

San Francisco Bay Regional Water Quality Control Board

**ORDER No. R2-2018-0012
NPDES No. CA0005240**

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

Table 1. Discharger Information

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 collection system
Facility Address	830 Loring Avenue, Crockett, CA 94525, Contra Costa County
CIWQS Place Number	212212

Table 2. Discharge Locations

Discharge Point No.	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Approximately 16 million gallons per day (MGD) of once-through barometric condenser cooling water from Carquinez Strait, condensed vapors from vacuum pans, once-through cooling water from evaporators and a steam turbine, and roof drains. 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° N	122.2183° W	Carquinez Strait
002	Approximately 0.93 MGD of secondary treated effluent (secondary treatment of process wastewater from the Refinery and de-gritted wastewater from Crockett Community Services District). The point of discharge is a deep water multi-port diffuser located directly below the Carquinez Bridge, 637 feet west of the Refinery plant.	38.0583° N	122.2244° W	Carquinez Strait
003	Stormwater from small yard area: estimated flow is less than 1,000 gallons per day (gpd).	38.0575° N	122.2175° W	Carquinez Strait
005	Stormwater from Refinery yard and community streets: estimated flow is 15,000 gpd.	38.0575° N	122.2197° W	Carquinez Strait
006	Stormwater from community streets and truck parking areas: estimated flow is 1,000 gpd.	38.0575° N	122.2252° W	Carquinez Strait

Discharge Point No.	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
008	Stormwater from Refinery yard: estimated flow is 3,000 gpd.	38.0575° N	122.2197° W	Carquinez Strait
009	Stormwater from dock and nearby areas: estimated flow is less than 100 gpd.	38.0572° N	122.2127° W	Carquinez Strait
011	Stormwater from area north of Herreshoff Kiln: estimated flow is 15,000 gpd.	38.0575° N	122.2197° W	Carquinez Strait
012	Stormwater from canopied products and material storage area in Refinery yard and rooftops: estimated flow is less than 500 gpd.	38.0575° N	122.2197° W	Carquinez Strait
013	Stormwater from western side of Refinery south of Warehouse No. 1: estimated flow is 4,500 gpd.	38.0575° N	122.2208° W	Carquinez Strait
014	Stormwater from area adjacent to C&H Sugar Company, Inc., primary wastewater treatment plant: estimated flow is 15,000 gpd.	38.0561° N	122.2208° W	Carquinez Strait
016	Stormwater from undeveloped areas in secondary treatment plant: estimated flow is less than 100 gpd.	38.0552° N	122.2267° W	Carquinez Strait

Table 3. Administrative Information

This Order was adopted on:	April 11, 2018
This Order shall become effective on:	July 1, 2018
This Order shall expire on:	June 30, 2023
CIWQS Regulatory Measure Number	420805
The Discharger shall file a Report of Waste Discharge for updated WDRs in accordance with California Code of Regulations, title 23, and as an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than:	September 1, 2022
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, San Francisco Bay Region, have classified this discharge as follows:	Major

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

Bruce H. Wolfe, Executive Officer

Contents

I.	Facility Information	4
II.	Findings.....	4
III.	Discharge Prohibitions.....	4
IV.	Effluent Limitations and Discharge Specifications	5
V.	Receiving Water Limitations	7
VI.	Provisions.....	9
	A. Standard Provisions.....	9
	B. Monitoring and Reporting.....	9
	C. Special Provisions	9
	1. Reopener Provisions.....	9
	2. Effluent Characterization Study and Report	10
	3. Pollutant Minimization Program	11
	4. Special Provisions	13
	5. Other Special Provisions	13

Tables

Table 1. Discharger Information.....	1
Table 2. Discharge Locations	1
Table 3. Administrative Information	2
Table 4. Effluent Limitations – Discharge Point No. 001	5
Table 5. Effluent Limitations – Discharge Point No. 002	6
Table 6. Effluent Limitations – Discharge Point Nos. 003 through 016	7
Table 7. Copper Action Plan.....	13
Table 8. Cyanide Action Plan	14
Table 9. Cooling Water Intake Report.....	15

Attachments

Attachment A – Definitions.....	A-1
Attachment B – Facility Map.....	B-1
Attachment C – Process Flow Diagram.....	C-1
Attachment D – Federal Standard Provisions.....	D-1
Attachment E – Monitoring and Reporting Program (MRP).....	E-1
Attachment F – Fact Sheet.....	F-1
Attachment G – Regional Standard Provisions and Monitoring and Reporting Requirements	G-1
Attachment S – Stormwater Provisions, Monitoring, and Reporting Requirements.....	S-1

I. FACILITY INFORMATION

Information describing the C&H Sugar Company, Inc. (C&H Sugar), and the Crockett Community Services District (District), referred to jointly as the Discharger, is summarized in Table 1 and Fact Sheet (Attachment F) sections I and II.

II. FINDINGS

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

- A. Legal Authorities.** This Order serves as WDRs pursuant to California Water Code article 4, chapter 4, division 7 (commencing with § 13260). This Order is also issued pursuant to federal Clean Water Act (CWA) section 402 and implementing regulations adopted by U.S. EPA and Water Code chapter 5.5, division 7 (commencing with § 13370). It shall serve as a National Pollutant Discharge Elimination System (NPDES) permit authorizing the Discharger to discharge into waters of the United States as listed in Table 2 subject to the WDRs in this Order.
- B. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information the Discharger submitted as part of its application, information obtained through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F) contains background information and rationale for the requirements in this Order and is hereby incorporated into and constitutes findings for this Order. Attachments A through E, G, and S are also incorporated into this Order.
- C. Provisions and Requirements Implementing State Law.** No provisions or requirements in this Order implement State law only.
- D. Notification of Interested Parties.** The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe these WDRs and provided an opportunity to submit written comments and recommendations. The Fact Sheet provides details regarding the notification.
- E. Consideration of Public Comment.** The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. The Fact Sheet provides details regarding the public hearing.

THEREFORE, IT IS HEREBY ORDERED that Order No. R2-2012-0084 (previous order) is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions of Water Code division 7 (commencing with § 13000) and regulations adopted thereunder and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Regional Water Board from taking enforcement action for violations of the previous order.

III. DISCHARGE PROHIBITIONS

- A.** Discharge of treated wastewater at a location or in a manner different than described in this Order is prohibited.

- B. The discharge of once-through cooling water from Discharge Point No. 001 and treated wastewater from Discharge Point No. 002 to Carquinez Strait at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1 is prohibited. Compliance shall be achieved by proper operation and maintenance of the discharge outfalls to ensure that they (or their replacements, in whole or in part) are in good working order and are consistent with or can achieve better mixing than that described in the Fact Sheet section IV.C.4.a. The Discharger shall address measures taken to ensure this in its application for permit reissuance.
- C. Bypass of untreated or partially-treated wastewater to waters of the United States is prohibited, except as provided for in Attachment D sections I.G.
- D. The use of algaecides or anti-fouling additives in the barometric condenser cooling water system, discharged at Discharge Point No. 001, is prohibited.
- E. Any sanitary sewer overflow that results in a discharge of untreated or partially-treated wastewater to waters of the United States is prohibited. Sanitary sewer overflows upstream of the Joint Treatment Plant are the responsibility of the District.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point No. 001

C&H Sugar shall comply with the following effluent limitations at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-001 as described in the Monitoring and Reporting Program (MRP, Attachment E):

Table 4. Effluent Limitations – Discharge Point No. 001

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand, 5-day @ 20°C (BOD ₅) ^[1]	lbs/day	2,200	6,700	---	---
pH ^[2]	standard units	---	---	6.0	9.0
Copper, Total Recoverable	µg/L	54	120	---	---

Abbreviations:

lbs/day = pounds per day
 µg/L = micrograms per liter

Footnotes:

- ¹ In accordance with 40 C.F.R. section 409.22, compliance shall be based on the increase of BOD₅ measured at Monitoring Location EFF-001 over BOD₅ measured at Monitoring Location INF-001.
- ² If C&H Sugar monitors pH continuously, pursuant to 40 C.F.R. section 401.17, it shall be in compliance with the pH limitation specified herein provided that both of the following conditions are satisfied: (i) the total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month, and (ii) no individual excursion from the range of pH values shall exceed 60 minutes.

B. Discharge Point No. 002

1. Effluent Limitations. The Discharger shall comply with the following effluent limitations at Discharge Point No. 002, with compliance measured at Monitoring Location EFF-002 as described in the MRP.

Table 5. Effluent Limitations – Discharge Point No. 002

Parameter	Units	Effluent Limitations			
		Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand, 5-day @ 20°C (BOD ₅)	lbs/day	730	2,000	---	---
Total Suspended Solids (TSS)	lbs/day	730	2,600	---	---
pH ^[1]	standard units	---	---	6.0	9.0
Oil and Grease	mg/L	10	20	---	---
Total Residual Chlorine	mg/L	---	---	---	0.0
Copper, Total Recoverable	µg/L	54	120	---	---
Lead, Total Recoverable	µg/L	21	65	---	---
Cyanide, Total	µg/L	19	43	---	---
Chlorodibromomethane	µg/L	340	680	---	---
Bis(2-Ethylhexyl)Phthalate	µg/L	53	106	---	---
Dioxin-TEQ	µg/L	1.4 x 10 ⁻⁰⁸	2.8 x 10 ⁻⁰⁸	---	---
Ammonia, Total	mg/L as N	13	34	---	---

Abbreviations:

lbs/day = pounds per day
 mg/L = milligrams per liter
 µg/L = micrograms per liter

Footnote:

¹ If the Discharger monitors pH continuously, pursuant to 40 C.F.R. section 401.17, the Discharger shall be in compliance with the pH limitation specified herein provided that both of the following conditions are satisfied: (i) the total time during which the pH values are outside the required range of pH values shall not exceed 7 hours and 26 minutes in any calendar month, and (ii) no individual excursion from the range of pH values shall exceed 60 minutes.

2. Bacteria Limitations. The Discharger shall comply with the following effluent limits at Discharge Point No. 002, with compliance measured at Monitoring Location EFF-002D as described in the MRP:

- a. Total Coliform Bacteria.** The median value for the Most Probable Number (MPN) of total coliform bacteria in all discharge samples in a calendar month from Discharge Point No. 002 shall not exceed 240 MPN/100 mL. No single sample shall exceed 10,000 MPN/100 mL.
- b. Enterococcus.** The monthly geometric mean Enterococcus bacteria concentration of all discharge samples in a calendar month from Discharge Point No. 002 shall not exceed 35 MPN/100 mL.

3. Acute Toxicity. Discharges at Discharge Point No. 002 shall comply with the following effluent limitations, with compliance measured at Monitoring Location EFF-002 as described in the MRP:

- a.** An 11-sample median value of not less than 90 percent survival; and

- b. An 11-sample 90th percentile value of not less than 70 percent survival.

These acute toxicity limitations are defined as follows:

- **11-sample median.** A bioassay test showing survival of less than 90 percent represents a violation of this effluent limit, if five or more of the past ten or fewer bioassay tests show less than 90 percent survival.
- **11-sample 90th percentile.** A bioassay test showing survival of less than 70 percent represents a violation of this effluent limit, if one or more of the past ten or fewer bioassay tests show less than 70 percent survival.

If the Discharger can demonstrate that toxicity exceeding the levels cited above is caused solely by ammonia and that the ammonia in the discharge complies with the ammonia effluent limits in Table 5 of this Order, then such toxicity shall not constitute a violation of this effluent limitation.

C. Stormwater Limitations – Discharge Points Nos. 003 through 016

C&H Sugar shall comply with the following effluent limitations at Discharge Point Nos. 003 through 016, with compliance measured at Monitoring Locations EFF-003 through EFF-016 as described in the MRP:

Table 6. Effluent Limitations – Discharge Point Nos. 003 through 016

Parameter	Units	Effluent Limitation
pH	Standard Units	6.0 – 9.0 (instantaneous)
Visible Oil	---	None observed (instantaneous)
Visible Color	---	None observed (instantaneous)

V. RECEIVING WATER LIMITATIONS

- A. The discharge shall meet the following receiving water temperature limitations:
 1. Discharges, either individually or combined with other discharges, shall not create a zone, defined by water temperatures of more than 1 degree Fahrenheit above natural receiving water temperature, that exceeds 25 percent of the cross-sectional area of Carquinez Strait at any point.
 2. Discharges shall not cause a surface temperature rise greater than 4 degrees Fahrenheit above the natural temperature of the receiving water at any time or place.
- B. The discharge shall not cause the following conditions to exist at any place in receiving waters:
 1. Floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses;
 2. Alteration of suspended sediment in such a manner as to cause nuisance or adversely affect beneficial uses, or detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life;
 3. Suspended material in concentrations that cause nuisance or adversely affect beneficial uses;

4. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;
 5. 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;
 6. Coloration that causes nuisance or adversely affects beneficial uses;
 7. Visible, floating, suspended, or deposited oil or other products of petroleum origin; or
 8. Toxic or other deleterious substances in concentrations or quantities that cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.
- C. The discharge shall not cause the following limits to be exceeded in receiving waters at any place within one foot of the water surface:
1. Dissolved Oxygen 5.0 mg/L, minimum
The median dissolved oxygen concentration for any three consecutive months shall not be less than 80% of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.
 2. Dissolved Sulfide Natural background levels
 3. pH The pH shall not be depressed below 6.5 or raised above 8.5. The discharge shall not cause changes greater than 0.5 pH units in normal ambient pH levels.
 4. Nutrients Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.
- D. The discharge shall not cause a violation of any water quality standard for receiving waters adopted by the Regional Water Board or the State Water Resources Control Board (State Water Board) as required by the CWA and regulations adopted thereunder. If more stringent water quality standards are promulgated or approved pursuant to CWA section 303, or amendments thereto, the Regional Water Board may revise or modify this Order in accordance with the more stringent standards.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all “Standard Provisions” in Attachment D.
2. The Discharger shall comply with all applicable provisions of the “Regional Standard Provisions, and Monitoring and Reporting Requirements” (Attachment G).
3. C&H Sugar shall comply with all applicable provisions of “Stormwater Provisions, Monitoring, and Reporting Requirements” (Attachment S). By October 1, 2018, it shall submit an updated Stormwater Pollution Prevention Plan that includes all of the elements listed in Attachment S section I.A. Specifically, the plan shall include measures C&H Sugar has implemented or will implement to prevent fugitive sugar emissions from reaching the neighboring Crockett Cogeneration facility and Carquinez Strait.

B. Monitoring and Reporting

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

C. Special Provisions

1. Reopener Provisions

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

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

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

2. Effluent Characterization Study and Report

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

<u>Discharge Point</u>	<u>Monitoring Location</u>	<u>Minimum Frequency</u>
001	EFF-001	Once per year
002	EFF-002	Once per year

The samples shall be analyzed for the pollutants listed in Attachment G, Table B, except for those pollutants with effluent limitations where the MRP already requires more frequent monitoring and except for those pollutants for which there are no water quality criteria (see Fact Sheet Tables F-12 and F-13). Compliance with this requirement shall be achieved in accordance with the specifications of Attachment G sections III.A.1 and III.A.2.

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

b. Reporting Requirements

- i. Routine Reporting.** The Discharger shall report the following in the transmittal letter for the self-monitoring report associated with the month in which the samples were collected:
- (a)** Indication that a sample for this characterization study was collected; and
 - (b)** Identity of pollutants detected at or above applicable water quality criteria (see Fact Sheet Tables F-12 and F-13 for the criteria) and the detected concentrations of those pollutants.
- ii. Annual Reporting.** The Discharger shall summarize the annual data evaluation and source investigation in the annual self-monitoring report.

- iii. **Final Report.** The Discharger shall submit a final report that presents all these data with the application for permit reissuance. The Discharger need not resubmit data and information already submitted electronically into CIWQS; however, it shall reference the monthly monitoring reports where it provided such information.

3. Pollutant Minimization Program

- a. The Discharger shall continue to improve its existing Pollutant Minimization Program to promote minimization of pollutant loadings to the treatment plant and therefore to the receiving waters.
- b. The Discharger shall submit an annual report no later than February 28 of each calendar year. Each annual report shall include at least the following information:
 - i. **Brief description of treatment plant.** The description shall include the service area and treatment plant processes.
 - ii. **Discussion of current pollutants of concern.** Periodically, the Discharger shall analyze its circumstances to determine which pollutants are currently a problem and which pollutants may be potential future problems. This discussion shall include the reasons for choosing the pollutants.
 - iii. **Identification of sources for pollutants of concern.** This discussion shall include how the Discharger intends to estimate and identify pollutant sources. The Discharger shall include sources or potential sources not directly within the ability or authority of the Discharger to control, such as pollutants in the potable water supply and air deposition.
 - iv. **Identification of tasks to reduce the sources of pollutants of concern.** This discussion shall identify and prioritize tasks to address the Discharger's pollutants of concern. The Discharger may implement the tasks by itself or participate in group, regional, or national tasks that address its pollutants of concern. The Discharger is strongly encouraged to participate in group, regional, or national tasks that address its pollutants of concern whenever it is efficient and appropriate to do so. An implementation timeline shall be included for each task.
 - v. **Outreach to employees.** The Discharger shall inform employees about the pollutants of concern, potential sources, and how they might be able to help reduce the discharge of these pollutants of concern into the treatment plant. The Discharger may provide a forum for employees to provide input.
 - vi. **Continuation of Public Outreach Program.** The Discharger shall prepare a pollution prevention public outreach program for its service area. Outreach may include participation in existing community events, such as county fairs; initiating new community events, such as displays and contests during Pollution Prevention Week; conducting school outreach programs; conducting plant tours; and providing public information in newspaper articles or advertisements, radio or television stories or spots, newsletters, utility bill inserts, or web sites. Information shall be specific to target audiences. The Discharger shall coordinate with other agencies as appropriate.

- vii. Discussion of criteria used to measure Pollutant Minimization Program and task effectiveness.** The Discharger shall establish criteria to evaluate the effectiveness of its Pollutant Minimization Program. This discussion shall identify the specific criteria used to measure the effectiveness of each task in Provisions VI.C.3.b.iii, iv, v, and vi.
- viii. Documentation of efforts and progress.** This discussion shall detail all of the Discharger's Pollutant Minimization Program activities during the reporting year.
- ix. Evaluation of Pollutant Minimization Program and task effectiveness.** This Discharger shall use the criteria established in Provision VI.C.3.b.vii to evaluate the program and task effectiveness.
- x. Identification of specific tasks and timelines for future efforts.** Based on the evaluation, the Discharger shall explain how it intends to continue or change its tasks to more effectively reduce the amount of pollutants flowing to the treatment plant and subsequently in its effluent.
- c.** The Discharger shall develop and conduct a Pollutant Minimization Program as further described below when there is evidence that a priority pollutant is present in the effluent above an effluent limitation (e.g., sample results reported as detected but not quantified (DNQ) when the effluent limitation is less than the method detection limit (MDL), sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, or results of benthic or aquatic organism tissue sampling) and either:

 - i.** A sample result is reported as DNQ and the effluent limitation is less than the Reporting Level (RL); or
 - ii.** A sample result is reported as not detected (ND) and the effluent limitation is less than the MDL, using definitions in Attachment A and reporting protocols described in the MRP.
- d.** If triggered by the reasons set forth in Provision VI.C.3.c, above, the Discharger's Pollutant Minimization Program shall include, but not be limited to, the following actions and submittals:

 - i.** Annual review and semi-annual monitoring of potential sources of the reportable priority pollutants, which may include fish tissue monitoring and other bio-uptake sampling, or alternative measures when source monitoring is unlikely to produce useful analytical data;
 - ii.** Quarterly monitoring for the reportable priority pollutants in the influent to the treatment plant. The Executive Officer may approve alternative measures when influent monitoring is unlikely to produce useful analytical data;
 - iii.** Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutants in the effluent at or below the effluent limitation;

- iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and
- v. Inclusion of the following specific items within the annual report required by Provision VI.C.3.b above:
 - (a) All Pollutant Minimization Program monitoring results for the previous year;
 - (b) List of potential sources of the reportable priority pollutants;
 - (c) Summary of all actions undertaken pursuant to the control strategy; and
 - (d) Description of actions to be taken in the following year.

4. Special Provisions

a. Sludge and Biosolids Management

- i. Sludge and biosolids treatment and storage shall not create a nuisance, such as objectionable odors or flies, or result in groundwater contamination.
- ii. Sludge and biosolids treatment and storage facilities shall be adequate to divert surface runoff from adjacent areas, to protect site boundaries from erosion, and to prevent conditions that would cause drainage from stored materials. Adequate protection is defined as protection from at least a 100-year storm and the highest possible tidal state that may occur.
- iii. This Order does not authorize permanent onsite sludge or biosolids storage or disposal. A Report of Waste Discharge shall be filed and the site brought into compliance with applicable regulations prior to commencement of any such activity.

b. Collection System Management. The District is subject to the requirements of, and shall comply with, State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order No. WQ 2013-0058-EXEC and any subsequent orders updating these requirements.

5. Other Special Provisions

a. Copper Action Plan. The Discharger shall implement source control and pollution prevention for copper at Discharge Point No. 002 in accordance with the following tasks and time schedule:

Table 7. Copper Action Plan

Task	Compliance Date
<p>1. Implement Copper Control Program Continue implementing existing program to reduce identified copper sources, including, as applicable, taking the following actions:</p> <ul style="list-style-type: none"> a. Providing education and outreach to the public (e.g., focusing on proper pool and spa maintenance and plumbers’ roles in reducing corrosion); b. If corrosion is a significant copper source, working cooperatively with local water purveyors to reduce and control water corrosivity, as appropriate, and ensuring that local plumbing contractors implement best management practices to reduce corrosion in pipes; and 	Implementation shall be ongoing

Task	Compliance Date
<p>c. Educating plumbers, designers, and maintenance contractors for pools and spas to encourage best management practices that minimize copper discharges.</p>	
<p>2. 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.</p>	<p>With annual pollution prevention report due February 28 (at least 90 days following notification)</p>
<p>3. Report Status of Copper Control Program 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 provide a schedule for actions to be taken within the next 12 months.</p>	<p>With annual pollution prevention report due February 28 each year</p>

b. Cyanide Action Plan. The Discharger shall implement monitoring and surveillance, source control, and pollution prevention for cyanide at Discharge Point No. 002 in accordance with the following tasks and time schedule:

Table 8. Cyanide Action Plan

Task	Compliance Date
<p>1. 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 this case, notify the Executive Officer and implement tasks 2 and 3.</p>	<p>With annual pollution prevention report due February 28, 2019</p>
<p>2. 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 U.S. EPA guidance, such as <i>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>For purposes of this Order, a “significant cyanide discharge” is occurring if the treatment plant’s influent cyanide concentration from the Refinery or the Crockett community exceeds 40 µg/L.</p>	<p>Implementation shall be ongoing</p>
<p>3. Implement Additional Cyanide Control 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 annual pollution prevention report due February 28 (at least 90 days following notification)</p>
<p>4. 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>With annual pollution prevention report due February 28 each year</p>

- c. Cooling Water Intake Report.** By February 1, 2020, C&H Sugar shall submit an updated Cooling Water Intake Report that shall include the following information consistent with 40 C.F.R. sections 122.21(r)(2) through (8), 125.94, 125.95, and 125.96, as detailed in the table below:

Table 9. Cooling Water Intake Report

<p>1. Source Water Physical Data</p> <ul style="list-style-type: none"> a. Narrative description and scaled drawings showing physical configuration of all source water bodies used by the facility; b. Identification and characterization of the source waterbody’s hydrological and geomorphological features; and c. Location maps.
<p>2. Cooling Water Intake Structure Data</p> <ul 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 structures; c. Narrative description of the operation of the cooling water intake structures, 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; and e. Engineering drawings of the cooling water intake structure.
<p>3. Source Water Baseline Biological Characterization Data</p> <ul style="list-style-type: none"> a. List of information in items b through f of this section that are unavailable and efforts made to identify sources of the information; b. List of species (or relevant taxa) in the vicinity of the cooling water intake structure, including all life stages and their relative abundance; c. Identification of the species and life stages most susceptible to impingement and entrainment; d. Identification and evaluation of the primary periods of reproduction, larval recruitment, and peak abundance for relevant taxa; e. Data representative of the seasonal and daily activities (e.g., feeding and water column migration) of biological organisms in the vicinity of the cooling water intake structure; f. Identification of all threatened, endangered, and other protected species that might be susceptible to impingement and entrainment at the cooling water intake structure; g. Documentation of any public participation or consultation with federal or State agencies undertaken; h. Description of all methods and quality assurance procedures for sampling and data analysis, including a description of the study area, taxonomic identification of sampled and evaluated biological assemblages (including all life stages of fish and shellfish), and sampling and data analysis methods; i. Identification of protective measures and stabilization activities that have been implemented, and description of how these measures and activities affected baseline conditions in the intake vicinity; and j. List of fragile species, as defined at 40 C.F.R. section 125.92(m), at the facility.
<p>4. Cooling Water System Data</p> <ul style="list-style-type: none"> a. Narrative description of the operation of the cooling water system and its relationship to cooling water intake structures, including all information required by 40 C.F.R. section 122.21(r)(5)(i); b. Design and engineering calculations prepared by a qualified professional and supporting data to support the description required by item 3.i; and c. Description of existing impingement and entrainment technologies or operational measures, and summary of their performance, including but not limited to reductions in impingement mortality and entrainment due to intake location and reductions in total water withdrawals and use.
<p>5. Chosen Method of Compliance with Impingement Mortality Standard Chosen compliance method for the cooling intake structure.</p>
<p>6. Entrainment Performance Studies Previously conducted studies or studies obtained from other facilities addressing technology efficacy and through-facility entrainment survival. Such submittals shall include a description of each study, together with its underlying data, and a summary of any conclusions or results.</p>

<p>7. Entrainment Characterization Study <i>Entrainment Characterization Study</i> that includes a minimum of one year of entrainment data collection and the elements detailed 40 C.F.R. sections 122.21(r)(9)(i),(ii), and (iii).</p>
<p>8. Operational Status Description of the operational status of each generating, production, or process unit that uses cooling water, including but not limited to the following:</p> <ul style="list-style-type: none">a. Reductions in flow or changes in operations to meet the requirements of 40 C.F.R. section 125.94(c);b. Descriptions of individual production processes and product lines;c. Operating status, including age of each line;d. Seasonal operation, including any extended or unusual outages that significantly affect current data for flow, impingement, entrainment, or other factors;e. Any major upgrades completed within the last 15 years;f. Any plans for decommissioning or replacing process units or production processes or product lines;g. Current and future production schedules; andh. Plans or schedules for any new units planned within the next 5 years.
<p>9. Comprehensive Technical Feasibility Study Engineering study of the technical feasibility of alternative entrainment technologies, including, at a minimum, fine mesh screens with a mesh size of 2 millimeters or smaller and screens with a through-screen intake velocity of 0.5 feet per second or less (measured perpendicular to the screen mesh).</p>

- d. **CWA Section 316(b) Requirements.** C&H Sugar shall continue meeting, or improving upon, the impingement and entrainment standards described in the December 2009 Cooling Water Intake Report, namely an intake velocity of not more than 38 cm per second and a mesh size opening of not more than 0.38 inch. By July 1, 2020, C&H Sugar shall develop a schedule to implement, as expeditiously as possible, the recommendations set forth in the Cooling Water Intake Report submitted in accordance with Provision VI.C.5.c, which shall call for full implementation no later than February 1, 2022. C&H Sugar shall implement the report's recommendations in accordance with the schedule.
- e. **Impingement Technology Performance Optimization Study.** If C&H Sugar complies with Table 9, item 5 by choosing a compliance method in accordance with 40 C.F.R. section 125.94(c)(5) or (6), it shall provide a schedule by July 1, 2020, for completing an Impingement Technology Performance Optimization Study that includes the elements in 40 C.F.R. sections 122.21(r)(6)(i) and (ii) no later than February 1, 2021.

ATTACHMENT A – DEFINITIONS

Arithmetic Mean (μ)

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

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

Average Monthly Effluent Limitation (AMEL)

The highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Effluent Limitation (AWEL)

The highest allowable average of daily discharges over a calendar week (Sunday through Saturday), calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Bioaccumulative

Taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic

Known to cause cancer in living organisms.

Coefficient of Variation

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

Daily Discharge

Either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit) for a constituent with limitations expressed in units of mass; or (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period is considered the result for the calendar day in which the 24-hour period ends.

Detected, but Not Quantified (DNQ)

Sample result less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

Dilution Credit

Amount of dilution granted to a discharge in the calculation of a water quality-based effluent limitation, based on the allowance of a specified mixing zone. It is calculated from the dilution ratio or determined by conducting a mixing zone study or modeling the discharge and receiving water.

Effluent Concentration Allowance (ECA)

Value derived from the water quality criterion/objective, dilution credit, and ambient background concentration that is used, in conjunction with the CV for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as wasteload allocation (WLA) as used in U.S. EPA guidance (*Technical Support Document For Water Quality-based Toxics Control*, March 1991, second printing, EPA/505/2-90-001).

Enclosed Bay

Indentation along the coast that encloses an area of oceanic water within a distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration

Concentration that results from the confirmed detection of the substance below the ML value by the analytical method.

Estuaries

Waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars are considered estuaries. Estuarine waters are considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Inland Surface Waters

All surface waters of the state that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation

Highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation

Lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Maximum Daily Effluent Limitation (MDEL)

Highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median

Middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between $n/2$ and $n/2+1$).

Method Detection Limit (MDL)

Minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 C.F.R. part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)

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

Mixing Zone

Limited volume of receiving water allocated for mixing with a wastewater discharge where water quality criteria can be exceeded without causing adverse effects to the overall water body.

Not Detected (ND)

Sample results less than the laboratory's MDL.

Persistent Pollutants

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

Pollutant Minimization Program

Program of waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the Pollutant Minimization Program is to reduce all potential sources of a priority pollutant through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. Cost effectiveness may be considered when establishing the requirements of a Pollutant Minimization Program. The completion and implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), is considered to fulfill Pollutant Minimization Program requirements.

Pollution Prevention

Any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State Water Board or Regional Water Board.

Reporting Level (RL)

ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from SIP Appendix 4 in accordance with SIP section 2.4.2 or established in accordance with SIP section 2.4.3. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the RL.

Source of Drinking Water

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

Standard Deviation (σ)

Measure of variability calculated as follows:

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

where:

x is the observed value;

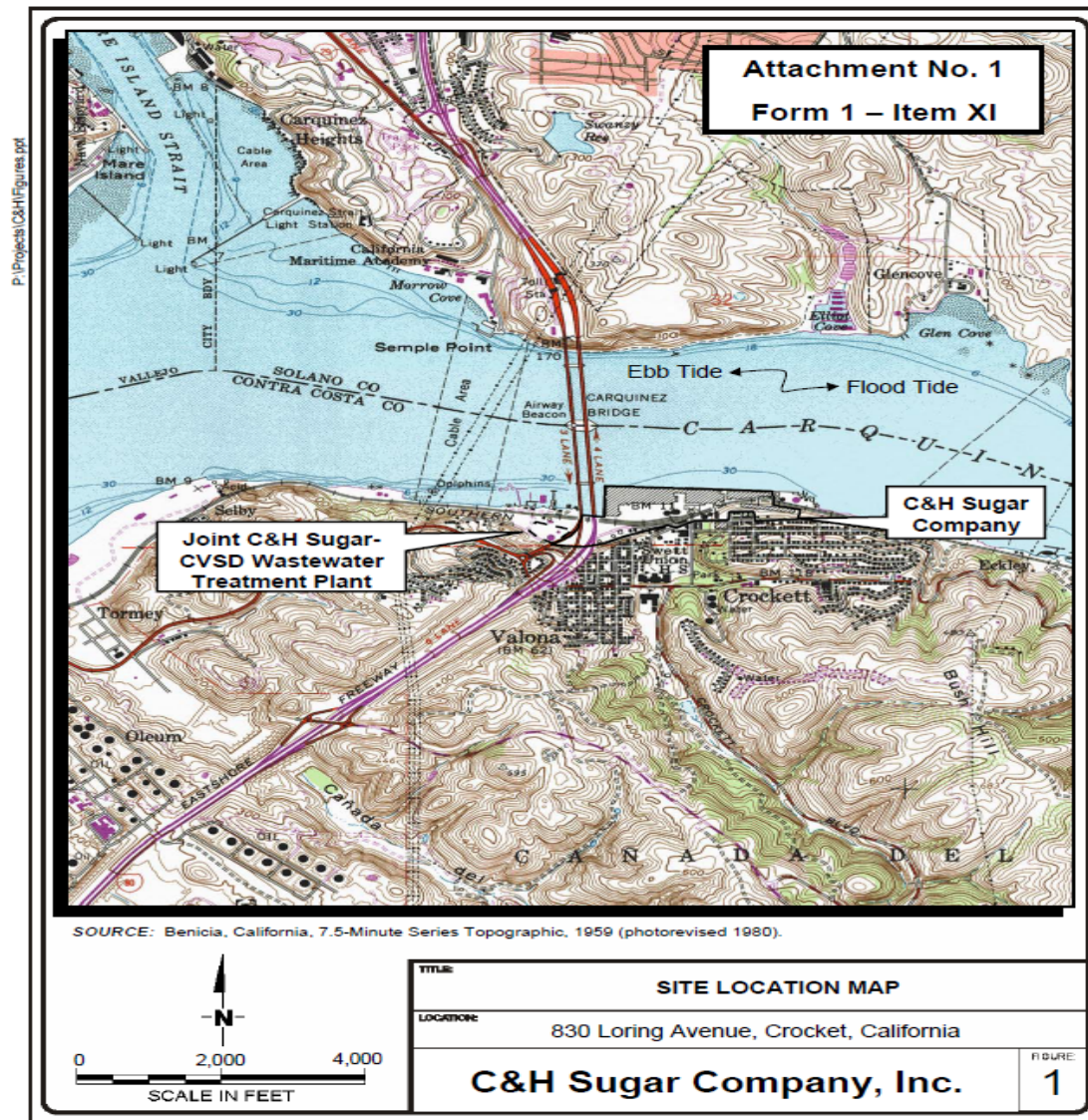
μ is the arithmetic mean of the observed values; and

n is the number of samples.

Toxicity Reduction Evaluation (TRE)

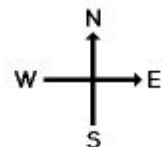
Study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of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

ATTACHMENT B – FACILITY MAP





Source: Google Maps aerial photograph (March 12, 2017).



Not to Scale

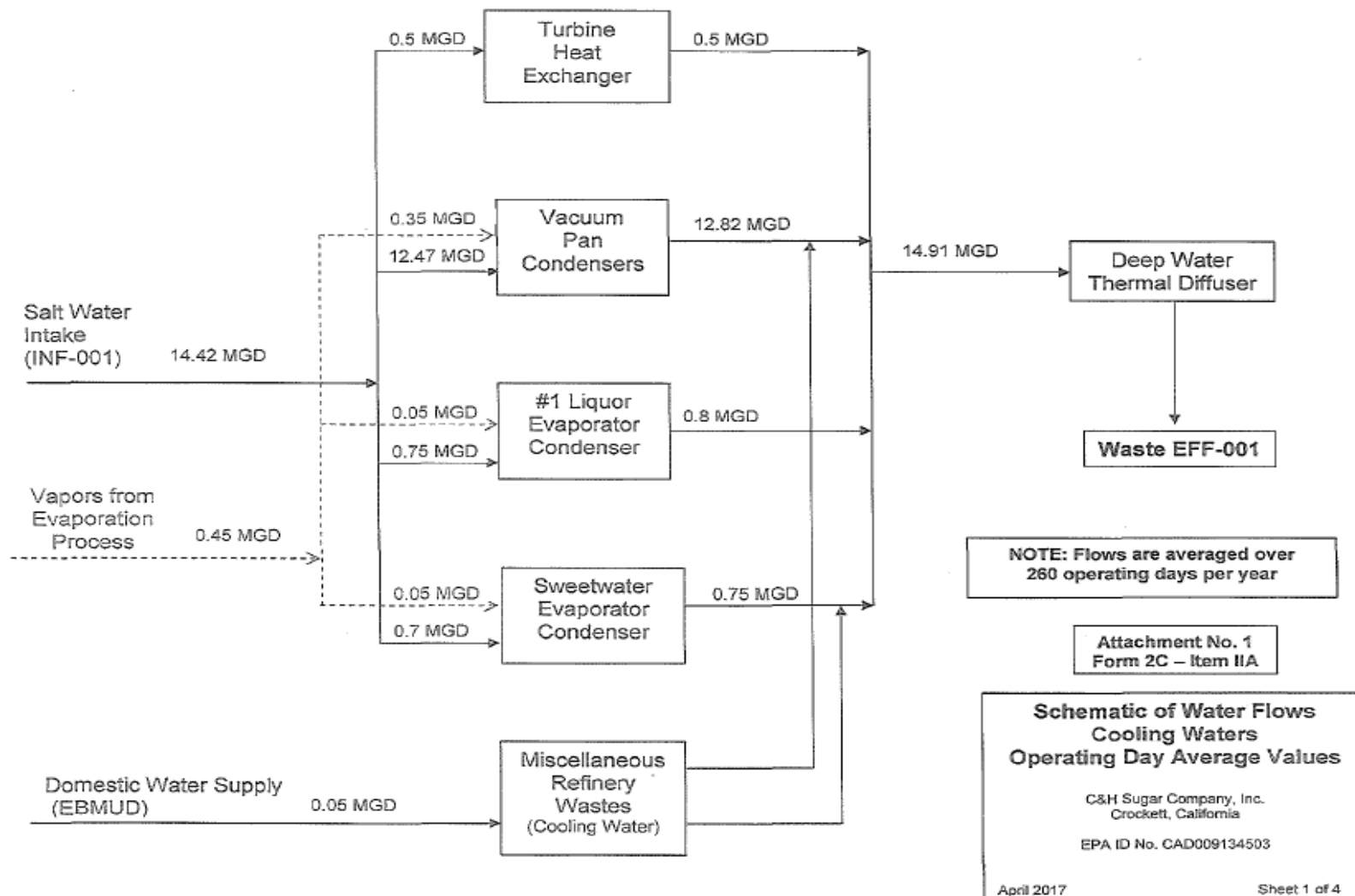
Attachment No. 2
 Form 1 - Item XI

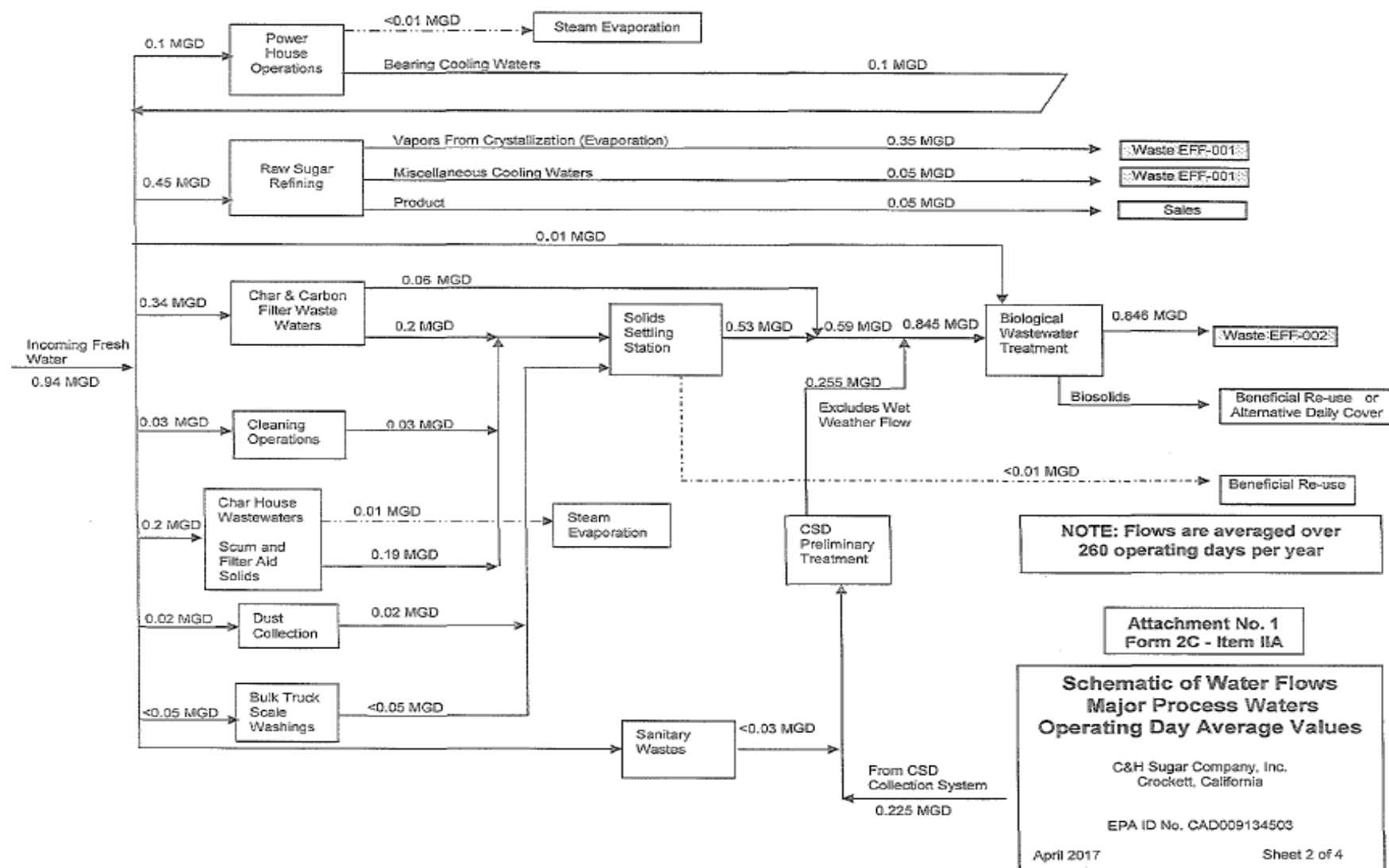
Explanation

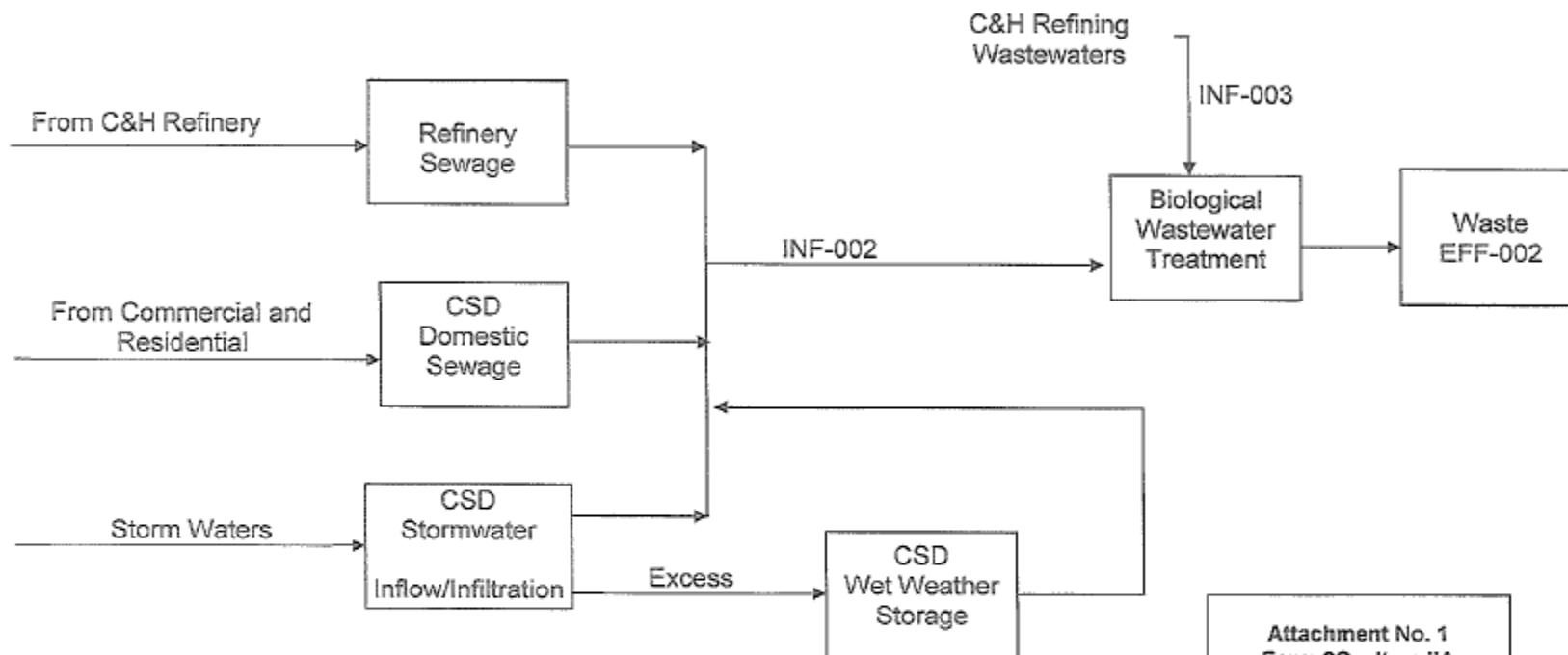
- CSD – Crockett Community Services District
- EFF-001 and EFF-002: Effluent locations
- INF-001,-002,-003: Influent locations
- EFF-003,-005,-006,-008,-009,-011,-012,-013,-014,-016: Storm drain locations

Site Vicinity Map
C&H and Joint Treatment Plant
 C&H Sugar Company, Inc.
 Crockett, California
 EPA ID No. CAD009134503
 April 2017 Figure 2

ATTACHMENT C – PROCESS FLOW DIAGRAMS







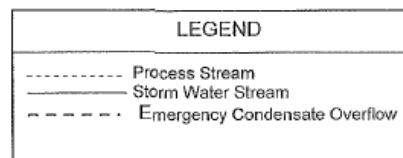
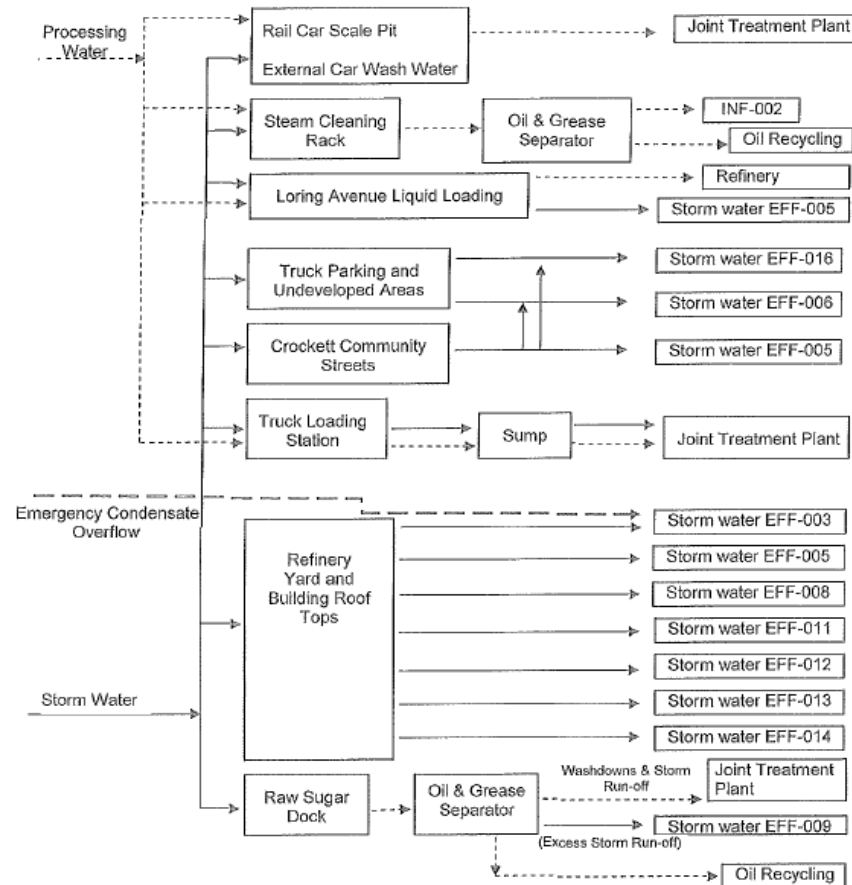
Note: Excess wastewater and stormwater inflow and infiltration from CSD during storm events can be diverted to wet weather storage.

Attachment No. 1
Form 2C – Item IIA

**Schematic of Water Flow
Sewage System (INF-002)**

CSD/C&H Sugar Company, Inc.
Crockett, California

April 2017 Sheet 3 of 4



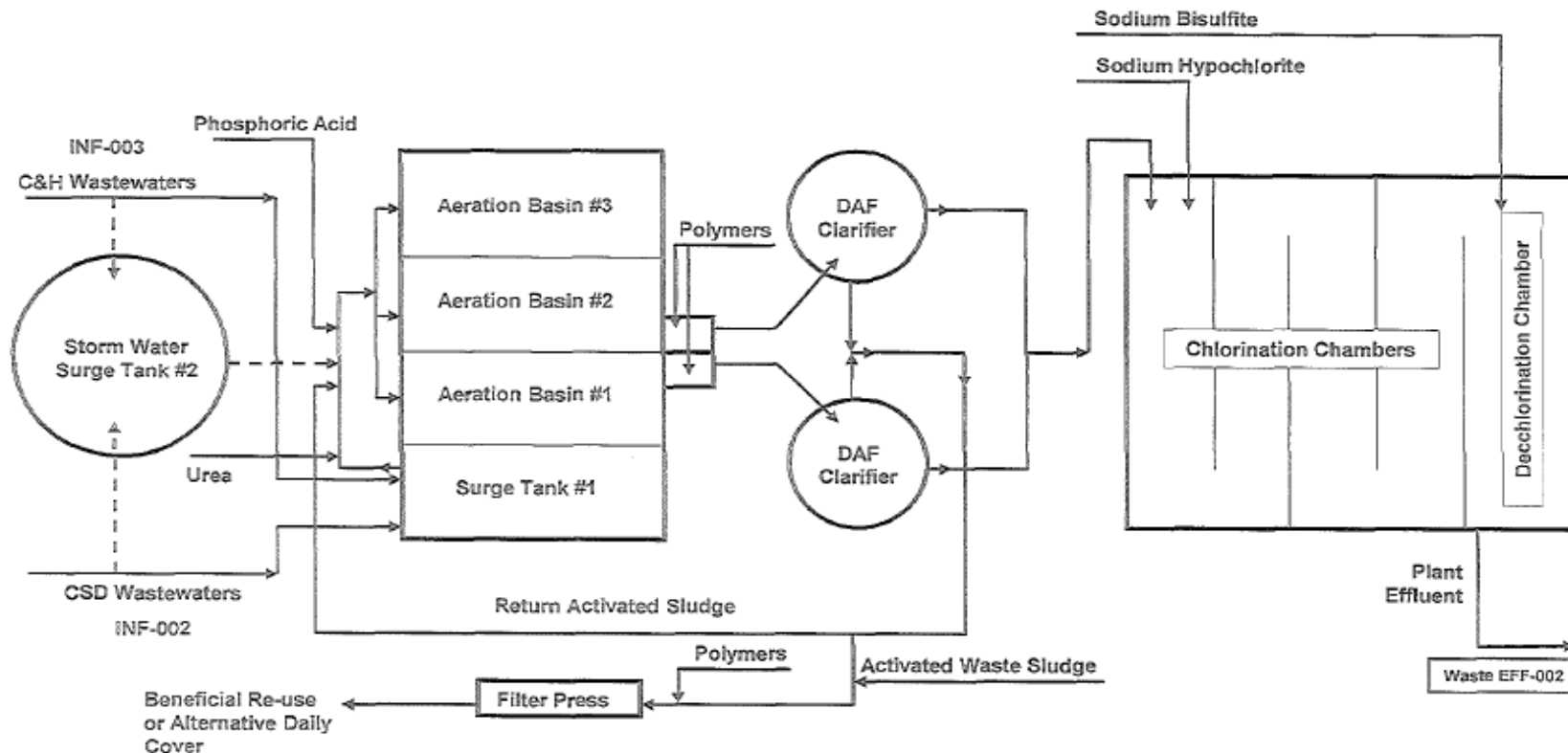
Attachment No. 1
 Form 2C – Item IIA

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

C&H Sugar Company, Inc.
 Crockett, California

EPA ID No. CAD009134503

April 2017 Sheet 4 of 4



Attachment No. 1A
 Form 2C – Item IIA

**Schematic of Water Flows
 C&H and CSD Joint Treatment Plant
 Wastewater Diagram**
 C&H Sugar Company, Inc.
 Crockett, California
 EPA ID No. CAD009134503
 April 2017 Sheet 1 of 1

ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)
2. The Discharger shall comply with effluent standards or prohibitions established under CWA section 307(a) for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) 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).)

E. Property Rights

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

F. Inspection and Entry

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

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

G. Bypass

1. Definitions

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

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

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

- a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));
- b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment

- should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 C.F.R. § 122.41(m)(4)(i)(B)); and
- c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 C.F.R. § 122.41(m)(4)(i)(C).)
- 4. Approval.** The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions—Permit Compliance I.G.3 above. (40 C.F.R. § 122.41(m)(4)(ii).)
- 5. Notice**
- a. **Anticipated bypass.** If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass. The notice shall be sent to the Regional Water Board. As of December 21, 2020, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(i).)
 - b. **Unanticipated bypass.** The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the Regional Water Board. As of December 21, 2020, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

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

1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)
2. **Conditions necessary for a demonstration of upset.** A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

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

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

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

IV. STANDARD PROVISIONS—RECORDS

- A. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 C.F.R. § 122.41(j)(2).)
- B. Records of monitoring information shall include the following:
 1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));
 2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));
 3. The date(s) the analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));
 4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));
 5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and
 6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)
- C. Claims of confidentiality for the following information will be denied (40 C.F.R. § 122.7(b)):
 1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and
 2. Permit applications and attachments, permits, and effluent data. (40 C.F.R. § 122.7(b)(2).)

V. STANDARD PROVISIONS—REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or U.S. EPA within a reasonable time, any information which the Regional Water Board, State Water Board, or U.S. EPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger

shall also furnish to the Regional Water Board, State Water Board, or U.S. EPA copies of records required to be kept by this Order. (40 C.F.R. § 122.41(h); Wat. Code, §§ 13267, 13383.)

B. Signatory and Certification Requirements

- 1.** All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or U.S. EPA shall be signed and certified in accordance with Standard Provisions—Reporting V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 C.F.R. § 122.41(k).)
- 2.** For a corporation, all permit applications shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means: (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or (ii) the manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures. (40 C.F.R. § 122.22(a)(1).)

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

For a municipality, State, federal, or other public agency, all permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of U.S. EPA). (40 C.F.R. § 122.22(a)(3).)

- 3.** All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or U.S. EPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a.** The authorization is made in writing by a person described in Standard Provisions—Reporting V.B.2 above (40 C.F.R. § 122.22(b)(1));
 - b.** The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 C.F.R. § 122.22(b)(2)); and

- c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions—Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 C.F.R. § 122.22(c).)
5. Any person signing a document under Standard Provisions—Reporting V.B.2 or V.B.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 C.F.R. § 122.22(d).)
6. Any person providing the electronic signature for documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all relevant requirements of 40 C.F.R. part 3 (Cross-Media Electronic Reporting) and 40 C.F.R. part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 C.F.R § 122.22(e).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order. (40 C.F.R. § 122.22(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J and comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 C.F.R. part 136, or another method required for an industry-specific waste stream under 40 C.F.R. chapter 1, subchapter N, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR reporting form specified by the Regional Water Board or State Water Board. (40 C.F.R. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 C.F.R. § 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

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

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

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

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. section 122.29(b) (40 C.F.R. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (Alternatively, for an existing manufacturing, commercial, mining, or silvicultural discharge as referenced in 40 C.F.R. section 122.42(a), this notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 C.F.R. section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1).) (40 C.F.R. § 122.41(l)(1)(ii).)

G. Anticipated Noncompliance

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

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions—Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision—Reporting V.E above. For noncompliance related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting V.E and the applicable required data in appendix A to 40 C.F.R. part 127. The Regional Water Board may also require the Discharger to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 C.F.R. § 122.41(l)(7).)

I. Other Information

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

J. Initial Recipient for Electronic Reporting Data

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

VI. STANDARD PROVISIONS—ENFORCEMENT

- A. The Regional Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, sections 13268, 13350, 13385, 13386, and 13387.

VII. ADDITIONAL PROVISIONS—NOTIFICATION LEVELS

A. Non-Municipal Facilities

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

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

B. Publicly-Owned Treatment Works (POTWs)

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

1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to CWA sections 301 or 306 if it were directly discharging those pollutants (40 C.F.R. § 122.42(b)(1)); and
2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of this Order. (40 C.F.R. § 122.42(b)(2).)

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

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Contents

I.	General Monitoring Provisions.....	E-2
II.	Monitoring Locations.....	E-2
III.	Intake and Influent Monitoring Requirements.....	E-4
IV.	Effluent Monitoring Requirements.....	E-4
V.	Toxicity Testing Requirements.....	E-6
	A. Acute Toxicity.....	E-6
	B. Chronic Toxicity.....	E-7
VI.	Receiving water Monitoring Requirements.....	E-10
VII.	Stormwater Monitoring Requirements.....	E-10
VIII.	Reporting Requirements.....	E-11
	A. General Monitoring and Reporting Requirements.....	E-11
	B. Self-Monitoring Reports (SMRs).....	E-11
	C. Discharge Monitoring Reports (DMRs).....	E-14

Tables

Table E-1.	Monitoring Locations.....	E-2
Table E-2.	Influent Monitoring.....	E-4
Table E-3.	Effluent Monitoring – Monitoring Location EFF-001.....	E-4
Table E-4.	Effluent Monitoring – Monitoring Location EFF-002.....	E-5
Table E-5.	Stormwater Monitoring.....	E-10
Table E-6.	CIWQS Reporting.....	E-12
Table E-7.	Monitoring Periods.....	E-13

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Clean Water Act (CWA) section 308 and 40 C.F.R. sections 122.41(h), 122.41(j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code sections 13267 and 13383 also authorize the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. This MRP establishes monitoring, reporting, and recordkeeping requirements that implement federal and State laws and regulations.

I. GENERAL MONITORING PROVISIONS

- A. The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 C.F.R. sections 122.62, 122.63, and 124.5. If any discrepancies exist between this MRP and the *Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D)* (Attachment G) or *Stormwater Provisions, Monitoring, and Reporting Requirements* (Attachment S), this MRP shall prevail.
- B. The Discharger shall conduct all monitoring in accordance with Attachment D, section III, as supplemented by Attachment G. Equivalent test methods must be more sensitive than those specified in 40 C.F.R. section 136 and must be specified in this permit.
- C. The Discharger shall ensure that results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address:

State Water Resources Control Board
 Quality Assurance Program Officer
 Office of Information Management and Analysis
 1001 I Street, Sacramento, CA 95814
- D. The Discharger shall implement a Quality Assurance-Quality Control Program for any onsite field tests (e.g., turbidity, pH, temperature, dissolved oxygen, conductivity, disinfectant residual) analyzed by a noncertified laboratory. The Discharger shall keep a manual onsite containing the steps followed in this program and must demonstrate sufficient capability to adequately perform these field tests (e.g., qualified and trained employees, properly calibrated and maintained field instruments). The program shall conform to U.S. EPA guidelines or other approved procedures.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Locations

Sampling Location Type	Monitoring Location Name	Monitoring Location Description
Intake Water	INF-001	At any point in the water intake system that delivers water from Carquinez Strait to the Refinery, prior to any treatment or being used for cooling or processing.
Influent	INF-002	At any point in the wastewater conveyance system from the District to the Joint Treatment Plant where flow measurements are representative of wastewater flows from the District.

Sampling Location Type	Monitoring Location Name	Monitoring Location Description
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 No. 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 No. 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 at which adequate contact with the disinfectant has been achieved.
Stormwater	EFF-003	At any point in the outfall for stormwater Discharge Point No. 003 between the point of discharge and the point at which all waste tributary thereto is present.
Stormwater	EFF-005	At any point in the outfall for stormwater Discharge Point No. 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 No. 006 between the point of discharge and the point at which all waste tributary thereto is present.
Stormwater	EFF-008	At any point in the outfall for stormwater Discharge Point No. 008 between the point of discharge and the point at which all waste tributary thereto is present.
Stormwater	EFF-009	At any point in the outfall for stormwater Discharge Point No. 009 between the point of discharge and the point at which all waste tributary thereto is present.
Stormwater	EFF-011	At any point in the outfall for stormwater Discharge Point No. 011 between the point of discharge and the point at which all waste tributary thereto is present.
Stormwater	EFF-012	At any point in the outfall for stormwater Discharge Point No. 012 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 No. 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 No. 014 between the point of discharge and the point at which all waste tributary thereto is present.
Stormwater	EFF-016	At any point in the outfall for stormwater Discharge Point No. 016 between the point of discharge and the point at which all waste tributary thereto is present.

III. INTAKE AND INFLUENT MONITORING REQUIREMENTS

The Discharger shall monitor cooling water intake and plant influent at Monitoring Locations INF-001, INF-002, and INF-003 as follows:

Table E-2. Influent Monitoring

Parameter	Units	Sampling Method	Minimum Sampling Frequency		
			INF-001 Intake	INF-002 Influent	INF-003 Influent
Flow ^{[1][2]}	MG/MGD	Continuous	Continuous	Continuous	Continuous
Copper, Total	µg/L	24-hour composite	2/Year	---	---
Cyanide	µg/L	Grab	---	1/Quarter	1/Quarter
Biochemical Oxygen Demand, 5-day @ 20°C (BOD ₅)	mg/L, lbs/day	24-hour composite	1/Week	---	---
Intake Structure ^[3]	N/A	Visual	1/Week	---	---

Abbreviations:

- MG = million gallons
- MGD = million gallons per day
- mg/L = milligrams per liter
- µg/L = micrograms per liter
- N/A = not applicable

Sampling Types and Frequencies:

- Continuous = measured continuously
- 1/Week = once per week
- 1/Quarter = once per quarter
- 2/Year = twice per year

Footnotes:

- ¹ For intake and influent flow, the Discharger shall report the following information in self-monitoring reports:
 - Daily Average Flow (MGD)
 - Daily Maximum Flow (MGD)
 - Total Monthly Flow Volume (MG)
- ² With the daily maximum flow Monitoring Location INF-001, the Discharger shall also report the corresponding daily maximum velocity (cm/sec) in each self-monitoring report.
- ³ 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.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Discharge Point No. 001

C&H Sugar Company, Inc. (C&H Sugar), shall monitor discharges from Discharge Point No. 001 at Monitoring Location EFF-001 as follows:

Table E-3. Effluent Monitoring – Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MG/MGD	Continuous	Continuous/D
Biochemical Oxygen Demand, 5-day @ 20°C (BOD ₅)	mg/L	C-24	1/Week
pH ^[2]	Standard units	Grab	1/Day ^[3]
Temperature	°C	Grab	1/Day ^[3]
Copper, Total	µg/L	C-24	2/Year

Abbreviations:

MG = million gallons
 MGD = million gallons per day
 mg/L = milligrams per liter
 °C = degrees Celsius
 µg/L = micrograms per liter

Sampling Types and Frequencies:

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

Footnotes:

- ¹ For effluent flows, the following information shall be reported in self-monitoring reports:
 - Daily Average Flow (MGD)
 - Total Monthly Flow Volume (MG)
- ² If pH is monitored continuously, the minimum and maximum pH values for each day shall be reported in self- monitoring reports.
- ³ Monitoring is required only.

B. Discharge Point No. 002

The Discharger shall monitor discharges from Discharge Point No. 002 at Monitoring Location EFF-002 as follows:

Table E-4. Effluent Monitoring – Monitoring Location EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^[1]	MG/MGD	Continuous	Continuous/D
Biochemical Oxygen Demand, 5-day @ 20°C (BOD ₅) ^[2]	mg/L	C-24	1/Month
Total Suspended Solids (TSS) ^[2]	mg/L	C-24	1/Month
Oil and Grease	mg/L	Grab	1/Quarter
pH ^[3]	Standard units ^[3]	Grab	1/Day
Total Residual Chlorine ^[4]	mg/L	Continuous	Continuous/D
Total Coliform ^[5]	MPN/100mL	Grab	3/Week
Enterococcus ^[5]	MPN/100 mL	Grab	2/Year ^[6]
Temperature	°C	Grab	1/Day
Copper, Total	µg/L	C-24	1/Month
Lead, Total	µg/L	C-24	1/Month
Cyanide, Total ^[7]	µg/L	Grab	1/Month
Chlorodibromomethane	µg/L	Grab	2/Year
Bis(2-ethylhexyl)phthalate	µg/L	C-24	1/Year
Ammonia, Total	mg/L as N	Grab	1/Month
Dioxin-TEQ	µg/L	Grab	1/Year
Acute Toxicity ^[8]	% Survival	Flow-through or static renewal	1/Month
Chronic Toxicity ^[9]	TUc	C-24	1/Year

Abbreviations:

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

°C	= degrees Celsius
µg/L	= micrograms per liter
MPN/100 mL	= most probable number per 100 milliliters
TUc	= chronic toxicity units

Sampling Types and Frequencies:

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

Footnotes:

- ¹ For effluent flows, the following information shall be reported in self-monitoring reports:
 - Daily Average Flow (MGD)
 - Total Monthly Flow Volume (MG)
- ² Sampling of BOD₅ and TSS is required once per month when there is Refinery process wastewater discharging into the Joint Treatment Plant.
- ³ If pH is monitored continuously, the minimum and maximum for each day shall be reported in self-monitoring reports.
- ⁴ Effluent residual chlorine concentrations shall be monitored continuously or, at a minimum, every hour. The Discharger shall describe all excursions of the chlorine limit in the transmittal letter of self-monitoring reports as required by Attachment G section V.C.1.a. If monitoring continuously, the Discharger shall report through data upload to CIWQS, from discrete readings of the continuous monitoring every hour on the hour, the maximum for each day and any other discrete hourly reading that exceed the effluent limit, and, for the purpose of mandatory minimum penalties required by Water Code section 13385(i), compliance shall be based only on these discrete readings. The Discharger shall retain continuous monitoring readings for at least three years. The Regional Water Board reserves the right to use all continuous monitoring data for discretionary enforcement.

The Discharger may elect to use a continuous on-line monitoring system for measuring or determining that residual dechlorinating agent is present. This monitoring system may be used to prove that anomalous residual chlorine exceedances measured by on-line chlorine analyzers are false positives and are not valid total residual chlorine detections because it is chemically improbable to have chlorine present in the presence of sodium bisulfite. If Regional Water Board staff finds convincing evidence that chlorine residual exceedances are false positives, the exceedances are not violations of this Order's total chlorine residual limit.
- ⁵ The total coliform bacteria and enterococcus bacteria sampling location used for monitoring compliance is EFF-002D. Results may be reported as Colony Forming Units (CFU)/100 mL if the laboratory method used provides results in CFU/100 mL.
- ⁶ The two samples shall be collected in different calendar months. If at any time the Discharger does not meet compliance with this enterococcus effluent limitation, the minimum monitoring frequency shall be accelerated to five times per month until the Discharger has demonstrated full compliance for three consecutive months.
- ⁷ The Discharger may, at its option, analyze for cyanide as weak acid dissociable cyanide using protocols specified in Standard Method Part 4500-CN-I, U.S. EPA Method OI 1677, or an equivalent method in the latest Standard Method edition.
- ⁸ Acute toxicity tests shall be performed in accordance with MRP section V.A.
- ⁹ Chronic toxicity tests shall be performed in accordance with MRP section V.B.

V. TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity

1. Compliance with the acute toxicity effluent limitations shall be evaluated at Monitoring Location EFF-002 by measuring survival of test organisms exposed to 96-hour continuous flow-through bioassays.
2. Test organisms shall be rainbow trout (*Onchorhynchus mykiss*). Alternatively, the Executive Officer may specify a more sensitive organism or, if testing a particular organism proves unworkable, the most sensitive organism available.

3. All bioassays shall be performed according to the most up-to-date protocols in 40 C.F.R. part 136, currently *Methods for Measuring the Acute Toxicity of Effluents and Receiving Water to Freshwater and Marine Organisms*, 5th Edition (EPA-821-R-02-012). 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.
4. If the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment. The Discharger may adjust the pH of whole effluent acute toxicity samples prior to performing bioassays to minimize ammonia toxicity interference.
5. Bioassay water monitoring shall include, on a daily basis, pH, dissolved oxygen, ammonia (if toxicity is observed), temperature, hardness, and alkalinity. These results shall be reported. If final or intermediate results of an acute bioassay test indicate a violation or threatened violation (e.g., the percentage of surviving test organisms is less than 70 percent), the Discharger shall initiate a new test as soon as practical and shall investigate the cause of the mortalities and report its findings in the next self-monitoring report. The Discharger shall repeat the test until a test fish survival rate of 90 percent or greater is observed. If the control fish survival rate is less than 90 percent, the bioassay test shall be restarted with new fish and shall continue as soon as practical until an acceptable test is completed (i.e., control fish survival rate is 90 percent or greater).

B. Chronic Toxicity

1. Monitoring Requirements

- a. **Sampling.** The Discharger shall collect 24-hour composite effluent samples at Monitoring Location EFF-002 for critical life stage toxicity testing as indicated below. For toxicity tests requiring renewals, the Discharger shall collect 24-hour composite samples on consecutive or alternating days.
- b. **Test Species.** The test species shall be the giant kelp (*Macrocystis pyrifera*) unless a more sensitive species is identified. If using this species proves unworkable, the Executive Officer may specify a different species in writing upon the Discharger's request with justification.

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

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

- i. The Discharger shall monitor routinely once per year.
- ii. The Discharger shall accelerate monitoring to monthly if it exceeds a single-sample maximum of 10 TU_c (100/NOEL). Based on the TU_c results, the Executive Officer may specify a different frequency for accelerated monitoring to ensure that accelerated monitoring provides useful information.
- iii. The Discharger shall return to routine monitoring if accelerated monitoring does not exceed the trigger in ii, above.
- iv. If accelerated monitoring confirms consistent toxicity in excess of the trigger in ii, above, the Discharger shall continue accelerated monitoring and initiate toxicity reduction evaluation (TRE) procedures in accordance with section V.B.3, below.
- v. The Discharger shall return to routine monitoring after implementing appropriate elements of the TRE, and either the toxicity drops below the trigger in ii, above, or, based on the TRE results, the Executive Officer determines that accelerated monitoring would no longer provide useful information.
- vi. Monitoring conducted pursuant to a TRE shall satisfy the requirements for routine and accelerated monitoring while the TRE is underway.

d. Methodology. Sample collection, handling, and preservation shall be in accordance with U.S. EPA protocols. Bioassays shall be conducted in compliance with the most recently promulgated test methods, as shown in Appendix E-2. These are *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, currently 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.

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

e. Dilution Series. The Discharger shall conduct tests at 50%, 25%, 10%, 5%, and 2.5%. The "%" represents percent effluent as discharged. Test sample pH may be controlled to the level of the effluent sample as received prior to being salted up.

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

- a. Sample date
- b. Test initiation date
- c. Test species
- d. End point values for each dilution (e.g., number of young, growth rate, percent survival)
- e. No Observed Effect Level (NOEL) values in percent effluent. The NOEL shall equal the IC₂₅ or EC₂₅ (see MRP Appendix E-1). If the IC₂₅ or EC₂₅ cannot be statistically determined, the NOEL shall equal the No Observed Effect Concentration (NOEC) derived using hypothesis testing. The NOEC is the maximum percent effluent concentration that causes no observable effect on test organisms based on a critical life stage toxicity test.
- f. IC₁₅, IC₂₅, IC₄₀, and IC₅₀ values (or EC₁₅, EC₂₅, EC₄₀, and EC₅₀) as percent effluent
- g. TU_c values (100/NOEL and upper and lower confidence intervals)
- h. Mean percent mortality (\pm s.d.) after 96 hours in 100% effluent (if applicable)
- i. IC₅₀ or EC₅₀ values for reference toxicant tests
- j. Available water quality measurements for each test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, ammonia)

2. Toxicity Reduction Evaluation (TRE)

- a. The Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order to be ready to respond to toxicity events. The Discharger shall review and update the work plan as necessary so that it remains current and applicable to the discharge and discharge facilities.
- b. Within 30 days of exceeding the chronic toxicity trigger, the Discharger shall submit a TRE work plan, which shall be the generic work plan revised as appropriate for this toxicity event after consideration of available discharge data.
- c. Within 30 days of completing an accelerated monitoring test observed to exceed the chronic toxicity trigger, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all comments from the Executive Officer.
- d. The TRE shall be specific to the discharge and be prepared 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 process, as summarized below:
 - i. Tier 1 shall consist of basic data collection (routine and accelerated monitoring).
 - ii. Tier 2 shall consist of evaluation of treatment process, including operation practices and in-plant process chemicals.

- iii. Tier 3 shall consist of a toxicity identification evaluation (TIE).
- iv. Tier 4 shall consist of a toxicity source evaluation.
- v. Tier 5 shall consist of a toxicity control evaluation, including options for modifications of in-plant treatment processes.
- vi. Tier 6 shall consist of implementation of selected toxicity control measures and followup monitoring and confirmation of implementation success.
- e. The Discharger may end the TRE at any stage if monitoring finds there is no longer consistent toxicity (complying with the trigger in section V.B.1.c).
- f. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity. The Discharger shall employ all reasonable efforts using currently available TIE methodologies.
- g. As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the toxic substances from the discharge. The Discharger shall take all reasonable steps to reduce toxicity to levels below the chronic toxicity trigger.
- h. Many recommended TRE elements parallel required or recommended efforts related to source control, pollution prevention, and stormwater control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements or recommended efforts of such programs may be acceptable to demonstrate compliance with TRE requirements.

VI. RECEIVING WATER MONITORING REQUIREMENTS

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

VII. STORMWATER MONITORING REQUIREMENTS

C&H Sugar shall monitor stormwater at Monitoring Locations EFF-003 through EFF-016 as follows:

Table E-5. Stormwater Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ^{[1],[2],[3]}	MGD	---	2/Year
pH	Standard units	Grab	2/Year
Biochemical Oxygen Demand, 5-day @ 20°C (BOD ₅)	mg/L	Grab	2/year
Total Suspended Solids (TSS)	mg/L	Grab	2/Year
Total Organic Carbon	mg/L	Grab	2/Year
Conductivity	µmhos/cm	Grab	2/Year
Standard Observations ^[4]	---	---	1/Month

Abbreviations:

MGD	= million gallons per day
mg/L	= milligrams per liter
µmhos/cm	= microsiemens per centimeter

Sampling Types and Frequencies:

Grab	= grab sample
1/Month	= once per month
2/Year	= twice per year

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.
- ² 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.
- ³ 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 stormwater pollution prevention plan.
- ⁴ Standard Observations are specified in Attachment S section II.A. Stormwater observations during the dry period, May 1 through September 30, may be limited to two if they occur during this five-month period.

VIII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachments D, G, and S) related to monitoring, reporting, and recordkeeping. C&H Sugar shall also meet all applicable recordkeeping requirements set forth in 40 C.F.R. section 125.97 for once-through cooling water intake structures. The Crockett Community Services District, as the owner and operator of the sewage collection system and related equipment, shall meet all recordkeeping and reporting requirements related to the collection system. C&H Sugar, as operator of the Joint Treatment Plant, shall meet all other recordkeeping and reporting requirements.

B. Self-Monitoring Reports (SMRs)

- 1. SMR Format.** The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) website at http://www.waterboards.ca.gov/water_issues/programs/ciwqs. The CIWQS website will provide additional information for SMR submittal in the event of a planned service interruption for electronic submittal.
- 2. SMR Due Dates and Contents.** The Discharger shall submit SMRs by the due dates, and with the contents, specified below:
 - a. Monthly SMRs.** Monthly SMRs shall be due 30 days after the end of each calendar month, covering that calendar month. The monthly SMR shall contain the applicable items described in sections V.B and V.C of both Attachments D and G of this Order. See Provision VI.C.2 (Effluent Characterization Study and Report) of this Order for information that must also be reported with monthly SMRs.

Monthly SMRs shall include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this

Order, the Discharger shall include the results of such monitoring in the calculations and reporting for the SMR.

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

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

Table E-6. CIWQS Reporting

Parameter		Method of Reporting	
		EDF/CDF data upload or manual entry	Attached File
All parameters identified in influent, effluent, and receiving water monitoring tables (except Dissolved Oxygen and Temperature)		Required for all results	
Dissolved Oxygen Temperature		Required for monthly maximum and minimum results only ^[1]	Discharger may use this method for all results or keep records
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]	
Volume and Duration of Blended Discharge ^[3]		Required for all blended effluent discharges	
Analytical Method		Not required (Discharger may select “data unavailable”) ^[1]	
Collection Time Analysis Time		Not required (Discharger may select “0:00”) ^[1]	

Footnotes:

- ¹ The Discharger shall continue to monitor at the minimum frequency specified in this MRP, keep records of the measurements, and make the records available upon request.
- ² These parameters require EDF/CDF data upload or manual entry regardless of whether monitoring is required by this MRP or other provisions of this Order (except for biosolids, sludge, or ash provisions).
- ³ The requirement for volume and duration of blended discharge applies only if this Order authorizes the Discharger to discharge blended effluent.

The Discharger shall arrange all reported data in a tabular format and summarize data to clearly illustrate whether the treatment plant is operating in compliance with effluent limitations. The Discharger is not required to duplicate the submittal of data entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS

does not provide for entry into a tabular format, the Discharger shall electronically submit the data in a tabular format as an attachment.

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

Table E-7. Monitoring Periods

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period^[1]
Continuous Continuous/D	Order effective date	All times
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 3/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	First day of calendar month through last day of calendar month
1/Quarter	Closest January 1, April 1, July 1, or October 1 following or on Order effective date ^[2]	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31
1/Year	Closest January 1 before or after Order effective date ^[2]	January 1 through December 31
2/Year	Closest January 1 or July 1 before or after Order effective date ^[2]	Two times during the wet season when it rains, with the first sampling on the first storm event of the season
2/Year (once through cooling water and wastewater discharge)	Closest January 1 or July 1 before or after Order effective date ^[2]	Once during the wet season (typically November 1 – April 30) and once during the dry season (typically May 1 through October 31)
1/Event	Order effective date	Event duration

Footnotes:

- ¹ The monitoring period shall be during the timeframe in which Refinery process wastewater is being treated at the Joint Treatment Plant.
- ² Monitoring performed during the previous order term may be used to satisfy monitoring required by this Order.

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

- a.** Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
- b.** Sample results less than the RL, but greater than or equal to the laboratory’s MDL, shall be reported as “Detected, but Not Quantified,” or DNQ. The estimated chemical

concentration of the sample shall also be reported.

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

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected", or ND.
- d. The Discharger shall instruct laboratories to establish calibration standards so that the minimum level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

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

C. Discharge Monitoring Reports (DMRs)

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

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

I. Definition of Terms

- A. No observed effect level (NOEL) for compliance determination is equal to IC₂₅ or EC₂₅. If the IC₂₅ or EC₂₅ cannot be statistically determined, the NOEL shall be equal to the NOEC derived using hypothesis testing.
- B. Effective concentration (EC) is a point estimate of the toxicant concentration that would cause an adverse effect on a quantal, “all or nothing,” response (such as death, immobilization, or serious incapacitation) in a given percent of the test organisms. If the effect is death or immobility, the term lethal concentration (LC) may be used. EC values may be calculated using point estimation techniques such as probit, logit, and Spearman-Kärber. EC₂₅ is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.
- C. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an IC₂₅ is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as U.S. EPA's Bootstrap Procedure.
- D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

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

APPENDIX E-2
SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

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

Species	(Scientific Name)	Effect	Test Duration	Reference
Alga	<i>(Skeletonema costatum)</i> <i>(Thalassiosira pseudonana)</i>	Growth rate	4 days	1
Red alga	<i>(Champia parvula)</i>	Number of cystocarps	7 – 9 days	3
Giant kelp	<i>(Macrocystis pyrifera)</i>	Percent germination; germ tube length	48 hours	2
Abalone	<i>(Haliotis rufescens)</i>	Abnormal shell development	48 hours	2
Oyster Mussel	<i>(Crassostrea gigas)</i> <i>(Mytilus edulis)</i>	Abnormal shell development; percent survival	48 hours	2
Echinoderms – Urchins Sand dollar	<i>(Strongylocentrotus purpuratus,</i> <i>S. franciscanus)</i> <i>(Dendraster excentricus)</i>	Percent fertilization or larval development	1 hour or 72 hours	2
Shrimp	<i>(Mysidopsis bahia)</i>	Percent survival; growth	7 days	3
Shrimp	<i>(Holmesimysis costata)</i>	Percent survival; growth	7 days	2
Topsmelt	<i>(Atherinops affinis)</i>	Percent survival; growth	7 days	2
Silverside	<i>(Menidia beryllina)</i>	Larval growth rate; percent survival	7 days	3

Toxicity Test References:

1. American Society for Testing Materials (ASTM). 1990. Standard Guide for Conducting Static 96-Hour Toxicity Tests with Microalgae. Procedure E 1218-90. ASTM, Philadelphia, PA.
2. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms. EPA/600/R-95/136. August 1995.
3. Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to Marine and Estuarine Organisms. EPA/821/R-02/014. October 2002.

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

Species	(Scientific Name)	Effect	Test Duration	Reference
Fathead minnow	<i>(Pimephales promelas)</i>	Survival; growth rate	7 days	4
Water flea	<i>(Ceriodaphnia dubia)</i>	Survival; number of young	7 days	4
Alga	<i>(Selenastrum capricornutum)</i>	Cell division rate	4 days	4

Toxicity Test Reference:

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

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

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

Footnotes:

- ^[1] (a) Marine refers to receiving water salinities greater than 10 parts per thousand (ppt) at least 95 percent of the time during a normal water year.
 (b) Freshwater refers to receiving water with salinities less than 1 ppt at least 95 percent of the time during a normal water year.
 (c) Estuarine refers to receiving water salinities that fall between those of marine and freshwater, as described above.
- ^[2] The freshwater species may be substituted with marine species if:
 - (a) The salinity of the effluent is above 1 ppt greater than 95 percent of the time, or
 - (b) The ionic strength (TDS or conductivity) of the effluent at the test concentration used to determine compliance is documented to be toxic to the test species.

ATTACHMENT F - FACT SHEET

Contents

I.	Permit Information.....	F-3
II.	Facility Description.....	F-4
	A. Wastewater Treatment and Control.....	F-5
	1. Once-Through Cooling Water (Discharge Point No. 001).....	F-5
	2. Wastewater Treatment Plant Effluent (Discharge Point No. 002)	F-6
	B. Discharge Points and Receiving Waters	F-7
	C. Previous Requirements and Monitoring Data	F-7
	D. Compliance Summary	F-9
	E. Planned Changes	F-10
III.	Applicable Plans, Policies, and Regulations.....	F-10
IV.	Rationale For Effluent Limitations and Discharge Specifications	F-14
	A. Discharge Prohibitions	F-14
	B. Basin Plan Discharge Prohibition 1.....	F-15
	C. Technology-Based Effluent Limitations	F-15
	1. Scope and Authority	F-15
	2. Effluent Limitation Guidelines.....	F-16
	3. Technology-Based Effluent Limitations	F-17
	D. Water Quality-Based Effluent Limitations.....	F-19
	1. Scope and Authority	F-19
	2. Beneficial Uses and Water Quality Criteria and Objectives	F-19
	3. Need for Water Quality-Based Effluent Limitations (Reasonable Potential Analysis) ..	F-24
	4. Water Quality-Based Effluent Limitations.....	F-34
	E. Discharge Requirement Considerations	F-39
V.	Rationale for Receiving Water Limitations	F-40
VI.	Rationale for Provisions.....	F-40
	A. Standard Provisions.....	F-40
	B. Monitoring and Reporting	F-40
	C. Special Provisions	F-41
VII.	Rationale for Monitoring and Reporting Program (MRP)	F-43
VIII.	Public Participation	F-45

Tables

Table F-1. Facility Information.....	F-3
Table F-2. Previous Effluent Limitations and Monitoring Data at Discharge Point No. 001	F-7
Table F-3. Previous Effluent Limitations and Monitoring Data at Discharge Point No. 002	F-8
Table F-4. Previous Effluent Limitations and Monitoring Data at Discharge Point Nos. 003 to 016.....	F-9
Table F-5. Compliance Summary	F-9
Table F-6. Collection System and SSO Rates (SSO/100 miles).....	F-10
Table F-7. Beneficial Uses.....	F-11
Table F-8. Technology-Based Requirements of 40 C.F.R. section 409.22(a).....	F-16
Table F-9. Technology-Based Requirements of 40 C.F.R. section 409.22(b).....	F-16
Table F-10. Technology-Based Requirements for Process Wastewater.....	F-16
Table F-11. Technology-Based Limitations for Discharge Point No. 001	F-17
Table F-12. Factors Considered Pursuant to 40 C.F.R. section 125.3(d)	F-18
Table F-13. Site-Specific Translators	F-23
Table F-14. Reasonable Potential Analysis – Discharge Point No. 001.....	F-25
Table F-15. Reasonable Potential Analysis – Discharge Point No. 002.....	F-29
Table F-16. WQBEL Calculations for Discharge Point No. 001	F-35
Table F-17. WQBEL Calculations for Discharge Point No. 002	F-37
Table F-18. Monitoring Requirements Summary.....	F-44

ATTACHMENT F – FACT SHEET

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the C&H Sugar Company Refinery, Joint Use C&H Sugar Company-Crockett Services District Philip F. Mead Water Treatment Plant, and its collection system.

Table F-1. Facility Information

WDID	2 071006001
CIWQS Place ID	212212
Discharger	C&H Sugar Company, Inc., and Crockett Community Services District
Name of Facility	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 collection system
Facility Address	830 Loring Avenue, Crockett, CA 94525
	Contra Costa County
Facility Contact, Title, Phone	Tanya Akkerman, Environmental Manager, C&H Sugar Company, Inc., Tanya.akkerman@asr-group.com, 510-787-4352 Dale McDonald, General Manager, Crockett Community Services District, manager@town.crockett.ca.us, 510-787-2992
CIWQS Party ID	521474
Authorized Person to Sign and Submit Reports	Dale McDonald (sewage collection system reports) Tanya Akkerman (all other reports)
Mailing Address	Same as above
Billing Address	Same as above
Type of Facility	Sugar Processing / Privately-owned wastewater treatment plant
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	A
Pretreatment Program	No
Reclamation Requirements	NA
Mercury and PCBs Discharge Requirements	Mercury and PCBs Requirements—NPDES Permit No. CA0038849
Facility Design Flow	35 MGD for once-through cooling water discharged through Outfall 001 1.8 MGD for treated wastewater discharged through Outfall 002
Watershed	Suisun Basin
Receiving Water	Carquinez Strait within Northern San Francisco Bay
Receiving Water Type	Estuarine

- A.** C&H Sugar Company, Inc. (C&H Sugar), owns and operates the C&H Sugar Company Refinery, which discharges untreated once-through cooling water and condensed vapor at Discharge Point No. 001; treated wastewater consisting of sugar refining wastes and domestic waste from the Crockett Community Services District (District) and its associated collection system at Discharge Point No. 002; and stormwater from Discharge Point Nos. 003 through 016. C&H Sugar and the District (collectively, the Discharger) have a Joint Use Agreement that allows the District to discharge to the wastewater treatment plant owned and operated by, and located on property leased to, C&H Sugar. The plant, known as the Philip F. Meads Water Treatment Plant, or Joint Treatment Plant, discharges through Discharge Point No. 002. C&H Sugar and the District jointly use the plant.

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

- B.** The Discharger is regulated pursuant to National Pollutant Discharge Elimination System (NPDES) Permit No. CA0005240. The Discharger was previously subject to the NPDES permit in Order No. R2-2012-0084 (previous order). The Discharger filed a Report of Waste Discharge and submitted an application for reissuance of its Waste Discharge Requirements (WDRs) and NPDES permit on June 29, 2017.

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

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

II. FACILITY DESCRIPTION

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 per year. The Refinery has an average melt rate capacity of 3,600 tons per day.

The Refinery processes approximately 800,000 tons of raw cane sugar annually, producing packaged consumer sugar and liquid and bulk granulated industrial-use cane sugar. The sugar cane refining process includes the following steps: affination, in which residual molasses is removed from the sugar crystals with a heavy affination syrup, then separated from the syrup using a centrifuge; carbonation, clarification, and decolorization, in which diatomaceous earth, phosphoric acid, lime, and bone charcoal filters are used to filter, clarify, and decolor the sugar crystals. The resulting syrup is pumped through a pressure filter and evaporated by passing it through a multiple-effect evaporator, which crystallizes the sugar in vacuum pans that heat the liquid under partial vacuum. The crystallized sugar and the remaining syrup are mixed in a tank and the syrup separated from the sugar grains using a centrifuge. Finally, the centrifuged sugar is dried in a granulator, screened, and packaged. The Refinery 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 paragraph A, below. The neighboring Crockett Cogeneration facility provides steam used for heat in the sugar refining processes.

The Refinery typically operates on a 7-day operating cycle, with 5 days of operation followed by 2 days down. C&H Sugar ships both crystalline and liquid refined sugars by truck and rail.

A. Wastewater Treatment and Control

The Refinery discharges about 16 million gallons per day (MGD) of once-through cooling water and condensed vapor from evaporators and vacuum pans to Carquinez Strait at Discharge Point No. 001 without treatment. It also discharges approximately 0.79 MGD of secondary-treated process and sanitary wastewater to Carquinez Strait at Discharge Point No. 002, which the Refinery shares with the District. Both discharge points are deep water outfalls. The Refinery also has 10 stormwater outfalls.

1. Once-Through Cooling Water (Discharge Point No. 001)

In the refining process, three process operations create waste heat: (1) the multiple-effect evaporator; (2) the crystallizing vacuum pans; and (3) the sweetwater evaporators. Waste heat is removed with barometric condensers using once-through cooling water pumped from Carquinez Strait. The Refinery discharges once-through cooling water and condensed vapor (without treatment) through Discharge Point No. 001. The annual average discharge flow through Discharge Point No. 001 from 2013 through 2017 ranged from 12.3 to 14.0 MGD.

A December 2009 *Cooling Water Intake Study* describes the intake water system. Water withdrawn from Carquinez Strait enters the cooling water intake structure through a 10-foot wide opening with 0.5-inch vertical steel bars spaced 4 inches apart and extending from the bottom of the structure to above the water line. Water is filtered through a single traveling screen with 0.38-inch square mesh openings and an effective area at Mean Low Water (MLLW) of 111 square feet. The screen was installed in 1993. Water passes through the screen at a maximum velocity of 38 centimeters per second (cm/sec) at MLLW before reaching a 48-inch diameter pipe leading to the pump room. The traveling screen carries impinged organisms and debris to a sluice trough where they are washed off and returned to Carquinez Strait.

Approximately 16 MGD is withdrawn from the Carquinez Strait, depending on Refinery operations. The flow is reduced to between 0 and 1 MGD during two days of the seven-day cycle, when operations are normally shut down. During the previous order term, initiatives to replace the two system pumps and to increase awareness and management of the demand for once-through cooling water have reduced the average daily intake flow to approximately 15 to 16 MGD from a previous average of 22.5 MGD.

2. Wastewater Treatment Plant Effluent (Discharge Point No. 002)

Before C&H Sugar pumps its sugar refining process wastewater to the Joint Treatment Plant, it processes its char washings, scum filter aid slurries, refinery equipment wash water, railcar washings, truck washings, and contaminated stormwater from process areas through a primary wastewater treatment plant at the Refinery. The annual average flow for this wastewater is 0.45 MGD. Solids removed at the Refinery's primary wastewater treatment plant are dewatered on a belt filter and shipped offsite for use as a soil amendment.

Before the District sends municipal sewage from the community of Crockett to the Joint Treatment Plant for secondary treatment and disinfection, it comminutes and degrits it. The District hauls the grit to a Class III disposal site. Crockett is a small community with few industrial activities besides C&H Sugar. Its municipal sewage mainly consists of wastewater from residential and commercial sources and inflow and infiltration. 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.

The Joint Treatment Plant treats the primary-treated sugar refining wastewater and pretreated municipal wastewater using flow equalization, activated sludge aeration basins, clarification, chlorination, and dechlorination. Refinery and District flows combine at the Joint Treatment Plant in a surge basin that feeds three one-million-gallon capacity aeration basins. Two dissolved air flotation units clarify the wastewater from the aeration basins. Because Refinery process wastewater is typically high in carbohydrates and low in nutrients, C&H Sugar adds phosphoric acid and urea to enhance biological treatment. It disinfects the clarified wastewater using sodium hypochlorite and dechlorinates it with sodium bisulfite before discharge through a deep water outfall to the Carquinez Strait.

C&H Sugar uses belt presses to dewater waste biosolids from the dissolved air clarifiers and trucks the biosolids offsite for disposal. Wastewater removed from the belt presses is combined with washings, waste samples, drips, stormwater, and other process waters and returned to treatment process.

The District's average dry weather design flow to the Joint Treatment Plant is 0.3 MGD. During wet weather, the peak wet weather flow may increase to 3.3 MGD, which may be temporarily stored 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. For 2016, the annual average discharge through Discharge Point No. 002 was 0.79 MGD.

3. Stormwater (Discharge Point Nos. 003 through 016)

C&H Sugar routes stormwater from the Refinery site to Carquinez Strait through 10 outfalls (Discharge Point Nos. 003 through 016).

B. Discharge Points and Receiving Waters

C&H Sugar discharges once-through cooling water, wastewater treatment plant effluent, and stormwater from Discharge Point Nos. 001 through 016 to Carquinez Strait, a water of the United States. It discharges once-through cooling water through a submerged, multi-port diffuser (Discharge Point No. 001) about 155 feet from the Refinery at a depth of 48 feet below mean lower low water. The diffuser is 42-inches in diameter and 155-feet long and has 30 six-inch diameter ports, with two ports located along each side of the diffuser every 10-feet.

The Discharger discharges effluent from the Joint Treatment Plant through a submerged, multi-port diffuser (Discharge Point No. 002) about 2,000 feet west of Discharge Point No. 001 at a depth of 45-feet below mean lower low water. The diffuser is an 18-foot 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. The Discharger shares this outfall with Crockett Cogeneration LLP under a contractual arrangement, as described in NPDES Permit No. CA0029904.

C. Previous Requirements and Monitoring Data

The tables below present the previous order’s effluent limitations and representative monitoring data from the previous order term for Discharge Point Nos. 001 through 016:

Table F-2. Previous Effluent Limitations and Monitoring Data at Discharge Point No. 001

Parameter	Units	Effluent Limitations			Monitoring Data (1/2013 – 6/2017)
		Monthly Average	Weekly Average	Daily Maximum	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @20°C) (BOD ₅)	mg/L	---	---	---	62
	lbs/day	2,200	---	6,700	9,014
pH	standard units	6.0 – 9.0			6.4 – 8.9
Arsenic, Total Recoverable	µg/L	24	---	67	4.5
Copper, Total Recoverable	µg/L	54	---	120	19
Lead, Total Recoverable	µg/L	3.0	---	8.2	1.8
Nickel, Total Recoverable	µg/L	23	---	54	28
Selenium, Total Recoverable	µg/L	17	---	59	2.8
Zinc, Total Recoverable	µg/L	250	---	590	81
Cyanide, Total	µg/L	2.0	---	5.0	<3

Parameter	Units	Effluent Limitations			Monitoring Data (1/2013 – 6/2017)
		Monthly Average	Weekly Average	Daily Maximum	Highest Daily Discharge
Dioxin-TEQ	µg/L	1.4 x 10 ⁻⁸	---	2.8 x 10 ⁻⁸	2.06 x 10 ⁻⁸
Bis(2-Ethylhexyl)Phthalate	µg/L	54	---	110	1.4

Abbreviations:

mg/L = milligrams per liter
 lbs/day = pounds per day
 µg/L = micrograms per liter
 < = not detected

Table F-3. Previous Effluent Limitations and Monitoring Data at Discharge Point No. 002

Parameter	Units	Effluent Limitations				Monitoring Data (1/2013 – 6/2017)
		Monthly Average	Weekly Average	Daily Maximum	Instantaneous Maximum	Highest Daily Discharge
Biochemical Oxygen Demand (5-day @20°C) (BOD ₅)	mg/L	---	---	---	---	28
	lbs/day	730	---	2,000	---	207
Total Suspended Solids (TSS)	mg/L	---	---	---	---	115
	lbs/day	730	---	2,600	---	879
pH	standard units	6.0 – 9.0				6.1 – 8.6
Oil and Grease	mg/L	10	---	20	---	10
Total Residual Chlorine	mg/L	---	---	---	0.0	<0.01 ^[1]
Copper, Total Recoverable	µg/L	55	---	120	---	17
Lead, Total Recoverable	µg/L	23	---	67	---	8.2
Zinc, Total Recoverable	µg/L	300	---	600	---	80
Cyanide, Total	µg/L	19	---	46	---	10
Dioxin-TEQ	µg/L	1.4 x 10 ⁻⁸	---	2.8 x 10 ⁻⁸	---	<3.75 x 10 ⁻⁷
Chlorodibromomethane	µg/L	340	--	680	---	45
Dichlorobromomethane	µg/L	460	---	920	---	45
Bis(2-Ethylhexyl)Phthalate	µg/L	54	---	110	---	46
Dibenzo(a,h)Anthracene	µg/L	0.48	---	1.0	---	<0.1
Ammonia as N	mg/L	17	---	55	---	1.9
Total Coliform	MPN/100 mL	[2]				300
Enterococcus	MPN/100 mL	[3]				5.1
Acute Toxicity	% survival	[4]				100

Abbreviations:

mg/L = milligrams per liter

lbs/day = pounds per day
 µg/L = micrograms per liter
 MPN/100 ML = most probably number per 100 milliliters
 < = not detected

Footnotes:

- ¹ Reported as instantaneous maximum.
- ² Within each calendar month, the median concentration of total coliform bacteria in all discharge samples from Discharge Point No. 002 was not to exceed 240 MPN/100 mL. The daily maximum was not to exceed 10,000 MPN/100 mL.
- ³ The geometric mean enterococcus bacteria concentration of all samples of the discharge at Discharge Point No. 002 in a calendar month was not to exceed 35 colonies per 100 mL.
- ⁴ The limitations were an 11-sample median value of not less than 90 percent survival, and an 11-sample 90th percentile value of not less than 70 percent survival.

Table F-4. Previous Effluent Limitations and Monitoring Data at Discharge Point Nos. 003 to 016

Parameter	Units	Effluent Limitation	Reported Values
pH	standard units	6.0 – 9.0 (instantaneous)	6.6 – 8.4
Visible Oil	---	None observed (instantaneous)	None observed
Visible Color	---	None observed (instantaneous)	None observed

D. Compliance Summary

- 1. Treatment Plant.** During the previous order term, the Discharger violated its effluent limits as listed below:

Table F-5. Compliance Summary

Violation Date	Parameter	Unit	Effluent Limit	Reported Value
9/5/2013	Biochemical Oxygen Demand (5-day @20°C) at Discharge Point No. 001	lbs/day	6,700 Daily Maximum	9,014
10/8/2014	Mercury at Discharge Point No. 002	µg/L	0.12 Daily Maximum	0.19

Unit Abbreviations:

lbs/day = pounds per day
 µg/L = micrograms per liter

The Discharger was unable to determine the cause of these violations. As part of its investigation of the mercury violation, the Discharger replaced mercury-containing thermometers with non-mercury thermometers. To address these violations, the Regional Water Board issued a \$3,000 mandatory minimum penalty (Order No. R2-2016-1018).

- 2. Collection System.** The table below shows District’s sanitary sewer overflow (SSO) rates (total SSOs per 100 miles of collection system) for the last five years, the length and age of the collection system, and comparisons to other systems in the San Francisco Bay Region. The District’s SSO rate is 20 times the median of all San Francisco Bay Region collection systems and 5 times the median of other collection systems between 10 and 25 miles in length. The average age of the District’s collection system, 63 years, is greater than most other collection systems throughout the Region. SSOs that reach waters of the United States may violate Prohibition III.E of this Order.

Table F-6. Collection System and SSO Rates (SSO/100 miles)
 (Values based on CIWQS data analysis completed in November 2017) ^[1]

	Length (miles)	Average Age of Pipe (years)	Total SSO Rate				
			2012	2013	2014	2015	2016
Discharger	16	63	50	62	44	56	50
San Francisco Bay Region median of 16 comparable systems (10-25 miles)	17	43	19	14	11	11	10
San Francisco Bay Region median of all 133 systems	46	43	5.2	5.7	6.3	3.7	4.2

Footnote:

^[1] The State Water Board’s *Enrollee’s Guide to the SSO Database* defines “Total number of SSOs per 100 miles of Sewer” as “...the number of SSOs, for which the reporting enrollee is responsible, for every 100 miles of pipe or sewer lines in an enrollee’s sanitary sewer system. Due to the large variation in facility specific characteristics, this metric should only be viewed as a rough comparison of the operation and maintenance performance of enrollees and their sanitary sewer systems.”

The total volume of SSOs in 2016 was 2,257 gallons, of which 833 gallons reached surface waters. Most of these spills were due to blockages in lower laterals with small diameter feeder lines.

In August 2016, the District adopted an updated Sewer System Management Plan (SSMP) that indicates that the District will clean its sewer pipes at a frequency ranging from every two months to every five years. To evaluate the condition of the sewer pipes, the SSMP states that the District will conduct video inspections on a 10-year cycle. The SSMP set an annual goal for sewer repair/replacement at 1,622 Linear Feet (LF) of pipe annually, or 2 percent per year, through at least 2018 to address known defects in the sewer collection system. The District completed three projects and five emergency spot repairs in 2017, repairing or replacing sewers on 21 line segments with 1,716 LF of new pipe, or 2.12 percent, meeting its goal for 2017. As part of a planned 2018 SSMP audit, the District intends to recommend additional changes to the repair/replacement program to meet SSMP goals.

E. Planned Changes

No Facility changes are planned.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

A. Legal Authorities

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

B. California Environmental Quality Act

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act, Public Resources Code division 13, chapter 3 (commencing with § 21100). Provisions and requirements in this Order implementing State law only are further exempt from CEQA pursuant to the categorical exemption for existing facilities (Cal. Code Regs., tit. 40, § 15301).

C. State and Federal Regulations, Policies, and Plans

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

Table F-7. Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 through 016	Carquinez Strait	Industrial Service Supply (IND) Ocean, 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 (REC-1) Non-Contact Water Recreation (REC-2) Navigation (NAV)

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

3. 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 May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for inland surface waters and establishes specific limitations for thermal wastes (cooling water and industrial process water used for the purpose of transporting waste heat) and elevated

temperature wastes (liquid, solid, or gaseous material, including thermal waste discharged at a temperature higher than the natural temperature of receiving water).

The Thermal Plan establishes that elevated temperature waste discharges, either individually or combined with other discharges, are not to create a zone, defined by water temperature of more than 1 degree Fahrenheit above natural receiving water temperatures, which exceeds 25 percent of the cross sectional area of a main river channel at any point. In addition, no elevated temperature waste discharge is to cause a surface water temperature rise greater than 4 degrees Fahrenheit above the natural temperature of the receiving waters at any time or place. These requirements apply to Discharge Point No. 001. The Thermal Plan also establishes that elevated temperature waste discharges are not to exceed the natural receiving water temperature by more than 20 degrees Fahrenheit and that the maximum temperature of thermal waste discharges is not to exceed 86 degrees Fahrenheit. However, State Water Board Resolution No. 75-72, issued on July 17, 1975, and approved by U.S. EPA on September 2, 1975, states that discharges from Discharge Point Nos. 001 and 002 are exempt from these last two requirements.

- 4. National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority pollutants.
- 5. State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated for California through the NTR and the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives, and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
- 6. Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 require that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*, which is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the

antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. (See Fact Sheet section IV.D.2.)

- 7. Anti-Backsliding Requirements.** CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous order, with some exceptions in which limitations may be relaxed. (See Fact Sheet section IV.D.1.)
- 8. Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all applicable Endangered Species Act requirements.
- 9. Sludge and Biosolids.** U.S. EPA administers 40 C.F.R. part 503, Standards for the Use or Disposal of Sewage Sludge, which regulates the final use or disposal of sewage sludge generated during the treatment of domestic sewage in a municipal wastewater treatment facility. This Order does not authorize any act that violates those requirements. The Discharger is responsible for meeting all applicable requirements of 40 C.F.R. part 503.

D. Impaired Waters on CWA 303(d) List

In July 2015, U.S. EPA approved a revised list of impaired waters prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt total maximum daily loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources and are established to achieve the water quality standards for the impaired waters.

Carquinez Strait is 303(d) listed as impaired by chlordane, DDT, dieldrin, dioxin compounds, invasive species, furan compounds, mercury, PCBs, dioxin-like PCBs, and selenium. On February 12, 2008, U.S. EPA approved a TMDL for mercury in San Francisco Bay. On March 29, 2010, U.S. EPA approved a TMDL for PCBs in San Francisco Bay. The mercury and PCBs TMDLs apply to this discharge and are implemented through NPDES Permit No. CA0038849. 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 limits 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 IV.C.3, the discharge is not a significant source of chlordane, DDT, or dieldrin because these pollutants have not been detected in the discharge. The discharge

is also not a source of invasive species because it is disinfected. This Order contains dioxin-TEQ effluent limitations to ensure that dioxins and furans are kept below water quality objectives.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

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

A. Discharge Prohibitions

- 1. Discharge Prohibition III.A (No discharge at location or in manner different than 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.
- 2. Discharge Prohibition III.B (No discharge without initial dilution of at least 10:1):** 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 one or more water quality-based effluent limitations based on information regarding the dilution achieved by the Discharger's outfalls. This prohibition is necessary to ensure that this Order's effluent limitations remain protective of water quality.
- 3. Discharge Prohibition III.C (No bypass):** This prohibition is based on 40 C.F.R. section 122.41(m) (see Attachment D section I.G).
- 4. Discharge Prohibition III.D (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.
- 5. Discharge Prohibition III.E (No sanitary sewer overflows):** Basin Plan Table 4-1, Discharge Prohibition 15, and the CWA prohibit the discharge of wastewater to surface waters, except as authorized under an NPDES permit. Publicly-owned treatment works must achieve secondary treatment at a minimum and any more stringent limitations necessary to meet water quality standards (33 U.S.C. § 1311[b][1][B and C]). A sanitary sewer overflow that results in the discharge of raw sewage or wastewater not meeting this Order's effluent

limitations to waters of the United States is therefore prohibited under the Basin Plan and the CWA.

B. Basin Plan Discharge Prohibition 1

This Order permits discharge of stormwater from Discharge Point Nos. 003 through 016 without an initial dilution of at least 10:1. Although Basin Plan Discharge Prohibition 1 prohibits discharges having characteristics of particular concern that do not receive a minimum 10:1 initial dilution, the Basin Plan further indicates that the prohibition is to address discharges of undiluted wastes or abnormal discharges caused by the malfunction or upset of a treatment process. Since stormwater discharges do not contain process wastewaters and are not subject to upset, the prohibition does not apply.

C. Technology-Based Effluent Limitations

1. Scope and Authority

CWA section 301(b) and 40 C.F.R. section 122.44 require that permits include technology-based effluent limitations based on several levels of controls:

- **Best practicable treatment control technology (BPT)** represents the average of the best existing performance by well-operated facilities within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- **Best available technology economically achievable (BAT)** represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category or subcategory. BAT standards apply to toxic and non-conventional pollutants.
- **Best conventional pollutant 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. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

Where U.S. EPA has not yet developed technology-based standards of performance (effluent limitation guidelines) for a particular industry or a particular pollutant, CWA section 402(a)(1) and 40 C.F.R. section 125.3 authorize the use of best professional judgment to derive technology-based effluent limits on a case-by-case basis. When best professional judgment is used, the permit must reflect specific factors outlined at 40 C.F.R. section 125.3.

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.

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:

- a. 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 biochemical oxygen demand (BOD₅) limitation is determined by adding the BOD₅ attributed to the barometric condenser cooling water to the amount of BOD₅ attributed to the process water. The Total Suspended Solids (TSS) limitation is the amount of TSS attributed to the treated process water.

Table F-8. Technology-Based Requirements of 40 C.F.R. section 409.22(a)

Parameter	Monthly Average	Daily Maximum
Biochemical Oxygen Demand (BOD ₅) (lbs/ton) ^[1]	0.86	2.38
Total Suspended Solids (TSS) ^[1]	0.18	0.54
pH	6.0 – 9.0 standard units	

Footnote:

¹ Pounds BOD₅ or TSS per ton of melt (raw sugar contained within aqueous solution at the beginning of the process for production of refined cane sugar).

- b. 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 (for example, the cooling water from Discharge Point No. 001) is required to achieve the following net limitations.

Table F-9. Technology-Based Requirements of 40 C.F.R. section 409.22(b)

Parameter	Monthly Average	Daily Maximum
Biochemical Oxygen Demand (BOD ₅) (lbs/ton) ^[1]	0.68	2.04

Footnote:

¹ Pounds BOD₅ per ton of melt (raw sugar contained within aqueous solution at the beginning of the process for production of refined cane sugar).

- c. Process Water Only.** To derive technology-based standards for process water only, the standards in Table F-9 are subtracted from those in Table F-8, as shown in Table F-10, based on Best Professional Judgment.

Table F-10. Technology-Based Requirements for Process Wastewater

Parameter	Monthly Average	Daily Maximum
Biochemical Oxygen Demand (BOD ₅) (lbs/ton) ^[1]	0.18	0.34
Total Suspended Solids (TSS) ^[1]	0.18	0.54
pH	6.0 – 9.0 standard units	

Footnote:

¹ Pounds BOD₅ or TSS per ton of melt (raw sugar contained within aqueous solution at the beginning of the process for production of refined cane sugar).

3. Technology-Based Effluent Limitations

a. Discharge Point No. 001. The technology-based standards described above require the following effluent limitations for Discharge Point No. 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):

$$\begin{aligned} \text{BOD}_5 \text{ maximum daily limit (lbs/day)} &= 2.04 \text{ lbs/ton} \times 3,300 \text{ tons/day} \\ &= 6,700 \text{ (lbs/day)} \end{aligned}$$

$$\begin{aligned} \text{BOD}_5 \text{ monthly average limit (lbs/day)} &= 0.68 \text{ lbs/ton} \times 3,300 \text{ tons/day} \\ &= 2,200 \text{ (lbs/day)} \end{aligned}$$

Table F-11. Technology-Based Limitations for Discharge Point No. 001

Parameter	Monthly Average ^[1]	Daily Maximum ^[1]
Biochemical Oxygen Demand (BOD ₅) (lbs/ton)	2,200	6,700
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.

b. Discharge Point No. 002. Discharge Point No. 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 BOD₅ and TSS effluent limitations for Discharge Point No. 002, which discharges process wastewater only, as indicated in Table F-10. In addition, Basin Plan Table 4-2 specifies technology-based effluent limits for wastewater treatment plants based on the secondary treatment standards.

i. BOD₅ and TSS. The BOD₅ and TSS mass load effluent limits are based on Best Professional Judgment pursuant to 40 C.F.R. 125.3(c)(2). They are the sum of the limits for the process wastewater and the limits 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-10.

For municipal wastewater, the limits are based on the secondary treatment standards of 40 C.F.R. section 133.102, which call for weekly average BOD₅ and TSS limits of 45 mg/L and monthly average BOD₅ and TSS limits of 30 mg/L. The weekly limits of 45 mg/L were converted to somewhat higher daily limits of 60 mg/L to reflect the different duration over which the limits are applied. The District’s maximum daily municipal wastewater flow of 2.36 MGD was used to calculate the daily limits, and its long-term average flow of 0.79 MGD was used to calculate the monthly limits. The calculations use a conversion factor of 8.34 L-lb/gallon-kg (i.e., 3.7854 L/gallon x 2.36 lbs/kg):

$$\begin{aligned} \text{BOD}_5 \text{ maximum daily limit (lbs/day)} &= \\ &= (0.34 \text{ lbs/ton} \times 3,300 \text{ tons/day}) + (2.36 \text{ MGD} \times 60 \text{ mg/L} \times 8.34 \text{ L-lb/gal-kg}) \\ &= 2,300 \text{ (lbs/day)} \end{aligned}$$

$$\begin{aligned} \text{BOD}_5 \text{ monthly average limit (lbs/day)} &= \\ &= (0.18 \text{ lbs/ton} \times 3,300 \text{ tons/day}) + (0.79 \text{ MGD} \times 30 \text{ mg/L} \times 8.34 \text{ L-lb/gal-kg}) \\ &= 790 \text{ (lbs/day)} \end{aligned}$$

$$\begin{aligned} \text{TSS maximum daily limit (lbs/day)} &= \\ &= (0.54 \text{ lbs/ton} \times 3,300 \text{ tons/day}) + (2.36 \text{ MGD} \times 60 \text{ mg/L} \times 8.34 \text{ L-lb/gal-kg}) \\ &= 3,000 \text{ (lbs/day)} \end{aligned}$$

$$\begin{aligned} \text{TSS monthly average limit (lbs/day)} &= \\ &= (0.18 \text{ lbs/ton} \times 3,300 \text{ tons/day}) + (0.79 \text{ MGD} \times 30 \text{ mg/L} \times 8.34 \text{ L-lb/gal-kg}) \\ &= 790 \text{ (lbs/day)} \end{aligned}$$

These newly calculated limits are higher than those in the previous order. Performance data collected between January 2013 and June 2017 show that the Discharger can readily comply with the previous order's limits. The maximum BOD₅ load was 207 lbs/day, and the maximum monthly average was 83 lbs/day. The maximum TSS load was 879 lbs/day, and the maximum monthly average was 202 lbs/day. To avoid backsliding, therefore, this Order retains the previous order limits.

These limits 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-12. Factors Considered Pursuant to 40 C.F.R. section 125.3(d)

Factors	Considerations
Cost relative to pollutant reduction benefits	The cost of imposing these limits is reasonable given that the Discharger can comply without modifying its existing process.
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.
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.

ii. Oil and Grease. The oil and grease effluent limitations are based on Basin Plan Table 4-2.

- iii. **pH.** The pH effluent limitations are based on Basin Plan Table 4-2.
 - iv. **Chlorine Residual.** The chlorine residual effluent limitation is based on Basin Plan Table 4-2. The Monitoring and Reporting Program (Attachment E) provides an allowance for determining false positives when using continuous devices based on the fact that continuous instruments occasionally have anomalous spikes, and it is chemically improbable to have free chlorine present in the presence of sodium bisulfite.
 - v. **Total Coliform Bacteria.** The total coliform bacteria effluent limitation is based on Basin Plan Table 4-2A to protect receiving waters with the shellfish harvesting beneficial use.
 - vi. **Enterococcus.** The enterococcus bacteria effluent limitation is based on Basin Plan Table 4-2A to protect receiving waters with the water contact recreation beneficial use.
- c. **Discharge Point Nos. 003 through 016.** The pH limitations for stormwater are based on 40 C.F.R. section 409.22 and are consistent with the previous order.

D. Water Quality-Based Effluent Limitations

1. Scope and Authority

This Order contains water quality-based effluent limitations (WQBELs) that protect beneficial uses. CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than federal technology-based requirements where necessary to achieve applicable water quality standards. According to 40 C.F.R. section 122.44(d)(1)(i), permits must include effluent limitations for all pollutants that are or may be discharged at levels that have a reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective, WQBELs must be established using (1) U.S. EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting a narrative criterion, supplemented with relevant information (40 C.F.R. § 122.44[d][1][vi]). The process for determining reasonable potential and calculating WQBELs is intended to achieve applicable water quality objectives and criteria and to protect designated uses of receiving waters as specified in the Basin Plan.

2. Beneficial Uses and Water Quality Criteria and Objectives

Fact Sheet section III.C.1 (Table F-5), identifies the receiving waters for facility discharges and their beneficial uses. Water quality criteria and objectives to protect these beneficial uses are described below:

a. Basin Plan Objectives. The Basin Plan specifies numerous water quality objectives, including numeric objectives for 10 priority pollutants and un-ionized ammonia, and narrative objectives for toxicity and bioaccumulation.

- i. Ammonia.** Basin Plan section 3.3.20 contains water quality objectives (WQOs) for un-ionized ammonia of 0.025 mg/L as an annual median and 0.16 mg/L as a maximum for Central San Francisco Bay and upstream. 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 WQOs into total ammonia criteria, pH, salinity, and temperature data collected through the Regional Monitoring Program (RMP) at the Yerba Buena monitoring station (BC10) between 1993 and 2001 were used. The un-ionized fraction of the total ammonia was calculated using the following equations:

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

Where:

$$pK = 0.09018 + 2729.92/T$$

$T = \text{temperature in Kelvin}$

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

Where:

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

$I = \text{the molal ionic strength of saltwater} = 19.9273*(S)/(1000 - 1.005109*S)$
 $S = \text{salinity (parts per thousand)}$
 $T = \text{temperature in Kelvin}$
 $P = \text{pressure (one atmosphere)}$

The appropriate equation was used depending on whether the salinity was less than 1 ppt or greater than 10 ppt. For waters of intermediate salinity, the equation resulting in a higher un-ionized ammonia fraction was used.

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 WQOs to total recoverable metal WQOs (U.S. EPA, 1996, *The Metals Translator: Guidance for Calculating a Total Recoverable Limit from a Dissolved Criterion*, EPA Publication 823-B96-007). The equivalent total ammonia acute and chronic WQO are 4.9 mg/L and 1.3 mg/L.

- ii. Dioxin-TEQ.** The narrative bioaccumulation objective (Basin Plan section 3.3.2) states, "Many pollutants can accumulate on particulates, in sediments, or

bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.”

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

When the CTR was promulgated, U.S. EPA stated its support of the regulation of dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs). U.S. EPA stated, “For California waters, if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric WQBEL for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme” (Fed. Reg. Vol. 65, No. 97, pages 31695-31696, May 18, 2000). This Order uses a TEQ scheme based on a set of toxicity equivalency factors (TEFs) the World Health Organization developed in 1998, 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 1998 World Health Organization scheme includes TEFs for dioxin-like PCBs, they are not included in this Order’s TEQ scheme. The CTR has established a specific water quality criterion for PCBs, and dioxin-like PCBs are included in the analysis of total PCBs.

The CTR establishes a numeric water quality objective for 2,3,7,8-TCDD of 1.4×10^{-8} µg/L for the protection of human health when aquatic organisms are consumed. The CTR criterion is used as a criterion for dioxin-TEQ because dioxin TEQ represents a toxicity weighted concentration equivalent to 2,3,7,8-TCDD, thus translating the narrative bioaccumulation objective into a numeric criterion.

- iii. Chronic Toxicity.** The narrative toxicity objective (Basin Plan section 3.3.18) states, “All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms... . There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community. Attainment of this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, or toxicity tests..., or other methods selected by the Water Board.”

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

- b. CTR Criteria.** The CTR specifies numeric aquatic life and human health criteria for numerous priority pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries. Some human health criteria are for consumption of "water and organisms" and others are for consumption of "organisms only." The criteria applicable to "organisms only" apply to the Carquinez Strait because they are not drinking water sources.
- c. NTR Criteria.** The NTR establishes numeric aquatic life and human health criteria for a number of toxic pollutants for San Francisco Bay waters upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. The NTR criteria apply to the Carquinez Strait.
- d. Thermal Plan Objectives.** The Thermal Plan contains narrative and numeric water quality objectives as described in Fact Sheet section III.C.3.
- e. Sediment Quality Objectives.** The *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* contains a narrative water quality objective: "Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in bays and estuaries of California." This objective is to be implemented by integrating three lines of evidence: sediment toxicity, benthic community condition, and sediment chemistry. The policy requires that if the Regional Water Board determines that a discharge has reasonable potential to cause or contribute to an exceedance of this objective, it is to impose the objective as a receiving water limit.
- f. Receiving Water Salinity.** Basin Plan section 4.6.2 (like the CTR and NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water are to be considered in determining applicable water quality objectives. Freshwater criteria apply to discharges to waters with salinities equal to or less than one part per thousand (ppt) at least 95 percent of the time. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to waters with salinities between these two categories, or tidally-influenced freshwaters that support estuarine beneficial uses, the water quality objectives are the lower of the salt or freshwater objectives (the latter calculated based on ambient hardness) for each substance.

The receiving water for Discharge Point Nos. 001 and 002, Carquinez Strait, is estuarine based on salinity data generated through the 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. During that period, the receiving water’s maximum salinity was 29 ppt, and its average salinity was 16.3 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.

- g. 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.
- h. Site-Specific Metals Translators.** Effluent limitations for metals must be expressed as total recoverable metal (40 C.F.R. § 122.45[c]). Since the water quality objectives for metals are typically expressed as dissolved metal, translators must be used to convert metals concentrations from dissolved to total recoverable and vice versa. The CTR contains default translators; however, site-specific conditions, such as water temperature, pH, 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 establishes site-specific copper translators. The Clean Estuary Partnership’s *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* (March 2005) contains site-specific nickel translators. These translators are listed in the table below:

Table F-13. Site-Specific Translators

Parameter	Site Specific Translators	
	Acute	Chronic
Copper	0.66	0.38
Nickel	0.57	0.27

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

Assessing whether a pollutant has reasonable potential to exceed a water quality objective is the fundamental step in determining whether a WQBEL is required. The reasonable potential analysis below applies to the discharges at Discharge Point Nos. 001 and 002. Discharge Point Nos. 003 through 016 discharge stormwater and are subject to narrative WQBELs as described in section IV.A.3 of the Order. These narrative requirements include implementation of best management practices in accordance with 40 C.F.R. section 122.44(k).

- a. Available Information.** The reasonable potential analysis for this Order is based on effluent monitoring data the Discharger collected from January 2013 through June 2017 and ambient background data summarized in the *San Francisco Bay California Toxics Rule Priority Pollutant Ambient Water Monitoring Report* (February 2017), which includes data the RMP collected at the Yerba Buena sampling station (BC10) from March 1993 through August 2015, supplemented by additional Bay Area Clean Water Agencies data from *San Francisco Bay Ambient Water Monitoring Interim Report* (2003) and *Ambient Water Monitoring: Final CTR Sampling Update* (2004).

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

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

- b. Methodology.** SIP section 1.3 sets forth the methodology used for this Order to assess whether a priority pollutant has reasonable potential to exceed a water quality objective. For this Order, the same method is used as guidance to assess dioxin-TEQ and ammonia. The analysis begins with identifying the maximum effluent concentration (MEC) observed for each pollutant based on available effluent concentration data and the ambient background concentration (B). SIP section 1.4.3 states that ambient background concentrations are either the maximum ambient concentration observed or, for water quality objectives intended to protect human health, the arithmetic mean of observed concentrations. There are three triggers in determining reasonable potential:
- i. Trigger 1** is activated if the maximum effluent concentration is greater than or equal to the lowest applicable water quality objective ($MEC \geq$ water quality objective).
 - ii. Trigger 2** is activated if the ambient background concentration observed in the receiving water is greater than the lowest applicable water quality objective ($B >$ water quality objective) *and* the pollutant is detected in any effluent sample.

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

c. Discharge Point No. 001

i. **Priority Pollutants, Dioxin-TEQ, and Ammonia.** The maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in this analysis are presented in the following table, along with the reasonable potential analysis results (yes or no) for each pollutant.

Table F-14. Reasonable Potential Analysis – Discharge Point No. 001

CTR No.	Priority Pollutants	C or Governing criterion or objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Results ^[3]
1	Antimony	4,300	0.18	1.8	No
2	Arsenic	36	4.5	2.5	No
3	Beryllium	No Criteria	<0.1	0.22	U
4	Cadmium	3.03	0.12	0.13	No
5a	Chromium (III)	257	0.15	4.4	No
5b	Chromium (VI)	11	5	4.4	No
6	Copper	11.7	19	2.5	Yes
7	Lead	4.4	1.8	0.8	No
8	Mercury (303(d)-listed) ^[4]	0.025	---	---	^[4]
9	Nickel	30	28	3.7	No
10	Selenium (303(d)-listed) ^[4]	5.0	2.8	0.39	^[4]
11	Silver	2.2	0.14	0.052	No
12	Thallium	6.3	<0.1	0.023	No
13	Zinc	86	81	5.1	No
14	Cyanide	2.9	<3	0.52	No
15	Asbestos	No Criteria	<2.23	Unavailable	U
16	2,3,7,8-TCDD (303(d)-listed)	1.4 x 10 ⁻⁸	<3.75 x 10 ⁻⁷	2.7 x 10 ⁻⁸	No ^[5]
17	Acrolein	780	<1.7	<0.5	No
18	Acrylonitrile	0.66	<0.69	0.03	No
19	Benzene	71	<0.18	<0.05	No
20	Bromoform	360	0.3	<0.15	No
21	Carbon Tetrachloride	4.4	<0.16	0.06	No
22	Chlorobenzene	21,000	<0.18	<0.18	No
23	Chlorodibromomethane	34	<0.17	<0.05	No
24	Chloroethane	No Criteria	<0.38	<0.38	U
25	2-Chloroethylvinyl ether	No Criteria	<0.28	<0.28	U
26	Chloroform	No Criteria	0.2	<0.19	U
27	Dichlorobromomethane	46	<0.16	<0.05	No
28	1,1-Dichloroethane	No Criteria	<0.19	<0.05	U
29	1,2-Dichloroethane	99	<0.18	0.04	No

CTR No.	Priority Pollutants	C or Governing criterion or objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Results ^[3]
30	1,1-Dichloroethylene	3.2	<0.21	<0.21	No
31	1,2-Dichloropropane	39	<0.18	<0.05	No
32	1,3-Dichloropropylene	1,700	<0.16	<0.16	No
33	Ethylbenzene	29,000	<0.26	<0.26	No
34	Methyl Bromide	4,000	<0.2	<0.30	No
35	Methyl Chloride	No Criteria	<0.2	<0.30	U
36	Methylene Chloride	1,600	<0.2	22	No
37	1,1,2,2-Tetrachloroethane	11	<0.1	<0.05	No
38	Tetrachloroethylene	8.85	<0.19	<0.05	No
39	Toluene	200,000	<0.19	<0.19	No
40	1,2-Trans-Dichloroethylene	140,000	<0.2	<0.22	No
41	1,1,1-Trichloroethane	No Criteria	<0.19	<0.19	U
42	1,1,2-Trichloroethane	42	<0.16	<0.05	No
43	Trichloroethylene	81	<0.20	<0.20	No
44	Vinyl Chloride	525	<0.2	<0.25	No
45	2-Chlorophenol	400	<0.4	<0.7	No
46	2,4-Dichlorophenol	790	<0.4	<0.9	No
47	2,4-Dimethylphenol	2,300	<0.4	<0.8	No
48	2-Methyl- 4,6-Dinitrophenol	765	<0.3	<0.6	No
49	2,4-Dinitrophenol	14,000	<0.2	<0.7	No
50	2-Nitrophenol	No Criteria	<0.4	<0.8	U
51	4-Nitrophenol	No Criteria	<0.5	<0.5	U
52	3-Methyl 4-Chlorophenol	No Criteria	0.98	<0.80	U
53	Pentachlorophenol	7.9	<0.4	<0.60	No
54	Phenol	4,600,000	<0.3	<0.50	No
55	2,4,6-Trichlorophenol	6.5	<0.5	<0.97	No
56	Acenaphthene	2,700	<0.01	0.002	No
57	Acenaphthylene	No Criteria	<0.02	0.001	U
58	Anthracene	110,000	<0.01	0.001	No
59	Benzidine	0.00054	<5	<0.0003	U
60	Benzo(a)Anthracene	0.049	0.06	0.005	No
61	Benzo(a)Pyrene	0.049	<0.01	0.002	No
62	Benzo(b)Fluoranthene	0.049	<0.02	0.005	No
63	Benzo(ghi)Perylene	No Criteria	<0.02	0.003	U
64	Benzo(k)Fluoranthene	0.049	<0.01	0.0020	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	<0.5	<0.3	U
66	Bis(2-Chloroethyl)Ether	1.4	<0.4	<0.3	No
67	Bis(2-Chloroisopropyl)Ether	170,000	<0.4	<0.6	No
68	Bis(2-Ethylhexyl)Phthalate	5.9	<3	<0.5	No
69	4-Bromophenyl Phenyl Ether	No Criteria	<0.5	<0.23	U
70	Butylbenzyl Phthalate	5,200	<0.5	<0.5	No

CTR No.	Priority Pollutants	C or Governing criterion or objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Results ^[3]
71	2-Chloronaphthalene	4,300	<0.4	<0.3	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	<0.5	<0.3	U
73	Chrysene	0.049	0.05	0.002	No
74	Dibenzo(a,h)Anthracene	0.049	<0.02	0.001	No
75	1,2-Dichlorobenzene	17,000	<0.27	<0.27	No
76	1,3-Dichlorobenzene	2,600	<0.18	<0.18	No
77	1,4-Dichlorobenzene	2,600	<0.18	<0.18	No
78	3,3 Dichlorobenzidine	0.077	<5	<0.0002	No
79	Diethyl Phthalate	120,000	<0.5	<0.2	No
80	Dimethyl Phthalate	2,900,000	<0.5	<0.2	No
81	Di-n-Butyl Phthalate	12,000	<0.4	<0.5	No
82	2,4-Dinitrotoluene	9.1	<0.4	<0.27	No
83	2,6-Dinitrotoluene	No Criteria	<0.4	<0.29	U
84	Di-n-Octyl Phthalate	No Criteria	<0.4	<0.38	U
85	1,2-Diphenylhydrazine	0.54	<0.5	0.004	No
86	Fluoranthene	370	0.05	0.011	No
87	Fluorene	14,000	<0.01	0.002	No
88	Hexachlorobenzene	0.00077	<0.4	0.00002	No
89	Hexachlorobutadiene	50	<0.4	<0.3	No
90	Hexachlorocyclopentadiene	17,000	<0.3	<0.3	No
91	Hexachloroethane	8.9	<0.4	<0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.049	<0.02	0.0040	No
93	Isophorone	600	<0.5	<0.3	No
94	Naphthalene	No Criteria	<0.02	0.009	U
95	Nitrobenzene	1,900	<0.5	<0.25	No
96	N-Nitrosodimethylamine	8.1	<0.3	<0.3	No
97	N-Nitrosodi-n-Propylamine	1.4	<0.5	<0.0002	No
98	N-Nitrosodiphenylamine	16	<0.3	<0.001	No
99	Phenanthrene	No Criteria	<0.01	0.006	U
100	Pyrene	11,000	0.07	0.019	No
101	1,2,4-Trichlorobenzene	No Criteria	<0.6	<0.3	U
102	Aldrin	0.00014	<0.004	<0.0000085	No
103	Alpha-BHC	0.013	<0.005	0.00050	No
104	Beta-BHC	0.046	<0.004	0.00040	No
105	Gamma-BHC	0.063	<0.004	0.0010	No
106	Delta-BHC	No Criteria	<0.004	0.00010	U
107	Chlordane (303(d)-listed)	0.00059	<0.02	0.00014	No
108	4,4'-DDT (303(d)-listed)	0.00059	<0.004	0.00020	No
109	4,4'-DDE (linked to DDT)	0.00059	<0.003	0.0010	No
110	4,4'-DDD	0.00084	<0.004	0.00030	No
111	Dieldrin (303(d)-listed)	0.00014	<0.004	0.00030	No

CTR No.	Priority Pollutants	C or Governing criterion or objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Results ^[3]
112	Alpha-Endosulfan	0.0087	<0.004	0.00010	No
113	Beta-Endosulfan	0.0087	<0.005	0.00010	No
114	Endosulfan Sulfate	240	<0.005	0.00010	No
115	Endrin	0.0023	<0.005	0.00004	No
116	Endrin Aldehyde	0.81	<0.005	<0.005	U
117	Heptachlor	0.00021	<0.004	0.000020	No
118	Heptachlor Epoxide	0.00011	<0.004	0.00010	No
119-125	PCBs sum (303(d)-listed)	0.00017	<0.7	---	[4]
126	Toxaphene	0.0002	<0.3	<8.2 x 10 ⁻⁷	U
	Ammonia	NA	NA	NA	U

Abbreviations:

- MEC = maximum effluent concentration
- B = background concentration
- C = water quality criterion or objective
- DL = minimum detection level
- RPA = reasonable potential analysis
- µg/L = micrograms per liter

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 detection level (DL).
- 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 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. The North San Francisco Bay selenium TMDL does not apply to once-through cooling water discharges because they do not contribute a net load to North San Francisco Bay.
- ⁵ Effluent from Discharge Point No. 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 No. 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.

ii. Acute and Chronic Toxicity. There is no reasonable potential for the discharge from Discharge Point No. 001 to cause or contribute to an exceedance of the narrative acute and chronic toxicity water quality objectives (Basin Plan § 3.3.18). 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.

iii. pH. Over the previous order term, pH at Discharge Point No. 001 ranged between 6.4 and 8.9, exceeding the pH water quality objectives of 6.5 to 8.5 (see Basin Plan § 3.3.9). However, this Order does not establish pH WQBELs because the technology-based pH limits of 6.0 and 9.0 (see Fact Sheet section IV C.2.a) are as

stringent as the pH effluent limits set forth in Basin Plan Table 4-2 for deep water discharges from all treatment facilities.

iv. Temperature. Once-through cooling water data collected over the previous order term recorded a maximum temperature of 108 degrees Fahrenheit. Using the average summer receiving water data from Davis Point (BD40) and Napa River (BD50) RMP monitoring stations of 68 degrees Fahrenheit and a conservative dilution of 10:1, the maximum projected temperature increase was 4.0 degrees Fahrenheit. Therefore, there is no reasonable potential for the discharge to cause or contribute to an exceedance of the limitations described in Fact Sheet section III.C.3. This analysis supports findings in the December 2009 *Cooling Water Intake Report* that the Discharge Point No. 001 diffuser design is sufficient to prevent a greater-than-4-degree Fahrenheit rise at the Carquinez Strait surface temperature.

d. Discharge Point No. 002

i. Priority Pollutants, Dioxin-TEQ, and Total Ammonia. The maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in this analysis are presented in the following table, along with the reasonable potential analysis results (yes or no) for each pollutant. Basin Plan section 7.2.1.2 requires copper WQBELs for all individual NPDES permits for municipal and industrial wastewater treatment facilities that discharge to San Francisco Bay.

Table F-15. Reasonable Potential Analysis – Discharge Point No. 002

CTR No.	Priority Pollutants	C or Governing criterion or objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Results ^[3]
1	Antimony	4,300	0.31	1.8	No
2	Arsenic	36	0.59	2.5	No
3	Beryllium	No Criteria	<0.1	0.22	U
4	Cadmium	3.03	0.09	0.13	No
5a	Chromium (III)	257	0.37	4.4	No
5b	Chromium (VI)	11	0.9	4.4	No
6	Copper	11.7	17	2.5	Yes
7	Lead	4.4	8.2	0.8	Yes
8	Mercury (303(d)-listed) ^[4]	0.025	---	---	^[4]
9	Nickel	30	1.3	3.7	No
10	Selenium (303(d)-listed) ^[4]	5.0	0.44	0.39	^[4]
11	Silver	2.2	<0.1	0.052	No
12	Thallium	6.3	<0.1	0.023	No
13	Zinc	86	80	5.1	No
14	Cyanide	2.9	10	0.52	Yes
15	Asbestos	No Criteria	Unavailable	Unavailable	U

CTR No.	Priority Pollutants	C or Governing criterion or objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Results ^[3]
16	2,3,7,8-TCDD (303(d)-listed)	0.000000014	<4.6 x 10 ⁻⁷	2.7 x 10 ⁻⁸	No
16-TEQ	Dioxin TEQ (303d-listed)	1.4 X 10⁻⁸	1.2 x 10⁻¹¹	4.1 x 10⁻⁸	Yes
17	Acrolein	780	<1.7	<0.5	No
18	Acrylonitrile	0.66	<0.69	0.03	No
19	Benzene	71	<0.18	<0.05	No
20	Bromoform	360	14	<0.15	No
21	Carbon Tetrachloride	4.4	<0.16	0.06	No
22	Chlorobenzene	21,000	<0.18	<0.18	No
23	Chlorodibromomethane	34	45	<0.05	Yes
24	Chloroethane	No Criteria	<0.38	<0.38	U
25	2-Chloroethylvinyl ether	No Criteria	<0.28	<0.28	U
26	Chloroform	No Criteria	170	<0.19	U
27	Dichlorobromomethane	46	45	<0.05	No
28	1,1-Dichloroethane	No Criteria	<0.19	<0.05	U
29	1,2-Dichloroethane	99	<0.18	0.04	No
30	1,1-Dichloroethylene	3.2	<0.21	<0.21	No
31	1,2-Dichloropropane	39	<0.18	<0.05	No
32	1,3-Dichloropropylene	1,700	<0.16	<0.16	No
33	Ethylbenzene	29,000	<0.26	<0.26	No
34	Methyl Bromide	4,000	<0.2	<0.30	No
35	Methyl Chloride	No Criteria	<0.2	<0.30	U
36	Methylene Chloride	1,600	<0.2	22	No
37	1,1,2,2-Tetrachloroethane	11	<0.1	<0.05	No
38	Tetrachloroethylene	8.85	<0.19	<0.05	No
39	Toluene	200,000	<0.19	<0.19	No
40	1,2-Trans-Dichloroethylene	140,000	<0.2	<0.22	No
41	1,1,1-Trichloroethane	No Criteria	<0.19	<0.19	U
42	1,1,2-Trichloroethane	42	<0.16	<0.05	No
43	Trichloroethylene	81	<0.2	<0.20	No
44	Vinyl Chloride	525	<0.2	<0.25	No
45	2-Chlorophenol	400	<0.4	<0.7	No
46	2,4-Dichlorophenol	790	<0.4	<0.9	No
47	2,4-Dimethylphenol	2,300	<0.4	<0.8	No
48	2-Methyl- 4,6-Dinitrophenol	765	<0.3	<0.6	No
49	2,4-Dinitrophenol	14,000	<0.2	<0.7	No
50	2-Nitrophenol	No Criteria	<0.4	<0.8	U
51	4-Nitrophenol	No Criteria	<0.5	<0.5	U
52	3-Methyl 4-Chlorophenol	No Criteria	<0.5	<0.80	U
53	Pentachlorophenol	7.9	<0.4	<0.60	No
54	Phenol	4,600,000	<0.3	<0.50	No

CTR No.	Priority Pollutants	C or Governing criterion or objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Results ^[3]
55	2,4,6-Trichlorophenol	6.5	<0.5	<0.97	No
56	Acenaphthene	2,700	<0.01	0.002	No
57	Acenaphthylene	No Criteria	<0.02	0.001	U
58	Anthracene	110,000	<0.01	0.001	No
59	Benzidine	0.00054	<5	<0.0003	U
60	Benzo(a)Anthracene	0.049	<0.02	0.005	No
61	Benzo(a)Pyrene	0.049	<0.01	0.002	No
62	Benzo(b)Fluoranthene	0.049	<0.02	0.005	No
63	Benzo(ghi)Perylene	No Criteria	<0.02	0.003	U
64	Benzo(k)Fluoranthene	0.049	<0.01	0.0020	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	<0.5	<0.3	U
66	Bis(2-Chloroethyl)Ether	1.4	<0.4	<0.3	No
67	Bis(2-Chloroisopropyl)Ether	170,000	<0.4	<0.6	No
68	Bis(2-Ethylhexyl)Phthalate	5.9	46	<0.5	Yes
69	4-Bromophenyl Phenyl Ether	No Criteria	<0.5	<0.23	U
70	Butylbenzyl Phthalate	5,200	<0.5	<0.5	No
71	2-Chloronaphthalene	4,300	<0.4	<0.3	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	<0.5	<0.3	U
73	Chrysene	0.049	<0.02	0.002	No
74	Dibenzo(a,h)Anthracene	0.049	<0.02	0.001	No
75	1,2-Dichlorobenzene	17,000	<0.27	<0.27	No
76	1,3-Dichlorobenzene	2,600	<0.18	<0.18	No
77	1,4-Dichlorobenzene	2,600	<0.18	<0.18	No
78	3,3 Dichlorobenzidine	0.077	<5	<0.0002	No
79	Diethyl Phthalate	120,000	<0.5	<0.2	No
80	Dimethyl Phthalate	2,900,000	<0.5	<0.2	No
81	Di-n-Butyl Phthalate	12,000	<0.4	<0.5	No
82	2,4-Dinitrotoluene	9.1	<0.4	<0.27	No
83	2,6-Dinitrotoluene	No Criteria	<0.4	<0.29	U
84	Di-n-Octyl Phthalate	No Criteria	<0.4	<0.38	U
85	1,2-Diphenylhydrazine	0.54	<0.5	0.004	No
86	Fluoranthene	370	<0.02	0.011	No
87	Fluorene	14,000	<0.01	0.002	No
88	Hexachlorobenzene	0.00077	<0.4	0.00002	No
89	Hexachlorobutadiene	50	<0.4	<0.3	No
90	Hexachlorocyclopentadiene	17,000	<0.3	<0.3	No
91	Hexachloroethane	8.9	0.6	<0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.049	<0.02	0.0040	No
93	Isophorone	600	<0.5	<0.3	No
94	Naphthalene	No Criteria	<0.02	0.009	U
95	Nitrobenzene	1,900	<0.5	<0.25	No

CTR No.	Priority Pollutants	C or Governing criterion or objective (µg/L)	MEC or Minimum DL (µg/L) ^{[1][2]}	B or Minimum DL (µg/L) ^{[1][2]}	RPA Results ^[3]
96	N-Nitrosodimethylamine	8.1	<0.3	<0.3	No
97	N-Nitrosodi-n-Propylamine	1.4	<0.5	<0.0002	No
98	N-Nitrosodiphenylamine	16	<0.3	<0.001	No
99	Phenanthrene	No Criteria	<0.01	0.006	U
100	Pyrene	11,000	<0.02	0.019	No
101	1,2,4-Trichlorobenzene	No Criteria	<0.6	<0.3	U
102	Aldrin	0.00014	<0.005	<0.0000085	No
103	Alpha-BHC	0.013	<0.005	0.00050	No
104	Beta-BHC	0.046	<0.004	0.00040	No
105	Gamma-BHC	0.063	<0.004	0.0010	No
106	Delta-BHC	No Criteria	<0.004	0.00010	U
107	Chlordane (303(d)-listed)	0.00059	<0.02	0.00014	No
108	4,4'-DDT (303(d)-listed)	0.00059	<0.004	0.00020	No
109	4,4'-DDE (linked to DDT)	0.00059	<0.003	0.0010	No
110	4,4'-DDD	0.00084	<0.004	0.00030	No
111	Dieldrin (303(d)-listed)	0.00014	<0.004	0.00030	No
112	Alpha-Endosulfan	0.0087	<0.004	0.00010	No
113	Beta-Endosulfan	0.0087	<0.005	0.00010	No
114	Endosulfan Sulfate	240	<0.005	0.00010	No
115	Endrin	0.0023	<0.005	0.00004	No
116	Endrin Aldehyde	0.81	<0.005	<0.005	U
117	Heptachlor	0.00021	<0.004	0.000020	No
118	Heptachlor Epoxide	0.00011	<0.004	0.00010	No
119-125	PCBs sum (303(d)-listed)	0.00017	<0.7	---	[4]
126	Toxaphene	0.0002	<0.3	<8.2 x 10 ⁻⁷	U
	Ammonia	1.3	1.9	0.18	Yes

Abbreviations:

MEC = maximum effluent concentration
 B = background concentration
 C = water quality criterion or objective
 DL = minimum detection level
 RPA = reasonable potential analysis
 µg/L = micrograms per liter

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 detection level (DL).
- 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 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, 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.

- ii. Acute Toxicity.** Basin Plan section 4.5.5.3.1 requires acute toxicity monitoring and limitations, implying there is reasonable potential for the discharge to cause or contribute to exceedances of the acute toxicity water quality objective.
- iii. Chronic Toxicity.** The Discharger conducted annual chronic toxicity tests during the previous order term. The maximum single-sample chronic toxicity result was below 1.0 TUc, which is less than the translated chronic toxicity objective of 1.0 TUc. Therefore, there is no reasonable potential for chronic toxicity in the receiving water, and no WQBEL is required.
- iv. pH.** Over the previous order term, pH at Discharge Point No. 002 ranged between 6.1 and 8.6, exceeding the pH water quality objectives of 6.5 to 8.5 (see Basin Plan § 3.3.9). However, this Order does not establish pH WQBELs because the technology-based pH limits of 6.0 and 9.0 (see Fact Sheet section IV.C.2.a) are as stringent as the pH effluent limits set forth in Basin Plan Table 4-2 for deep water discharges from all treatment facilities.
- e. Discharge Point Nos. 003 through 016.** Discharge Point Nos. 003 through 016 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 § 3.3.4), oil and grease (Basin Plan § 3.3.7), sediment (Basin Plan § 3.3.12), suspended material (Basin Plan § 3.3.14), and turbidity (Basin Plan § 3.3.19). Refinery stormwater may also contain pollutants that could cause or contribute to exceedances of other narrative and numeric water quality objectives.
- f. Sediment Quality.** Pollutants in some receiving water sediments may be present in quantities that alone or in combination are toxic to benthic communities. Efforts are underway to identify stressors causing such conditions. However, to date there is no evidence directly linking compromised sediment conditions to the discharges subject to this Order; therefore, the Regional Water Board cannot draw a conclusion about reasonable potential for these discharges to cause or contribute to exceedances of the sediment quality objectives. Nevertheless, the Discharger continues to participate in the RMP, which monitors San Francisco Bay sediment and seeks to identify stressors responsible for degraded sediment quality. Thus far, the monitoring has provided only limited information about potential stressors and sediment transport. The Regional Water Board is exploring options for obtaining additional information that may inform future analyses.

4. Water Quality-Based Effluent Limitations

WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of water quality objectives. The WQBEL calculations are based on the procedures specified in SIP section 1.4.

- a. **Dilution Credits.** The SIP allows dilution credits for completely-mixed discharges and, under certain circumstances, for incompletely-mixed discharges. On February 4, 2011, the Discharger submitted a study performed to determine 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 No. 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.

On June 4, 2012, the Discharger submitted an analysis of the dilution at Discharge Point No. 002. The analysis assumed the mixing conditions there were effectively the same as those at Discharge Point No. 001 since Discharge Point No. 002 is only 2,000 feet downstream and both outfalls extend similar distances into Carquinez Strait. However, the effluent flow at Discharge Point No. 002 is typically less than 5 percent of the flow at Discharge Point No. 001. Therefore, the analysis concluded that dilution at Discharge Point No. 002 would be significantly greater than 10:1.

- i. **Bioaccumulative Pollutants.** For certain bioaccumulative pollutants, dilution credit is denied. Specifically, these pollutants include dioxin and furan compounds, which appear on the CWA section 303(d) list for the 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's beneficial uses. 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 contaminants in fish tissues. The Office of Environmental Health and Hazard Assessment (OEHHA) 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 these pollutants. OEHHA 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 dioxins and furans.
- ii. **Non-Bioaccumulative Pollutants.** For non-bioaccumulative pollutants, a conservative dilution credit of 10:1 ($D = 9$) has been assigned. 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:

- (a) 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. The Yerba Buena Island RMP monitoring station, relative to other RMP stations, fits SIP guidance criteria for establishing background conditions. The SIP requires that background water quality data be representative of the ambient receiving water that will mix with the discharge. Water quality data from the Yerba Buena Island RMP monitoring station is representative of the water that will mix with the discharge.
- (b) 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 fresh water outflows. Being heavier and colder than fresh water, ocean salt water 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 complex patterns occur throughout San Francisco Bay, but are most prevalent in Carquinez Strait and Suisun Bay. 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 outfalls.

b. Discharge Point No. 001

- i. **Calculations.** For those pollutants with reasonable potential at Discharge Point No. 001, average monthly effluent limitations (AMELs) and maximum daily effluent limitations (MDELs) were calculated as shown in the table below:

Table F-16. WQBEL Calculations for Discharge Point No. 001

POLLUTANT	Copper
Units	µg/L
Basis and Criteria type	Basin Plan SSO
Criteria -Acute	-----
Criteria -Chronic	-----
Site-Specific Objective Criteria -Acute	9.4
Site-Specific Objective Criteria -Chronic	6
Water Effects ratio (WER)	1
Lowest WQO	6
Site-Specific Translator – MDEL	0.66
Site-Specific Translator - AMEL	0.38

POLLUTANT	Copper
Dilution Factor (D)	9
No. of samples per month	4
Aquatic life criteria analysis required? (Y/N)	Y
HH criteria analysis required? (Y/N)	N
Applicable Acute WQO	14.24
Applicable Chronic WQO	15.79
HH criteria	-----
Background (Maximum Conc for Aquatic Life calc)	2.55
Background (Average Conc for Human Health calc)	-----
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N
ECA acute	119.5
ECA chronic	135
ECA HH	-----
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	Y
Avg of effluent data points	10.22
Std Dev of effluent data points	4.96
CV calculated	NA
CV (Selected) – Final	0.60
ECA acute mult99	0.32
ECA chronic mult99	0.53
LTA acute	38.4
LTA chronic	71.2
minimum of LTAs	38.4
AMEL mult95	1.6
MDEL mult99	3.1
AMEL (aquatic life)	59.6
MDEL (aquatic life)	119.5
MDEL/AMEL Multiplier	2.0
AMEL (human health)	-----
MDEL (human health)	-----
minimum of AMEL for Aq. life vs HH	59.6
minimum of MDEL for Aq. Life vs HH	119.5
Previous order limit – AMEL	54
Previous order limit - MDEL	120

POLLUTANT	Copper
Final limit – AMEL	54
Final limit - MDEL	120

The previous order allowed intake water credits for copper, nickel, selenium, and cyanide under SIP section 1.4.4. This Order does not allow intake water credits because the Discharger can readily comply with the copper WQBELs without them.

c. Discharge Point No. 002

- i. Calculations.** For those pollutants with reasonable potential at Discharge Point No. 002, AMELs and MDELs were calculated as shown in the table below:

Table F-17. WQBEL Calculations for Discharge Point No. 002

POLLUTANT	Bis(2-Ethylhexyl) Phthalate	Chlorodibromomethane	Copper	Lead	Cyanide	Dioxin TEQ	Total Ammonia (acute)	Total Ammonia (chronic)
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L as N	mg/L as N
Basis and Criteria type	CTR HH	CTR HH	Basin Plan SSO	CTR Fresh Water Aquatic Life	Basin Plan SSO	CTR HH	Basin Plan Aquatic Life	Basin Plan Aquatic Life
Criteria -Acute	-----	-----	-----	114	-----	---	4.9	-----
Criteria -Chronic	-----	-----	-----	4.4	-----	---	-----	1.3
Site-Specific Objective Criteria -Acute	-----	-----	9.4	-----	9.4	---	-----	-----
Site-Specific Objective Criteria -Chronic	-----	-----	6	-----	2.9	---	-----	-----
Water Effects ratio (WER)	1	1	1	1	1	1	1	1
Lowest WQO	5.9	34.0	6	4.4	2.9	1.4 x 10 ⁻⁸	4.9	1.3
Site-Specific Translator – MDEL	-----	-----	0.66	-----	-----	---	-----	-----
Site-Specific Translator - AMEL	-----	-----	0.38	-----	-----	---	-----	-----
Dilution Factor (D)	9	9	9	9	9	0	9	9
No. of samples per month	4	4	4	4	4	4	4	30
Aquatic life criteria analysis required? (Y/N)	N	N	Y	Y	Y	N	Y	Y
HH criteria analysis required? (Y/N)	Y	Y	N	N	Y	Y	N	N
Applicable Acute WQO	-----	-----	14.24	114	9.4	---	4.9	-----
Applicable Chronic WQO	-----	-----	15.79	4.4	2.9	---	-----	1.3
HH criteria	5.90	34.00	-----	-----	2.2 x 10 ⁵	1.4 x 10 ⁻⁸	-----	-----
Background (Maximum Conc for Aquatic Life calc)	-----	-----	2.55	0.8	0.52	---	0.43	0.13
Background (Average Conc for Human Health calc)	0.7	0.05	-----	-----	0.4	1.6 x 10 ⁻⁸	-----	-----
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	N	N	N	Y	N	N

POLLUTANT	Bis(2-Ethylhexyl) Phthalate	Chlorodibromomethane	Copper	Lead	Cyanide	Dioxin TEQ	Total Ammonia (acute)	Total Ammonia (chronic)
Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L as N	mg/L as N
ECA acute	-----	-----	119.5	1,133	90.4	---	45	-----
ECA chronic	-----	-----	135	36.8	25.4	---	-----	12
ECA HH	52.70	339.55	-----	-----	2.2 x 10 ⁶	1.4 x 10 ⁻⁸	-----	-----
No. of data points <10 or at least 80% of data reported non detect? (Y/N)	Y	Y	Y	N	N	Y	N	N
Avg of effluent data points	6.60	7.23	10.22	1.07	2.42	N/A	0.23	0.23
Std Dev of effluent data points	14.78	14.94	4.96	2.01	1.99	N/A	0.15	0.15
CV calculated	N/A	N/A	N/A	1.88	0.83	N/A	0.62	0.62
CV (Selected) – Final	0.60	0.60	0.60	1.88	0.83	0.60	0.62	0.62
ECA acute mult99			0.32	0.12	0.24	---	0.31	-----
ECA chronic mult99	-----	-----	0.53	0.22	0.43	---	-----	0.93
LTA acute	-----	-----	38.4	138.09	21.9	---	14.2	-----
LTA chronic	-----	-----	71.2	7.92	10.9	---	-----	10.7
minimum of LTAs	-----	-----	38.4	7.92	10.9	---	14.2	10.7
AMEL mult95	1.55	1.55	1.6	2.7	1.8	1.6	1.58	1.20
MDEL mult99	3.11	3.11	3.1	8.2	4.1	3.1	3.22	3.22
AMEL (aquatic life)	-----	-----	59.6	21.4	19.4	---	22.2	12.8
MDEL (aquatic life)	-----	-----	119.5	65	45.0	---	45.4	34.3
MDEL/AMEL Multiplier	2.01	2.01	2.0	3.04	2.32	2.0	2.04	2.69
AMEL (human health)	52.70	339.55	-----	-----	2.2 x 10 ⁶	1.4 x 10 ⁻⁸	-----	-----
MDEL (human health)	105.73	681.20	-----	-----	5.1 x 10 ⁶	2.8 x 10 ⁻⁸	-----	-----
minimum of AMEL for Aq. life vs HH	52.70	339.55	59.6	21.38	19.4	1.4 x 10 ⁻⁸	22.2	12.8
minimum of MDEL for Aq. Life vs HH	105.73	681.20	119.5	64.98	45.0	2.8 x 10 ⁻⁸	45.4	34.4
Previous order limit – AMEL	54.00	340.00	54	23	19	1.4 x 10 ⁻⁸	17	22
Previous order limit - MDEL	110	680	120	67	46	2.8 x 10 ⁻⁸	55	113
Final limit – AMEL	53	340	54	21	19	1.4 x 10 ⁻⁸	22	13
Final limit - MDEL	106	680	120	65	45	2.8 x 10 ⁻⁸	45	34

ii. **Acute Toxicity.** This Order includes acute toxicity limits based on Basin Plan Table 4-3. Based on Basin Plan section 3.3.20, if the Discharger can demonstrate that ammonia causes acute toxicity in excess of the acute toxicity limitations in this Order, and that the ammonia in the discharge complies with the ammonia effluent limits, then such toxicity does not constitute a violation of the effluent limitations for acute toxicity.

d. Discharge Point Nos. 003 through 016

This Order contains narrative WQBELs for stormwater discharges. *Stormwater Provisions, Monitoring, and Reporting Requirements* (Attachment S) requires a Stormwater Pollution Prevention Plan 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).

E. Discharge Requirement Considerations

- 1. Anti-backsliding.** This Order complies with the anti-backsliding provisions of CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l), which generally require effluent limitations in a reissued permit to be as stringent as those in the previous order. The requirements of this Order are at least as stringent as those in the previous order.

The previous order contained effluent limitations for arsenic, cyanide, lead, nickel, zinc, selenium, dioxin-TEQ, and bis(2-ethylhexyl)phthalate at Discharge Point No. 001; however, the reasonable potential analysis shows that the discharge no longer demonstrates reasonable potential for these pollutants to cause or contribute to an exceedance of the water quality objectives. Similarly, the previous order contained effluent limitations for zinc, dichlorobromomethane, and dibenzo(a,h)anthracene at Discharge Point No. 002; however, the reasonable potential analysis shows that the discharge no longer demonstrates reasonable potential for these pollutants to cause or contribute to an exceedance of the water quality objectives. This Order, therefore, does not retain these limitations. Elimination of these limitations is consistent with State Water Board Order No. WQ 2001-16.

The previous order also contained technology-based effluent limit for settleable matter at Discharge Point No. 002. This Order does not retain those limits because settleable matter has not been detected in the effluent over the previous order term.

- 2. Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. It continues the status quo with respect to the level of discharge authorized in the previous order, which is the baseline by which to measure whether degradation will occur. This Order does not allow for a reduced level of treatment or increase effluent limitations relative to those in the previous order.
- 3. Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based effluent limitations and WQBELs for individual pollutants. The technology-based requirements implement minimum, applicable federal technology-based requirements. In addition, this Order contains more stringent effluent limitations as necessary to meet water quality standards. Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement CWA requirements.

This Order's WQBELs have been derived to implement water quality objectives that protect beneficial uses. The beneficial uses and water quality objectives have been approved

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

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

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

VI. RATIONALE FOR PROVISIONS

A. Standard Provisions

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

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

Attachment S includes requirements consistent with those of the *General Permit for Stormwater Discharges Associated with Industrial Activities* (NPDES No. CAS000001). These requirements require the Discharger to prepare a Stormwater Pollution Prevention Plan with specific elements (including specific measures to prevent fugitive sugar emissions due to observations noted in a January 23, 2015, inspection report), comply with numeric action levels for total suspended solids and oil and grease, and submit an annual stormwater report by July 30 each year.

B. Monitoring and Reporting

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

reporting, and recordkeeping requirements. The MRP establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. For more background regarding these requirements, see Fact Sheet section VII.

C. Special Provisions

1. **Reopener Provisions.** These provisions are based on 40 C.F.R. sections 122.62 and 122.63 and allow modification of this Order and its effluent limitations as necessary in response to updated water quality objectives, regulations, or other new and relevant information that may become available in the future, and other circumstances as allowed by law.
2. **Effluent Characterization Study and Report.** This Order does not include effluent limitations for priority pollutants that do not demonstrate reasonable potential, but this provision requires the Discharger to continue monitoring for these pollutants as described in the MRP and Attachment G. Monitoring data are necessary to verify that the “no” and “unknown” reasonable potential analysis conclusions of this Order remain valid. This requirement is authorized pursuant to Water Code section 13267 and is necessary to inform the next permit reissuance and to ensure that the Discharger takes timely steps in response to any unanticipated change in effluent quality during the term of this Order.
3. **Pollutant Minimization Program.** This provision is based on Basin Plan section 4.13.2 and SIP section 2.4.5.
4. **Special Provisions**
 - a. **Sludge and Biosolids Management.** This provision is based on Basin Plan section 4.17. “Sludge” refers to the solid, semisolid, and liquid residue removed during primary, secondary, and advanced wastewater treatment processes. “Biosolids” refers to sludge that has been treated and may be beneficially reused.
 - b. **Collection System Management.** The District’s collection system is part of the facility regulated through this Order. This provision requires compliance with State Water Board Order No. 2006-0003-DWQ, Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, as amended by State Water Board Order No. WQ 2013-0058-EXEC and any subsequent order updating these requirements. These State Water Board WDRs require public agencies that own or operate sanitary sewer systems with one or more miles of sewer lines to enroll for coverage and comply with requirements to develop sanitary sewer management plans and report sanitary sewer overflows, among other provisions and prohibitions. The State Water Board WDRs contain requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows that are more extensive and, therefore, more stringent than the standard provisions in Attachments D and G. Compliance with the State Water Board WDRs will satisfy the corresponding requirements in Attachments D and G.
5. **Other Special Provisions**
 - a. **Copper Action Plan.** This provision is based on Basin Plan section 7.2.1.2 and is necessary to ensure that use of copper site-specific objectives is consistent with

antidegradation policies. The Basin Plan requires a copper action plan to ensure compliance with State and federal antidegradation policies when copper limits are based on the site-specific objectives. The copper action plan requires additional actions depending on the three-year rolling mean dissolved concentrations in San Francisco Bay. Data compiled by the San Francisco Estuary Institute compiled for 2010-2013 indicate no degradation of San Francisco Bay water quality with respect to copper

<http://www.sfei.org/pages/copper-site-specific-objective-3-year-rolling-averages-0>

- b. Cyanide Action Plan.** This provision is based on Basin Plan section 4.7.2.2 and is necessary to ensure that use of cyanide site-specific objectives is consistent with antidegradation policies. The Basin Plan requires a cyanide action plan to ensure compliance with State and federal antidegradation policies when cyanide limits are based on the site-specific objectives. The trigger for the emergency monitoring and response plan is a rounded value based on the highest influent cyanide concentration from the Refinery or the Crockett community since 2009.
- c. Cooling Water Intake Report.** 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.

To ensure that the Refinery operates consistent with the BTA standard and minimizes adverse environmental impacts, Order No. R2-2007-0032 required C&H Sugar to submit a Cooling Water Intake Impingement and Entrainment Study. The resulting study, *Cooling Water Intake Report - C&H Sugar Company, Inc.*, December 2009, included 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.

In August 2014, U.S. EPA established updated BTA standards (40 C.F.R. § 125.94) that specify new requirements for facilities with cooling water intake structures. This provision includes tasks C&H Sugar must complete to document compliance with the updated BTA standards.

- d. CWA Section 316(b) Requirements.** This provision is based on 40 C.F.R. section 125.98(b)(5), which requires C&H Sugar to implement interim measures to minimize impingement and entrainment of aquatic organisms while it evaluates the need to improve its intake structure.
- e. Impingement Technology Performance Optimization Study.** This provision is based on 40 C.F.R. section 122.21 (r)(6) and is triggered only if C&H Sugar chooses to comply with Table 9, item 5 of the Order in accordance with 40 C.F.R. section 125.94 (c)(5) or (6).

VII. RATIONALE FOR MONITORING AND REPORTING PROGRAM (MRP)

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

A. Monitoring Requirements Rationale

- 1. Intake and Influent Monitoring.** Intake flow monitoring is necessary to evaluate the performance of the once-through-cooling system and compliance with entrainment standards. Influent flow monitoring is necessary to understand facility operations. Basin Plan section 4.7.2.2 requires influent cyanide monitoring at Monitoring Location INF-002 because this Order includes cyanide limits based on site-specific cyanide water quality objectives. Copper intake monitoring is necessary in the event that an intake water credit might be necessary when next reissuing the permit. BOD₅ 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).
- 2. Effluent Monitoring.** Effluent flow monitoring at Monitoring Locations EFF-001, EFF-002, and EFF-003 through EFF-016 is necessary to understand facility operations. Monitoring for other parameters is necessary to evaluate compliance with this Order's effluent limitations and to conduct future reasonable potential analyses.
- 3. Toxicity Testing.** Acute and chronic toxicity tests at Monitoring Location EFF-002 are necessary to evaluate compliance with this Order's acute toxicity effluent limitations and to conduct future reasonable potential analysis. Chronic toxicity tests are also necessary to evaluate whether chronic toxicity exceeds the trigger for accelerated monitoring and Toxicity Reduction Evaluations based on Basin Plan sections 4.5.5.3.2 and 4.5.5.3.3 and Basin Plan Table 4-5.
- 4. Receiving Water Monitoring.** RMP participation is necessary to characterize the receiving water and the effects the discharge has on it. The RMP involves collecting data on pollutants and toxicity in San Francisco Bay water, sediment, and biota.
- 5. Other Monitoring Requirements.** Pursuant to CWA section 308, U.S. EPA requires dischargers to participate in a Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program. The program annually evaluates the analytical abilities of laboratories that perform or support NPDES permit-required monitoring. The program applies to discharger laboratories and contract laboratories. There are two options to comply: (1) dischargers can obtain and analyze DMR-QA samples, or (2) pursuant to a waiver U.S. EPA issued to the State Water Board, dischargers can submit results from the most recent Water Pollution Performance Evaluation Study. Dischargers must submit results annually to the State Water Board, which then forwards the results to U.S. EPA.

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

Table F-18. Monitoring Requirements Summary

Parameter	Influent INF-001	Influent INF-002	Influent INF-003	Effluent EFF-001	Effluent EFF-002	Effluent EFF-003 through EFF-016	Receiving Water
Flow Rate	Continuous	Continuous	Continuous	Continuous	Continuous	2/Year	Support RMP
Biochemical Oxygen Demand, 5-day @ 20°C (BOD ₅)	1/Week	---	---	1/Week	1/Month	2/year	
Total Suspended Solids (TSS)	---	---	---	---	1/Month	2/Year	
Total Organic Carbon	---	---	---	---	---	2/Year	
Oil and Grease	---	---	---	---	1/Quarter	---	
pH	---	---	---	1/Day	1/Day	2/Year	
Total Residual Chlorine	---	---	---	---	Continuous	---	
Acute Toxicity	---	---	---	---	1/Month	---	
Chronic Toxicity	---	---	---	---	1/Year	---	
Total Coliform	---	---	---	---	3/Week	---	
Enterococcus	---	---	---	---	2/Year	---	
Conductivity	---	---	---	---	---	2/Year	
Temperature	---	---	---	1/Day	1/Day	---	
Copper	2/Year	---	---	2/Year	1/Month	---	
Lead	---	---	---	---	1/Month	---	
Cyanide	---	---	1/Month	---	1/Month	---	
Bis(2-ethylhexyl) phthalate	---	---	---	---	1/Year	---	
Chlorodibromo-methane	---	---	---	---	2/Year	---	
Total Ammonia	---	---	---	---	1/Month	---	
Dioxin-TEQ	---	---	---	---	1/Year	---	
All other priority pollutants	---	---	---	1/Year	1/Year	---	
Intake Structure	1/Week	---	---	---	---	---	
Visual Observation	---	---	---	---	---	See Attach S §II.A.1	

Sampling Frequencies:

- 1/Day = once per day
- 1/Week = once per week while discharge occurs
- 3/Week = three times per week
- 1/Quarter = once per quarter
- 1/Month = once per month
- 1/Year = once per year
- 2/Year = twice per year

VIII. PUBLIC PARTICIPATION

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

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

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

For full staff response and Regional Water Board consideration, the written comments were due at the Regional Water Board office by **5:00 p.m. on March 14, 2018**.

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

Date: **April 11, 2018**
Time: **9:00 a.m.**
Location: Elihu Harris State Office Building
1515 Clay Street, 1st Floor Auditorium
Oakland, CA 94612

Contact: William Burrell, (510) 622-2317, william.burrell@waterboards.ca.gov

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

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

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

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

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

- E. Information and Copying.** The Report of Waste Discharge, related supporting documents, and comments received are on file and may be inspected at the address above at any time between 9:00 a.m. and 5:00 p.m., Monday through Friday. Copying of documents may be arranged by calling (510) 622-2300.
- F. Register of Interested Persons.** Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the Regional Water Board, reference the facility, and provide a name, address, and phone number.
- G. Additional Information.** Requests for additional information or questions regarding this Order should be directed to William Burrell at (510) 622-2317 or william.burrell@waterboards.ca.gov.

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

ATTACHMENT G

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

November 2017

Contents

I. STANDARD PROVISIONS – PERMIT COMPLIANCE.....	G-1
A. Duty to Comply	G-1
B. Need to Halt or Reduce Activity Not a Defense	G-1
C. Duty to Mitigate	G-1
1. Contingency Plan	G-1
2. Spill Prevention Plan.....	G-2
D. Proper Operation and Maintenance	G-2
1. Operation and Maintenance Manual	G-2
2. Wastewater Facilities Status Report	G-2
3. Proper Supervision and Operation of Publicly-Owned Treatment Works (POTWs)	G-2
E. Property Rights.....	G-2
F. Inspection and Entry.....	G-2
G. Bypass	G-2
H. Upset.....	G-2
I. Other.....	G-3
II. STANDARD PROVISIONS – PERMIT ACTION.....	G-3
III. STANDARD PROVISIONS – MONITORING	G-3
A. Sampling and Analyses	G-3
1. Certified Laboratories	G-3
2. Minimum Levels	G-3
3. Monitoring Frequency	G-3
B. Standard Observations.....	G-5
1. Receiving Water Observations	G-5
2. Wastewater Effluent Observations	G-6
3. Beach and Shoreline Observations	G-6
4. Waste Treatment and/or Disposal Facility Periphery Observations	G-6
IV. STANDARD PROVISIONS – RECORDS	G-6
A. Records to be Maintained.....	G-6
B. Records of Monitoring	G-7
1. Analytical Information.....	G-7
2. Disinfection Process.....	G-7
3. Wastewater Treatment Process Solids	G-7
4. Treatment Process Bypasses	G-7
5. Treatment Facility Overflows	G-8
C. Claims of Confidentiality	G-8
V. STANDARD PROVISIONS – REPORTING	G-8
A. Duty to Provide Information	G-8
B. Signatory and Certification Requirements	G-8
C. Monitoring Reports	G-8
1. Self-Monitoring Reports	G-8
D. Compliance Schedules	G-11
E. Twenty-Four Hour Reporting	G-11
1. Oil or Other Hazardous Material Spills	G-11
2. Unauthorized Municipal Wastewater Treatment Plant Discharges	G-12
F. Planned Changes	G-13
G. Anticipated Noncompliance	G-13
H. Other Noncompliance.....	G-13
I. Other Information.....	G-13

VI. STANDARD PROVISION – ENFORCEMENT G-13
VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS G-13
VIII. DEFINITIONS G-13

REGIONAL STANDARD PROVISIONS, AND MONITORING AND REPORTING REQUIREMENTS

APPLICABILITY

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

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply – Not Supplemented

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

C. Duty to Mitigate – Supplement to Attachment D, Provision I.C.

- 1. Contingency Plan.** The Discharger shall maintain a Contingency Plan as prudent in accordance with current facility emergency planning. The Contingency Plan shall describe procedures to ensure that existing facilities remain in, or are rapidly returned to, operation in the event of a process failure or emergency incident, such as employee strike, strike by suppliers of chemicals or maintenance services, power outage, vandalism, earthquake, or fire. The Discharger may combine the Contingency Plan and Spill Prevention Plan (see Provision I.C.2, below) into one document. In accordance with Regional Water Board Resolution No. 74-10, discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as described below may be the basis for considering the discharge a willful and negligent violation of the permit pursuant to California Water Code section 13387. The Contingency Plan shall, at a minimum, provide for the following:
 - a. Sufficient personnel for continued facility operation and maintenance during employee strikes or strikes against contractors providing services;
 - b. Maintenance of adequate chemicals or other supplies, and spare parts necessary for continued facility operations;
 - c. Emergency standby power;
 - d. Protection against vandalism;
 - e. Expeditious action to repair failures of, or damage to, equipment, including any sewer lines;
 - f. Reporting of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges; and
 - g. Maintenance, replacement, and surveillance of physical condition of equipment and facilities, including any sewer lines.

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

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

- 1. Operation and Maintenance Manual.** The Discharger shall maintain an Operation and Maintenance Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the Operation and Maintenance Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The Operation and Maintenance Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff.
- 2. Wastewater Facilities Status Report.** The Discharger shall maintain a Wastewater Facilities Status Report and regularly review, revise, or update it, as necessary. This report shall document how the Discharger operates and maintains its wastewater collection, treatment, and disposal facilities to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.
- 3. Proper Supervision and Operation of Publicly-Owned Treatment Works (POTWs).** POTWs shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Title 23, section 3680, of the California Code of Regulations.

E. Property Rights – Not Supplemented

F. Inspection and Entry – Not Supplemented

G. Bypass – Not Supplemented

H. Upset – Not Supplemented

I. Other – Addition to Attachment D

1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code section 13050.
2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.
3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.

II. STANDARD PROVISIONS – PERMIT ACTION – Not Supplemented

III. STANDARD PROVISIONS – MONITORING

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

1. **Certified Laboratories.** Water and waste analyses shall be performed by a laboratory certified for these analyses in accordance with California Water Code section 13176.
2. **Minimum Levels.** For the 126 priority pollutants, the Discharger should use the analytical methods listed in Table B unless the Monitoring and Reporting Program (MRP, Attachment E) requires a particular method or minimum level (ML). All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.
3. **Monitoring Frequency.** The MRP specifies the minimum sampling and analysis schedule.
 - a. **Sample Collection Timing**
 - i. The Discharger shall collect influent samples on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated in the MRP. The Executive Officer may approve an alternative influent sampling plan if it is representative of plant influent and complies with all other permit requirements.
 - ii. The Discharger shall collect effluent samples on days coincident with influent sampling, unless otherwise stipulated by the MRP. If influent sampling is not required, the Discharger shall collect effluent samples on varying days selected at random, unless otherwise stipulated in the MRP. The Executive Officer may approve an alternative effluent sampling plan if it is representative of plant discharge and in compliance with all other permit requirements.
 - iii. The Discharger shall collect effluent grab samples during periods of daytime maximum peak flows (or peak flows through secondary treatment units for facilities that recycle effluent).

- iv. Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay the MRP requires. During the course of the bioassay, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event that a bioassay result does not comply with effluent limitations, the Discharger shall analyze the retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limitations.
 - (a) The Discharger shall perform bioassays on final effluent samples; when chlorine is used for disinfection, bioassays shall be performed on effluent after chlorination and dechlorination; and
 - (b) The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet effluent limitations.

b. Conditions Triggering Accelerated Monitoring

- i. **Average Monthly Effluent Limitation Exceedance.** If the results from two consecutive samples of a constituent monitored in a particular month exceed the average monthly effluent limitation for any parameter (or if the required sampling frequency is once per month or less and the monthly sample exceeds the average monthly effluent limitation), the Discharger shall, within 24 hours after the results are received, increase its sampling frequency to daily until the results from the additional sampling show that the parameter complies with the average monthly effluent limitation.
- ii. **Maximum Daily Effluent Limitation Exceedance.** If a sample result exceeds a maximum daily effluent limitation, the Discharger shall, within 24 hours after the result is received, increase its sampling frequency to daily until the results from two samples collected on consecutive days show compliance with the maximum daily effluent limitation.
- iii. **Acute Toxicity.** If final or intermediate results of an acute bioassay indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay is less than 70 percent), the Discharger shall initiate a new test as soon as practical or as described in applicable State Water Board plan provisions that become effective after adoption of these Regional Standard Provisions. The Discharger shall investigate the cause of the mortalities and report its findings in the next self-monitoring report.
- iv. **Chlorine.** The Discharger shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Discharger shall collect grab samples at least every 30 minutes until compliance with the limitation is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring.
- v. **Bypass.** Except as indicated below, if a Discharger bypasses any portion of its treatment facility, it shall monitor flows and collect samples at affected discharge

points and analyze samples for all constituents with effluent limitations on a daily basis for the duration of the bypass. The Discharger need not accelerate chronic toxicity monitoring. The Discharger also need not collect and analyze samples for mercury, dioxin-TEQ, and PCBs after the first day of the bypass. The Discharger may satisfy the accelerated acute toxicity monitoring requirement by conducting a flow-through test or static renewal test that captures the duration of the bypass (regardless of the method specified in the MRP). If bypassing disinfection units only, the Discharger shall only monitor bacteria indicators daily.

(a) Bypass for Essential Maintenance. If a Discharger bypasses a treatment unit for essential maintenance pursuant to Attachment D section I.G.2, the Executive Officer may reduce the accelerated monitoring requirements above if the Discharger (i) monitors effluent at affected discharge points on the first day of the bypass for all constituents with effluent limitations, except chronic toxicity; and (ii) identifies and implements measures to ensure that the bypass will continue to comply with effluent limitations.

(b) Approved Wet Weather Bypasses. If a Discharger bypasses a treatment unit or permitted outfall during wet weather with Executive Officer approval pursuant to Attachment D section I.G.4, the Discharger shall monitor flows and collect and retain samples for affected discharge points on a daily basis for the duration of the bypass. The Discharger shall analyze daily for TSS using 24-hour composites (or more frequent increments) and for bacteria indicators with effluent limitations using grab samples. If TSS exceeds 45 mg/L in any composite sample, the Discharger shall also analyze daily the retained samples for all other constituents with effluent limitations, except oil and grease, mercury, PCBs, dioxin-TEQ, and acute and chronic toxicity. Additionally, at least once each year, the Discharger shall analyze the retained samples for one approved bypass for all other constituents with effluent limitations, except oil and grease, mercury, PCBs, dioxin-TEQ, and acute and chronic toxicity. This monitoring shall be in addition to the minimum monitoring specified in the MRP.

B. Standard Observations – Addition to Attachment D

- 1. Receiving Water Observations.** The following requirements only apply when the MRP requires standard observations of receiving waters. Standard observations shall include the following:
 - a. Floating and Suspended Materials** (e.g., oil, grease, algae, and other microscopic particulate matter) — presence or absence, source, and size of affected area.
 - b. Discoloration and Turbidity** — color, source, and size of affected area.
 - c. Odor** — presence or absence, characterization, source, and distance of travel.
 - d. Beneficial Water Use** — estimated number of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities.

Monitoring records shall include the following:

- 1. Analytical Information.** Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.
- 2. Disinfection Process.** For the disinfection process, records shall include the following:
 - a.** For bacteriological analyses:
 - i.** Wastewater flow rate at the time of sample collection; and
 - ii.** Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in the MRP).
 - b.** For the chlorination process (when chlorine is used for disinfection), at least daily average values for the following:
 - i.** Chlorine residual of treated wastewater as it enters the chlorine contact basin (mg/L);
 - ii.** Chlorine dosage (kg/day); and
 - iii.** Dechlorination chemical dosage (kg/day).
- 3. Wastewater Treatment Process Solids.** For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:
 - a.** Total volume or mass of solids removed from each collection unit (e.g., grit, skimmings, undigested biosolids, or combination) for each calendar month or other time period as appropriate, but not to exceed annually; and
 - b.** Final disposition of such solids (e.g., landfill, other subsequent treatment unit).
- 4. Treatment Process Bypasses.** For all treatment process bypasses, including wet weather blending, records shall include the following:
 - a.** Chronological log of treatment process bypasses;
 - b.** Identification of treatment processes bypassed;
 - c.** Beginning and ending dates and times of bypasses;
 - d.** Bypass durations;
 - e.** Estimated bypass volumes; and
 - f.** Description of, or reference to other reports describing, the bypasses, their cause, the corrective actions taken (except for wet weather blending explicitly approved within the permit and in compliance with any related permit conditions), and any additional monitoring conducted.

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

C. Claims of Confidentiality – Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information – Not Supplemented

B. Signatory and Certification Requirements – Not Supplemented

C. Monitoring Reports – Supplement to Attachment D, Provision V.C

1. **Self-Monitoring Reports.** For each reporting period established in the MRP, the Discharger shall submit a self-monitoring report to the Regional Water Board in accordance with the requirements listed in the MRP and below:
 - a. **Transmittal Letter.** Each self-monitoring report shall be submitted with a transmittal letter that includes the following:
 - i. Identification of all violations of effluent limitations or other waste discharge requirements found during the reporting period;
 - ii. Details regarding the violations, such as parameters, magnitude, test results, frequency, and dates;
 - iii. Causes of the violations;
 - iv. Corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedules for implementation (the Discharger may refer to previously submitted reports that address the corrective actions);
 - v. Explanation for any data invalidation. Data should not be submitted in a self-monitoring report if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate a measurement after submitting it in a self-monitoring report, the Discharger shall identify the measurement suspected to be invalid and state the Discharger's intent to submit, within 60 days, a formal request to invalidate the measurement. The formal request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports invalidation (e.g., laboratory sheet, log entry, test results), and a discussion of the corrective actions taken or planned (with a time schedule for completion) to prevent recurrence of the sampling or measurement problem;
 - vi. Description of blending, if any. If the Discharger blends, it shall describe the duration of blending events and certify whether the blending complied with all conditions for blending;

- vii.** Description of other bypasses, if any. If the Discharger bypasses any treatment units (other than blending), it shall describe the duration of the bypasses and effluent quality during those times; and
- viii.** Signature. The transmittal letter shall be signed in accordance with Attachment D, Provision V.B.
- b. Compliance Evaluation Summary.** Each self-monitoring report shall include a compliance evaluation summary that addresses each parameter for which the permit specifies effluent limitations, the number of samples taken during the monitoring period, and the number of samples that exceed the effluent limitations.
- c. More Frequent Monitoring.** If the Discharger monitors any pollutant more frequently than required by the MRP, the Discharger shall include the results of such monitoring in the calculation and reporting of the data submitted in the self-monitoring report.
- d. Analysis Results**

 - i. Tabulation.** Each self-monitoring report shall include tabulations of all required analyses and observations, including parameters, dates, times, sample stations, types of samples, test results, method detection limits, method minimum levels, and method reporting levels (if applicable), signed by the laboratory director or other responsible official.
 - ii. Multiple Samples.** Unless the MRP specifies otherwise, when determining compliance with effluent limitations (other than instantaneous effluent limitations) and more than one sample result is available, the Discharger shall compute the arithmetic mean. If the data set contains one or more results that are “Detected, but Not Quantified (DNQ) or “Not Detected” (ND), the Discharger shall instead compute the median in accordance with the following procedure:

 - (a)** The data set shall be ranked from low to high, reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - (b)** The median of the data set shall be determined. If the data set has an odd number of data points, the median is the middle value. If the data set has an even number of data points, the median is the average of the two values around the middle, unless one or both of these values is ND or DNQ, in which case the median shall be the lower of the two results (where DNQ is lower than a quantified value and ND is lower than DNQ).
 - iii. Duplicate Samples.** The Discharger shall report the average of duplicate sample analyses when reporting for a single sample result (or the median if one or more of the duplicates is DNQ or ND [see Provision V.C.1.c.ii, above]). For bacteria indicators, the Discharger shall report the geometric mean of the duplicate analyses.
 - iv. Dioxin-TEQ.** The Discharger shall report for each dioxin and furan congener the analytical results of effluent monitoring, including the reporting level, the method

detection limit, and the measured concentration. The Discharger shall report all measured values of individual congeners, including data qualifiers. When calculating dioxin-TEQ, the Discharger shall set congener concentrations below the minimum levels (MLs) to zero. The Discharger shall calculate and report dioxin-TEQ using the following formula, where the MLs, toxicity equivalency factors (TEFs), and bioaccumulation equivalency factors (BEFs) are as provided in Table A:

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

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

Table A
 Minimum Levels, Toxicity Equivalency Factors,
 and Bioaccumulation Equivalency Factors

Dioxin or Furan Congener	Minimum Level (pg/L)	2005 Toxicity Equivalency Factor (TEF)	Bioaccumulation Equivalency Factor (BEF)
2,3,7,8-TCDD	10	1.0	1.0
1,2,3,7,8-PeCDD	50	1.0	0.9
1,2,3,4,7,8-HxCDD	50	0.1	0.3
1,2,3,6,7,8-HxCDD	50	0.1	0.1
1,2,3,7,8,9-HxCDD	50	0.1	0.1
1,2,3,4,6,7,8-HpCDD	50	0.01	0.05
OCDD	100	0.0003	0.01
2,3,7,8-TCDF	10	0.1	0.8
1,2,3,7,8-PeCDF	50	0.03	0.2
2,3,4,7,8-PeCDF	50	0.3	1.6
1,2,3,4,7,8-HxCDF	50	0.1	0.08
1,2,3,6,7,8-HxCDF	50	0.1	0.2
1,2,3,7,8,9-HxCDF	50	0.1	0.6
2,3,4,6,7,8-HxCDF	50	0.1	0.7
1,2,3,4,6,7,8-HpCDF	50	0.01	0.01
1,2,3,4,7,8,9-HpCDF	50	0.01	0.4
OCDF	100	0.0003	0.02

- e. **Results Not Yet Available.** The Discharger shall make all reasonable efforts to obtain analytical data for required parameter sampling in a timely manner. Certain analyses may require additional time to complete analytical processes and report results. In these cases, the Discharger shall describe the circumstances in the self-monitoring report and include the data for these parameters and relevant discussions of any violations in the next self-monitoring report due after the results are available.

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

D. Compliance Schedules – Not supplemented

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

1. Oil or Other Hazardous Material Spills

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

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

2. Unauthorized Municipal Wastewater Treatment Plant Discharges¹

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

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.

vi. Identity of person reporting the unauthorized discharge.

b. Five-Day Written Report. Within five business days following the two-hour notification, the Discharger shall submit a written report that includes, in addition to the information listed in Provision V.E.2.a, above, the following:

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

ii. Efforts implemented to minimize public exposure to the unauthorized discharge;

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

iv. Corrective measures taken to minimize the impact of the unauthorized discharge;

v. Measures to be taken to minimize the potential for a similar unauthorized discharge in the future;

vi. Summary of Spill Prevention Plan or Operation and Maintenance Manual modifications to be made, if necessary, to minimize the potential for future unauthorized discharges; and

vii. Quantity and duration of the unauthorized discharge, and the amount recovered.

F. Planned Changes – Not supplemented

G. Anticipated Noncompliance – Not supplemented

H. Other Noncompliance – Not supplemented

I. Other Information – Not supplemented

VI. STANDARD PROVISION – ENFORCEMENT – Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – Not Supplemented

VIII. DEFINITIONS – Addition to Attachment D

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

A. Arithmetic Calculations –

1. Geometric Mean. The antilog of the log mean or the back-transformed mean of the logarithmically transformed variables, which is equivalent to the multiplication of the antilogarithms. The geometric mean can be calculated with either of the following equations:

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

or

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

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

2. **Mass Emission Rate.** The rate of discharge expressed in mass. The mass emission rate is obtained from the following calculation for any calendar day:

$$\text{Mass emission rate (lb/day)} = \frac{8.345}{N} \sum_{i=1}^N Q_i C_i$$

$$\text{Mass emission rate (kg/day)} = \frac{3.785}{N} \sum_{i=1}^N Q_i C_i$$

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

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

In which “N” is the number of component waste streams and “Q” and “C” are the flow rate (MGD) and the constituent concentration (mg/L) associated with each of the “N” waste streams. “Q_t” is the total flow rate of the combined waste streams.

3. **Removal Efficiency.** The ratio of pollutants removed by the treatment facilities to pollutants entering the treatment facilities (expressed as a percentage). The Discharger shall determine removal efficiencies using monthly averages (by calendar month unless otherwise specified) of pollutant concentration of influent and effluent samples collected at about the same time and using the following equation (or its equivalent):

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

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

C. Composite Sample – a sample composed of individual grab samples collected manually or by an automatic sampling device on the basis of time or flow as specified in the MRP. For flow-based composites, the proportion of each grab sample included in the composite sample shall be within plus or minus five percent (+/-5%) of the representative flow of the waste stream being measured at the time of grab sample collection. Alternatively, equal volume grab samples may

be individually analyzed with the flow-weighted average calculated by averaging flow-weighted ratios of each grab sample analytical result. Grab samples comprising time-based composite samples shall be collected at intervals not greater than those specified in the MRP. The quantity of each grab sample comprising a time-based composite sample shall be a set of flow proportional volumes as specified in the MRP. If a particular time-based or flow-based composite sampling protocol is not specified in the MRP, the Discharger shall determine and implement the most representative protocol.

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

Table B
 List of Monitoring Parameters and Analytical Methods

CTR No.	Pollutant/Parameter	Analytical Method ²	Minimum Levels ³ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
1	Antimony	204.2					10	5	50	0.5	5	0.5		1000
2	Arsenic	206.3				20		2	10	2	2	1		1000
3	Beryllium							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) ⁴	SM 3500					50	2	10	0.5	1			1000
6	Copper	200.9					25	5	10	0.5	2			1000
7	Lead	200.9					20	5	5	0.5	2			10,000
8	Mercury	1631 (note) ⁵												
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) ⁶	0100.2 ⁷												
16	2,3,7,8-TCDD and 17 congeners (Dioxin)	1613												
17	Acrolein	603	2.0	5										
18	Acrylonitrile	603	2.0	2										
19	Benzene	602	0.5	2										
33	Ethylbenzene	602	0.5	2										
39	Toluene	602	0.5	2										
20	Bromoform	601	0.5	2										
21	Carbon Tetrachloride	601	0.5	2										
22	Chlorobenzene	601	0.5	2										
23	Chlorodibromomethane	601	0.5	2										
24	Chloroethane	601	0.5	2										
25	2-Chloroethylvinyl Ether	601	1	1										
26	Chloroform	601	0.5	2										
75	1,2-Dichlorobenzene	601	0.5	2										

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 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.

⁴ Analysis for total chromium may be substituted for analysis of chromium (III) and chromium (VI) if the concentration measured is below the lowest hexavalent chromium criterion (11 µg/l).

⁵ The Discharger shall use ultra-clean sampling (U.S. EPA Method 1669) and ultra-clean analytical methods (U.S. EPA Method 1631) for mercury monitoring. The minimum level for mercury is 2 ng/l (or 0.002 µg/l).

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

⁷ Determination of Asbestos Structures over 10 [micrometers] in Length in Drinking Water Using MCE Filters, U.S. EPA 600/R-94-134, June 1994.

CTR No.	Pollutant/Parameter	Analytical Method ²	Minimum Levels ³ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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										
48	2-Methyl-4,6-Dinitrophenol or Dinitro-2-methylphenol	604	10	5										
49	2,4-Dinitrophenol	604	5	5										
50	2-Nitrophenol	604		10										
51	4-Nitrophenol	604	5	10										
52	3-Methyl-4-Chlorophenol	604	5	1										
53	Pentachlorophenol	604	1	5										
54	Phenol	604	1	1		50								
55	2,4,6-Trichlorophenol	604	10	10										
56	Acenaphthene	610 HPLC	1	1	0.5									
57	Acenaphthylene	610 HPLC		10	0.2									
58	Anthracene	610 HPLC		10	2									
60	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5										
61	Benzo(a)Pyrene	610 HPLC		10	2									
62	Benzo(b)Fluoranthene or 3,4 Benzo(b)fluoranthene	610 HPLC		10	10									
63	Benzo(ghi)Perylene	610 HPLC		5	0.1									
64	Benzo(k)Fluoranthene	610 HPLC		10	2									
74	Dibenzo(a,h)Anthracene	610 HPLC		10	0.1									
86	Fluoranthene	610 HPLC	10	1	0.05									
87	Fluorene	610 HPLC		10	0.1									
92	Indeno(1,2,3-cd) Pyrene	610 HPLC		10	0.05									
100	Pyrene	610 HPLC		10	0.05									
68	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5										
70	Butylbenzyl Phthalate	606 or 625	10	10										
79	Diethyl Phthalate	606 or 625	10	2										
80	Dimethyl Phthalate	606 or 625	10	2										
81	Di-n-Butyl Phthalate	606 or 625		10										

CTR No.	Pollutant/Parameter	Analytical Method ²	Minimum Levels ³ (µg/l)											
			GC	GCMS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
84	Di-n-Octyl Phthalate	606 or 625		10										
59	Benzidine	625		5										
65	Bis(2-Chloroethoxy)Methane	625		5										
66	Bis(2-Chloroethyl)Ether	625	10	1										
67	Bis(2-Chloroisopropyl)Ether	625	10	2										
69	4-Bromophenyl Phenyl Ether	625	10	5										
71	2-Chloronaphthalene	625		10										
72	4-Chlorophenyl Phenyl Ether	625		5										
73	Chrysene	625		10	5									
78	3,3'-Dichlorobenzidine	625		5										
82	2,4-Dinitrotoluene	625	10	5										
83	2,6-Dinitrotoluene	625		5										
85	1,2-Diphenylhydrazine (note) ⁸	625		1										
88	Hexachlorobenzene	625	5	1										
89	Hexachlorobutadiene	625	5	1										
90	Hexachlorocyclopentadiene	625	5	5										
91	Hexachloroethane	625	5	1										
93	Isophorone	625	10	1										
94	Naphthalene	625	10	1	0.2									
95	Nitrobenzene	625	10	1										
96	N-Nitrosodimethylamine	625	10	5										
97	N-Nitrosodi-n-Propylamine	625	10	5										
98	N-Nitrosodiphenylamine	625	10	1										
99	Phenanthrene	625		5	0.05									
101	1,2,4-Trichlorobenzene	625	1	5										
102	Aldrin	608	0.005											
103	α-BHC	608	0.01											
104	β-BHC	608	0.005											
105	γ-BHC (Lindane)	608	0.02											
106	δ-BHC	608	0.005											
107	Chlordane	608	0.1											
108	4,4'-DDT	608	0.01											
109	4,4'-DDE	608	0.05											
110	4,4'-DDD	608	0.05											
111	Dieldrin	608	0.01											
112	Endosulfan (alpha)	608	0.02											
113	Endosulfan (beta)	608	0.01											
114	Endosulfan Sulfate	608	0.05											
115	Endrin	608	0.01											
116	Endrin Aldehyde	608	0.01											
117	Heptachlor	608	0.01											
118	Heptachlor Epoxide	608	0.01											
119-125	PCBs: Aroclors 1016, 1221, 1232, 1242, 1248, 1254, 1260	608	0.5											
126	Toxaphene	608	0.5											

⁸ Measurement for 1,2-Diphenylhydrazine may use azobenzene as a screen: if azobenzene is measured at >1 ug/l, then the Discharger shall analyze for 1,2-Diphenylhydrazine.

ATTACHMENT S

STORMWATER PROVISIONS, MONITORING, AND REPORTING REQUIREMENTS

November 2017

Contents

I. STANDARD PROVISIONS – PERMIT COMPLIANCE	S-1
A. Stormwater Pollution Prevention Plan (SWPPP).....	S-2
B. Site Map.....	S-2
C. List of Industrial Materials.....	S-2
D. Potential Pollutant Sources.....	S-2
E. Assessment of Potential Pollutant Sources.....	S-3
F. Minimum Best Management Practices (BMPs).....	S-4
G. Action Levels and Advanced BMPs.....	S-6
H. BMP Descriptions.....	S-6
I. Annual Comprehensive Facility Compliance Evaluation.....	S-7
II. STANDARD PROVISIONS – MONITORING	S-7
A. Visual Observations.....	S-7
1. Monthly Visual Observations.....	S-7
2. Sampling Event Visual Observations.....	S-7
3. Visual Observation Records.....	S-8
4. SWPPP Revisions.....	S-8
B. Sampling and Analysis.....	S-8
III. STANDARD PROVISIONS – REPORTING	S-8
A. Annual Stormwater Report.....	S-9
IV. DEFINITIONS	S-9

STORMWATER PROVISIONS

APPLICABILITY

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

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

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

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

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

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

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

- B. Site Map.** The Discharger shall prepare one or more site maps that include notes, legends, a north arrow, and other data as appropriate to ensure the map is clear, legible and understandable, including the following:
1. The facility boundary, stormwater drainage areas within the facility boundary, and portions of any drainage area impacted by discharges from surrounding areas (the maps shall include the flow direction of each drainage area, on-facility surface water bodies, areas of soil erosion, and locations of nearby water bodies [e.g., rivers, lakes, wetlands] or municipal storm drain inlets that may receive the facility's industrial stormwater discharges and authorized non-stormwater discharges);
 2. Locations of stormwater collection and conveyance systems, associated discharge locations, and direction of flow (the maps shall include sample locations if different than the discharge locations);
 3. Locations and descriptions of structural control measures (e.g., catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers) that affect industrial stormwater discharges, authorized non-stormwater discharges, and run-on;
 4. Identification of all impervious areas, including paved areas, buildings, covered storage areas, or other roofed structures;
 5. Locations where materials are directly exposed to precipitation and the locations where identified significant spills or leaks have occurred; and
 6. Areas of industrial activity (the maps shall identify all industrial storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage and maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and material reuse areas, and other areas of industrial activity that may have potential pollutant sources).
- C. List of Industrial Materials.** The SWPPP shall contain a list of industrial materials handled at the facility and the locations where each material is stored, received, shipped, and handled, as well as the typical quantities and handling frequency.
- D. Potential Pollutant Sources.** The Discharger shall describe and assess potential stormwater pollutant sources, including the following:
1. **Industrial Processes.** Industrial processes may include manufacturing, cleaning, maintenance, recycling, and disposal. The SWPPP shall describe the type, characteristics, and approximate quantity of industrial materials used and areas protected by containment structures and the corresponding containment capacity.
 2. **Material Handling and Storage Areas.** The SWPPP shall describe the type, characteristics, and quantity of industrial materials handled or stored; shipping, receiving, and loading procedures; spill and leak prevention and response procedures; and areas protected by containment structures and the corresponding containment capacity.

- 3. Dust and Particulate Generating Activities.** The SWPPP shall describe the discharge locations, source type, and characteristics of the dust or particulate pollutant.
 - 4. Significant Spills and Leaks.** The Discharger shall evaluate the facility for areas where spills and leaks can occur. The SWPPP shall list any industrial materials spilled or leaked in significant quantities and discharged from the facility's stormwater conveyance system within the previous five years, including but not limited to any chemicals identified in 40 C.F.R. section 302 as reported on U.S. EPA Form R and any oil and hazardous substances discharged in excess of reportable quantities (40 C.F.R. §§ 110, 117, and 302). The SWPPP shall also list any industrial materials spilled or leaked in significant quantities that had the potential to be discharged from the facility's stormwater conveyance system within the previous five years. For each listed industrial material spill and leak, the SWPPP shall include the location, characteristics, and approximate quantity of the material spilled or leaked; the approximate quantity of the material discharged; the cleanup or remedial actions taken or planned; the approximate quantity of remaining material that could be discharged; and the preventive measures taken to ensure that spills or leaks do not reoccur.
 - 5. Non-Stormwater Discharges.** The SWPPP shall describe all non-stormwater discharges, including the source, quantity, frequency, characteristics, and associated drainage area, and indicate whether these discharges are authorized or unauthorized.
 - 6. Erodible Surfaces.** The SWPPP shall describe any facility locations where soil erosion may be caused by industrial activity, contact with stormwater, authorized and unauthorized non-stormwater discharges, or run-on from areas surrounding the facility.
- E. Assessment of Potential Pollutant Sources.** The SWPPP shall include a narrative assessment of all areas of industrial activity with potential industrial pollutant sources, including, at a minimum, the following:
1. Facility areas with likely sources of pollutants;
 2. Pollutants likely to be present in industrial stormwater discharges;
 3. Approximate quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each industrial material handled, produced, stored, recycled, or disposed;
 4. Degree to which the pollutants associated with such materials may be exposed to, and mobilized by, contact with stormwater;
 5. Direct and indirect pathways by which pollutants may be exposed to stormwater;
 6. Sampling, visual observation, and inspection records;
 7. Effectiveness of existing BMPs to reduce or prevent pollutants in industrial stormwater discharges; and
 8. Estimated effectiveness of implementing, to the extent feasible, minimum BMPs to reduce or prevent pollutants in industrial stormwater discharges.

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

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

1. Good Housekeeping. The Discharger shall do the following:

- a. Observe all outdoor areas associated with industrial activity, including stormwater discharge locations, drainage areas, conveyance systems, waste handling and disposal areas, and perimeter areas affected by off-facility materials or stormwater run-on to determine housekeeping needs. Any identified debris, waste, spills, tracked materials, or leaked materials shall be cleaned and disposed of properly;
- b. Minimize or prevent material tracking;
- c. Minimize dust generated from industrial materials or activities;
- d. Ensure that all facility areas impacted by rinse or wash waters are cleaned as soon as possible;
- e. Cover all stored industrial materials that can be readily mobilized by contact with stormwater;
- f. Contain all stored non-solid industrial materials or wastes (e.g., particulates, powders, shredded paper) that can be transported or dispersed by the wind or contact with stormwater;
- g. Prevent disposal of any rinse or wash waters or industrial materials into the stormwater conveyance system;
- h. Minimize stormwater discharges from non-industrial areas (e.g., stormwater flows from employee parking areas) that contact industrial areas of the facility; and,
- i. Minimize authorized non-stormwater discharges from non-industrial areas (e.g., potable water, fire hydrant testing) that contact areas of the sanitary or industrial facility.

2. Preventative Maintenance. The Discharger shall (1) identify all equipment and systems used outdoors that may spill or leak pollutants, (2) observe the identified equipment and systems to detect leaks or identify conditions that may result in the development of leaks, (3) establish an appropriate schedule for maintenance of identified equipment and systems, and (4) establish procedures for prompt maintenance and repair of equipment and maintenance of systems when conditions exist that may result in the development of spills or leaks.

3. Spill and Leak Prevention and Response. The Discharger shall (1) establish procedures and controls to minimize spills and leaks; (2) develop and implement spill and leak response procedures to prevent industrial materials from discharging through the stormwater

conveyance system (spilled or leaked industrial materials shall be cleaned promptly and disposed of properly); (3) identify and describe all necessary and appropriate spill and leak response equipment, locations of spill and leak response equipment, and spill or leak response equipment maintenance procedures; and (4) identify and train appropriate spill and leak response personnel.

- 4. Material Handling and Waste Management.** The Discharger shall do the following:
 - a. Prevent or minimize handling of industrial materials or wastes that can be readily mobilized by contact with stormwater during a storm;
 - b. Contain all stored non-solid industrial materials or wastes (e.g., particulates, papers, shredded paper) that can be transported or dispersed by the wind or contact with stormwater;
 - c. Cover industrial waste disposal containers and industrial material storage containers that contain industrial materials when not in use;
 - d. Divert run-on and stormwater generated from within the facility away from all stockpiled materials;
 - e. Clean all spills of industrial materials or wastes that occur during handling in accordance with spill response procedures; and,
 - f. Observe and clean, as appropriate, any outdoor material or waste handling equipment or containers that can be contaminated by contact with industrial materials or wastes.
- 5. Erosion and Sediment Control.** The Discharger shall (1) implement effective wind erosion controls; (2) provide effective stabilization for inactive areas, finished slopes, and other erodible areas prior to a forecasted storms; (3) maintain effective perimeter controls and stabilize site entrances and exits to sufficiently control discharges of erodible materials; and (4) divert run-on and stormwater generated from within the facility away from erodible materials.
- 6. Employee Training.** The Discharger shall ensure that all personnel implementing the SWPPP are properly trained with respect to BMP implementation, BMP effectiveness evaluations, visual observations, and monitoring activities. The Discharger shall identify which personnel need to be trained, their responsibilities, and the type of training they are to receive and maintain documentation of completed training and the personnel that received the training with the SWPPP.
- 7. Quality Assurance and Record Keeping.** The Discharger shall (1) develop and implement management procedures to ensure that appropriate personnel implement all SWPPP elements; (2) develop methods of tracking and recording BMP implementation; and (3) maintain BMP implementation records, training records, and records related to any spills and clean-up related response activities for a minimum of five years.

G. Action Levels and Advanced BMPs. If the Discharger samples total suspended solids (TSS), oil and grease, or pH in excess of an action level in Table A, the Discharger shall review the SWPPP to identify appropriate modifications to existing BMPs or additional BMPs as necessary to reduce pollutant discharge concentrations to levels below the action level. The Discharger shall revise the SWPPP accordingly before the next storm, if possible, or as soon as practical, and in no event later than three months following the exceedance.

Table A
 Stormwater Action Levels

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

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

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

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

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

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

5. The procedures, including maintenance procedures, and instructions to implement the BMP effectively; and
6. The equipment and tools necessary to implement the BMP effectively.

I. Annual Comprehensive Facility Compliance Evaluation. The Discharger shall conduct one annual facility evaluation for each reporting year (July 1 to June 30). If the Discharger conducts an annual evaluation fewer than 8 months, or more than 16 months, after it conducts the previous annual evaluation, it shall document the justification for doing so. The Discharger shall revise the SWPPP, as appropriate, and implement the revisions within 90 days of the annual evaluation. At a minimum, the annual evaluations shall consist of the following:

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

II. STANDARD PROVISIONS – MONITORING

A. Visual Observations

1. Monthly Visual Observations

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

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

B. Sampling and Analysis

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

III. STANDARD PROVISIONS – REPORTING

A. Annual Stormwater Report. The results of the Discharger’s Annual Comprehensive Facility Compliance Evaluation shall be reported in the Annual Stormwater Report to the Regional Water Board no later than July 30. The Discharger shall include in the Annual Stormwater Report the following:

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

IV. DEFINITIONS

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

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

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