

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION**

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waterboards.ca.gov/sanfranciscobay

**TENTATIVE ORDER NO. R2-2026-00XX
NPDES PERMIT NO. CA0005240**

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

Discharger **C&H Sugar Company, Inc., and Crockett Community Services District**

Facility Name **C&H Sugar Company Refinery, Joint Use C&H Sugar Company-Crockett Community Services District Philip F. Meads Water Treatment Plant, and Crockett Community Services District sanitary sewer system**

Facility Address **830 Loring Avenue
Crockett, CA 94525
Contra Costa County**

Table 1. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Approximately 28 million gallons per day (MGD) of once-through barometric condenser cooling waters from Carquinez Strait; condensed vapors from vacuum pans, evaporators, and a turbine heat exchanger; and excess recirculated cooling waters. The point of discharge is a deep-water diffuser that extends approximately 200 feet offshore into Carquinez Strait to a depth of 47 feet.	38.0575°	-122.2183°	Carquinez Strait
002	Approximately 0.85 MGD of secondary treated wastewater consisting of clarified sugar refining wastes from the Refinery, comminuted and dewatered sanitary wastewaters from Crockett Community Services District and steam condensate overflow. The point of discharge is a deep-water multi-port diffuser located directly below Carquinez Bridge, 637 feet west of the Refinery plant.	38.0583°	-122.2244°	Carquinez Strait

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
005	Stormwater from the Refinery's yard and roofs and Crockett's community streets: estimated flow is 15,000 gpd.	38.0575°	-122.2197°	Carquinez Strait
006	Stormwater from the truck parking areas and Crockett's community streets: estimated flow is 1,000 gpd.	38.0575°	-122.2253°	Carquinez Strait
013	Stormwater from a warehouse loading dock area of the Refinery and roof drains: estimated flow is less than 4,500 gpd.	38.0575°	-122.2208°	Carquinez Strait
014	Stormwater from areas adjacent to the C&H's primary waste treatment plant on the west side of the Refinery and roof drains: estimated flow is 15,000 gpd.	38.0561°	-122.2208°	Carquinez Strait

This Order was adopted on: **<adoption date>**
 This Order shall become effective on: **<effective date>**
 This Order shall expire on: **<expiration date>**
 CIWQS regulatory measure number: **<CIWQS regulatory measure>**

The Discharger shall file a Report of Waste Discharge as an application for updated WDRs in accordance with title 23, California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than **<9 months before expiration>**. The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board) have classified this discharge as **"major."**

I hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the Regional Water Board on the date indicated above.

Eileen M. White, P.E., Executive Officer

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1. FACILITY INFORMATION

Information describing the C&H Sugar Company Refinery (Refinery), Joint Use C&H Sugar Company-Crockett Community Services District Philip F. Meads Water Treatment Plant (Joint Treatment Plant), and Crockett Community Services District's (District's) sanitary sewer system (collectively, Facility) is summarized on the cover page and in Fact Sheet (Attachment F) sections 1 and 2. Fact Sheet section 1 also includes information regarding the permit application.

2. FINDINGS

The Regional Water Board finds the following:

- 2.1. Legal Authorities.** This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as an NPDES permit authorizing the Discharger to discharge into waters of the United States as described in Table 1 subject to the WDRs in this Order.
- 2.2. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information the Discharger submitted as part of its application, information obtained through monitoring and reporting programs, and other available information. The Fact Sheet contains background information and rationale for the requirements in this Order and is hereby incorporated into and constitutes findings for this Order. Attachments A through E, G, and S are also incorporated into this Order.
- 2.3. Provisions and Requirements Implementing State Law.** Provision 5.3.5.3.1 below and Attachment G Provision 1.9.1 are included to implement state law only. These provisions are not required or authorized under the federal CWA; consequently, violations of these provisions are not subject to the enforcement remedies that are available for NPDES violations.
- 2.4. Notification of Interested Parties.** The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe these WDRs and has provided an opportunity to submit written comments and recommendations. Fact Sheet section 7.1 provides details regarding the notification.
- 2.5. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Fact Sheet section 7.3 provides details regarding the public hearing.

THEREFORE, IT IS HEREBY ORDERED that Order R2-2018-0012 (previous order), is rescinded upon the effective date of this Order, except for enforcement purposes, and, in order to meet the provisions contained in 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 violations of the previous order.

3. DISCHARGE PROHIBITIONS

- 3.1. Discharge at a location or in a manner different from that described in this Order is prohibited.
- 3.2. Bypass of untreated or partially treated wastewater to waters of the United States is prohibited, except as provided for in Attachment D, section 1.7 of this Order.
- 3.3. Discharge at Discharge Points 001 and 002 is prohibited when the wastewater does not receive an initial dilution of at least 10:1. Compliance shall be achieved by proper operation and maintenance of the discharge outfalls to ensure that they (or their replacements, in whole or part) are in good working order and are consistent with or can achieve better mixing than that described in Fact Sheet sections 4.3.4.2.1 and 4.3.4.3.1. The Discharger shall address measures taken to ensure this in its application for permit reissuance.
- 3.4. Any sanitary sewer spill that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited. The District is responsible for sanitary sewer spills upstream of the Joint Treatment Plant.
- 3.5. The use of algacides or anti-fouling additives in the barometric condenser cooling water system, discharged at Discharge Point 001, is prohibited.

4. EFFLUENT LIMITATIONS

4.1. Discharge Point 001

4.1.1. **Effluent Limitations.** The discharge at Discharge Point 001 shall meet the following effluent limitations, with compliance measured at Monitoring Location EFF-001, as described in the Monitoring and Reporting Program (MRP, Attachment E):

Table 2. Effluent Limitations – Discharge Point 001

Parameter	Units	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand (5-day @ 20°C) (BOD5) ^[1]	lbs/day	2,200	6,700	-	-
pH ^[2]	standard units	-	-	6.0	9.0
Copper, Total Recoverable	µg/L	38	120	-	-
Lead, Total Recoverable	µg/L	30	61	-	-
Nickel, Total Recoverable	µg/L	220	440	-	-
Zinc, Total Recoverable	µg/L	430	850	-	-

(Footnotes are provided on the next page)

Footnotes:

- ⁽¹⁾ In accordance with Title 40 of the Code of Federal Regulations (40 C.F.R.) section 409.22, compliance shall be based on the increase of BOD measured at Monitoring Location EFF-001 over BOD measured at Monitoring Location INF-001.
- ⁽²⁾ If the Discharger monitors pH continuously, pursuant to 40 C.F.R. section 401.17, the Discharger shall be in compliance with this pH limitation provided that both of the following conditions are satisfied: (1) 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 (2) no individual excursion from the required pH range shall exceed 60 minutes.

4.2. Discharge Point 002

4.2.1. **Effluent Limitations.** The discharge at Discharge Point 002 shall meet the following effluent limitations, with compliance measured at Monitoring Location EFF-002, as described in the MRP:

Table 3. Effluent Limitations – Discharge Point 002

Parameter	Units	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	One-hour Average (mg/L) ^[2]
BOD5	lbs/day	670	-	2,000	-	-	-
BOD5	mg/L	52	78	-	-	-	-
Total Suspended Solids (TSS)	lbs/day	670	-	2,600	-	-	-
TSS	mg/L	68	100	-	-	-	-
pH ^[1]	standard units	-	-	-	6.0	9.0	-
Oil and Grease	mg/L	10	-	20	-	-	-
Chlorine, Total Residual	mg/L	-	-	-	-	-	0.13
Copper, Total Recoverable	µg/L	52	-	120	-	-	-
Lead, Total Recoverable	µg/L	21	-	64	-	-	-
Cyanide, Total	µg/L	17	-	43	-	-	-
Dichlorobromomethane	µg/L	460	-	922	-	-	-
Dioxin-TEQ	µg/L	1.4 x 10 ⁻⁸	-	2.8 x 10 ⁻⁸	-	-	-
Ammonia, Total	mg/L as N	12	-	34	-	-	-

Footnotes:

- ⁽¹⁾ If the Discharger monitors pH continuously, pursuant to 40 C.F.R. section 401.17, the Discharger shall be in compliance with this pH limitation provided that both of the following conditions are satisfied: (1) 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 (2) no individual excursion from the required pH range shall exceed 60 minutes.
- ⁽²⁾ To evaluate compliance with the one-hour average effluent limitation, the Discharger shall consider all readings recorded within each hour. The monitoring period shall begin every hour on the hour.

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

4.2.1.1.1. The six-week rolling geometric mean of *Enterococcus* bacteria, calculated weekly, shall not exceed 240 colony forming units per 100 milliliters

(CFU/100 mL). Compliance with this limitation shall be determined weekly by calculating the geometric mean of all *Enterococcus* sample results from the past six weeks; and

4.2.1.1.2. No more than 10 percent of all *Enterococcus* bacteria samples collected in a calendar month shall exceed 1,000 CFU/100 mL. Compliance with this limitation shall be determined based on measured sample results. The Discharger shall not report interpolated results. If the Discharger has 9 or fewer sample results in a calendar month, compliance shall be based on the highest result. If the Discharger has 10 to 19 sample results, compliance shall be based on the second highest result, and so on.

4.2.1.2. **Chronic Toxicity.** The discharge at Discharge Point 002 shall meet the following maximum daily effluent limitation (MDEL) and median monthly effluent limit (MMEL) at Monitoring Location EFF-002, with compliance measured using the instream waste concentration (IWC) of 10 percent effluent, the most sensitive species as described in the MRP, and the Test of Significant Toxicity:

- MDEL: No chronic aquatic toxicity test result of “fail” for any sub-lethal endpoint and no percent effect greater than or equal to 50 percent for the survival endpoint (if the most sensitive species has a survival endpoint) or greater than or equal to 50 percent for any sub-lethal endpoint (if the most sensitive species has no survival endpoint).
- MMEL: No more than one chronic aquatic toxicity test result of “fail” in a calendar month for any endpoint.

4.3. Discharge Points 005 through 014

4.3.1. **Effluent Limitations.** The discharges at Discharge Points 005 through 014 shall meet the following effluent limitations, with compliance measured at the corresponding monitoring locations as described in the MRP:

Table 4. Effluent Limitations – Discharge Points 005 through 014

Parameter	Units	Instantaneous Minimum	Instantaneous Maximum
pH	standard units	6.0	9.0
Visible Oil	-	None observed (instantaneous)	
Visible Color	-	None observed (instantaneous)	

5. PROVISIONS

5.1. Standard Provisions

5.1.1. The Discharger shall comply with all “Standard Provisions” in Attachment D.

- 5.1.2. The Discharger shall comply with all applicable provisions of the “Regional Standard Provisions, and Monitoring and Reporting Requirements for NPDES Wastewater Discharge Permits” in Attachment G.
- 5.1.3. For discharges from Discharge Points 005 through 014, the Discharger shall comply with the applicable provisions of the “Stormwater Provisions, Monitoring, and Reporting Requirements” in Attachment S and Provision 5.3.5.2.
- 5.1.4. If there is any conflict, duplication, or overlap between provisions in this Order, the more stringent provision shall apply.

5.2. Monitoring and Reporting Provisions

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

5.3. Special Provisions

- 5.3.1. **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 or as otherwise authorized by law. The Discharger may request a permit modification based on any of these circumstances. With any such request, the Discharger shall include antidegradation and anti-backsliding analyses as necessary.
 - 5.3.1.1. 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;
 - 5.3.1.2. If new or revised water quality objectives or total maximum daily loads (TMDLs) come into effect for San Francisco Bay or contiguous water bodies (whether statewide, regional, or site-specific). In such cases, effluent limitations in this Order may be modified as necessary to reflect the updated water quality objectives or wasteload allocations. Adoption of the effluent limitations in this Order does not 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;
 - 5.3.1.3. If translator, dilution, or other water quality studies provide a basis for determining that a permit condition should be modified;
 - 5.3.1.4. If a State Water Board precedential decision, new policy, new law, or new regulation is adopted; or
 - 5.3.1.5. If an administrative or judicial decision on a separate NPDES permit or WDRs addresses requirements similar to this discharge.

- 5.3.1.6. To revise the aquatic toxicity provisions, if the California Supreme Court determines that the Test of Significant Toxicity cannot be used in NPDES permits and the State Water Board suspends or revises the aquatic toxicity water quality standards.

5.3.2. Effluent Characterization Study and Report

- 5.3.2.1. **Study Elements.** The Discharger shall characterize and evaluate the discharge from Discharge Points 001 and 002 as required by the MRP to verify that the reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. If concentrations of any of the priority pollutants listed in Attachment G, Table B, significantly increase over past performance, the Discharger shall investigate the cause of any such increase. The investigation may include, but need not be limited to, an increase in monitoring frequency, monitoring of internal process streams, and monitoring of influent sources. The Discharger shall establish remedial measures addressing any increase resulting in reasonable potential to cause or contribute to an exceedance of applicable water quality objectives. This requirement may be satisfied through identification of the constituent as a “pollutant of concern” in the Discharger’s Pollutant Minimization Program, described in Provision 5.3.3 below.

- 5.3.2.2. **Reporting Requirements.** The Discharger shall summarize the data evaluation and any applicable source investigation in the annual self-monitoring report associated with the year in which samples were collected. The Discharger shall also report the pollutants detected at or above applicable water quality objectives (see Fact Sheet Tables F-17 and F-18 for the objectives) in the transmittal letter for the self-monitoring report associated with the month in which samples were collected. This requirement does not apply to pollutants with effluent limitations (see Tables 2 and 3 of this Order).

5.3.3. Pollutant Minimization Program

- 5.3.3.1. The Discharger shall continue to improve its existing Pollutant Minimization Program to promote minimization of pollutant loadings to the treatment plant and therefore to the receiving waters.
- 5.3.3.2. The Discharger shall submit an annual report no later than **February 28** of each calendar year. Each annual report shall include at least the following information:
- 5.3.3.2.1. **Brief description of treatment plant.** The description shall include the service area and treatment plant processes.
- 5.3.3.2.2. **Discussion of current pollutants of concern.** Periodically, the Discharger shall analyze its circumstances to determine which pollutants are currently a problem and which pollutants may be potential future

problems. This discussion shall include the reasons for choosing the pollutants.

- 5.3.3.2.3. **Identification of sources for pollutants of concern.** This discussion shall include how the Discharger intends to estimate and identify pollutant sources. The Discharger shall include sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.
- 5.3.3.2.4. **Identification of tasks to reduce the sources of pollutants of concern.** This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement the tasks by itself or participate in group, regional, or national tasks that address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that address its pollutants of concern whenever it is efficient and appropriate to do so. An implementation timeline shall be included for each task.
- 5.3.3.2.5. **Outreach to employees.** The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the Facility. The Discharger may provide a forum for employees to provide input.
- 5.3.3.2.6. **Continuation of Public Outreach Program.** The Discharger shall prepare a pollution prevention public outreach program for its service area. Outreach may include participation in existing community events, such as county fairs; initiating new community events, such as displays and contests during Pollution Prevention Week; conducting school outreach programs; conducting plant tours; and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, or web sites. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.
- 5.3.3.2.7. **Discussion of criteria used to measure Pollutant Minimization Program and task effectiveness.** The Discharger shall establish criteria to evaluate the effectiveness of its Pollutant Minimization Program. This discussion shall identify the specific criteria used to measure the effectiveness of each task in Provisions 5.3.3.2.3, 5.3.3.2.4, 5.3.3.2.5, and 5.3.3.2.6 above.
- 5.3.3.2.8. **Documentation of efforts and progress.** This discussion shall detail all of the Discharger's Pollutant Minimization Program activities during the reporting year.

- 5.3.3.2.9. **Evaluation of Pollutant Minimization Program and task effectiveness.** The Discharger shall use the criteria established in Provision 5.3.3.2.7 above to evaluate the program and task effectiveness.
- 5.3.3.2.10. **Identification of specific tasks and timelines for future efforts.** Based on the evaluation, the Discharger shall explain how it intends to continue or change its tasks to more effectively reduce the amount of pollutants flowing to the treatment plant, and subsequently in its effluent.
- 5.3.3.3. The Discharger shall develop and conduct a Pollutant Minimization Program as 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 aquatic toxicity, health advisories for fish consumption, or results of benthic or aquatic organism tissue sampling) and either:
- 5.3.3.3.1. A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or
- 5.3.3.3.2. A sample result is reported as not detected (ND) and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in the MRP.
- 5.3.3.4. If triggered for a reason set forth in Provision 5.3.3.3 above, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals:
- 5.3.3.4.1. An 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;
- 5.3.3.4.2. Quarterly monitoring for the reportable priority pollutants in the influent to the wastewater treatment system. The Executive Officer may approve alternative measures when influent monitoring is unlikely to produce useful analytical data;
- 5.3.3.4.3. 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;
- 5.3.3.4.4. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and
- 5.3.3.4.5. Inclusion of the following specific items within the annual report required by Provision 5.3.3.2 above:

- 5.3.3.4.5.1. All Pollutant Minimization Program monitoring results for the previous year;
- 5.3.3.4.5.2. List of potential sources of the reportable priority pollutants;
- 5.3.3.4.5.3. Summary of all actions undertaken pursuant to the control strategy; and
- 5.3.3.4.5.4. Description of actions to be taken in the following year.

5.3.4. **Chlorine Process Control Plan.** The Discharger shall implement a Chlorine Process Control Plan to ensure that it adds sufficient dechlorinating chemicals to target a chlorine residual of 0.0 mg/L at Discharge Point 002. The Operation and Maintenance Manual shall include the information necessary to implement the Chlorine Process Control Plan.

5.3.5. **Other Special Provisions**

5.3.5.1. **Acetone Control**

5.3.5.1.1. The Discharger shall comply with the following action level when adding isopropanol to the Refinery’s vacuum pans, with compliance measured at Monitoring Location EFF-001, as described in the MRP:

Table 5. Isopropanol Action Level – Discharge Point 001

Parameter	Units	Instantaneous Maximum
Acetone	mg/L	0.6

5.3.5.1.2. Upon becoming aware of an exceedance of the action level, the Discharger shall comply with the following tasks:

5.3.5.1.2.1. Re-sample within 48 hours and commence at a minimum weekly sampling for a total of at least three new samples. If all three samples show acetone levels below the action level, return to routine sampling.

If during the accelerated sampling any of the new samples are above the action level, the Discharger shall implement measures to reduce acetone and continue sampling weekly until the observed acetone discharge is below the action level for two consecutive weeks.

5.3.5.1.2.2. In the cover letter of the monthly self-monitoring report covering the month of the exceedance, the Discharger shall report any exceedance of the acetone action level and the status of measures taken to reduce acetone in the discharge below the action level.

5.3.5.2. Stormwater Requirements

5.3.5.2.1. **Stormwater Pollution Prevention Plan (SWPPP).** By December 1, 2026, the Discharger shall submit and implement an updated SWPPP. The SWPPP shall contain the elements listed in Attachment S, section 1.1, and include measures the Discharger has implemented or will implement to prevent fugitive sugar emissions from reaching the neighboring Crockett Cogeneration facility and Carquinez Strait.

5.3.5.2.2. **Stormwater Action Levels.** The Discharger shall comply with the following stormwater action levels, with compliance measured at Monitoring Locations EFF-005 through 014, as described in the Monitoring and Reporting Program (MRP, Attachment E):

Table 6. Stormwater Action Levels for Industrial Stormwater

Parameter	Units	Annual Average	Instantaneous Maximum
BOD5	mg/L	30	-
TSS	mg/L	100	400
Oil and Grease	mg/L	15	25

5.3.5.2.2.1. Upon becoming aware of an exceedance of a stormwater action level, the Discharger shall review its SWPPP to identify appropriate modifications to existing best management practices (BMPs) or additional BMPs to reduce pollutant discharge concentrations to levels below the action level, as described in Attachment S, Provision 1.7.

5.3.5.2.3. **Annual Stormwater Report.** The Discharger shall submit an annual stormwater report by July 30 of each year covering data for the previous wet weather season. The annual stormwater report shall, at a minimum, include the elements listed in Attachment S, section 3.1 and the following:

- A tabulated summary of all sampling results and visual observations for all stormwater discharge points,
- A comprehensive discussion of attainment of stormwater action levels (Attachment S, section 1.7) and compliance with effluent limitations, and
- A summary of best management practices changes implemented the previous year and those planned for the following year.

5.3.5.3. Sludge and Biosolids Management

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

- 5.3.5.3.2. The sludge and biosolids treatment and storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect site boundaries from erosion, and to prevent conditions that would cause drainage from the stored materials. Adequate protection is defined as protection from at least a 100-year storm and the highest possible tidal stage that may occur.
- 5.3.5.3.3. This Order does not authorize permanent onsite sludge or biosolids storage or disposal. The Discharger shall file a Report of Waste Discharge and bring the site into compliance with applicable regulations prior to commencement of any such activity.

5.3.5.4. **Sanitary Sewer System Management**

The Discharger shall properly operate and maintain its sanitary sewer system (see Attachments D and G, section 1.4), report any noncompliance with respect to its sanitary sewer system (see Attachment D, section 5.5.1, and Attachment G, sections 5.5.1 and 5.5.2), and mitigate any discharges in violation of this Order associated with its sanitary sewer system (see Attachments D and G, section 1.3).

State Water Board Order WQ 2022-0103-DWQ, *Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems*, (statewide WDRs) contain requirements for operation and maintenance of sanitary sewer systems and for reporting and mitigating sanitary sewer spills. The statewide WDRs clearly and specifically stipulate requirements for operation and maintenance and for reporting and mitigating sanitary sewer spills. Implementing the requirements for operation and maintenance and mitigation of sanitary sewer spills set forth in the statewide WDRs (and any subsequent order updating these requirements) shall satisfy the corresponding federal NPDES requirements specified in Attachments D and G of this Order for the sanitary sewer systems. Following the reporting requirements set forth in the statewide WDRs (and any subsequent order updating those requirements) shall satisfy the NPDES reporting requirements for sanitary sewer spills specified in Attachments D and G.

5.3.5.5. **Once-Through Cooling Water Intake Structure**

- 5.3.5.5.1. **Best Management Practices Plan.** The Discharger shall prepare and implement a Best Management Practices (BMPs) Plan that describes steps to ensure that clearing the travelling screen will not adversely affect receiving waters. The Discharger shall calibrate its flow meters used to calculate the once-through cooling water inflow as frequently as necessary, but no less than annually, to maintain accurate flow measurements.

The Discharger shall submit the BMPs Plan within six months following this Order's effective date. The BMPs Plan shall be retained onsite, revised as necessary to maintain compliance with this Order, and made available upon request of any Regional Water Board representative. The Executive Officer may require additional pollutant control and treatment measures if existing measures are found to be inadequate to control pollutant discharges such as turbidity.

If the Discharger makes any changes to its current screen, it shall be done in accordance with Chapter 8 of *NOAA Fisheries West Coast Region Anadromous Salmonid Passage Design Manual* (February 2023). If an alternative screen is proposed, the Discharger shall seek Endangered Species Act (ESA) "take" coverage through ESA section 7 via the Corps of Engineers' 404 permitting process.

5.3.5.5.2. **Annual Report.** The Discharger shall prepare and submit an annual status report that (a) certifies the proper operation and maintenance (i.e., cleaning records) of the once-through cooling water intake structure, identifying any operational problems; (b) certifies that the flow meters used to calculate the once-through cooling water inflow were calibrated during the calendar year; (c) evaluates the effectiveness of the BMPs used for clearing the travelling screen and documents any changes to the BMPs plan; and (d) identifies work planned or completed beyond routine maintenance. The Discharger shall submit this annual status report with its Annual Self-Monitoring Report.

5.3.5.5.3. **Entrainment and Impingement Study.** The Discharger shall conduct and submit an entrainment and impingement study, as described in the table below, to reflect the current conditions of its cooling water intake report, particularly with respect to the delta smelt (*Hypomesus transpacificus*) and longfin smelt (*Spirinchus thaleichthys*).

The Discharger shall revise deliverables required by Table 7 below to incorporate comments the Executive Officer may provide to ensure that the deliverables comply with this provision's requirements set forth in the table below. In submitting deliverables, the Discharger shall also submit copies to the National Marine Fisheries Service and U.S. Fish and Wildlife Service (Services). Deliverables shall also incorporate comments provided by the Services.

If the Discharger is unable to meet the deadlines required by Table 7 due to circumstances beyond its control (e.g., data collection delays, sample collection or laboratory quality control problems, analytical turnaround times, or delays in third party reports), it shall submit a written notice to the Executive Officer at least 30 days before the applicable deadline that completion of a task has been delayed following circumstances beyond its reasonable control. The notice shall describe the anticipated length of time

the delay may persist, the cause or causes of the delay, the measures taken or to be taken to minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. If the Executive Officer determines in writing, based on the information submitted by the Discharger, that the delay is beyond the Discharger’s reasonable control and that the anticipated date of compliance is acceptable, the applicable deadline shall be automatically extended to the anticipated date of compliance in the Discharger’s request.

Table 7. Entrainment and Impingement Study and Tasks

Task Number	Task	Deadline
1	<p>Prepare and Submit Entrainment and Impingement Study Plan. Include the collection of one year’s worth of entrainment and impingement data to identify the baseline biological characterization within the vicinity of the cooling water intake. The study shall also include a schedule for data collection and the following information:</p> <ul style="list-style-type: none"> ▪ Proposed data collection period and frequency (no less than monthly). <ul style="list-style-type: none"> • The Discharger shall characterize annual, seasonal, and diel variations of entrainment and impingement, including but not limited to variations related to climate and weather differences, spawning, feeding, and water column migration. <ul style="list-style-type: none"> - The monitoring data shall include the taxonomic identification of all life stages of fish and shellfish, specifically addressing potential impacts to delta smelt (<i>Hypomesus transpacificus</i>), longfin smelt (<i>Spirinchus thaleichthys</i>), Chinook salmon (<i>Oncorhynchus tshawytscha</i>), steelhead (<i>Oncorhynchus mykiss</i>), green sturgeon (<i>Acipenser medirostris</i>) and white sturgeon (<i>Acipenser transmontanus</i>). • The Discharger shall collect monitoring data during periods of representative operational flows for the cooling water intake structure and document the sweeping and approach velocities associated with the data. • A description of all methods and quality assurance procedures for sampling and data analysis, including a description of the study area. 	December 1, 2026
2	<p>Commence Entrainment and Impingement Study. Commence the study in accordance with the study plan and schedule, incorporating any changes the Executive Officer may provide to the Discharger. Provide an annual update on study progress in the annual Self-Monitoring Report following commencement of the study.</p>	Annually on March 1, with annual self-monitoring reports
3	<p>Report Findings, Conclusions, and Recommendations. Complete the entrainment and impingement study and submit a final report containing its findings, conclusions, and recommendations, including the following information:</p> <ol style="list-style-type: none"> a. Identification of species that are in the vicinity of the cooling water intake structure(s). 	January 2, 2030

Task Number	Task	Deadline
	<p>b. Identification of species susceptible to entrainment and impingement, including any fragile¹, threatened, endangered, or protected species; and</p> <ul style="list-style-type: none"> • Identification and evaluation of the primary periods of reproduction, larval recruitment, and peak abundance for these species. <p>If the entrainment and impingement study concludes that the rate of impingement is <i>de minimis</i> and no additional controls are justified, the Discharger shall demonstrate these findings in the final report.</p>	
4	<p>Report Status of Cooling Water Intake Structure. Submit a report providing updated information on the cooling water intake structure, including the following information:</p> <ol style="list-style-type: none"> a. Narrative description of the configuration of the cooling water intake structure and where it is located in the water body and the water column. b. Latitude and longitude, in degrees, minutes, and seconds, of the cooling water intake structure. c. Narrative description of the operation of the cooling water intake structure, including design intake flows, daily hours of operation, number of days of the year in operation, and seasonal changes, if applicable. d. Flow distribution and water balance diagram that includes all sources of water to the facility, recirculating flows, and discharges. e. Engineering drawings of the cooling water intake structure. <p>This report may be combined with the final report submitted in Task 3, above.</p>	January 2, 2030

5.3.5.5.4. **Compliance with Best Technology Available (BTA) Standards for Impingement Mortality.** The Discharger shall properly operate the once-through cooling water intake structure to comply with the requirements of 40 C.F.R. section 125.94 to minimize impingement and entrainment of fish, shellfish, and other organisms, in accordance with the following schedule:

¹ Defined at 40 C.F.R. section 125.92(m).

Table 8. BTA Compliance Schedule

Task Number	Task	Deadline
1	<p>Prepare and Submit a Feasibility Study. Evaluate the feasibility of operating the cooling water intake structure to meet a maximum through-screen intake velocity of 0.5 feet per second to comply with 40 C.F.R. section 125.94(c)(3). The study shall consider methods to decrease the traveling screen’s approach velocity, such as</p> <ul style="list-style-type: none"> a. Modifying the screen; b. Installing a variable speed pump; and c. Scaling down production. 	December 1, 2026
2	<p>Evaluate and Propose a BTA. Evaluate each BTA standard listed in paragraphs (c)(1) through (c)(7) of 40 C.F.R. section 125.94 and submit a proposal for the Discharger’s chosen BTA standard for compliance with 40 C.F.R section 125.94. The proposal may be combined with the final report submitted in Task 3 of Provision 5.3.5.5.3, above. The proposal shall include the following:</p> <ul style="list-style-type: none"> a. Documentation that it consulted with the National Marine Fisheries Service and U.S. Fish and Wildlife Service in selecting the alternative BTA standard; b. Demonstration of compliance with all applicable provisions of CEQA (California Public Resources Code Division 13, Chapter 3, Section 21100 et seq.); and c. Earliest commencement date of implementing the BTA standard. <p>If the Discharger chooses to comply with 40 C.F.R. section 125.94(c)(5) or (6), it shall provide a schedule for completing an Impingement Technology Performance Optimization Study that includes and complies with the elements in 40 C.F.R. sections 122.21(r)(6)(i) and (ii).</p> <p>If the entrainment and impingement study in Provision 5.3.5.5.3, above, concludes that the cooling water system meets a <i>de minimis</i> rate of impingement, the Discharger may submit a request that no additional controls are warranted. The request shall still include the Discharger’s chosen BTA standard for compliance with 40 C.F.R section 125.94. If the Executive Officer approves the Discharger’s request for no additional controls, the Discharger does not need to proceed with Task 3, below.</p>	January 2, 2030
3	<p>BTA Implementation. Upon approval from the Executive Officer of the proposed BTA standard identified in Task 2, above, the Discharger shall update its Operation and Maintenance Manual (see Attachment G section 1.4.1) and Contingency Plan (see Attachment G section 1.3.1) to include the BTA standard, implement the BTA standard, and provide certification by a licensed professional that the BTA standard has been constructed as designed, has been tested, and is ready for use.</p>	60 days after Executive Officer’s approval

5.3.5.5.5. **Thermal Plume Monitoring Study – Discharge Points 001.** The Discharger shall conduct and submit a thermal plume monitoring study, as described in the table below, to update its previous thermal plume studies to reflect current conditions, particularly with respect to the delta smelt (*Hypomesus transpacificus*) and longfin smelt (*Spirinchus Thale ichthys*).

The Discharger shall revise deliverables required by Table 9 below to incorporate comments the Executive Officer may make to ensure that the deliverables comply with this Provision’s requirements set forth in the table below. In submitting deliverables, the Discharger shall also send copies to the National Marine Fisheries Service and U.S. Fish and Wildlife Service. Deliverables shall also incorporate any comments provided by the Services.

If the Discharger is unable to meet the deadlines required by Table 9 due to circumstances beyond its control (e.g., data collection delays, sample collection or laboratory quality control problems, analytical turnaround times, or delays in third party reports), it shall submit a written notice to the Executive Officer at least 30 days before the applicable deadline that completion of a task has been delayed following circumstances beyond its reasonable control. The notice shall describe the anticipated length of time the delay may persist, the cause or causes of the delay, the measures taken or to be taken to minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. If the Executive Officer determines in writing, based on the information submitted by the Discharger, that the delay is beyond the Discharger’s reasonable control and that the anticipated date of compliance is acceptable, the applicable deadline shall be automatically extended to the anticipated date of compliance in the Discharger’s request.

Table 9. Thermal Plume Monitoring Study and Tasks

Task Number	Task	Deadline
1	Prepare and Submit Thermal Study Plan. Specifically, address potential impacts to delta smelt (<i>Hypomesus transpacificus</i>) and longfin smelt (<i>Spirinchus thaleichthys</i>) and include a schedule for completing the study. Also include a determination of minimum and maximum plume temperatures, duration of plume temperatures, and plume size.	December 1, 2026
2	Commence Thermal Plume Study. Commence the thermal plume study in accordance with the study plan and schedule, incorporating any changes the Executive Officer may provide to the Discharger. Provide an annual update on the study progress following the commencement of the study.	Annually on March 1, with annual self-monitoring reports
3	Report Findings, Conclusions, and Recommendations. Complete the thermal plume study and submit a final report containing its findings, conclusions, and recommendations, including the following information: a. Potential impacts to delta smelt (<i>Hypomesus transpacificus</i>) and longfin smelt (<i>Spirinchus thaleichthys</i>), b. Delineation of minimum and maximum plume size, temperature, and duration, c. Any measures necessary to ensure the protection of beneficial uses identified in this Order (see Attachment F, Table F-8) and a schedule to implement those measures.	January 2, 2030

Task Number	Task	Deadline
4	Implement Protective Measures. Implement measures identified in Task 3.c above, incorporating any changes the Executive Officer or Services may provide to the Discharger.	In accordance with the schedule set forth in the final report.
5	Report Progress. Report on progress toward implementing Task 4 above.	Annually on March 1, with annual self-monitoring reports

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

Table 10. Copper Action Plan

Task Number	Task	Deadline
1	Review Potential Copper Sources. Submit an up-to-date inventory of potential copper sources.	With annual pollution minimization program report due February 28, 2027
2	Implement Copper Control Program. Continue to minimize copper sources, as identified in Discharger’s Pollutant Prevention and Minimization Plan. Incorporate additional measures as appropriate to address newly identified potential copper sources.	Implementation shall be ongoing
3	Implement Additional Actions. If the Regional Water Board notifies the Discharger that the three-year rolling mean dissolved copper concentration in San Pablo Bay exceeds 3.0 µg/L, then within 90 days of the notification, evaluate the effluent copper concentration trend and, if it is increasing, develop and begin implementation of additional measures to control copper discharges. Report the conclusion of the trend analysis and provide a schedule for any new actions to be taken within the next 12 months.	With next annual pollution minimization program report due February 28 (at least 90 days following notification)
4	Report Status. Submit an annual report documenting copper control program implementation that evaluates the effectiveness of the actions taken, including any additional actions required by Task 2 above, and provides a schedule for actions to be taken within the next 12 months.	Annually, with annual pollution minimization program report due February 28 each year

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

Table 8. Cyanide Action Plan

Task Number	Task	Deadline
1	<p>Review Potential Cyanide Sources. Submit an up-to-date inventory of potential cyanide sources. If no cyanide source is identified, Tasks 2 and 3, below, are not required unless the Discharger receives a request to discharge detectable levels of cyanide to the sewer. In such case, notify the Executive Officer and implement Tasks 2 and 3.</p>	<p>With annual pollution minimization program report due February 28, 2027</p>
2	<p>Implement Cyanide Control Program. Implement a control program to minimize cyanide discharges consisting, at a minimum, of the following elements:</p> <ul style="list-style-type: none"> a. Inspect each potential source to assess the need to include that source in the control program. b. Inspect sources included in the control program annually. Inspection elements may be based on <i>U.S. EPA guidance, such as Industrial User Inspection and Sampling Manual for POTWs</i> (EPA 831-B-94-01). c. Develop and distribute educational materials regarding the need to prevent cyanide discharges to sources included in the control program. d. Prepare an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs. <p>If the influent cyanide concentration from the Crockett community (INF-002) or the Refinery (INF-003) exceeds 40 µg/L, the Discharger shall collect a follow-up sample within 5 days of becoming aware of the laboratory results. If the results of the follow-up sample also exceed 40 µg/L, then a “significant cyanide discharge” is occurring.</p>	<p>Implementation shall be ongoing</p>
3	<p>Implement Additional Measures. If the Regional Water Board notifies the Discharger that ambient monitoring shows cyanide concentrations are 1.0 µg/L or higher in the main body of San Francisco Bay, then within 90 days of the notification, commence actions to identify and abate cyanide sources responsible for the elevated ambient concentrations, report on the progress and effectiveness of the actions taken, and provide a schedule for actions to be taken within the next 12 months.</p>	<p>With next annual pollution minimization program report due February 28 (at least 90 days following notification)</p>
4	<p>Report Status of Cyanide Control Program. Submit an annual report documenting cyanide control program implementation and addressing the effectiveness of actions taken, including any additional cyanide controls required by Task 3, above, and provide a schedule for actions to be taken within the next 12 months.</p>	<p>Annually, with annual pollution minimization program report due February 28 each year</p>

5.3.5.8. **Outfall Inspection and Maintenance.** By December 1, 2026, the Discharger shall prepare a plan, which includes an implementation schedule, to inspect the condition of its outfalls, Discharge Points 001 and 002, by September 3, 2029. The inspection must evaluate the physical condition of

the discharge pipes and diffusers and evaluate the extent of sediment accumulations in diffuser ports and in the vicinity of the outfall. The Discharger shall submit an Outfall Inspection Report by January 2, 2030, that includes the results of its inspection and any maintenance that must be implemented, along with a time schedule, to ensure that the diffuser is operating as designed and complies with Discharge Prohibition 3.3.

5.3.5.9. **Annual Average Selenium Load.** The Discharger shall report the average annual selenium load from Discharge Point 002 with its application for permit reissuance. The average annual load shall be the arithmetic mean of the annual mass discharges for the previous order term. Annual mass emissions shall be computed as follows:

$$\text{Annual Mass emission rate (kg/day)} = (3.785/N) \sum Q_i C_i$$

where:

N = number of samples in a year

Q_i = flow rate (MGD) associated with the i^{th} sample, valid until a new sample is collected

C_i = selenium concentration (mg/L) associated with the i^{th} sample, valid until a new sample is collected

When calculating selenium loads, the Discharger shall use estimated values and assume data reported below the method detection limit equal half of the detection limit.

5.3.5.10. **Joint Treatment Plant Evaluation.** The Discharger shall evaluate the treatment capacity of the Joint Treatment Plant and determine influent action levels for the Refinery at Monitoring Location INF-003 that are protective of the Joint Treatment Plant's operation in accordance with the following tasks and time schedule:

Table 9. Joint Treatment Plant Evaluation

Task Number	Task	Deadline
1	<p>Evaluate Treatment Capacity. Evaluate the treatment capacity of the Joint Treatment Plant based on the treatment plant's current technologies, equipment, personnel, and operating hours. The evaluation shall identify the following for the Joint Treatment Plant:</p> <ul style="list-style-type: none"> a. Hydraulic treatment capacity b. Organic treatment capacity c. Incompatible waste streams from the Refinery (INF-003) that may interfere with normal operations including pollutants that may be present at concentrations that could be toxic to microbes that provide biological treatment. 	January 2, 2027

Task Number	Task	Deadline
2	<p>Report Findings and Propose Influent Action Levels. Submit a final report, certified by a licensed professional that establishes the hydraulic and organic design of the Joint Treatment Plant, and includes findings, conclusions, and recommendations for protecting the Joint Treatment Plant from Refinery discharges. This shall include influent action levels applicable to the Refinery’s discharge to the Joint Treatment Plant at Monitoring Location INF-003. At minimum, the Discharger shall develop and propose influent action levels for TSS, chemical oxygen demand (COD), pH, and temperature that would be protective of the Joint Treatment Plant’s operations. If the Discharger identifies and develops action levels for pollutants that do not have influent monitoring requirements established at INF-003 (Monitoring and Reporting Program, Table E-4), it shall include a proposed monitoring frequency.</p>	<p>April 1, 2027</p>
3	<p>Implement Influent Actions Levels. Implement action levels and influent monitoring for any additional parameters identified in Task 2. If the Discharger samples any parameter in excess of an action level, the Discharger shall accelerate monitoring, at Monitoring Location INF-003, to daily until two consecutive samples demonstrate that the parameter is below its action level. If any accelerated monitoring result confirms the parameter is above the action level, the Discharger shall immediately implement measures to ensure the parameter is below its action level. The Discharger shall report its response to any exceeded action level and include all monitoring results in its monthly Self-Monitoring Reports as described in MRP section 7.2.2.1.</p>	<p>30 days following confirmation from the Executive Officer that Task 2 is complete</p>

ATTACHMENT A– DEFINITIONS AND ABBREVIATIONS

DEFINITIONS

Alternative Hypothesis

Statement used to propose a statistically significant relationship in a set of given observations. Under the TST approach, when the Null Hypothesis is rejected, the Alternative Hypothesis is accepted in its place, indicating a relationship between variables and an acceptable level of toxicity.

Arithmetic Mean (μ)

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

$$\text{Arithmetic mean} = \mu = \Sigma x / n$$

where: Σx is the sum of the measured ambient water concentrations,
and n is the number of samples

Average Monthly Effluent Limitation (AMEL)

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)

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, through epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Calendar Month(s)

Period from the first day of a month through the last day of a month (e.g., January 1 to January 31). For toxicity monitoring, the period is from the first day of a routine monitoring test to the day before the corresponding day of the next month (e.g., from June 15 to July 14), or to the last day of the next month if there is no corresponding day (e.g., January 31 to February 28).

Carcinogenic

Known to cause cancer in living organisms.

Coefficient of Variation (CV)

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 a constituent discharged over a calendar day (12:00 a.m. through 11:59 p.m.) 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 a constituent over a 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 results 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 through conducting a mixing zone study or modeling of the discharge and receiving water.

Effluent Concentration Allowance (ECA)

Value derived from the water quality criterion or 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).

Effective Concentration (EC)

The 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.

Enclosed Bays

Indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest

distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration

Concentration that results from the confirmed detection of a substance below the ML 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 shall be 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 included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220; Suisun Bay; Carquinez Strait downstream to the Carquinez Bridge; and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inhibition Concentration (IC)

The 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.

Inland Surface Waters

All surface waters of the state that are not 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).

Instream Waste Concentration (IWC)

Concentration of effluent in the receiving water after any dilution credit is applied. The IWC is the inverse of 1 plus the dilution credit, D, or $IWC = 1/(1+D)$, expressed as a percentage (e.g., if D = 9, the IWC is 10 percent). If no dilution credit is granted, the IWC is 100 percent.

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 toxicity, the MDEL is based on the outcome of the TST and the percent effect at the IWC (applied to the results of any single bioassay). 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.

Maximum Daily Effluent Target (MDET)

Target based on a single independent toxicity test using the TST used to determine whether a TRE should be conducted. Not meeting the MDET is not a violation of an effluent limitation. The MDET only applies to discharges with no numeric toxicity limits.

Median

Middle measurement in a data set. The median of a data set 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 $n/2+1$).

Median Monthly Effluent Limitation (MMEL)

Highest allowable median of daily discharges over a calendar month, calculated as the median of all daily discharges measured during a calendar month. For aquatic toxicity, the MMEL is an effluent limitation based on a maximum of three independent toxicity tests analyzed using the TST during a calendar month.

Median Monthly Effluent Target (MMET)

Target based on a maximum of three independent toxicity tests using the TST during a calendar month used to determine whether a TRE should be conducted. Not meeting a MMET is not a violation of an effluent limitation.

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

Mixing Zone

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.

MMEL Compliance Test

For chronic toxicity monitoring, one of up to two tests used in addition to a routine monitoring test to determine compliance with the chronic toxicity MMEL and MDEL.

MMET Test

For chronic toxicity monitoring, one of up to two tests used in addition to a routine monitoring test to evaluate if the discharge meets the chronic toxicity MMET and MDET.

No Observed Effect Concentration (NOEC)

The 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.

No Observed Effect level (NOEL)

For compliance determination, the NOEL 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.

Not Detected (ND)

Sample results less than the laboratory's MDL.

Null Hypothesis

Statement used in statistical testing that has been put forward either because it is believed to be true or because it is to be used as a basis for argument, but has not been proved.

Percent Effect

Value that denotes the difference in response between a test concentration and a control, divided by the mean control response and multiplied by 100.

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 a 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 the 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 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 Resources Control Board or Regional Water Board.

Regulatory Management Decision (RMD)

Decision that represents the maximum allowable error rates and thresholds for toxicity and non-toxicity that would result in an acceptable risk to aquatic life.

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. For priority pollutants, 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 State Implementation Plan (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.

Response

Measured biological effect (e.g., on survival, reproduction, growth) of exposure to a stimulus.

Routine Monitoring

Regular chronic toxicity monitoring required during the permit term. Routine monitoring results may trigger MMEL compliance tests or MMET tests. If a violation of the MDEL or MMEL occurs, or if the discharge does not meet the MDET or MMET, routine monitoring also includes one sample collected during the following month (regardless of the regular monitoring frequency), which is used to determine if a TRE is necessary. Routine monitoring does not include surveillance monitoring.

Source of Drinking Water

Any water designated as municipal or domestic supply (MUN) beneficial use.

Standard Deviation (σ)

Measure of variability calculated as follows:

$$\text{Standard deviation} = \sigma = (\Sigma[(x - \mu)^2]/(n - 1))^{0.5}$$

where: x is the observed value
 μ is the arithmetic mean of the observed values
 n is the number of samples

Surveillance Monitoring

Chronic toxicity monitoring performed using the most sensitive species at an effluent concentration at least double the IWC. Surveillance monitoring results are not for assessing compliance with the chronic toxicity MMEL or MDEL.

Test of Significant Toxicity (TST)

Statistical approach used to analyze aquatic toxicity test data, as described in section III.B.3 of State Water Board's *State Policy for Water Quality Control: Toxicity Provisions*.

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.

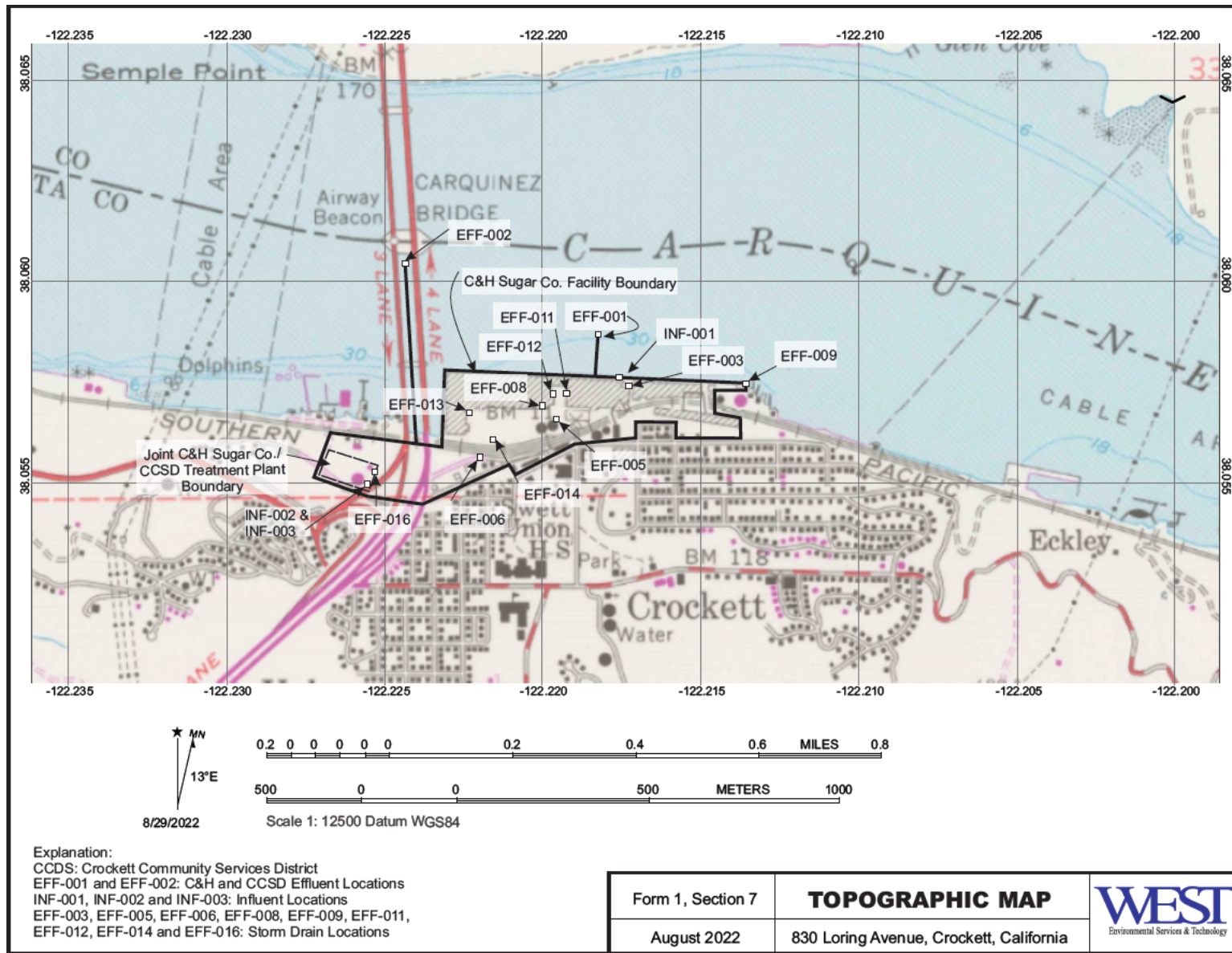
ABBREVIATIONS

°F	degrees Fahrenheit
°C	degrees Celsius
%	Percent
µg/L	Micrograms per liter
µS/cm	Microsiemens per centimeter
1/Blending Event	Once per blending event
1/Discharge	Once per discharge
1/Day	Once per day
1/Month	Once per month
1/Quarter	Once per quarter
1/Week	Once per week
1/Year	Once per year
2/Month	Two times per month
2/Week	Twice per week
2/Year	Twice per year

3/Week	Three times per week
4/Week	Four times per week
5/Week	Five times per week
AMEL	Average monthly effluent limitation
AWEL	Average weekly effluent limitation
B	Background concentration
BOD₅	Biochemical oxygen demand (5-day @ 20°C)
C	Water quality criterion or objective
C-24	24-hour composite
CBOD₅	Carbonaceous biochemical oxygen demand (5-day @ 20°C)
CFU/100 mL	Colony forming units per 100 milliliters
CIWQS	California Integrated Water Quality System
COD	Chemical oxygen demand
Continuous	Measured continuously
Continuous/D	Measured continuously, and recorded and reported daily
Continuous/H	Measured continuously, and recorded and reported hourly
CTR	California Toxics Rule
CV	Coefficient of Variation
DMR	Discharge Monitoring Report
DNQ	Detected, but not quantified
DL	Detection level
ECA	Effluent Concentration Allowance
Grab	Grab sample
IWC	Instream Waste Concentration
lbs/day	Pounds per day
MDEL	Maximum Daily Effluent Limitation
MDET	Maximum Daily Effluent Target
MDL	Method detection limit
MEC	Maximum effluent concentration
MG	Million gallons
mg/L	Milligrams per liter
mg/L as N	Milligrams per liter as nitrogen
MGD	Million gallons per day

ML	Minimum level
MMEL	Median Monthly Effluent Limitation
MMET	Median Monthly Effluent Target
MPN/100 mL	Most probable number per 100 milliliters
MRP	Monitoring and Reporting Program (Attachment E)
ND	Not detected
NTR	National Toxics Rule
NTU	Nephelometric turbidity units
pg/L	Picograms per liter
ppt	Parts per thousand
RL	Reporting level
RPA	Reasonable potential analysis
SIP	<i>Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California</i> (State Implementation Policy)
SMR	Self-Monitoring Report
s.u.	Standard pH units
TIE	Toxicity identification evaluation
TRE	Toxicity reduction evaluation
TST	Test of Significant Toxicity
TUa	Acute toxicity units
TUc	Chronic toxicity units
WDRs	Waste discharge requirements
WQBEL	Water quality-based effluent limitation

ATTACHMENT B – FACILITY LOCATION



ATTACHMENT C – PROCESS FLOW DIAGRAMS

Figure C-1. Schematic of Water Flows – Major Process Waters

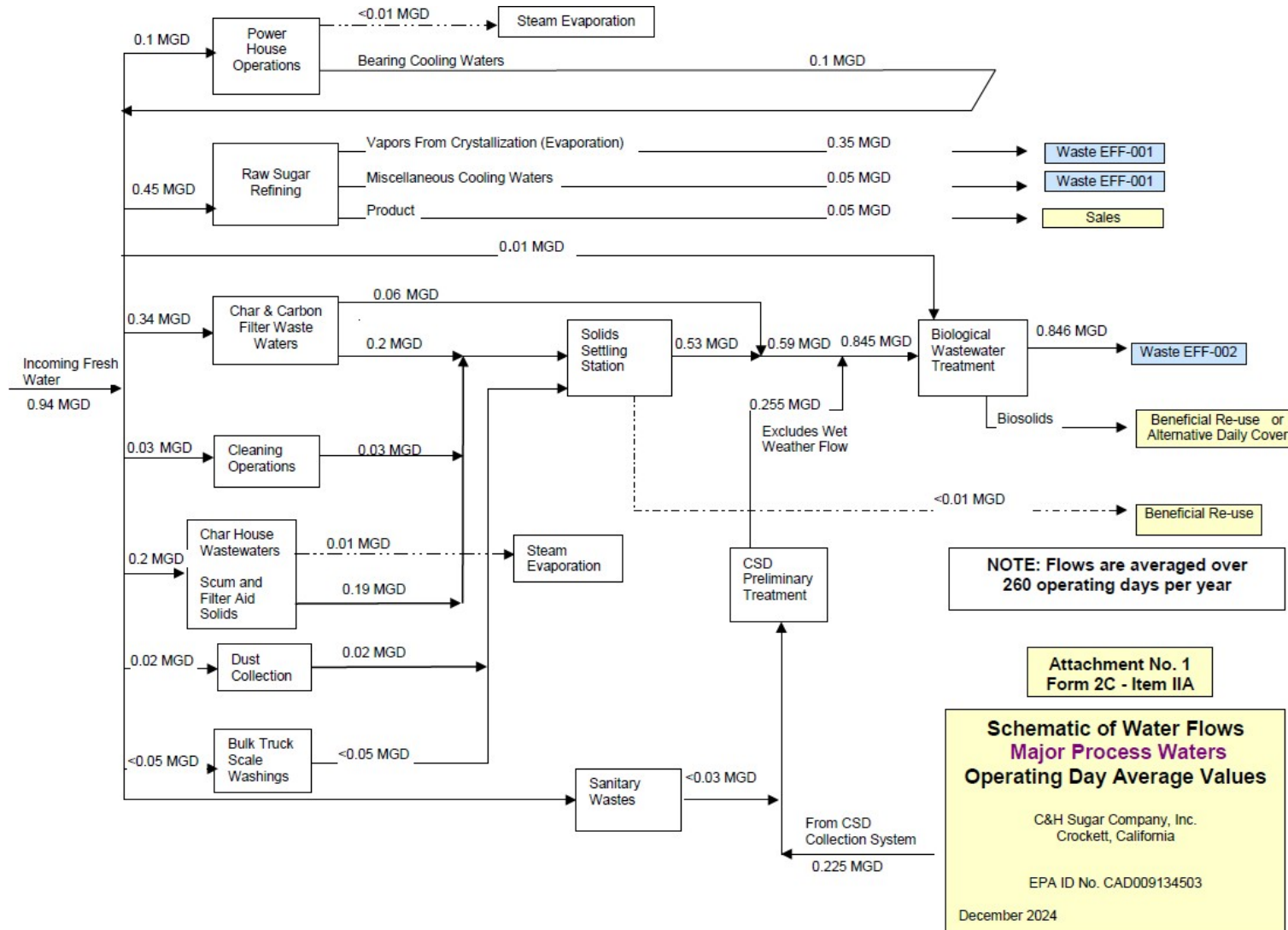


Figure C-2. Schematic of Water Flows – Cooling Waters

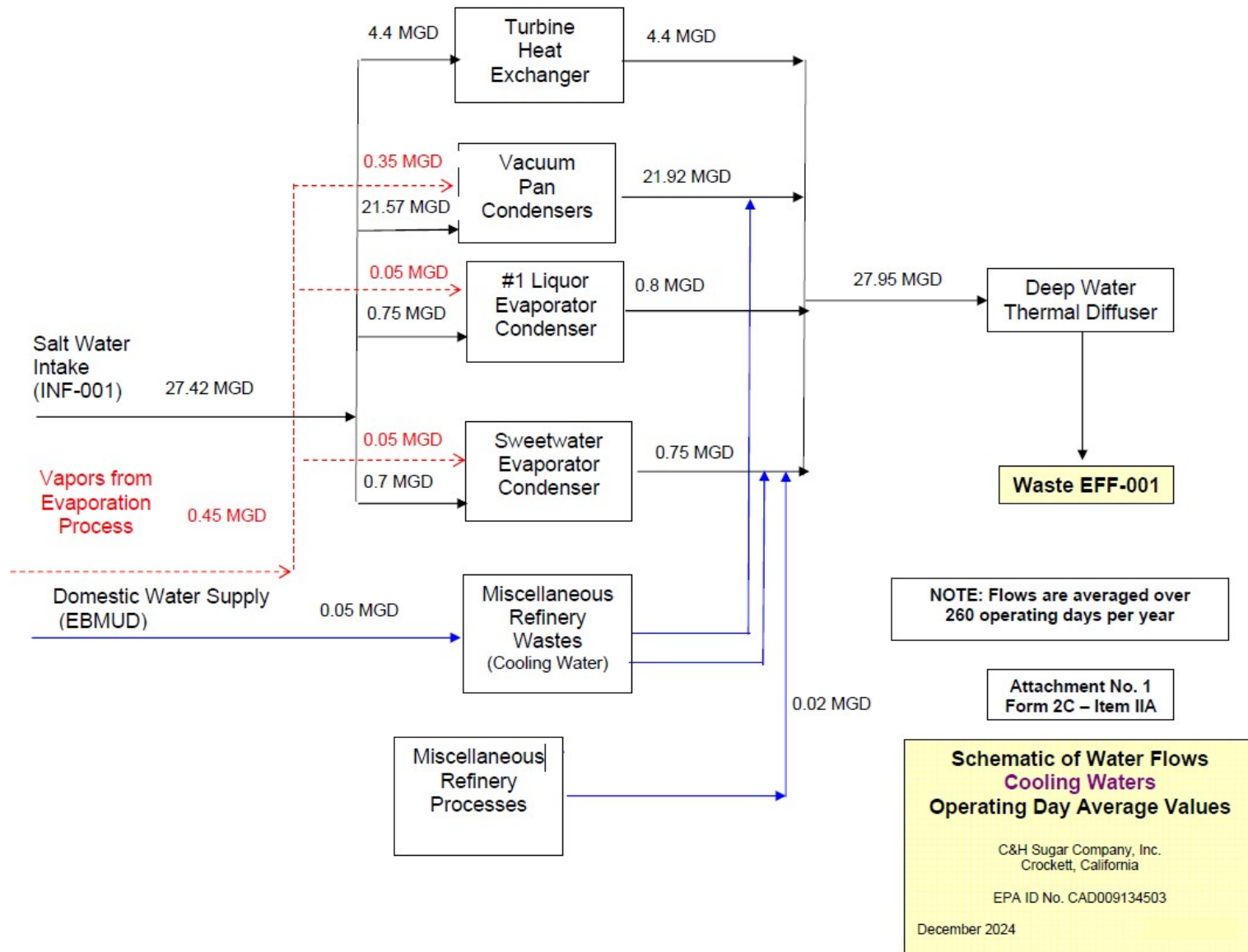


Figure C-3. Schematic of Water Flow – Sewage System

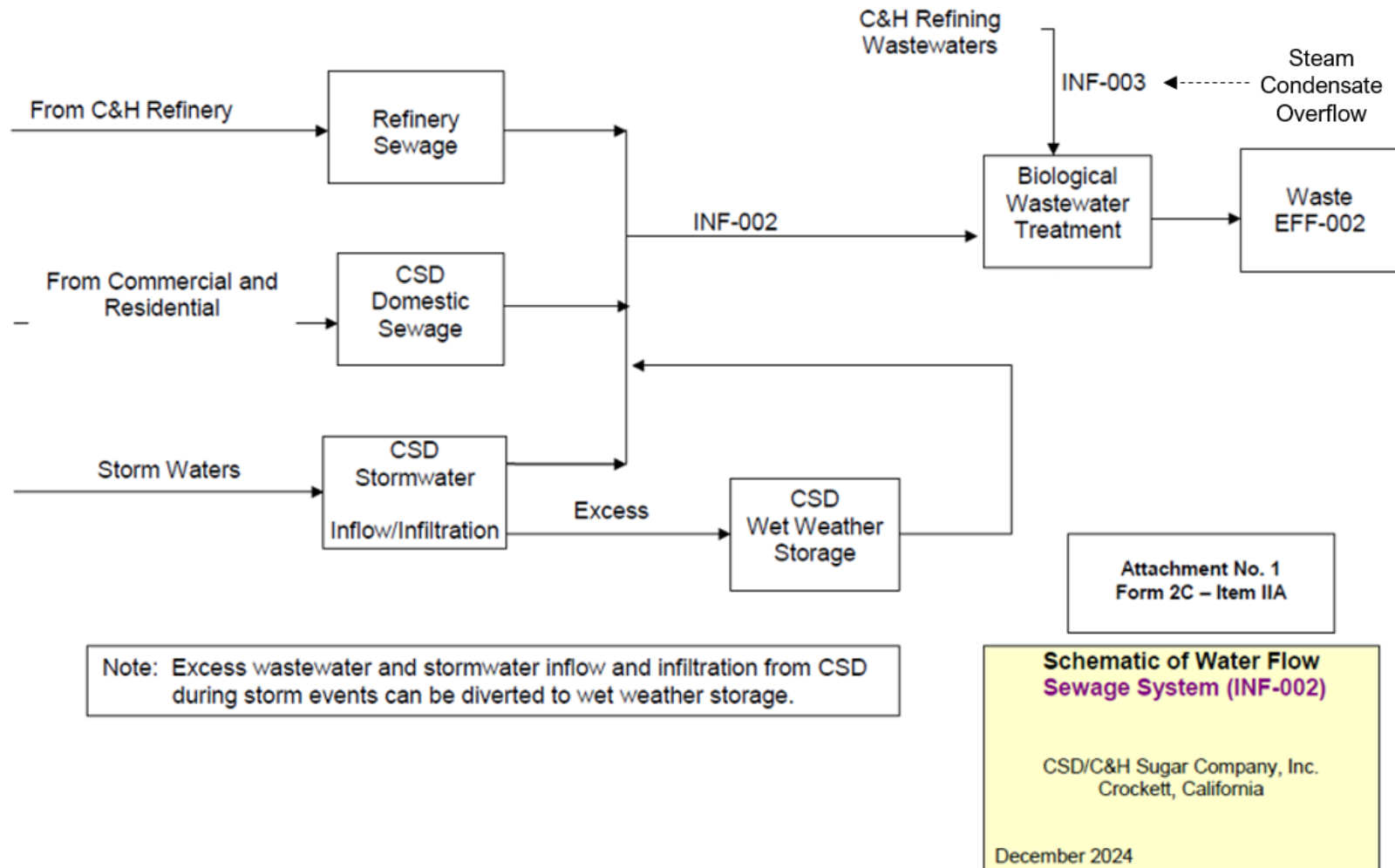
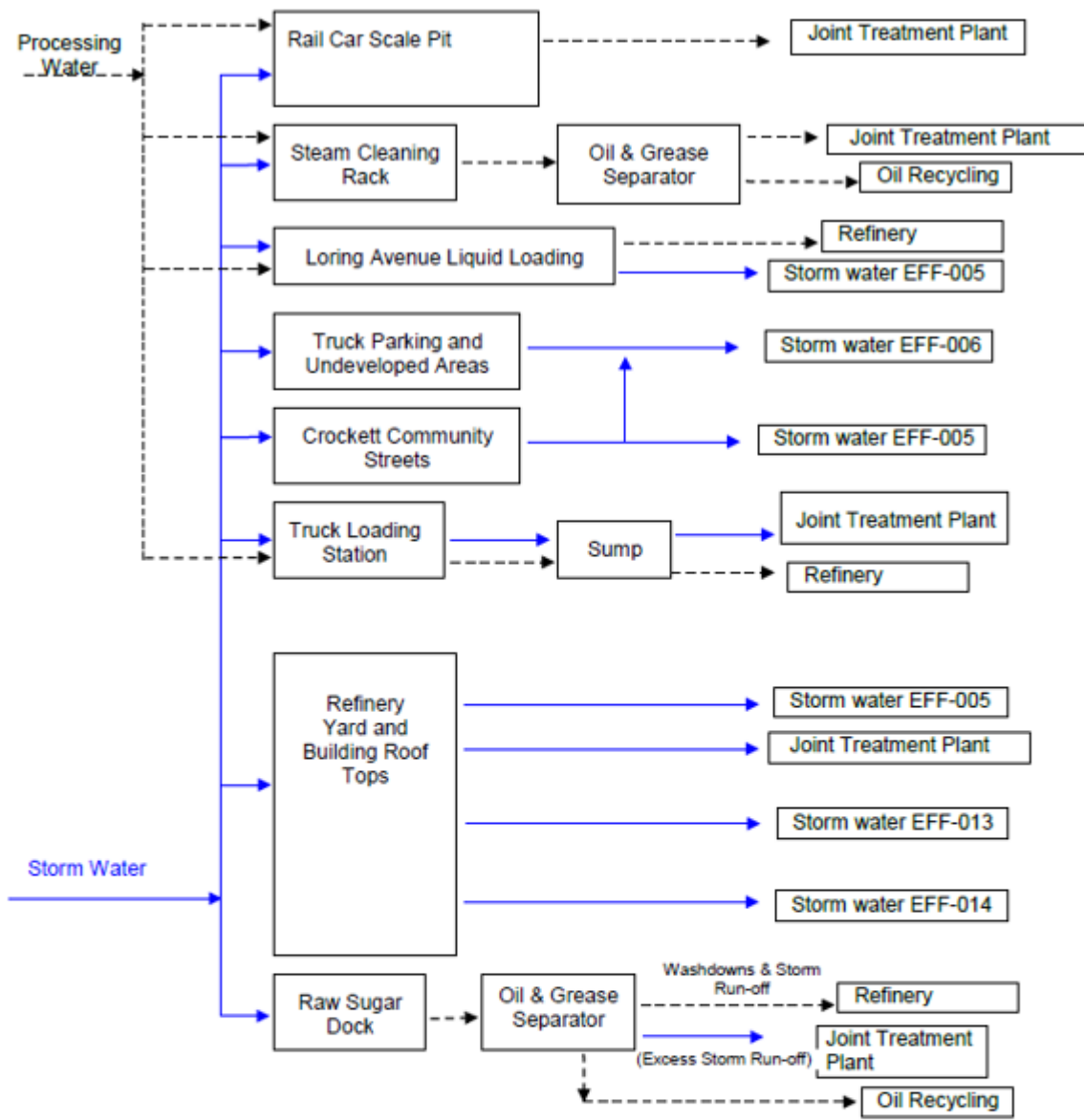


Figure C-4. Schematic of Water Flows – Stormwater and Minor Discharges



LEGEND

----- Process Stream
 _____ Storm Water Stream

Attachment No. 1
Form 2C – Item IIA

**Schematic of Water Flows
 - Minor Discharges -
 - Stormwater Discharges -**

C&H Sugar Company, Inc.
 Crockett, California
 EPA ID No. CAD009134503
 December 2024

ATTACHMENT D – STANDARD PROVISIONS

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ATTACHMENT D – STANDARD PROVISIONS

1. STANDARD PROVISIONS – PERMIT COMPLIANCE

1.1. Duty to Comply

- 1.1.1. 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; permit termination, revocation and reissuance, or modification; 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.)
- 1.1.2. 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).)

1.2. 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).)

1.3. 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).)

1.4. 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) that 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).)

1.5. Property Rights

- 1.5.1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 122.41(g).)
- 1.5.2. 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).)

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

- 1.6.1. 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);
- 1.6.2. 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);
- 1.6.3. 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
- 1.6.4. Sample or monitor, at reasonable times, for the purposes of ensuring 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.)

1.7. Bypass

1.7.1. Definitions

- 1.7.1.1. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)
- 1.7.1.2. "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).)
- 1.7.2. **Bypass not exceeding limitations.** The Discharger may allow any bypass to occur that does not cause exceedances of effluent limitations, but only if it is for essential maintenance to ensure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance sections 1.7.3, 1.7.4, and 1.7.5 below. (40 C.F.R. § 122.41(m)(2).)
- 1.7.3. **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)):

- 1.7.3.1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
- 1.7.3.2. 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
- 1.7.3.3. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance section 1.7.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
- 1.7.4. **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 section 1.7.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
- 1.7.5. **Notice**
 - 1.7.5.1. **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, 2028, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section 5.10 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).)
 - 1.7.5.2. **Unanticipated bypass.** The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions – Reporting section 5.5 below (24-hour notice). The notice shall be sent to the Regional Water Board. As of December 21, 2028, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section 5.10 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).)
- 1.8. **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).)

- 1.8.1. **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 section 1.8.2 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).)
- 1.8.2. **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)):
 - 1.8.2.1. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));
 - 1.8.2.2. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));
 - 1.8.2.3. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting section 5.5.2.2 below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and
 - 1.8.2.4. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance section 1.3 above. (40 C.F.R. § 122.41(n)(3)(iv).)
- 1.8.3. **Burden of proof.** In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

2. STANDARD PROVISIONS – PERMIT ACTION

- 2.1. **General.** This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)
- 2.2. **Duty to Reapply.** If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)
- 2.3. **Transfers.** This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and Water Code. (40 C.F.R. §§ 122.41(l)(3), 122.61.)

3. STANDARD PROVISIONS – MONITORING

- 3.1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)
- 3.2. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapter N. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or as required under 40 C.F.R. chapter 1, subchapter N. For the purposes of this paragraph, a method is sufficiently sensitive when:
 - 3.2.1. The method minimum level (ML) is at or below the level of the most stringent effluent limitation established in the permit for the measured pollutant or pollutant parameter, and either the method ML is at or below the level of the most stringent applicable water quality criterion for the measured pollutant or pollutant parameter or the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in the facility's discharge is high enough that the method detects and quantifies the level of the pollutant or pollutant parameter in the discharge; or
 - 3.2.2. 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).)

4. STANDARD PROVISIONS – RECORDS

- 4.1. 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).)
- 4.2. Records of monitoring information shall include:
 - 4.2.1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

- 4.2.2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 - 4.2.3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 - 4.2.4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 - 4.2.5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 - 4.2.6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- 4.3.** Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):
- 4.3.1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
 - 4.3.2. Permit applications and attachments, permits, and effluent data. (40 C.F.R. § 122.7(b)(2).)

5. STANDARD PROVISIONS – REPORTING

5.1. 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 that 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.)

5.2. Signatory and Certification Requirements

- 5.2.1. 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 sections 5.2.2, 5.2.3, 5.2.4, 5.2.5, and 5.2.6 below. (40 C.F.R. § 122.41(k).)
- 5.2.2. 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: (1) 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 (2) the manager of one or more manufacturing, production, or operating facilities, provided the manager is authorized to make management decisions that 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 ensure 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 municipal, 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 (1) the chief executive officer of the agency, or (2) 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).)

- 5.2.3. 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 section 5.2.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - 5.2.3.1. The authorization is made in writing by a person described in Standard Provisions – Reporting section 5.2.2 above (40 C.F.R. § 122.22(b)(1));
 - 5.2.3.2. 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
 - 5.2.3.3. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
- 5.2.4. If an authorization under Standard Provisions – Reporting section 5.2.3 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 section 5.2.3 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).)
- 5.2.5. Any person signing a document under Standard Provisions – Reporting section 5.2.2 or 5.2.3 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).)

- 5.2.6. Any person providing the electronic signature for documents described in Standard Provisions – Reporting sections 5.2.1, 5.2.2, or 5.2.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting section 5.2, 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).)

5.3. Monitoring Reports

- 5.3.1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 C.F.R. § 122.41(l)(4).)
- 5.3.2. 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. All reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting section 5.10 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).)
- 5.3.3. 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 or reporting form specified by the Regional Water Board or State Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
- 5.3.4. Calculations for all limitations that require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

- 5.4. 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).)

5.5. Twenty-Four Hour Reporting

- 5.5.1. 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, 2028, 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 section 5.10. 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).)

- 5.5.2. The following shall be included as information that must be reported within 24 hours:
- 5.5.2.1. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)
- 5.5.2.2. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(B).)
- 5.5.3. The Regional Water Board may waive the above required written report on a case-by-case basis if an oral report has been received within 24 hours. (40 C.F.R. § 122.41(l)(6)(ii)(B).)

- 5.6. 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)):

- 5.6.1. 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
- 5.6.2. 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 unless the discharge is an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 C.F.R. section 122.42(a). (40 C.F.R. § 122.41(l)(1)(ii).) If the discharge is 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 section 7.1.1). (40 C.F.R. § 122.41(l)(1)(ii).)
- 5.7. Anticipated Noncompliance.** The Discharger shall give advance notice to the Regional 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).)
- 5.8. Other Noncompliance.** The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting sections 5.3, 5.4, and 5.5 above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting section 5.5 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 section 5.5 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).)
- 5.9. 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).)
- 5.10. 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. § 7.2(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).)

6. STANDARD PROVISIONS – ENFORCEMENT

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

7. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

7.1. **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)):

7.1.1. 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)):

7.1.1.1. 100 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(1)(i));

7.1.1.2. 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));

7.1.1.3. Five (5) times the maximum concentration reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or

7.1.1.4. 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)(1)(iv).)

7.1.2. 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)):

7.1.2.1. 500 micrograms per liter ($\mu\text{g/L}$) (40 C.F.R. § 122.42(a)(2)(i));

7.1.2.2. 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));

7.1.2.3. Ten (10) times the maximum concentration reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or

7.1.2.4. 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).)

7.2 Publicly Owned Treatment Works (POTWs)

7.2.1. All POTWs shall provide adequate notice to the Regional Water Board of 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)).

- 7.2.2. All POTWs shall provide adequate notice to the Regional Water Board of 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).)
- 7.2.3. 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

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Clean Water Act (CWA) section 308 and Code of Federal Regulations, Title 40 (40 C.F.R.), sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code section 13383 also authorizes the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This Monitoring and Reporting Program (MRP) establishes monitoring, reporting, and recordkeeping requirements that implement the federal and State laws and regulations.

1. GENERAL MONITORING PROVISIONS

- 1.1. The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 C.F.R. section 122.63. If any discrepancies exist between this MRP and the “Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits” (Attachment G), this MRP shall prevail.
- 1.2. The Discharger shall conduct all monitoring in accordance with Attachment D, section 3, 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 Order.
- 1.3. For the analysis of monitoring samples, the Discharger shall use laboratories certified by the State Water Resources Control Board (State Water Board) in accordance with Water Code section 13176 and shall obtain quality assurance/quality control data with laboratory reports. For any onsite field tests (e.g., turbidity, pH, temperature, dissolved oxygen, conductivity, disinfectant residual) analyzed by a noncertified laboratory, the Discharger shall implement a Quality Assurance-Quality Control Program. The Discharger shall keep a manual onsite containing the steps followed in this program and shall 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.
- 1.4. The Discharger shall ensure that the 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 to the DMR-QA Officer via email at QualityAssurance@waterboards.ca.gov, or 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

2. MONITORING LOCATIONS

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

Table E-1. Monitoring Locations

Discharge Point	Monitoring Location	Monitoring Location Description
Intake Water	INF-001	At any point in the water intake system that delivers water from Carquinez Strait to the C&H Sugar Company Refinery (Refinery), prior to any treatment or being used for cooling or processing.
Influent	INF-002	At any point in the wastewater conveyance system from Crockett Community Services District (District) to the Joint Use C&H Sugar Company-Crockett Community Services District Philip F. Meads Water Treatment Plant (Joint Treatment Plant) where flow measurements are representative of wastewater flows from the District.
Influent	INF-003	At any point in the wastewater treatment system beyond the primary waste treatment plant at the Refinery and before the surge tank at the Joint Treatment Plant.
Effluent	EFF-001	At any point leading to Discharge Point 001 between the point of discharge and the point where all waste tributary thereto is present such that the sample is representative of the effluent.
Effluent	EFF-002	At any point leading to Discharge Point 002 between the point of discharge and the point where all waste tributary thereto is present such that the sample is representative of the effluent.
Effluent	EFF-002D	At any point in the disinfection facilities leading to Discharge Point 002 at which adequate contact with the disinfectant has been achieved.
Stormwater	EFF-005	At any point in the outfall for stormwater Discharge Point 005 between the point of discharge and the point at which all waste tributary thereto is present.
Stormwater	EFF-006	At any point in the outfall for stormwater Discharge Point 006 between the point of discharge and the point at which all waste tributary thereto is present.
Stormwater	EFF-013	At any point in the outfall for stormwater Discharge Point 013 between the point of discharge and the point at which all waste tributary thereto is present.
Stormwater	EFF-014	At any point in the outfall for stormwater Discharge Point 014 between the point of discharge and the point at which all waste tributary thereto is present.

3. INFLUENT MONITORING

3.1. Monitoring Location INF-001. The Discharger shall monitor cooling water from Carquinez Strait at Monitoring Location INF-001 as follows:

Table E-2. Influent Monitoring Location INF-001

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow	MG/MGD and ft/sec ^[1]	Continuous	Continuous/D
Copper, Total Recoverable	µg/L	C-24	2/Year
Lead, Total Recoverable	µg/L	C-24	2/Year
Nickel, Total Recoverable	µg/L	C-24	2/Year
Zinc, Total Recoverable	µg/L	C-24	2/Year
Biochemical Oxygen Demand (5-day @ 20°C) (BOD5)	lbs/day	C-24	1/Week
Standard Observations	-	Visual ^[2]	1/Week

Footnotes:

^[1] The following flow information shall be reported in monthly self-monitoring reports:

- Daily maximum flow rate (MGD)
- Daily maximum velocity (ft/sec)
- Daily average flow rate (MGD)
- Total monthly flow volume (MG)

^[2] The Discharger shall conduct visual inspections of the intake structure to ensure that it continues to operate as designed to minimize impingement and entrainment of aquatic organisms. In each self-monitoring report, the Discharger shall include documentation of any operational or maintenance issues and a schedule to address such issues, as necessary.

3.2. Monitoring Location INF-002. The Discharger shall monitor Joint Treatment Plant influent from the District at Monitoring Location INF-002 as follows:

Table E-3. Influent Monitoring Location INF-002

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MG/MGD	Continuous	Continuous/D
Cyanide	µg/L	Grab	1/Quarter

Footnote

^[1] The following flow information shall be reported in monthly self-monitoring reports:

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

3.3. Monitoring Location INF-003. The Discharger shall monitor Joint Treatment Plant influent from the Refinery at Monitoring Location INF-003 as follows:

Table E-4. Influent Monitoring Location INF-003

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MG/MGD	Continuous	Continuous/D
Cyanide	µg/L	Grab	1/Quarter
COD ^[2]	mg/L and lbs/day	C-24	1/Week

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Total Suspended Solids (TSS) ^[2]	mg/L and lbs/day	C-24	1/Week
pH ^[3]	standard units	Continuous or Grab	1/Day
Temperature ^[3]	°F	Continuous or Grab	1/Day

Footnotes:

- ^[1] The following flow information shall be reported in monthly self-monitoring reports:
- Daily average flow rate (MGD)
 - Total monthly flow volume (MG)
- ^[2] COD and TSS monitoring at INF-003 may be analyzed by a noncertified laboratory if the Discharger implements a quality assurance-quality control program that demonstrates sufficient capability to adequately perform these analyses onsite.
- ^[3] If pH and/or temperature is monitored continuously, the minimum and maximum for each day shall be reported in monthly self-monitoring reports.

4. EFFLUENT MONITORING

4.1. Monitoring Location EFF-001. The Discharger shall monitor effluent at Monitoring Location EFF-001 as follows:

Table E-5. Effluent Monitoring Location EFF-001

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MG/MGD	Continuous	Continuous/D
BOD5	lbs/day	C-24	1/Week
pH ^[2]	standard units	Continuous or Grab	1/Day
Temperature ^[2]	°F	Continuous or Grab	1/Day
Copper, Total Recoverable	µg/L	C-24	2/Year
Lead, Total Recoverable	µg/L	C-24	2/Year
Nickel, Total Recoverable	µg/L	C-24	2/Year
Zinc, Total Recoverable	µg/L	C-24	2/Year
Acetone	mg/L	Grab	1/Month ^[3,4]
Other Priority Pollutants ^[5]	µg/L	Grab or C-24 ^[6]	1/Year

Footnotes:

- ^[1] Flow shall be calculated based on influent flow monitoring. The following flow information shall be reported in monthly self-monitoring reports:
- Daily average flow rate (MGD)
 - Total monthly flow volume (MG)
- ^[2] If pH and/or temperature is monitored continuously, the minimum and maximum for each day shall be reported in monthly self-monitoring reports.
- ^[3] The Discharger shall monitor for acetone for when it adds isopropanol to the Refinery's vacuum pans.
- ^[4] If at any time the Discharger does not meet compliance with the acetone action level, the minimum monitoring frequency shall be accelerated to weekly in accordance with Provision 5.3.5.1.2.
- ^[5] The Discharger shall monitor for the pollutants listed in Attachment G, Table B.
- ^[6] The Discharger shall collect C-24 samples for metals.

4.2. Monitoring Location EFF-002. The Discharger shall monitor effluent at Monitoring Location EFF-002 as follows:

Table E-7. Effluent Monitoring Location EFF-002

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MG/MGD	Continuous	Continuous/D
BOD5	mg/L and lbs/day	C-24	2/Week
TSS	mg/L and lbs/day	C-24	2/Week
pH ^[2]	standard units	Continuous or Grab	1/Day
Temperature ^[2]	°F	Grab	1/Day
Oil and Grease	mg/L	Grab	1/Quarter
Chlorine, Total Residual	mg/L	Continuous	Continuous/D ^[3]
Copper, Total Recoverable	µg/L	C-24	1/Month
Lead, Total Recoverable	µg/L	C-24	1/Month
Cyanide, Total ^[4]	µg/L	Grab	1/Month
Dichlorobromomethane	µg/L	Grab	2/Year
Dioxin-TEQ	µg/L	C-24	1/Year
Ammonia, Total	mg/L and kg/day as N	C-24 ^[5]	1/Month
Nitrate-Nitrite	mg/L and kg/day as N	C-24 ^[5]	1/Month
Inorganic Nitrogen, Total ^[6]	mg/L and kg/day as N	Calculated	1/Month
Phosphorus, Total	mg/L and kg/day as P	C-24 ^[5]	1/Quarter
<i>Enterococcus</i>	MPN/100 mL ^[7]	Grab ^[8]	3/Week
Chronic Toxicity ^[9]	“pass” or “fail” and % effect ^[10]	C-24	2/Year
Other Priority Pollutants ^[11]	µg/L	Grab or C-24 ^[12]	1/Year

Footnotes:

^[1] The following flow information shall be reported in monthly self-monitoring reports:

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

^[2] If pH and/or temperature is monitored continuously, the minimum and maximum for each day shall be reported in monthly self-monitoring reports.

^[3] Total residual chlorine concentrations shall be monitored continuously and recorded at a frequency of not less than every 5 minutes. The minimum level for total residual chlorine analysis shall be no greater than 0.05 mg/L.

To document compliance with the minimum level, the Discharger shall calibrate continuous total residual chlorine analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation.

If a continuous chlorine residual monitor malfunctions or is offline for essential maintenance lasting more than an hour, the Discharger shall substitute grab samples at a frequency of no less than one sample every hour until the continuous chlorine residual monitor is back online. The Discharger shall report any substitution of grab sampling for continuous sampling in its monthly self-monitoring report.

To evaluate compliance with the one-hour average effluent limit, the Discharger shall consider all readings recorded within each hour. The monitoring period shall begin every hour on the hour. All readings below the minimum level shall be treated as zeros for compliance evaluation. The Discharger shall calculate arithmetic means for each hour using all the readings for that hour.

The Discharger shall report through data upload to CIWQS the maximum one-hour arithmetic mean for each calendar day and any other arithmetic mean values that exceed the effluent limit. The Discharger shall retain documentation of chlorine results for at least three years.

The Discharger may elect to use a continuous on-line monitoring system for measuring or determining that a residual dechlorinating agent (e.g., sodium bisulfite) is present. Such a monitoring system may be used to prove that anomalous residual

chlorine exceedances measured by online chlorine analyzers are false positives and are not valid total residual chlorine detections because it is chemically improbable to have chlorine present in the presence of a dechlorinating agent. If the data from continuous total residual chlorine analyzers provide convincing evidence that chlorine residual exceedances are false positives, the exceedances shall not be violations of this Order's total residual chlorine effluent limitation.

- [4] The Discharger may, at its option, analyze for cyanide as weak acid dissociable cyanide using protocols specified in 40 C.F.R. Part 136, or an equivalent method in the latest Standard Method edition.
- [5] The 24-hour composites may be made up of four discrete grab samples collected over a 24-hour period and volumetrically or mathematically flow-weighted. During a 24-hour period, the samples may be collected only when the plant is staffed, if necessary. Monitoring for total ammonia, nitrate-nitrite, and total phosphorus shall be performed on the same day.
- [6] Total Inorganic Nitrogen = Total Ammonia + Nitrate-Nitrite. Dischargers may use approved analytical techniques that require filtration for analyte measurements that comprise Total Inorganic Nitrogen. When calculating total inorganic nitrogen, the Discharger shall assume data reported below the method detection limit equal half of the detection limit.
- [7] Results may be reported as colony forming units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL.
- [8] EFF-002D is the *Enterococcus* bacteria sampling location used for monitoring compliance. Grab samples shall be collected on the same day as composite samples for parameters with effluent limitations.
- [9] Chronic toxicity tests shall be performed in accordance with MRP Section 5. The monitoring frequency shall become 1/Quarter after any MDEL or MMEL violation.
- [10] Chronic toxicity monitoring results shall be reported as "pass" or "fail" and percent effect, as defined in Toxicity Provisions sections III.B.3 and III.B.4.
- [11] The Discharger shall monitor for the pollutants listed in Attachment G, Table B.
- [12] The Discharger shall collect C-24 samples for metals.

4.3. Monitoring Locations EFF-005 through EFF-014. The Discharger shall monitor stormwater at Monitoring Locations EFF-005 through EFF-014 as follows:

Table E-8. Effluent Monitoring Locations EFF-005 through EFF-014

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MG/MGD	- ^[2]	2/Year
pH	standard units	Continuous or Grab	2/Year
BOD5	mg/L	Grab	2/Year
TSS	mg/L	Grab	2/Year
Oil and Grease	mg/L	Grab	2/Year
Standard Observations ^[3]	-	-	1/Month ^[4]

Footnotes:

- [1] Stormwater discharges shall be sampled during the first 30-minutes of the first daylight storm that occurs during scheduled operating periods and is preceded by at least 3 days of dry weather. If sampling during the first 30 minutes is impractical, samples may be taken during the first hour of discharge, and the Discharger shall explain in the monitoring report why grab samples could not be taken in the first 30 minutes.
 A storm is defined as a continuous or semi-continuous period of rain that produces significant stormwater discharge. Significant stormwater discharge is a continuous discharge of stormwater for approximately one hour or more.
- [2] The flow shall be the estimated total volume of stormwater discharge from each monitoring location for the storm sampled. Estimates shall be determined from the amount of rainfall and the area of drainage multiplied by a drainage factor. The areas and drainage factors shall be identified in the SWPPP.
- [3] Standard Observations shall include the following information:
 - The presence or indication of prior, current, or potential unauthorized non-stormwater discharges and their sources;
 - Authorized non-stormwater discharges, sources, and associated BMPs; and
 - Outdoor industrial equipment and storage areas, outdoor industrial activities areas, BMPs, and all other potential sources of industrial pollutants.
- [4] Standard observations during the dry period, May 1 through September 30, may be limited to two if they occur during this five-month period.

5. TOXICITY MONITORING

5.1. Compliance Monitoring

5.1.1. **Sampling.** The Dischargers shall collect 24-hour composite effluent samples at Monitoring Location EFF-002 for critical life stage toxicity testing as indicated below. Effluent samples may be collected before disinfection for toxicity tests. For toxicity tests requiring renewals, the Dischargers shall collect 24-hour composite samples on consecutive or alternating days.

5.1.2. **Test Species.** The test species shall be giant kelp (*Macrocystis pyrifera*) unless a more sensitive species is identified in accordance with MRP, Appendix E-1. The Discharger shall conduct chronic toxicity species sensitivity screening as described in Appendix E-1. Upon completion of the chronic toxicity species sensitivity screening, the most sensitive species shall be species exhibiting the highest percent effect.

If testing a particular species proves unworkable (e.g., the Discharger encounters unresolvable test interference or cannot secure a reliable supply of test organisms), the Executive Officer may authorize the temporary use of the next appropriate species as the most sensitive species. The Executive Officer will confirm the temporary use of the next appropriate species in writing.

5.1.3. **Frequency.** The Discharger shall monitor chronic toxicity as specified below:

5.1.3.1. **Routine Monitoring.** The Discharger shall conduct routine monitoring two times per calendar year at the instream waste concentration (IWC) set forth in section 4.2.1.2 of the Order. The Discharger shall continue routine monitoring during any Toxicity Reduction Evaluation (TRE) consistent with MRP section 5.3.7. The routine monitoring frequency shall become once per quarter after any MDEL or MMEL violation.

5.1.3.2. **MMEL Compliance Tests and TRE Determination.** If any routine monitoring test result is “fail,” the Discharger shall conduct at least one and at most two MMEL compliance tests. The results of these tests shall be used to determine if a TRE is necessary according to the process shown in Appendix E-3. The Discharger shall initiate these tests within the same calendar month as the failed routine monitoring test. (For the purposes of MMEL compliance tests, the “calendar month” shall begin on the calendar day that the failed routine monitoring test was initiated. The “calendar month” shall end on the day before the corresponding day of the following month, or on the last day of the following month if it has no corresponding day [e.g., January 31 through February 28]).

5.1.3.2.1. If the first MMEL compliance test result is “pass,” then the Discharger shall conduct a second MMEL compliance test. If the first MMEL compliance test result is “fail,” that result constitutes an MMEL violation and a second MMEL compliance test is not required. If any of the failed tests were also

an MDEL violation, the Discharger shall conduct a TRE (see MRP section 5.3).

- 5.1.3.2.2. If the second MMEL compliance test result is “pass,” then the Discharger shall return to routine monitoring as described in MRP section 5.1.3.1.¹ If the second MMEL compliance test result is “fail,” that result constitutes an MMEL violation. If any of the failed tests were also an MDEL violation, the Discharger shall conduct a TRE (MRP section 5.3).
- 5.1.3.2.3. If the Discharger cannot conduct an MMEL compliance test because not enough effluent is available to test, the Discharger shall return to routine monitoring as soon as enough effluent is available.
- 5.1.4. **Methodology.** Sample collection, handling, and preservation shall be in accordance with U.S. EPA protocols. Bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in Appendix E-2. These are:
- *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, currently 1st edition (EPA/600/R-95-136);
 - *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, currently 3rd edition (EPA-821-R-02-014); and
 - *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, currently 4th edition (EPA-821-R2-02-013).

If these protocols prove unworkable, the Executive Officer and the Environmental Laboratory Accreditation Program may grant exceptions in writing upon the Discharger’s request with justification.

Chronic toxicity shall be evaluated using the Test of Significant Toxicity (TST) as described in the State Water Board’s *State Policy for Water Quality Control: Toxicity Provisions* (Toxicity Provisions), section III.B.3. The selected test concentrations shall include the IWC. The TST shall be conducted using the IWC sample and a control as described in Toxicity Provisions section III.B.3. Test sample pH may be controlled to the level of the effluent sample as received by the laboratory prior to being salted up. A result of “fail” indicates toxicity at the IWC.

¹ See Appendix E-3, *Toxicity Reduction Evaluation Process Flowchart*.

If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, the evaluation for meeting the chronic toxicity target may be performed after test samples are adjusted to remove the influence of those substances. The adjustment shall not remove the influence of other substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration must be obtained prior to any such adjustment.

5.2. Reporting

The Discharger shall provide toxicity test results with self-monitoring reports and shall include the following, at a minimum, for each test:

- 5.2.1. Sample date.
- 5.2.2. Test initiation date.
- 5.2.3. Test species.
- 5.2.4. End point values for the control and IWC sample (e.g., number of young, growth rate, percent survival). For routine monitoring and MMEL compliance tests, the Discharger shall report the results as either "pass" or "fail," and the percent effect at the IWC for each endpoint.
- 5.2.5. End point values for each replicate of the control and IWC sample (e.g., number of young, growth rate, percent survival).
- 5.2.6. Available water quality measurements for each test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, ammonia).

5.3. Toxicity Reduction Evaluation (TRE)

- 5.3.1. The Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order to be ready to respond to toxicity events. The Discharger shall review and update the generic work plan as necessary so it remains current and applicable to the discharge and discharge facilities.
- 5.3.2. Within 30 days of the following circumstances, the Discharger shall submit a TRE work plan that shall be the generic work plan revised as appropriate for the particular toxicity observed. The circumstances triggering a TRE are as follows:
 - 5.3.2.1. The Discharger has any combination of two or more MDEL or MMEL violations within a single calendar month or two successive calendar months; or
 - 5.3.2.2. The Discharger violates the MDEL or MMEL during a calendar month, there is no effluent available to test in the following calendar month, and the Executive Officer requires a TRE.

- 5.3.3. Within 30 days of submitting the TRE work plan, the Discharger shall initiate a TRE in accordance with the TRE work plan. 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:
- 5.3.3.1. Tier 1 shall consist of basic data collection (routine monitoring, additional routine monitoring, and MMEL compliance tests);
 - 5.3.3.2. Tier 2 shall consist of evaluating treatment processes, including operational practices and process chemicals;
 - 5.3.3.3. Tier 3 shall consist of a toxicity identification evaluation (TIE) to identify the substance or combination of substances causing the observed toxicity. The Discharger shall employ all reasonable efforts using currently available TIE methodologies;
 - 5.3.3.4. Tier 4 shall consist of a toxicity source evaluation;
 - 5.3.3.5. Tier 5 shall consist of a toxicity control evaluation that considers alternative strategies, including treatment process modifications, to reduce or eliminate the toxic substances from the discharge; and
 - 5.3.3.6. Tier 6 shall consist of implementing all reasonable toxicity control measures, and follow-up monitoring and confirmation of implementation success.
- 5.3.4. The Discharger may end the TRE at any stage if monitoring finds there is no longer consistent toxicity (i.e., two consecutive test results of “pass”).
- 5.3.5. The Executive Officer may authorize the Discharger to end a TRE if the Discharger documents that it has exhausted all reasonable efforts to identify the cause of the toxicity.
- 5.3.6. 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.
- 5.3.7. The routine monitoring frequency shall be a minimum of two tests per calendar year at the IWC when the Discharger is conducting toxicity testing as part of a TRE during that calendar year. The Discharger must return to the routine monitoring frequency specified in MRP section 5.1.3.1 at the conclusion of the TRE or one year after the initiation of the TRE, whichever occurs sooner. TRE triggers are set forth in Table E-9 below.

Table E-9. Toxicity Reduction Evaluation (TRE) Triggers

Monitoring Type and Frequency	Triggers	TRE Required?
Routine and MMEL compliance monitoring, less than monthly frequency	1. Violation of MDEL or MMEL in a calendar month, AND 2. No discharge during the following calendar month	Executive Officer may require TRE
Routine and MMEL compliance monitoring	Any combination of two or more MDEL or MMEL violations in a single calendar month or successive calendar months	TRE is required

6. RECEIVING WATER MONITORING

The Discharger shall continue to participate in the Regional Monitoring Program (RMP), which collects data on pollutants and toxicity in San Francisco Bay water, sediment, and biota.

7. REPORTING REQUIREMENTS

7.1. General Monitoring and Reporting Requirements. The Discharger shall comply with all Standard Provisions (Attachments D and G) related to monitoring, reporting, and recordkeeping.

7.2. Self-Monitoring Reports (SMRs)

7.2.1. SMR Format. The Discharger shall electronically submit SMRs using the State Water Board’s California Integrated Water Quality System (CIWQS) Program website (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.

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

7.2.2.1. Monthly SMRs — Monthly SMRs shall be due the first day of the second month after the monthly monitoring period. Each SMR shall contain the applicable items described in Provisions 5.3.2.2 (Effluent Characterization Study and Report), 5.3.5.1.2.2 (Acetone Control), and 5.3.5.10 (Joint Treatment Plant Evaluation) of the Order; Attachment D, section 5.2 (Signatory and Certification Requirements); and Attachment G section 5.3 (Monitoring Reports). Each SMR shall include all new monitoring results obtained since the last SMR was submitted as required by this MRP and Attachment G sections 3.1.3.2 (Conditions Triggering Accelerated Monitoring) and 3.1.3.3 (Conditions Triggering Additional Monitoring). 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. If the Discharger adds isopropanol to

the Refinery’s vacuum pans or discharges condensate, it shall report this in the cover letter for the SMR covering the month it was added.

- 7.2.2.2. **Annual SMR** — Annual SMRs shall be due March 1 each year, covering the previous calendar year. The annual SMR shall contain the applicable items described in Provisions 5.3.2.2 (Effluent Characterization Study and Report), 5.3.5.5.2 (Once-Through Cooling Water Intake Structure), and 5.3.5.5.3 (Entrainment and Impingement Study), 5.3.5.5.5 (Thermal Plume Monitoring Study – Discharge Points 001) of the Order and Attachment G, section 5.3.1.6 (Annual Self-Monitoring Reports).
- 7.2.3. **Pollutant Minimization Program Annual Report** – The Discharger shall implement its Pollutant Minimization Program and submit an annual report due February 28 each year, covering the previous calendar year. The annual report shall contain the applicable items described in Provision 5.3.3.2 of the Order.
- 7.2.4 **Entrainment and Impingement Study** – The Discharger shall implement a entrainment and impingement study in accordance with Provision 5.3.5.5.3 of the Order and submit a final report due with the Report of Waste Discharge on January 2, 2030.
- 7.2. 5. **Thermal Plume Monitoring Study** – The Discharger shall implement a thermal plume monitoring study in accordance with Provision 5.3.5.5.5 of the Order and submit a final report due with the Report of Waste Discharge on January 2, 2030.
- 7.2. 6. **Annual Stormwater Report** — The Discharger shall submit annual stormwater reports by July 30 each year, covering the July 1 through June 30 of the preceding reporting year. The annual stormwater report shall contain the items listed in Attachment S, Section 3.1.
- 7.2.7. **Outfall Inspection and Maintenance** – The Discharger shall inspect the condition of its outfalls at Discharge Points 001 and 002 in accordance with Provision 5.3.5.8 of the Order and submit an Outfall Inspection Report with the Report of Waste Discharge on January 2 2030.
- 7.2.3. **Specifications for Submitting SMRs to CIWQS.** The Discharger shall submit analytical results and other information using one of the following methods:

Table E-10. CIWQS Reporting

Parameter	Method of Reporting: EDF/CDF data upload	Attached File
All parameters identified in influent, effluent, and receiving water monitoring tables (except Dissolved Oxygen and Temperature)	Required for all results	-

Parameter	Method of Reporting: EDF/CDF data upload	Attached File
Dissolved Oxygen, Temperature	Required for monthly maximum and minimum results only ^[1]	Discharger may use this method for all results or keep records
Antimony, Arsenic, Beryllium, Cadmium, Chromium, Copper, Cyanide, Lead, Mercury, Nickel, Selenium, Silver, Thallium, Zinc, Dioxins & Furans (by U.S. EPA Method 1613), Other Pollutants (by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625)	Required for all results ^[2]	-
Analytical Method	Not required (Discharger may select "data unavailable") ^[1]	-
Collection Time, Analysis Time	Not required	-

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.

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

Table E-11. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
Continuous/D	Order effective date	All times
1/Hour	Order effective date	Every hour on the hour
1/Day	Order effective date	Any 24-hour period that reasonably represents a calendar day for sampling purposes (e.g., beginning at midnight and continuing through 11:59 p.m.)
1/Week 2/Week	First Sunday following or on Order effective date	Sunday through Saturday
1/Month	First day of calendar month following or on Order effective date ^[2]	First day of calendar month through last day of calendar month ^[2]
1/Quarter	Closest January 1, April 1, July 1, or October 1 before or after Order effective date ^[1]	January 1 through March 31 July 1 through September 30 April 1 through June 30 October 1 through December 31
1/Year	Closest January 1 before or after Order effective date ^[1]	January 1 through December 31

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period
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
Once	Order effective date	Once during the permit term within 12 months prior to applying for permit reissuance

Footnotes:

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

^[2] See Attachment A for the definition of a calendar month for chronic toxicity testing.

7.2.5. **RL and MDL Reporting.** The Discharger shall report with each sample result the Reporting Level (RL) and Method Detection Limit (MDL) as determined by the procedure in 40 C.F.R. part 136. The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

7.2.5.1. 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).

7.2.5.2. 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 Discharger shall require the laboratory to 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 (\pm a percentage of the reported value), numerical ranges (low to high), or any other means the laboratory considers appropriate.

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

7.2.5.4. 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.

7.2.6. **Compliance Determination.** Compliance with effluent limitations shall be determined using sample reporting protocols defined above, in the Fact Sheet, and in 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 pollutant in the monitoring sample is greater than the effluent limitation and, if applicable, greater than or equal to the RL.

7.3. Discharge Monitoring Reports (DMRs). DMRs are U.S. EPA reporting requirements. The Discharger shall electronically certify and submit DMRs together with SMRs using 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 (waterboards.ca.gov/water_issues/programs/discharge_monitoring).

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

1. Definition of Terms

- 1.1. Continuous Discharger.** Discharger that discharges without interruption throughout its operating hours, except for infrequent shutdowns for maintenance, process changes, or other similar activities, and that discharges throughout the calendar year.
- 1.2. Non-Continuous Discharger.** Discharger that does not discharge in a continuous manner or does not discharge throughout the calendar year (e.g., intermittent and seasonal dischargers).

2. Chronic Toxicity Species Sensitivity Screening

- 2.1.** The Discharger shall perform species sensitivity screening as specified in Toxicity Provisions section III.C.2:
 - 2.1.1.** The Discharger shall conduct species sensitivity screening and submit a technical report that identifies the most sensitive test species within 18 months of the effective date of this Order if the Discharger has not previously conducted a species sensitivity screening as specified in section III.C.2 of the Toxicity Provisions.
 - 2.1.2.** The Discharger shall conduct a species sensitivity screening and submit a technical report that identifies the most sensitive test species with the application for permit reissuance. Alternatively, the Discharger may provide species sensitivity screening results from a previous sensitive species screening conducted within the 15 years before the expiration date of this Order if that sensitive species screening was conducted as specified in Toxicity Provisions section III.C.2.
 - 2.1.3.** The Discharger shall conduct species sensitivity screening and submit a technical report that identifies the most sensitive test species no later than 18 months after any significant change in the nature of the effluent discharged due to changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts.
- 2.2.** Species sensitivity screening shall, at a minimum, reflect the following elements:
 - 2.2.1** Test species specified in Appendix E-2, attached, and protocols referenced in those tables. Test species shall be Tier I unless those species are unavailable. In such cases, the Executive Officer may approve a Tier II test species.
 - 2.2.2.** Continuous Dischargers: four sets of tests, one in each calendar quarter of a calendar year.

Non-continuous Dischargers: at least two sets of tests, one in each calendar quarter with at least 15 days of discharge, unless the Discharger discharges in only one quarter of a calendar year; in that case, both sets of testing shall occur during the same calendar quarter. Testing in a specific species sensitivity screening can be conducted using effluent that is not discharged into surface waters (e.g., effluent discharged onto land because of a summer prohibition on discharges into surface waters) as long as the effluent tested is representative of the effluent that will be discharged to surface waters.

- 2.2.3. Appropriate controls as required by the applicable U.S. EPA test method for the selected test species.
- 2.2.4. Tests conducted at a waste concentration of 10 percent or the IWC, whichever represents a higher concentration of effluent. Alternatively, the Executive Officer may specify a higher waste concentration if needed to increase the likelihood that potential effects might be observed.
- 2.3. The Discharger shall submit a species sensitivity screening proposal at least 30 days prior to initiating any species sensitivity screening. The proposal shall address each of the elements listed above.
- 2.4. Unless the Executive Officer specifies otherwise, the most sensitive species shall be the species exhibiting the highest percent effect.

APPENDIX E-2: SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

Table AE-1. West Coast Marine Chronic Toxicity Test Species and Methods

Species	Scientific Name	Tier	Effect	Test Duration	Reference
Giant kelp	<i>Macrocystis pyrifera</i>	I	Percent germination; germ tube length	48 hours	1
Red Abalone	<i>Haliotis rufescens</i>	I	Larval development	48 hours	1
Oyster Mussel	<i>Crassostrea gigas</i> <i>Mytilus sp.</i>	I	Larval development	48 hours	1
Purple Urchin Sand dollar	<i>Strongylocentrotus purpuratus</i> <i>Dendroaster excentricus</i>	I	Percent fertilization or larval development	1 hour or 72 hours	1
Shrimp	<i>Americamysis bahia</i>	II	Percent survival; growth	7 days	2
Topsmelt	<i>Atherinops affinis</i>	I	Percent survival; growth	7 days	1
Silverside	<i>Menidia beryllina</i>	II	Larval growth rate; percent survival	7 days	2

Toxicity Test References:

1. *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.
2. *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. Freshwater Chronic Toxicity Test Species and Method

Species	Scientific Name	Tier	Effect	Test Duration	Reference
Fathead minnow	<i>Pimephales promelas</i>	I	Survival; growth rate	7 days	1
Water flea	<i>Ceriodaphnia dubia</i>	I	Survival; number of young	7 days	1
Green Alga	<i>Selenastrum capricornutum</i>	I	Final cell density	4 days	1

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).

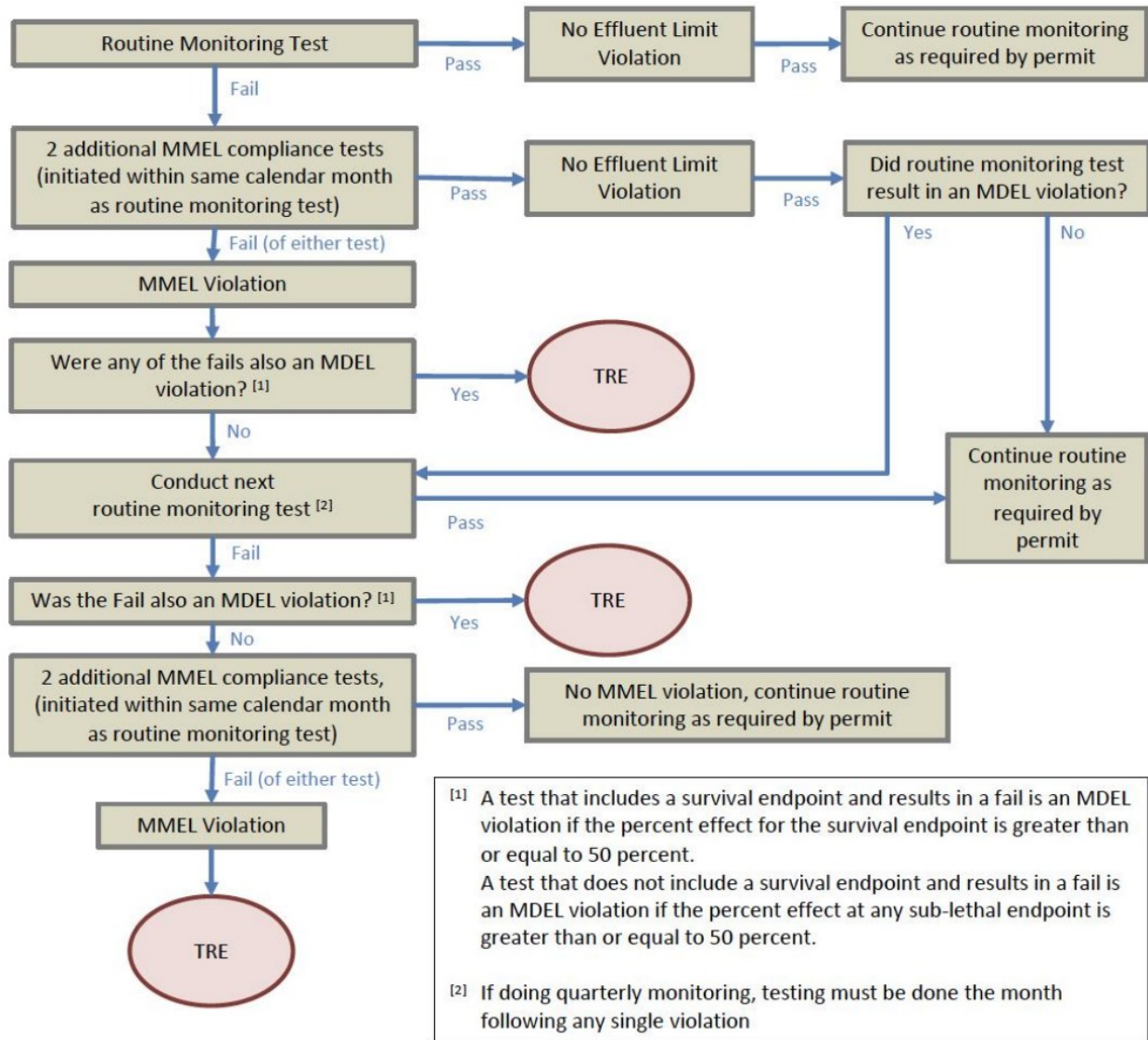
Table AE-3. Toxicity Test Requirements for Species Sensitivity Screening

Requirements	Discharges to Marine or Estuarine Water (San Francisco Bay) ^[1]	Discharges to Freshwater ^[1]
Taxonomic diversity	1 plant 1 invertebrate 1 fish	1 plant 1 invertebrate 1 fish
Screening Requirement	A total of 3 Marine and/or Freshwater species from Table AE-1 and Table AE-2	3 Freshwater species from Table AE-2 ^[2]

Footnotes:

- ^[1] (a) "Marine" refers to receiving water salinities greater than 1.0 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 1.0 ppt at least 95 percent of the time during a normal water year.
- (c) "Estuarine" refers to all other cases (i.e., when receiving water salinity is above 1.0 less than 95 percent of the time and below 1.0 less than 95% of the time).
- ^[2] The freshwater species may be substituted with a 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 IWC is documented to be toxic to the test species.

APPENDIX E-3: TOXICITY REDUCTION EVALUATION PROCESS FLOWCHART ROUTINE MONITORING



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

1. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 071006001
CIWQS Place ID	212212
Discharger	C&H Sugar Company, Inc., and Crockett Community Services District
Facility Name	C&H Sugar Company Refinery, Joint Use C&H Sugar Company-Crockett Community Services District Philip F. Meads Water Treatment Plant, and Crockett Community Services District sanitary sewer system
Facility Address	830 Loring Avenue Crockett, CA 94525 Contra Costa County
Facility Contact, Title, Phone, and Email	John-Paul Nepote, Environmental Manager, 510-210-9402 Johnpaul.nepote@asr-group.com
Authorized Person to Sign and Submit Reports	Hitesh Modgil, General Manager John-Paul Nepote, Environmental Manager
Mailing Address	Same as Facility address
Billing Address	Same as Facility address
Facility Type	Sugar Processing / Privately-Owned Wastewater Treatment Plant
Major or Minor Facility	Major
Water Quality Threat	2
Complexity	A
Pretreatment Program	No
Reclamation Requirements	None
Mercury and PCBs Requirements	NPDES Permit CA0038849
Facility Permitted Flow	35 MGD for once-through cooling water discharged through Outfall 001 1.8 MGD for treated wastewater discharged through Outfall 002
Facility Design Flow	Same as Facility permitted flow
Watershed	Suisun Basin
Receiving Water	Carquinez Strait
Receiving Water Type	Estuarine
Date of Last Inspection	September 24, 2025

- 1.1.** C&H Sugar Company Inc. (C&H Sugar), owns and operates the C&H Sugar Company Refinery (Refinery), which discharges untreated once-through cooling water and condensed vapor at Discharge Point 001; treated wastewater

consisting of sugar refining wastes from the Refinery and domestic waste from the Crockett Community Services District (District) and its associated sanitary sewer system at Discharge Point 002; and stormwater from Discharge Points 005 through 014.

C&H Sugar and the District (collectively, the Discharger) have a Joint Use Agreement that allows the District to discharge domestic waste to the Philip F. Meads Water Treatment Plant, or Joint Treatment Plant, which is majority-owned and operated by C&H Sugar and partially owned by the District. C&H Sugar and the District jointly use the plant, which discharges treated wastewater through Discharge Point 002.

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.

- 1.2.** The Discharger is regulated pursuant to NPDES Permit CA0005240. The Discharger is authorized to discharge subject to the Waste Discharge Requirements (WDRs) in this Order at the discharge location described in Table 1 of this Order.
- 1.3.** The Discharger was previously subject to Order R2-2018-0012 (previous order).
- 1.4.** The Discharger filed a Report of Waste Discharge and submitted an application for reissuance of its WDRs and NPDES permit on September 14, 2022.
- 1.5.** Regulations in the Code of Federal Regulation, title 40 (40 C.F.R.), section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, this Order limits the effective period for the discharge authorization. Pursuant to 40 C.F.R. section 122.6(d) and California Code of Regulations, title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all requirements for continuation of expired permits.
- 1.6.** The Discharger is also regulated under NPDES Permit CA0038849, which establish requirements on mercury and polychlorinated biphenyls (PCBs) from wastewater discharges to San Francisco Bay. This Order does not affect those permits.
- 1.7.** 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.

2. FACILITY DESCRIPTION

C&H Sugar owns and operates a sugar refinery that processes raw cane sugar at an average melt rate of 3,300 tons per day over 260 operating days a year. The Refinery has an average melt rate capacity of 3,600 tons per day and typically operates on a 7-day cycle, with 5 days on and 2 days down.

The Refinery processes approximately 700,000 tons of raw cane sugar annually, producing packaged consumer sugar and packaged, liquid and bulk granulated industrial-use cane sugar. The sugar cane refining process begins with adding raw sugar to a mingler, a large mixing trough where the raw sugar combines with affirmation syrup (concentrated sugar syrup solution) to remove molasses from sugar crystals. The mixture is heated and fed to centrifuges that separate the sugar crystals from the syrup. The sugar is melted, screened, clarified, and treated through pressure and char filters. The resulting syrup then goes through a multiple-effect evaporator, which crystallizes the sugar in vacuum pans that heat the syrup under partial vacuum. The crystallized sugar and the remaining syrup are mixed in a tank and the syrup is separated from the sugar grains again using a centrifuge. Finally, the centrifuged sugar is dried in a granulator, screened, and packaged.

The operations generate low-density “sweetwater” (i.e., dilute sugar solutions), which are reused in the refining processes described above, as well as wastewater, as described in section 2.1 below. Crockett Cogeneration Plant, a neighboring natural gas-fired steam electric cogeneration plant, provides steam used for heat in the sugar refining process.

2.1. Wastewater Treatment and Control

The Refinery discharges about 28 million gallons per day (MGD) of once-through cooling water and condensed vapor from vacuum pans, evaporators and turbine, roof drains, and excess recirculated cooling waters to Carquinez Strait from Discharge Point 001 without treatment. It also discharges approximately 0.85 MGD of secondary-treated process and sanitary wastewater to Carquinez Strait at Discharge Point 002, which the Refinery shares with the District. Both Discharge Points 001 and 002 are deep water outfalls. In addition, the Refinery has four stormwater outfalls.

2.1.1. Once-Through Cooling Water (Discharge Point 001)

The refining process creates waste heat through four process operations: (1) vacuum pan condensers; (2) turbine head exchanger; (3) triple effect evaporator condenser; and (4) sweetwater evaporator condenser. Waste heat is removed with barometric condensers using once-through cooling water pumped from Carquinez Strait. The Refinery discharges untreated once-through cooling water and condensed vapor from crystallizing vacuum pans through Discharge Point 001. The annual average discharge flow through

Discharge Point 001 from 2018 through 2025, excluding days of no discharge, ranged from 10.9 to 22.4 MGD.

West Environmental Services & Technology and Tenera Environmental prepared C&H Sugar's *Cooling Water Intake Report* (January 31, 2020), which describes the water intake system. Water withdrawn from Carquinez Strait enters the cooling water intake structure through a 10-foot-wide trash rack with 0.5-inch vertical steel bars spaced 4 inches apart laterally and vertically, resulting in 3.5-inch openings. Water is filtered through a single traveling water screen with 0.375-inch square mesh openings at a Mean Lower Low Water (MLLW) depth of 13.5 feet. The screen was most recently replaced in 2019. Water then passes through the screen at an average velocity of less than 0.5 feet per second (ft/sec) at the MLLW before reaching a 48-inch diameter reinforced concrete pipe leading to a wet well for the cooling pumps. The traveling screen carries impinged organisms and debris to a sluice trough where they are washed off and returned to Carquinez Strait. On operating days, C&H Sugar withdraws an average of 16 million gallons (MG) from Carquinez Strait.

2.1.2. **Wastewater Treatment Plant Effluent (Discharge Point 002)**

C&H Sugar processes its char washings, scum filter aid slurries, refinery equipment wash water, rail car washings, and contaminated stormwater through a primary wastewater treatment plant before sending it to the Joint Treatment Plant. In 2025, the annual average flow for this wastewater was 0.34 MGD. The Refinery's primary wastewater treatment plant consists of an active sludge process that removes and dewateres solids using a belt filter. The solids are loaded on a truck and shipped offsite for use as a soil amendment.

Crockett is a small community with few industrial activities besides C&H Sugar. The District comminutes and degrits municipal sewage from Crockett and sends the pretreated sewage to the Joint Treatment Plant for secondary treatment and disinfection. The District hauls generated grit to a Class III disposal site. The District's average dry weather design flow to the Joint Treatment Plant is 0.30 MGD. During wet weather, the peak wet weather flow may increase to 2.3 MGD, which the District may temporarily store its wastewater in the District's stormwater surge tanks prior to sending it to the treatment plant. As necessary, peak wet weather flows may also be stored in the treatment plant's surge tank prior to processing. C&H Sugar adds less than 0.04 MGD of Refinery sanitary waste and tank truck washings to the District's pretreated sewage when it reaches the Joint Treatment Plant. In 2025, the annual average flow for the District's wastewater was 0.26 MGD.

In addition, C&H Sugar receives steam from Crockett Cogeneration that is used for the production processes, where it is released as steam or condensed into the hot water system. Any remaining steam condensate is returned to Crockett Cogeneration for reuse. If the steam condensate is unable to be

reused, it is directed to C&H Sugar's hot water system or a holding tank and may be routed to the Joint Treatment Plant for treatment. Discharge of steam condensate at any other location is prohibited (see Discharge Prohibition 3.1 of this Order), a violation of this Order, and subject to the monitoring and reporting requirements in Attachment D sections 5.3 (Monitoring Reports) and 5.5 (Twenty-Four Hour Reporting) and Attachment G sections 3.1.3.3 (Conditions Triggering Additional Monitoring) and 5.3 (Monitoring Reports).

The Refinery and District's flows combine at the Joint Treatment Plant in a surge basin that feeds three 1-MG capacity aeration basins, each equipped with two dissolved air flotation units to clarify the wastewater. C&H Sugar uses belt presses to dewater waste biosolids from the dissolved air clarifiers and sends the biosolids offsite for beneficial reuse or alternative daily cover. Wastewater removed from the belt presses is combined with other process waters and returned to treatment process. The Joint Treatment Plant continues to treat the primary-treated sugar refining wastewater and pretreated municipal wastewater using flow equalization, activated sludge aeration basins, clarification, chlorination, and dechlorination. Because the Refinery process wastewater is typically high in carbohydrates and low in nutrients, C&H Sugar adds phosphoric acid and urea to the treatment process to enhance biological treatment. It then disinfects the clarified wastewater using sodium hypochlorite and dechlorinates it with sodium bisulfite before discharging it through a deepwater outfall to the Carquinez Strait (Discharge Point 002). In 2025, the annual average discharge flow through Discharge Point 002 was 0.60 MGD.

2.1.3. Stormwater (Discharge Points 005 through 014)

C&H Sugar routes stormwater from the Refinery site to Carquinez Strait through four outfalls (Discharge Points 005, 006, 013, and 014). Since the previous order term, C&H Sugar rerouted its storm drain system and removed Discharge Points 003, 008, 009, 011, and 016.

2.2. Discharge Point and Receiving Waters

C&H Sugar discharges once-through cooling water, wastewater treatment plant effluent, and stormwater from Discharge Points 001 through 014 to Carquinez Strait, a water of the United States.

The once-through cooling water is discharged through a submerged, multi-port diffuser (Discharge Point 001) that is about 200 feet offshore of the Refinery at a depth of 48 feet below mean lower low water. The diffuser is 155-feet long, 42-inches in diameter, and has 30 six-inch diameter ports. The Discharger shares this outfall with Crockett Cogeneration LLP under a contractual arrangement, as described in NPDES Permit CA0029904.

The Discharger discharges effluent from the Joint Treatment Plant through a submerged, multi-port diffuser (Discharge Point 002) located about 2,000 feet west

of Discharge Point 001, at a depth of 45-feet below mean lower low water. The diffuser is an 18-feet long, 20-inch diameter pipe, with eight 6-inch diameter ports spaced every 5-feet. It is located at the end of a 324-foot long, 20-inch diameter pipe.

2.3. Previous Requirements and Monitoring Data

The table below presents the previous order’s effluent limitations and representative monitoring data for Discharge Points 001 through 016 are shown in Tables F-2 through F-4 below:

Table F-2. Previous Effluent Limitations and Monitoring Data for Discharge Point 001

Parameter	Unit	Average Monthly Limitation	Maximum Daily Limitation	Instantaneous Minimum	Instantaneous Maximum	Long-Term Average	Highest Daily Value
Biochemical Oxygen Demand (5 day @ 20°C) (BOD5)	lbs/day	2,200	6,700	-	-	232	12,653
pH	standard units	-	-	6.0	9.0	-	6.6 – 8.8 ^[1]
Copper, Total Recoverable	µg/L	54	120	-	-	25	310

Footnote:

^[1] The range is the lowest and highest pH values.

Table F-3. Previous Effluent Limitations and Monitoring Data for Discharge Point 002

Parameter	Unit	Average Monthly Limitation	Maximum Daily Limitation	Instantaneous Minimum	Instantaneous Maximum	Long-Term Average	Highest Daily Value
BOD5	lbs/day	730	2,000	-	-	76	2,304
Total Suspended Solids (TSS)	lbs/day	730	2,600	-	-	390	21,606
pH	standard units	-	-	6.0	9.0	-	4.7 – 8.2 ^[1]
Oil and Grease	mg/L	10	20	-	-	ND	5.5
Total Residual Chlorine	mg/L	-	-	-	0.0	ND	ND
Copper, Total Recoverable	µg/L	54	120	-	-	3.3	19
Lead, Total Recoverable	µg/L	21	65	-	-	0.62	6.7
Cyanide, Total	µg/L	19	43	-	-	9.0	110

Parameter	Unit	Average Monthly Limitation	Maximum Daily Limitation	Instantaneous Minimum	Instantaneous Maximum	Long-Term Average	Highest Daily Value
Chlorodibromomethane	µg/L	340	680	-	-	2.2	7.4
Bis(2-Ethylhexyl) Phthalate	µg/L	53	106	-	-	ND	1.7
Dioxin-TEQ	µg/L	1.4 × 10 ⁻⁸	2.8 × 10 ⁻⁸	-	-	ND	ND
Ammonia, Total	mg/L as N	13	34	-	-	0.46	17
Total Coliform	µg/L	240 ^[2]	-	-	10,000	110	>16,000
<i>Enterococcus</i>	µg/L	35 ^[3]	-	-	-	1.3 ^[4]	132 ^[3]
Acute Toxicity	% Survival	-	-	-	Not less than 90% (11-sample median)	98	95 ^[5]
Acute Toxicity	% Survival	-	-	-	Not less than 70% (11-sample 90th percentile)	98	95 ^[6]

Footnotes:

- ^[1] The range is the lowest and highest pH values.
- ^[2] The limitation was expressed as a monthly median.
- ^[3] The limitation was expressed as a monthly geometric mean.
- ^[4] This value is the geometric mean of all samples from May 2019 through September 2023.
- ^[5] Lowest 11-sample median percent survival.
- ^[6] Lowest 11-sample 90th percentile survival.

Table F-4. Previous Effluent Limitations and Monitoring Data for Discharge Points 003 through 016

Parameter	Unit	Effluent Limitation	Reported Values
pH	standard units	6.0 - 9.0	6.6 – 8.4 ^[1]
Visible Oil	-	None observed (instantaneous)	None observed
Visible Color	-	None observed (instantaneous)	None observed

Footnote:

- ^[1] The range is the lowest and highest pH values.

2.4. Compliance Summary

2.4.1. Effluent Limitation Violations

2.4.1.1. **Discharge Point 001.** During the previous order term, the Discharger exceeded the effluent limitations at Discharge Point 001 for copper and biochemical oxygen demand (BOD5) as listed below:

Table F-5. Numeric Violations – Discharge Point 001

Violation Date	Limitation Violated	Units	Effluent Limitation	Reported Value
7/10/2019	Copper, Total Daily Maximum	µg/L	120	310
7/31/2019	Copper, Total Monthly Maximum	µg/L	54	310
12/18/2019	BOD5, Daily Maximum	lbs/day	6,700	10,817
12/31/2019	BOD5, 30-Day Average	lbs/day	2,200	3,309
12/16/2020	BOD5, Daily Maximum	lbs/day	6,700	11,807
12/31/2020	BOD5, 30-Day Average	lbs/day	2,200	3,403
12/29/2021	BOD5, Daily Maximum	lbs/day	6,700	10,912

C&H Sugar conducted accelerated monitoring following its elevated copper sample on July 10, 2019, and was unable to determine the cause of the copper violations after all four accelerated samples were below the effluent limitation. The daily maximum BOD5 exceedances in December 2019 and 2020 contributed to the exceedances of those month’s 30-day averages. Similarly to the copper exceedances, C&H Sugar was unable to determine the cause of the BOD5 violations and conducted accelerated monitoring, all of which were in compliance. The Regional Water Board settled these effluent limitation violations through mandatory minimum penalties and an Administrative Civil Liability described in section 2.4.1.2, below.

2.4.1.2. **Discharge Point 002.** During the previous order term, the Discharger exceeded the effluent limitations at Discharge Point 002 for the cyanide, pH, BOD5, total suspended solids, total coliform, and *Enterococci* as listed below:

Table F-6. Numeric Violations – Discharge Point 002

Violation Date	Limitation Violated	Units	Effluent Limitation	Reported Value
2/6/2019	Cyanide, Daily Maximum	µg/L	43	110
2/28/2019	Cyanide, Monthly Average	µg/L	19	57.8
5/14/2022	pH, Instantaneous Minimum	standard units	6.0	5.0
5/15/2022	pH, Instantaneous Minimum	standard units	6.0	4.7
5/16/2022	pH, Instantaneous Minimum	standard units	6.0	5.0
5/17/2022	pH, Instantaneous Minimum	standard units	6.0	5.4
10/12/2022	BOD5, Daily Maximum	lbs/day	2,000	2,304
10/12/2022	Total Suspended Solids (TSS), Daily Maximum	lbs/day	2,600	3,297
10/13/2022	Total Coliform, Daily Maximum	MPN/100 mL	10,000	>16,000
3/31/2023	TSS, Monthly Average	lbs/day	730	789

Violation Date	Limitation Violated	Units	Effluent Limitation	Reported Value
4/11/2023	Total Coliform, Daily Maximum	MPN/100 mL	10,000	>16,000
1/3/2024	<i>Enterococci</i> , Monthly Geometric Mean	MPN/ 100 mL	35	132
1/18/2024	Total Coliform, Daily Maximum	MPN/100 mL	10,000	>16,000
12/26/2024	Total Coliform, Daily Maximum	MPN/100 mL	10,000	>16,000
8/5/2025	TSS, Daily Maximum	lbs/day	2,600	4,623
8/31/2025	TSS, Monthly Average	lbs/day	730	918
9/3/2025	TSS, Daily Maximum	lbs/day	2,600	21,606
9/3/2025	Total Coliform, Daily Maximum	MPN/100 mL	10,000	>16,000
9/4/2025	TSS, Daily Maximum	lbs/day	2,600	8,664
9/5/2025	Total Coliform, Daily Maximum	MPN/100 mL	10,000	>16,000
9/30/2025	Cyanide, Monthly Average	µg/L	19	20.3
9/30/2025	TSS, Monthly Average	lbs/day	730	1,717
12/16/2025	TSS, Daily Maximum	lbs/day	2,600	14,381
12/23/2025	TSS, Daily Maximum	lbs/day	2,600	3,249
12/31/2025	TSS, Monthly Average	lbs/day	730	3,886

In response to cyanide exceedances in February 2019, C&H Sugar re-analyzed the original sample and initiated accelerated monitoring. C&H Sugar did not identify any potential sources of cyanide.

The pH exceedances in May 2022 were caused by a microbial die-off at the Joint Treatment Plant due to an electrical failure at the Refinery. In response, C&H Sugar diverted its wastewater to holding tanks and injected its activated sludge aeration basins with seeding sludge and additives to increase microbial activity. C&H also added lime to increase the pH levels.

In October 2022, C&H Sugar violated its daily maximum effluent limitations for BOD5, TSS and total coliform, all of which were attributed to equipment failures. The Regional Water Board settled these violations and the previous pH violations through an administrative civil liability.

In 2023, C&H Sugar violated its monthly average effluent limitation for TSS and daily maximum effluent limitation for total coliform. C&H conducted accelerated monitoring and did not determine a cause for the violations.

In January 2024, the C&H Sugar violated its daily maximum effluent limitation for total coliform. C&H discovered that a pump used to transport sludge to the belt press was failing, causing solids to build up in the contact chamber and preventing adequate disinfection. In response, C&H Sugar halted its discharge, cleaned the contact chamber to removal excessive solids, and

ordered an additional sludge pump to operate as a backup. Due to the delay in receiving the coliform results, accelerated monitoring was not conducted. During the same month, C&H Sugar exceeded its daily maximum effluent limitation for *Enterococcus*, but did not determine a cause for the violation. On December 26, 2024, equipment maintenance delayed operators from verifying chlorine concentrations in the chlorine contact chamber, which likely caused the total coliform daily maximum exceedance. The residual chlorine likely dissipated to a level that was unable to disinfect.

The Regional Water Board settled these effluent limitation violations through mandatory minimum penalties as part of an Administrative Civil Liability (ACL) Order R2-2025-1022, which imposed a penalty of \$734,000. Order R2-2025-1022 stipulated that C&H Sugar pay \$360,000 to the State Water Pollution Cleanup and Abatement account and \$374,000 to the Contra Costa Resource Conservation District to implement a Supplemental Environmental Project. The Supplemental Environmental Project funds the *Crockett Shoreline Flood Mitigation Project*, which will improve water quality within the Crockett Waterfront by building green infrastructure to filter pollutants and address seasonal flooding. The green infrastructure includes installation of a bioretention basin, a rain water garden, and a permeable surface bordered by bioswales to slow down and filter runoff while promoting groundwater recharge.

In 2025, there were multiple TSS violations. The TSS exceedances started in August and continued into September due to improper flocculation at the Joint Treatment Plant. This also contributed to a total coliform exceedance. During this time, there was also a cyanide exceedance, but C&H Sugar was unable to determine the cause of this violation. C&H Sugar addressed the flocculation issue by clearing out filamentous bacteria that affected the dewatering process. The Joint Treatment Plant faced a similar flocculation issue in December 2025 due to issues with its belt presses that resulted in high levels of solids. In response, C&H Sugar bought a spare motor for its belt press and is working on the installation of a centrifuge solid removal system as a replacement for the belt press to better remove solids. The Regional Water Board is addressing these violations.

- 2.4.2. **Sanitary Sewer System.** The table below summarizes the District's Category 1 sanitary sewer spill rates for the last five years. Category 1 spill rates are those that reach waters of the United States and thus may violate Prohibition 3.5 of this Order.

Table F-7. Category 1 Spill Rates (Spills/100 miles)
 (Values based on CIWQS data analysis completed in June 2024) ^[1]

	Length (miles) ^[2]	Average Pipe Age (years) ^[3]	2019	2020	2021	2022	2023
District	16	53	6.2	12	0	6.2	19
San Francisco Bay Region	17,700	49	1.4	0.68	1.2	1.0	0.86
State of California	106,000	48	0.59	0.35	0.50	0.45	0.36

Footnotes:

- ^[1] A sanitary sewer spill rate is the total number of sanitary sewer spills per 100 miles of sewer system. The State Water Board's *Enrollee's Guide to the SSO Database* defines "Total number of [sanitary sewer spills] per 100 miles of sewer" as "...the number of [sanitary sewer spills], for which the reporting enrollee is responsible, for every 100 miles of pipe or sewer lines in an enrollee's sanitary sewer system. Due to the large variation in facility specific characteristics, this metric should only be viewed as a rough comparison of the operation and maintenance performance of enrollees and their sanitary sewer systems."
- ^[2] Length shown is based on 2024 data.
- ^[3] The average pipe age for the State of California is estimated based on the percentage of piping constructed during each decade as reported by enrollees under the statewide WDRs for sanitary sewer systems. Ages shown are based on 2024 data.

The District's Category 1 sanitary sewer spill rates are higher compared to the San Francisco Bay Region's rates. The sanitary sewer system is small, at 16 miles long, so a single spill exceeds the regional and state average. The District's 2023 sanitary sewer spill rate was the highest during the previous permit term and represents three Category 1 sanitary sewer spills; on average, each Category 1 spill was less than 1,000 gallons.

During the previous permit term, the District rehabilitated sewer pipes at a rate of approximately two percent per year, televised approximately ten percent of its pipeline each year, and cleaned its entire sanitary sewer system based on a five-year frequency. The District also works with the Bay Area Pollution Prevention Group (BAPPG) on outreach activities to educate on fats, oils, and grease. In 2023, the District replaced six sanitary sewer assets and conducted three spot repairs to address small breaks and root blockages.

The District's sanitary sewer system experiences increased flows during wet weather, likely due to exposed laterals. The District is not responsible for private sewer laterals up to and including the connections to the District's sewer mainlines. Under the District's Sewer Lateral Compliance Ordinance, property owners are required to demonstrate that the property's sewer line is in good working order when selling their homes. However, real estate turnover in the District's service areas is limited. Nonetheless, these increased flows have not contributed to increased spills, even in the 2022-23 wet weather season, which brought record rainfall to the region.

To combat increased flow, the District uses a concrete equalization tank to temporarily store wastewater prior to treatment at the Joint Treatment Plant. The concrete equalization tank is located near the Carquinez Bridge with a capacity to store 1.95 million gallons. The District utilizes this equalization tank during wet weather events and power outages.

2.5. Sea Level Rise. The Discharger assessed the risks associated with sea level rise using a model from ClimateAi, which uses machine learning and artificial intelligence. The assessment calculated the risks of chronic hazards, such as extreme temperature and precipitation, across a range of climate change scenarios. It also included hazards such as hurricanes, wildfires, floods, water availability, and water scarcity scenarios up to the year 2100. The results of the study indicated a low or negligible risk of sea level rise impacting the Joint Treatment Plant. At this time, the Discharger determined that no additional mitigation measures, such as levee construction, were necessary.

3. APPLICABLE PLANS, POLICIES, AND REGULATIONS

The requirements contained in this Order are based on the requirements and authorities described in this section.

3.1. 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 the U.S. EPA, and Water Code chapter 5.5, division 7 (commencing with § 13370). It serves as an NPDES permit authorizing the Discharger to discharge into waters of the United States at the discharge location described in Table 1 subject to the WDRs in this Order.

3.2. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resources Code division 13, chapter 3 (commencing with § 21100). This Order includes two provisions—Provision 5.3.5.3.1 and Attachment G Provision 1.9.1—under state law only. These state law requirements are not subject to the exemption under Water Code section 13389. However, the previous order imposed these requirements. As such, retaining these requirements is not a project subject to CEQA because they will not cause a direct or indirect physical change in the environment (Public Resources Code §§ 21065, 21080).

3.3. State and Federal Laws, Regulations, Policies, and Plans

3.3.1. Water Quality Control Plan. The Regional Water Board adopted the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, this Order implements State Water Board Resolution 88-63, which established State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Because of the marine influence on Carquinez Strait, total dissolved solids levels exceed 3,000 mg/L; therefore, Carquinez Strait meets an exception to

State Water Board Resolution 88-63. The beneficial uses applicable to Carquinez Strait are as follows:

Table F-8. Beneficial Uses

Discharge Points	Receiving Water	Beneficial Uses
001 through 014	Carquinez Strait	Industrial Service Supply (IND) Commercial and Sport Fishing (COMM) Estuarine Habitat (EST) Fish Migration (MIGR) Preservation of Rare and Endangered Species (RARE) Fish Spawning (SPWN) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2) Navigation (NAV)

- 3.3.2. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** The NTR and CTR contain federal water quality criteria for priority pollutants. U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. About 40 NTR criteria apply in California. U.S. EPA adopted the CTR on May 18, 2000. The CTR promulgated new toxics criteria for California and incorporated the NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001, and again on January 16, 2025.
- 3.3.3. **State Implementation Policy.** 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) on March 2, 2000. The SIP establishes implementation provisions for priority pollutant criteria and objectives, and provisions for chronic toxicity control. 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 through 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. Requirements of this Order implement the SIP.
- 3.3.4. **Sediment Quality.** The State Water Board adopted the *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* on September 16, 2008, and it became effective on August 25, 2009. The State Water Board adopted amendments to the plan on June 5, 2018, that became effective on March 11, 2019. This plan establishes sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries.
- 3.3.5. **Bacteria Objectives.** The State Water Board adopted the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of*

California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy on August 7, 2018, and it became effective on March 22, 2019. This plan establishes *Enterococcus* bacteria water quality objectives and related implementation provisions for discharges to marine and estuarine waters that support the water contact recreation (REC1) beneficial use.

- 3.3.6. **Toxicity Provisions.** On December 1, 2020, the State Water Board adopted *State Policy for Water Quality Control: Toxicity Provisions* (Toxicity Provisions), which established statewide numeric water quality objectives for both acute and chronic toxicity using the Test of Significant Toxicity (TST) and a program of implementation to control toxicity. On October 5, 2021, the State Water Board adopted a resolution confirming that the Toxicity Provisions were adopted as a state policy for water quality control for all inland surface waters, enclosed bays, estuaries, and coastal lagoons of the state, regardless of their status as waters of the United States. The Toxicity Provisions establish a uniform regulatory approach to provide consistent protection of aquatic life beneficial uses and protect aquatic habitats and life from the effects of known and unknown toxicants. The Toxicity Provisions were approved by the Office of Administrative Law on April 25, 2022, and by U.S.EPA on May 1, 2023.

On December 14, 2023, the State Water Board applied for U.S. EPA Region IX review and approval of a limited-use alternative test procedure (ATP) for the use of one effluent concentration when conducting whole effluent toxicity (WET) tests, pursuant to 40 C.F.R. section 136.5 (Aug. 28, 2017). The application is specific to acute or chronic WET tests in Table 1 of the application when using the TST statistical approach (U.S. EPA, 2010) for analyzing the data. The application is being sought for all dischargers or facilities in the State of California and their associated laboratories. The ATP application is still pending with U.S. EPA.

The use of the TST has been the subject of litigation. In December 2024, the Second District Court of Appeal upheld the use of the TST in an NPDES permit in the case *Camarillo Sanitary District v. California Regional Water Quality Control Board - Los Angeles Region*.

A separate legal challenge to the State Water Board's adoption of the Toxicity Provisions originated in Fresno County Superior Court on July 18, 2022, through a petition for writ of mandate filed by Camarillo Sanitary District, City of Simi Valley, City of Thousand Oaks, Central Valley Clean Water Association, and Clean Water SoCal (formerly known as Southern California Alliance of Publicly Owned Treatment Works) (Petitioners). One of the claims was that the Toxicity Provisions were inconsistent with the Clean Water Act. On October 9, 2023, the superior court denied the petition in its entirety.

On December 19, 2023, three of the Petitioners filed a notice of appeal of the Fresno Superior Court's decision upholding the Toxicity Provisions. On August 5, 2025, the Fifth District Court of Appeal issued a published opinion

holding that the TST statistical approach, which is an integral component of the Toxicity Provisions, cannot be utilized in NPDES permitting to evaluate WET data because the TST is not an approved method under 40 C.F.R. part 136. The Court of Appeal did not, however, disturb the Toxicity Provisions' use of the TST as a part of its water quality objectives. The State Water Board prevailed on all other claims in the litigation. The Court of Appeal's decision became final on September 4, 2025.

On September 15, 2025, the State Water Board filed a petition for review of the Fifth Circuit Court of Appeal's decision with the California Supreme Court. On November 12, 2025, the California Supreme Court granted review. The issues to be briefed and argued are limited to the issues raised in the State Water Board's petition for review.

Pending the California Supreme Court's review, the opinion of the Fifth Circuit Court of Appeal is not binding on the Water Boards. However, the opinion may be cited, not only for its persuasive value, but also for the limited purpose of establishing the existence of a conflict in authority.

In accordance with Water Code sections 13146 and 13247, the Regional Water Board must fully implement the water quality objectives and their implementation procedures in the Toxicity Provisions. The numeric water quality objectives for chronic and acute toxicity established by the Toxicity Provisions, which are based on the TST, were approved by U.S. EPA and remain in effect. As such, the numeric water quality objectives continue to serve as the applicable federal water quality standards in California.

The Regional Water Board must also continue to comply with federal Clean Water Act NPDES regulations for determining reasonable potential and establishing applicable water quality-based effluent limitations (WQBELs). NPDES regulations (40 C.F.R. section 122.44(d)(1)(vii)(A)) require that all WQBELs be derived from and comply with all applicable water quality standards. Moreover, although the Toxicity Provisions left in place narrative water quality objectives for aquatic toxicity in the Basin Plan, the Toxicity Provisions did supersede Basin Plan provisions and portions of the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP) for implementing narrative water quality objectives. As such, there are currently no Basin Plan or SIP procedures in effect for implementing narrative water quality objectives to determine reasonable potential as required by 40 C.F.R. section 122.44(d)(1)(ii). As a result, the Regional Water Board must fully implement all of the Toxicity Provisions.

- 3.3.7. **Thermal Plan.** The State Water Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (hereinafter Thermal Plan) on January 7, 1971, and amended this plan on September 18, 1975. This plan contains temperature

objectives for surface waters. Under the Thermal Plan, the cooling water discharge from Discharge Point 001 is considered an existing discharge of elevated temperature waste to an enclosed bay because the discharge began before State Water Board adoption of the Thermal Plan. Requirements of this Order implement the Thermal Plan.

- 3.3.8. **Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 require that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, which incorporates 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.
- 3.3.9. **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.
- 3.3.10. **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 federal Endangered Species Act (16 U.S.C. §§ 1531 to 1544). This Order requires compliance with effluent limitations, receiving water limitations, and other requirements to protect the beneficial uses of waters of the State, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all applicable Endangered Species Act requirements.
- 3.3.11. **Sewage Sludge and Biosolids.** U.S. EPA administers 40 C.F.R. part 503, *Standards for the Use or Disposal of Sewage Sludge*, which regulates the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a municipal wastewater treatment facility. This Order does not authorize any act that violates those requirements. The Discharger is responsible for meeting applicable requirements of 40 C.F.R. part 503.
- 3.3.12. **Clean Water Act section 316(b) Rule (Cooling Water Intakes).** Clean Water Act Section 316(b) and 40 C.F.R. part 125 subparts I and J require that the location, design, construction, and capacity of cooling water intake structures reflect the best technology available for minimizing adverse environmental impact. U.S. EPA amended the rule effective October 15, 2014. Point source

dischargers with a design intake flow of 2 MGD or greater that use at least 25 percent of the water withdrawn from waters of the United States exclusively for cooling are subject to these requirements.

3.4. Impaired Water Bodies on CWA section 303(d) List. On May 11, 2022, U.S. EPA approved a revised list of impaired waters pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for nonpoint sources and are established to achieve water quality standards. Carquinez Strait is listed as impaired by mercury, PCBs, dioxin-like PCBs, chlordane, DDT, dieldrin, invasive species, dioxin compounds (including 2,3,7,8-TCDD), selenium, and furan compounds.

On February 12, 2008, U.S. EPA approved a TMDL for mercury in San Francisco Bay. On March 29, 2010, U.S. EPA approved a TMDL for PCBs in San Francisco Bay. The TMDLs for mercury and PCBs apply to this discharge and are implemented through NPDES Permit CA0038849. On August 23, 2016, U.S. EPA approved a selenium TMDL for North San Francisco Bay, including Carquinez Strait. The selenium TMDL does not require effluent limitations for industrial wastewater dischargers (with the exception of petroleum refineries) because these discharges have an insignificant effect on North Bay water quality with respect to selenium.

As shown in Fact Sheet section 4.3.3, the discharge is not a significant source of chlordane, DDT, or dieldrin, because these pollutants have not been detected in the discharge. The discharge is also not a source of invasive species because it is disinfected. The discharge is an insignificant source of dioxins and furans compounds; nonetheless, this Order contains dioxin-TEQ effluent limitations to ensure that dioxins and furans in effluent are kept below water quality objectives.

4. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

4.1. Discharge Prohibitions

4.1.1. Prohibitions in this Order

- 4.1.1.1. **Discharge Prohibition 3.1 (No discharge other than as described):** This prohibition is based on 40 C.F.R. section 122.21(a) and Water Code section 13260, which require filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the application and Report of Waste Discharge, and subsequently in this Order, are prohibited.
- 4.1.1.2. **Discharge Prohibition 3.2 (No bypass to waters of the United States):** This prohibition is based on 40 C.F.R. section 122.41(m) (see Attachment D, section 1.7).
- 4.1.1.3. **Discharge Prohibition 3.3 (No discharge without minimum initial dilution described in Fact Sheet sections 4.3.4.2.1 and 4.3.4.3.1):** This prohibition is based on Discharge Prohibition 1 from Basin Plan Table 4-1, which prohibits discharges that do not receive a minimum of 10:1 initial dilution. Furthermore, this Order allows a 10:1 dilution credit in the calculation of multiple water quality-based effluent limitations based on information regarding the dilution achieved by the Discharger's outfalls. Therefore, this prohibition is necessary to ensure that this Order's effluent limitations and toxicity requirements remain protective of water quality.
- 4.1.1.4. **Discharge Prohibition 3.4 (No sanitary sewer spills to waters of the United States):** This prohibition is based on Discharge Prohibition 15 of Basin Plan Table 4-1 and the CWA, which prohibit the discharge of wastewater to surface waters, except as authorized under an NPDES permit. Publicly owned treatment works must achieve secondary treatment at a minimum and any more stringent limitations necessary to meet water quality standards. A sanitary sewer spill that results in the discharge to waters of the United States of raw sewage or wastewater not meeting this Order's effluent limitations is therefore prohibited under the Basin Plan and CWA.
- 4.1.1.5. **Discharge Prohibition 3.5 (No algaecides or anti-fouling additives in barometric condenser cooling water system):** This prohibition ensures that toxic additives are not present in cooling water discharges. It is necessary because this Order does not contain effluent limitations for algaecides and anti-fouling agents and does not require toxicity testing of cooling water discharges. Algaecides and anti-fouling agents are, by their nature, toxic.

4.1.2. Basin Plan Discharge Prohibitions

Basin Plan Discharge Prohibition 1 (Basin Plan Table 4-1) prohibits the discharge of any wastewater that has particular characteristics of concern to beneficial uses at any point where the discharge does not receive an initial

dilution of at least 10:1 to limit exposure to undiluted wastes or abnormal discharges caused by the malfunction or upset of a treatment process. Discharges from Discharge Points 001 and 002 receive at least 10:1 initial dilution.

Basin Plan Discharge Prohibition 1 does not apply to the discharge of stormwater from Discharge Points 005 through 014 because stormwater flows are not continuous and are not subject to plant upset or malfunction. Furthermore, this discharge would qualify for an exception to Basin Plan Discharge Prohibition 1 if the prohibition applied. Providing for deep-water discharge to achieve an initial dilution of at least 10:1 would be impractical for a stormwater discharge and thus would constitute an inordinate burden. In addition, Provision 5.3.5.2.1 of this Order requires the Discharger to provide an equivalent level of environmental protection by developing and implementing Best Management Practices reflecting best industry practice considering technological availability and economic practicability to comply with effluent limits and minimize pollutants in stormwater.

4.2. Technology-Based Effluent Limitations

4.2.1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44(a) require that permits include applicable technology-based requirements based on several levels of control:

- Best practicable treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants. Conventional pollutants include 5-day biochemical oxygen demand (BOD₅), total suspended solids (TSS), pH, and oil and grease.
- Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.
- Best conventional control technology (BCT) represents the control from existing industrial point sources of conventional pollutants. The BCT standard is established after considering the “cost reasonableness” of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.
- New source performance standards (NSPS) represent the best available demonstrated control technology standards for new sources. The intent of

NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires U.S. EPA to develop effluent limitations, guidelines, and standards representing application of BPT, BAT, BCT, and NSPS. U.S. EPA established effluent limitation guidelines for the crystalline cane sugar refining industry at 40 C.F.R. part 409 subpart B. These limitations are based, in part, on the melt rate of raw cane sugar. The Refinery’s average melt rate is 3,300 tons per day.

CWA section 402(a)(1) and 40 C.F.R. section 125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis whenever U.S. EPA has not promulgated effluent limitations, guidelines, and standards. When using BPJ to impose technology based effluent limits based on BPT and BCT control, 40 C.F.R. section 125.3 requires the Regional Water Board to consider the factors set forth in 40 C.F.R. subsections 125.3(c)(2)(i)-(ii) and 125.3(d).

Basin Plan Table 4-2 contains technology-based effluent limitations for pH, residual chlorine, settleable matter, and oil and grease that apply to all sewage treatment facilities. It also contains effluent limitations for BOD and TSS that the Regional Water Board may, at its option, apply to non-sewage discharges if doing so does not preempt any of U.S. EPA’s effluent limitations, guidelines, and standards.

Table F-9. Selected Effluent Limitations from Basin Plan Table 4-2

Parameter	Monthly Average	Weekly Average	Daily Maximum
BOD5	30 mg/L	45 mg/L	-
TSS	30 mg/L	45 mg/L	-
Oil and Grease	10 mg/L	20 mg/L	-
pH	-	-	6.0 – 9.0

4.2.2. Effluent Limitation Guidelines

The following standards of performance for existing crystalline cane sugar refinery facilities, representing BPT and BCT, as established at 40 C.F.R. 409 subpart B, apply to the Refinery:

- 4.2.2.1. **Barometric Condenser Cooling Water and Other Process Waters.** In accordance with 40 C.F.R. section 409.22(a), any crystalline cane sugar refinery discharging both barometric condenser cooling water and other process waters must meet the following limitations. The BOD limitation is determined by adding the BOD attributed to the barometric condenser cooling water to the amount of BOD attributed to the process water. The TSS limitation is the amount of TSS attributed to the treated process water.

Table F-10. Technology-Based Requirements of 40 C.F.R. section 409.22(a)

Parameter	Monthly Average	Daily Maximum
BOD5 ^[1]	0.86 lbs/ton	2.38 lbs/ton
TSS ^[1]	0.18 lbs/ton	0.54 lbs/ton
pH	6.0 – 9.0 standard units	

Footnote:

^[1] Pounds BOD or TSS per ton of melt (raw sugar contained within aqueous solution at the beginning of the process for production of refined cane sugar).

4.2.2.2. **Barometric Condenser Cooling Water Only.** In accordance with 40 C.F.R. section 409.22 (b), any crystalline cane sugar refinery discharging barometric condenser cooling water only (e.g., the cooling water from Discharge Point 001) is required to achieve the following net limitations.

Table F-11. Technology-Based Requirements of 40 C.F.R. section 409.22(b)

Parameter	Monthly Average	Daily Maximum
BOD5 ^[1]	0.68 lbs/ton	2.04 lbs/ton

Footnote:

^[1] Pounds BOD or TSS per ton of melt (raw sugar contained within aqueous solution at the beginning of the process for production of refined cane sugar).

4.2.2.3. **Process Water Only.** To derive technology-based standards for process water only, the standards in Table F-10 are subtracted from those in Table F-11, as shown in Table F-12, based on best professional judgment.

Table F-12. Technology-Based Requirements for Process Wastewater

Parameter	Monthly Average	Daily Maximum
BOD5 ^[1]	0.18 lbs/ton	0.34 lbs/ton
TSS ^[1]	0.18 lbs/ton	0.54 lbs/ton
pH	6.0 – 9.0 standard units	

Footnote:

^[1] Pounds BOD or TSS per ton of melt (raw sugar contained within aqueous solution at the beginning of the process for production of refined cane sugar).

4.2.3. Technology-Based Effluent Limitations

4.2.3.1. **Discharge Point 001.** The technology-based standards described above require the following effluent limitations for Discharge Point 001 (barometric cooling water only). The BOD5 effluent limitations are based on an average melt rate of raw cane sugar of 3,300 tons per day (limits are rounded to two significant digits):

$$\begin{aligned} \text{BOD5 maximum daily limitation (lbs/day)} &= 2.04 \text{ lbs/ton} \times 3,300 \text{ tons/day} \\ &= 6,700 \text{ lbs/day} \end{aligned}$$

$$\begin{aligned} \text{BOD5 monthly average limitation (lbs/day)} &= 0.68 \text{ lbs/ton} \times 3,300 \text{ tons/day} \\ &= 2,200 \text{ lbs/day} \end{aligned}$$

Table F-13. Technology-Based Limitations for Discharge Point 001

Parameter	Monthly Average	Daily Maximum
BOD5 ^[1]	2,200 lbs/day	6,700 lbs/day
pH	6.0 – 9.0 standard units	

Footnote:

^[1] In accordance with 40 C.F.R. section 409.22 (b), compliance is to be determined based on the net increase of BOD5 above the intake measured at Monitoring Location INF-001.

4.2.3.2. **Discharge Point 002.** Discharge Point 002 contains both Refinery process wastewater and municipal wastewater. Based on best professional judgment, the technology-based standards specified in 40 C.F.R. parts 409(a) and (b) are used to calculate BOD and TSS effluent limitations for process wastewater, as indicated in Table F-12. In addition, Basin Plan Table 4-2 specifies technology-based BOD and TSS concentration-based effluent limitations for municipal wastewater treatment plants, or publicly owned treatment works (POTWs), based on the secondary treatment standards shown in Table F-9. Under 40 C.F.R. section 133.103(b)(2), these concentration-based limitations may be adjusted when industrial wastewater is introduced to a POTW under certain conditions.

4.2.3.2.1. **BOD and TSS (Mass-Based Limitations).** The BOD and TSS mass load effluent limitations are based on best professional judgment. They are the sum of the limitations for the process wastewater and the limitations for the municipal wastewater. For process wastewater, the calculations are based on an average melt rate of raw cane sugar of 3,300 tons per day and the values listed in Table F-12.

For municipal wastewater, the concentration-based effluent limitations call for weekly average BOD and TSS limits of 45 mg/L and monthly average BOD and TSS limits of 30 mg/L. To calculate the daily mass load, the weekly limitation of 45 mg/L was converted to a daily limitation of 60 mg/L to reflect the different duration over which the limitations are applied. The District’s maximum daily municipal wastewater flow of 2.31 MGD was used to calculate the daily limits, and its long-term average flow of 0.30 MGD was used to calculate the monthly limitations. The calculations use a conversion factor of 8.34 L-lbs/gallon-kg (i.e., 3.7854 L/gallon x 2.36 lbs/kg):

$$\begin{aligned} \text{BOD5 maximum daily limitation (lbs/day)} &= \\ &= (0.34 \text{ lbs/ton} \times 3,300 \text{ tons/day}) + (2.31 \text{ MGD} \times 60 \text{ mg/L} \times 8.34 \text{ L-} \\ &\quad \text{lbs/gal-kg}) \\ &= 2,300 \text{ lbs/day} \end{aligned}$$

$$\begin{aligned} \text{BOD5 monthly average limitation (lbs/day)} &= \\ &(0.18 \text{ lbs/ton} \times 3,300 \text{ tons/day}) + (0.30 \text{ MGD} \times 30 \text{ mg/l} \times 8.34 \text{ L-} \\ &\text{lbs/gal-kg}) \\ &= 670 \text{ lbs/day} \end{aligned}$$

$$\begin{aligned} \text{TSS maximum daily limitation (lbs/day)} &= \\ &(0.54 \text{ lbs/ton} \times 3,300 \text{ tons/day}) + (2.31 \text{ MGD} \times 60 \text{ mg/L} \times 8.34 \text{ L-} \\ &\text{lbs/gal-kg}) \\ &= 2,900 \text{ lbs/day} \end{aligned}$$

$$\begin{aligned} \text{TSS monthly average limitation (lbs/day)} &= \\ &(0.18 \text{ lbs/ton} \times 3,300 \text{ tons/day}) + (0.30 \text{ MGD} \times 30 \text{ mg/L} \times 8.34 \text{ L-} \\ &\text{lbs/gal-kg}) \\ &= 670 \text{ lbs/day} \end{aligned}$$

These newly calculated monthly averages limitations for BOD5 and TSS are lower than those in the previous order. Performance data collected between July 2018 and March 2026 show that the Discharger exceeded its previous TSS monthly average limitations four times; other than those instances, the Discharger can readily comply with the new limitations. To avoid backsliding, this Order retains the previous order's maximum daily limitations for BOD and TSS.

4.2.3.2.2. **BOD and TSS (Concentration-Based Limitations).** Because approximately half of the Joint Treatment Plant's influent is municipal wastewater and the Joint Treatment Plant is a POTW, this Order imposes concentration-based BOD and TSS effluent limitations consistent with secondary treatment standards for POTWs. However, 40 C.F.R. section 133.103(b)(2) allows for the upward adjustment of the BOD and TSS concentration-based limitations when industrial wastewater is introduced to a POTW, provided the following:

- the permitted discharge of pollutants would not be greater than that which would be permitted under CWA sections 301(b)(1)(A)(i), 301(b)(2)(E), or 306 if the industrial facility were to discharge directly into navigable waters, and
- the flow or loading of such pollutants introduced by the industrial facility exceeds ten percent of the design flow or loading of the publicly owned treatment works.

CWA section 301(b)(1)(A)(i) requires that effluent limitations for point sources other than POTWs require the application of BPT. CWA section 301(b)(2)(E) requires that effluent limitations for point sources other than POTWs require the application of BCT for conventional pollutants, including BOD and TSS. CWA section 306 requires new industrial facilities to comply with U.S. EPA-established NSPS. As explained in Fact Sheet section 4.2.3.2.1, above, the mass-based BOD

and TSS limitations established in this Order represent BPT and BCT. The Refinery is not subject to NSPS for crystalline cane sugar refining because they were not established until after the Refinery was built. The establishment of concentration-based BOD and TSS effluent limitations adjusted upwards of secondary treatment standards will not allow for the discharge of pollutants greater than what is permitted under CWA sections 301(b)(1)(A)(i) and 301(b)(2)(E) because the Discharger must still comply with the mass-based limitations this Order establishes under those sections. The flow from the Refinery is about half of the flow treated at the Joint Treatment Plant and exceeds ten percent of the Joint Treatment Plant design flow. Therefore, this Order upwardly adjusts the concentration-based effluent limitations for BOD and TSS that are established in the secondary treatment standards.

To calculate the adjusted concentration-based effluent limitations, this Order considered BOD and TSS monitoring data collected during the previous order term that represented treatment performance during proper operation and maintenance of the Joint Treatment Plant. This is consistent with 40 C.F.R. section 133.101, which describes how the secondary treatment standards were developed based on treatment plant performance that is consistently achievable through proper operation and maintenance. As such, BOD and TSS concentration-based data collected during the previous order term that were paired with mass-based BOD and TSS effluent limitation exceedances were considered unrepresentative of Facility performance during proper operation and maintenance. Below describes specifically how the adjusted effluent limitations were calculated for BOD and TSS.

- 4.2.3.2.2.1. **BOD.** During the previous permit term, the Discharger did not exceed its mass-based average monthly effluent limitation of 730 lbs/day. It did exceed its mass-based daily effluent limitation of 2,000 lbs/day one time on October 12, 2022, with a daily mass discharge of 2,304 lbs/day. The associated BOD concentration for this day was 339 mg/L, which represents the threshold for when the Joint Treatment Plant was not properly operated or maintained. All BOD concentrations at or above 339 mg/L were censored from the data distribution. Consistent with 40 C.F.R. section 133.101, the 95th percentile of the remaining data distribution was used to calculate the average monthly effluent limitation, and 1.5 times that value was used to calculate the average weekly effluent limitation. The 95th percentile of the BOD monitoring data distribution below 339 mg/L resulted in a monthly average effluent limitation of 52 mg/L. The BOD weekly limitation was calculated by multiplying 52 mg/L by 1.5, which resulted in a BOD weekly average effluent limitation of 78 mg/L.
- 4.2.3.2.2.2. **TSS.** During the previous order term, the Discharger exceeded its mass-based average monthly average effluent limitation of 730 lbs/day

four times and its mass-based daily effluent limitation of 2,600 lbs/day six times between October 2022 and December 2025. The average monthly concentrations were paired with the associated average monthly mass loads for each month. Following a conservative approach, the lowest average monthly concentration associated with an exceedance of the monthly mass-based limitation, 86 mg/L, was selected. This value corresponded to an average monthly mass discharge of 789 lbs/day in March 2023. This concentration was used to represent conditions under which the Joint Treatment Plant was not properly operated or maintained. All TSS concentrations at or above 86 mg/L were censored from the data distribution. This value as a threshold also censored any concentration associated with a daily mass-based limitation exceedance. Consistent with 40 C.F.R. section 133.101, the 95th percentile of the data distribution was used to calculate the average monthly effluent limitation, and 1.5 times that value was used to calculate the average weekly effluent limitation. The 95th percentile of the TSS monitoring data distribution below 86 mg/L resulted in a monthly average effluent limitation of 68 mg/L. The TSS weekly limitation was calculated by multiplying 68 mg/L by 1.5, which resulted in a TSS weekly average effluent limitation of 100 mg/L.

These limitations are feasible for the Discharger to comply with; historic monitoring data show that when the Facility is properly operated and maintained, BOD and TSS effluent concentrations at the Joint Treatment Plant are consistently below the adjusted effluent limitations.

The mass-based and concentration-based limitations represent Best Practicable Control Technology (BPT) and Best Conventional Pollution Control Technology (BCT). In calculating these limits, the factors specified in 40 C.F.R. section 125.3(d) were considered as shown below:

Table F-14. Factors Considered Pursuant to 40 C.F.R. section 125.3(d)

Factors	Consideration
Cost relative to pollutant reduction benefits and their reasonableness	The cost of imposing these limitations is reasonable given that the Discharger can comply without modifying its existing process. The benefits include ensuring consistent treatment performance, ensuring that treatment units are performing as designed, and preventing high loads and concentrations of BOD and TSS being discharged to receiving waters.
Comparison of cost and pollutant reductions from publicly owned treatment works to those from this Facility	The facility provides secondary treatment of the District's wastewater; therefore, the cost of continuing its operations is comparable to the costs for comparable publicly owned treatment works.

Factors	Consideration
Age of equipment and facilities	The limits can be met with existing equipment and facilities, assuming they continue to be properly maintained.
Process employed	The limits can be met with the existing process.
Engineering aspects of application or control techniques	The existing controls are practicable and capable of meeting the limits.
Process changes	No process change is necessary to meet the limits.
Non-water quality environmental impacts	Because no process change is necessary, no non-water quality impacts are foreseeable.

- 4.2.3.2.2. **Oil and Grease.** The oil and grease effluent limitations are based on Basin Plan Table 4-2.
- 4.2.3.2.3. **pH.** The pH effluent limitations are based on the secondary treatment standards and Basin Plan Table 4-2.
- 4.2.3.2.4. **Total Residual Chlorine.** Basin Plan Table 4-2 contains an instantaneous limitation for total residual chlorine of 0.0 mg/L. This Order replaces the instantaneous limitation in the Basin Plan with a higher water quality-based effluent limitation (see Fact Sheet section 4.3.4.3.5), because Basin Plan section 4.5.3 allows less stringent effluent limitations when certain conditions are met. It states, “The Water Board will consider establishing less stringent limitations, consistent with state and federal laws, for any discharge where it can be conclusively demonstrated through a comprehensive program approved by the Water Board that such limitations will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.” These conditions are met. The requirements of this Order (specifically Provision 5.3.4 and footnote 4 to Table E-7) include a comprehensive program that will ensure that these limitations will not result in unacceptable adverse impacts on the beneficial uses of receiving waters. Chlorine is a non-persistent pollutant that quickly degrades to a non-toxic state, and the mixing zone described in Fact Sheet section 4.3.4.3.1 is very small relative to the size of the receiving water. This Order requires the Discharger to implement a Chlorine Process Control Plan to target a chlorine residual of 0.0 mg/L at Discharge Point 002. This will ensure that chlorine will typically not be present in discharge and, if chlorine is detected, the duration of such discharges will be relatively short.

The water quality-based effluent limitation is consistent with state and federal anti-backsliding (CWA sections 402(o), 303(d)(4), and 40 C.F.R. section 122.44(l)) and antidegradation (Resolution 68-16 and 40 C.F.R. 131.12) laws, as explained in Fact Sheet sections 4.4.1 and 4.4.2.

- 4.2.3.3. **Discharge Points 005 through 014.** The pH limitations for stormwater are based on 40 C.F.R. section 409.22 and are consistent with the previous order.

4.3. Water Quality-Based Effluent Limitations

4.3.1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44(d) require permits to include limitations more stringent than federal technology-based requirements where necessary to achieve 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, water quality-based effluent limitations (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. The process for determining reasonable potential and calculating WQBELs when necessary is intended to achieve applicable water quality objectives and criteria, and thereby protect designated beneficial uses of receiving waters.

4.3.2. Beneficial Uses and Water Quality Criteria and Objectives

Discharge Points 001 through 014 discharges to Carquinez Strait. Fact Sheet section 3.3.1 identifies the beneficial uses of Carquinez Strait. Water quality criteria and objectives to protect these beneficial uses are described below.

- 4.3.2.1. **Basin Plan Objectives.** The Basin Plan specifies numerous water quality objectives, including numeric objectives for ten priority pollutants and un-ionized ammonia, and narrative objectives for other pollutants, such as bioaccumulation and toxicity.

- 4.3.2.1.1. **Un-ionized Ammonia.** Basin Plan section 3.3.20 contains water quality objectives for un-ionized ammonia of 0.025 mg/L (as nitrogen) as an annual median and 0.16 mg/L (as nitrogen) as a maximum for Central San Francisco Bay and upstream 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 collected at the Yerba Buena monitoring station (BC10) between 1993 and 2017 were used. The un-ionized fraction of the total ammonia was calculated using the following equations (*Ambient Water Quality Criteria for Ammonia (Saltwater)*—1989, EPA Publication 440/5-88-004, 1989):

$$\text{Fraction of un-ionized ammonia} = (1 + 10^{[\text{pK} - \text{pH}]})^{-1}$$

Where, for salinity greater than 10 ppt:

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

I = molal ionic strength of saltwater

$$= 19.9273*(S)/(1000-1.005109*S)$$

S = salinity (parts per thousand)

T = temperature in Kelvin

P = pressure (one atmosphere)

The 90th percentile and median un-ionized ammonia fractions were then used to express the maximum and annual average un-ionized objectives as acute and chronic total ammonia criteria. This approach is consistent with U.S. EPA guidance on translating dissolved metal water quality objectives to total recoverable metal water quality criteria (*The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion*, EPA Publication 823-B96-007, 1996). The equivalent acute and chronic total ammonia criteria are 4.1 mg/L and 1.2 mg/L (as nitrogen).

- 4.3.2.1.2. **Bioaccumulation and 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 Carquinez Strait on its 303(d) list of receiving waters where water quality objectives are not being met after imposition of applicable technology-based requirements.

When the CTR was promulgated, U.S. EPA stated its support for the regulation of dioxin and dioxin-like compounds through the use of toxicity

equivalencies (TEQs). U.S. EPA stated, “For California waters, if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric water quality-based effluent limits for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme” (Federal Register 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 water and 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.

4.3.2.1.3. **Toxicity and Total Residual Chlorine.** The narrative toxicity objective in 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 acute toxicity in ambient waters.”

U.S. EPA criteria guidance under CWA section 304(a), specifically U.S. EPA’s *Ambient Water Quality Criteria for Chlorine – 1984* (EPA 440/5-84-030), is used to translate this narrative objective. These criteria are shown below:

Table F-15. Ambient Water Quality Criteria for Chlorine

Receiving Water Type	4-Day Average (mg/L)	1-Hour Average (mg/L)
Marine or Estuarine	0.0075	0.013
Freshwater	0.011	0.019

4.3.2.2. **CTR Criteria.** The CTR specifies numeric aquatic life and human health criteria for numerous priority pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries. Some human health criteria are for consumption of “water and organisms” and others are for consumption of “organisms only.” The criteria applicable to “organisms only” apply to Carquinez Strait because it is not a source of drinking water.

- 4.3.2.3. **NTR Criteria.** The NTR establishes numeric aquatic life and human health criteria for a number of toxic pollutants for San Francisco Bay waters upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. The NTR criteria apply to Carquinez Strait.
- 4.3.2.4. **Bacteria Objectives.** The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* establishes *Enterococcus* bacteria water quality objectives to limit cases of gastrointestinal illness from water contact recreation. The *Enterococcus* bacteria objectives apply to marine and estuarine waters.
- 4.3.2.5. **Toxicity Provisions.** The Toxicity Provisions establish numeric chronic and acute toxicity objectives that apply to all inland surface waters, enclosed bays, and estuaries in the State with aquatic life beneficial uses. The chronic toxicity water quality objective is as follows:
- H₀:
mean response (ambient water) ≤ 0.75 x mean response (control water)
- H_a:
mean response (ambient water) > 0.75 x mean response (control water)
- Where:
- H₀ = null hypothesis
H_a = alternative hypothesis,
0.75 = regulatory management decision criterion (i.e., 75 percent)
- H₀ means the ambient water is toxic when the test organism response in a bioassay is less than or equal to 75 percent of the control response;
H_a means the ambient water is not toxic when the test organism response is greater than 75 percent of the control response. For example, if an average of 75 percent of bioassay test organisms or fewer survive when exposed to ambient water relative to the average number that survive when exposed to control water, the ambient water is toxic (i.e., the test result is “fail”). Conversely, if an average of more than 75 percent of bioassay test organisms survive relative to those exposed to control water, the ambient water is not toxic (i.e., the test result is “pass”).
- 4.3.2.6. **Sediment Quality Objectives.** The *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* contains the following narrative water quality objectives:
- 4.3.2.6.1. “Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California.” This objective is to be implemented by integrating three lines of evidence: sediment toxicity, benthic community condition, and sediment

chemistry. The policy requires that if the Regional Water Board determines that a discharge has reasonable potential to cause or contribute to an exceedance of this objective, it is to impose the objective as a receiving water limit.

- 4.3.2.6.2. “Pollutants shall not be present in sediments at levels that will bioaccumulate in aquatic life to levels that are harmful to human health in bays and estuaries of California.” This objective is to be implemented by a three-tiered procedure based on pollutant concentrations in sediment and fish tissue.
- 4.3.2.6.3. “Pollutants shall not be present in sediment at levels that alone or in combination are toxic to wildlife and resident finfish by direct exposure or bioaccumulate in aquatic life at levels that are harmful to wildlife or resident finfish by indirect exposure in bays and estuaries of California.” This objective is to be implemented on a case-by-case basis, based upon an ecological risk assessment.
- 4.3.2.7. **Temperature.** The Thermal Plan, under paragraph 5.A.(1), establishes the following narrative objective for existing dischargers with elevated temperature waste discharges to estuaries, including Carquinez Strait:
- Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.
 - No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.
 - The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.
 - Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses and the maximum temperature of thermal waste discharges shall not exceed 86°F.

Wastewater discharged at Discharge Point 001 is cooling water used to transport waste heat; thus, the Thermal Plan applies.

However, State Water Board Resolution 75-72, issued on July 17, 1975, and approved by U.S. EPA on September 2, 1975, states that discharges from Discharge Points 001 and 002 are exempt from the last two objectives with the stipulation that the thermal waste be diffused at least 75 feet offshore and receive and initial dilution of at least 10:1.

- 4.3.2.8. **Receiving Water Salinity.** Basin Plan section 4.6.2 (like the CTR and NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water are to be considered in determining the applicable water quality objectives. Freshwater criteria apply to discharges to waters with salinities equal to or less than one 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 water with salinities in 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 criteria (the latter calculated based on ambient hardness) for each substance.

The receiving water for Discharge Points 001 and 002, Carquinez Strait, is estuarine based on salinity data collected through the Regional Monitoring Program (RMP) at the Napa River (BD50) and Davis Point (BD40) sampling stations between March 1993 and August 2001, as well as random sampling within San Pablo Bay between July 2002 and August 2009. The receiving water's maximum salinity was 29 ppt and its average salinity was 16 ppt. Because the salinity was less than 1 ppt in 4 percent of the samples and greater than 10 ppt in 72 percent of the samples, the waters of Carquinez Strait are classified as estuarine. Therefore, the reasonable potential analysis and effluent limitations in this Order are based on the more stringent of the freshwater and saltwater water quality objectives.

- 4.3.2.9. **Receiving Water Hardness.** Ambient hardness data collected at the Napa River (BD50) and Davis Point (BD40) RMP stations from April 1995 to August 2001 were used to calculate freshwater water quality objectives that are hardness dependent. A hardness of 130 mg/L as calcium carbonate was used to determine those objectives. This is the geometric mean of the 26 measurements taken at the Napa River and Davis Point RMP stations, censored to remove 18 values above 400 mg/L. Values above 400 mg/L fall beyond the range in which hardness has been correlated with metals toxicity and generally represent marine conditions where marine water quality objectives, not freshwater objectives, apply. This approach represents a conservative compromise between not using the extremely conservative lowest hardness value ever observed and a value that could be higher than the hardness typical of freshwater salinity conditions.
- 4.3.2.10. **Metals Translators.** Regulations at 40 C.F.R. section 122.45(c) require effluent limitations for metals to be expressed as total recoverable metal. Since the water quality objectives for metals are typically expressed as dissolved metal, translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. The CTR contains default translators; however, site-specific conditions, such as water temperature, pH, total suspended solids, and organic carbon may affect the form of metal (dissolved, non-filterable, or otherwise) present and therefore available to cause toxicity. In general, dissolved metals are more available and more

toxic to aquatic life than other forms. Site-specific translators can account for site-specific conditions, thereby preventing overly stringent or under-protective water quality objectives.

CTR default translators were used for all metals other than copper and nickel. Basin Plan Table 7.2.1-2 sets forth site-specific copper translators. The Clean Estuary Partnership’s *North of the Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (March 2005) contains site-specific nickel translators. These site-specific translators are listed in the table below:

Table F-16. Site-Specific Translators

Parameter	Chronic Translator	Acute Translator
Copper	0.66	0.38
Nickel	0.57	0.27

4.3.3. Reasonable Potential Analysis

4.3.3.1. **Available Information.** The reasonable potential analysis for this Order is based on effluent data the Discharger collected from July 2018 through March 2026 and ambient background data summarized in the RMP’s *San Francisco Bay California Toxics Rule Priority Pollutant Ambient Water Monitoring Report* (2017), which includes data collected through the RMP at the Yerba Buena RMP station (BC10) from 1993 through 2019, supplemented by additional Bay Area Clean Water Agencies data from *San Francisco Bay Ambient Water Monitoring Interim Report* (2003) and *Ambient Water Monitoring: Final CTR Sampling Update* (2004).

SIP section 1.4.3 requires that background water quality data be representative of the ambient receiving water that will mix with the discharge. For priority pollutants, the Yerba Buena RMP monitoring station (BC10), relative to other RMP stations best fits SIP guidance for establishing background conditions at Discharge Points 001 and 002.

This Order does not contain WQBELs for constituents that do not demonstrate reasonable potential; however, Provision 5.3.2 still requires monitoring for those pollutants. If effluent concentrations are found to have increased significantly, Provision 5.3.2.1 of the Order requires the Discharger to investigate the sources of the increases and implement remedial measures if the increases pose a threat to receiving water quality.

4.3.3.2. **Methodology.** SIP section 1.3 sets forth the methodology used to assess 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 ammonia and dioxin-TEQ as guidance. The analysis begins with identifying the maximum effluent concentration (MEC) observed for each

pollutant based on available effluent concentration data and the ambient background concentrations (B). SIP section 1.4.3 states that ambient background concentrations are either the maximum ambient concentration observed or, for water quality objectives intended to protect human health, the arithmetic mean of observed concentrations. There are three triggers in determining reasonable potential:

- **Trigger 1** is activated if the maximum effluent concentration is greater than or equal to the lowest applicable water quality objective ($MEC \geq$ water quality objective).
- **Trigger 2** is activated if the ambient background concentration observed in the receiving water is greater than the lowest applicable water quality objective ($B >$ water quality objective) and the pollutant is detected in any effluent sample.
- **Trigger 3** is activated if a review of other information indicates that a WQBEL is needed to protect beneficial uses.

4.3.3.3. **Discharge Point 001.**

4.3.3.3.1. **Priority Pollutants.** The maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in the analysis are presented below, along with the reasonable potential analysis results (yes, no, or unknown) for each pollutant. Based on this analysis, copper, lead, nickel, and zinc exhibit reasonable potential by Trigger 1.

Table F-17. Reasonable Potential Analysis for Discharge Point 001

CTR Number	Priority Pollutants	C or Governing criterion or objective (mg/L)	MEC or minimum MDL (mg/L) ^{[1][2]}	B or MDL (mg/L) ^{[1][2]}	RPA Results ^[3]
1	Antimony	4,300	0.27	1.8	No
2	Arsenic	36	2.7	2.5	No
3	Beryllium	No Criteria	<0.45	0.22	U
4	Cadmium	3.0	<0.25	0.13	No
5a	Chromium (III) ^[4]	257	110	4.4	No
5b	Chromium (VI)	11	<1.5	4.4	No
6	Copper	12	310	2.5	Yes^[5]
7	Lead	4.4	6.1	0.80	Yes
8	Mercury	-	-	-	^[6]
9	Nickel	30	350	3.7	Yes
10	Selenium	-	-	-	^[6]
11	Silver	2.2	<0.10	0.052	No
12	Thallium	6.3	0.0054	0.023	No

CTR Number	Priority Pollutants	C or Governing criterion or objective (mg/L)	MEC or minimum MDL (mg/L) ^{[1][2]}	B or MDL (mg/L) ^{[1][2]}	RPA Results ^[3]
13	Zinc	86	100	5.1	Yes
14	Cyanide	2.9	<0.9	0.52	No ^[5]
15	Asbestos (fibers/L) ^[7]	No Criteria	Unavailable	-	U
16	2,3,7,8-TCDD	1.4 x 10 ⁻⁸	Unavailable	2.7 x 10 ⁻⁸	No
	Dioxin-TEQ	1.4 x 10 ⁻⁸	Unavailable	4.1 x 10 ⁻⁸	No ^[8]
17	Acrolein	780	<0.81	<0.50	No
18	Acrylonitrile	0.66	<0.75	0.030	No
19	Benzene	71	<0.18	<0.050	No
20	Bromoform	360	<0.15	<0.15	No
21	Carbon Tetrachloride	4.4	<0.16	0.060	No
22	Chlorobenzene	21,000	<0.18	<0.18	No
23	Chlorodibromomethane	34	<0.17	<0.050	No
24	Chloroethane	No Criteria	<0.15	<0.38	U
25	2-Chloroethylvinyl ether	No Criteria	<0.28	<0.28	U
26	Chloroform	No Criteria	<0.19	<0.19	U
27	Dichlorobromomethane	46	<0.16	<0.050	No
28	1,1-Dichloroethane	No Criteria	<0.19	<0.050	U
29	1,2-Dichloroethane	99	<0.18	0.040	No
30	1,1-Dichloroethylene	3.2	<0.21	<0.21	No
31	1,2-Dichloropropane	39	<0.18	<0.050	No
32	1,3-Dichloropropylene	1,700	<0.09	<0.16	No
33	Ethylbenzene	29,000	<0.10	<0.26	No
34	Methyl Bromide	4,000	<0.30	<0.30	No
35	Methyl Chloride	No Criteria	<0.30	<0.30	U
36	Methylene Chloride	1,600	<0.40	22	No
37	1,1,2,2-Tetrachloroethane	11	<0.15	<0.050	No
38	Tetrachloroethylene	8.9	<0.19	<0.050	No
39	Toluene	200,000	<0.19	<0.19	No
40	1,2-Trans-Dichloroethylene	140,000	<0.22	<0.22	No
41	1,1,1-Trichloroethane	No Criteria	<0.19	<0.19	U
42	1,1,2-Trichloroethane	42	<0.16	<0.050	No
43	Trichloroethylene	81	<0.20	<0.20	No
44	Vinyl Chloride	525	<0.25	<0.25	No
45	2-Chlorophenol	400	<0.90	<0.70	No
46	2,4-Dichlorophenol	790	<0.90	<0.90	No
47	2,4-Dimethylphenol	2,300	<0.40	<0.80	No
48	2-Methyl- 4,6-Dinitrophenol	765	<0.90	<0.60	No
49	2,4-Dinitrophenol	14,000	<0.70	<0.70	No
50	2-Nitrophenol	No Criteria	<1.0	<0.80	U
51	4-Nitrophenol	No Criteria	<0.50	<0.50	U
52	3-Methyl 4-Chlorophenol	No Criteria	<0.50	<0.80	U

CTR Number	Priority Pollutants	C or Governing criterion or objective (mg/L)	MEC or minimum MDL (mg/L) ^{[1][2]}	B or MDL (mg/L) ^{[1][2]}	RPA Results ^[3]
53	Pentachlorophenol	7.9	<0.40	<0.60	No
54	Phenol	4,600,000	<0.30	<0.50	No
55	2,4,6-Trichlorophenol	6.5	<0.50	<0.97	No
56	Acenaphthene	2,700	<0.02	0.0020	No
57	Acenaphthylene	No Criteria	<0.02	0.0010	U
58	Anthracene	110,000	<0.03	0.0010	No
59	Benzidine	0.00054	<4.0	<0.00030	No
60	Benzo(a)Anthracene	0.049	<0.02	0.0050	No
61	Benzo(a)Pyrene	0.049	<0.02	0.0020	No
62	Benzo(b)Fluoranthene	0.049	<0.02	0.0050	No
63	Benzo(ghi)Perylene	No Criteria	<0.02	0.0030	U
64	Benzo(k)Fluoranthene	0.049	<0.02	0.0020	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	<0.50	<0.30	U
66	Bis(2-Chloroethyl)Ether	1.4	<0.90	<0.30	No
67	Bis(2-Chloroisopropyl)Ether	170,000	<0.90	<0.60	No
68	Bis(2-Ethylhexyl)Phthalate	5.9	<0.5	<0.50	No
69	4-Bromophenyl Phenyl Ether	No Criteria	<0.5	<0.23	U
70	Butylbenzyl Phthalate	5,200	<0.5	<0.50	No
71	2-Chloronaphthalene	4,300	<1.0	<0.30	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	<0.5	<0.30	U
73	Chrysene	0.049	<0.02	0.0020	No
74	Dibenzo(a,h)Anthracene	0.049	<0.02	0.0010	No
75	1,2-Dichlorobenzene	17,000	<0.27	<0.27	No
76	1,3-Dichlorobenzene	2,600	<0.18	<0.18	No
77	1,4-Dichlorobenzene	2,600	<0.18	<0.18	No
78	3,3-Dichlorobenzidine	0.077	<5.0	<0.00020	No
79	Diethyl Phthalate	120,000	<0.50	<0.20	No
80	Dimethyl Phthalate	2,900,000	<0.50	<0.20	No
81	Di-n-Butyl Phthalate	12,000	<0.40	<0.50	No
82	2,4-Dinitrotoluene	9.1	<0.90	<0.27	No
83	2,6-Dinitrotoluene	No Criteria	<0.40	<0.29	U
84	Di-n-Octyl Phthalate	No Criteria	<0.40	<0.38	U
85	1,2-Diphenylhydrazine	0.54	<0.50	0.0040	No
86	Fluoranthene	370	<0.02	0.011	No
87	Fluorene	14,000	<0.01	0.0020	No
88	Hexachlorobenzene	0.00077	<0.40	0.000022	No
89	Hexachlorobutadiene	50	<0.40	<0.30	No
90	Hexachlorocyclopentadiene	17,000	<0.90	<0.30	No
91	Hexachloroethane	8.9	<0.90	<0.20	No

CTR Number	Priority Pollutants	C or Governing criterion or objective (mg/L)	MEC or minimum MDL (mg/L) ^{[1][2]}	B or MDL (mg/L) ^{[1][2]}	RPA Results ^[3]
92	Indeno(1,2,3-cd)Pyrene	0.049	<0.02	0.0040	No
93	Isophorone	600	<0.50	<0.30	No
94	Naphthalene	No Criteria	<0.02	0.0090	U
95	Nitrobenzene	1,900	<0.50	<0.25	No
96	N-Nitrosodimethylamine	8.1	<0.70	<0.30	No
97	N-Nitrosodi-n-Propylamine	1.4	<0.50	<0.00020	No
98	N-Nitrosodiphenylamine	16	<0.70	<0.0010	No
99	Phenanthrene	No Criteria	<0.02	0.0060	U
100	Pyrene	11,000	<0.02	0.019	No
101	1,2,4-Trichlorobenzene	No Criteria	<0.90	<0.30	U
102	Aldrin	0.00014	<0.003	<0.0000085	No
103	Alpha-BHC	0.013	<0.004	0.00050	No
104	Beta-BHC	0.046	<0.004	0.00040	No
105	Gamma-BHC	0.063	<0.003	0.00070	No
106	Delta-BHC	No Criteria	<0.004	0.000053	U
107	Chlordane	0.00059	<0.007	0.000087	No
108	4,4'-DDT	0.00059	<0.004	0.00017	No
109	4,4'-DDE (linked to DDT)	0.00059	<0.004	0.00069	No
110	4,4'-DDD	0.00084	<0.003	0.00031	No
111	Dieldrin	0.00014	<0.004	0.00026	No
112	Alpha-Endosulfan	0.0087	<0.004	0.00011	No
113	Beta-Endosulfan	0.0087	<0.004	0.00011	No
114	Endosulfan Sulfate	240	<0.004	0.000080	No
115	Endrin	0.0023	<0.003	0.000040	No
116	Endrin Aldehyde	0.81	<0.003	<0.0050	No
117	Heptachlor	0.00021	<0.004	0.000019	No
118	Heptachlor Epoxide	0.00011	<0.004	0.000019	No
119-125	PCBs sum	0.00017	<0.06	-	^[6]
126	Toxaphene	0.0002	<0.20	<0.3	No

Footnotes:

- ^[1] The MEC and ambient background concentration are the actual detected concentrations unless preceded by a “<” sign, in which case the value shown is the minimum method detection limit (MDL).
- ^[2] The MEC or ambient background concentration is “Unavailable” when there are no monitoring data for the constituent.
- ^[3] RPA Results = Yes, if MEC ≥ WQC, B > WQC and MEC is detected, or Trigger 3
 = No, if MEC and B are < WQC or all effluent data are undetected
 = Unknown (U) if no criteria have been promulgated or data are insufficient.
- ^[4] The MEC and maximum ambient background concentrations are the total chromium concentration. The chromium (III) and chromium (VI) concentrations are unknown but less than these values.
- ^[5] Reasonable potential is based in whole or part on Basin Plan sections 7.2.1.2 and 4.7.2.2.
- ^[6] SIP section 1.3 excludes from its reasonable potential analysis procedure priority pollutants for which a TMDL has been developed. TMDLs have been developed for mercury and PCBs in San Francisco Bay. Mercury and PCBs from wastewater discharges are regulated by NPDES Permit No. CA0038849, which implements the San Francisco Bay Mercury and PCBs TMDLs. A TMDL has also been developed for selenium in North San Francisco Bay and does not apply to once-through cooling water discharges because they do not contribute a net load to North San Francisco Bay.
- ^[7] Asbestos sampling is only required for discharges to waters with the municipal or domestic supply (MUN) beneficial use.

^[8] Effluent from Discharge Point 001 does not have reasonable potential to cause or contribute to an exceedance of the narrative bioaccumulation water quality objective with respect to dioxins and furans, and thus an effluent limitation for dioxin-TEQ is not required. Effluent discharged through Discharge Point 001 is comprised almost entirely of non-contact cooling water, and non-contact cooling water operations are not anticipated to be sources of dioxins and furans to the intake water.

4.3.3.3.2. **Acute and Chronic Toxicity.** Toxicity Provisions section III.C.11 exempts insignificant non-stormwater discharges from acute and chronic toxicity requirements if they do not have reasonable potential to cause or contribute to the exceedance of toxicity water quality objectives. In the context of toxicity, this Order finds the discharge from Discharge Point 001 to be insignificant. The Discharger does not alter once-through cooling water in a way that could make it more acutely or chronically toxic than when taken from Carquinez Strait. Therefore, discharge from Discharge Point 001 is exempt from toxicity requirements.

4.3.3.3.3. **pH.** pH at Discharge Point 001 ranged between 6.6 and 8.8, exceeding the pH water quality objectives of 6.5 to 8.5 (see Basin Plan section 3.3.9). However, this Order does not establish pH WQBELs because the technology-based pH limitations of 6.0 and 9.0 (see Fact Sheet section 4.2.3.1) are as stringent as the pH effluent limitations set forth in Basin Plan Table 4-2 for deep water discharges from all treatment facilities.

4.3.3.3.4. **Enterococcus Bacteria.** There is no reasonable potential for the discharge from Discharge Point 001 to cause or contribute to an exceedance of the Basin Plan Table 3-1 water quality objectives for total coliform or *Enterococcus* bacteria because there is no sanitary wastewater component to this discharge.

4.3.3.4. **Discharge Point 002**

4.3.3.4.1. **Priority Pollutants, Ammonia, and Dioxin-TEQ.** The maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in the analysis are presented below, along with the reasonable potential analysis results (yes, no, or unknown) for each pollutant. Based on this analysis, copper, lead, cyanide, dichlorobromomethane, and ammonia exhibit reasonable potential by Trigger 1. Dioxin-TEQ has reasonable potential because the receiving water is impaired by dioxin-TEQ and discharge at Discharge Point 002 could contain dioxins.

Table F-18. Reasonable Potential Analysis for Discharge Point 002

CTR Number	Priority Pollutants	C or Governing criterion or objective (mg/L)	MEC or minimum MDL (mg/L) ^{[1][2]}	B or MDL (mg/L) ^{[1][2]}	RPA Results ^[3]
1	Antimony	4,300	1.1	1.8	No
2	Arsenic	36	1.2	2.5	No

CTR Number	Priority Pollutants	C or Governing criterion or objective (mg/L)	MEC or minimum MDL (mg/L) ^{[1][2]}	B or MDL (mg/L) ^{[1][2]}	RPA Results ^[3]
3	Beryllium	No Criteria	<0.09	0.22	U
4	Cadmium	3.0	0.10	0.13	No
5a	Chromium (III) ^[4]	257	0.67	4.4	No
5b	Chromium (VI) ^[4]	11	3.5	4.4	No
6	Copper	11.7	19	2.5	Yes ^[5]
7	Lead	4.4	6.7	0.80	Yes
8	Mercury	0.025	0.065	-	^[6]
9	Nickel	30	1.8	3.7	Yes
10	Selenium	-	-	-	^[6]
11	Silver	2.2	<0.02	0.052	No
12	Thallium	6.3	0.06	0.023	No
13	Zinc	86	80	5.1	No
14	Cyanide	2.9	110	0.52	Yes ^[5]
15	Asbestos	No Criteria	Unavailable	-	U
16	2,3,7,8-TCDD	1.4 x 10 ⁻⁸	<1.8 x 10 ⁻⁶	2.7 x 10 ⁻⁸	U
	Dioxin-TEQ	1.4 x 10⁻⁸	<5.0 x 10⁻¹¹	4.1 x 10⁻⁸	Yes ^[8]
17	Acrolein	780	<0.81	<0.50	No
18	Acrylonitrile	0.66	<0.75	0.030	No
19	Benzene	71	<0.18	<0.050	No
20	Bromoform	360	0.31	<0.15	No
21	Carbon Tetrachloride	4.4	<0.16	0.060	No
22	Chlorobenzene	21,000	<0.15	<0.18	No
23	Chlorodibromomethane	34	7.4	<0.050	No
24	Chloroethane	No Criteria	<0.28	<0.38	U
25	2-Chloroethylvinyl ether	No Criteria	<0.28	<0.28	U
26	Chloroform	No Criteria	294	<0.19	U
27	Dichlorobromomethane	46	100	<0.050	Yes
28	1,1-Dichloroethane	No Criteria	<0.19	<0.050	U
29	1,2-Dichloroethane	99	<0.18	0.040	No
30	1,1-Dichloroethylene	3.2	<0.21	<0.21	No
31	1,2-Dichloropropane	39	<0.18	<0.050	No
32	1,3-Dichloropropylene	1,700	<0.09	<0.16	No
33	Ethylbenzene	29,000	<0.10	<0.26	No
34	Methyl Bromide	4,000	<0.30	<0.30	No
35	Methyl Chloride	No Criteria	<0.30	<0.30	U
36	Methylene Chloride	1,600	0.16	22	No
37	1,1,2,2-Tetrachloroethane	11	<0.15	<0.050	No
38	Tetrachloroethylene	8.9	<0.19	<0.050	No
39	Toluene	200,000	0.27	<0.19	No
40	1,2-Trans-Dichloroethylene	140,000	<0.22	<0.22	No
41	1,1,1-Trichloroethane	No Criteria	<0.19	<0.19	U

CTR Number	Priority Pollutants	C or Governing criterion or objective (mg/L)	MEC or minimum MDL (mg/L) ^{[1][2]}	B or MDL (mg/L) ^{[1][2]}	RPA Results ^[3]
42	1,1,2-Trichloroethane	42	<0.16	<0.050	No
43	Trichloroethylene	81	<0.20	<0.20	No
44	Vinyl Chloride	525	<0.25	<0.25	No
45	2-Chlorophenol	400	<0.90	<0.70	No
46	2,4-Dichlorophenol	790	<0.90	<0.90	No
47	2,4-Dimethylphenol	2,300	<0.40	<0.80	No
48	2-Methyl- 4,6-Dinitrophenol	765	<2.0	<0.60	No
49	2,4-Dinitrophenol	14,000	<2.0	<0.70	No
50	2-Nitrophenol	No Criteria	<0.5	<0.80	U
51	4-Nitrophenol	No Criteria	<1.0	<0.50	U
52	3-Methyl 4-Chlorophenol	No Criteria	<0.50	<0.80	U
53	Pentachlorophenol	7.9	<0.40	<0.60	No
54	Phenol	4,600,000	<0.30	<0.50	No
55	2,4,6-Trichlorophenol	6.5	<0.40	<0.97	No
56	Acenaphthene	2,700	<0.02	0.0020	No
57	Acenaphthylene	No Criteria	<0.02	0.0010	U
58	Anthracene	110,000	<0.03	0.0010	No
59	Benzidine	0.00054	<4.0	<0.00030	No
60	Benzo(a)Anthracene	0.049	<0.05	0.0050	No
61	Benzo(a)Pyrene	0.049	<0.04	0.0020	No
62	Benzo(b)Fluoranthene	0.049	<0.05	0.0050	No
63	Benzo(ghi)Perylene	No Criteria	<0.05	0.0030	U
64	Benzo(k)Fluoranthene	0.049	<0.02	0.0020	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	<0.50	<0.30	U
66	Bis(2-Chloroethyl)Ether	1.4	<0.90	<0.30	No
67	Bis(2-Chloroisopropyl)Ether	170,000	<0.90	<0.60	No
68	Bis(2-Ethylhexyl)Phthalate	5.9	1.7	<0.50	No
69	4-Bromophenyl Phenyl Ether	No Criteria	<0.5	<0.23	U
70	Butylbenzyl Phthalate	5,200	<2	<0.50	No
71	2-Chloronaphthalene	4,300	<1.0	<0.30	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	<0.6	<0.30	U
73	Chrysene	0.049	<0.05	0.0020	No
74	Dibenzo(a,h)Anthracene	0.049	<0.05	0.0010	No
75	1,2-Dichlorobenzene	17,000	<0.27	<0.27	No
76	1,3-Dichlorobenzene	2,600	<0.18	<0.18	No
77	1,4-Dichlorobenzene	2,600	<0.18	<0.18	No
78	3,3-Dichlorobenzidine	0.077	<5.0	<0.00020	No
79	Diethyl Phthalate	120,000	<0.50	<0.20	No
80	Dimethyl Phthalate	2,900,000	<0.50	<0.20	No

CTR Number	Priority Pollutants	C or Governing criterion or objective (mg/L)	MEC or minimum MDL (mg/L) ^{[1][2]}	B or MDL (mg/L) ^{[1][2]}	RPA Results ^[3]
81	Di-n-Butyl Phthalate	12,000	<0.40	<0.50	No
82	2,4-Dinitrotoluene	9.1	<0.90	<0.27	No
83	2,6-Dinitrotoluene	No Criteria	<0.40	<0.29	U
84	Di-n-Octyl Phthalate	No Criteria	<0.40	<0.38	U
85	1,2-Diphenylhydrazine	0.54	<0.50	0.0040	No
86	Fluoranthene	370	<0.02	0.011	No
87	Fluorene	14,000	<0.02	0.0020	No
88	Hexachlorobenzene	0.00077	<1.0	0.000022	No
89	Hexachlorobutadiene	50	<0.40	<0.30	No
90	Hexachlorocyclopentadiene	17,000	<0.90	<0.30	No
91	Hexachloroethane	8.9	<0.40	<0.20	No
92	Indeno(1,2,3-cd)Pyrene	0.049	<0.05	0.0040	No
93	Isophorone	600	<0.50	<0.30	No
94	Naphthalene	No Criteria	<0.02	0.0090	U
95	Nitrobenzene	1,900	<0.50	<0.25	No
96	N-Nitrosodimethylamine	8.1	<0.70	<0.30	No
97	N-Nitrosodi-n-Propylamine	1.4	<0.50	<0.00020	No
98	N-Nitrosodiphenylamine	16	<0.70	<0.0010	No
99	Phenanthrene	No Criteria	<0.02	0.0060	U
100	Pyrene	11,000	<0.02	0.019	No
101	1,2,4-Trichlorobenzene	No Criteria	<0.40	<0.30	U
102	Aldrin	0.00014	<0.0014	<0.0000085	No
103	Alpha-BHC	0.013	<0.0026	0.00050	No
104	Beta-BHC	0.046	<0.0029	0.00040	No
105	Gamma-BHC	0.063	<0.0022	0.00070	No
106	Delta-BHC	No Criteria	<0.0035	0.000053	U
107	Chlordane	0.00059	<0.0034	0.000087	No
108	4,4'-DDT	0.00059	<0.0038	0.00017	No
109	4,4'-DDE (linked to DDT)	0.00059	<0.0009	0.00069	No
110	4,4'-DDD	0.00084	<0.0021	0.00031	No
111	Dieldrin	0.00014	<0.0017	0.00026	No
112	Alpha-Endosulfan	0.0087	<0.0042	0.00011	No
113	Beta-Endosulfan	0.0087	<0.0023	0.00011	No
114	Endosulfan Sulfate	240	<0.0011	0.000080	No
115	Endrin	0.0023	<0.0027	0.000040	No
116	Endrin Aldehyde	0.81	<0.0034	<0.0050	No
117	Heptachlor	0.00021	<0.0031	0.000019	No
118	Heptachlor Epoxide	0.00011	<0.0027	0.000019	No
119-125	PCBs sum	---	<0.05	-	^[6]
126	Toxaphene	0.0002	<0.4	<0.3	No
	Total Ammonia (mg/)	1.2	17	0.43	Yes

Footnotes:

- ^[1] The MEC and ambient background concentration are the actual detected concentrations unless preceded by a “<” sign, in which case the value shown is the minimum method detection limit (MDL).
- ^[2] The MEC 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
= Unknown (U) if no criteria have been promulgated or data are insufficient.
- ^[4] The MEC and maximum ambient background concentrations are the total chromium concentration. The chromium (III) and chromium (VI) concentrations are unknown but less than these values.
- ^[5] Reasonable potential is based in whole or part on Basin Plan sections 7.2.1.2 and 4.7.2.2.
- ^[6] Mercury and PCBs from wastewater discharges are regulated by NPDES Permit CA0038849, which implements the San Francisco Bay Mercury and PCBs TMDLs. A TMDL has also been developed for selenium in North San Francisco Bay, which includes Carquinez Strait. Basin Plan section 7.2.4.5 finds that municipal and industrial wastewater dischargers (with the exception of petroleum refineries) have no reasonable potential to cause or contribute to the selenium impairment in San Francisco Bay segments and, therefore, are not required to have numeric effluent limitations.
- ^[7] Asbestos sampling is only required for discharges to waters with the municipal or domestic supply (MUN) beneficial use. Lower San Francisco Bay does not have the MUN beneficial use.
- ^[8] Reasonable potential is based in whole or part on Trigger 3 because San Francisco Bay is impaired for dioxin-TEQ, fish tissue shows elevated levels of dioxin TEQ, and the discharge could be a source of dioxin TEQ.

4.3.3.4.2. **Acute Toxicity.** The Toxicity Provisions do not require acute toxicity monitoring and limitations. During the previous order term, the Discharger monitored its effluent monthly for acute toxicity at 100 percent effluent and did not detect toxicity violating its acute toxicity permit limits. Therefore, there is no reasonable potential for the discharge to cause or contribute to acute toxicity in the receiving water.

4.3.3.4.3. **Chronic Toxicity.** Toxicity Provisions section III.C.3.c states that reasonable potential exists if any of at least four chronic toxicity tests at the IWC within five years prior to permit reissuance (1) results in a “fail” or (2) has at least a 10 percent effect. If data from these tests were not analyzed using the TST, the data must be re-analyzed using the TST. If previous tests were not conducted at the IWC, then a concentration of effluent higher than the IWC may be used. Data from older tests may also be considered. If a minimum of four chronic toxicity tests is unavailable, the Regional Water Board must require the Discharger to conduct a minimum of four chronic toxicity tests at the IWC and analyze the data using the TST.

The Discharger conducted chronic toxicity tests annually during the previous order term using giant kelp (*Macrocystis pyrifera*). All tests at the Instream Waste Concentration (IWC) of 10 percent effluent resulted in a Pass; however, two samples had a maximum percent effect of greater than 10 percent. Therefore, the discharge from Discharge Point 002 exhibits reasonable potential for chronic toxicity pursuant to the Toxicity Provisions.

4.3.3.3.4. **pH.** pH at Discharge Point 002 ranged between 4.7 and 8.0, exceeding the pH water quality objectives of 6.5 to 8.5 (see Basin Plan section 3.3.9). However, this Order does not establish pH WQBELs because the technology-based pH limitations of 6.0 and 9.0 (see Fact Sheet section 4.2.3.1) are as stringent as the pH effluent limitations set forth in

Basin Plan Table 4-2 for deep water discharges from all treatment facilities.

- 4.3.3.3.5. **Temperature.** The State's Thermal Plan requires existing dischargers of elevated temperature waste to enclosed bays to comply with limitations necessary to ensure protection of beneficial uses. Wastewater discharged at Discharge Point 002 does not include elevated temperature waste as defined by the Thermal Plan. Therefore, it is not subject to Thermal Plan requirements and does not have a reasonable potential to cause or contribute to an impact on beneficial uses.
- 4.3.3.4.6. ***Enterococcus Bacteria.*** The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* requires *Enterococcus* bacteria effluent limitations for discharges to marine and estuarine receiving waters that support the water contact recreation (REC1) beneficial use.
- 4.3.3.5. **Discharge Points 005 through 014.** Discharge Points 005 through 014 discharge stormwater from industrial areas of the Refinery. Stormwater discharged from these locations has a reasonable potential to cause or contribute to an exceedance of the water quality objectives for color (Basin Plan section 3.3.4), oil and grease (Basin Plan section 3.3.7), suspended material (Basin Plan section 3.3.14), and turbidity (Basin Plan section 3.3.19). Refinery stormwater may also contain pollutants that could cause or contribute to exceedances of other narrative and numeric water quality objectives.
- 4.3.3.6. **Sediment Quality.** Pollutants in some receiving water sediments may be present in quantities that alone or in combination are toxic to benthic communities. The Sediment Quality Plan states that effluent limits to protect sediment quality are to be developed when: (1) a direct relationship between the discharge and degraded sediment has been established; (2) the pollutants causing degradation have been identified; and (3) the reductions in pollutant loading needed to restore sediment quality have been estimated. However, to date there is no evidence directly linking compromised sediment conditions to the discharges subject to this Order; therefore, the Regional Water Board does not find reasonable potential for this discharge to cause or contribute to exceedances of the sediment quality objectives. Nevertheless, the Discharger continues to participate in the Regional Monitoring Program, which routinely monitors San Francisco Bay sediment and seeks to identify stressors responsible for degraded sediment quality.
- 4.3.3.7. **Narrative Water Quality Objectives.** Basin Plan chapter 3 includes narrative water quality objectives for all surface waters within the region, except the Pacific Ocean. Where reasonable potential is found, the Basin Plan requires these objectives to be translated into effluent limitations.

- 4.3.3.7.1. Basin Plan section 3.3.2 requires that controllable water quality factors not cause a detrimental increase in the concentration of bioaccumulative, toxic substances in bottom sediments or aquatic life. The Regional Water Board is implementing this narrative objective by using an indicator parameter, dioxin-TEQ, for these bioaccumulative pollutants of concern. The Discharger does not alter its once-through cooling water in a manner that would increase the concentration of bioaccumulative, toxic substances in bottom sediments or aquatic life; therefore, there is no reasonable potential for dioxin-TEQ at Discharge Point 001. However, this Order finds reasonable potential for dioxin-TEQ at Discharge Point 002. As explained in Fact Sheet section 4.3.2.1.2, elevated levels of dioxins and furans in San Francisco Bay fish tissue demonstrate that the narrative bioaccumulation water quality objective is not being met. Therefore, this Order contains an effluent limitation and monitoring requirements for dioxin-TEQ as well as chronic toxicity.
- 4.3.3.7.2. Basin Plan section 3.3.3 requires that the receiving water not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses. The total discharge between Discharge Points 001 and 002 is about 97 percent once-through cooling water and 3 percent is refinery process and municipal wastewater. At Discharge Point 001, the cooling water is low in nutrients and the Discharger does not alter it in a manner that would promote aquatic growths. At Discharge Point 002, the discharge, which is about 0.85 MGD, consists of refinery process and municipal wastewater that is generally low in nutrients. Therefore, there is no reasonable potential to exceed this narrative objective.
- 4.3.3.7.3. Basin Plan section 3.3.4 requires that discharges be free of coloration that causes nuisance or adversely affects beneficial uses. At Discharge Point 001, the Discharger does not alter its once-through cooling water in a manner that would contribute to coloration. At Discharge Point 002, as stated in Fact Sheet section 2.1.2, the discharge receives secondary treatment and does not contain objectionable color. Further, the technology based effluent limitations in this Order, including those for TSS, are sufficient to prevent an excursion above this narrative water quality objective in the receiving water. See Fact Sheet sections 4.2.3.1 and 4.2.3.2.1. Therefore, there is no reasonable potential to exceed this narrative objective.
- 4.3.3.7.4. Basin Plan section 3.3.5 requires that dissolved oxygen downstream of Carquinez Bridge remain above a minimum of 5.0 mg/L and that the median dissolved oxygen concentration for any three consecutive months not be less than 80 percent 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. To evaluate reasonable potential, this Order uses

the water quality objective of 5.0 mg/L. It does not consider dissolved oxygen content at saturation because that is based on salinity, temperature, and a three-month duration, which makes it impractical to evaluate with effluent data. The BOD technology based effluent limitations in this Order for Discharge Points 001 and 002 are sufficient to prevent an excursion below the dissolved oxygen water quality objective of 5.0 mg/L. See Fact Sheet sections 4.2.3.1 and 4.2.3.2.1. Therefore, there is no reasonable potential for the discharge to decrease dissolved oxygen below the water quality objective in the receiving water.

- 4.3.3.7.5. Basin Plan section 3.3.6 requires that discharges not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses. At Discharge Point 001, the Discharger filters the intake of its cooling water using a single travelling screen that filters from Carquinez Strait; the captured impinged organisms and debris are washed off and returned to Carquinez Strait and no floating material is added to the subsequent discharge. At Discharge Point 002, the discharge receives secondary treatment and does not contain floating debris, oil, or scum. Therefore, there is no reasonable potential for the discharge to contribute to floating material in the receiving water.
- 4.3.3.7.6. Basin Plan section 3.3.7 requires that discharges not contain visible, floating, suspended, or deposited oil or other products of petroleum origin. At Discharge Point 001, the Discharger does not alter its once-through cooling water in a manner that would contribute to oil or other products of petroleum origin. At Discharge Point 002, the discharge receives secondary treatment and does not contain petroleum products; therefore, there is no reasonable potential for the discharge to contribute to visible, suspended, or deposited oil or other petroleum products in the receiving water.
- 4.3.3.7.7. Basin Plan section 3.3.8 requires that the receiving water remain free of toxic substances in concentrations that are lethal to or that produce significant alterations in population or community ecology or receiving water biota. At Discharge Point 001, the Discharger does not alter its once-through cooling water in a manner that would make it acutely or chronically toxic. At Discharge Point 002, this Order establishes effluent limitations for chronic toxicity based on the (see Fact Sheet section 4.3.4.3.3). These limitations are sufficient to prevent an excursion above the water quality objective.
- 4.3.3.7.8. Basin Plan section 3.3.9 requires that pH not be depressed below 6.5 nor raised above 8.5 in the receiving water, and that discharges not cause changes greater than 0.5 pH units in normal ambient pH levels. For both Discharge Points 001 and 002, this Order establishes technology based effluent limitations for pH that are sufficient to prevent an excursion below

or above this water quality objective. See Fact Sheet sections 4.2.3.1 and 4.2.3.2.3.

- 4.3.3.7.9. Basin Plan section 3.3.10 requires that radioactive material not be present in concentrations that result in the accumulation of radionuclides in the food web that would present hazards to human, plant, animal, or aquatic life. Crockett Community Services District Code section 10.08.040, prohibits the discharge of any radioactive wastes or isotopes exceeding any limits set forth in California Administrative Code, Title 17, Section 30287, into the Crockett Community Services District sanitary sewer system; therefore, there is no reasonable potential for radioactive material to be present in the discharge.
- 4.3.3.7.10. Basin Plan section 3.3.11 requires that discharges not increase the total dissolved solids or salinity of receiving waters so as to adversely affect beneficial uses. As stated in Fact Sheet section 4.3.2.8, receiving water monitoring from the previous order term showed an average salinity of 16 ppt. At Discharge Point 001, the Discharger does not alter its once-through cooling water in a manner that would significantly increase total dissolved solids or salinity. Additionally, the discharge is diluted by at least 10:1. At Discharge Point 002, the typical salinity for sewage treatment plant effluent ranges from 0.5 to 1.5 ppt, depending on influent conditions; therefore, there is no reasonable potential for the discharge to significantly increase total dissolved solids or salinity in the receiving water.
- 4.3.3.7.11. Basin Plan section 3.3.12 requires that discharges not alter 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. At Discharge Point 001, the Discharger does not alter its once-through cooling water in a manner that would alter suspended sediment in the receiving water. At Discharge Point 002, the technology based effluent limitations in this Order, including those for TSS, are sufficient to prevent an excursion above this narrative water quality objective in the receiving water (see Fact Sheet section 4.2.3.2.1). Therefore, there is no reasonable potential for the discharge to detrimentally alter suspended sediment in the receiving water.
- 4.3.3.7.12. Basin Plan section 3.3.13 requires that discharges not cause bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses. At Discharge Point 001, the cooling water is low in nutrients and the Discharger does not alter it in a manner that would cause bottom deposits or aquatic growths. At Discharge Point 002, the technology-based effluent limitations in this Order for TSS are sufficient to prevent an excursion above this water quality objective (see Fact Sheet section 4.2.3.2.1). Furthermore, the discharge, which is only about 0.85 MGD, consists of municipal

wastewater and refinery process wastewater, the latter of which is not expected to be concentrated in nutrients to the extent that it would promote aquatic growths and that such growths could cause a nuisance or affect uses. Because the Discharger adds urea and phosphoric acid to its refinery process wastewater, this Order requires monitoring for nitrate-nitrite, total nitrogen, and phosphorus to evaluate the District's nutrient load to San Francisco Bay and ensure that it is not adversely affecting beneficial uses.

- 4.3.3.7.14. Basin Plan section 3.3.15 requires that discharges be free of dissolved sulfides above natural background levels. Sulfides cannot exist to a significant degree in an oxygenated environment, and this Order contains technology based effluent limitations for BOD that protect dissolved oxygen levels near Discharge Points 001 and 002; therefore, there is no reasonable potential for the discharge to contain sulfide concentrations above the background levels of the receiving water.
- 4.3.3.7.15. Basin Plan section 3.3.16 requires that discharges not contain taste- or odor-producing substances that impart undesirable tastes or odors to edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses. At Discharge Point 001, the Discharger does not alter its once-through cooling in a manner that would contribute to taste- or odor-producing substances. At Discharge Point 002, the discharge receives secondary treatment and does not contain objectionable color, odor, taste, or turbidity; therefore, there is no reasonable potential to exceed this narrative objective. Further, the technology based effluent limitations in this Order, including those for TSS, are sufficient to prevent an excursion above this narrative objective in the receiving water.
- 4.3.3.7.16. Basin Plan section 3.3.17 requires that discharges comply with the temperature objectives in the Thermal Plan (see Fact Sheet section 4.3.2.7). Basin Plan section 3.3.17 also requires that discharges not alter temperature beyond present natural background levels unless it can be demonstrated that such alteration in temperature does not adversely affect beneficial uses, and prohibits temperature increases of more than 2.8 degrees Celsius above the natural receiving water temperature. As stated in Fact Sheet section 4.3.2.7, State Water Board Resolution 75-72, issued on July 17, 1975, and approved by U.S. EPA on September 2, 1975, states that discharges from Discharge Points 001 and 002 are exempt from the following:
- “The maximum temperature shall not exceed the natural receiving water temperature by more than 20 degrees Fahrenheit.”
 - “...the maximum temperature of thermal waste discharges shall not exceed 86 degrees Fahrenheit.”

These exemptions were granted, with the stipulation that the thermal waste be diffused on the bottom at least 75 feet offshore and receive an initial dilution of at least 10:1. The discharges covered in this Order comply with these conditions. This alternative assures the protection and propagation of a balanced indigenous population of shellfish, fish, and wildlife.

Wastewater discharged at Discharge Point 001 includes elevated temperature waste as defined by the Thermal Plan. Once-through cooling water data collected over the previous order term recorded a maximum temperature of 95 degrees Fahrenheit during both the dry season (May through September) and wet season (October through April). Based on data collected at the Davis Point (BD40) and Napa River (BD50) RMP monitoring stations, the discharge temperatures did not exceed the applicable Basin Plan objectives. During the dry season, the average receiving water temperature was 68 degrees Fahrenheit. Using a conservative dilution of 10:1, the maximum projected temperature increase for the dry months was 1.5 degrees Fahrenheit. During the wet months, the average receiving water temperature was 55 degrees Fahrenheit. Using the same dilution of 10:1, the maximum projected temperature increase for the wet months was 3.6 degrees Fahrenheit. The temperature difference for both seasons was less than the temperature objectives in Fact Sheet section 4.3.2.7. Additionally, Carquinez Strait is not a main river channel. Therefore, there is no reasonable potential for the discharge to significantly alter the temperature of the receiving water beyond natural background levels.

- 4.3.3.7.17. Basin Plan section 3.3.19 requires that discharges be free of 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. At Discharge Point 001, the Discharger does not alter its once-through cooling water, nor discharge, in a manner that would contribute to suspended material. At Discharge Point 002, the technology based effluent limitations in this Order for TSS are sufficient to prevent an excursion above this narrative water quality objective in the receiving water (see Fact Sheet section 4.2.3.2.1).
- 4.3.3.8. Total Residual Chlorine.** There is reasonable potential to cause or contribute to an exceedance of the Basin Plan's narrative toxicity objective because the Facility disinfects its effluent with chlorine and, without sufficient dechlorination, the discharge could contain chlorine in concentrations that are acutely toxic to aquatic organisms.

4.3.4. **Water Quality-Based Effluent Limitations**

WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of water quality objectives. With the exception of those for *Enterococcus* bacteria, chronic toxicity, and chlorine (discussed below), the WQBEL calculations are based on the procedures in SIP section 1.4.

4.3.4.1. **WQBEL Expression.** NPDES regulations at 40 C.F.R. section 122.45(d) require that permit limitations for industrial dischargers be expressed as maximum daily and average monthly limits, unless impracticable.

4.3.4.2. **Discharge Point 001**

4.3.4.2.1. **Mixing Zones and Dilution Credits.** SIP section 1.4.2, Basin Plan section 4.5.1, and Toxicity Provisions section III.C.1 allow mixing zones and dilution credits under certain circumstances. On February 4, 2011, the Discharger submitted a study that determined initial dilution in Carquinez Strait near slack tide, *Dye Dilution Study for Crockett Cogeneration and C&H Sugar Outfall 001*. The study assumed a maximum flow of 37 MGD and an average flow of 22.7 MGD at Discharge Point 001. It showed that 10:1 dilution is achieved within 10 feet of the outfall, and dilution at the edge of the initial mixing zone varies between 37:1 and 44:1.

4.3.4.3.1.2. **Non-Bioaccumulative Pollutants.** For copper, lead, nickel, and zinc, mixing zones corresponding to a conservative dilution credit of 10:1 ($D=9$) have been established. The 10:1 dilution credit is based, in part, on Basin Plan Prohibition 1 (Table 4-1), which prohibits discharges with less than 10:1 dilution. SIP section 1.4.2 allows for limiting the dilution credit. The dilution credit is limited for the following reasons:

4.3.4.3.1.2.1. San Francisco Bay is a complex estuarine system with highly variable and seasonal upstream freshwater inflows and diurnal tidal saltwater inputs. SIP section 1.4.3 allows background conditions to be determined on a discharge-by-discharge or water body-by-water body basis. A water body-by-water body approach is taken here due to inherent uncertainties in characterizing ambient background conditions in a complex estuarine system on a discharge-by-discharge basis.

4.3.4.3.1.2.2. Because of the complex hydrology of San Francisco Bay, there are uncertainties in accurately determining an appropriate mixing zone. The models used to predict dilution do not consider the three-dimensional nature of San Francisco Bay currents resulting from the interaction of tidal flushes and seasonal freshwater outflows. Being heavier and colder than freshwater, ocean saltwater enters San Francisco Bay on a twice-daily tidal cycle, generally beneath the

warmer fresh water that flows seaward. When these waters mix and interact, complex circulation patterns occur due to the varying densities of the fresh and ocean waters. The locations of this mixing and interaction change depending on the strength of each tide. Additionally, sediment loads from the Central Valley change on a long-term basis, affecting the depth of different parts of San Francisco Bay, resulting in alteration of flow patterns, mixing, and dilution at the outfall.

4.3.4.2.2. **WQBEL Calculations.** The following table shows the WQBEL calculations for copper, lead, nickel, and zinc in accordance with SIP section 1.4.

Table F-19. WQBEL Calculations for Discharge Point 001

Pollutant	Copper	Lead	Nickel	Zinc
Units	µg/L	µg/L	µg/L	µg/L
Basis and Criteria type	Basin Plan Site-Specific Objective	CTR Freshwater Aquatic Life	CTR Marine Aquatic Life	CTR Marine Aquatic Life
Criteria - Acute	-	114	74	90
Criteria - Chronic	-	4.4	8.2	81
Site-Specific Objective Criteria - Acute	9.4	-	-	-
Site-Specific Objective Criteria - Chronic	6.0	-	-	-
Water Effects Ratio (WER)	1	1	1	1
Lowest WQO	6.0	4.4	8.2	81
Site Specific Translator - MDEL	0.66	-	0.57	-
Site Specific Translator - AMEL	0.38	-	0.27	-
Dilution Factor (D)	9	9	9	9
Number of samples per month	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	Y
Human Health criteria analysis required? (Y/N)	N	N	Y	N
Applicable Acute WQO	14	114	130	90
Applicable Chronic WQO	16	4.4	30	81
Human Health Criteria	-	-	4,600	-
Background (Maximum Concentration for Aquatic Life Calculation)	2.6	0.80	3.7	5.1
Background (Average Concentration for Human Health Calculation)	-	-	2.2	-
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	N	N
Effluent Concentration Allowance Acute	119	1,133	1,265	854

Pollutant	Copper	Lead	Nickel	Zinc
Effluent Concentration Allowance Chronic	135	37	270	764
Effluent Concentration Allowance Human Health	-	-	4.6 x 10 ⁴	-
Number of data points <10 or at least 80% of data reported non-detect? (Y/N)	N	Y	Y	Y
Average of effluent data points	30	1.8	64	31
Standard Deviation of effluent data points	72	2.2	140	35
Coefficient of Variation Calculated	2.4	N/A	N/A	N/A
Coefficient of Variation (Selected) - Final	2.4	0.6	0.6	0.6
Effluent Concentration Allowance Acute Mult99	0.10	0.32	0.32	0.32
Effluent Concentration Allowance Chronic Mult99	0.17	0.53	0.53	0.53
Long-Term Average Acute	13	364	406	274
Long-Term Average Chronic	24	20	142	403
Minimum of Long-Term Average	13	20	142	274
AMEL Mult95	3.0	1.6	1.6	1.6
MDEL Mult99	9.5	3.1	3.1	3.1
AMEL (Aquatic Life)	38	30	221	426
MDEL (Aquatic Life)	119	61	444	854
MDEL/AMEL Multiplier	3.2	2.0	2.0	2.0
AMEL (Human Health)	-	-	4.6 x 10 ⁴	-
MDEL (Human Health)	-	-	9.2 x 10 ⁴	-
Minimum of AMEL for Aquatic Life vs Human Health	38	30	221	426
Minimum of MDEL for Aquatic Life vs Human Health	119	61	444	854
Previous Order Limitation - AMEL	54	-	-	-
Previous Order Limitation - MDEL	120	-	-	-
Final Limitation - AMEL	38	30	220	430
Final Limitation - MDEL	120	61	440	850

4.3.4.3. Discharge Point 002

4.3.4.3.1. Mixing Zones and Dilution Credits. SIP section 1.4.2 allows mixing zones and dilution credits under certain circumstances. On June 4, 2012,

the Discharger submitted an analysis of the dilution at Discharge Point 002. The analysis assumed the mixing conditions there were effectively the same as those at Discharge Point 001 since Discharge Point 002 is only 2,000 feet downstream and both outfalls extend similar distances into Carquinez Strait. However, the effluent flow at Discharge Point 002 is typically less than 5 percent of the flow at Discharge Point 001. Therefore, the analysis concluded that dilution at Discharge Point 002 would be significantly greater than 10:1.

- 4.3.4.3.1.1. **Bioaccumulative Pollutants.** For certain bioaccumulative pollutants, no mixing zone is established, and dilution credit is denied. Specifically, these pollutants include dioxin and furan compounds, which appear on the CWA section 303(d) list for Carquinez Strait, because, based on available data on the concentrations of these pollutants in aquatic organisms, sediment, and the water column, they impair San Pablo Bay beneficial uses. The following factors suggest insufficient assimilative capacity in San Francisco Bay for these pollutants.

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

- 4.3.4.3.1.2. **Non-Bioaccumulative Pollutants.** This Order grants a conservative dilution credit of 10:1 for copper, lead, cyanide, dichlorobromomethane, ammonia, chronic toxicity, *Enterococcus*, and chlorine. The 10:1 dilution credit is based, in part, on Basin Plan Prohibition 1 (Table 4-1), which prohibits discharges with less than 10:1 dilution. SIP section 1.4.2 allows for limiting the dilution credit. The dilution credit is limited for the reasons listed in Fact Sheet sections 4.3.4.3.1.2.1 and 4.3.4.3.1.2.2. For chlorine, this dilution credit was used to represent acute conditions. This is justified because chlorine is a non-persistent pollutant that quickly disperses and degrades to a non-toxic state. As such,

cumulative toxicity associated with chlorine from other unrelated discharges is unlikely.

- 4.3.4.3.2. **WQBEL Calculations.** The following table shows the WQBEL calculations for copper, lead, cyanide, dioxin-TEQ, dichlorobromomethane, and total ammonia in accordance with SIP section 1.4.

Table F-20. WQBEL Calculations for Discharge Point 002

Pollutant	Copper	Lead	Cyanide	Dioxin-TEQ	Dichlorobromo -methane	Total Ammonia (acute)	Total Ammonia (chronic)
Units	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L as N	mg/L as N
Basis and Criteria type	Basin Plan Site- Specific Objective	CTR Fresh Water Aquatic Life	Basin Plan Site- Specific Objective	CTR Human Health	CTR Human Health	Basin Plan Aquatic Life Objective	Basin Plan Aquatic Life Objective
Criteria - Acute	-	114	-	-	-	4.1	-
Criteria - Chronic	-	4.4	-	-	-	-	1.2
Criteria - Health	-	-	-	1.4 x 10 ⁻⁸	46	-	-
Site-Specific Objective Criteria - Acute	9.4	-	9.4	-	-	-	-
Site-Specific Objective Criteria - Chronic	6.0	-	2.9	-	-	-	-
Water Effects Ratio (WER)	1	1	1	1	1	1	1
Lowest WQO	6.0	4.4	2.9	1.4 x 10 ⁻⁸	46	4.1	1.2
Site Specific Translator - MDEL	0.66	-	-	-	-	-	-
Site Specific Translator - AMEL	0.38	-	-	-	-	-	-
Dilution Factor (D)	9	9	9	0	9	9	9
Number of samples per month	4	4	4	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	Y	Y	Y	N	N	Y	Y
Human Health criteria analysis required? (Y/N)	N	N	Y	Y	Y	N	N
Applicable Acute WQO	14	114	9.4	-	-	4.1	-
Applicable Chronic WQO	16	4.4	2.9	-	-	-	1.2
Human Health Criteria	-	-	2.2 x 10 ⁵	1.4 x 10 ⁻⁸	46	-	-

Pollutant	Copper	Lead	Cyanide	Dioxin-TEQ	Dichlorobromo -methane	Total Ammonia (acute)	Total Ammonia (chronic)
Background (Maximum Concentration for Aquatic Life Calculation)	2.6	0.80	0.52	-	0.05	0.21	0.07
Background (Average Concentration for Human Health Calculation)	-	-	0.50	4.1E-08	0.05	-	-
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	N	Y	N	N	N
Effluent Concentration Allowance Acute	120	1,133	89	-	-	37	-
Effluent Concentration Allowance Chronic	135	37	24	-	-	-	11
Effluent Concentration Allowance Human Health	-	-	2.2 x 10 ⁵	1.4 x 10 ⁻⁸	460	-	-
Number of data points <10 or at least 80% of data reported non-detect? (Y/N)	N	N	N	Y	Y	N	N
Average of effluent data points	3.3	0.65	9.1	-	36	0.48	0.23
Standard Deviation of effluent data points	2.6	1.4	11	-	37	1.3	0.15
Coefficient of Variation Calculated	0.79	2.1	1.2	N/A	N/A	2.7	0.62
Coefficient of Variation (Selected) - Final	0.79	2.1	1.2	0.6	0.6	2.7	0.62
Effluent Concentration Allowance Acute Mult99	0.25	0.11	0.17	-	-	0.10	-

Pollutant	Copper	Lead	Cyanide	Dioxin-TEQ	Dichlorobromo -methane	Total Ammonia (acute)	Total Ammonia (chronic)
Effluent Concentration Allowance Chronic Mult99	0.44	0.19	0.32	-	-	-	0.73
Long-Term Average Acute	30	127	15	-	-	3.6	-
Long-Term Average Chronic	60	7.1	7.7	-	-	-	7.8
Minimum of Long-Term Average	30	7.1	7.7	-	-	3.6	7.8
AMEL Mult95	1.7	2.9	2.2	1.6	1.6	3.2	5.3
MDEL Mult99	4.0	8.9	5.9	3.1	3.1	10	10
AMEL (Aquatic Life)	52	21	17	-	-	12	15
MDEL (Aquatic Life)	120	64	45	-	-	37	80
MDEL/AMEL Multiplier	2.3	3.1	2.7	2.0	2.0	3.2	5.3
AMEL (Human Health)	-	-	2.2×10^5	1.4×10^{-8}	460	-	-
MDEL (Human Health)	-	-	6.6×10^5	2.8×10^{-8}	922	-	-
Minimum of AMEL for Aquatic Life vs Human Health	52	21	17	1.4×10^{-8}	460	12	15
Minimum of MDEL for Aquatic Life vs Human Health	120	64	45	2.8×10^{-8}	922	37	80
Previous Order Limitation - AMEL	54	21	19	1.4×10^{-8}	-	22	13
Previous Order Limitation - MDEL	120	65	43	2.8×10^{-8}	-	45	34
Final Limitation - AMEL	52	21	17	1.4×10^{-8}	460	12	13
Final Limitation - MDEL	120	64	43	2.8×10^{-8}	922	37	34

4.3.4.3.3. **Chronic Toxicity.** This Order includes chronic toxicity limitations based on Toxicity Provisions section III.C.5. This Order grants a mixing zone for chronic toxicity corresponding to a dilution ratio of at least 10:1 (D=9), equivalent to an IWC of 10 percent effluent. This Order imposes a maximum daily effluent limit (MDEL) and median monthly effluent limit (MMEL) based on testing at the IWC.

4.3.4.3.4. **Enterococcus Bacteria.** This Order includes *Enterococcus* effluent limitations based on the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy*. That plan requires limitations for discharges to receiving waters with the water contact recreation beneficial use. This Order accounts for a conservative initial dilution of 10:1 (D=9) to calculate the *Enterococcus* effluent limitation. To establish background conditions, the District collected two *Enterococcus* receiving water samples near its outfall. The maximum sample result was 7 CFU/100 mL.

The *Enterococcus* effluent limitation was calculated with the following equation using SIP section 1.4 as guidance:

$$ECA = C + D (C - B)$$

where:

ECA = Effluent Concentration Allowance (effluent limitation)

C = water quality objective (30 CFU/100 mL, 110 CFU/100mL)

D = dilution factor (D = 9)

B = background concentration (7 CFU /100 mL)

This calculation results in a six-week rolling geometric mean *Enterococcus* effluent limitation of 240 CFU/100 mL and a 90th percentile of all *Enterococcus* bacteria samples collected in a calendar month limitation of 1,000 CFU/100mL.

4.3.4.3.5. **Total Residual Chlorine.** Where reasonable potential has been established for a pollutant, but there is no numeric objective, water quality-based effluent limitations must be established using (1) U.S. EPA criteria guidance under Clean Water Act (CWA) section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting a narrative criterion, supplemented with relevant information. The limitations for total residual chlorine in this Order are derived from the one-hour average criterion from U.S EPA's *Ambient Water Quality Criteria for Chlorine – 1984* (EPA 440/5-84-030). For marine and estuarine waters,

the numeric criterion is 0.013 mg/L as a one-hour average. Chlorine dissipates quickly upon entering receiving waters; thus, it is unlikely that discharges that meet one-hour effluent limitations will have chlorine concentrations that persist in receiving waters long enough to cause the four-day water quality criterion to be exceeded.

This Order establishes a mixing zone corresponding to an initial dilution of 10:1, consistent with the Discharger's modeled dilution for acute conditions described in Fact Sheet section 4.3.4.3.1, above. This is because chlorine is a non-persistent pollutant that quickly disperses and degrades to a non-toxic state.

This Order uses a simplified equation from SIP section 1.4 because background concentrations for total residual chlorine are assumed to be zero:

$$ECA = (D+1) * C$$

where:

ECA = Effluent Concentration Allowance (effluent limitation)
C = Water quality criteria (0.013 mg/L)
D = Dilution factor (D=9)

This calculation results in a one-hour average effluent limitation of 0.13 mg/L.

4.3.4.4. **Discharge Point 005 through 014**

4.3.4.4.1. **WQBELs.** This Order contains narrative WQBELs for stormwater discharges. *Stormwater Provisions, Monitoring, and Reporting Requirements* (Attachment S) requires a Stormwater Pollution Prevention Plan (SWPPP) and implementation of Best Management Practices. This Order also contains WQBELs for visible oil and color consistent with the previous order and the narrative requirements of Basin Plan sections 3.3.4 and 3.3.7 that there be no visible color or oil in surface waters. These requirements include best management practices in accordance with 40 C.F.R. section 122.44(k).

4.3.5. Receiving Water Limitations. This Order removes the receiving water limitations contained in Section V of the previous order that served as backstops for unanticipated circumstances or changes to effluent quality that could affect water quality. The receiving water limitations made the Discharger responsible for the quality of the receiving water without specifying specific requirements (e.g., effluent limitations) or other actions the Discharger must take that apply at or before the discharge point. The Regional Water Board removed the receiving water limitations to be consistent with the U.S. Supreme

Court's ruling in *City and County of San Francisco, California v. Environmental Protection Agency* (2025) 145 S.Ct. 704, which held that NPDES permits issued by the U.S. EPA may not include end-result requirements, under the Clean Water Act. End-result requirements are provisions that do not spell out what a Discharger must do or refrain from doing; rather, they make a Discharger responsible for the quality of the water in the body of water into which it discharges pollutants.¹

4.4. Discharge Requirement Considerations

- 4.4.1. **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 unless an exception applies. The requirements of this Order are at least as stringent as those in the previous order or otherwise fall under an anti-backsliding exception.

This Order does not retain effluent limitations at Discharge Point 002 for chlorodibromomethane or bis(2-ethylhexyl)phthalate from the previous order because data no longer indicate reasonable potential for these parameters to exceed water quality objectives. CWA section 303(d)(4)(B) applies to removal of these effluent limitations because San Pablo Bay is not impaired by chlorodibromomethane or bis(2-ethylhexyl)phthalate, making it an attainment water. The removal of these effluent limits is consistent with CWA section 303(d)(4)(B). As explained in Fact Sheet section 4.4.2, removing these effluent limits will not result in degradation of water quality, and the relaxation will not result in a violation of water quality standards.

This Order contains new *Enterococcus* bacteria effluent limitations based on the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy*. The new limitations are expressed using different averaging periods than the previous limitations and are therefore not directly comparable to the previous limitations.

This Order does not retain the previous order's total coliform limitations because Basin Plan Table 4-2A no longer requires total or fecal coliform limitations for deepwater discharges to protect shellfish harvesting. The previous order's total coliform effluent limitations were water-quality based. CWA section 402(o)(1) allows for relaxation of WQBELs if it is consistent with the provisions of CWA section 303(d)(4). CWA section 303(d)(4)(B) applies to this discharge because Carquinez Strait attains the water quality level needed

¹ While the Regional Water Board removed generalized receiving water limitations in accordance with the U.S. Supreme Court's decision interpreting the Clean Water Act's NPDES requirements, the Regional Water Board may decide in the future to include similar requirements as a matter of state authority.

for shellfish harvesting, making it an attainment water. Under CWA section 303(d)(4)(B), a limitation based on a water quality standard or any other permitting standard may only be relaxed where the action is consistent with antidegradation policy. As explained in Fact Sheet section 4.4.2, there will be no degradation to water quality with respect to total coliform, and the relaxation will not result in a violation of water quality standards.

This Order imposes new chronic toxicity effluent limits and does not retain the acute and chronic toxicity effluent limits in place prior to the new Toxicity Provisions. This complies with anti-backsliding requirements, consistent with State Water Board Order WQ 2001-06, because the new chronic toxicity effluent limits, based on the TST, are not comparable to the acute and chronic toxicity effluent limitations in the previous permit, which were based on point estimates of acute and chronic toxicity. As discussed in Fact Sheet section 4.4.2, removing these effluent limits in lieu of new chronic toxicity effluent limits will not result in degradation to water quality nor a violation of water quality standards.

This Order replaces a technology-based total residual chlorine effluent limitation of 0.0 mg/l to a less stringent water quality-based effluent limitation of 0.13 mg/L. Clean Water Act section 402(o) prohibits backsliding from an effluent limitation that is based on state standards, such as water quality standards or treatment standards, unless the change is consistent with Clean Water Act section 303(d)(4). The previous effluent limitation was based on state treatment standards. Clean Water Act section 303(d)(4)(B) says, for waters that meet water quality standards, effluent limitations may be revised if such revision is consistent with antidegradation policies. Thus, backsliding is allowed because the surface waters of the San Francisco Bay region are not impaired by chlorine and the relaxed effluent limit is consistent with antidegradation policies as explained below.

As discussed in Fact Sheet sections 4.3.5 and 5.4, this Order removes the receiving water limitations included in the previous order and retains the nuisance provisions contained in the previous order as state only requirements. The removal of these requirements, as a matter of federal law, is consistent with the U.S. Supreme Court's holding in *City and County of San Francisco, California v. Environmental Protection Agency* (2025) 145 S.Ct. 704. However, as discussed in Fact Sheet section 4.3.5, the Regional Water Board has determined that the requirements in this Order are sufficient to ensure the discharge complies with Clean Water Act section 301(b)(1)(C) (33 U.S.C. § 1311(b)(1)(C)). As a result, the discharge does not authorize violations of water quality standards, and the removal of the receiving water limitations does not authorize the additional discharge of pollutants or authorize the violation of water quality standards. The Order does not, therefore, authorize either backsliding or further degradation of water quality.

4.4.2. **Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16. As explained below, this Order 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.

Removing the water-quality based effluent limits for chlorodibromomethane and bis(2-ethylhexyl)phthalate is consistent with State and federal antidegradation requirements. The quantities of these pollutants are not expected to exceed the quantity discharged under the previous order when the effluent limits were in place. Therefore, there is no evidence that the removal of these limitations will lower water quality related to these pollutants in the receiving waters.

The removal of total coliform limitations will not degrade water quality because the Discharger must still disinfect bacteria to meet the *Enterococcus* bacteria limits intended to protect water contact recreation. Although this Order modifies the *Enterococcus* bacteria limitations, the new limitations serve a comparable purpose, reflect the most up-to-date water quality objectives, and will not lower water quality-related to bacteria in the receiving waters. Because *Enterococcus* and total coliform are both indicators for fecal waste, they are removed from wastewater in similar ways. Basin Plan Table 4-2A no longer requires total coliform limitations for this deepwater discharge because it is positively buoyant in the receiving waters and thus cannot harm benthic organisms like shellfish. The new limitations will ensure that water quality will not be degraded as it relates to bacteria.

This Order imposes new aquatic toxicity requirements. The previous order required acute and chronic toxicity monitoring, imposed acute toxicity effluent limits, and imposed TRE triggers for chronic toxicity. This Order instead requires chronic toxicity monitoring at an IWC of 10 percent effluent. It also imposes TRE triggers for chronic toxicity based on tests at the IWC. The effluent limitations and TRE triggers will ensure that a comparable level of treatment will be maintained; thus, these requirements will ensure that receiving water quality will not be degraded. As for the acute toxicity limits, the chronic toxicity requirements will protect against acute toxicity, which is typically caused by higher levels of toxicants. For these reasons, water quality will not be degraded.

This Order authorizes a higher chlorine effluent limitation, but any increases in chlorine discharge will be minor, spatially localized, temporally limited, and unlikely to be observable in the receiving waters, particularly outside the mixing zones, because chlorine dissipates rapidly in receiving waters and because this Order requires the Discharger to implement a Chlorine Process Control Plan that targets a chlorine residual of 0.0 mg/L at the discharge point. Thus, there will not be any significant reduction in water quality in receiving waters, which are high quality as it relates to chlorine. Under the State Water Resources Control Board's Administrative Procedures Update No. 90-004 on the

implementation of antidegradation policies in NPDES permits, a simple antidegradation analysis is sufficient where, as here, a discharge will not be adverse to the intent and purpose of state and federal antidegradation policies and any reduction in water quality will be spatially localized or limited (e.g., confined to a mixing zone), temporally limited with no long-term deleterious effects on water quality, and produce minor effects that will not result in a significant reduction of water quality, among other factors.

Assuming that there will be a small increase in chlorine observable near the discharge point (Discharge Point 002), it would be consistent with the maximum benefit to the people of the state because the Discharger will reduce the use and discharge of dechlorination chemicals, which generate greenhouse gas emissions during manufacturing and delivery, place oxygen demand on receiving waters when discharged, and unnecessarily generate additional costs for the Discharger. The excess use of dechlorination chemicals costs wastewater treatment plants up to \$2 million per year (Bay Area Clean Water Agencies, September 29, 2023). These funds could be better invested in other important water quality projects. This revised approach for establishing a chlorine effluent limitation thus reflects the updated understanding that overdosing with dechlorination chemicals is no longer the best practicable treatment or control of chlorine because of its adverse impacts to water quality.

Compliance with the new chlorine effluent limitation will not unreasonably affect current or anticipated beneficial uses because the chlorine water quality criterion implemented in this Order is protective of most aquatic life. To ensure that any migration corridors for threatened and endangered species will not be compromised, the chlorine mixing zone established in this Order is small relative to the size of the receiving water body, Carquinez Strait, allowing passage. In addition, this Order requires implementation of a Chlorine Process Control Plan and continuous monitoring to assess whether discharges comply with the new limitations based on a one-hour average, both of which ensure improved process control.

This Order removes the generalized receiving water limitations contained in the previous order. As discussed in Fact Sheet section 4.3.3.7., the effluent limits established in this Order are sufficient to protect Carquinez Strait. The removal of the generalized receiving water limitations will not result in an increased volume or concentration of pollutants in the discharge. As explained in Fact Sheet section 4.3.3.7, the technology and water quality-based effluent limits established in the Order are sufficient to drive treatment plant performance in a manner comparable to the previous order and to ensure that water quality and beneficial uses are protected. This Order does not, therefore, authorize further degradation of water quality.

- 4.4.3. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and water quality-based effluent limitations 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. 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 also applicable water quality standards pursuant to 40 C.F.R. section 131.21(c)(2).

5. RATIONALE FOR PROVISIONS

5.1. Standard Provisions

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

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

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

5.2. Monitoring and Reporting Provisions

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

MRP establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. For more information, see Fact Sheet section 7.

5.3. Special Provisions

5.3.1. 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.

5.3.2. Effluent Characterization Study and Report

This Order does not include WQBELs for 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 13383 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.

5.3.3. Pollutant Minimization Program

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

5.3.4. Chlorine Process Control Plan

This provision is consistent with Order R2-2023-0023 and is necessary to ensure that using a water quality-based effluent limit for chlorine is consistent with antidegradation policies. The provision requires the Discharger to implement a Chlorine Process Control Plan to target a chlorine residual of 0.0 mg/L at the discharge point. This will ensure that chlorine will typically not be present in discharge and, if chlorine is detected, the duration of such discharges will be relatively short.

5.3.5. Other Special Provisions

- 5.3.5.1. **Acetone Control.** The Discharger may add isopropanol to the Refinery's vacuum pan process to improve the efficiency of sugar crystallization. Acetone may be a byproduct of isopropanol and can adversely impact aquatic life. This provision's action level is based on a 2014 study on acetone toxicity, which observed a No Observed Effect Concentration of 0.6 mg/L on

fathead minnow.² This provision is necessary to ensure that the Discharger's addition of isopropanol does not adversely impact beneficial uses.

- 5.3.5.2. **Stormwater Requirements.** This provision is based on Basin Plan section 4.8 and mirrors the requirements of General Permit for Storm Water Discharges Associated with Industrial Activities (State Water Board Order 2014-0057-DWQ) and U.S. EPA's NPDES Stormwater Multi-Sector General Permit for Industrial Activities (Federal Register Volume 65, Number 210, October 30, 2000). This provision is necessary to ensure that the Discharger implements best management practices to protect beneficial uses.
- 5.3.5.3. **Sludge and Biosolids Management.** Provision 5.3.5.3.1 is based on Water Code section 13263, which requires the Regional Water Board to consider the need to prevent nuisance when issuing waste discharge requirements. (See Fact Sheet section 5.4.) The remaining provisions are based on 40 C.F.R. section 122.41(d), which requires the Discharger to take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment. "Sludge" refers to the solid, semisolid, and liquid residue removed during primary, secondary, and advanced wastewater treatment processes. "Biosolids" refers to sludge that has been treated and may be beneficially reused.
- 5.3.5.4. **Sanitary Sewer System Management.** The Discharger's sanitary sewer system is part of the Facility regulated through this Order. This provision requires compliance with Attachments D and G and states that these requirements may be satisfied by separately complying with State Water Board Order WQ 2022-0103-DWQ, *Statewide Waste Discharge Requirements General Order for Sanitary Sewer Systems*, and any subsequent order updating these requirements. These statewide WDRs require public agencies that own or operate sanitary sewer systems with one or more miles of sewer lines to enroll for coverage and comply with requirements to develop sanitary sewer management plans and report sanitary sewer spills, among other provisions and prohibitions. The statewide WDRs contain requirements for operation and maintenance of sanitary sewer systems and for reporting and mitigating sanitary sewer spills that are more extensive and, therefore, more stringent than the standard provisions in Attachments D and G. Compliance with the statewide WDRs will satisfy the corresponding requirements in Attachments D and G.

² Based on information provided in U.S. EPA's Integrated Risk Information System and CompTox Chemical Dashboard for isopropanol (CAS No. 67-63-0) and acetone (CAS No. 67-64-1)

5.3.5.5. **Once-Through Cooling Water Intake Structure**

This provision requires the Discharger to implement a Best Management Practices (BMPs) Plan to ensure that clearing the travelling screen will not increase turbidity or otherwise adversely impact the receiving water. Furthermore, this provision requires the Discharger to certify, through annual reports, the proper operation and maintenance of the once-through cooling water intake structure by identifying any operational problems and necessary operational changes to be made, certifying that the flow meters used to calculate the once through cooling water inflow were calibrated, evaluating the effectiveness of the BMPs used for clearing the traveling screen and documenting any BMP changes, and identifying work planned or completed that is beyond routine maintenance. This requirement is necessary to ensure compliance with CWA section 316(b) and 40 C.F.R. section 125.94, subsections (a) and (c)(2). This Order also requires the Discharger to update its thermal plume study to reflect current conditions and ensure the protection of aquatic life, including federally listed and endangered species.

CWA section 316(b) addresses adverse environmental impacts caused by the intake of once-through cooling water. These impacts include impingement of aquatic life on cooling water intake structures and entrainment of aquatic life within cooling water flows, where it is subject to thermal and physical stresses. CWA section 316(b) requires that NPDES permits include requirements for the best technology available (BTA) in the location, design, construction, and capacity of cooling water intake structures to minimize adverse environmental impacts.

- 5.3.5.5.1. **Entrainment and Impingement Study.** To ensure that the Refinery operates consistent with the BTA standard and minimizes adverse impacts to aquatic life, this Order requires the Discharger to submit an Entrainment and Impingement Study that reflects the current conditions of the cooling water intake. The study must include information on the cooling water intake structure, the physical conditions of Carquinez Strait near the intake structure, baseline biological conditions in the area of influence of the Refinery's cooling water intake structure, and impingement and entrainment mortality attributed to the Refinery's cooling water intake structure.
- 5.3.5.5.2. **Compliance with Best Technology Available (BTA) Standards for Impingement Mortality.** This provision requires the Discharger to evaluate the feasibility of maintaining a maximum approach velocity of no greater than 0.50 feet per second (15.3 centimeters per second (cm/sec)). This maximum approach velocity is based on the Discharger's 2020 Cooling Water Intake Report (January 31, 2020) report, which proposed that the Discharger will meet this maximum approach velocity to comply with a Best Technology Available (BTA) standard for minimizing impingement and entrainment, consistent with 40 C.F.R.

section 125.94(c)(2). If the Discharger cannot maintain this maximum approach velocity, this provision requires the Discharger to evaluate and implement methods to decrease the approach velocity. If the Discharger cannot feasibly decrease its approach velocity, this provision requires the Discharger to propose an alternative BTA standard listed in 40 C.F.R. section 125.94(c). This provision is necessary to ensure the Discharger complies with 40 C.F.R. section 125.94(c).

- 5.3.5.5.3. **Thermal Plume Monitoring Study – Discharge Point 001.** This provision is necessary to comply with CWA section 316(b), the Thermal Plan, the Basin Plan, and 40 C.F.R. parts 122 and 125 requirements for cooling water intakes. Under the Thermal Plan, cooling water discharged at Discharge Point 001 is considered thermal waste used for the purpose of transporting heat and an existing discharge (see Fact Sheet section 3.3.7). The Basin Plan and Thermal Plan require existing discharges to enclosed bays to be protective of beneficial uses.

The Regional Water Board, pursuant to federal law and regulation³, submitted the Discharger's permit reissuance application to the National Marine Fisheries Service and U.S. Fish and Wildlife Service (the Services) for review. The Services did not require corrections to the federally listed species and critical habitat present or recommend any additional measures to protect aquatic life. However, U.S. Fish and Wildlife Service recommended updating the latest thermal plume study to reflect current conditions and potential effects on the delta smelt (*Hypomesus transpacificus*) and the San Francisco Bay-Delta distinct population segment of the longfin smelt (*Spirinchus thaleichthys*). The delta smelt is federally listed as *threatened*. The San Francisco Bay-Delta population of the longfin smelt is a candidate for federal listing as *endangered*. This provision is necessary to ensure that beneficial uses are protected from thermal waste discharges and is consistent with the recommendation from U.S. Fish & Wildlife Service.

- 5.3.5.6. **Copper Action Plan.** This provision is based on Basin Plan section 7.2.1.2 and is necessary to ensure that use of copper site-specific objectives is consistent with antidegradation policies. This Order requires the Discharger to implement pretreatment, source control, and pollution prevention for identified sources. Additional actions may be necessary depending on the three-year rolling mean copper concentration in San Pablo Bay. Data the San Francisco Estuary Institute compiled for 2015-2019 indicate no

³ Section 316(b) of the Clean Water Act, as amended; the Code of Federal Regulations, Title 40, Parts 122 and 125; Endangered Species Act Section 7 Consultation: Programmatic Biological Opinion on the U.S. EPA's Issuance and Implementation of the Final Regulations Section 316(b) of the Clean Water Act (May 19, 2014); and U.S. EPA's instructional memorandum to water division directors (December 11, 2014).

degradation of San Francisco Bay water quality with respect to copper (sfei.org/pages/copper-site-specific-objective-3-year-rolling-averages-0).

- 5.3.5.7. **Cyanide Action Plan.** This provision is based on Basin Plan section 4.7.2.2 and is necessary to ensure that use of cyanide site-specific objectives is consistent with antidegradation policies. The threshold for considering influent cyanide concentrations to indicate a possible “significant cyanide discharge” in the Discharger’s service area is set at 40 µg/L. This threshold is consistent with the previous order.
- 5.3.5.8. **Outfall Inspection and Maintenance.** This provision is necessary to ensure that the diffuser is operating as designed and that the Discharger is achieving dilution required in Prohibition 3.3.
- 5.3.5.9. **Annual Average Selenium Load.** This provision is based on Basin Plan section 7.2.4.5. The information will be used to confirm that selenium loads are consistent with wasteload allocations. The requirements regarding treatment of estimated and non-detect values are consistent with the load calculations performed for the North San Francisco Bay Selenium TMDL.
- 5.3.5.10. **Joint Treatment Plant Evaluation.** This provision is necessary to ensure that wastewater discharges from the Refinery to the Joint Treatment Plant do not adversely impact operations of the Joint Treatment Plant. Due to the nature of the Refinery’s operations, the Refinery’s discharge can be concentrated in organic material that can inhibit or disrupt the operation of the Joint Treatment Plant, leading to the discharge of untreated or inadequately-treated wastewater into waters of the United States. Implementing influent action levels on BOD₅, COD, pH, and temperature can ensure that the Refinery’s discharge to the Joint Treatment Plant are protective of the Joint Treatment Plant’s operations.

5.4. Provisions from Previous Order Retained to Implement State Law Only

Attachment G Provision I.I.1. of the previous order stated, “Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code section 13050.” Consistent with the holding in *City and County of San Francisco, California v. Environmental Protection Agency* (2025) 145 S.Ct. 704 (discussed in Fact Sheet section 4.3.5), this Order does not retain this provision as a federal requirement. However, this Order does retain a modified version of the provision in Attachment G Provision 1.9.1 as a matter of state law: “The treatment of pollutants shall not create nuisance as defined by California Water Code section 13050.” This requirement does not address the discharge of pollutants or pollution or contamination because this Order includes technology-based and water quality-based effluent limitations sufficient to prevent nuisance or contamination in receiving water associated with the discharge.

Consistent with *City and County of San Francisco v. Environmental Protection Agency*, this Order also does not retain Provision VI.C.4.b.i from the previous order as a federal requirement. Provision 5.3.5.3.1 of this Order retains the requirements of Provision VI.C.4.a.i from the previous order to implement state law only. The provision states “Sludge and biosolids treatment and storage shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.”

The Regional Water Board has maintained these provisions as state law requirements to implement Water Code section 13263, which identifies the need to prevent nuisance as a factor to consider when issuing waste discharge requirements. The U.S. Supreme Court’s decision in *City and County of San Francisco v. U.S. EPA* did not interpret the Water Code. Furthermore, there is no provision of the Water Code analogous to the NPDES permit shield that was a part of the basis of the U.S. Supreme Court’s decision. Likewise, the Porter-Cologne Water Quality Control Act has consistently recognized the ability of the Water Boards to regulate to prevent nuisance, and the Porter-Cologne Water Quality Control Act does not share the legislative history of the federal Clean Water Act. This Order, therefore, maintains the requirements identified above to continue protections as a matter of state law.

As required by Water Code section 13263, the Regional Water Board has considered the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the factors listed in Water Code section 13241 in establishing these state law requirements. The Water Code section 13241 factors are considered below.

- 5.4.1. **Past, present, and probable future beneficial uses of water.** Basin Plan Chapter 2 identifies designated beneficial uses for water bodies in the San Francisco Bay Region. Beneficial uses of water relevant to this Order are also identified above in Fact Sheet Table F-8. The Regional Water Board has taken beneficial uses into account in establishing the requirements of this Order. The prohibition against nuisance and groundwater contamination will not adversely affect present and future beneficial uses of water.
- 5.4.2. **Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.** The environmental characteristics of the Suisun Basin watershed are described in Basin Plan Table 2-1 and the Discharger’s Report of Waste Discharge. The prohibition against nuisance and groundwater contamination will not adversely affect the environmental characteristics of the hydrographic unit.
- 5.4.3. **Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.** By complying with the CWA-mandated requirements established in this Order, the Discharger will ensure control over factors that could affect water

quality. The requirement to prevent nuisance will ensure that the treatment process, including the treatment and storage of biosolids, does not result in odors that could adversely affect the surrounding community. The requirement to prevent groundwater contamination from the treatment and storage of biosolids is necessary to ensure that the Facility is properly operated and maintained and groundwater is protected.

- 5.4.4. **Economic considerations.** The Discharger caused an odor nuisance from at least September 8, 2022, through October 14, 2022, that affected Crockett Community. The odor nuisance resulted when the Discharger's aeration basin air-blowers overheated. In response, the Discharger invested in on-site backup generators and a permanent canopy for its blowers to prepare for future power issues and excessive heatwaves. Historically, the Discharger has reliably operated its wastewater treatment plant to prevent groundwater contamination associated with the treatment and storage of biosolids. It is unlikely, but the Discharger could incur additional costs to prevent nuisance or groundwater contamination associated with its treatment and storage of biosolids. Those costs would be necessary to properly operate and maintain its treatment plant and protect public health and the environment. If a nuisance were to occur, it would have a negative economic impact on tourism, recreation, and affected residents in the area.
- 5.4.5. **The need for developing housing within the region.** The requirement to prevent nuisance and groundwater contamination will not adversely affect the development of housing within the region.
- 5.4.6. **The need to develop and use recycled water.** The requirement to prevent nuisance and groundwater contamination will have no impact on the development and use of recycled water.

6. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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

6.1. Monitoring Requirements Rationale

- 6.1.1. **Intake and Influent Monitoring.** Intake flow monitoring at Monitoring Location INF-001 is necessary to evaluate the performance of the once-through-cooling system and compliance with entrainment standards. Copper, lead, nickel and zinc intake monitoring is necessary in the event that an intake water credit might be necessary when next reissuing the permit. BOD intake monitoring is necessary to comply with 40 C.F.R. section 409.22. Weekly intake structure monitoring is necessary to comply with 40 C.F.R. section 125.96(e).

Influent flow monitoring is necessary to understand facility operations. Basin Plan section 4.7.2.2 requires influent cyanide monitoring at Monitoring

Locations INF-002 and INF-003 because this Order includes cyanide limits based on site-specific cyanide water quality objectives.

This order contains new influent monitoring requirements at INF-003 for COD, TSS, pH, and temperature to characterize and assess the wastewater from the Refinery to the Joint Treatment Plant. For monitoring at INF-003, COD and TSS may be analyzed by a noncertified laboratory if the Discharger implements a quality assurance control program that demonstrates sufficient capability to adequately perform these onsite field tests. This allowance is justified because such monitoring is for internal process control, not discharge compliance, and it will allow the Discharger to respond quicker to any exceedance in influent action levels developed in response to Provision 5.3.5.10 (Joint Treatment Plant Evaluation) of the Order.

- 6.1.2. **Effluent Monitoring.** Effluent monitoring at Monitoring Locations EFF-001 through EFF-014 is necessary to understand Facility operations, evaluate compliance with this Order's effluent limitations and provisions, and conduct future reasonable potential analyses.
- 6.1.3. **Toxicity Testing.** Toxicity tests are necessary to ensure the discharge does not cause or contribute to toxicity in the receiving waters, to evaluate whether the Toxicity Provisions' chronic toxicity water quality objectives are met, and to conduct future reasonable potential analyses. Chronic toxicity tests are also necessary to evaluate whether Toxicity Reduction Evaluations (TREs) are needed. This monitoring will allow timely identification and response to potential toxicants.

The Toxicity Provisions require routine monitoring and MDEL and MMEL compliance tests for chronic toxicity at the IWC to ensure compliance with toxicity effluent limitations. This Order grants a mixing zone for chronic toxicity corresponding to a dilution ratio of 10:1 (D=9), equivalent to an IWC of 10 percent. The Discharger must evaluate the MDEL and MMEL based on the IWC.

Toxicity Provisions section III.C.4.b.i(A) also requires a routine chronic toxicity monitoring frequency of monthly for non-stormwater NPDES dischargers authorized to discharge at a rate equal to or greater than 5.0 MGD unless the Regional Water Board approves a reduced monitoring frequency under Toxicity Provisions section III.C.4.b.i(B). Toxicity Provisions section III.C.4.b.i(B) allows for a reduced routine toxicity monitoring frequency if all of the following conditions have been met:

- The Discharger complied with the previous order's toxicity requirements.
- The Discharger conducted a minimum of at least ten chronic aquatic toxicity tests during the last five years at an effluent concentration at or above the IWC.

- The Discharger analyzed or reanalyzed all test data for the last five years using the TST.
- The Discharger found no test resulting in a “fail” at the IWC. All results were “pass.”

The Discharger’s previously monitored for chronic toxicity once a year and does not meet the requirement to have conducted a minimum of ten chronic toxicity tests during the last five years. Instead, Regional Water Board considered all of the Discharger’s previous chronic toxicity tests since 2013, all of which did not detect chronic toxicity when monitoring annually using giant kelp (*Macrocystis pyrifera*). This Order approves a reduced routine chronic toxicity monitoring frequency of once per quarter.

As required by Toxicity Provisions section III.C.4.b.i(B), this Order requires that the routine chronic toxicity monitoring frequency revert to quarterly if the Discharger fails to comply with this Order’s chronic toxicity requirements or has a chronic toxicity test result that exceeds the MDEL or MMEL.

Until the Dischargers complete a new toxicity screening that satisfies the minimum screening requirements stated in Toxicity Provisions III.C.2.a, this Order retains the requirement to use giant kelp (*Macrocystis pyrifera*) for chronic toxicity tests based on the previous order.

The MRP (Attachment E), Appendix E-1, section 2.1.1, requires a new toxicity screening that satisfies the minimum screening requirements stated in Toxicity Provisions III.C.2.a within 18 months of the effective date of this Order. The Toxicity Provisions require that data are analyzed using the TST, and the test species include one vertebrate, one invertebrate, and one aquatic plant/algae from Table 1 of the Toxicity Provisions section III.B.2. The Toxicity Provisions species screening requirements are summarized in MRP Appendix E-1. If this species screening determines that a species other than giant kelp is most sensitive, that species will replace giant kelp for testing purposes.

- 6.1.4. **Receiving Water Monitoring.** The Discharger is required to continue participating in the Regional Monitoring Program, which involves collecting data on pollutants and toxicity in San Francisco Bay water, sediment, and biota. This monitoring is necessary to characterize the receiving water and the effects of the discharge this Order authorizes.
- 6.1.5. **Other Monitoring Requirements.** Pursuant to CWA section 308, U.S. EPA requires some dischargers to participate in a Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program that evaluates the analytical abilities of laboratories that perform or support NPDES permit-required monitoring. The program applies to discharger laboratories and contract laboratories, and evaluates each laboratory’s ability to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES

program. There are two options to comply: (1) the Discharger may obtain and analyze DMR-QA samples, or (2) pursuant to a waiver U.S. EPA issued to the State Water Board, the Discharger may submit results from the most recent Water Pollution Performance Evaluation Study. MRP section 1.4 requires the Discharger to ensure that the results of the DMR-QA Study or most recent Water Pollution Performance Evaluation Study are submitted to the State Water Board, which forwards the results to U.S. EPA.

6.2. 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. In addition to undertaking the monitoring below, the Discharger must conduct receiving water monitoring by continuing to participate in the Regional Monitoring Program.

Table F-21 Monitoring Requirements Summary

Parameter	Influent INF-001 ^[1]	Influent INF-002 ^[1]	Influent INF-003	Effluent EFF-001 ^[1]	Effluent EFF-002 ^[1]	Effluent EFF-005 through 014 ^[1]
Flow	Continuous/D	Continuous/D	Continuous/D	Continuous/D	Continuous/D	2/Year
COD	-	-	1/Week	-	-	-
BOD5	1/Week	-	-	1/Week	2/Week	2/Year
TSS	-	-	1/Week	-	2/Week	2/Year
pH	-	-	1/Day	1/Day	1/Day	2/Year
Temperature	-	-	1/Day	1/Day	1/Day	-
Oil and Grease	-	-	-	-	1/Quarter	2/Year
Chlorine, Total Residual	-	-	-	-	Continuous/D	-
<i>Enterococcus</i> Bacteria	-	-	-	-	3/Week	-
Chronic Toxicity	-	-	-	-	2/Year	-
Copper, Total Recoverable	2/Year	-	-	2/Year	1/Month	1/Year
Lead, Total Recoverable	2/Year	-	-	2/Year	1/Month	-
Nickel, Total Recoverable	2/Year	-	-	2/Year	-	-
Zinc, Total Recoverable	2/Year	-	-	2/Year	-	-
Cyanide, Total	-	1/Quarter	1/Quarter	-	1/Month	-
Dichlorobromomethane	-	-	-	-	2/Year	-
Dioxin-TEQ	-	-	-	-	1/Year	-
Ammonia, Total	-	-	-	-	1/Month	-
Nitrate-Nitrite	-	-	-	-	1/Month	-
Inorganic Nitrogen, Total	-	-	-	-	1/Month	-
Phosphorus, Total	-	-	-	-	1/Quarter	-
Priority Pollutants	-	-	-	1/Year	1/Year	-
Acetone	-	-	-	1/Month	-	-

Footnote:

^[1] The MRP defines these monitoring locations and sampling frequencies.

7. PUBLIC PARTICIPATION

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

7.1. 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. The public had access to the agenda and any changes in dates and locations through the Regional Water Board's website (waterboards.ca.gov/sanfranciscobay).

7.2. Written Comments. Interested persons were invited to submit written comments concerning the tentative WDRs as explained through the notification process. Comments were to be submitted either in person, by email, or by mail to the Executive Office at the Regional Water Board at 1515 Clay Street, Suite 1400, Oakland, California 94612, to the attention of Debbie Phan.

Written comments were due at the Regional Water Board office by 5:00 p.m. on July 10, 2026.

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

Date: August 12, 2026
Time: 9:00 a.m.

Contact: Debbie Phan, (510) 622-2411
Mail to: debbie.phan@waterboards.ca.gov

Interested persons were provided notice of the hearing and information on how to participate. At the public hearing, the Regional Water Board heard testimony pertinent to the discharge and Order.

Dates and venues can change. The Regional Water Board's website is (waterboards.ca.gov/sanfranciscobay), where one can access the current agenda for changes.

7.4. Reconsideration of Waste Discharge Requirements. Any person aggrieved by this Regional Water Board action may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations, title 23, sections 2050. The State Water Board must receive the petition at the following address within 30 calendar days of the date of Regional Water Board action:

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

A petition may also be filed by email at waterqualitypetitions@waterboards.ca.gov.

For instructions on how to file a water quality petition for review, see the Water Board's petition instructions (waterboards.ca.gov/public_notices/petitions/water_quality/wqpetition_instr.shtml).

- 7.5. Information and Copying.** Supporting documents and comments received are on file. To review these documents, please contact Melinda Wong, the Regional Water Board's custodian of records, by calling (510) 622-2300 or emailing Melinda.Wong@waterboards.ca.gov. Document copying may be arranged.
- 7.6. 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.
- 7.7. Additional Information.** Requests for additional information or questions regarding this Order should be directed to Debbie Phan, (510) 622-2411, debbie.phan@waterboards.ca.gov.

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

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

APPLICABILITY

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

1. STANDARD PROVISIONS – PERMIT COMPLIANCE

1.1. Duty to Comply – Not Supplemented

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

1.3. Duty to Mitigate – Supplement to Attachment D, Provision 1.3.

1.3.1. **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 1.3.2, 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:

1.3.1.1. Sufficient personnel for continued facility operation and maintenance during employee strikes or strikes against contractors providing services;

1.3.1.2. Maintenance of adequate chemicals or other supplies, and spare parts necessary for continued facility operations;

1.3.1.3. Response to a power outage, emergency standby power, and employee training program on response procedures;

1.3.1.4. Protection against vandalism;

1.3.1.5. Expedient action to repair failures of, or damage to, equipment, including any sewer lines;

- 1.3.1.6. Reporting of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges; and
- 1.3.1.7. Maintenance, replacement, and surveillance of physical condition of equipment and facilities, including any sewer lines.
- 1.3.2. **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:
 - 1.3.2.1. Identify the possible sources of accidental discharge, untreated or partially-treated waste bypass, and polluted drainage;
 - 1.3.2.2. State when current facilities and procedures became operational and evaluate their effectiveness; and
 - 1.3.2.3. 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.
- 1.4. **Proper Operation and Maintenance** – Supplement to Attachment D, Provision 1.4
 - 1.4.1. **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.
 - 1.4.2. **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.
 - 1.4.3. **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.

1.5. Property Rights – Not Supplemented

1.6. Inspection and Entry – Not Supplemented

1.7. Bypass – Not Supplemented

1.8. Upset – Not Supplemented

1.9. Other – Addition to Attachment D

1.9.1. The treatment of pollutants shall not create nuisance as defined by California Water Code section 13050.

1.9.2. 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.

1.9.3. 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.

2. STANDARD PROVISIONS – PERMIT ACTION – NOT SUPPLEMENTED

3. STANDARD PROVISIONS – MONITORING

3.1. Sampling and Analyses – Supplement to Attachment D, Provisions 3.1 and 3.2

3.1.1. **Certified Laboratories.** Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code section 13176.

3.1.2. **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.

3.1.3. **Monitoring Frequency.** The MRP specifies the minimum sampling and analysis schedule.

3.1.3.1. Sample Collection Timing

3.1.3.1.1. 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.

- 3.1.3.1.2. 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.
- 3.1.3.1.3. 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).
- 3.1.3.1.4. 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.
 - 3.1.3.1.4.1. 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
 - 3.1.3.1.4.2. The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet effluent limitations.
- 3.1.3.2. **Conditions Triggering Accelerated Monitoring**
 - 3.1.3.2.1. **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.
 - 3.1.3.2.2. **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.

- 3.1.3.2.3. **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.
- 3.1.3.2.4. **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.
- 3.1.3.2.5. **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.
- 3.1.3.2.5.1. **Bypass for Essential Maintenance.** If a Discharger bypasses a treatment unit for essential maintenance pursuant to Attachment D section 1.7.2, 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.
- 3.1.3.2.5.2. **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 1.7.4, 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.

3.1.3.3. Conditions Triggering Additional Monitoring

For any discharge of steam condensate, the Discharger shall monitor the condensate water in accordance with the table below. Monitoring shall occur at any point in the water intake system where steam condensate enters, prior to combining with the water used for cooling or processing.

Table G-1. Steam Condensate Discharge Monitoring Requirements

Parameter	Unit	Sample Type	Minimum Sampling Frequency
Flow	MG/MGD ^[1]	Continuous	Continuous/D
BOD5	lbs/day	C-24	1/Day
pH ^[2]	standard units	Continuous or Grab	1/Day
Temperature	°F	Continuous or Grab	1/Day

Footnotes:

^[1] The following flow information shall be reported in monthly self-monitoring reports:

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

3.2. Standard Observations – Addition to Attachment D

3.2.1. **Receiving Water Observations.** The following requirements only apply when the MRP requires standard observations of receiving waters. Standard observations shall include the following:

- 3.2.1.1. **Floating and Suspended Materials (e.g., oil, grease, algae, and other macroscopic particulate matter)** — presence or absence, source, and size of affected area.
- 3.2.1.2. **Discoloration and Turbidity** — color, source, and size of affected area.
- 3.2.1.3. **Odor** — presence or absence, characterization, source, and distance of travel.
- 3.2.1.4. **Beneficial Water Use** — estimated number of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities.

- 3.2.1.5. **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).
- 3.2.1.6. **Weather Conditions** — wind direction, air temperature, and total precipitation during five days prior to observation.
- 3.2.2. **Wastewater Effluent Observations.** The following requirements only apply when the MRP requires standard observations of wastewater effluent. Standard observations shall include the following:
 - 3.2.2.1. **Floating and Suspended Material of Wastewater Origin** (e.g., oil, grease, algae, and other macroscopic particulate matter) — presence or absence.
 - 3.2.2.2. **Odor** — presence or absence, characterization, source, distance of travel, and wind direction.
 - 3.2.3. **Beach and Shoreline Observations.** The following requirements only apply when the MRP requires standard observations of beaches or shorelines. Standard observations shall include the following:
 - 3.2.3.1. **Material of Wastewater Origin** — presence or absence, description of material, estimated size of affected area, and source.
 - 3.2.3.2. **Beneficial Use** — estimate of number of people participating in recreational water contact, non-water contact, and fishing activities.
 - 3.2.4. **Waste Treatment and/or Disposal Facility Periphery Observations.** The following requirements only apply when the MRP requires standard observations of the periphery of waste treatment or disposal facilities. Standard observations shall include the following:
 - 3.2.4.1. **Odor** — presence or absence, characterization, source, and distance of travel.
 - 3.2.4.2. **Weather Conditions** — wind direction and estimated velocity.

4. STANDARD PROVISIONS – RECORDS

4.1. Records to be Maintained – Supplement to Attachment D, Provision 4.1

The Discharger shall maintain records in a manner and at a location (e.g., the wastewater treatment plant or the Discharger's offices) such that the records are accessible to Regional Water Board staff. The minimum retention period specified in Attachment D, Provision IV, shall be extended during the course of any unresolved litigation regarding permit-related discharges, or when requested by Regional Water Board or U.S. EPA, Region IX, staff.

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

4.2. Records of Monitoring – Supplement to Attachment D, Provision 4.2

Monitoring records shall include the following:

- 4.2.1. **Analytical Information.** Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.
- 4.2.2. **Disinfection Process.** For the disinfection process, records shall include the following:
 - 4.2.2.1. For bacteriological analyses:
 - 4.2.2.1.1. Wastewater flow rate at the time of sample collection; and
 - 4.2.2.1.2. Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in the MRP).
 - 4.2.2.2. For the chlorination process (when chlorine is used for disinfection), at least daily average values for the following:
 - 4.2.2.2.1. Chlorine residual of treated wastewater as it enters the chlorine contact basin (mg/L);
 - 4.2.2.2.2. Chlorine dosage (kg/day); and
 - 4.2.2.2.3. Dechlorination chemical dosage (kg/day).
- 4.2.3. **Wastewater Treatment Process Solids.** For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:
 - 4.2.3.1. Total volume or mass of solids removed from each collection unit (e.g., grit, skimmings, undigested biosolids, or combination) for each calendar month or other time period as appropriate, but not to exceed annually; and
 - 4.2.3.2. Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
- 4.2.4. **Treatment Process Bypasses.** For all treatment process bypasses, including wet weather blending, records shall include the following:
 - 4.2.4.1. Chronological log of treatment process bypasses;
 - 4.2.4.2. Identification of treatment processes bypassed;

- 4.2.4.3. Beginning and ending dates and times of bypasses;
 - 4.2.4.4. Bypass durations;
 - 4.2.4.5. Estimated bypass volumes; and
 - 4.2.4.6. 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.
- 4.2.5. **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 5.5.2, below.

4.3. Claims of Confidentiality – Not Supplemented

5. STANDARD PROVISIONS – REPORTING

5.1. Duty to Provide Information – Not Supplemented

5.2. Signatory and Certification Requirements – Not Supplemented

5.3. Monitoring Reports – Supplement to Attachment D, Provision 5.3

5.3.1. 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:

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

- 5.3.1.1.1. Identification of all violations of effluent limitations or other waste discharge requirements found during the reporting period;
- 5.3.1.1.2. Details regarding the violations, such as parameters, magnitude, test results, frequency, and dates;
- 5.3.1.1.3. Causes of the violations;
- 5.3.1.1.4. 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);
- 5.3.1.1.5. 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;

- 5.3.1.1.6. 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;
- 5.3.1.1.7. 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
- 5.3.1.1.8. Signature. The transmittal letter shall be signed in accordance with Attachment D, Provision 5.2.
- 5.3.1.2. **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.
- 5.3.1.3. **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.
- 5.3.1.4. **Analysis Results**
 - 5.3.1.4.1. **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.
 - 5.3.1.4.2. **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:

- 5.3.1.4.2.1. 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.
- 5.3.1.4.2.2. 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).
- 5.3.1.4.3. **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 5.3.1.4.2, above]). For bacteria indicators, the Discharger shall report the geometric mean of the duplicate analyses.
- 5.3.1.4.4. **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:

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

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

Dioxin or Furan Congener	Minimum Level (pg/L)	2005 Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factor (BEF)
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

5.3.1.5. **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.

5.3.1.6. **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:

5.3.1.6.1. 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;

5.3.1.6.2. List of approved analyses, including the following:

5.3.1.6.2.1. List of analyses for which the Discharger is certified;

5.3.1.6.2.2. 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

5.3.1.6.2.3. List of “waived” analyses, as approved;

- 5.3.1.6.3. Plan view drawing or map showing the Discharger's facility, flow routing, and sampling and observation station locations; and
- 5.3.1.6.4. 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.

5.4. Compliance Schedules – Not Supplemented

5.5. Twenty-Four Hour Reporting – Supplement to Attachment D, Provision 5.5

5.5.1. Oil or Other Hazardous Material Spills

- 5.5.1.1. 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:
 - 5.5.1.1.1. 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).
 - 5.5.1.1.2. 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).
- 5.5.1.2. 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:
 - 5.5.1.2.1. Date and time of spill, and duration if known;
 - 5.5.1.2.2. Location of spill (street address or description of location);
 - 5.5.1.2.3. Nature of material spilled;
 - 5.5.1.2.4. Quantity of material spilled;
 - 5.5.1.2.5. Receiving water body affected, if any;
 - 5.5.1.2.6. Cause of spill;

- 5.5.1.2.7. Estimated size of affected area;
- 5.5.1.2.8. Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);
- 5.5.1.2.9. Corrective actions taken to contain, minimize, or clean up the spill;
- 5.5.1.2.10. Future corrective actions planned to prevent recurrence, and implementation schedule; and
- 5.5.1.2.11. Persons or agencies notified.

5.5.2. **Unauthorized Municipal Wastewater Treatment Plant Discharges**¹

5.5.2.1. **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:

- 5.5.2.1.1. Incident description and cause;
- 5.5.2.1.2. Location of threatened or involved waterways or storm drains;
- 5.5.2.1.3. Date and time that the unauthorized discharge started;
- 5.5.2.1.4. Estimated quantity and duration of the unauthorized discharge (to the extent known), and estimated amount recovered;
- 5.5.2.1.5. Level of treatment prior to discharge (e.g., raw wastewater, primary-treated wastewater, or undisinfected secondary-treated wastewater); and
- 5.5.2.1.6. Identity of person reporting the unauthorized discharge.

5.5.2.2. **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 5.5.2.1, above, the following:

- 5.5.2.2.1. Methods used to delineate the geographical extent of the unauthorized discharge within receiving waters;

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

- 5.5.2.2.2. Efforts implemented to minimize public exposure to the unauthorized discharge;
- 5.5.2.2.3. 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;
- 5.5.2.2.4. Corrective measures taken to minimize the impact of the unauthorized discharge;
- 5.5.2.2.5. Measures to be taken to minimize the potential for a similar unauthorized discharge in the future;
- 5.5.2.2.6. 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
- 5.5.2.2.7. Quantity and duration of the unauthorized discharge, and the amount recovered.

5.6. Planned Changes – Not Supplemented

5.7. Anticipated Noncompliance – Not Supplemented

5.8. Other Noncompliance – Not Supplemented

5.9. Other Information – Not Supplemented

6. STANDARD PROVISIONS – ENFORCEMENT – NOT SUPPLEMENTED

7. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – NOT SUPPLEMENTED

8. DEFINITIONS – ADDITION TO ATTACHMENT D

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

8.1. Arithmetic Calculations

- 8.1.1. **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:

$$\text{Geometric Mean} = \text{Anti log} (1/N \sum \text{Log } C_i)$$

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.

8.1.2. **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” 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.

8.1.3. **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):

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

8.2. Blending – the practice of bypassing biological treatment units and recombining the bypass wastewater with biologically-treated wastewater.

8.3. 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.

- 8.4. 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).
- 8.5. 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.
- 8.6. 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.
- 8.7. 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.
- 8.8. Untreated waste** – raw wastewater.

Table B
List of Monitoring Parameters, Analytical Methods, and Minimum Levels (µg/L) [1]

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
1	Antimony	204.2	-	-	-	-	10	5	50	0.5	5	0.5	-	1000
2	Arsenic	206.3	-	-	-	20	-	2	10	2	2	1	-	1000
3	Beryllium	-	-	-	-	-	20	0.5	2	0.5	1	-	-	1000
4	Cadmium	200 or 213	-	-	-	-	10	0.5	10	0.25	0.5	-	-	1000
5a	Chromium (III)	SM 3500	-	-	-	-	-	-	-	-	-	-	-	-
5b	Chromium (VI)	SM 3500	-	-	-	10	5	-	-	-	-	-	-	1000
	Chromium (total) ^[3]	SM 3500	-	-	-	-	50	2	10	0.5	1	-	-	1000
6	Copper	200.9	-	-	-	-	25	5	10	0.5	2	-	-	1000
7	Lead	200.9	-	-	-	-	20	5	5	0.5	2	-	-	10,000
8	Mercury	1631 ^[4]	-	-	-	-	-	-	-	-	-	-	-	-
9	Nickel	249.2	-	-	-	-	50	5	20	1	5	-	-	1000
10	Selenium	200.8 or SM 3114B or C	-	-	-	-	-	5	10	2	5	1	-	1000
11	Silver	272.2	-	-	-	-	10	1	10	0.25	2	-	-	1000
12	Thallium	279.2	-	-	-	-	10	2	10	1	5	-	-	1000
13	Zinc	200 or 289	-	-	-	-	20	-	20	1	10	-	-	-
14	Cyanide	SM 4500 CN- C or I	-	-	-	5	-	-	-	-	-	-	-	-
15	Asbestos (only required for dischargers to MUN waters) ^[5]	100.2 ^[6]	-	-	-	-	-	-	-	-	-	-	-	-
16	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613	-	-	-	-	-	-	-	-	-	-	-	-
17	Acrolein	603	2.0	5	-	-	-	-	-	-	-	-	-	-
18	Acrylonitrile	603	2.0	2	-	-	-	-	-	-	-	-	-	-
19	Benzene	602	0.5	2	-	-	-	-	-	-	-	-	-	-
33	Ethylbenzene	602	0.5	2	-	-	-	-	-	-	-	-	-	-
39	Toluene	602	0.5	2	-	-	-	-	-	-	-	-	-	-
20	Bromoform	601	0.5	2	-	-	-	-	-	-	-	-	-	-
21	Carbon Tetrachloride	601	0.5	2	-	-	-	-	-	-	-	-	-	-

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
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	-	-	-	-	-	-	-	-	-	-
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	-	-	-	-	-	-	-	-	-	-

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
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	-	-	-	-	-	-	-	-	-	-
65	Bis(2-Chloroethoxy)Methane	625	-	5	-	-	-	-	-	-	-	-	-	-

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
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 ^[7]	625	-	1	-	-	-	-	-	-	-	-	-	-
88	Hexachlorobenzene	625	5	1	-	-	-	-	-	-	-	-	-	-
89	Hexachlorobutadiene	625	5	1	-	-	-	-	-	-	-	-	-	-
90	Hexachlorocyclopentadiene	625	5	5	-	-	-	-	-	-	-	-	-	-
91	Hexachloroethane	625	5	1	-	-	-	-	-	-	-	-	-	-
93	Isophorone	625	10	1	-	-	-	-	-	-	-	-	-	-
94	Naphthalene	625	10	1	0.2	-	-	-	-	-	-	-	-	-
95	Nitrobenzene	625	10	1	-	-	-	-	-	-	-	-	-	-
96	N-Nitrosodimethylamine	625	10	5	-	-	-	-	-	-	-	-	-	-
97	N-Nitrosodi-n-Propylamine	625	10	5	-	-	-	-	-	-	-	-	-	-
98	N-Nitrosodiphenylamine	625	10	1	-	-	-	-	-	-	-	-	-	-
99	Phenanthrene	625	-	5	0.05	-	-	-	-	-	-	-	-	-
101	1,2,4-Trichlorobenzene	625	1	5	-	-	-	-	-	-	-	-	-	-
102	Aldrin	608	0.005	-	-	-	-	-	-	-	-	-	-	-
103	a-BHC	608	0.01	-	-	-	-	-	-	-	-	-	-	-
104	b-BHC	608	0.005	-	-	-	-	-	-	-	-	-	-	-
105	g-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	-	-	-	-	-	-	-	-	-	-	-

CTR No.	Pollutant / Parameter	Analytical Method ^[2]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGF AA	HYD RIDE	CVAA	DCP
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	-	-	-	-	-	-	-	-	-	-	-

Footnotes:

- ^[1] 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.
- ^[2] 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.
- ^[3] Analysis for total chromium may be substituted for analysis of chromium (III) and chromium (VI) if the concentration measured is below the lowest hexavalent chromium criterion (11 ug/l).
- ^[4] The Discharger shall use ultra-clean sampling (U.S. EPA Method 1669) and ultra-clean analytical methods (U.S. EPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 ug/l).
- ^[5] MUN = Municipal and Domestic Supply. This designation, if applicable, is in the Findings of the permit.
- ^[6] Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters, U.S. EPA 600/R-94-134, June 1994.
- ^[7] Detected as azobenzene.

ATTACHMENT S – STORMWATER PROVISIONS, MONITORING, AND REPORTING REQUIREMENTS

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ATTACHMENT S – STORMWATER PROVISIONS, MONITORING, AND REPORTING REQUIREMENTS

Applicability

These stormwater provisions only apply to facilities that do not direct all stormwater flows from process areas to a wastewater treatment plant's headwork or are not enrolled in NPDES Permit CAS000001 (General Permit for Stormwater Discharges Associated with Industrial Activities).

1. STORMWATER PROVISIONS – PERMIT COMPLIANCE

1.1. Stormwater Pollution Prevention Plan (SWPPP)

The Discharger shall prepare a SWPPP that includes the following elements:

- 1.1.1. Facility name and contact information;
- 1.1.2. Site map;
- 1.1.3. List of industrial materials;
- 1.1.4. Description of potential sources;
- 1.1.5. Assessment of potential pollutant sources;
- 1.1.6. Minimum Best Management Practices (BMPs);
- 1.1.7. Advanced BMPs, if applicable;
- 1.1.8. Monitoring implementation plan;
- 1.1.9. Annual comprehensive facility compliance evaluation; and
- 1.1.10. 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 (Attachment G section 1.3.2).

1.2. 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:

- 1.2.1. 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 nonstormwater discharges);
- 1.2.2. 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);
- 1.2.3. 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);
- 1.2.4. Identification of all impervious areas, including paved areas, buildings, covered storage areas, or other roofed structures;
- 1.2.5. Locations where materials are directly exposed to precipitation and the locations where identified significant spills or leaks have occurred; and
- 1.2.6. 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).

1.3. 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.

1.4. Potential Pollutant Sources

The Discharger shall describe and assess potential stormwater pollutant sources, including the following:

- 1.4.1. **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.
- 1.4.2. **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.
- 1.4.3. **Dust and Particulate Generating Activities.** The SWPPP shall describe the discharge locations, source type, and characteristics of the dust or particulate pollutant.
- 1.4.4. **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.
- 1.4.5. **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.
- 1.4.6. **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.

1.5. 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:

- 1.5.1. Facility areas with likely sources of pollutants;
- 1.5.2. Pollutants likely to be present in industrial stormwater discharges;
- 1.5.3. Approximate quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each industrial material handled, produced, stored, recycled, or disposed;
- 1.5.4. Degree to which the pollutants associated with such materials may be exposed to, and mobilized by, contact with stormwater.
- 1.5.5. Direct and indirect pathways by which pollutants may be exposed to stormwater;
- 1.5.6. Sampling, visual observation, and inspection records;
- 1.5.7. Effectiveness of existing BMPs to reduce or prevent pollutants in industrial stormwater discharges; and
- 1.5.8. 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 1.6, below, will not adequately reduce or prevent pollutants in stormwater discharges and any necessary advanced BMPs, as described in Provision 1.7, below, for those areas.

1.6. Minimum Best Management Practices (BMPs)

The Discharger shall, to the extent feasible, implement and maintain the following BMPs:

- 1.6.1. **Good Housekeeping.** The Discharger shall do the following:
 - 1.6.1.1. 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;
 - 1.6.1.2. Minimize or prevent material tracking;

- 1.6.1.3. Minimize dust generated from industrial materials or activities;
- 1.6.1.4. Ensure that all facility areas impacted by rinse or wash waters are cleaned as soon as possible;
- 1.6.1.5. Cover all stored industrial materials that can be readily mobilized by contact with stormwater;
- 1.6.1.6. 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;
- 1.6.1.7. Prevent disposal of any rinse or wash waters or industrial materials into the stormwater conveyance system;
- 1.6.1.8. Minimize stormwater discharges from non-industrial areas (e.g., stormwater flows from employee parking areas) that contact industrial areas of the facility; and,
- 1.6.1.9. 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.
- 1.6.2. **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.
- 1.6.3. **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.
- 1.6.4. **Material Handling and Waste Management.** The Discharger shall do the following:
 - 1.6.4.1. Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with stormwater during a storm;

- 1.6.4.2. Contain all stored non-solid industrial materials or wastes (e.g., particulates, powers, shredded paper) that can be transported or dispersed by the wind or contact with stormwater;
- 1.6.4.3. Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use;
- 1.6.4.4. Divert run-on and stormwater generated from within the facility away from all stockpiled materials;
- 1.6.4.5. Clean all spills of industrial materials or wastes that occur during handling in accordance with spill response procedures; and,
- 1.6.4.6. 1.6.4.6. 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.
- 1.6.5. **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.
- 1.6.6. **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.
- 1.6.7. **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.

1.7. 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 S-1, 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 S-1. Stormwater Action Levels for Industrial Stormwater

Parameter	Units	Annual Average	Instantaneous Maximum
Biochemical Oxygen Demand	mg/L	30	-
Total Suspended Solids	mg/L	100	400
Oil and Grease	mg/L	15	25

If, upon subsequent monitoring, the pollutants measured in Table S-1 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 1.6, above. The Discharger shall, to the extent feasible, implement and maintain any advanced BMPs identified pursuant to Provision 1.5.8, 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:

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

1.8. BMP Descriptions

The SWPPP shall identify each BMP being implemented at the facility, including the following

- 1.8.1. The pollutants the BMP is designed to reduce or prevent;
- 1.8.2. The frequency, times of day, or conditions when the BMP is scheduled for implementation;
- 1.8.3. The locations within each area of industrial activity or industrial pollutant source where the BMP shall be implemented;
- 1.8.4. The individual responsible for implementing the BMP;

1.8.5. The procedures, including maintenance procedures, and instructions to implement the BMP effectively; and

1.8.6. The equipment and tools necessary to implement the BMP effectively.

1.9. 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:

- 1.9.1. A review of all sampling, visual observation, and inspection records conducted during the previous reporting year;
- 1.9.2. 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;
- 1.9.3. An inspection of all drainage areas previously identified as having no exposure to industrial activities and materials;
- 1.9.4. An inspection of equipment needed to implement the BMPs; and
- 1.9.5. An assessment of any other factors needed to comply with the requirements of the Annual Stormwater Report (see Provision 3.1, below).

2. STORMWATER PROVISIONS – MONITORING

2.1. Monthly Visual Observations

- 2.1.1. At least once per month, the Discharger shall visually observe each drainage area for the following:
 - 2.1.1.1. The presence or indication of prior, current, or potential unauthorized non-stormwater discharges and their sources;
 - 2.1.1.2. Authorized non-stormwater discharges, sources, and associated BMPs; and
 - 2.1.1.3. Outdoor industrial equipment and storage areas, outdoor industrial activities areas, BMPs, and all other potential sources of industrial pollutants.
- 2.1.2. The monthly visual observations shall be conducted during daylight hours of scheduled facility operating hours and on days without precipitation.

- 2.1.3. The Discharger shall provide an explanation in the Annual Stormwater Report for uncompleted monthly visual observations (see Provision 3.1, below)

2.2. 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.

- 2.2.1. 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.
- 2.2.2. 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.
- 2.2.3. 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.
- 2.2.4. 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.
- 2.2.5. The Discharger shall provide an explanation in the Annual Stormwater Report for uncompleted sampling event visual observations (see Provision 4.1, below).

2.3. 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.

2.4. SWPPP Revisions

The Discharger shall revise its BMPs as necessary when the visual observations indicate pollutant sources have not been adequately addressed.

2.5. Sampling and Analysis

- 2.5.1. The Discharger shall collect and analyze stormwater samples as specified in the MRP.

- 2.5.2. Samples shall be (1) representative of stormwater associated with industrial activities and any commingled authorized non-stormwater dischargers; or (2) associated with the discharge of contained stormwater.
- 2.5.3. 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.

3. STORMWATER PROVISIONS – REPORTING

3.1. 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:

- 3.1.1. A compliance checklist that indicates whether the Discharger has complied with or addressed all applicable requirements of the SWPPP;
- 3.1.2. An explanation for any non-compliance requirements within the reporting year, as indicated in the compliance checklist;
- 3.1.3. An identification, including page numbers and sections, of all revisions made to the SWPPP within the reporting year; and
- 3.1.4. The date(s) of the annual evaluation.

4. STORMWATER PROVISIONS – DEFINITIONS

4.1. Authorized Non-Stormwater Discharges

Non-stormwater discharges are authorized if they meet the following conditions:

- 4.1.1. Fire-hydrant and fire prevention or response system flushing;
- 4.1.2. Potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems;
- 4.1.3. Drinking fountain water and atmospheric condensate, including refrigeration, air conditioning, and compressor condensate;
- 4.1.4. Irrigation drainage and landscape watering, provided that all pesticides, herbicides, and fertilizers have been applied in accordance with manufacturer’s labels;

- 4.1.5. Uncontaminated natural springs, groundwater, foundation drainage, footing drainage;
- 4.1.6. Seawater infiltration where the seawater is discharged back into the source; or,
- 4.1.7. 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).

4.2. Stormwater

Stormwater runoff, snow melt runoff, and surface runoff and drainage, excluding infiltration and runoff from agricultural land