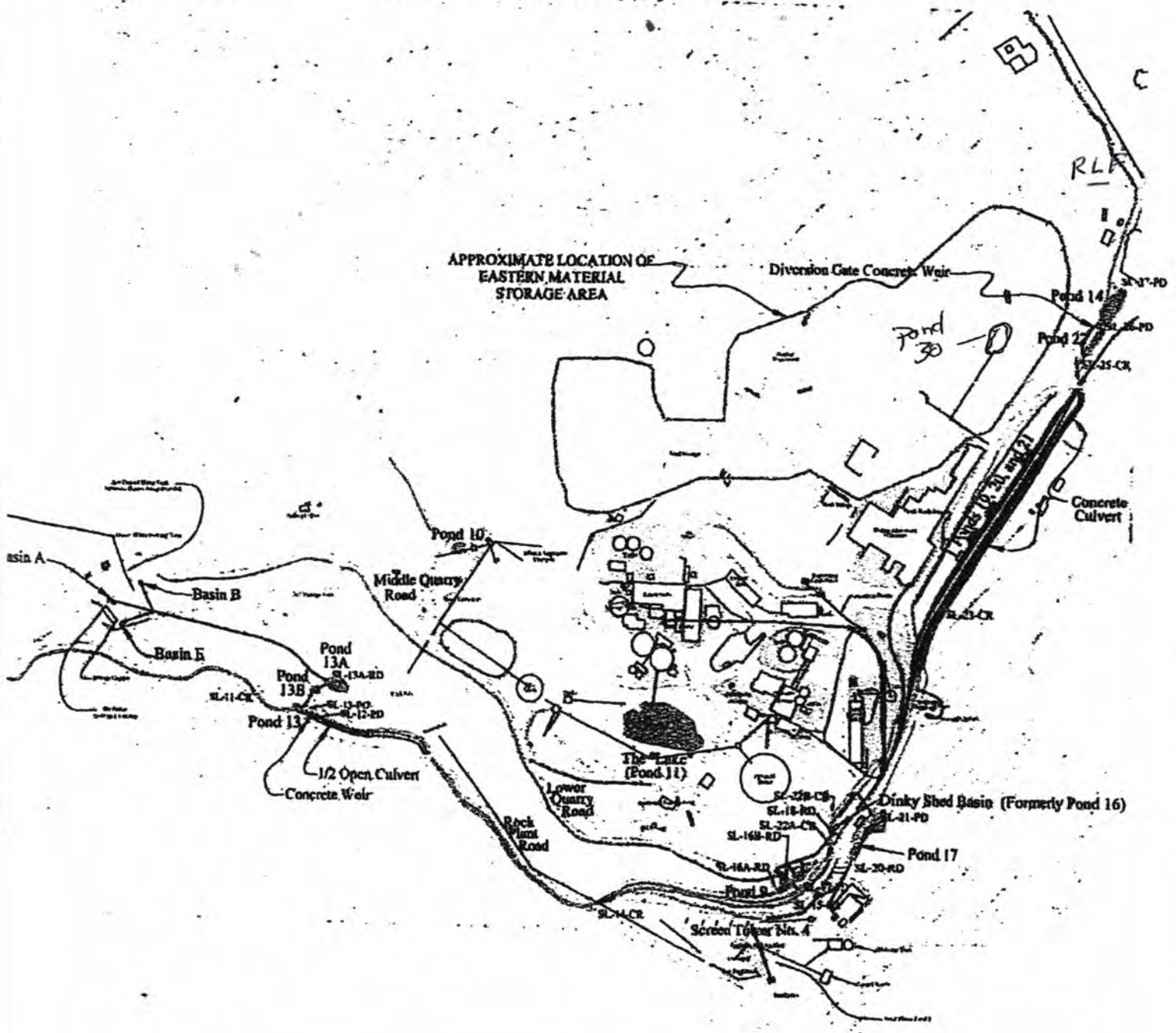
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Naphthalene	1.815E+03
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Nickel pollutant	5.687E+00
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	PAHs (benzo[a]pyrene equiv)	1.583E-01
Cupertino	Lehigh Southwest Cement Company	17	24001 Stevens Creek Blvd	Polychlorinated biphenyl (PCB)	1.737E+00
Gilroy	Recology Pacheco Pass	13566	Bloomfield Rd & Highway 152	Ammonia (NH3) pollutant	5.205E+04
Gilroy	Z-Best Composting Facility	11531	980 State Highway 25	Ammonia (NH3) pollutant	3.003E+05
Gilroy	Calpine Gilroy Cogen,LP & Gilroy Energy Center LLC	11180	1400 Pacheco Pass Hwy	Benzene	1.163E+01
Gilroy	Gavilan College	9111	5055 Santa Teresa Blvd	Benzene	8.806E+00
Gilroy	Recology Pacheco Pass	13566	Bloomfield Rd & Highway 152	Benzene	4.426E+00
Gilroy	Toro Petroleum Corp	756	6470 Monterey Road	Benzene	8.180E+00
Gilroy	Gavilan Hills Crematory	1426	910 1st Street	Chromium (hexavalent)	2.282E-03
Gilroy	Calpine Gilroy Cogen,LP & Gilroy Energy Center LLC	11180	1400 Pacheco Pass Hwy	Formaldehyde	2.125E+02
Gilroy	Olam West Coast Inc	20330	1350 Pacheco Pass Hwy	Formaldehyde	2.773E+01
Gilroy	Gavilan Hills Crematory	1426	910 1st Street	Mercury (all) pollutant	5.542E-01
Gilroy	Classic Cleaners	12012	1280 1st St, Unit D	Perchloroethylene	5.396E+02
Gilroy	Recology Pacheco Pass	13566	Bloomfield Rd & Highway 152	Perchloroethylene	1.835E+01
Gilroy	Recology Pacheco Pass	13566	Bloomfield Rd & Highway 152	Vinyl chloride	1.366E+01
Los Gatos	Fashion Cleaners	12977	461 N Santa Cruz Ave	Perchloroethylene	1.350E+02
Milpitas	International Disposal Corp of CA	9013	1601 W Dixon Landing Rd	1,3-butadiene	1.011E+01
Milpitas	Lenthor Engineering	7942	1514 Gladding Court	Ammonia (NH3) pollutant	9.728E+03
Milpitas	Viasystems Technologies Corp,LLC	8297	1831 Tarob Court	Ammonia (NH3) pollutant	2.060E+05
Milpitas	City of Milpitas	17162	1001 N McCarthy Blvd	Arsenic (all)	1.171E-02
Milpitas	City of Milpitas	17162	1001 N McCarthy Blvd	Benzene	1.363E+01
Milpitas	City of Milpitas	17141	1325 E Calaveras Blvd	Benzene	4.497E+00
Milpitas	International Disposal Corp of CA	9013	1601 W Dixon Landing Rd	Benzene	2.905E+02
Milpitas	City of Milpitas	17162	1001 N McCarthy Blvd	Cadmium	2.929E-02
Milpitas	International Disposal Corp of CA	9013	1601 W Dixon Landing Rd	Dichlorobenzene	2.505E+02
Milpitas	International Disposal Corp of CA	9013	1601 W Dixon Landing Rd	Ethylbenzene	1.256E+03
Milpitas	International Disposal Corp of CA	9013	1601 W Dixon Landing Rd	Ethylene dichloride	1.460E+01
Milpitas	City of Milpitas	17141	1325 E Calaveras Blvd	Formaldehyde	4.059E+01
Milpitas	International Disposal Corp of CA	9013	1601 W Dixon Landing Rd	Hydrogen Sulfide (H2S)	2.317E+04
Milpitas	City of Milpitas	17162	1001 N McCarthy Blvd	Nickel pollutant	4.738E-01
Milpitas	International Disposal Corp of CA	9013	1601 W Dixon Landing Rd	Perchloroethylene	3.826E+01
Milpitas	Linear Technology Corp	12417	275 So Hillview Dr	Sulfuric Acid mist pollutant	4.128E+01

↑ 100
↑ 1000

-61-

PERMANENT LEIGH CREEK

Monitoring Locations



LEIGH QUARRY - POND

NDDDB Records

Animals **RLF**

● Specific Location

▨ General Area



Appendix C
Response to Comments

California Regional Water Quality Control Board

San Francisco Bay Region

RESPONSE TO WRITTEN COMMENTS

On the Tentative Order for
Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc., Permanente Plant,
Cupertino, Santa Clara County

On or before May 3, 2019, the Regional Water Board received written comments on a draft NPDES permit (tentative order) distributed for public comment on April 3, 2019. The following parties provided comments:

1. Lehigh Southwest Cement Company and Hanson Permanente Cement, Inc. (Lehigh)
2. Ms. Danielle Burnett-Foster
3. Ms. Rhoda Fry
4. Ms. Cathy Helgerson
5. Ms. Sarah Khan
6. Ms. Libby Lucas

Regional Water Board staff has summarized the comments, shown below in *italics* (paraphrased for brevity) and followed each comment with a response. For the full content and context of the comments, please refer to the comment letter.

All revisions to the tentative order are shown with underline text for additions and strikethrough ~~text~~ for deletions.

LEHIGH

Lehigh Comment 1.

Lehigh requests that we revise Table 2 of the tentative order to include in the effluent description for Discharge Point 005 and the flow description for Discharge Point 004. Lehigh informed the Water Board of modifications to stormwater flows from the Rock Plant that would facilitate such flows being discharged at Discharge Point 005 instead of Discharge Point 004. This will improve stormwater quality because Lehigh installed significant stormwater treatment infrastructure at Discharge Point 005 that cannot be installed at Discharge Point 004. Discharge Point 004 is not being abandoned; it will remain a potential discharge point, including for stormwater runoff from the adjacent hillside.

Response to Lehigh Comment 1.

We agree. Lehigh's most recent Stormwater Pollution Prevention Plan (SWPPP), dated October 2018, reflects the stormwater flows described above. Furthermore, directing stormwater to a discharge point with more treatment infrastructure clearly benefits water quality. We revised Table 2 as follows:

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
∴	∴	∴	∴	∴
002	Settled stormwater from slope north of Pond 13B, discharged from Pond 13B	37.31674°	-122.10167°	Permanente Creek
004	<u>Potential discharge of</u> settled stormwater from rain falling directly on Rock Plant <u>and runoff from adjacent hillside</u> , discharged from Pond 17	37.31431°	-122.08893°	Permanente Creek
005	Settled stormwater from former Aluminum Plant, entry road, and nearby hillside, <u>and rain falling in the Rock Plant area</u> , 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
∴	∴	∴	∴	∴

Lehigh Comment 2.

Lehigh requests that we revise the discharge rate allowed at Discharge Points 001 and 007, combined, from 138,000 gallons per hour (gph) to 167,000 gph, which is the current permitted discharge rate at Discharge Point 001 and is the flow rate cited in Fact Sheet Table F-1.

Response to Lehigh Comment 2.

We agree. The 138,000 gph flow rate was a typographical error and should have been 167,000 gph. We revised section III.B of the tentative order as follows:

Combined discharge greater than ~~138,000~~ 167,000 gallons per hour (gph), as determined on an hourly basis, from Discharge Point Nos. 001 and 007 is prohibited.

We also revised Fact Sheet Table F-1 as follows:

Table F-1. Facility Information

∴	∴
Reclamation Requirements	Order No. 94-038
Permitted Flow	138 <u>167,000</u> gallons per hour (gph) (Discharge Point Nos. 001 and 007, combined)
Design Flow	167,000 gph (Discharge Point Nos. 001 and 007, combined)
∴	∴

Lehigh Comment 3.

Lehigh requests that we exercise our discretion under section 1.2 of Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan or SIP) to exclude an unrepresentative data point and recalculate the selenium water quality-based effluent limits at Discharge Points 001 and 007. Lehigh states that a sample collected from treatment system effluent on December 21, 2017, which resulted in a selenium detection of 15 micrograms per liter (µg/L), is unrepresentative. Lehigh explains that this selenium detection was due to an operational error during treatment system start-up and optimization. As part of the bioreactor backwash cycle, aerated water was flushed out of the bioreactor; however, instead of being recirculated to the treatment system

influent, the aerated water was discharged. The recirculation issue in the backwash cycle has been rectified and the discharge of aerated backwash water has not been repeated.

Response to Lehigh Comment 3.

We partly agree. Given that the treatment system is still relatively new, we think it is reasonable to use the December 21, 2017, result in the reasonable potential analysis to determine whether a selenium limit is warranted. However, given that the discharge of aerated backwash water is not normal operation, we agree that the December 21, 2017, result should not be used in calculating effluent limits. We therefore recalculated the selenium effluent limits and revised the tentative order accordingly. We revised Table 4 of the tentative order as follows (these revisions include changes made in Response to Lehigh Comment 5):

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
:	:	:	:	:	:
Chromium (VI)	µg/L	6.0	16	---	---
Selenium	µg/L	3.0 3.7	8.2	---	---
Total Dissolved Solids (TDS)	mg/L	1,000	1,800	---	---

We revised Fact Sheet Table F-8 as follows (these revisions include changes made in Response to Lehigh Comment 5):

PRIORITY POLLUTANTS	...	Chromium (VI)	Selenium	Total Dissolved Solids
Units	...	µg/L	µg/L	mg/L
Basis and Criteria type	...	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	±
Lowest WQO	...	11	5.0	1,000
Dilution Factor (D) (if applicable)	...	0	0	0
No. of samples per month	...	4	4	4
Aquatic life criteria analysis required? (Y/N)	...	Y	Y	N
HH criteria analysis required? (Y/N)	...	N	N	Y
Applicable Acute WQO	...	16	20	-
Applicable Chronic WQO	...	11	5.0	-
HH criteria	...			1,000
Background (Maximum Conc for Aquatic Life calc)	...	0.66	0.68	-
Background (Average Conc for Human Health calc)	...			289
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	...	N	Y	N
				-

PRIORITY POLLUTANTS	...	Chromium (VI)	Selenium	Total Dissolved Solids
Units	...	µg/L	µg/L	mg/L
ECA acute	...	16	20	-
ECA chronic	...	11	5.0	-
ECA HH	...			1,000
Number of data points <10 or at least 80% of data reported non detect? (Y/N)	...	N	N	N
Avg of effluent data points	...	0.71	1.6 <u>1.1</u>	430
Std Dev of effluent data points	...	0.87	2.8 <u>1.0</u>	193
CV calculated	...	1.2	1.8 <u>0.89</u>	0.45
CV (Selected) – Final	...	1.2	1.8 <u>0.89</u>	0.45
				-
ECA acute mult99	...	0.17	0.13 <u>0.23</u>	-
ECA chronic mult99	...	0.32	0.23 <u>0.41</u>	-
LTA acute	...	2.8	2.5 <u>4.5</u>	-
LTA chronic	...	3.5	1.1 <u>2.0</u>	-
minimum of LTAs	...	2.8	1.1 <u>2.0</u>	-
AMEL mult95	...	2.2	2.6 <u>1.8</u>	1.4
MDEL mult99	...	5.8	7.8 <u>4.4</u>	2.5
AMEL (aq life)	...	6.0	3.0 <u>3.7</u>	-
MDEL (aq life)	...	16	8.9 <u>9.0</u>	-
MDEL/AMEL Multiplier	...	2.7	3.0 2.4	1.8
AMEL (human hlth)	...			1,000
MDEL (human hlth)	...			1,758
minimum of AMEL for Aq. life vs HH	...	6.0	3.0 <u>3.7</u>	1,000
minimum of MDEL for Aq. Life vs HH	...	16	8.9 <u>9.0</u>	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	3.0 <u>3.7</u>	1,000
Final limit – MDEL	...	16	8.2	1,800

Lehigh Comment 4.

In the reasonable potential analyses for antimony and chromium (VI), Lehigh requests that we only use data from after October 1, 2017, when full treatment commenced at Discharge Point 001, and thus remove effluent limits for those pollutants from the tentative order. Lehigh points out that data from before that date are unrepresentative of the current discharge and that effluent data for those pollutants since that date are well below their water quality objectives. Furthermore, Lehigh disagrees that the data since October 1, 2017, were generated during “mild rainy seasons” as stated in the Fact Sheet.

Response to Lehigh Comment 4.

We partly agree and revised the tentative order to clarify the data used in the reasonable potential analysis, but did not remove the reasonable potential finding or the effluent limits. The tentative order's reasonable potential analysis (Fact Sheet section IV.C.3) applies SIP section 1.3 and, for inorganic pollutants, uses only data collected after full treatment commenced for its analysis for triggers 1 and 2. We find reasonable potential for antimony based on trigger 1 because the maximum antimony effluent concentration detected (7.3 µg/L) exceeds the water quality objective for antimony (6.0 µg/L). However, we find reasonable potential for chromium (VI) based on trigger 3 because the treatment system is relatively new and, historically, concentrations have exceeded the primary drinking water standard.

Lehigh's treatment system is complex and, while capable of meeting stringent metals limits, has not been applied at other sites to reach effluent limitations as stringent as those in the previous order or tentative order. Lehigh has therefore had to refine its treatment operations without sufficient manuals and operating procedures provided by the manufacturer. Lehigh has significantly improved its treatment operations, but there may be nuances it has not yet encountered. Chromium (VI) is potentially toxic if insufficiently treated, and the discharge receives no dilution. Moreover, potential and existing beneficial uses of the receiving water, including municipal supply and groundwater recharge, are a particular point of community concern. Also, Lehigh does have a history of compliance problems, despite its improved performance. Therefore, at this time, we believe it is premature to find no reasonable potential for chromium (VI).

Finally, the past two rainy seasons have been "relatively mild" in the sense that they have been normal rather than extreme.

We revised Fact Sheet section IV.C.3.b as follows:

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, for most inorganics, and from December 2014 through April 2017, the latest data available, for most organics. ~~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.

We revised Fact Sheet section IV.C.3.d as follows (these revisions include changes made in Response to Lehigh Comment 5):

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), and 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. We find that chromium (VI) has a reasonable potential to be discharged at a concentration that could cause or contribute to an exceedance of water quality objectives in Permanente Creek by Trigger 3, above, based on a combination of factors. While these pollutants have chromium (VI) has not been discharged in excess of their its 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~~ normal 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.~~ The FTS is complex and, while capable of meeting stringent limits for metals, has not been used to meet effluent limitations as stringent as those in this Order or the previous order at other sites. Standard operating procedures are therefore unavailable from the manufacturer and the Discharger has had to refine its treatment operations to meet these limits. Chromium (VI) is potentially toxic if insufficiently treated, and the discharge receives no dilution. Moreover, chromium (VI) is a potential drinking water contaminant, and Permanente Creek’s beneficial uses include municipal supply and groundwater recharge (see Fact Sheet Table F-5), which are of particular community concern. Also, the Discharger has a history of compliance problems, despite its improved performance.

Lehigh Comment 5.

Lehigh requests that we revise the tentative order to remove the finding of reasonable potential and effluent limits for total dissolved solids (TDS). Lehigh points out that the maximum TDS effluent concentration is 810 milligrams per liter (mg/L), less than the maximum contaminant level (MCL) of 1,000 mg/L applied as the TDS water quality objective. The water quality objective is a secondary MCL for taste, and no TDS risk to drinking water wells is evident. Lehigh points to the Santa Clara Valley Water District’s Annual Groundwater Report for Calendar Year 2017, which states that all public and private water supply well monitoring results were below 500 mg/L TDS and TDS concentration trends were stable in all wells downgradient of Lehigh’s facility for the period 2013 through 2017 based on a statistical trend analysis.

Response to Lehigh Comment 5.

We agree and removed the TDS reasonable potential finding and effluent limits. The tentative order’s reasonable potential finding for TDS was based on review of other information, similar to the finding for chromium (VI) (see Response to Lehigh Comment 4, above). However, unlike chromium (VI), TDS is not removed by Lehigh’s treatment system; therefore, a TDS effluent limit is not needed to ensure effective treatment system operation to protect beneficial uses. Furthermore, the TDS water quality objective is based on a secondary MCL for consumer acceptance, unlike the primary MCL for chromium (VI) to protect human health, and Santa Clara Valley Water District monitoring data show no TDS impact to downgradient drinking water wells.

We revised Table 4 of the tentative order and Fact Sheet Table F-8 as shown in Response to Lehigh Comment 3, and we revised Fact Sheet sections IV.C.3.b and d as shown in Response to Lehigh Comment 4.

We revised Fact Sheet Table F-7 as follows:

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⁾
⋮	⋮	⋮	⋮	⋮	⋮
	Total Ammonia (mg/L N)	1.2	0.13	Unavailable	No
	Total Dissolved Solids (mg/L)	1,000	810	289	Yes No
	Turbidity (NTU)	5.0	5.0	3.6	No
⋮	⋮	⋮	⋮	⋮	⋮

Lehigh Comment 6.

Lehigh requests that we revise the tentative order to remove the effluent limitations for settleable matter at Discharge Points 001 and 007. Lehigh points out that settleable matter was detected only once at Discharge Point 001 since September 2014, and not at all since the treatment system began operating. Lehigh further states that, although Basin Plan Table 4-2 lists effluent limitations for settleable matter, Basin Plan section 4.7.5 states, “Effluent limits are not necessary for substances that do not pose any risk to beneficial uses or are shown not to be present in the discharge.”

Response to Lehigh Comment 6.

We disagree. Basin Plan Table 4-2 sets effluent limits for conventional pollutants discharged to inland surface waters in the San Francisco Bay Region. Solids are present in the waste stream prior to treatment. Thus, the Basin Plan Table 4-2 limits apply to this discharge.

Lehigh Comment 7.

Lehigh requests that we revise the tentative order to remove the effluent limitations for settleable matter at Discharge Points 002, 004, 005, and 006; or, if we do not remove them, to base the limits on the 1.0 milliliter per liter-hour (mL/L-hr) level in Basin Plan Table 4-2, Footnote e. Lehigh states that the settleable solids concentrations of 0.10 and 0.20 mL/L-hr imposed as average monthly and maximum daily effluent limits were intended to apply to discharges from “treatment facilities,” not to discharges from “sedimentation and similar cases.” For the latter, Basin Plan Table 4-2, Footnote e, states “Discharges from sedimentation and similar cases should generally not contain more than 1.0 mL/L-hr of settleable matter.” Lehigh points out that discharges from Discharge Points 002, 004, 005, and 006 did not exceed 1.0 mL/L-hr of settleable matter, and that significant improvements to best management practices (BMPs) and, in the case of Discharge Point 006, rerouting of flows to treatment, have been made to prevent discharge of solids.

Response to Lehigh Comment 7.

We disagree. Basin Plan Table 4-2 sets the settleable solids effluent limits of 0.10 and 0.20 mL/L-hr as a monthly average and daily maximum, respectively, for discharges to inland surface waters in the San Francisco Bay Region. These limits are applied to similar discharges in the Region, such as discharges from aggregate mining facilities (*Aggregate Mining, Marine Sand Washing, and Sand Offloading General Permit*, Order No. R2-2015-0035). Lehigh mines and processes construction aggregate as a secondary product of limestone mining. Basin Plan Table 4-2, Footnote e, provides guidance that discharges from sedimentation and similar cases should generally not contain more than 1.0 mL/L-hr of settleable matter. More stringent limits are appropriate for discharges from Discharge Points 002 and 004 through 006 because controlling solids in these discharges is necessary to control other pollutants, such as metals, that adhere to solids, and to ensure that the BMPs are effectively implemented.

Lehigh Comment 8.

Lehigh requests that we revise Attachment S Table A (as modified by Provision VI.A.3 of the tentative order), Footnote 1, to specify that compliance with the annual action level for selenium shall be evaluated over each July 1 through June 30, the same period covered by the Annual Comprehensive Facility Compliance Evaluation required by Attachment S, section I.I. Lehigh also points out that the current text of Footnote 1 refers to pH, which does not appear in Table A because the tentative order would impose a pH effluent limit instead.

Response to Lehigh Comment 8.

We agree. The period from July 1 to the following June 30 is also the period to be covered by the Annual Stormwater Report required by Attachment S, section III.A. We revised Table A in Provision VI.A.3 of the tentative order as follows:

Parameter	Unit	Instantaneous Action Level	Annual Action Level ^[1]
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~~ Comparisons with Annual Action Levels shall be evaluated using data collected over each 12-month period from July 1 through the following June 30.

Lehigh Comment 9.

Instead of requiring stormwater pollution prevention plan (SWPPP) updates triggered by stormwater action level exceedances no more than three months after each exceedance, Lehigh requests that we revise the tentative order to require such updates once per year, following the stormwater year (July 1 through June 30) in which the exceedances occur. This revision would be consistent with the State's Industrial General Stormwater Permit (Order No. 2014-0057-DWQ), which requires SWPPP updates to be completed within six months of the end of each stormwater year. It would also provide sufficient time to revise the SWPPP and begin implementing updated BMPs before the beginning of the next wet season, and limit the potential for multiple revisions to the SWPPP before all updated BMPs are fully implemented.

Response to Lehigh Comment 9.

We did not revise the tentative order. The tentative order's requirement to update the SWPPP and BMPs within three months of a stormwater action level exceedance is the same as that imposed through Attachment S on more than a dozen dischargers in the San Francisco Bay Region. Attachment S is intended to require a more timely response to stormwater action level exceedances than the Industrial General Stormwater Permit does. The Industrial General Stormwater Permit typically applies to stormwater discharges requiring relatively little oversight to protect water quality, which is not the case for this discharge.

Lehigh Comment 10.

Lehigh provided an updated process flow diagram showing site flows as they are currently managed and the upper and lower treatment systems as installed.

Response to Lehigh Comment 10.

We replaced the process flow diagram (Attachment C of the tentative order) with the updated version.

Lehigh Comment 11.

Lehigh requests that we revise Attachment E (Monitoring and Reporting Program [MRP]) of the tentative order to clarify that section I.E applies to parameters reported to the California Electronic Data Exchange Network (CEDEN).

Response to Lehigh Comment 11.

We agree. We revised MRP section I.E as follows:

~~Where applicable~~ For parameters reported to the California Environmental Data Exchange Network (CEDEN), 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....

Lehigh Comment 12.

Lehigh requests that we revise the description of Monitoring Location RSW-004 in MRP Table E-1 to allow monitoring at a more accessible location. Lehigh states that, to access the current location, sampling personnel must climb down a steep embankment to Permanente Creek and carry heavy, large-volume samples (for toxicity testing) a considerable distance while avoiding hazards, such as wild oak, brush, and fallen trees. Because there are no discharges to Permanente Creek from Discharge Point 006 downstream to Pond 14 (a 500-foot segment), Monitoring Location RSW-004 could be described as anywhere within this segment.

Response to Lehigh Comment 12.

We agree. We revised MRP Table E-1 as follows (these revisions include changes made in Response to Lehigh Comment 13):

Monitoring Location Type	Monitoring Location Name	Monitoring Location Description ^[1]
⋮	⋮	⋮
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>
Receiving Water	RSW-004	A point in Permanente Creek within 50 feet downstream of Discharge Point No. 006 <u>and 50 feet upstream of Pond 14.</u> <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>

Lehigh Comment 13.

Lehigh requests that we revise the tentative order to make the CEDEN reporting names of Monitoring Locations RSW-005 and RSW-006 consistent with those Lehigh already uses to report data collected at those locations under the Regional Water Board's August 1, 2018, Water Code Section 13267 Technical Report Order Requiring Submittal of Information on Lehigh Permanente Quarry and Cement Plant Discharges and Permanente/Stevens Creeks Water (13267 Order).

Response to Lehigh Comment 13.

We agree. We revised MRP Table E-1 as shown in Response to Lehigh Comment 12, above.

Lehigh Comment 14.

Lehigh requests that we revise the tentative order to remove Monitoring Location RSW-007, also known as PER020. Lehigh points out that flows from upper Permanente Creek are typically diverted to Stevens Creek by the Stevens Creek diversion channel upstream of Monitoring Location RSW-007; thus, flow there is not from Lehigh. Lehigh adds that it would need to amend its encroachment permit with the Santa Clara Valley Water District to gain access to Monitoring Location RSW-007, but the tentative order does not provide the time necessary to do so. Lehigh also states that Monitoring Location RSW-007 was removed from the 13267 Order based on Lehigh's discussions with the Regional Water Board, and it is unaware of new information that supports a need for monitoring there. Lehigh states that if there is a need for such data, dischargers in the lower Permanente Creek watershed should help bear that responsibility.

Response to Lehigh Comment 14.

We partly agree. We established Monitoring Location RSW-007 to collect data at the bottom of the Permanente Creek watershed as part of Regional Water Board efforts to evaluate water column selenium concentrations and ensure that any potential sources of toxicity in Permanente Creek are identified and resolved, and therefore did not remove it from the tentative order. However, Lehigh should only be required to monitor at Monitoring Location RSW-007 when flow is present and Lehigh has contributed to it. Because such events are relatively infrequent, Lehigh should have sufficient time to gain access to the location. See Response to Lehigh Comment 15, below, for revisions that reduce monitoring frequencies at Monitoring Location RSW-007 and limit such monitoring to times when Lehigh has contributed to flows at that location.

Lehigh Comment 15.

Lehigh requests that we revise the tentative order to remove routine mercury monitoring. Lehigh points out that the tentative order does not have effluent limits or stormwater action levels for mercury. There is no reasonable potential for mercury to exceed water quality objectives. Lehigh points out that mercury monitoring requires low-level analysis and is labor intensive, requiring two samplers to be on hand for each sample (clean hands / dirty hands sampling). Mercury would still be tested as part of the effluent characterization analysis for priority pollutants, allowing reasonable potential to be assessed during the next permitting cycle.

Response to Lehigh Comment 15.

We disagree that routine mercury monitoring should be removed, but we revised the tentative order to reduce the mercury monitoring frequency. (The revisions shown below include revisions made to the same sections in response to Lehigh Comments 16 through 23 and 25 through 27.)

We revised MRP Table E-2 as follows:

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

Parameter	Units	Sample Type ^[1]	Minimum Sampling Frequency
⋮	⋮	⋮	⋮
Chromium (VI)	μg/L	Grab	1/Month
Mercury	μg/L	Grab	1/Month 1/Quarter
Nickel	μg/L	Grab	1/Month

Parameter	Units	Sample Type ^[1]	Minimum Sampling Frequency
∴	∴	∴	∴
Priority Pollutants ^[6]	µg/L	Grab	1/Year
Total Dissolved Solids (TDS)	mg/L	Grab	1/Week <u>1/Quarter</u>
Acute Toxicity ^[4]	% Survival	C-24	1/Quarter
∴	∴	∴	∴

∴
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.

∴

We revised MRP Table E-3 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
∴	∴	∴	∴
Chromium (VI)	µg/L	Grab	1/Quarter
Mercury	µg/L	Grab	1/Quarter <u>1/Year</u>
Nickel	µg/L	Grab	1/Quarter
Selenium	µg/L	Grab	1/Month ^[4]
Visual Observations ^[5]	---	---	Each Occurrence

∴

1/Quarter = once per quarter

1/Year = once per year

∴
Footnotes:

∴

^[4] The selenium monitoring frequency shall be 1/month during the wet season (November 1 through April 30) and twice during the dry season. 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.

∴

We revised MRP Table E-4 as follows:

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

Parameter	∴	Minimum Sampling Frequency ^[1]
Chloride ^[2]		1/Quarter <u>1/Year</u>
Conductivity	∴	^[3]
Dissolved Oxygen	∴	^[3]
Flow	∴	^[3]
Total Hardness as Calcium Carbonate (CaCO ₃) ^[4]	∴	1/Quarter <u>1/Year</u>

Parameter	...	Minimum Sampling Frequency ^[1]
pH	...	^[3]
Settleable Matter ^[4]	...	1/Quarter <u>1/Year</u>
Sulfate ^[2]	...	1/Quarter
Temperature	...	^[3]
TSS	...	^[3]
Turbidity	...	1/Quarter <u>1/Year</u>
Antimony	...	1/Quarter <u>1/Year</u>
Chromium (VI)	...	1/Quarter <u>1/Year</u>
Chronic Toxicity ^[1, 2, 5]	...	1/Quarter
Mercury	...	1/Quarter <u>1/Year</u>
Nickel	...	1/Quarter <u>1/Year</u>
Selenium	...	^[3]
Priority Pollutants ^[6]	...	1/Quarter <u>1/Year</u>
TDS	...	1/Quarter <u>1/Year</u>
Trace Metals ^[2, 7]	...	1/Quarter
Standard Observations ^[8]	...	1/Month ^[3]

⋮

1/Quarter = once per quarter

~~2/Year~~ = twice per year

1/Year = once per year

Footnotes:

⋮

^[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~~ 1/Year.

^[4] Hardness and settleable matter shall be monitored at Monitoring Location RSW-001A. Hardness and settleable matter monitoring is not required at Monitoring Location RSW-001.

⋮

We revised MRP Table E-5 as follows:

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

Parameter	Units	Sample Type	Minimum Sampling Frequency
⋮	⋮	⋮	⋮
pH	Standard Units	Grab	1/Quarter
Settleable Matter	mL/L-hr	Grab	1/Quarter
Temperature	°C	Grab	1/Quarter
⋮	⋮	⋮	⋮
Chromium (VI)	µg/L	Grab	1/Quarter
Mercury	µg/L	Grab	1/Quarter <u>1/Year</u>
Nickel	µg/L	Grab	1/Quarter
Selenium	µg/L	Grab	1/Quarter
TDS	mg/L	Grab	1/Quarter <u>1/Year</u>
Standard Observations ^[1]	---	---	1/Month <u>1/Quarter</u>

Unit Abbreviations:

⋮

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
~~1/Year = once per year~~
 :

We revised MRP section IV.C and Table E-6 as follows:

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 2]
Flow	cfs	Monthly	^[3 2]
Total Hardness as CaCO ₃ ^[2]	mg/L	Grab	1/Quarter
pH	Standard Units	Grab	^[3 2]
Settleable Matter	mL/L-hr	Grab	1/Quarter
Sulfate ^[2]	mg/L	Grab	1/Quarter
Temperature	°C	Grab	^[3 2]
TSS	mg/L	Grab	^[3 2]
Turbidity	NTU	Grab	1/Quarter
Antimony	µg/L	Grab	^{[4] [3]}
Chromium (VI)	µg/L	Grab	^{[4] [3]}
Chronic Toxicity ^[2, 5 4]	TUc	Grab	1/Quarter
Mercury ^[6]	µg/L	Grab	1/Quarter
Nickel	µg/L	Grab	^{[4] [3]}
Selenium	µg/L	Grab	^[3 2]
TDS	mg/L	Grab	1/Quarter 1/Year
Trace Metals ^[2, 7 5]	µg/L	Grab	1/Quarter
Standard Observations ^[8 6]	---	---	^[3 2]

Unit Abbreviations:
 :
 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
~~1/Year = once per year~~

Footnotes:

- ⁽¹⁾ ~~At Monitoring Location RSW-004, s~~ 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⁾ ⁽²⁾ Monitoring frequency shall be monthly during the wet season (November 1 through April 30) and twice during the dry season.
- ⁽⁴⁾ ⁽³⁾ 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⁾ ⁽⁴⁾ 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⁾ ⁽⁵⁾ Trace metals are total recoverable arsenic, cadmium, chromium, copper, molybdenum, thallium, vanadium, and zinc. Trace metals shall be monitored concurrently with chronic toxicity.
- ⁽⁸⁾ ⁽⁶⁾ Standard observations are listed in Attachment G section III.C.1.

We added MRP section IV.D, including Table E-7, as follows, and renumbered former MRP Tables E-7 and E-8 to be Tables E-8 and E-9 (not shown) (these revisions include changes made in Response to Lehigh Comment 14):

Monitoring Locations RSW-005 through RSW-007

The Discharger shall monitor receiving water at Monitoring Locations RSW-005 through RSW-007 as follows:

**Table E-7. Receiving Water Monitoring—
Monitoring Locations RSW-005 through RSW-007**

<u>Parameter</u>	<u>Units</u>	<u>Sample Type</u>	<u>Minimum Sampling Frequency</u> ⁽¹⁾
<u>Chloride</u> ⁽²⁾	<u>mg/L</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>Dissolved Oxygen</u>	<u>mg/L and % Saturation</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>Flow</u>	<u>cfs</u>	<u>Monthly</u>	<u>1/Quarter</u>
<u>Total Hardness as CaCO₃</u> ⁽²⁾	<u>mg/L</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>pH</u>	<u>Standard Units</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>Sulfate</u> ⁽²⁾	<u>mg/L</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>Temperature</u>	<u>°C</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>TSS</u>	<u>mg/L</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>Turbidity</u>	<u>NTU</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>Antimony</u>	<u>µg/L</u>	<u>Grab</u>	⁽³⁾
<u>Chromium (VI)</u>	<u>µg/L</u>	<u>Grab</u>	⁽³⁾
<u>Chronic Toxicity</u> ^(2, 4)	<u>TUc</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>Mercury</u> ⁽⁵⁾	<u>µg/L</u>	<u>Grab</u>	<u>1/Year</u>
<u>Nickel</u>	<u>µg/L</u>	<u>Grab</u>	⁽³⁾
<u>Selenium</u>	<u>µg/L</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>TDS</u>	<u>mg/L</u>	<u>Grab</u>	<u>1/Year</u>
<u>Trace Metals</u> ^(2, 6)	<u>µg/L</u>	<u>Grab</u>	<u>1/Quarter</u>
<u>Standard Observations</u> ⁽⁷⁾	<u>---</u>	<u>---</u>	<u>1/Quarter</u>

Unit Abbreviations:

- TUc = chronic toxicity units
cfs = cubic feet per second

°C = degrees Celsius
 µg/L = micrograms per liter
 mg/L = milligrams per liter
 % Saturation = percent saturation

Sampling Frequencies:

1/Quarter = once per quarter
 1/Year = once per year

Footnotes:

- [1] Monitoring at Monitoring Location RSW-005 is required only if flow from the Facility continues to this location. Monitoring at Monitoring Locations RSW-006 and RSW-007 is required only when flow from upper Permanente Creek continues to these locations.
- [2] Chloride, total hardness as CaCO₃, sulfate, chronic toxicity, and trace metals shall be monitored at Monitoring Location RSW-005. Such monitoring is not required at Monitoring Locations RSW-006 and RSW-007.
- [3] Antimony, chromium (VI), and nickel shall be monitored concurrently with chronic toxicity at Monitoring Location RSW-005. Such monitoring is not required at Monitoring Locations RSW-006 and RSW-007.
- [4] Chronic bioassay tests shall be performed in accordance with MRP section V.B.
- [5] Mercury shall be monitored at Monitoring Location RSW-005. Mercury monitoring is not required at Monitoring Locations RSW-006 and RSW-007.
- [6] Trace metals are total recoverable arsenic, cadmium, chromium, copper, molybdenum, thallium, vanadium, and zinc. Trace metals shall be monitored concurrently with chronic toxicity.
- [7] Standard observations are listed in Attachment G section III.C.1.

We revised Fact Sheet Table F-9 as follows:

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	Receiving Water RSW-004 RSW-005 through RSW-007
Chloride	---	---	1/Quarter 1/Year ^[1]	---	1/Quarter	1/Quarter ^[2]
Conductivity	---	1/Quarter	[3]	---	---	---
Dissolved Oxygen	---	---	[3]	1/Quarter	[3]	[3]
Flow	Continuous/D ^[4]	1/Month ^[4]	[3]	1/Quarter	[3]	[3]
Hardness	---	---	1/Quarter 1/Year ^[5]	---	1/Quarter	1/Quarter ^[2]
Oil and Grease	1/Quarter	1/Quarter ^[6]	---	---	---	---
pH	Continuous/D or 1/Day ^[7]	1/Quarter	[3]	1/Quarter	[3]	[3]
Settleable Matter	1/Month	1/Quarter	1/Quarter 1/Year ^[5]	1/Quarter ---	==	1/Quarter ---
Sulfate	---	---	1/Quarter ^[1]	---	1/Quarter	1/Quarter ^[2]
Temperature	1/Month	---	[3]	1/Quarter	[3]	[3]
Total Residual Chlorine ^[7]	1/Day	---	---	---	---	---
TSS	1/Week	1/Quarter	[3]	1/Quarter	[3]	[3]
Turbidity	---	---	1/Quarter 1/Year	1/Quarter	1/Quarter	1/Quarter
Acute Toxicity	1/Quarter	---	---	---	---	---
Antimony	1/Month	1/Quarter	1/Quarter 1/Year	1/Quarter	1/Quarter	1/Quarter
Chromium (VI)	1/Month	1/Quarter	1/Quarter 1/Year	1/Quarter	1/Quarter	1/Quarter
Chronic Toxicity	1/Quarter	---	1/Quarter ^[1]	---	1/Quarter	1/Quarter ^[2]

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	<u>Receiving Water RSW-004</u>	Receiving Water <u>RSW-004</u> <u>RSW-005</u> through RSW-007
Mercury	1/Month 1/Quarter	1/Quarter 1/Year	1/Quarter 1/Year	1/Quarter 1/Year	=	1/Quarter 1/Year ^[8]
Nickel	1/Month	1/Quarter	1/Quarter 1/Year	1/Quarter	1/Quarter	1/Quarter
Selenium	2/Month	[3]	[3]	1/Quarter	[3]	[3]
TDS	1/Week 1/Quarter	---	1/Quarter 1/Year	1/Quarter 1/Year	1/Year	1/Quarter 2/Year
Trace Metals ^[10]	---	---	1/Quarter ^[1]	---	1/Quarter [2]	1/Quarter ^[2]
Other priority pollutants ^[11]	1/Year	---	2/Year 1/Year	---	---	---
Standard Observations ^[12]	1/Day	---	1/Month ^[3]	1/Month 1/Quarter	1/Quarter	1/Month ^[3]
Visual Observations ^[13]	---	Each Occurrence	---	---	---	---

:
 1/Quarter = once per quarter
~~2/Year~~ = twice per year
 1/Year = once per year
 :

[5] Hardness and settleable matter shall be monitored at Monitoring Location RSW-001A. Hardness and settleable matter monitoring is not required at Monitoring Location RSW-001

[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.

Lehigh Comment 16.

Lehigh requests that we revise the tentative order to reduce or remove routine effluent TDS monitoring. Lehigh points out that the tentative order requires only monthly or quarterly monitoring for other parameters with effluent limits compared to weekly for TDS. If the TDS limits are removed, routine TDS monitoring will be unnecessary.

Response to Lehigh Comment 16.

We partly agree. We revised the tentative order to reduce the TDS monitoring frequency because we revised the tentative order to remove the TDS limits (see Response to Lehigh Comment 5, above). However, some TDS monitoring is needed to evaluate receiving water quality and to provide data for future reasonable potential analyses. We revised MRP Table E-2 and Fact Sheet Table F-9 as shown in Response to Lehigh Comment 15, above.

Lehigh Comment 17.

Lehigh requests that we revise the tentative order to remove routine receiving water TDS monitoring because it is unnecessary.

Response to Lehigh Comment 17.

We partly agree; however, because the wastewater stream has relatively high TDS concentrations, we find TDS receiving water monitoring necessary to ensure that beneficial uses of groundwater recharge

and potential municipal supply continue to be protected. Therefore, we revised the tentative order to reduce the receiving water TDS monitoring frequency, but not remove it. These revisions are shown in Response to Lehigh Comment 15, above.

Lehigh Comment 18.

Lehigh requests that we revise the tentative order to remove the requirement to monitor flow simultaneously with antimony, chromium (VI), and nickel at Monitoring Location EFF-001. Lehigh points out that compliance with the antimony and chromium (VI) effluent limitations is not based on a flow-weighted average and the tentative order has no effluent limitations for nickel; therefore, simultaneous flow monitoring is unnecessary.

Response to Lehigh Comment 18.

We agree. Our revisions are shown in Response to Lehigh Comment 15, above.

Lehigh Comment 19.

Lehigh requests that we revise the tentative order to reduce the selenium monitoring frequency at stormwater discharge Monitoring Locations EFF-002, EFF-004, EFF-005, and EFF-006. Lehigh states that stormwater discharge and receiving water monitoring frequencies should be consistent.

Response to Lehigh Comment 19.

We agree. Our revisions are shown in Response to Lehigh Comment 15, above.

Lehigh Comment 20.

Lehigh requests that we revise the tentative order to remove requirements to monitor settleable matter in the receiving water. Lehigh points out that the previous order requires settleable matter monitoring only at Monitoring Location RSW-001A, while the tentative order requires settleable matter monitoring at all receiving water monitoring locations. Lehigh argues that the increased monitoring is unnecessary.

Response to Lehigh Comment 20.

We agree. Our revisions are shown in Response to Lehigh Comment 15, above.

Lehigh Comment 21.

Lehigh requests that we revise the tentative order to reduce monitoring frequencies at Monitoring Location RSW-001A. The tentative order would increase the monitoring frequencies at this location compared to the previous order, but data collected there and upstream justifies a reduced frequency.

Response to Lehigh Comment 21.

We agree. Our revisions are shown in Response to Lehigh Comment 15, above.

Lehigh Comment 22.

Lehigh requests that we revise the tentative order to reduce monitoring frequencies at Monitoring Location RSW-001 for similar reasons as its request to reduce monitoring frequencies at Monitoring Location RSW-001A. Lehigh requests that California Toxics Rule priority pollutant monitoring be removed and TSS monitoring be reduced to once per quarter. Lehigh notes that downstream priority pollutant monitoring is not required of municipal wastewater treatment plants, which can have identifiable sources of priority pollutants in their sewersheds, while Lehigh has no sources of volatile organic compounds, semi-volatile organic compounds, or pesticides in its discharge.

Response to Lehigh Comment 22.

We agree. Our revisions are shown in Response to Lehigh Comment 15, above. We also note, however, that most municipal wastewater treatment plants do monitor priority pollutants in their receiving waters by supporting the Regional Monitoring Program.

Lehigh Comment 23.

Lehigh requests that we revise the tentative order to require standard observations during “each monitoring event” at all receiving water monitoring locations, rather than monthly. Monthly monitoring is more frequent than required for other parameters. Requiring standard observations monitoring at the same frequency as the monitoring for water quality parameters would eliminate additional site visits.

Response to Lehigh Comment 23.

We agree. The change makes the standard observations monitoring frequency monthly during the wet season and twice during the dry season at all monitoring locations except Monitoring Location RSW-001A, where the frequency would be annual, and Monitoring Location RSW-002, where the frequency would be quarterly when there is discharge from Discharge Point 002 (see Response to Lehigh Comment 24, below). The monitoring frequency at Monitoring Location RSW-007 would still be limited to when Lehigh is discharging and flow from upper Permanente Creek is present. Our revisions are shown in Response to Lehigh Comment 15, above.

Lehigh Comment 24.

Lehigh requests that we revise the tentative order to require monitoring at Monitoring Location RSW-002 only when there is discharge from Discharge Point 002. Lehigh states that, if there is no discharge from Discharge Point 002, monitoring at Monitoring Location RSW-002 is duplicative of monitoring at Monitoring Location RSW-001. There has been no discharge from Discharge Point 002 under the previous order.

Response to Lehigh Comment 24.

We agree. We revised MRP section IV.B as follows:

The Discharger shall monitor receiving water at Monitoring Location RSW-002 when there is discharge at Discharge Point 002 as follows....

Lehigh Comment 25.

Lehigh requests that we revise the tentative order to require monitoring at Monitoring Locations RSW-005, RSW-006, and RSW-007 quarterly for parameters currently monitored under the 13267 Order, consistent with that order.

Response to Lehigh Comment 25.

We agree. Our intent is that the tentative order require all the monitoring required by the 13267 Order, not to increase monitoring relative to that order. Our revisions are shown in Response to Lehigh Comment 15, above.

Lehigh Comment 26.

Lehigh requests that we revise the tentative order to include the 13267 Order’s flow conditions associated with monitoring requirements at offsite receiving water monitoring locations. Lehigh points out that the 13267 Order requires monitoring at Monitoring Locations RSW-005, RSW-006, and RSW-007 only when water is present and when flow continues offsite to those locations due to discharges from the Permanente Plant.

Response to Lehigh Comment 26.

We agree. Our revisions are shown in Response to Lehigh Comment 15, above.

Lehigh Comment 27.

Lehigh requests that we revise the tentative order to require antimony, chromium (VI), and nickel monitoring at Monitoring Location RSW-005 only concurrently with chronic toxicity monitoring, as required by the 13267 Order.

Response to Lehigh Comment 27.

We agree. Our revisions are shown in Response to Lehigh Comment 15, above.

Lehigh Comment 28.

Lehigh requests that we correct several typographical errors in MRP section V.A.2.

Response to Lehigh Comment 28.

We agree. We revised MRP section V.A.2.a.iii.(c) and (d) as follows:

- (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.e~~ V.A.2.c, below.

We revised MRP section V.A.2.c.ii through vii as follows:

- ii. Within 30 days of exceeding either chronic toxicity trigger in section ~~IV.A.2.a.iii.(b)~~ V.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)~~ V.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.
:
- 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)~~ V.A.2.a.iii.(b), above).
:
- 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)~~ V.A.2.a.iii.(b), above.

Lehigh Comment 29.

*Lehigh requests that we revise the tentative order to omit the fathead minnow (*Pimephales promelas*) as a chronic toxicity test species at Monitoring Location RSW-005. Lehigh points out that chronic toxicity monitoring in the first quarter of 2019 did not detect toxicity to *Pimephales promelas* at that monitoring location, and that the Regional Water Board has omitted *Pimephales promelas* from chronic toxicity monitoring of Permanente and Stevens Creeks planned for 2019 under other programs. Lehigh further points out that data collected at Pond 4A (Discharge Point 001), Pond 9 (former Discharge Point 003), and Ponds 13 and 14 (in-stream), and from the upper treatment system effluent, have not detected toxicity to *Pimephales promelas*. Finally, Lehigh points out that the 13267 Order allowed for chronic toxicity testing with *Pimephales promelas* to cease after one year, subject to Regional Water Board approval, while the tentative order does not.*

Response to Lehigh Comment 29.

We agree. We revised MRP section V.B.1.b as follows:

Test Species. The test species at Monitoring Locations RSW-001, ~~and RSW-004, and RSW-005~~ 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*).~~

Lehigh Comment 30.

Lehigh requests that we revise the tentative order's receiving water toxicity monitoring requirements to require a toxicity identification evaluation (TIE) when toxicity is detected, instead of accelerated monitoring followed by a TIE if toxicity continues to be detected. Lehigh points out that stormwater and regional monitoring typically do not include accelerated monitoring because pollutants can be flushed from the watershed and therefore not be detected by accelerated monitoring. Lehigh also notes that a sample must be "sufficiently toxic" for a TIE to be successful, and that a common U.S. EPA-supported trigger, used in the Sacramento-San Joaquin Delta Regional Monitoring Program, is 50 percent sample response compared to control response. When a response is below 50 percent, Lehigh proposes to evaluate analytical and discharge flow data to determine a source, if possible, and to use this information to inform future TIEs. Furthermore, Lehigh proposes to target TIEs to the most relevant discharges and locations by building on previous work to identify likely or possible causes of toxicity.

Response to Lehigh Comment 30.

We agree. Flows in Permanente Creek currently depend on stormwater flows, which are episodic and often do not allow for timely or useful accelerated monitoring. When follow-up samples can be collected, the toxicity episode and any opportunity to determine its source may have passed. It therefore makes sense to perform TIEs on samples in which toxicity is detected, without first collecting additional samples. It also makes sense to limit TIEs to samples with enough toxicity for TIEs to be successful and to target discharges and locations using results of previous investigations. We revised MRP section V.B.3 as follows:

~~Accelerated Monitoring and~~ Toxicity Reduction Evaluation (TRE)

- a. Monitoring Locations RSW-001 and RSW-004.** The Discharger shall conduct a TIE when it observes toxicity ~~if toxicity is observed~~ at Monitoring Locations RSW-001 or RSW-004 and the following circumstances exist:

- i. the Discharger is not currently conducting a TRE for discharges from Discharge Point Nos. 001 or 007,
- ii. discharges from Discharge Point Nos. 001 or 007 are not otherwise identifiable as causes of the observed toxicity (e.g., are not toxic concurrently with the receiving water), and
- iii. the percent effect in the receiving water sample is at least 50 percent and statistically significant.

~~†~~ The Discharger shall accelerate to monthly sampling and testing conduct the TIE using the same sample and with the affected species. The Discharger shall also follow MRP section V.A.2.c to investigate toxicity at Discharge Point Nos. 001 and 007. 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.

The Discharger shall select TIE treatments based on weight of evidence (e.g., nature of the toxicity observed, historical TIE results, and concurrent analytical test results for metals, minerals, suspended solids, etc.). The Discharger shall describe its rationale for TIE treatment selection in the appropriate SMR.

The Discharger may conduct the TIE using a single species if more than one species exhibits toxicity and the same cause is suspected. The Discharger may also conduct the TIE on a sample from one monitoring location if toxicity is observed at both monitoring locations and there is continuous flow between them. The Discharger shall describe its rationale for species and monitoring location selection in the appropriate SMR.

The Discharger is not required to conduct a TIE if the cause of toxicity can be identified based on weight-of-evidence using previous TRE or TIE data (e.g., there is a consistent chemical signal associated with the observed toxicity). The Discharger shall report its rationale for not conducting a TIE and identifying the cause of toxicity in the appropriate SMR.

If the percent effect in the receiving water sample is less than 50 percent but statistically significant, the Discharger shall analyze possible causes of toxicity based on available data (e.g., trace metals, mineral content, turbidity, or test-related quality assurance or quality control data) and report the results in the appropriate SMR.

- b. Monitoring Location RSW-005.** ~~If the Discharger observes 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.

Lehigh Comment 31.

Lehigh requests that we revise the tentative order to limit Surface Water Ambient Monitoring Program (SWAMP) comparability and California Environmental Data Exchange Network (CEDEN) reporting to the parameters listed in the 13267 Order and to clarify the CEDEN reporting deadline.

Response to Lehigh Comment 31.

We agree. SWAMP comparability and CEDEN reporting are required for data to be used in making Clean Water Act section 303(d) listings of impaired waters and are therefore required for data collected to determine the need for listings and total maximum daily loads (TMDLs).

We revised Provision VI.C.4 of the tentative order as follows:

The Discharger shall submit receiving water data for the following parameters collected at the following monitoring locations ~~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:

- *Monitoring Location RSW-001:* selenium, pH, temperature, DO, electrical conductivity (EC), turbidity, TSS, chloride, sulfate, trace metals (antimony, arsenic cadmium, total chromium, chromium [VI], copper, molybdenum, nickel, thallium, vanadium, and zinc), and chronic toxicity.
- *Monitoring Location RSW-004:* selenium, pH, temperature, DO, EC, turbidity. Parameters monitored quarterly with chronic toxicity: total hardness, TSS, chloride, sulfate, trace metals (antimony, arsenic cadmium, total chromium, chromium [VI], copper, molybdenum, nickel, thallium, vanadium, and zinc), and chronic toxicity.
- *Monitoring Location RSW-005:* selenium, pH, temperature, DO, EC, turbidity. Parameters monitored quarterly with chronic toxicity: total hardness, TSS, chloride, sulfate, trace metals (antimony, arsenic cadmium, total chromium, chromium [VI], copper, molybdenum, nickel, thallium, vanadium, and zinc), and chronic toxicity.
- *Monitoring Location RSW-006:* selenium, pH, temperature, DO, EC, and turbidity.
- *Monitoring Location RSW-007:* selenium, pH, temperature, DO, EC, and turbidity.

Data and results shall be submitted annually by March 1.

Lehigh Comment 32.

Lehigh requests that we revise the tentative order to include mercury in the anti-backsliding discussion because the tentative order does not retain the mercury effluent limitations from the previous order.

Response to Lehigh Comment 32.

We agree. We revised Fact Sheet section IV.D.1 as follows (these revisions address a similar circumstance related to the previous TDS effluent limits; see Response to Lehigh Comment 5):

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, mercury, thallium, TDS, 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, TDS, 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. ...

MS. DANIELLE BURNETT-FOSTER

Ms. Burnett-Foster Comment 1.

Ms. Burnett-Foster opposes Lehigh's permit to expand and continue its operations after what she says is its egregious record of water treatment. Ms. Burnett-Foster points to Lehigh's process resulting in toxic by-products, specifically mercury, a neurotoxin, and asks that the Regional Water Board protect water quality.

Response to Ms. Burnett-Foster Comment 1.

The tentative order would not authorize increased discharge, nor any discharge that would harm water quality. The comments regarding Lehigh's potential expansion do not relate to the tentative order because the Regional Water Board is not the permitting authority to approve any such expansion. The Santa Clara County Planning Commission is.

Although Lehigh has had a record of noncompliance with Clean Water Act requirements, the Regional Water Board's adoption of this NPDES permit and a cease and desist order in 2014 resulted in significant improvements. The permit and cease and desist order required Lehigh to install wastewater treatment and replumb the site to direct polluted stormwater into the treatment system. The treatment was designed primarily to remove selenium, but it also removes other metals, including mercury. When Lehigh operates the treatment system correctly, discharge concentrations are below water quality objectives intended to protect human health and aquatic life. Since October 2017, Lehigh has not violated its mercury limits and has violated its selenium limits once in December 2017 and twice in April 2019. The Regional Water Board assessed a \$3,000 mandatory minimum penalty for the December 2017 violation through Order No. R2-2019-1014; enforcement is pending for the April 2019 violations. The tentative order would continue to impose metals limits to ensure Lehigh operates the treatment system effectively.

We revised Fact Sheet section II.D.3 and Table F-4 to update the summary of compliance and enforcement since October 1, 2017, as follows:

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~~ five 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 ^[1]	Selenium, Maximum Daily	µg/L	8.2	15
03/22/2018	004	Turbidity, Maximum Daily	NTU	50	52
<u>04/24/2019</u>	<u>001</u> ^[2]	<u>Selenium, Maximum Daily</u>	<u>µg/L</u>	<u>8.2</u>	<u>9.3</u>
		<u>Selenium, Average Monthly</u>	<u>µg/L</u>	<u>4.1</u>	<u>9.3</u>

Footnotes:

^[1] This violation was detected in the effluent from the Upper FTS.

^[2] This violation was detected in the effluent from the Lower FTS.

On May 21, 2019, the Regional Water Board issued Order No. R2-2019-1014, fining the Discharger \$6,000 for the November and December 2017, and March 2018 violations above. Enforcement for the April 2019 violations is pending.

MS. RHODA FRY

Ms. Fry Comment 1.

Ms. Fry requests that the Regional Water Board ensure the correct company names are on the permit. Ms. Fry states that since Hanson Permanente’s bankruptcy, the company names Lehigh Southwest Cement Company and Hanson Permanente Cement have ceased to exist. Ms. Fry requests that the parent company, Heidelberg Cement Group, be named in the permit as well. Ms. Fry suggests that previous Regional Water Board documents portray Lehigh as a small company, rather than a subsidiary of a major multinational company.

Response to Ms. Fry Comment 1.

The tentative order correctly names Hanson Permanente Cement, Inc., and Lehigh Southwest Cement Company as permittees. In September 2016, Hanson Permanente Cement, Inc., and Kaiser Gypsum Company, Inc., filed for Chapter 11 bankruptcy protection with the U.S. Bankruptcy Court in the Western District of North Carolina. The two bankruptcies are jointly administered as Case No. 16-31602. According to the *Statement of Financial Affairs for Hanson Permanente Cement, Inc., Case No. 16-31614 (JCW)*, filed with the Bankruptcy Court on November 23, 2016 (Case 16-31602, Doc 257, page 10):

...In addition to the equity it holds in its subsidiaries, [Hanson-Permanente Company, Inc.] owns a cement plant, rock plant and a quarry (including the minerals) (the “Permanente Property”) located in Santa Clara County, California, that it leases to Lehigh Southwest Cement Company (“Lehigh Southwest”), a non-Debtor affiliate. Lehigh Southwest manages and operates the Permanente Property. Under the lease, Lehigh Southwest pays rent, royalties and other amounts, and also is responsible for the ongoing operating costs of the Permanente Property. For its part, [Hanson-Permanente Company, Inc.] funds capital expenditures and certain other costs for the cement plant....

As of May 20, 2019, the Bankruptcy Court has not accepted a plan of reorganization. Thus, Hanson Permanente Cement, Inc., continues in business under that name. Lehigh Southwest Cement Company has not filed for bankruptcy, thus also continues in business under that name.

Ms. Fry Comment 2.

Ms. Fry objects to Lehigh’s proposal for a new quarry and asks how the Regional Water Board can prevent water pollution from the proposed new quarry.

Response to Ms. Fry Comment 2.

As stated in Response to Ms. Burnett-Foster Comment 1 above, the tentative order would not authorize increased discharge, and the Regional Water Board is not the permitting authority to approve any potential expansion. If the Santa Clara County Planning Commission were to approve a future expansion, Lehigh would need to apply for a new or amended NPDES permit. The Regional Water Board would provide for public comment prior to considering any such changes.

Ms. Fry Comment 3.

Ms. Fry comments that the Regional Water Board should fully document the toxic legacy of previous site uses when considering moving waste piles. Ms. Fry states that the East Materials Storage Area (EMSA) contains 75 acres of waste and the West Materials Storage Area (WMSA) contains 175 acres of waste, with 48 million tons of material destined to be quarry pit fill. Ms. Fry posits that thallium is an indicator of industrial activities. Ms. Fry asks that the Regional Water Board also look for radioactive materials since a World War II weapons laboratory had been run onsite. Ms. Fry submitted photographs, articles, and documents indicating the presence, production, or use of cement, asbestos cement (“Plastite”), magnesium, ferrosilicon, radium, incendiary munitions, phosphate fertilizer, and aluminum products, and the historic presence of a World War II research facility, underground tanks and facilities containing toxic materials, and other demolished buildings. Ms. Fry speculates that related materials could be in the waste piles.

Response to Ms. Fry Comment 3.

For the most part, the comments regarding moving waste piles do not relate to the tentative order. To the extent that waste pile runoff could enter the wastewater stream, the tentative order’s requirements would be sufficient to protect water quality. Beyond the context of the NPDES permit, the Regional Water Board has investigated and documented previous site uses and potential pollutant sources, as described in the Waste Discharge Requirements in Regional Water Board Order No. R2-2018-0028. Pursuant to that order, the Regional Water Board continues to require site characterization.

When originally issued in 2014, the NPDES permit imposed an effluent limit for thallium based on data available at the time. The tentative order would remove that limit because, in the last five years, thallium has not been found in the discharge at or above the applicable water quality objective of 1.7 µg/L.

Thallium has not been detected at all since October 2017, the cease and desist order deadline for installing the treatment system. The tentative order would continue to require thallium monitoring.

We doubt that significant radioactive materials are present onsite. The information Ms. Fry provides states that Dr. Fritz Johann Hansgirg worked on a magnesium production process named after him at the site, but does not indicate any work on nuclear weapons. The radium to which Ms. Fry referred was apparently used in x-ray equipment to examine parts used in the magnesium process. Thus, it was likely a small amount associated with x-ray equipment, and was likely removed from the site with that equipment. This may suggest the presence of radium in a building that has since been removed; however, it does not suggest that radium should be present in stormwater or industrial wastewater discharges regulated by the NPDES permit.

Ms. Fry Comment 4.

Ms. Fry asks if the wastewater treatment system removes anything from the water that is beneficial to aquatic life. Ms. Fry also asks about the consequences of using and disposing of chemicals employed at the water treatment plant, such as sodium hypochlorite (bleach), citric acid, hydrogen peroxide, bio-reactor with nutrients that creates sulfides, antisealant, and backwash (including metals and settled matter disposed offsite).

Response to Ms. Fry Comment 4.

The treatment plant is designed to remove selenium and metals. We are unaware of anything removed from the treated wastewater that would be beneficial to aquatic life. Moreover, using the specific treatment chemicals mentioned will not harm water quality. Sodium hypochlorite is used for disinfection, but it can readily be removed and the tentative order includes a chlorine effluent limit of 0.0 mg/L. Citric acid and hydrogen peroxide present no water quality issues at the concentrations discharged. The nutrient used in the bioreactor is consumed, not discharged. Sulfides produced by the bioreactor are abated by vapor carbon. “Antisealant” may refer to anti-scalant, and the minor amounts of these chemicals used to prevent scaling are not a water quality concern. Solids and other materials shipped offsite for disposal are subject to oversight by other regulatory agencies, and are not subject to NPDES permit requirements.

Ms. Fry Comment 5.

Ms. Fry notes that, due to dewatering, Permanente Creek can run dry, and asks why so much water is taken out of the creek, and what the hydrological consequences of removing so much water and then reintroducing it at high rates might be. Ms. Fry asks how the discharge rate limit of 138,000 gph was determined. Ms. Fry asks whether Lehigh is using this water to dilute its pollutants prior to discharge.

Response to Ms. Fry Comment 5.

Regarding the water taken from Permanente Creek, Lehigh does not take water from the creek directly. The depth of the quarry pit significantly lowers the water table, causing groundwater that would otherwise flow toward the creek to flow toward the quarry pit; Lehigh dewateres the quarry pit and discharges the extracted water to Permanente Creek after treatment. This is the majority of Lehigh’s wastewater. Lehigh cannot use this quarry pit wastewater to dilute its pollutants because this wastewater already contains pollutants (e.g., selenium and other metals) in excess of water quality objectives and effluent limits. This is why the tentative order requires all this wastewater to be treated.

The hydrological consequences of removing water from Permanente Creek are beyond the scope of the NPDES permit because, pursuant to the Clean Water Act, the permit relates only to discharges to Permanente Creek. However, the tentative order does authorize discharge to Permanente Creek, which to

some extent may mitigate the consequences of removing water. Specifically, Provision VI.C.5 of the tentative order would require Lehigh to discharge the first 450 gallons per minute of its discharge to the upper reach of Permanente Creek adjacent to the Lehigh property during the dry season. Provision V would prohibit discharges that cause foaming or erosion.

Regarding how the discharge rate of 138,000 gph was determined, 138,000 gph was a typographical error; see Response to Lehigh Comment 2. The tentative order would maintain the same maximum discharge rate of 167,000 gph as set forth in the previous order (the tentative order would allow this discharge from Discharge Points 001 and 007, combined).

Ms. Fry Comment 6.

Ms. Fry requests that we compare what is being proposed versus various water standards. Ms. Fry states, as an example, that the U.S. EPA drinking water standard for antimony is 6.0 micrograms per liter ($\mu\text{g/L}$), compared with the proposed effluent limit of 640 $\mu\text{g/L}$.

Response to Ms. Fry Comment 6.

The tentative order is based on the most stringent applicable water quality objectives, including the drinking water standards (maximum contaminant levels or MCLs). Fact Sheet section IV.C.2 and Table F-7 summarize the applicable criteria.

The tentative order would impose antimony effluent limits at Discharge Points 001 and 007 of 6.0 $\mu\text{g/L}$ as a monthly average and 12 $\mu\text{g/L}$ as a daily maximum (see Table 4). These limits were calculated based on the antimony MCL of 6.0 $\mu\text{g/L}$, as shown in Fact Sheet Table F-8. Provision VI.A.3 of the tentative order would establish an antimony stormwater action level at Discharge Points 002 and 004 through 006 of 640 $\mu\text{g/L}$. That stormwater action level is based on U.S. EPA's benchmark concentration from the 2015 *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP)*. The tentative order would require Lehigh to implement BMPs to maintain water quality standards in Permanente Creek. As a backstop, the tentative order would also require Lehigh to report stormwater action level exceedances and improve its BMPs in response to them.

We revised Fact Sheet section VI.A (third paragraph) as follows:

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 or U.S.EPA's 2015 *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity (MSGP)*, this Order establishes the lowest acute 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 $\mu\text{mhos/cm}$.

Ms. Fry Comments 7.1 through 7.7.

Ms. Fry lists seven comments, which we have renumbered 7.1 through 7.7.

Comment 7.1. *What would it take to reduce the pollutant concentrations to non-detect levels?*

Response to Ms. Fry Comment 7.1. The Clean Water Act does not require treatment to non-detect levels. It requires that discharges be controlled such that they protect water quality. Different analytical methods have different detection limits. Analytical detection limits have nothing to do with water quality.

Comment 7.2. *What is the source of the ammonia?*

Response to Ms. Fry Comment 7.2. Ammonia was detected at 0.13 mg/L at Pond 4A (Discharge Point 001) in one sample collected in April 2011. The source of the ammonia may have been ammonia used to control corrosion in the kiln (see Response to Ms. Helgeson Comment 6, below). The kiln is not a major source of wastewater; water used in the kiln typically evaporates (Prohibition III.D prohibits discharge of kiln exhaust cooling water). Because the tentative order does not impose an ammonia effluent limit, Provision IV.C should not contain an ammonia-related exception to the acute toxicity limits. Therefore, we revised Provision IV.C of the tentative order as follows:

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.~~

Comment 7.3. *Document the differences between the current NPDES permit and previous permits as to maximum pollutants, gallons per hour, etc.*

Response to Ms. Fry Comment 7.3. We did not revise the tentative order. As stated in Fact Sheet section IV.D.1, the tentative order's requirements are at least as stringent as the previous order, except for limits on specified pollutants. Fact Sheet section IV.D.1 explains the rationales for these differences. Fact Sheet section IV.D.2 further states, "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."

Comment 7.4. *Why are there discharge points that do not have effluent limits for metals?*

Response to Ms. Fry Comment 7.4. The tentative order includes metals effluent limits for all discharge points, but in some cases these effluent limits are narrative, not numeric. This comment refers to Fact Sheet section II.C and Table F-3, which indicate that the previous order imposed no numeric effluent limitations for metals at stormwater Discharge Points 002 through 006. Likewise, the tentative order would impose no numeric effluent limitations at these discharge points (Discharge Point 003 is no longer an authorized discharge point). However, like the previous order, the tentative order would

impose narrative limits consisting of the stormwater requirements of Attachment S, as modified by Provision IV.3. Fact Sheet section IV.C.4 explains the rationale: metals mobilized by stormwater discharges can vary greatly over time, thus numeric effluent limits are infeasible at these locations. The effluent limits are therefore narrative consistent with Basin Plan section 4.8 and 40 Code of Federal Regulations (C.F.R.) section 122.44(k).

Comment 7.5. The civil liabilities for non-compliance have been staggering, among them \$465,500 in 2017. It appears that the fines are merely a cost of doing business and that the Water Boards are selling permits to pollute. Why is our water quality for sale?

Response to Ms. Fry Comment 7.5. Our water quality is not for sale. The Regional Water Board does not profit from permit fees or enforcement. In this case, however, the Regional Water Board's enforcement efforts, including both administrative civil liabilities and a cease and desist order, have resulted in substantial compliance with permit requirements since October 1, 2017. Since then, Lehigh's permit violations have plummeted in both number and severity.

Comment 7.6. Thank you for providing the amounts exceeded as compared to the amounts allowed in Fact Sheet Table F-4.

Response to Ms. Fry Comment 7.6. We note the comment, which does not require a response.

Comment 7.7. The Regional Water Board must not allow limits to be relaxed.

Response to Ms. Fry Comment 7.7. The tentative order does not relax effluent limitations. Fact Sheet section III.C.6 describes Clean Water Act anti-backsliding requirements, stating "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." Fact Sheet section IV.D.1 explains that the tentative order does not retain effluent limits for nickel, mercury, thallium, TDS, and turbidity because available data do not indicate that limits are needed to protect water quality or, in the case of turbidity at Discharge Points 002, 004, and 005, the previous order was based on inapplicable guidance.

MS. CATHY HELGERSON

We numbered Ms. Helgerson's comments in the order in which she presents them.

Ms. Helgerson Comment 1.

The water from dewatering of the quarry is suspected to come from the aquifer below the Silicon Valley. This water is polluted. It is being pulled up by extraction wells. This dewatering is to address pollution allowed to flow from the Stevens Creek Reservoir to a recharge pond. This water is allowed to enter the aquifer and is eventually pulled up through the Lehigh Quarry pit via extraction wells. The water is then piped to the wastewater treatment plant and treated with chemicals. The public is unsure what these chemicals are.

Response to Ms. Helgerson Comment 1.

The water extracted from the quarry is groundwater from the shallow aquifer and stormwater that either flows to the quarry or is directed there for storage prior to treatment. The extraction wells are only deep enough to dewater the quarry for quarrying operations.

Fact Sheet section II.B describes the treatment process, which mainly consists of reverse osmosis, ultrafiltration, and biological treatment. Chemical use is minimal. See Response to Ms. Fry Comment 4.

Ms. Helgerson Comment 2.

The water is not treated down to zero pollution levels. It is difficult for the public to understand exactly what level the selenium is being treated down to. Also, treating quarry water at the treatment plant has been holding up the Permanente Creek restoration.

Response to Ms. Helgerson Comment 2.

Table 4 of the tentative order clearly specifies the selenium effluent limits. Completely eliminating selenium and other pollutants from the discharge is infeasible and unnecessary. The tentative order would require wastewater treatment to levels that protect water quality. See Response to Ms. Fry Comment 7.1.

The tentative order would regulate wastewater discharges. It would not affect Permanente Creek restoration.

Ms. Helgerson Comment 3.

The allowed pollution levels are set so high as to not interfere with Lehigh's interests. If they are caught in violation, they may or may not pay a fine, but if they do, it is just a cost of doing business and they violate again. There seems to be no regard for the cumulative effects of chemicals on water, air, and soil, hurting humans and animals alike.

Response to Ms. Helgerson Comment 3.

The tentative order's effluent limitations are based on water quality objectives necessary to protect beneficial uses. The water quality-based effluent limitations do not consider or account for Lehigh's cost of compliance. Regarding the effectiveness of the Regional Water Board's enforcement efforts, see Response to Ms. Fry Comment 7.5. Regarding the potential for cumulative effects, see Response to Ms. Lucas Comment 7.

Ms. Helgerson Comment 4.

Some of the ponds at Lehigh are not being directed to the quarry or the treatment plant. The water flows into the Permanente Creek. This water is polluted but diluted by stormwater. Nothing is being done about the pollution because testing is conducted during the rainy season. Drinking water is being polluted.

Response to Ms. Helgerson Comment 4.

The tentative order would continue to allow stormwater discharges from Discharge Points 002, 004, 005, and 006 (i.e., Ponds 13B, 17, 20, and 30) subject to Provisions IV.B and VI.A.3 of the tentative order. Discharge Prohibition III.C prohibits discharges from these locations except as a result of precipitation or as necessary to discharge retained stormwater. Lehigh does not discharge from these points during the dry season. Lehigh directs most stormwater to treatment instead of discharging it at Discharge Points

002 and 004 through 006. See Response to Ms. Fry Comment 5 regarding whether effluent limits are met by dilution and Response to Ms. Fry Comment 7.5 regarding enforcement.

Ms. Helgerson Comment 5.

Ms. Helgerson would like to see the Lehigh quarry shut down and a park be created. Homes could be built on this land but it would have to be cleaned of any pollution.

Response to Ms. Helgerson Comment 5.

The Regional Water Board cannot make land use decisions.

Ms. Helgerson Comment 6.

The ammonia in the water results from Lehigh's discharge of polluted water into the Permanente Creek and the ponds. Lehigh uses ammonia to hold down nitrogen oxide levels and reduce corrosion of the kiln. The ammonia is at high levels and is polluting the wastewater.

Response to Ms. Helgerson Comment 6.

The discharges do not contain ammonia concentrations harmful to aquatic life. See Response to Ms. Fry Comment 7.2.

Ms. Helgerson Comment 7.

Water purveyors use ammonia and chlorine to clean the water taken from the aquifer below Silicon Valley, but they do not treat all types of pollution. Many pollutants from the Lehigh facility should be addressed but are not. The Santa Clara Valley Water District will do nothing to stop the pollution.

Response to Ms. Helgerson Comment 7.

The tentative order implements drinking water standards (i.e., MCLs) as water quality objectives, thus ensuring that Lehigh's surface water discharges do not harm groundwater aquifers used to supply Silicon Valley's drinking water. See Fact Sheet sections III.C.1, III.C.5, and IV.C.2.a.

Ms. Helgerson Comment 8.

Lehigh has been in constant violation of its NPDES permit. Why has the Regional Water Board allowed it to keep the permit? The Regional Water Board is giving Lehigh a permit to pollute. Fining Lehigh for violations is not enough. Ms. Helgerson wants to see Lehigh closed down.

Response to Ms. Helgerson Comment 8.

Lehigh's compliance has greatly improved. See Response to Ms. Fry Comment 7.5.

Ms. Helgerson Comment 9.

Lehigh must comply with the Standard Provisions and, if there is noncompliance, that constitutes a violation of the Clean Water Act and California Water Code and is grounds for enforcement. Ms. Helgerson sees only leniency on the part of the regulatory agencies. The disregard for enforcement to allow the polluter to continue to operate is inexcusable.

The regulatory agencies appear to fear lawsuits from Lehigh's mother company, Heidelberg Cement, which operates 139 cement plants, more than 1,500 ready-mixed concrete productions sites, over 600 aggregate quarries, and 740 mining sites. It does not need the Lehigh quarry and could easily close down the facility. There has been a great deal of dust from the cement plant and all of that dust is going

into the ponds and Permanente Creek. Lehigh is getting ready to apply for a new quarry and, if Santa Clara County allows this, the public will be in danger for another 100 years.

Response to Ms. Helgerson Comment 9.

The tentative order contains effluent limits and stormwater provisions to control pollutants from cement plant dust that reaches onsite ponds. Regarding a possible quarry expansion, see Response to Ms. Fry Comment 2. Regarding allowing Lehigh to continue operations, see Response to Ms. Burnett-Foster Comment 1. Regarding compliance and enforcement, see Response to Ms. Fry Comment 7.5.

Ms. Helgerson Comment 10.

The tentative order would allow Lehigh its own best management practices (BMPs), and the Regional Water Board seems to think they will pick the most advanced BMPs available. How can we leave this to Lehigh? It will use the most inexpensive BMPs it can.

Response to Ms. Helgerson Comment 10.

The tentative order would require Lehigh to select appropriate BMPs because the Regional Water Board cannot specify the method or means of complying with its requirements. However, the tentative order would also require Lehigh to improve its BMPs if stormwater actions levels or receiving water limits were exceeded. This approach, described in Fact Sheet section VI.A, is consistent with the State Water Board's *General Permit for Stormwater Discharges Associated with Industrial Activities* (NPDES No. CAS000001).

Ms. Helgerson Comment 11.

The stormwater action levels cover some but not all of the pollutants that could be in stormwater. The Regional Water Board needs to do its own testing. Allowing Lehigh to do the testing is having the fox watch over the chicken coup. How can we be sure Lehigh operates honestly.

Response to Ms. Helgerson Comment 11.

The Clean Water Act places the burden of compliance monitoring and reporting on dischargers, recognizing the limited resources of regulatory agencies to take this on. This nationwide approach works well. Attachment G section III.A.1 of the tentative order requires Lehigh to use a certified laboratory, and Attachment D section V.B requires Lehigh to report results under penalty of perjury. Filing a false report carries with it the risk of incarceration. See Response to Ms. Helgerson Comment 10 regarding how the pollutants subject to stormwater action levels were chosen.

Ms. Helgerson Comment 12.

Lehigh has continually violated the permit and caused adverse impacts on water quality. The public suffers from this pollution.

Response to Ms. Helgerson Comment 12.

Lehigh's compliance has significantly improved. See Response to Ms. Fry Comment 7.5.

Ms. Helgerson Comment 13.

The problem with Provision VI.C.1.b of the tentative order (reopener provision) is who decides what the effluent limitations are and what may be modified as necessary to reflect updated water quality objectives and wasteload allocations?

Response to Ms. Helgerson Comment 13.

NPDES permits are issued for periods not to exceed five-years to allow dischargers some certainty regarding the regulatory requirements with which they must comply. Provision VI.C.1 allows the Regional Water Board to modify or reopen the permit prior to its expiration date under specific circumstances as set forth. The Regional Water Board would decide what modifications are appropriate through a formal hearing process that includes an opportunity for public comment.

Ms. Helgerson Comment 14.

During the rainy season, the stormwater going into the ponds and the quarry is diluted, and this dilution alters pollutant levels. The Regional Water Board seems more concerned about reporting when the stormwater is highly diluted. What about the rest of the year, when Lehigh releases polluted water from the cement plant, the ponds, and the quarries into Permanente Creeks? The public is not protected. This permit allows Lehigh to continue to pollute the public to death.

Response to Ms. Helgerson Comment 14.

Lehigh does not discharge stormwater during the dry season. See Response to Ms. Helgerson Comment 4.

Ms. Helgerson Comment 15.

Ms. Helgerson wonders if regulatory agencies would ever close Lehigh down. She asserts there is no way to eliminate all of the pollution Lehigh has exposed the public to. Lehigh will go on polluting, and the public will be sick and possibly die from this pollution. The quarry is running out of limestone, and Lehigh wants to apply for a new pit. The destruction from this new pit will be astronomical and horrifying.

Response to Ms. Helgerson Comment 15.

Regarding Lehigh compliance and enforcement, see Response to Ms. Fry Comment 7.5. Regarding eliminating all pollutants, see Response to Ms. Helgerson Comment 2. Regarding a potential expansion, see Response to Ms. Burnett-Foster Comment 1.

Ms. Helgerson Comment 16.

Ms. Helgerson asks for clarification regarding the potential to reopen the permit if an administrative or judicial decision on a separate permit addresses requirements similar to this discharge (Provision VI.C.1.e of the tentative order). Ms. Helgerson opines that a decision on extending waste discharges from illegal dumping or illegal reporting should definitely call for closing down the discharger's business. Polluters should be held and prosecuted for their crimes. Ms. Helgerson would like to see that stated in the permit.

Response to Ms. Helgerson Comment 16.

Consistent with 40 C.F.R. section 122.62, Provision VI.C.1 allows the Regional Water Board to modify or reopen the permit prior to its expiration date under specific circumstances. For example, if the State Water Board were to issue an administrative decision or a court were to issue a judicial decision regarding a different permit and it affects a standard on which the tentative order is based, the Regional Water Board could modify or reopen this permit. In such a case, the Regional Water Board would amend or reopen the permit through a formal hearing process that includes an opportunity for public comment.

Ms. Helgerson Comment 17.

The selenium impairment of Permanente Creek has not been solved because the EMSA covers up the pollution onsite. This will eventually come out when Lehigh starts its reclamation. The pollution needs to be cleaned up. Also, selenium is coming from Cement Plant emissions that end up in Permanente Creek. Many other pollutants are coming from Lehigh too. There is no way the public will allow Lehigh to mine a new pit.

Response to Ms. Helgerson Comment 17.

See Response to Ms. Fry Comment 3, above, regarding previous site uses and sources of pollution and Response to Ms. Lucas Comment 2, below, regarding air emissions. See Response to Ms. Burnett-Foster Comment 1, above, regarding a potential new quarry pit.

Ms. Helgerson Comment 18.

Regarding Provision VI.C.1.g of the tentative order (the Regional Water Board may modify or reopen the permit as allowed by law), Ms. Helgerson asks where the law has been for 100 years and counting, while Lehigh has not been shut down. Cement manufacturing and quarry mining are not more important than human and animal life.

Response to Ms. Helgerson Comment 18.

This provision would allow the Regional Water Board to modify or reopen the permit as allowed by law. For example, the Regional Water Board modified the previous order when it amended the permit through Order No. R2-2017-0030. The law does not obligate the Regional Water Board to shut Lehigh down, particularly since its compliance has greatly improved. See Response to Ms. Fry Comment 7.5 regarding enforcement.

Ms. Helgerson Comment 19.

Regarding Provision VI.C.1 (last sentence) of the tentative order (the Discharger may request a permit modification), Lehigh should not be allowed a permit modification without bringing this matter up before the Regional Water Board and notifying the public, who should be allowed to comment on and oppose such a request. Once the permit is reissued, Lehigh should not be allowed to request a change. It is unacceptable to allow Lehigh to request changes that probably should have been brought up to begin with.

Response to Ms. Helgerson Comment 19.

Provision VI.C.1 would allow Lehigh to request a permit modification, but it does not require the Regional Water Board to grant that request. Any changes to the permit would need to be made through the Regional Water Board's formal hearing process, which includes an opportunity for public comment.

Ms. Helgerson Comment 20.

Regarding Provision VI.C.2.a of the tentative order, Ms. Helgerson is concerned that Lehigh would only be required to evaluate annually whether concentrations of any pollutants listed in Attachment G, Table B, significantly increase over past performance. How can Lehigh minimize the pollutant after it has been allowed to flow into the streams. The damage is done. The issue is why Lehigh would allow this to happen in the first place.

Response to Ms. Helgerson Comment 20.

The requirements of the tentative order are based on available information obtained through the previous order term. Provision VI.C.2.a would require Lehigh to review new information more frequently (at least annually) so it can respond to any significant unforeseen problems before they threaten water quality.

Ms. Helgerson Comment 21.

Regarding Provision VI.C.2.b of the tentative order, Ms. Helgerson questions whether annual reporting is enough. Why allow noncompliance for an entire year? This could seriously affect aquatic and human life.

Response to Ms. Helgerson Comment 21.

Provision VI.C.2.b does not relate to compliance monitoring. Monitoring and Reporting Program section VI.B.2.a requires monthly self-monitoring reports. Moreover, Attachment D section V.E would require Lehigh to report any violations within 24 hours of becoming aware of them. See Response to Ms. Helgerson Comment 11.

Ms. Helgerson Comment 22.

Analytical results below the Method Detection Level (MDL) are listed as Non Detect (ND), but such pollutant levels are still harmful to the aquatic life and to human life. ND implies there is nothing there. Moreover, the cumulative effects of pollutant mixtures can cause even more dangerous effects. Water purveyors do not treat drinking water for all contaminants. They use ammonia and chlorine, which only kill the bacteria, not hazardous pollution. Why not start with not dumping the pollution into Permanente Creek. Lehigh needs to find another way to dispose of its polluted water. The tentative order would allow stormwater in the ponds to be directed to Permanente Creek without being cleaned.

Response to Ms. Helgerson Comment 22.

ND results do not imply that a pollutant is not present, just that the concentration is too low to detect using a particular analytical method. ND pollutants may or may not be harmful to aquatic or human life. Regarding the potential for cumulative effects of pollutant mixtures, see Response to Ms. Lucas Comment 7. Because the tentative order applies drinking water MCLs as water quality objectives, water purveyors would not need to provide additional treatment to remove pollutants in Lehigh's discharge. see Response to Ms. Fry Comment 6.

Ms. Helgerson Comment 23.

The Pollutant Minimization Program required by Provision VI.C.3.b of the tentative order cannot work. Can anyone expect Lehigh to report the truth if doing so will force it to shut down? The fines assessed against Lehigh have not been used to improve the air, water, and soil pollution.

Response to Ms. Helgerson Comment 23.

Provision VI.C.3.b implements a requirement of the State Implementation Policy (SIP). See Response to Ms. Helgerson Comment 11 regarding self-reporting. Fines have been transmitted to the State Water Pollution Cleanup and Abatement Account to fund cleanup projects throughout the State. Some of the fines imposed on Lehigh funded supplemental environmental projects, including specific Regional Monitoring Program (RMP) projects used to evaluate and understand water quality throughout the San Francisco Bay.

Ms. Helgerson Comment 24.

Lehigh is causing chronic toxicity and this must end. Lehigh's wastewater treatment plant does not provide sufficient treatment because it does not remove all pollutants. The treatment only treats bacteria. Apparently, this is why Provision VI.C.6 of the tentative order requires testing fish. We do not know what fish or where the fish will come from. The selenium problem should have been resolved but it is still a serious problem. The aquifer is polluted and Lehigh is using extraction wells to pull up the polluted water. Lehigh's wastewater treatment plant is supposed to clean the water so why does Lehigh need to test the fish? The problem may be that some stormwater is not treated.

Response to Ms. Helgerson Comment 24.

Available data do not indicate that Lehigh's discharges are toxic. The aquifer below Lehigh does not appear to be polluted and is not a source of pollutants in Lehigh's discharge. The pollutants arise from contact between water and the rocks and other materials onsite. Lehigh's wastewater treatment system removes selenium and other metals. The treatment does not include disinfection because the wastewater does not contain domestic wastewater (i.e., sewage). As explained in Fact Sheet section VI.C.6, Provision VI.C.6 requires fish monitoring to provide data for a reasonable potential analysis using updated U.S. EPA selenium criteria if the new criteria are promulgated in the next five years.

Ms. Helgerson Comment 25.

Ms. Helgerson expresses concerns that Lehigh has been allowed to continue operating even though it has violated the law over and over again. She views Regional Water Board penalties as similar to those issued by the Air Resource Board, which charges fees based on pounds of pollution. In her view, the penalties paid by Lehigh are fees that allow them to continue to pollute.

Response to Ms. Helgerson Comment 25.

Regarding the effectiveness of the Regional Water Board's enforcement efforts, see Response to Ms. Fry Comment 7.5.

Ms. Helgerson Comment 26.

Ms. Helgerson asks what the definition of "dilution credit" in Attachment A of the tentative order is all about. It seems like a bunch of baloney set up to aid Lehigh. What are the cumulative effects of the pollution the public has been subjected to. The dilution credit seems to be an easy fix for some, but not for Ms. Helgerson.

Response to Ms. Helgerson Comment 26.

Attachment A is a standard part of NPDES permits and defines terms used in NPDES permits. Although Attachment A defines "dilution credit," Fact Sheet section IV.C.4.a states that no dilution credit was granted and thus none was used to calculate the tentative order's effluent limits. Therefore, no dilution credit aids Lehigh.

MS. SARAH KHAN

Ms. Sarah Khan states she has been a resident of Cupertino since 2006 and lives in close proximity to the Lehigh facility.

Ms. Khan Comment 1.

Ms. Khan objects to the Lehigh plant expanding because Lehigh is unconcerned with the neighborhoods surrounding the plant and its environmental impacts. She states that local traffic has worsened, the plant's fans cause a grinding sound 24 hours per day, and she has worsening allergies and breathing problems she attributes to dust from the plant that falls on her yard.

Response to Ms. Khan Comment 1.

The tentative order would not authorize increased discharge, nor any discharge that would harm water quality. The comment regarding Lehigh's potential expansion does not relate to the tentative order because the Regional Water Board is not the permitting authority to approve any such an expansion. The Santa Clara County Planning Commission is. Please also see our Response to Ms. Burnett-Foster Comment 1.

MS. LIBBY LUCAS

Ms. Lucas' commented in three emails, dated April 29, May 2, and May 3, 2019, and provided supporting documents by regular mail.

April 29, 2019, Comments

Ms. Lucas Comment 1.

Ms. Lucas comments that when modifying the existing permit to accommodate drinking water standards, compliance with the California Safe Drinking Water Act should be mandatory to protect the beneficial uses of the waters of the State against chemical, physical, biological, bacteriological, radiological, and other degradation.

Response to Ms. Lucas Comment 1.

The tentative order implements drinking water standards (i.e., MCLs) as water quality objectives, and thus facilitates compliance with the Safe Drinking Water Act, which applies to the delivery of potable water to the tap. See Fact Sheet sections III.C.1, III.C.5, and IV.C.2.a.

Ms. Lucas Comment 2.

Ms. Lucas expresses concern that air emissions of toxic organic and inorganic pollutants (1,3-butadiene, acetaldehyde, arsenic, benzene, beryllium, cadmium, chlorinated dioxins & furans, chromium [VI], formaldehyde, hydrogen chloride [HCl], manganese, mercury, naphthalene, nickel, polycyclic aromatic hydrocarbons [PAHs], and polychlorinated biphenyls [PCBs]) have been deposited on the site and in Permanente Creek drainages for decades. Ms. Lucas comments that these contaminants do not appear to have been tested for in facility discharges and states that the reissued permit should require testing for these pollutants continuously before determining the discharges do not threaten Santa Clara County's drinking water supplies.

Response to Ms. Lucas Comment 2.

We disagree. Many of the pollutants mentioned in the comment, including arsenic, benzene, beryllium, cadmium, mercury, naphthalene, nickel, PAHs, and PCBs, are priority pollutants and have been monitored at Discharge Point 001; the metals have been monitored at stormwater Discharge Points 004, 005, and 006 as well. The tentative order reflects the results of that monitoring.

We revised Fact Sheet section IV.C.3.b as shown in Response to Lehigh Comment 4 to clarify the data we used in the reasonable potential analysis. We used inorganic pollutant data obtained after October 2017, when the wastewater treatment plant was installed, and organic pollutant data from December 2014 through April 2017. Because the organic pollutant data reflect mostly untreated discharges, they likely overstate discharge concentrations; nevertheless, few organic pollutants were even detected (see Fact Sheet Table F-7). As for continuous monitoring, analytical methods are not available that can continuously monitor any of the pollutants mentioned by Ms. Lucas.

Ms. Lucas Comment 3.

Ms. Lucas comments that the tentative order does not have a trigger for ceasing or diverting discharge if a spike in particular pollutant, like benzene, is observed, and asks if continuous testing can be required. Ms. Lucas believes it is important to be able to divert discharges to the City of Cupertino's sanitary sewer if necessary to prevent toxic substances from entering deep ground water aquifers or to protect Rancho San Antonio Open Space Preserve's wildlife.

Response to Ms. Lucas Comment 3.

As explained in Response to Ms. Lucas Comment 2, above, continuous monitoring is infeasible and unnecessary. The tentative order does not authorize discharges that violate its requirements. Therefore, its effluent limits are essentially triggers that require ceasing or diverting discharges. If Lehigh were ever to need to cease discharge, it has substantial onsite storage (i.e., in the quarry pit) to allow it time to resolve its compliance challenges.

Ms. Lucas Comment 4.

Ms. Lucas comments that a California Department of Water Resources map of groundwater cascade and aquifer delineation, which she provided, illustrates the potential for Permanente Creek percolation to supply drinking water to Santa Clara Valley aquifers and thus also contaminate those supplies.

Response to Ms. Lucas Comment 4.

The effluent limitations in the tentative order are sufficient to ensure that discharges to surface waters will meet drinking water standards (i.e., MCLs), thus also protecting groundwater from surface water percolation.

Ms. Lucas Comment 5.

Ms. Lucas comments on the proximity of the Monte Vista and Berrocal Faults, the latter passing through the site near the lower water treatment plant. The lower water treatment plant includes seven holding tanks that might be a hazard in an earthquake.

Response to Ms. Lucas Comment 5.

As stated in Attachment G section I.C.1, Lehigh must maintain a Contingency Plan that describes procedures it will implement 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 an earthquake. The Santa Clara County Department of Planning and Development provides oversight of seismic construction requirements; the Santa Clara County Department of Environmental Health provides oversight of hazardous materials and waste storage.

Ms. Lucas Comment 6.

Ms. Lucas notes that the flow schematic of drainage conduits and groundwater pumping has changed considerably from earlier versions and asks if the guidelines of the California Environmental Quality

Act (CEQA) might be implemented to clarify environmental impacts to water flows, both in quantity and quality. Ms. Lucas lists several questions about the effect of the wastewater treatment plant on surface and groundwater, such as might be asked of a new project under CEQA. Specifically, she asks if the proposal would result in the following:

- a. Changes in currents, or the course of direction of water movements, in either marine or fresh water*
- b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff*
- c. Alterations in the course or flow of flood waters*
- d. Changes in the amount of surface water in any waterbody*
- e. Discharge into surface waters or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen, or turbidity*
- f. Alteration of the direction or rate of flow of ground waters*
- g. Change in the quantity of groundwaters, either through direct addition or withdrawals, or through interception of an aquifer by cuts or excavation*
- h. Substantial reduction in the amount of water otherwise available for public water supplies*
- i. Exposure of people or property in water related hazards such as flooding or tidal waves.*

Response to Ms. Lucas Comment 6.

As stated in Fact Sheet section III.B, adoption of the tentative order would be exempt from CEQA. More to the point, the tentative order does not require significant physical changes relative to those imposed through Cease and Desist Order No. R2-2014-0011. Therefore, it would not change surface water currents or flow directions, absorption rates, drainage patterns, or runoff. Likewise, it would not alter the course of flood waters or the amount of surface water in any waterbody. It would also not authorize new surface waters discharges or significantly alter surface water quality, and it would not affect the direction, flow, or quality of ground waters or the amount of water available for public water supplies. Finally, it would not expose people or property to flooding or tidal waves.

May 2, 2019, Comments

Ms. Lucas Comment 7.

Ms. Lucas reiterates her concern about air emissions and adds that it is critical to consider synergistic effects of combinations of contaminants, citing specifically that she believes nickel and selenium have exacerbated impacts when combined. Ms. Lucas reiterates her request for continuous monitoring.

Response to Ms. Lucas Comment 7.

As mentioned in our Response to Ms. Lucas Comment 2, it is not technically feasible to monitor for these pollutants continuously. As for synergistic effects between pollutants, the tentative order requires Lehigh to conduct both acute and chronic toxicity monitoring. Acute toxicity measures lethal responses to a sensitive species (rainbow trout) from a short-term exposure; whereas chronic toxicity measures sub-lethal responses such as reproduction to a sensitive species (water flea). We require toxicity monitoring because numerical objectives for individual pollutants do not take mixtures into account and because numerical objectives do not exist for all pollutants of concern.

Ms. Lucas Comment 8.

Ms. Lucas notes that the northerly discharge point to Permanente Creek was extended downstream through what Ms. Lucas states is historic endangered red-legged frog habitat (referring to a survey

included with her comments). Ms. Lucas asks if California Department of Fish and Wildlife biologists reviewed this extension, and whether wastewater treatment plant discharges are likely to harm red-legged frogs or affect the continuity or chemistry of flows for trout.

Response to Ms. Lucas Comment 8.

The tentative order does not move any discharge locations relative to the previous order, as amended by Order No. R2-2017-0030. That order defined Discharge Point 001 as “One or more locations anywhere between approximately [North latitude] 37.32507°N, [West longitude] -122.08286°W and [North latitude] 37.31744°N, [West longitude] -122.11557°W.” By allowing upstream discharge at Discharge Point 001 so defined, the previous order ensured that water would be available to provide habitat for any red-legged frogs or trout that might be present in that reach. The tentative order would redefine the discharge points (but not change them) as Discharge Point 001 (located at latitude and longitude 37.31713°, -122.11165°) and Discharge Point 007 (located at latitude and longitude 37.31778°, -122.08750°). Moreover, the tentative order implements aquatic life water quality objectives to protect red-legged frogs and trout from authorized discharges. The Regional Water Board included the California Department of Fish and Wildlife on the distribution list for the tentative order.

May 3, 2019, Comments (supplement to earlier comments)

Ms. Lucas Comment 9.

Ms. Lucas lists 21 documents she supplied to support her comments.

Response to Ms. Lucas Comment 9.

See our responses to Ms. Lucas’s specific comments above.