TENTATIVE ORDER No. R2-2020-00XX
NPDES No. CA0004961

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

Table 1. Discharger Information

Discharger	Tesoro Refining & Marketing Company LLC
Facility Name	Marathon Martinez Refinery
Facility Address	150 Solano Way Martinez, CA 94553 Contra Costa County
CIWQS Place Number	228968

Table 2. Discharge Locations

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Treated refinery process wastewater and stormwater	38.0483	-122.08944	Suisun Bay
003	Stormwater from about 76 acres in southwestern portion of Tract 4 tank farm	38.0122	-122.0652	Lower Walnut Creek
004	Stormwater from about 198 acres, including southeast portion of Tract 4 tank farm and all of Tract 6 tank farm and offsite facilities	38.0225	-122.0583	Hastings Slough
005-T2NW	Stormwater from small areas near stairway leading down to non-operating saltwater pump station on creek side of slope	38.0302	-122.0753	Lower Walnut Creek
005-T2S-A	Stormwater from small areas near channel drain along north side of fence at used equipment reclamation area before Gate 15 south of Foster Wheeler area	38.0191	-122.0669	Lower Walnut Creek
005-T2S-B	Stormwater from small areas near fence line immediately north of railroad tracks (area at extreme south end of Tract 2)	38.0193	-122.0674	Lower Walnut Creek
005-T2S-C	Stormwater from small areas across road west of Foster Wheeler yard (three tall gray tanks) where runoff from asphalt perimeter drainage channels run under road toward creek	38.0202	-122.0682	Lower Walnut Creek
005-T2SW	Stormwater from small areas near “D” Street firehouse, against fence, including paved areas around auto shop and western side of Purchasing and Storehouse	38.0223	-122.0693	Lower Walnut Creek

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
005-T4NW	Stormwater from small areas at easternmost culvert that conveys runoff from this area under road to west	38.0179	-122.0675	Lower Walnut Creek
005-T4SW	Stormwater from small areas near outlet of pipe that drains impoundment (pipe has a locked valve)	38.0042	-122.0583	Lower Walnut Creek
006	Waste Management Unit (WMU) 5 Cap Runoff	38.0274	-122.0567	Lower Walnut Creek

Table 3. Administrative Information

This Order was adopted on:	XXX
This Order shall become effective on:	November 1, 2020
This Order shall expire on:	October 31, 2025
CIWQS Regulatory Measure Number	XXX
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:	February 3, 2025
The U.S. Environmental Protection Agency (U.S. EPA) and the California Regional Water Quality Control Board, San Francisco Bay Region, have classified this discharge as follows:	Major

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

_____
Michael Montgomery, Executive Officer

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Tables

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I. FACILITY INFORMATION

Information describing the Marathon Martinez Refinery (Facility) is summarized in Table 1 and Fact Sheet (Attachment F) sections I and II.

II. FINDINGS

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

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

B. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information the Discharger submitted as part of its application, information obtained through monitoring and reporting programs, and other available information. The Fact Sheet contains background information and rationale for the requirements in this Order and is hereby incorporated into and constitutes findings for this Order. Attachments A through E, G, and S are also incorporated into this Order.

C. 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.

D. 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. R2-2015-0033 (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 past violations of the previous order.

III. DISCHARGE PROHIBITIONS

A. Discharge of treated or untreated wastewater at a location or in a manner different from that described in this Order is prohibited.

B. Discharge at Discharge Point No. 001 is prohibited when treated wastewater does not receive an initial dilution of at least 15:1, as modeled. Compliance shall be achieved by proper operation and maintenance of the discharge outfall to ensure that it (or its replacement, in whole or part) is in good working order and is consistent with or can achieve better mixing than that described in

Fact Sheet section IV.C.4.a.ii. 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 section I.G of this Order.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Discharge Point No. 001

1. Effluent Limitations. The Discharger 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 [1]	Units	Average Monthly Limit	Maximum Daily Limit	Instantaneous Limits
Biochemical Oxygen Demand (BOD_5) (5-day @ 20 degrees Celsius)	lbs/day	2,000	3,600	-
Chemical Oxygen Demand (COD)	lbs/day	14,000	27,000	-
Total Suspended Solids (TSS)	lbs/day	1,600	2,500	-
Oil and Grease	lbs/day	590	1,100	-
Oil and Grease	mg/L	8.0	15	-
Phenolic Compounds	lbs/day	12	27	-
Ammonia (N)	lbs/day	1,100	2,400	-
Sulfide	lbs/day	11	24	-
Total Chromium	lbs/day	14	41	-
Hexavalent Chromium	lbs/day	1.1	2.6	-
pH	s.u.	-	-	6.0 - 9.0 [2]
Copper	µg/L	37	120	-
Selenium [3]	kg/day	0.69 (November 1–March 31) 0.36 (April 1–October 31) [4]	-	-
Lead	µg/L	3.7	7.8	-
Cyanide	µg/L	16	40	-
Dioxin-TEQ	µg/L	1.4×10^{-8}	2.8×10^{-8}	-
Ammonia (N)	mg/L	23	67	-
Chronic Toxicity [5]	TU_c	-	10	-

Abbreviations:

mg/L = milligrams per liter
lbs/day = pounds per day
s.u. = standard units
TU_c = toxicity units

Footnotes:

[1] All metals limitations are expressed as total recoverable metal.

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

[3] Compliance shall be evaluated by calculating the arithmetic mean of daily selenium mass discharges for each day of the calendar month. Daily mass discharges shall be calculated based on the total daily flow and the corresponding selenium concentration for each day that selenium is measured.

[4] From November 1 through March 31, the Discharger shall comply with a limit of 0.69 kg/day. From April 1 through October 31, the Discharger shall comply with a limit of 0.36 kg/day.

[5] Bioassays shall be conducted in accordance with MRP section V.B. The maximum daily effluent limitation for chronic toxicity shall be interpreted as the maximum test result for the month.

2. **Additional Contaminated Runoff Effluent Limitation Allocations.** Additional effluent limitation allocations for contaminated runoff commingled with process wastewater are established on top of the process wastewater mass-based limitations in Table 4. When contaminated runoff is discharged through Discharge Point No. 001, an additional effluent limitation allocation may be added to the effluent limitation in Table 4 for each pollutant in Table 5, below. The additional allocation shall be equal to the contaminated runoff flow times the pollutant concentration in Table 5.

Table 5. Stormwater Runoff Allocation

Pollutant	Units	Monthly Average	Daily Maximum
BOD_5	mg/L	26	48
TSS	mg/L	21	33
COD	mg/L	180	360
Oil and Grease	mg/L	8.0	15
Phenolic Compounds	mg/L	0.17	0.35
Total Chromium	mg/L	0.21	0.60
Hexavalent Chromium	mg/L	0.028	0.062

3. **Additional Ballast Water Effluent Limitation Allocations.** Additional effluent limitation allocations for ballast water commingled with process wastewater are established on top of the process wastewater mass-based limitations in Table 4. When ballast water is discharged through Discharge Point No. 001, an additional effluent limitation allocation may be added to the effluent limitation in Table 4 for each pollutant in Table 6, below. The additional allocation shall be equal to the ballast water flow times the pollutant concentration in Table 6.

Table 6. Ballast Water Allocation

Pollutant	Units	Monthly Average	Daily Maximum
BOD_5	mg/L	26	48
TSS	mg/L	21	33
COD	mg/L	240	470
Oil and Grease	mg/L	8.0	15

4. **Enterococcus Bacteria.** The discharge shall meet the following enterococcus effluent limitations, with compliance measured at Monitoring Location EFF-001-D1 and EFF-001-D2, as described in the MRP:

   a. The six-week rolling geometric mean of enterococcus bacteria, calculated weekly, shall not exceed 200 colony forming units per 100 milliliters (CFU/100 mL); and

   b. No more than 10 percent of all enterococcus bacteria samples collected in a calendar month shall exceed 1000 CFU/100 mL.

   Compliance with these enterococcus limits shall be evaluated as follows:

- **Six-week rolling geometric mean.** Compliance with this limit shall be determined weekly by calculating the geometric mean of all enterococcus sample results from the past six weeks.

- **10 percent of samples.** Compliance with this limit shall be determined based on measured sample results. The Discharger shall not report interpolated results. If the Discharger has 9 or fewer sample results in a calendar month, compliance shall be based on the highest result. If the Discharger has 10 to 19 sample results, compliance shall be based on the second highest result, and so on.

5. **Total Coliform Bacteria.** The discharge shall meet the following total coliform bacteria effluent limitations, with compliance measured at Monitoring Location EFF-001-D1 and EFF-001-D2, as described in the MRP:

   a. The median of five consecutive samples shall not have total coliform organisms exceeding 240 most probable number per 100 milliliters (MPN/100 mL); and

   b. Any single sample shall not exceed 10,000 MPN/100 mL.

6. **Acute Toxicity.** The discharge at Discharge Point No. 001 shall meet the following acute toxicity effluent limitations, with compliance measured at Monitoring Location EFF-001, as described in the MRP:

   a. An 11-sample median 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 also show less than 70 percent survival.

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

7. **Recycled Water Use Effluent Limitation Adjustments**. If the Discharger replaces raw water used in its operations with recycled water and complies with Provision VI.C.4.e, an additional allocation shall be added to the mass-based and concentration-based effluent limitations by calculating adjustments as described below and adding them to the effluent limitations in Table 4. All calculations supporting such limitation adjustments shall be described in applicable self-monitoring reports.

   a. Concentration-based Effluent Limitation Adjustments. The adjustment for a concentration-based effluent limitation shall be the difference between its recycled water influent mass and raw water influent mass, divided by the effluent volume for the

applicable monitoring interval (e.g., seven days for a constituent monitored weekly) and shall be calculated according to the following example in which constituent B is monitored weekly and the lag time is Y days:

Step 1: Influent mass of B = [(Influent recycled water concentration of B) – (Influent raw water concentration of B)] x (Influent recycled water volume)

Step 2: Effluent volume for monitoring period = Effluent volume at Monitoring Location EFF-001 for the one-week period beginning Y days after influent mass determined

Step 3: Effluent limitation adjustment for B = (Influent mass of B) / (Effluent volume for monitoring period)

b. Mass-based Effluent Limitation Adjustments. The adjustment for a mass-based effluent limitation shall be the difference between the recycled water influent mass and raw water influent mass, divided by the number of days in the monitoring period, and shall be calculated according to the following example for constituent B (lag time is not used for this calculation):

Step 1: Influent mass of B = [(Influent recycled water concentration of B) – (Influent raw water concentration of B)] x (Influent recycled water volume)

Step 2: Effluent limitation adjustment for B = (Influent mass of B) / (Monitoring interval in days)

B. Discharge Point Nos. 003 – 006

1. The Discharger shall comply with the following effluent limitations at Discharge Point Nos. 003 through 006, with compliance measured at Monitoring Locations EFF-003 through EFF-006, as described in the MRP:

Table 7. Effluent Limitations for Stormwater Outfalls

Parameter	Units	Maximum Daily Limit	Other Limits
Total Organic Carbon	mg/L	110	-
Oil and Grease	mg/L	15	-
pH	s.u.	-	6.5 – 8.5 at all times
Visible Oil	-	-	None observed
Visible Color	-	-	None observed

2. If a total organic carbon or oil and grease effluent limitation in Table 7 is exceeded at any of Monitoring Locations EFF-003 through EFF-006, the Discharger shall also comply with the following effluent limitations at the same monitoring location as described in the MRP:

Table 8. Supplemental Effluent Limitations for Stormwater Outfalls

Pollutant	Units	Maximum Daily Limit	Average Monthly Limit [1]
BOD_5	mg/L	48	26
TSS [2]	mg/L	33	21
COD	mg/L	360	180
Oil and Grease	mg/L	15	8.0
Phenolic Compounds	mg/L	0.35	0.17

Total Chromium	mg/L	0.60	0.21
Hexavalent Chromium	mg/L	0.062	0.028

Footnotes:

[1] These limitations shall not apply unless there is sufficient runoff for sampling on at least three days during the month.

[2] As indicated in Provision VI.C.4.c, the numeric actions levels for TSS are an annual average of 100 mg/L and a daily maximum of 400 mg/L.

V. RECEIVING WATER LIMITATIONS

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

1. Floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses;

2. Alteration of suspended sediment in such a manner as to cause nuisance or adversely affect beneficial uses or detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life;

3. Suspended material in concentrations that cause nuisance or adversely affect beneficial uses;

4. Bottom deposits or aquatic growths to the extent that such deposits or growths cause nuisance or adversely affect beneficial uses;

5. Alteration of temperature beyond present natural background levels unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses;

6. Changes in turbidity that cause nuisance or adversely affect beneficial uses, or increases from normal background light penetration or turbidity greater than 10 percent in areas where natural turbidity is greater than 50 nephelometric turbidity units;

7. Coloration that causes nuisance or adversely affects beneficial uses;

8. Visible, floating, suspended, or deposited oil or other products of petroleum origin; or

9. Toxic or other deleterious substances in concentrations or quantities that cause deleterious effects on wildlife, waterfowl, or other aquatic biota, or render any of these unfit for human consumption, either at levels created in the receiving waters or as a result of biological concentration.

B. The discharge shall not cause the following limits to be exceeded in receiving waters at any place within one foot of the water surface:

1. Dissolved Oxygen 5.0 mg/L, minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation. When natural factors cause concentrations less than that specified above, the discharge shall not cause further reduction in ambient dissolved oxygen concentrations.

2.	Dissolved Sulfide	Natural background levels
3.	pH	The pH shall not be depressed below 6.5 or raised above 8.5. The discharge shall not cause changes greater than 0.5 pH units in normal ambient pH levels.
4.	Nutrients	Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

C. The discharge shall not cause a violation of any water quality standard for receiving waters adopted by the Regional Water Board or State Water Resources Control Board (State Water Board) as required by the CWA and regulations adopted thereunder. If more stringent water quality standards are promulgated or approved pursuant to CWA section 303, or amendments thereto, the Regional Water Board may revise or modify this Order in accordance with the more stringent standards.

VI. PROVISIONS

A. Standard Provisions

1. The Discharger shall comply with all "Standard Provisions" in Attachment D.

2. The Discharger shall comply with all applicable provisions of the "Regional Standard Provisions, and Monitoring and Reporting Requirements for NPDES Wastewater Discharge Permits" in Attachment G.

3. For discharges from Discharge Point Nos. 003 through 006, the Discharger shall comply with all applicable provisions of Attachment S (*Stormwater Provisions, Monitoring, and Reporting Requirements*).

B. Monitoring and Reporting

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

C. Special Provisions

1. Reopener Provisions

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

a. If present or future investigations demonstrate that the discharges governed by this Order have or will have a reasonable potential to cause or contribute to adverse impacts on water quality or beneficial uses of the receiving waters.

b. If new or revised water quality objectives or total maximum daily loads (TMDLs) come into effect for San Francisco Bay 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 characterize and evaluate the discharge from Discharge Point No. 001 as required by the MRP, to verify that the reasonable potential analysis conclusions of this Order remain valid and to inform the next permit reissuance. The Discharger shall evaluate on annual basis if concentrations of any of the priority pollutants listed in Attachment G, Table B, significantly increase over past performance. The Discharger shall investigate the cause of any such increase. The investigation may include, but need not be limited to, an increase in monitoring frequency, monitoring of internal process streams, and monitoring of influent sources. The Discharger shall establish remedial measures addressing any increase resulting in reasonable potential to cause or contribute to an exceedance of applicable water quality objectives. This requirement may be satisfied through identification of the constituent as a "pollutant of concern" in the Discharger's Pollutant Minimization Program, described in Provision VI.C.3.

b. Reporting Requirements

i. Routine Reporting. The Discharger shall report the pollutants detected at or above applicable water quality objectives (see Fact Sheet Table F-8 for the objectives) in the transmittal letter for the self-monitoring report associated with the month in which samples were collected. The requirement does not apply to pollutants with effluent limitations (see Table 4, section IV.A).

ii. Annual Reporting. The Discharger shall summarize the annual data evaluation and source investigation in the annual self-monitoring report.

3. Pollutant Minimization Program

a. The Discharger shall continue to improve its existing Pollutant Minimization Program to promote minimization of pollutant loadings to the treatment plant and therefore to the receiving waters.

b. The Discharger shall submit an annual report no later than February 28 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 Facility. The Discharger may provide a forum for employees to provide input.

vi. 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, and v.

vii. Documentation of efforts and progress. This discussion shall detail all of the Discharger's Pollutant Minimization Program activities during the reporting year.

viii. Evaluation of Pollutant Minimization Program and task effectiveness. The Discharger shall use the criteria established in Provision VI.C.3.b.vi to evaluate the program and task effectiveness.

ix. 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 Facility. The Executive Officer may approve alternative measures when influent monitoring is unlikely to produce useful analytical data;

iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutants in the effluent at or below the effluent limitation;

iv. Implementation of appropriate cost-effective control measures for the reportable priority pollutants, consistent with the control strategy; and

v. Inclusion of the following specific items within the annual report required by Provision VI.C.3.b above:

(a) All Pollutant Minimization Program monitoring results for the previous year;
(b) List of potential sources of the reportable priority pollutants;
(c) Summary of all actions undertaken pursuant to the control strategy; and
(d) Description of actions to be taken in the following year.

4. Other Special Provisions

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

Table 9. Copper Action Plan

Task	Compliance Date
1. Review Potential Copper Sources Submit an up-to-date inventory of potential copper sources.	With annual pollution minimization program report due February 28, 2021
2. Implement Copper Control Program Continue to minimize copper sources, as identified in Discharger's Pollutant Prevention and Minimization Plan. Incorporate additional measures as appropriate to address newly identified potential copper sources.	Implementation shall be ongoing
3. Implement Additional Actions If the Regional Water Board notifies the Discharger that the three-year rolling mean dissolved copper concentration in Suisun Bay exceeds 2.8 µg/L, then within 90 days of the notification, evaluate the effluent copper concentration trend and, if it is increasing, develop and begin implementation of additional measures to control copper discharges. Report the conclusion of the trend analysis and provide a schedule for any new actions to be taken within the next 12 months.	With next annual pollution minimization program report due February 28 (at least 90 days following notification)
4. Report Status Submit an annual report documenting copper control program implementation that evaluates the effectiveness of the actions taken, including any additional actions required by Task 2 above, and provides a schedule for actions to be taken within the next 12 months.	Annually, with annual pollution minimization program report due February 28 each year

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

Table 10. Cyanide Action Plan

Task	Compliance Date
1. Review Potential Cyanide Sources Submit an up-to-date inventory of potential cyanide sources.	With annual pollution minimization program report due February 28, 2021
2. Implement Cyanide Control Program Continue to minimize cyanide sources, as identified in Discharger's Pollutant Prevention and Minimization Plan consisting, at a minimum, of the following elements: **a.** Inspect each potential source to assess the need to include that source in the control program. **b.** Maintain an emergency monitoring and response plan to be implemented if a significant cyanide discharge occurs.	Implementation shall be ongoing
3. Implement Additional Measures If the Regional Water Board notifies the Discharger that ambient monitoring shows cyanide concentrations are 1.0 µg/L or higher in the main body of San Francisco Bay, then within 90 days of the notification, commence actions to identify and abate cyanide sources responsible for the elevated ambient concentrations, report on the progress and effectiveness of the actions taken, and provide a schedule for actions to be taken within the next 12 months.	With next annual pollution minimization program report due February 28 (at least 90 days following notification)

Task	Compliance Date
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.	Annually, with annual pollution minimization program report due February 28 each year

c. Stormwater Pollution Prevention Plan and Annual Report. By October 1, 2021, the Discharger shall submit and implement an updated Stormwater Pollution Prevention Plan (SWPPP). In subsequent years, the Discharger shall update and submit an updated SWPPP, or a letter stating that no revisions are necessary and the last year it updated its SWPPP, annually by October 1. The Discharger shall implement each SWPPP update. The SWPPP shall contain the elements listed in Attachment S section I.J.

The Discharger shall submit an annual stormwater report by July 1 of each year covering data for the previous wet weather season. The annual stormwater report shall, at a minimum, include the following:

i. tabulated summary of all sampling results and visual observations for all stormwater discharge points;

ii. comprehensive discussion of compliance with effluent limitations and other requirements of this Order and any corrective actions taken or planned; and

iii. Comprehensive discussion of source identification and control programs for pollutants of concern, including total suspended solids (TSS). If TSS levels at any stormwater discharge point exceed the numeric action levels of an annual average of 100 mg/L or a daily maximum of 400 mg/L, the Discharger shall identify in its next SWPPP update additional best management practices that it will implement to reduce TSS levels below these thresholds.

d. Construction and Development Requirements for Stormwater. In areas where construction stormwater is not subject to physical treatment, the Discharger shall enroll under *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (NPDES Permit No. CAS000002, currently Order No. 2009-0009-DWQ). These requirements do not apply to stormwater that drains to the Discharger's wastewater treatment plant or stormwater treated in earthen basins via physical settling.

e. Conditions for Mass and Concentration Adjustments for Recycled Water. Prior to any allocation of recycled water use adjustments to mass-based or concentration-based effluent limitations (see Table 4), the Discharger shall satisfy all of the following conditions:

i. The Discharger shall sample and analyze influent recycled water for any constituents for which it seeks adjustments at Monitoring Location INF-001 at least as frequently as the MRP requires for effluent monitoring at Monitoring Location EFF-001.

ii. The Discharger shall sample and analyze influent raw water for any constituents for which it seeks adjustments at Monitoring Location INF-002 at least once per year.

The annual average concentration may be used in the calculations described in section IV.A.7 of this Order.

iii. The Discharger shall determine the interval between the introduction of a limited constituent in recycled water and the appearance of that constituent in the final effluent.

iv. The Discharger shall submit a technical report demonstrating that proposed adjustments will not impair beneficial uses in the vicinity of the discharge (such as by creating a zone acutely toxic to aquatic organisms). At a minimum, the report shall assess toxicity testing results and compare the effluent concentrations projected when using recycled water to the proposed adjusted effluent limitations.

v. The Discharger shall submit one or more examples of how influent recycled and raw water concentrations, lag time, and effluent limitation adjustments will be calculated in accordance with section IV.A.7 of this Order.

vi. The Discharger shall obtain written concurrence from the Executive Officer stating that these conditions have been met.

f. Average Annual Selenium Load. The Discharger shall report the average annual selenium load with its annual self-monitoring report. The average annual load shall be the arithmetic mean of the annual mass discharges for the previous permit term. Annual mass emissions shall be computed as follows:

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

where:

N = number of samples in a year
Qi = flow rate (MGD) associated with the i^{th} sample, valid until a new sample is collected
Ci = selenium concentration (mg/L) associated with the i^{th} sample, valid until a new sample is collected

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

g. Acceptance of Ballast Water. Before accepting ballast water at its treatment plant, the Discharger shall obtain approval from the California State Lands Commission and notify the Regional Water Board of that approval.

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:

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

Average Monthly Effluent Limitation (AMEL)
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 (CV)
Measure of data variability calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

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

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

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

Detected, but Not Quantified (DNQ)
Sample result less than the RL, but greater than or equal to the laboratory's MDL. Sample results reported as DNQ are estimated concentrations.

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

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

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

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

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

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

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

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

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

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

Method Detection Limit (MDL)
Minimum concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in 40 C.F.R. part 136, Attachment B.

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

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

Not Detected (ND)
Sample results less than the laboratory's MDL.

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

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

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

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

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

Standard Deviation (σ)
Measure of variability calculated as follows:

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

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

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

ATTACHMENT B – FACILITY MAP

Figure B-1. Facility Map

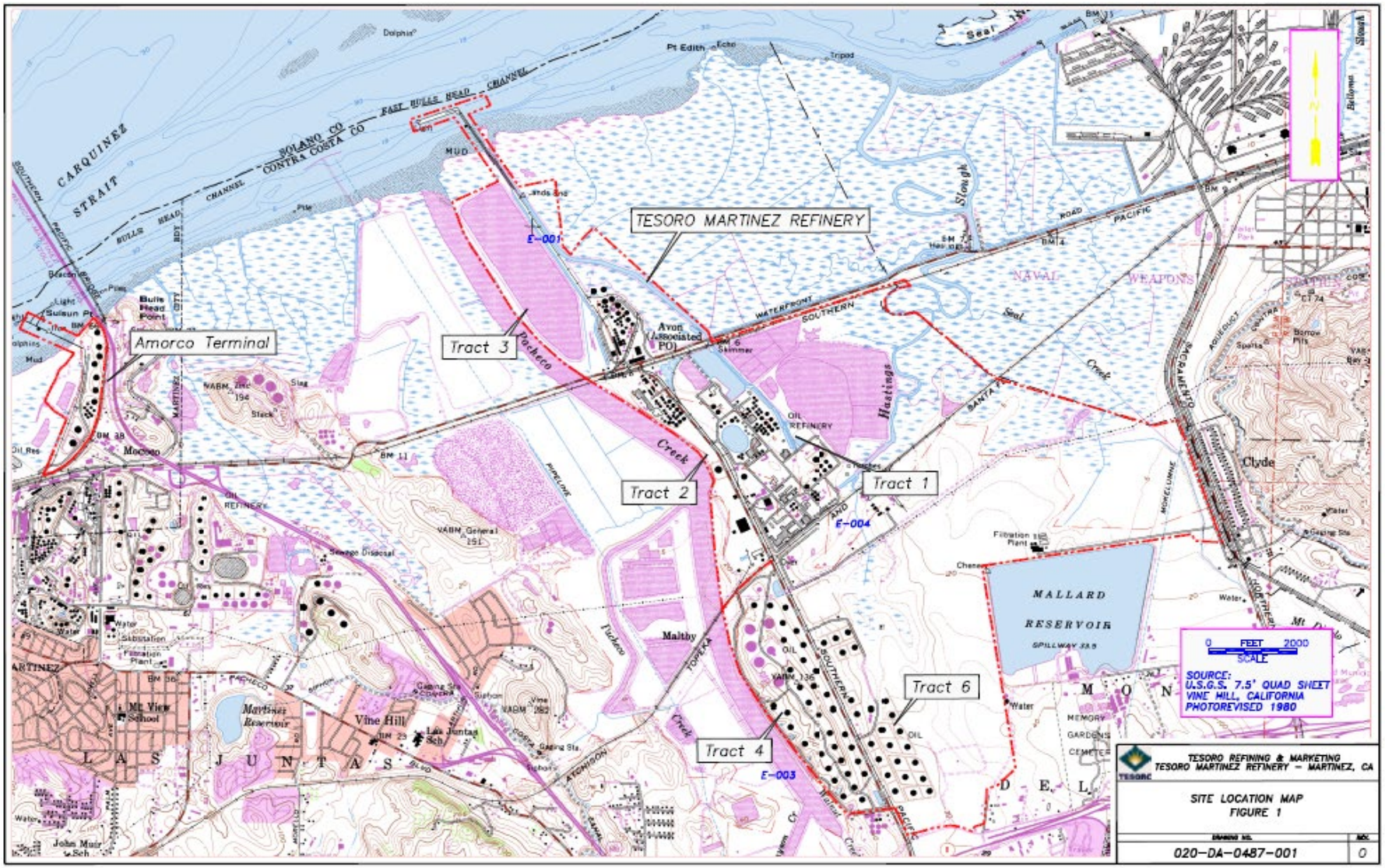
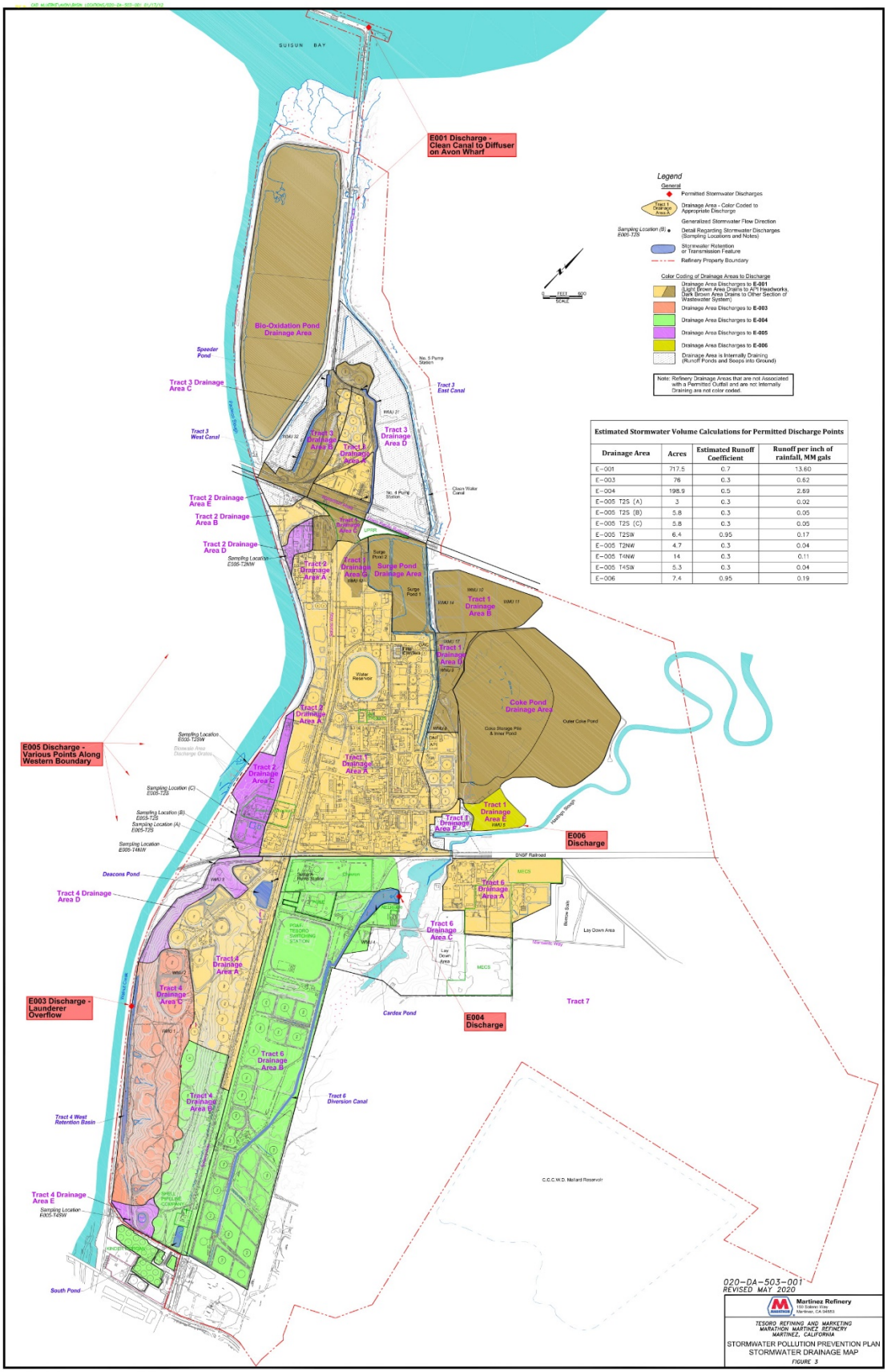


Figure B-2. Stormwater Discharge Points



ATTACHMENT C – PROCESS FLOW DIAGRAM

Figure C-1. Wastewater Collection Diagram

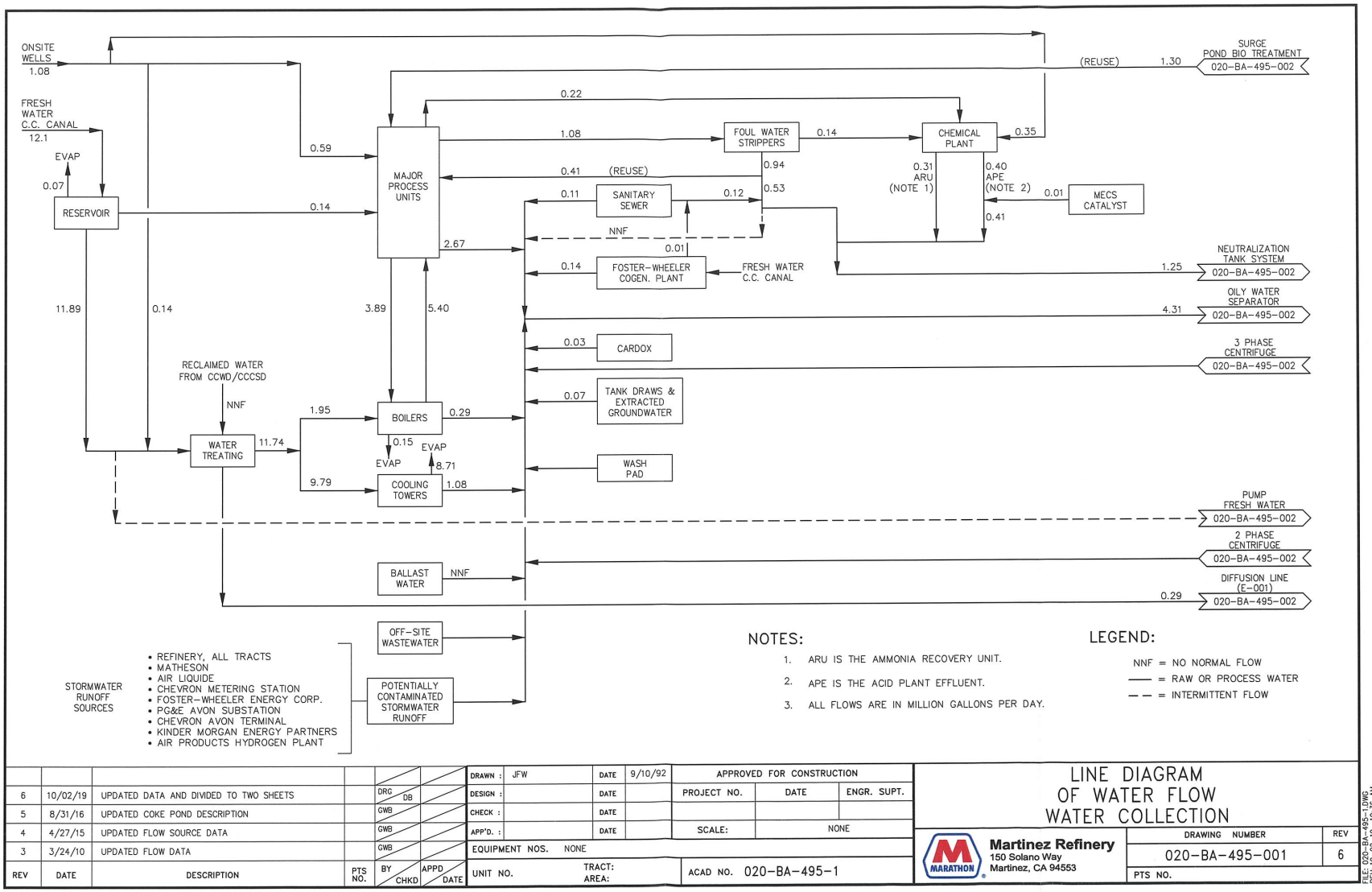
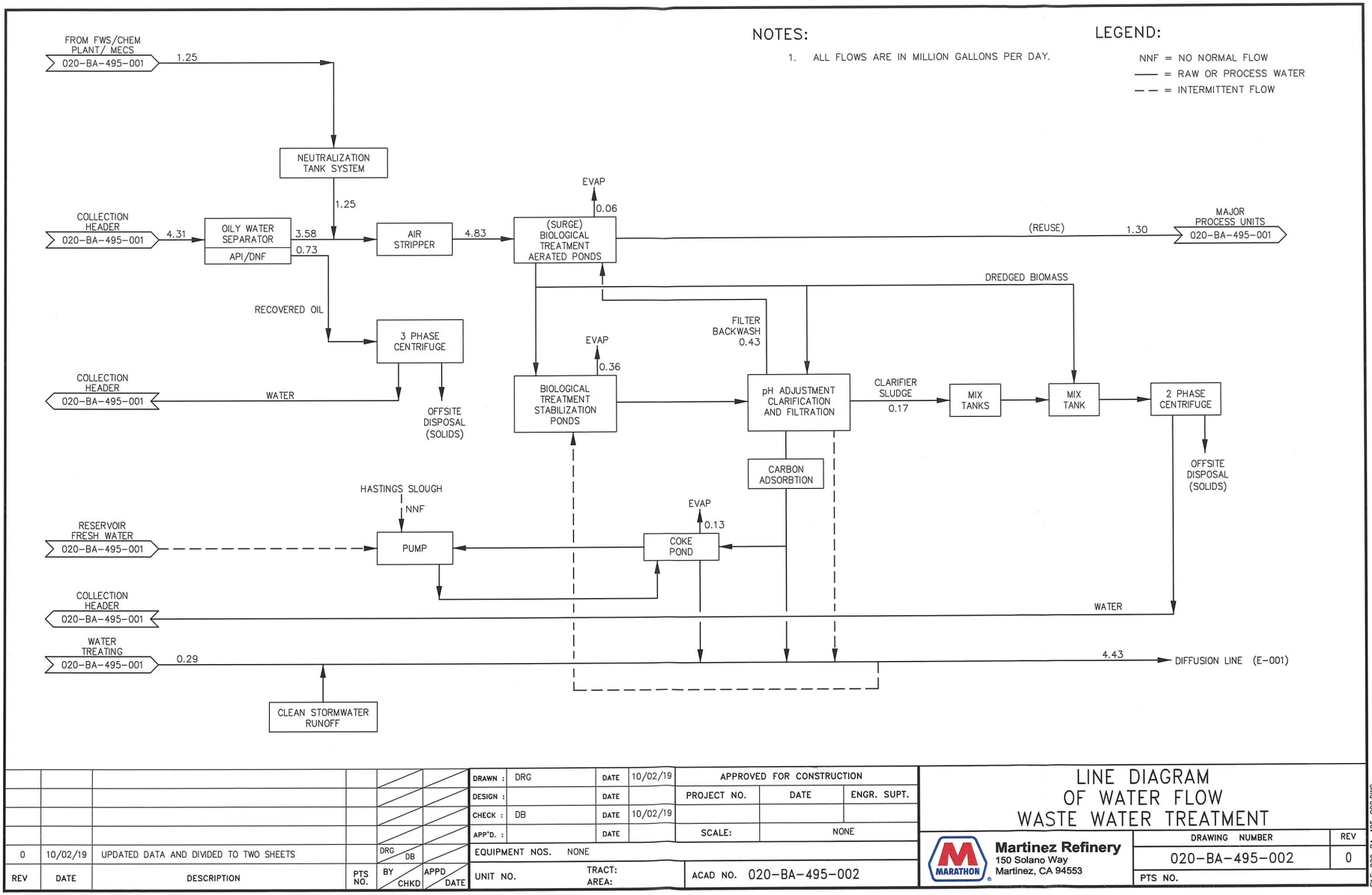


Figure C-2. Process Flow Diagram



ATTACHMENT D –STANDARD PROVISIONS

I. STANDARD PROVISIONS—PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the terms, requirements, and conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application; or a combination thereof. (40 C.F.R. § 122.41(a); Wat. Code §§ 13261, 13263, 13265, 13268, 13000, 13001, 13304, 13350, 13385.)

2. The Discharger shall comply with effluent standards or prohibitions established under CWA section 307(a) for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 C.F.R. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

The Discharger shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Discharger to achieve compliance with the conditions of this Order. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by a Discharger only when necessary to achieve compliance with the conditions of this Order. (40 C.F.R. § 122.41(e).)

E. Property Rights

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

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

F. Inspection and Entry

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

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(i); 40 C.F.R. § 122.41(i)(1); Wat. Code, §§ 13267, 13383);

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(2)); Wat. Code, §§ 13267, 13383);

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (33 U.S.C. § 1318(a)(4)(B)(ii); 40 C.F.R. § 122.41(i)(3); Wat. Code, §§ 13267, 13383); and

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (33 U.S.C. § 1318(a)(4)(B); 40 C.F.R. § 122.41(i)(4); Wat. Code, §§ 13267, 13383.)

G. Bypass

1. Definitions

a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 C.F.R. § 122.41(m)(1)(i).)

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

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

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

a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 122.41(m)(4)(i)(A));

b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of

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

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

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

5. Notice

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

b. Unanticipated bypass. The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the Regional Water Board. As of December 21, 2020, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J below. Notices shall comply with 40 C.F.R. part 3, 40 C.F.R. section 122.22, and 40 C.F.R. part 127. (40 C.F.R. § 122.41(m)(3)(ii).)

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 C.F.R. § 122.41(n)(2).)

2. Conditions necessary for a demonstration of upset. A discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 C.F.R. § 122.41(n)(3)):

a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 122.41(n)(3)(ii));

c. The Discharger submitted notice of the upset as required in Standard Provisions—Reporting V.E.2.b below (24-hour notice) (40 C.F.R. § 122.41(n)(3)(iii)); and

d. The Discharger complied with any remedial measures required under Standard Provisions—Permit Compliance I.C above. (40 C.F.R. § 122.41(n)(3)(iv).)

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 C.F.R. § 122.41(n)(4).)

II. STANDARD PROVISIONS—PERMIT ACTION

A. General

This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Discharger for modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any Order condition. (40 C.F.R. § 122.41(f).)

B. Duty to Reapply

If the Discharger wishes to continue an activity regulated by this Order after the expiration date of this Order, the Discharger must apply for and obtain a new permit. (40 C.F.R. § 122.41(b).)

C. Transfers

This Order is not transferable to any person except after notice to the Regional Water Board. The Regional Water Board may require modification or revocation and reissuance of the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 C.F.R. §§ 122.41(l)(3), 122.61.)

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 C.F.R. § 122.41(j)(1).)

B. Monitoring must be conducted according to test procedures approved under 40 C.F.R. part 136 for the analyses of pollutants unless another method is required under 40 C.F.R. chapter 1, subchapter N. Monitoring must be conducted according to sufficiently sensitive test methods approved under 40 C.F.R. part 136 for the analysis of pollutants or pollutant parameters or required under 40 C.F.R. chapter 1, subchapter N. For the purposes of this paragraph, a method is sufficiently sensitive when:

1. The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter, and either (a) the method ML is at or below the level of the applicable water quality criterion for the measured pollutant or pollutant parameter, or (b) the method ML is above the applicable water quality criterion but the amount of the pollutant or pollutant parameter in a facility's discharge is

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. § 122.41(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, subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional 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 under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

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 permit under several provisions of the Water Code, including, but not limited to, sections 13268, 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 (µg/L) (40 C.F.R. § 122.42(a)(1)(i));

b. 200 µg/L for acrolein and acrylonitrile; 500 µg/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 (µg/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

Tables

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

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

I. GENERAL MONITORING PROVISIONS

A. The Discharger shall comply with this MRP. The Executive Officer may amend this MRP pursuant to 40 C.F.R. sections 122.62, 122.63, and 124.5. If any discrepancies exist between this MRP and the "Regional Standard Provisions, and Monitoring and Reporting Requirements (Supplement to Attachment D) for NPDES Wastewater Discharge Permits" (Attachment G) or *Stormwater Provisions, Monitoring, and Reporting Requirements* (Attachment S), this MRP shall prevail.

B. The Discharger shall conduct all monitoring in accordance with Attachment D, section III, as supplemented by Attachment G. Equivalent test methods must be more sensitive than those specified in 40 C.F.R. section 136 and must be specified in this permit.

C. The Discharger shall ensure that results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board at the following address:

State Water Resources Control Board
Quality Assurance Program Officer
Office of Information Management and Analysis
1001 I Street, Sacramento, CA 95814

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

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Locations

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Recycled Water	INF-001	Any point in pipe that delivers only recycled water to Facility but upstream of any wastewater treatment unit, blending point, or point of use
Raw Water	INF-002	Any point in pipe that delivers raw water to Facility but upstream of any water treatment unit, blending point, or point of use
Treated Process Wastewater	EFF-001	Any point after full treatment and before discharge to Suisun Bay

Type of Sampling Location	Monitoring Location Name	Monitoring Location Description
Disinfected Sanitary Wastewater	EFF-001-D1	Any point in Tract 1 sanitary sewer where adequate disinfection is ensured
Disinfected Sanitary Wastewater	EFF-001-D2	Any point in Tract 2 sanitary sewer where adequate disinfection is ensured
Stormwater	EFF-003	Any point where stormwater representative of that discharged at Discharge Point No. 003, including all stormwater flow tributary to that outfall, is present
Stormwater	EFF-004	Any point where stormwater representative of that discharged at Discharge Point No. 004, including all stormwater flow tributary to that outfall, is present
Stormwater	EFF-005-T2NW	Any point where stormwater representative of that discharged at Discharge Point No. 005-T2NW, including all stormwater flow tributary to that outfall, is present
Stormwater	EFF-005-T2S-A	Any point where stormwater representative of that discharged at Discharge Point No. 005-T2S-A, including all stormwater flow tributary to that outfall, is present
Stormwater	EFF-005-T2S-B	Any point where stormwater representative of that discharged at Discharge Point No. 005-T2S-B, including all stormwater flow tributary to that outfall, is present
Stormwater	EFF-005-T2S-C	Any point where stormwater representative of that discharged at Discharge Point No. 005-T2S-C, including all stormwater flow tributary to that outfall, is present
Stormwater	EFF-005-T2SW	Any point where stormwater representative of that discharged at Discharge Point No. 005-T2SW, including all stormwater flow tributary to that outfall, is present
Stormwater	EFF-005-T4NW	Any point where stormwater representative of that discharged at Discharge Point No. 005-T4NW, including all stormwater flow tributary to that outfall, is present
Stormwater	EFF-005-T4SW	Any point where stormwater representative of that discharged at Discharge Point No. 005-T4SW, including all stormwater flow tributary to that outfall, is present
Stormwater	EFF-006	Any point where stormwater representative of that discharged at Discharge Point No. 006, including all stormwater flow tributary to that outfall, is present

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001 (Recycled Water Intake)

Monitoring recycled water at Monitoring Location INF-001 is only required if the Discharger chooses to apply for recycled water adjustments in accordance with provision IV.A.7 of this Order.

The Discharger need monitor only those parameters for which it seeks effluent limitation adjustments; monitoring others is optional.

Table E-2. Influent Monitoring—Monitoring Location INF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Recycled Water Flow [1]	MGD	Continuous	Continuous
Biochemical Oxygen Demand (BOD_5) (5-day @ 20 degrees Celsius)	mg/L	C-24	1/Month
Total Suspended Solids (TSS)	mg/L	C-24	1/Week
Chemical Oxygen Demand (COD)	mg/L	C-24	1/Month
Oil and Grease	mg/L	Grab	1/Month
Sulfide, Total	mg/L	Grab	1/Month
Phenolic Compounds, Total	mg/L	C-24	1/Month
Ammonia Nitrogen, Total (as N)	mg/L	C-24	1/Month
Chromium, Total Recoverable	mg/L	C-24	1/Month
Chromium (VI), Total Recoverable	mg/L	Grab	1/Month
Copper, Total Recoverable	µg/L	C-24	1/Month
Cyanide, Total [2]	µg/L	Grab	1/Month
Lead, Total Recoverable	µg/L	C-24	1/Month
Selenium, Total Recoverable [3]	µg/L	C-24	1/Week
Dioxin-TEQ	ρg/L	C-24	2/Year

Unit Abbreviations:

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

Sample Types and Frequencies:

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

Footnotes:

[1] For influent flows, the following information shall also be monitored and reported in the monthly self-monitoring reports:
- Daily Average Flow (MGD)
- Total Monthly Flow Volume (MG)

[2] 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 edition.

[3] The Dischargers shall analyze selenium using U.S. EPA Method No. 200.8 or Standard Method No. 3114B or 3114C.

B. Monitoring Location INF-002 (Raw Water Intake)

Monitoring raw water at Monitoring Location INF-002 is only required if the Discharger chooses to apply for recycled water adjustments in accordance with provision IV.A.7 of this Order. The Discharger need monitor only those parameters for which it seeks effluent limitation adjustments; monitoring others is optional.

Table E-3. Influent Monitoring—Monitoring Location INF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency
BOD_5	mg/L	C-24	1/Year [1]

Parameter	Units	Sample Type	Minimum Sampling Frequency
TSS	mg/L	C-24	1/Year [1]
COD	mg/L	C-24	1/Year [1]
Oil and Grease	mg/L	Grab	1/Year [1]
Sulfide, Total	mg/L	Grab	1/Year [1]
Phenolic Compounds, Total	mg/L	C-24	1/Year [1]
Ammonia Nitrogen, Total (as N)	mg/L	C-24	1/Year [1]
Chromium, Total Recoverable	mg/L	C-24	1/Year [1]
Chromium (VI), Total Recoverable	mg/L	Grab	1/Year [1]
Copper, Total Recoverable	µg/L	C-24	1/Year [1]
Cyanide, Total [2]	µg/L	Grab	1/Year [1]
Lead, Total Recoverable	µg/L	C-24	1/Year [1]
Selenium, Total Recoverable [3]	µg/L	C-24	1/Year [1]
Dioxin-TEQ	ρg/L	C-24	1/Year [1]

Unit Abbreviations:

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

Sample Types and Frequency:

C-24 = 24-hour composite sample
Grab = grab sample
1/Year = once per year

Footnotes:

[1] As described in Provision VI.C.4.e of this Order, the Discharger shall sample and analyze influent raw water at least once per year at Monitoring Location INF-001 for any constituents for which it seeks recycled water use adjustments. The annual average concentration may be used in the calculations described in provision IV.A.7 of this Order.

[2] 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 edition.

[3] The Discharger shall analyze selenium using U.S. EPA Method No. 200.8 or Standard Method No. 3114B or 3114C.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

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

Table E-4. Effluent Monitoring—Monitoring Location EFF-001

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow [1]	MGD	Continuous	Continuous/D
Oil and Grease	mg/L	Grab, C-24	1/Week
pH [2]	standard units	Continuous	Continuous
Temperature	ºC	Continuous	Continuous
BOD_5	mg/L, lbs/day	C-24	1/Month
TSS	mg/L, lbs/day	C-24	1/Week
COD	mg/L, lbs/day	C-24	1/Month
Sulfide	mg/L, lbs/day	Grab	1/Month
Ammonia	mg/L as N, lbs/day	C-24	1/Month
Total Chromium	lbs/day	C-24	1/Month
Hexavalent Chromium	lbs/day	Grab	1/Month

Parameter	Units	Sample Type	Minimum Sampling Frequency
Phenolics Compounds	lbs/day	C-24	1/Month
Copper	µg/L	C-24	1/Month
Cyanide	µg/L	Grab	1/Month
Dioxin-TEQ	µg/L	C-24	2/Year
Selenium	µg/L	C-24	1/Week
Lead	µg/L	C-24	1/Month
Acute Toxicity [3]	% survival	C-24	1/Week [5]
Chronic Toxicity [4]	TUc	C-24	1/Quarter
Other Priority Pollutants [6]	µg/L	Grab	2/Year

Unit Abbreviations:

MGD = million gallons per day
mg/L = milligrams per liter
µg/L = micrograms per liter
mg/L as N = milligrams per liter as nitrogen
% survival = percent survival
TUc = chronic toxicity units

Sampling Types and Frequencies:

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

Footnotes:

[1] Flow shall be monitored continuously and the daily average flow (MGD) and total monthly flow volume (MG) shall be reported in monthly self-monitoring reports:

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

[3] Acute bioassay tests shall be performed in accordance with MRP section V.A.

[4] Chronic bioassay tests shall be performed in accordance with MRP section V.B.

[5] If the Discharger partially routes treated wastewater around GAC units, it shall conduct acute toxicity monitoring.

[6] The Discharger shall monitor for the pollutants listed in Attachment G, Table B.

B. Monitoring Locations EFF-001-D1 and EFF-001-D2 (Discharge Point No. 001)

The Discharger shall monitor treated wastewater at Monitoring Locations EFF-001-D1 and EFF-001-D2 as follows:

Table E-5. Effluent Monitoring—Monitoring Locations EFF-001-D1 and EFF-001-D2

Parameter	Units	Sample Type	Minimum Sampling Frequency
Total Coliform [1]	MPN/100 mL	Grab	1/Month
Enterococcus [1, 2]	CFU/100 mL [3]	Grab	1/Week

Unit Abbreviation:

CFU/100 mL = colony forming units per 100 milliliters
MPN/100 mL = most probable number per 100 milliliters

Sample Type and Frequencies:

Grab = grab sample
1/Week = once per week
1/Month = once per month

Footnotes:

[1] U.S. EPA Method 1600 or an equivalent method is suggested to measure culturable enterococci.

[2] If the data contain results that are "Not Detected" (ND), the Discharger shall use the minimum detection level to calculate the geometric mean. If the data set contains results that are "Detected, but Not Quantified" (DNQ), the Discharger shall use the DNQ value to calculate the geometric mean.

[3] Results may be reported as either MPN/100 mL if the laboratory method used provides results in MPN/100 mL or CFU/100 mL if the laboratory method used provides results in CFU/100 mL.

C. Stormwater Monitoring

The Discharger shall monitor stormwater discharges at Monitoring Locations EFF-003 through EFF-006 as follows:

Table E-6. Stormwater Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Outfalls
Flow	MGD	Calculation [1]	Not Applicable	All
TOC	mg/L	Grab [2]	Each discharge event [3]	All[4]
Oil and Grease	mg/L	Grab [2]	Each discharge event [3]	All[4]
pH	s.u.	Grab [2]	Each discharge event [3]	All[4]
Specific Conductance	µmhos/cm	Grab [2]	Each discharge event [3]	All[4]
TSS	mg/L	Grab [2]	Each discharge event [3]	All[4]
Standard Observations	-	-	Each discharge event [3]	All
BOD_5	mg/L	Grab [2]	Daily during storm event	[5]
COD	mg/L	Grab [2]	Daily during storm event	[5]
Phenolic Compounds	mg/L	Grab [2]	Daily during storm event	[5]
Total Chromium	µg/L	Grab [2]	Daily during storm event	[5]
Hexavalent Chromium	µg/L	Grab [2]	Daily during storm event	[5]

Unit Abbreviations:

MGD = million gallons per day
mg/L = milligrams per liter
µg/L = micrograms per liter
µmhos/cm = micromhos per centimeter

Footnotes:

[1] The monthly cumulative rainfall shall be measured, and the total volume of stormwater discharged for each month shall be calculated based on the drainage area served by each discharge point. The monthly rainfall amount and the monthly discharge volume for each discharge point shall be reported on a monthly basis.

[2] At least one grab sample shall be collected within the first 30 minutes of significant flow during a storm event.

[3] For Monitoring Locations EFF-005-T2NW, EFF-005-T2S-A, EFF-005-T2S-B, EFF-005-T2S-C, EFF-005-T2SW, EFF-005-T4NW, EFF-005-T4SW, and EFF-006, samples for chemical analysis shall be collected, during daylight storms, at least twice during the wet season.

[4] If and when the supplemental effluent limitations in Table 8 of this Order become effective in accordance with section IV.B.2 of this Order, the monitoring frequency at the outfalls where the limitations are in effect shall be increased to daily during each storm event.

[5] If and when supplemental effluent limitations for this pollutant in Table 8 of this Order become effective in accordance with section IV.B.2 of this Order, monitoring shall begin at the outfalls where the limitations are in effect.

V. TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity

1. Compliance with the acute toxicity effluent limitations shall be evaluated at Monitoring Location EFF-001 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 the Discharger demonstrates that specific identifiable substances in the discharge are rapidly rendered harmless upon discharge to the receiving water, compliance with the acute toxicity limit may be determined after test samples are adjusted to remove the influence of those substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration and that the adjustment will not remove the influence of other substances must be obtained prior to any such adjustment. The Discharger may adjust the pH of acute toxicity samples prior to performing bioassays to minimize ammonia toxicity interference.

4. Bioassay 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-001 for critical life stage toxicity testing as indicated below. Effluent samples may be before disinfection for toxicity tests. 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 red abalone (*Haliotis rufescens*) unless a more sensitive species is identified. If using this species proves unworkable, the Executive

Officer may specify a different species in writing upon the Discharger's request with justification.

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

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

i. The Discharger shall monitor routinely once per quarter.

ii. The Discharger shall accelerate monitoring to monthly after exceeding a single-sample maximum value of 10 TU_c 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 chronic toxicity limit in ii, above.

iv. If accelerated monitoring confirms consistent toxicity in excess of the chronic toxicity limit, 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 chronic toxicity limit, 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. The adjustment shall not remove the influence of other substances. Written acknowledgement that the Executive Officer concurs with the Discharger's demonstration must be obtained prior to any such adjustment.

e. Dilution Series. The Discharger shall conduct tests at 40%, 20%, 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 Observable Effect Level (NOEL) values in percent effluent. The NOEL shall equal the IC_{25} or EC_{25} (see MRP Appendix E-1). If the IC_{25} or EC_{25} cannot be statistically determined, the NOEL shall equal the No Observable Effect Concentration (NOEC) derived using hypothesis testing. The NOEC is the maximum percent effluent concentration that causes no observable effect on test organisms based on a critical life stage toxicity test.

f. IC_{15}, IC_{25}, IC_{40}, and IC_{50} values (or EC_{15}, EC_{25}, EC_{40}, and EC_{50}) as percent effluent

g. TU values (100/NOEL and upper and lower confidence intervals)

h. Mean percent mortality (±s.d.) after 96 hours in 100% effluent (if applicable)

i. IC_{50} or EC_{50} values for reference toxicant tests

j. Available water quality measurements for each test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, ammonia).

3. Toxicity Reduction Evaluation (TRE)

a. The Discharger shall prepare a generic TRE work plan within 90 days of the effective date of this Order to be ready to respond to toxicity events. The Discharger shall review and update the work plan as necessary so that it remains current and applicable to the discharge and discharge facilities.

b. Within 30 days of exceeding the chronic toxicity effluent limit, 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 limit, the Discharger shall initiate a TRE in accordance with a TRE work plan that incorporates any and all Executive Officer comments.

d. The TRE shall be specific to the discharge and be in accordance with current technical guidance and reference materials, including U.S. EPA guidance materials. The Discharger shall conduct the TRE as a tiered evaluation as summarized below:

i. Tier 1 shall consist of basic data collection (routine and accelerated monitoring).

ii. Tier 2 shall consist of evaluation of treatment process, including operational practices and in-plant process chemicals.

iii. Tier 3 shall consist of a toxicity identification evaluation (TIE).

iv. Tier 4 shall consist of a toxicity source evaluation.

v. Tier 5 shall consist of a toxicity control evaluation, including options for modifications of in-plant treatment processes.

vi. Tier 6 shall consist of implementation of selected toxicity control measures, and follow-up monitoring and confirmation of implementation success.

e. The Discharger may end the TRE at any stage if monitoring finds there is no longer consistent toxicity (i.e., compliance with the chronic toxicity limit).

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 limit.

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 (RMP), which collects data on pollutants and toxicity in San Francisco Bay water, sediment, and biota.

VII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

The Discharger shall comply with all Standard Provisions (Attachments D, G, and S) related to monitoring, reporting, and recordkeeping.

B. Self-Monitoring Reports (SMRs)

1. **SMR Format.** The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) website (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) for information that must also be reported with monthly SMRs.

   Monthly SMRs shall include all new monitoring results obtained since the last SMR was submitted. If the Discharger monitors any pollutant more frequently than required by this Order, the Discharger shall include the results of such monitoring in the calculations and reporting for the SMR.

   b. **Annual SMR** — Annual SMRs shall be due February 1 each year, covering the previous calendar year. The annual SMR shall contain the items described in Attachment G section V.C.1.f. See also Provisions VI.C.2 (Effluent Characterization Study and Report) and VI.C.4.f. (Average Annual Selenium Load) of the Order for requirements to submit reports with annual SMRs.

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

Table E-7. CIWQS Reporting

Parameter	Method of Reporting: EDF/CDF data upload or manual entry	Method of Reporting: 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

Parameter	Method of Reporting: EDF/CDF data upload or manual entry	Method of Reporting: Attached File
Antimony Arsenic Beryllium Cadmium Chromium Copper Cyanide Lead Mercury Nickel Selenium Silver Thallium Zinc Dioxins &Furans (by U.S. EPA Method 1613) Other Pollutants (by U.S. EPA Methods 601, 602, 608, 610, 614, 624, and 625)	Required for all results [2]	-
Analytical Method	Not required (Discharger may select "data unavailable") [1]	-
Collection Time Analysis Time	Not required (Discharger may select "0:00") [1]	-

Footnotes:

[1] The Discharger shall continue to monitor at the minimum frequency specified in this MRP, keep records of the measurements, and make the records available upon request.

[2] These parameters require EDF/CDF data upload or manual entry regardless of whether monitoring is required by this MRP or other provisions of this Order (except for biosolids, sludge, or ash provisions).

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

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

Table E-8. Monitoring Periods

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

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period
2/Year	Closest January 1 or July 1 before or after Order effective date [1]	January 1 through June 30 July 1 through December 31
1/Year	Closest January 1 before or after Order effective date [1]	January 1 through December 31
Once	Order effective date	Once during the permit term within 12 months prior to applying for permit reissuance

Footnote:

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

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

   a. Sample results greater than or equal to the RL shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).

   b. Sample results less than the RL, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

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

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

   d. The Discharger shall instruct laboratories to establish calibration standards so that the minimum level (ML) value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

6. **Compliance Determination.** Compliance with effluent limitations 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 pollutant in the monitoring sample is greater than the effluent limitation and, if applicable, 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 waterboards.ca.gov/water_issues/programs/discharge_monitoring.

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

I. Definition of Terms

A. No observed effect level (NOEL) for compliance determination is equal to IC_{25} or EC_{25}. If the IC_{25} or EC_{25} 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-Karber. EC_{25} is the concentration of toxicant (in percent effluent) that causes a response in 25 percent of the test organisms.

C. Inhibition concentration (IC) is a point estimate of the toxicant concentration that would cause a given percent reduction in a nonlethal, nonquantal biological measurement, such as growth. For example, an IC_{25} is the estimated concentration of toxicant that would cause a 25 percent reduction in average young per female or growth. IC values may be calculated using a linear interpolation method such as U.S. EPA's Bootstrap Procedure.

D. No observed effect concentration (NOEC) is the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specific time of observation. It is determined using hypothesis testing.

II. Chronic Toxicity Screening Phase Requirements

A. The Discharger shall perform screening phase monitoring:

1. Subsequent to any significant change in the nature of the effluent discharged through changes in sources or treatment, except those changes resulting from reductions in pollutant concentrations attributable to source control efforts, or

2. Prior to permit reissuance. Screening phase monitoring data shall be included in the NPDES permit application for reissuance. The information shall be as recent as possible, but may be based on screening phase monitoring conducted within 5 years before the permit expiration date.

B. Design of the screening phase shall, at a minimum, consist of the following elements:

1. Use of test species specified in Appendix E-2, attached, and use of the protocols referenced in those tables.

2. Two stages:

a. Stage 1 shall consist of a minimum of one battery of tests conducted concurrently. Selection of the type of test species and minimum number of tests shall be based on Appendix E-2 (attached).

b. Stage 2 shall consist of a minimum of two test batteries conducted at a monthly frequency using the three most sensitive species based on the Stage 1 test results.

3. Appropriate controls.

4. Concurrent reference toxicant tests.

5. Dilution series of 100%, 50%, 25%, 12.5%, 6.25%, and 0.0%, where "%" is percent effluent as discharged, or as otherwise approved by the Executive Officer if different dilution ratios are needed to reflect discharge conditions.

C. The Discharger shall submit a screening phase proposal. The proposal shall address each of the elements listed above. If within 30 days, the Executive Officer does not comment, the Discharger shall commence with screening phase monitoring.

APPENDIX E-2
SUMMARY OF TOXICITY TEST SPECIES REQUIREMENTS

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

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

Toxicity Test Reference:

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

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

Requirements	Receiving Water Characteristics: Discharges to Ocean	Receiving Water Characteristics: Discharges to Marine/ Estuarine Waters [1]	Receiving Water Characteristics: Discharges to 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] Marine/Estuarine	 0 4	 1 or 2 3 or 4	 3 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

Tables

ATTACHMENT F – FACT SHEET

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

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	2 071048001
CIWQS Place ID	228968
Discharger	Tesoro Refining & Marketing Company LLC
Facility Name	Marathon Martinez Refinery
Facility Address	150 Solano Way, Martinez, CA 94553
	Contra Costa County
Facility Contact, Title, Phone	Peter Carroll, Environmental Engineer, 925-335-3497
Authorized Person to Sign and Submit Reports	June Christman, Environmental Supervisor, 925-370-3275
Mailing Address	Same as Facility Address
Billing Address	Same as Facility Address
Facility Type	Petroleum Refinery
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	N/A
Reclamation Requirements	No
Mercury and PCBs Requirements	NPDES Permit No. CA0038849
Nutrients	N/A
Hydraulic Capacity	10.44 million gallons per day (MGD)
Average Facility Flow	4.6 MGD
Watershed	Suisun Bay
Receiving Water	Suisun Bay
Receiving Water Type	Estuarine

A. The Tesoro Refining & Marketing Company LLC (Discharger), a subsidiary of Marathon Petroleum Corporation, owns and operates the Marathon Martinez Refinery (Facility). The Facility discharges treated wastewater and stormwater to Suisun Bay, a water of the United States. Attachment B provides maps of the area around the Facility and the stormwater discharge points.

For the purposes of this Order, references to the "discharger" or "permittee" in applicable federal and State laws, regulations, plans, or policy 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. CA0004961. The Discharger was previously subject to Order No. R2-2015-0033

(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 December 5, 2019.

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

C. The discharge is also regulated under NPDES Permit Nos. CA0038849, which establishes requirements on mercury and polychlorinated biphenyls (PCBs) from wastewater discharges to San Francisco Bay. This Order does not affect that permit.

II. FACILITY DESCRIPTION

The Facility receives crude oil by tanker or pipelines for the production of unleaded gasoline and diesel fuels. U.S. EPA has classified the Facility as a cracking refinery pursuant to 40 C.F.R. section 419.20. The Facility processes an average crude throughput of about 149,500 barrels per day (bbls/d).

A. Wastewater Treatment

The Facility discharges process wastewater, non-process wastewater, sanitary wastewater, and stormwater at Discharge Point No. 001 after treatment at a wastewater treatment plant. Process wastewater includes wastewater from sour water strippers, an ammonia recovery unit, an acid plant, cooling tower blowdown, boiler blowdown, cooling tower and boiler blowdown from the Foster Wheeler Cogeneration Plant, neutralized demineralizer regeneration, the fire water system, and remediation activities (groundwater). Process wastewater also includes non-hazardous wastewater generated from offsite Discharger-owned facilities, the MECS Catalyst Plant, and cooling tower and boiler blowdown from the Matheson Dioxide Plant. The wastewater treatment plant also treats sanitary wastewater and stormwater from about 717 acres of process areas. Attachment C provides wastewater collection and treatment process flow diagrams.

The Discharger routes process wastewater to a central pump station (i.e., No. 1 pump station). From this pump station, process wastewater flows to an API oily-water and solids separator that consists of a head channel that feeds four concrete channels. The API separator uses a chain-driven system to remove oil and solids. The Discharger pumps this material to Tanks 699 and 700 for additional oil and water separation and recovery. After the API separator, wastewater flows by gravity to four dissolved nitrogen flotation (DNF) units where additional oil and solids are removed.

From the DNF units, wastewater is routed through an air stripper, where a blower forces air through a grid of perforated tubes. The vapors from the air stripper, DNF units, and API separator are incinerated in a thermal oxidizer. The Discharger pumps wastewater from the air stripper to Surge Pond No. 1 for biotreatment. Surge Pond No. 1 is a 14-acre rectangular basin that is baffled into four cells, where aeration and nutrients are provided. From Surge Pond No. 1, wastewater flows by gravity to Surge Pond No. 2. Surge Pond No. 2 is a 6-acre rectangular basin

that is also aerated. The Discharger may pump up to 900 gallons per minute of wastewater from Surge Pond No. 2 to the refinery for reuse as industrial water. The remaining wastewater from Surge Pond No. 2 is pumped to the Bio-Oxidation Pond (Ox Pond). The Ox Pond is about 108 acres with an estimated capacity of 216 million gallons. It typically operates with a volume of around 150 million gallons. The Ox Pond is aerated at the inlet to the pond. It passively treats wastewater by providing retention time of about 30 days.

From the Ox Pond, the Discharger routes wastewater to two clarifiers that operate in parallel. In the clarifiers, the Discharger adds coagulants and flocculants to enhance settling of wastewater solids. Clarifier solids are centrifuged and disposed of offsite. The supernatant from the centrifuge is routed to Surge Pond No. 1. From the clarifiers, wastewater flows through a toothed weir to two filters (Round and Zimpro) that operate in parallel. The Round filter is a multimedia (sand and anthracite) filter and consists of six chambers, while the Zimpro filter is a six-celled trickling sand filter. Both filters contain automatic backwash functions that allow continuous operation. Backwash water from the filters is routed to Surge Pond No. 1 for treatment, and treated wastewater is routed to twelve granular activated carbon (GAC) columns that operate in pairs (i.e., lead and lag). The Discharger uses the GAC columns to ensure that treated wastewater is not toxic to aquatic life. Backwash water from the GAC columns is also discharged to Surge Pond No. 1 for further treatment.

The Discharger may partially route treated wastewater around the GAC columns when toxicity levels are low to increase flow through the wastewater treatment plant. This Order allows this to occur during the wet season to increase outflow from the Ox Pond. Re-routing water in this manner is not a bypass subject to Discharge Prohibition III.C of the Order (see Fact Sheet § IV.A.3).

After the GAC columns, the Discharger normally routes the fully treated wastewater to the Coke Pond for flow equalization or discharges it directly to the Clean Canal. The Clean Canal also receives stormwater runoff and neutralized demineralizer reject water from the Discharger's water treatment plant. The Clean Canal conveys the treated wastewater and other streams to a sump containing three pumps that discharge to Suisun Bay under the Avon Wharf. The average discharge rate from September 2015 through December 2019 was 4.6 MGD; the hydraulic capacity of the treatment plant is approximately 10.44 MGD.

The Facility also has several stormwater discharge points; however, most Facility stormwater is routed to the refinery's wastewater treatment plant for treatment and discharge at Discharge Point No. 001.

Treated wastewater is discharged from the Clean Canal to Suisun Bay (Discharge Point No. 001). The discharge occurs through a 27-inch diameter multi-port diffuser located under the Avon Wharf. The diffuser consists of six ports, each 8 inches in diameter, located approximately 8 feet above the Suisun Bay floor, and 48 feet below mean lower low water. The diffuser ports are spaced between 2 feet and 4 feet 4 inches. Additionally, the diffuser ports are at angles ranging from -65 to 65 degrees with respect to the main pipe.

B. Stormwater Treatment and Control

Discharge Point No. 001 includes discharge of stormwater from approximately 717 acres, which is about 68 percent of the Facility by land. The Facility discharges the remainder of stormwater runoff

from mostly non-process areas through 10 stormwater discharge points (see Table 2 of the Order). Attachment B Figure B-2 shows the locations of the stormwater discharge points. Drainage areas that discharge to Discharge Point Nos. 003 and 004 first drain into collection ponds. Laundering devices prevent oil from entering these discharges. Discharge Point Nos. 005 through 006 discharge directly to adjacent surface waters.

1. **Discharge Point No. 003.** Discharge Point No. 003 discharges stormwater runoff from about 76 mostly unpaved acres that include a tank farm. Stormwater is controlled by swales and berms that direct runoff to a series of five retention ponds that flow into the Tract 4 West Retention Basin. Stormwater from the Basin discharges to Lower Walnut Creek at Discharge Point No. 003 when accumulated water exceeds about five feet in depth.

2. **Discharge Point No. 004.** Discharge Point No. 004 discharges stormwater runoff from about 198 acres that include a roughly 47-acre tank farm and mostly unpaved open land. Some of the developed areas include a Chevron refined products terminal, PG&E switch station, and the Matheson site and associated railcar, where organic gasses are stored. Stormwater is controlled by swales and berms that direct runoff to either the South Pond or into drop inlets along the western edge of Solano Way that connect to South Pond by a subsurface pipe. Stormwater from the South Pond flows into the Tract 6 Diversion Canal and the Cardox Pond. When the level in the Cardox Pond is sufficiently high, it discharges to the wetlands upstream of Hastings Slough.

   Discharge Point No. 004 also drains a 151-acre area at the southeastern corner of the Facility that serves as a tank farm, but also includes offices and an area for equipment laydown in its northernmost portion. Berms around the tank farm provide storage retention time for stormwater. The berms and swales direct runoff to the Tract 6 Diversion Canal and ultimately to the Cardox Pond.

3. **Discharge Point Nos. 005-T2S-A, 005-T2S-B, 005-T2S-C, and 005-T2SW.** These discharge points discharge stormwater runoff from about 21 acres that include paved and developed areas, including the Foster Wheeler cogeneration facility. Stormwater is controlled by swales and slopes that direct runoff to lowland areas that contain a bioswale and discharge grates that drain to Lower Walnut Creek.

4. **Discharge Point No. 005-T2NW.** Discharge Point No. 005-T2NW discharges stormwater runoff from about 4.7 acres that include developed lands associated with the 50 Crude Unit. Stormwater is controlled by swales and slopes that direct runoff to lowland areas adjacent to Lower Walnut Creek.

5. **Discharge Point No. 005-T4NW.** Discharge Point No. 005-T4NW discharges stormwater runoff from about 14 acres that include undeveloped perimeter land downslope from the Tract 4 tank farm. The area is steep and unpaved. Stormwater is controlled by swales and berms. Stormwater discharges to the lowlands east of Tract 4 and then to Lower Walnut Creek.

6. **Discharge Point No. 005-T4SW.** Discharge Point No. 005-T4SW discharges stormwater runoff from about 5.3 acres of mostly undeveloped lands beyond the historic Tract 4 tank farm. The area is steep and unpaved. Stormwater is controlled by swales and berms. Stormwater from the Basin discharges to Lower Walnut Creek.

7. **Discharge Point No. 006.** Discharge Point No. 006 discharges stormwater runoff from about 7.4 acres that include the Waste Management Unit. The area is fitted with a cap that sheets stormwater and discharges to Walnut Creek.

C. Collection System

The Discharger's Maintenance Department is responsible for cleaning, repairing, and maintaining the oily water collection system (Collection System) at the Facility. The Discharger cleans drain inlets, manholes, major trunks, and feeder trunks annually, or semi-annually, using truck mounted water jetting equipment. When the Discharger recovers material during cleaning, it evaluates the potential for line failure (e.g., recovery of sand or gravel may indicate pipe structural problems). If anomalies are documented, the Discharger will inspect these areas by remote video or excavation and direct visual inspection. The Refinery Operations Group routinely operates and monitors the Collection System for proper operation. Problems with draining or inlet backups are reported to the Maintenance Department for cleaning or repair. If the Discharger discovers obsolete lines, it will seal them off from the active Collection System by pumping them full of cement-based grout.

D. Previous Requirements and Monitoring Data

For Discharge Point No. 001, the table below presents the previous order's effluent limitations and representative monitoring data from the previous order term:

Table F-2a. Summary of Previous Technology-Based Effluent Limitations and Monitoring Data, Discharge Point No. 001

Parameter	Units	Average Monthly Limit	Maximum Daily Limit	Other Limits	Long-term Average (9/2015 – 12/2019)	Highest Daily Discharge (9/2015 – 12/2019)
BOD_5	lb/day	2,000	3,600	-	310	1,246
COD	lb/day	14,000	27,000	-	2,000	3,935
TSS	lb/day	1,600	2,500	-	210	3,335 [1]
Oil and Grease	lb/day	590	1,100	-	160	408
Phenolic Compounds	lb/day	13	27	-	0.11	0.51
Ammonia as N	lb/day	1,100	2,400	-	88	991
Sulfide	lb/day	11	24	-	1.1	5.9
Total Chromium	lb/day	15	43	-	0.070	0.23
Hexavalent Chromium	lb/day	1.2	2.7	-	0.013	0.092
pH	s.u.	-	-	6.0 – 9.0	-	6.0 – 8.9 [2]
Total Coliform	MPN/ 100 mL	-	-	240 (5-sample median)-	-	1.0
Total Coliform	MPN/ 100 mL			10,000 (single-sample)	-	340,000
Enterococcus	MPN/ 100 mL			364 (monthly geometric mean)	5.2	100

Abbreviations:

BOD_5 = 5-day Biochemical Oxygen Demand
COD = Chemical Oxygen Demand
TSS = Total Suspended Solids
lb/day = pounds per day

MPN/100mL = most probable number per 100 milliliters
s.u. = standard units

Footnotes:

[1] This was not a violation because the Discharger had an increased flow of about 10 MGD more than normal operations. By applying the stormwater allocation calculations the previous order authorized in accordance with U.S. EPA's *Guide for the Application of Effluent Limitations Guidelines for the Petroleum Refining Industry,* the Discharger's TSS limit increased to 5,200 pounds that day.

[2] The highest and lowest reported pH value

Table F-2b. Summary of Previous Water Quality-Based Effluent Limitations and Monitoring Data, Discharge Point No. 001

Parameter	Units	Average Monthly Limit	Maximum Daily Limit	Other Limits	Long-term Average (9/2015 – 12/2019)	Highest Daily Discharge (9/2015 – 12/2019)
Copper	µg/L	37	120	-	1.1	8.5
Selenium	µg/L	39	50	-	6.8	34
Cyanide	µg/L	21	40	-	1.3	16
Lead	µg/L	3.7	7.8	-	1.3	3.9
Dioxin-TEQ	µg/L	1.4×10^{-8}	2.8×10^{-8}	-	-	7.6×10^{-10} [1]
Ammonia (N)	mg/L	26	67	-	2.0	19
Acute Toxicity	% Survival	-	-	90% (11-Sample Median) 70% (11-Sample 90th Percentile)	- -	100 [2] 80 [2]
Chronic Toxicity	TU_c	-	-	10 (single-sample max)	2.7	7.0

Abbreviations:

µg/L = micrograms per liter
mg/L = miligrams per liter
TU_c = chronic toxicity units

Footnotes:

[1] Dioxin-TEQ was calculated in accordance with Attachment G section V.C.1.d.iv of the previous order.

[2] Minimum survival rate

For Discharge Points Nos. 003 through 006, the previous order established the following stormwater effluent limitations based on the requirements of *Effluent Limitations Guidelines for the Petroleum Refining Point Source Category*:

Table F-3. Previous Stormwater Effluent Limitations

Pollutant	Limitation
pH	within 6.5 to 8.5
Oil and Grease	daily maximum of 15 mg/L
TOC	daily maximum of 110 mg/L

In its Report of Waste Discharge, the Discharger provided the following characterization of its stormwater discharges through Discharge Point Nos. 003 through 006 from the previous permit term:

Table F-4. Stormwater Quality (mg/L)

Discharge Point	Oil and Grease Average	Oil and Grease Daily Maximum	TOC Average	TOC Daily Maximum	TSS Average	TSS Daily Maximum
003	< 1.1	< 1.1	24	34	18	39.4
004	< 1.1	< 1.1	8.2	15	35	120

Discharge Point	Oil and Grease Average	Oil and Grease Daily Maximum	TOC Average	TOC Daily Maximum	TSS Average	TSS Daily Maximum
005-T2NW	0.91[1]	2.6	8.9	30	43	113
005-T2S-A	< 1.1	< 1.1	6.8	22	61	190
005-T2S-B	1.1 [2]	4.0	6.3	14	220	674
005-T2S-C	1.0 [3]	2.3	5.3	17	83	206
005-T2SW	< 1.1	< 1.1	7.2	14	4.2	9.9
005-T4NW	< 1.1	< 1.1	12	17	160	306
005-T4SW	no data	no data	no data	no data	no data	no data
006	< 1.1	< 1.1	2.6	5.3	28	78.6

Abbreviations:

TOC = Total Organic Carbon
TSS = Total Suspended Solids

Footnotes:

[1] There were two detected values and six non-detect values. To calculate an average, the non-detect values were assumed to be one half the detection limit.

[2] There were two detected values and eight non-detect values. To calculate an average, the non-detect values were assumed to be one half the detection limit.

[3] There were three detected values and five non-detect values. To calculate an average, the non-detect values were assumed to be one half the detection limit.

Although the previous order had no TSS effluent limit for stormwater, the TSS levels in stormwater often exceeded the benchmark value of 100 mg/L contained in U.S. EPA's *NPDES Stormwater Multi-Sector General Permit for Industrial Activities* (Federal Register Volume 65, Number 210, October 30, 2000) at two of the stormwater outfalls. To address the high TSS at Discharge Point Nos. 005-T2S-B and 005-T4NW, the Discharger installed underground sediment collection vaults at both locations in November 2015. The average TSS decreased from 450 mg/L to 220 mg/L at Discharge Point No. 005-T2S-B and from 850 mg/L to 160 mg/L at Discharge Point No. 005-T4NW (comparing values observed from 2011 through 2014 with those observed from 2015 through 2019). In 2019, the Discharger installed drain rock around some of the collection vaults to increase control of TSS levels.

E. Compliance Summary

1. **Discharge Point No. 001.** During the previous order (September 2015 through December 2019), the Discharger violated its total coliform effluent limitation three times. As a corrective measure, the Discharger automated its hypochlorite feed system during summer 2016. In December 2017, the pressure regulator on the hypochlorite injection pump failed and was repaired. Since then, the Discharger has complied with the total coliform effluent limitations.

2. **Discharge Points Nos. 003 through 006.** As shown in Table F-4, the Discharger complied with its stormwater effluent limits with one exception. The Discharger reported a pH of 8.8 at Discharge Point No. 004 in March 2018. For corrective actions, the Discharger cleaned a high-pH white residue from the soil and implemented a new standing order to flush water upstream of the #6 Boiler area. At the remaining stormwater outfalls, the pH ranged from 6.7 to 8.2.

F. Planned Changes

According to the Discharger's 2017 Sea Level Rise report, sea level rise could affect the Bio-Oxidation Pond. The Discharger is developing a strategy to manage and mitigate the potential effects of sea level rise on the Facility.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

A. Legal Authorities

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

B. California Environmental Quality Act

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resources Code division 13, chapter 3 (commencing with § 21100).

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plan.** The Regional Water Board adopted the *Water Quality Control Plan for the San Francisco Bay Basin* (Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Requirements in this Order implement the Basin Plan. In addition, this Order implements State Water Board Resolution No. 88-63, which 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 San Francisco Bay, total dissolved solids levels exceed 3,000 mg/L; therefore, San Francisco Bay meets an exception to State Water Board Resolution No. 88-63. Beneficial uses applicable to Suisun Bay are as follows:

Table F-5. Basin Plan Beneficial Uses

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

004	Hastings Slough	Estuarine Habitat (EST) Preservation of Rare and Endangered Species (RARE) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2)
003 005-T2NW 005-T2S-A 005-T2S-B 005-T2S-C 005-T2SW 005-T4NW 005-T4SW 006	Lower Walnut Creek	Cold Freshwater Habitat (COLD) Fish Migration (MIGR) Fish Spawning (SPWN) Warm Freshwater Habitat (WARM) Preservation of Rare and Endangered Species (RARE) Wildlife Habitat (WILD) Water Contact Recreation (REC1) Non-Contact Water Recreation (REC2)

2. **Bacteria.** The State Water Board adopted the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* on August 7, 2018, and it became effective on March 22, 2019. This plan establishes new enterococcus bacteria water quality objectives and related implementation provisions for discharges to marine and estuarine receiving waters that support the water contact recreation beneficial use.

3. **Sediment Quality.** The State Water Board adopted the *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* on September 16, 2008, and it became effective on August 25, 2009. The State Water Board adopted amendments to the plan on June 5, 2018, that became effective on March 11, 2019. This plan supersedes other narrative sediment quality objectives and establishes new sediment quality objectives and related implementation provisions for specifically defined sediments in most bays and estuaries.

4. **National Toxics Rule (NTR) and California Toxics Rule (CTR).** U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995, and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority pollutants.

5. **State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated for California through the NTR and the priority pollutant objectives the Regional Water Board established in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria U.S. EPA promulgated through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005, that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives, and provisions for chronic toxicity control. Requirements of this Order implement the SIP.

6. **Antidegradation Policy.** Federal regulations at 40 C.F.R. section 131.12 require that state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy through State Water Board Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California,* which is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution No. 68-16. (See Fact Sheet § IV.D.1.)

7. **Anti-Backsliding Requirements.** CWA sections 402(o) and 303(d)(4) and 40 C.F.R. section 122.44(l) restrict backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. (See Fact Sheet § IV.D.2.)

8. **Endangered Species Act Requirements**. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare, threatened, or endangered species. The Discharger is responsible for meeting all applicable Endangered Species Act requirements.

D. Impaired Waters on CWA 303(d) List

On April 6, 2018, U.S. EPA approved a revised list of impaired waters pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Regional Water Board plans to adopt total maximum daily loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for nonpoint sources and are established to achieve water quality standards.

Suisun Bay is listed as impaired by chlordane, DDT, dieldrin, dioxin compounds, furan compounds, invasive species, 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. On August 23, 2016, U.S. EPA approved a selenium TMDL for North San Francisco Bay (including Suisun Bay). This Order implements the selenium TMDL as it applies to the Discharger. The TMDLs for mercury and PCBs are implemented through NPDES Permit No. CA0038849. As shown in Fact Sheet section IV.D.3, chlordane, DDT, and dieldrin have not been detected in Facility discharges. This Order contains dioxin-TEQ effluent limitations to ensure that dioxins and furans in effluent are kept below water quality objectives. Facility discharges are not a source of invasive species because the California State Lands Commission sets conditions for approving ballast water disposal, as discussed in Fact Sheet section VI.C.4.g below.

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 other than as described in this Order):** This prohibition is based on 40 C.F.R. section 122.21(a) and Water Code section 13260, which require filing an application and Report of Waste Discharge before a discharge can occur. Discharges not described in the application and Report of Waste Discharge, and subsequently in this Order, are prohibited.

2. **Discharge Prohibition III.B (Minimum initial dilution ratio of 15:1 at Discharge Point No. 001):** This prohibition is based on Basin Plan Discharge Prohibition 1, which prohibits discharges that do not receive a minimum initial dilution of at least 10:1 (10 parts total receiving water after mixing with 1 part effluent). Furthermore, this Order allows a 10:1 dilution credit in the calculation of some water quality-based effluent limitations and a 15:1 dilution credit in the calculation of the ammonia water quality-based effluent limitations. These water quality-based effluent limitations would not be protective of water quality if the discharge did not actually achieve at least 15:1 dilution.

3. **Discharge Prohibition III.C (No bypass):** This prohibition is based on 40 C.F.R. section 122.41(m) (see Attachment D § I.G). It does not apply to treated wastewater bypassing GAC units when toxicity levels are below effluent limitations.

B. Basin Plan Discharge Prohibitions

Basin Plan Discharge Prohibition No. 1 prohibits wastewater discharges having characteristics of particular concern that do not receive a minimum initial dilution of 10:1 to limit exposure to undiluted wastes or abnormal discharges caused by the malfunction or upset of a treatment process. Since these stormwater discharges do not contain process wastewater that is undiluted or would be subject to upset, Basin Plan Prohibition No. 1 does not apply.

Basin Plan Discharge Prohibition No. 8 prohibits discharge of floating oil or other materials to protect wildlife. This Order establishes effluent limits for oil and grease and requires the Discharger to conduct acute toxicity tests that ensure treated effluent is protective of wildlife. Basin Plan Discharge Prohibition No. 13 prohibits discharge of oil except in accordance with waste discharge requirements. This Order establishes waste discharge requirements for oil and grease.

C. Technology-Based Effluent Limitations

1. Scope and Authority

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

a. Best practicable treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants. Conventional pollutants include BOD_5, TSS, pH, and oil and grease.

b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.

c. Best conventional control technology (BCT) represents the control from existing industrial point sources of conventional pollutants. The BCT standard is established after considering the "cost reasonableness" of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.

d. New source performance standards (NSPS) represent the best available demonstrated control technology standards for new sources. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

Where U.S. EPA has not yet developed technology-based standards 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 judgement (BPJ) to derive technology-based effluent limitations on a case-by-case basis. When BPJ is used, the permit must reflect specific factors outlined at 40 C.F.R. section 125.3.

U.S. EPA has established standards of performance (technology-based limitations and standards) for the petroleum refining industry at 40 C.F.R. section 419, *Effluent Limitations Guidelines for the Petroleum Refining Point Source Category*. Subpart B of these regulations for the Cracking Refinery Subcategory applies to discharges from the Facility and have been used to develop this Order's limitations and requirements (see Attachment F-1).

2. Effluent Limitations

a. Technology-Based Effluent Limitations – Discharge Point No. 001

The effluent limitations guidelines established in 40 C.F.R. part 419, subpart B, require that technology-based effluent limitations for Discharge Point No. 001 be derived based on refinery production (total crude oil throughput) and the treatment processes used. Crude oil throughput is currently 149,500 bbls/day. Attachment F-1 presents the derivation of these technology-based effluent limitations.

The table below lists the most stringent of the calculated BPT, BAT, and BCT limitations. (NSPS limitations do not apply because the Facility was constructed prior to October 18, 1982.) The table also presents the previous order's limitations, which were based on a lower crude oil throughput of 143,600 bbls/d. The new limitations are more stringent than the previous limitations for total chromium and hexavalent chromium. However, the previous order contained more stringent limitations for BOD_5, TSS, COD, oil and grease, sulfide, phenolic compounds, and total ammonia. This Order includes the more stringent effluent limitations from the previous order to avoid backsliding.

Table F-6. Technology-Based Effluent Limitations for Process Wastewater

Pollutant	Newly Calculated Maximum Daily Limit (lbs/day)	Newly Calculated Average Monthly Limit (lbs/day)	Previous Maximum Daily Limit (lbs/day)	Previous Average Monthly Limit (lbs/day)
BOD_5	3,800	2,100	3,600	2,000
TSS	2,600	1,700	2,500	1,600
COD	28,000	15,000	27,000	14,000
Oil and Grease	1,100	610	1,100	590
Sulfide	25	11	24	11
Phenolic Compounds, Total	28	12	27	13
Total Ammonia, as N	2,500	1,100	2,400	1,100
Chromium, Total Recoverable	41	14	43	15
Chromium (VI), Total Recoverable	2.6	1.1	2.7	1.2
pH	6.0 – 9.0 s.u. (instantaneous)	-	6.0 – 9.0 s.u. (instantaneous)	-

Because ballast water (i.e., cargo hold wash water) and contaminated runoff commingled with process wastewater may also be discharged through Discharge Point No. 001, Tables 5 and 6 of the Order provide additional allocations that may be applied to the mass-based effluent limitations above and in Table 4 of the order. The additional contaminated runoff allocations are based on 40 C.F.R. sections 419.22(e), 419.23(f), and 419.24(e). The additional ballast water allocations are based on 40 C.F.R. sections 419.22(c), 419.23(d), and 419.24(c). Attachment F-1 explains these allocations.

b. Technology-Based Effluent Limitations – Discharge Point Nos. 003 through 006

The technology-based effluent limitations for the stormwater outfalls are based on 40 C.F.R. section 419, subpart B (see Attachment F-1). However, the pH limitations in this Order are based on Basin Plan section 3.3.9 because the water quality-based effluent limitations are more stringent than the technology-based effluent limitations required by 40 C.F.R. section 419, subpart B. The water quality-based effluent limitations for pH, visible oil, and visible color are discussed in Fact Sheet section IV.D.4.b.

D. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

This Order contains WQBELs that protect beneficial uses. CWA section 301(b) and 40 C.F.R. section 122.44(d) require that permits include limitations more stringent than federal technology-based requirements where necessary to achieve applicable water quality standards.

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

2. Beneficial Uses and Water Quality Criteria and Objectives

Fact Sheet section III.C.1, above, identifies the beneficial uses of each of the receiving waters. 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 bioaccumulation and toxicity.

i. Ammonia. Basin Plan section 3.3.20 contains water quality objectives for un-ionized ammonia of 0.025 mg/L as an annual median and 0.16 mg/L as a maximum for central San Francisco Bay and upstream, including Suisun Bay.

Effluent and receiving water data are available for total ammonia, but not un-ionized ammonia, because (1) sampling and laboratory methods are unavailable to analyze for un-ionized ammonia, and (2) the fraction of total ammonia that exists in the toxic un-ionized form depends on pH, salinity, and temperature. Total ammonia concentrations (as nitrogen) were translated into un-ionized ammonia concentrations for comparison with the Basin Plan un-ionized objectives based on the following equations (U.S. EPA, 1989, Ambient Water Quality Criteria for Ammonia (Saltwater)–1989, EPA Publication 440/5-88-004):

$$\text{For salinity} < 1 \text{ ppt: fraction of } NH_3 = \frac{1}{1+10^{(pK-pH)}}$$

Where:

$pK = 0.09018 + 2729.92/T$
T = *temperature in Kelvin*

$$\text{For salinity} > 1 \text{ ppt: fraction of } NH_3 = \frac{1}{1+10^{(pK-pH)}}$$

Where:

$pK = 9.245 + 0.116*(I) + 0.0324*(298-T) + 0.0415*(P)/T$
I = *molal ionic strength of saltwater* $= 19.9273*(S)/(1000-1.005109*S)$

S = salinity (parts per thousand)
T = temperature in Kelvin
P = pressure (one atmosphere)

The equivalent total ammonia chronic and acute criteria are 1.24 mg/L and 4.66 mg/L as nitrogen.

ii. **Dioxin-TEQ.** The narrative bioaccumulation objective (Basin Plan § 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 Suisun Bay on its 303(d) list of receiving waters where water quality objectives are not being met after imposition of applicable technology-based requirements.

When the CTR was promulgated, U.S. EPA stated its support for the regulation of dioxin and dioxin-like compounds through the use of toxicity equivalencies (TEQs). U.S. EPA stated, "For California waters, if the discharge of dioxin or dioxin-like compounds has reasonable potential to cause or contribute to a violation of a narrative criterion, numeric water quality-based effluent limits for dioxin or dioxin-like compounds should be included in NPDES permits and should be expressed using a TEQ scheme" (Fed. Reg. Vol. 65, No. 97, pages 31695-31696, May 18, 2000). This Order uses a TEQ scheme based on a set of toxicity equivalency factors (TEFs) the World Health Organization developed in 2005, and a set of bioaccumulation equivalency factors (BEFs) U.S. EPA developed for the Great Lakes region (40 C.F.R. § 132, Appendix F) to convert the concentration of any congener of dioxin or furan into an equivalent concentration of 2,3,7,8-tetrachlorinated dibenzo-p-dioxin (2,3,7,8-TCDD). Although the 2005 World Health Organization scheme includes TEFs for dioxin-like PCBs, they are not included in this Order's TEQ scheme. The CTR has established a specific water quality criterion for PCBs, and dioxin-like PCBs are included in the analysis of total PCBs.

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

iii. **Chronic Toxicity**. The narrative toxicity objective (Basin Plan § 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). 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 Suisun Bay because it is not a source of drinking water.

c. NTR Criteria. The NTR establishes numeric aquatic life and human health criteria for a number of toxic pollutants for San Francisco Bay waters upstream to and including Suisun Bay and the Sacramento-San Joaquin Delta. The NTR criteria apply to Suisun Bay.

d. Bacteria Water Quality Objectives. The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* establishes enterococci bacteria water quality objectives to limit cases of gastrointestinal illness from water contact recreation. The enterococci bacteria objectives apply to marine and estuarine waters.

e. Sediment Quality Objectives. The *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1, Sediment Quality* contains the following narrative water quality objectives:

i. "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.

ii. "Pollutants shall not be present in sediments at levels that will bioaccumulate in aquatic life to levels that are harmful to human health in bays and estuaries of

California." This objective is to be implemented by a three-tiered procedure based on pollutant concentrations in sediment and fish tissue.

iii. "Pollutants shall not be present in sediment at levels that alone or in combination are toxic to wildlife and resident finfish by direct exposure or bioaccumulate in aquatic life at levels that are harmful to wildlife or resident finfish by indirect exposure in bays and estuaries of California." This objective is to be implemented on a case-by-case basis, based upon an ecological risk assessment.

g. Receiving Water Salinity. Basin Plan section 4.6.2 (like the CTR and NTR) states that the salinity characteristics (i.e., freshwater vs. saltwater) of the receiving water are to be considered in determining the applicable water quality objectives. Freshwater criteria apply to discharges to waters with salinities equal to or less than one part per thousand (ppt) at least 95 percent of the time. Saltwater criteria apply to discharges to waters with salinities equal to or greater than 10 ppt at least 95 percent of the time in a normal water year. For discharges to water with salinities in between these two categories, or tidally-influenced freshwaters that support estuarine beneficial uses, the water quality objectives are the lower of the salt or freshwater criteria (the latter calculated based on ambient hardness) for each substance.

Suisun Bay is an estuarine environment based on salinity data generated through the Regional Monitoring Program (RMP). Salinity data were collected at the Pacheco Creek (BF10) sampling location between 1993 and 2001. During that period, the average salinity was 4.2 ppt, with a range from 0 to 12.8 ppt. Because the salinity was between 1 and 10 ppt in 33 percent of the receiving water samples, Suisun Bay is classified as estuarine, and the reasonable potential analysis and WQBELs are based on saltwater and freshwater water quality criteria and objectives.

h. Receiving Water Hardness. Ambient hardness values collected at the Pacheco River RMP station (BF10) between 1995 and 2001 were used to calculate freshwater objectives that are hardness-dependent. The data were censored to eliminate hardness values greater than 400 mg/L and samples taken when salinity was greater than 1 ppt. The adjusted geometric mean of the resulting data, 88 mg/L as calcium carbonate ($CaCO_3$), was used to determine the water quality objectives.

i. 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. For copper,
Basin Plan Table 7.2.1-2 contains site-specific translators for deep-water discharges to Suisun Bay. For nickel, this Order uses site-specific translators the Clean Estuary Partnership developed, as set forth in *North of Dumbarton Bridge Copper and Nickel Development and Selection of Final Translators* report (March 2005).

Table F-7. Site-Specific Translators

Parameter	Chronic	Acute
Copper	0.38	0.66
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.

a. Available Information. The reasonable potential analysis for this Order is based on effluent monitoring data the Discharger collected from September 2015 through December 2019, and ambient background data summarized in *San Francisco Bay California Toxics Rule Priority Pollutant Ambient Water Monitoring Report* (2017), which includes data collected through the RMP data collected at the Yerba Buena Island station (BC10) from 1993 through 2015, supplemented by additional Bay Area Clean Water Agencies data from *San Francisco Bay Ambient Water Monitoring Interim Report* (2003) and *Ambient Water Monitoring: Final CTR Sampling Update* (2004).

SIP section 1.4.3 requires that background water quality data be representative of the ambient receiving water that will mix with the discharge. For the priority pollutants, the Yerba Buena Island station (BC10), relative to other RMP stations, best fits SIP guidance for establishing background conditions at Discharge Point No. 001.

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

b. Discharge Point No. 001

i. Priority Pollutants and Dioxin-TEQ

(a). 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. SIP section 1.3 applies to priority pollutants and is used here for dioxin-TEQ as guidance. The analysis begins with identifying the maximum effluent concentration (MEC) observed for each pollutant based on available effluent concentration data and the ambient background concentration (B). SIP section 1.4.3 states that ambient background concentrations are either the maximum ambient concentration observed or, for water quality objectives intended to protect human health, the arithmetic mean of observed concentrations. There are three triggers in determining reasonable potential:

(1) Trigger 1 is activated if the maximum effluent concentration is greater than or equal to the lowest applicable water quality objective (MEC ≥ water quality objective).

(2) 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.

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

(b) Analysis. The maximum effluent concentrations, most stringent applicable water quality criteria and objectives, and ambient background concentrations used in the analysis are presented in the following table, along with the reasonable potential analysis results (yes, no, or unknown) for each pollutant. Basin Plan sections 7.2.1.2 and 4.7.2.2 require copper and cyanide WQBELs for all individual NPDES permits for municipal and industrial wastewater treatment facilities.

Table F-8. Reasonable Potential Analysis

CTR No.	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	4300	2.6	1.8	No
2	Arsenic	36	5.7	2.5	No
3	Beryllium	No Criteria	<0.048	0.22	U
4	Cadmium	1.0	0.04	0.13	No
5a	Chromium (III)[4]	186	5.3	4.4	No
5b	Chromium (VI)[4]	11	0.55	4.4	U
6	**Copper**	**14**	**16**	**2.5**	**Yes**[5]
7	**Lead**	**2.7**	**3.9**	**0.8**	**Yes**
8	Mercury[6]	-	-	-	-
9	Nickel	30.4	6.3	3.7	No
10	**Selenium**[6]	-	-	-	-
11	Silver	2.2	<0.025	0.052	No
12	Thallium	6.3	<0.026	0.023	No
13	Zinc	86	18	5.1	No
14	**Cyanide**	**2.9**	**16**	**0.52**	**Yes**[5]
15	Asbestos[7]	No Criteria	-	-	-
16	2,3,7,8-TCDD	1.4E-08	<1.3E-07	2.7E-08	No
	Dioxin TEQ	**1.4E-08**	**7.6E-10**	**4.1E-08**	**Yes**[8]
17	Acrolein	780	<2.0	<0.5	No
18	Acrylonitrile	0.66	<1.0	0.03	No
19	Benzene	71	<0.051	<0.05	No
20	Bromoform	360	0.90	<0.15	No
21	Carbon Tetrachloride	4.4	<0.069	0.06	No
22	Chlorobenzene	21000	<0.050	<0.18	No
23	Chlorodibromomethane	34	0.63	<0.05	No
24	Chloroethane	No Criteria	<0.31	<0.38	U
25	2-Chloroethylvinyl ether	No Criteria	<0.50	<0.28	U

CTR No.	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]
26	Chloroform	No Criteria	0.31	<0.19	U
27	Dichlorobromomethane	46	0.63	<0.05	No
28	1,1-Dichloroethane	No Criteria	<0.060	<0.05	U
29	1,2-Dichloroethane	99	<0.090	0.04	No
30	1,1-Dichloroethylene	3.2	<0.086	<0.21	No
31	1,2-Dichloropropane	39	<0.055	<0.05	No
32	1,3-Dichloropropylene	1700	<0.090	<0.16	No
33	Ethylbenzene	29000	<0.050	<0.26	No
34	Methyl Bromide	4000	0.22	<0.3	No
35	Methyl Chloride	No Criteria	<0.13	<0.3	U
36	Methylene Chloride	1600	0.23	22	No
37	1,1,2,2-Tetrachloroethane	11	<0.11	<0.05	No
38	Tetrachloroethylene	8.9	<0.082	<0.05	No
39	Toluene	200000	0.79	<0.19	No
40	1,2-Trans-Dichloroethylene	140000	<0.06	<0.22	No
41	1,1,1-Trichloroethane	No Criteria	<0.05	<0.19	U
42	1,1,2-Trichloroethane	42	<0.08	<0.05	No
43	Trichloroethylene	81	<0.06	<0.2	No
44	Vinyl Chloride	525	<0.07	<0.25	No
45	2-Chlorophenol	400	<0.017	<0.7	No
46	2,4-Dichlorophenol	790	<0.012	<0.9	No
47	2,4-Dimethylphenol	2300	<0.099	<0.8	No
48	2-Methyl- 4,6-Dinitrophenol	765	<0.99	<0.6	No
49	2,4-Dinitrophenol	14000	<0.30	<0.7	No
50	2-Nitrophenol	No Criteria	<1.4	<0.8	U
51	4-Nitrophenol	No Criteria	<1.7	<0.5	U
52	3-Methyl 4-Chlorophenol	No Criteria	<0.27	<0.8	U
53	Pentachlorophenol	7.9	<0.11	<0.6	No
54	Phenol	4600000	14	<0.5	No
55	2,4,6-Trichlorophenol	6.5	<0.010	<0.97	No
56	Acenaphthene	2700	<0.0053	0.002	No
57	Acenaphthylene	No Criteria	<0.0062	0.001	U
58	Anthracene	110000	<0.0036	0.001	No
59	Benzidine	0.00054	<0.29	<0.0003	No
60	Benzo(a)Anthracene	0.049	<0.0049	0.005	No
61	Benzo(a)Pyrene	0.049	<0.0050	0.002	No
62	Benzo(b)Fluoranthene	0.049	<0.0074	0.005	No
63	Benzo(ghi)Perylene	No Criteria	0.012	0.003	U
64	Benzo(k)Fluoranthene	0.049	<0.055	0.002	No
65	Bis(2-Chloroethoxy)Methane	No Criteria	<0.3	<0.3	U
66	Bis(2-Chloroethyl)Ether	1.4	.087	<0.3	No

CTR No.	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]
67	Bis(2-Chloroisopropyl)Ether	170000	<0.018	<0.6	No
68	Bis(2-Ethylhexyl)Phthalate	5.9	0.68	<0.5	No
69	4-Bromophenyl Phenyl Ether	No Criteria	<0.17	<0.23	U
70	Butylbenzyl Phthalate	5200	<0.29	<0.5	No
71	2-Chloronaphthalene	4300	<0.25	<0.3	No
72	4-Chlorophenyl Phenyl Ether	No Criteria	<0.2	<0.3	U
73	Chrysene	0.049	<0.0046	0.002	No
74	Dibenzo(a,h)Anthracene	0.049	<0.012	0.001	No
75	1,2-Dichlorobenzene	17000	<0.08	<0.27	No
76	1,3-Dichlorobenzene	2600	<0.071	<0.18	No
77	1,4-Dichlorobenzene	2600	0.075	<0.18	No
78	3,3 Dichlorobenzidine	0.077	<0.016	<0.0002	No
79	Diethyl Phthalate	120000	<0.017	<0.2	No
80	Dimethyl Phthalate	2900000	<0.022	<0.2	No
81	Di-n-Butyl Phthalate	12000	0.055	<0.5	No
82	2,4-Dinitrotoluene	9.1	<0.013	<0.27	No
83	2,6-Dinitrotoluene	No Criteria	<0.011	<0.29	U
84	Di-n-Octyl Phthalate	No Criteria	<0.04	<0.38	U
85	1,2-Diphenyhydrazine	0.54	<0.16	0.004	No
86	Fluoranthene	370	<0.0048	0.011	No
87	Fluorene	14000	<0.0079	0.002	No
88	Hexachlorobenzene	0.00077	<0.0087	0.00002	No
89	Hexachlorobutadiene	50	<0.0069	<0.3	No
90	Hexachlorocyclopentadiene	17000	<0.71	<0.3	No
91	Hexachloroethane	8.9	<0.014	<0.2	No
92	Indeno(1,2,3-cd)Pyrene	0.049	<0.0081	0.004	No
93	Isophorone	600	<0.32	<0.3	No
94	Naphthalene	No Criteria	<0.0094	0.009	U
95	Nitrobenzene	1900	<0.32	<0.25	No
96	N-Nitrosodimethylamine	8.1	<0.75	<0.3	No
97	N-Nitrosodi-n-Propylamine	1.4	<0.35	<0.0002	No
98	N-Nitrosodiphenylamine	16	<0.18	<0.001	No
99	Phenanthrene	No Criteria	<0.0073	0.006	U
100	Pyrene	11000	<0.017	0.019	No
101	1,2,4-Trichlorobenzene	No Criteria	<0.18	<0.3	U
102	Aldrin	0.00014	<0.0028	<0.0000085	No
103	Alpha-BHC	0.013	<0.0031	0.0005	No
104	Beta-BHC	0.046	<0.0069	0.0004	No
105	Gamma-BHC	0.063	<0.0045	0.001	No
106	Delta-BHC	No Criteria	<0.0014	0.0001	U

CTR No.	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]
107	Chlordane	0.00059	<0.023	0.0001	No
108	4,4'-DDT	0.00059	<0.0017	0.0002	No
109	4,4'-DDE	0.00059	<0.0018	0.001	No
110	4,4'-DDD	0.00084	<0.0011	0.0003	No
111	Dieldrin	0.00014	<0.0014	0.0003	No
112	Alpha-Endosulfan	0.0087	<0.0011	0.0001	No
113	beta-Endosulfan	0.0087	<0.0046	0.0001	No
114	Endosulfan Sulfate	240	<0.0033	0.0001	No
115	Endrin	0.0023	<0.0018	0.00004	No
116	Endrin Aldehyde	0.81	<0.0053	<0.005	No
117	Heptachlor	0.00021	<0.0041	0.00002	No
118	Heptachlor Epoxide	0.00011	<0.0025	0.0001	No
119-125	PCBs sum	-	-	-	-
126	Toxaphene	0.0002	<0.02	<0.00000082	No
	Total Ammonia	**1.2**	**19**	**0.22**	**Yes**

Abbreviations:

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

Footnotes:

[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] The maximum effluent and ambient background concentrations are the total chromium concentration. The chromium (III) and chromium (IV) concentrations are unknown but less than these values.

[5] Reasonable potential is based in part on Basin Plan sections 7.2.1.2 and 4.7.2.2.

[6] SIP section 1.3 excludes from its reasonable potential analysis procedure priority pollutants for which a TMDL has been developed. TMDLs have been developed for mercury and PCBs in San Francisco Bay. Mercury and PCBs from wastewater discharges are regulated by NPDES Permit No. CA0038849, which implements the San Francisco Bay Mercury and PCBs TMDLs. A TMDL has also been developed for selenium in North San Francisco Bay, which includes Suisun Bay. This Order implements the North San Francisco Bay Selenium TMDL by establishing mass-based selenium limitations. See Fact Sheet § IV.D.4.a.iv.

[7] Asbestos sampling is only required for discharges to waters with the municipal or domestic supply (MUN) beneficial use.

[8] Reasonable potential is based on Trigger 2 and because San Francisco Bay is 303(d)-listed for dioxin-TEQ and elevated levels of dioxin-TEQ are found in San Francisco Bay fish tissue. Dioxin-TEQ is also present in the discharge.

ii. Acute and Chronic Toxicity. Due to the complexity of the discharge, there is reasonable potential for it to cause or contribute to exceedance of the narrative toxicity objectives in Basin Plan section 3.3.18, which states, "There shall be no acute toxicity in ambient waters…."and "There shall be no chronic toxicity in ambient

waters." Refinery discharges can contain many different combinations of potentially toxic pollutants in addition to those for which numeric water quality objectives have been established. Acute and chronic WQBELs are needed to ensure that the toxicity objective is met in Suisun Bay. In addition, Basin Plan Table 4-3 requires acute toxicity effluent limitations.

iii. **Enterococcus Bacteria.** The *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* requires enterococcus bacteria effluent limitations for discharges to marine and estuarine receiving waters that support the water contact recreation (REC1) beneficial use.

iv. **Total Coliform.** Basin Plan Table 4-2A requires total coliform effluent limitations for discharges to receiving waters with the shellfish harvesting (SHELL) beneficial use.

v. **Sediment Quality.** Pollutants in some receiving water sediments may be present in quantities that alone or in combination are toxic to benthic communities. 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 routinely monitors San Francisco Bay sediment and seeks to identify stressors responsible for degraded sediment quality.

c. **Discharge Point Nos. 003 through 006.** Discharge Point Nos. 003 through 006 discharge stormwater from current and former areas of refinery operations. Stormwater discharged from these areas has a reasonable potential to cause or contribute to an exceedance of the narrative water quality objectives for color (Basin Plan § 3.3.4), oil and grease (Basin Plan § 3.3.6), and pH (Basin Plan § 3.3.9) because it could come in contact with process waste. To ensure that stormwater discharged at these discharge points will not be contaminated with process waste, this Order includes numeric effluent limitations for oil and grease and total organic carbon, as required by 40 C.F.R. section 419, subpart B (see Attachment F-1). Stormwater discharges could also contain other pollutants through unauthorized events (e.g., spills from operations) that could cause or contribute to exceedances of other narrative and numeric water quality objectives; therefore, Provision VI.C.4.c requires a Stormwater Pollution Prevention Plan and Best Management Practices as narrative WQBELs. The discharge has no reasonable potential to cause or contribute to an exceedance of the water quality objectives for total coliform or enterococcus bacteria because there is no sanitary wastewater component to this discharge.

4. Water Quality-Based Effluent Limitations (WQBELs)

WQBELs were developed for the pollutants determined to have reasonable potential to cause or contribute to exceedances of water quality objectives.

a. Discharge Point No. 001

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

ii. Mixing Zones and Dilution Credits. Basin Plan section 4.6.1 and SIP section 1.4.2 allow mixing zones and dilution credits under certain circumstances. The outfall at Discharge Point No. 001 is designed to achieve a minimum initial dilution of 10:1. The actual dilution has been estimated using the U.S. EPA-supported plume-modeling program UDKHDEN. Model results were reported in a technical report prepared by S.R. Hansen & Associates, titled *Initial Dilution Modeling and Dye Dispersion Studies for the Effluent Discharged from the Tosco Avon Refinery* (March 1990). The worst-case initial dilution calculated was 15:1 (one part effluent for each 15 parts total receiving water after mixing with 14 parts ambient water) at a flow rate of 0.176 cubic meters per second (4 MGD). This dilution ratio was calculated at slack tide and under stratified conditions. The 4-MGD flow is similar to the Discharger's actual average daily flow from 2015 to 2019 of 4.6 MGD. The median dilution calculated was 130:1 at the 95th percentile high discharge rate of 7.05 MGD.

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

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

(b) Ammonia. For ammonia, a conservative estimate of actual initial dilution was used to calculate effluent limits. This is justified because ammonia, a non-persistent pollutant, quickly disperses and degrades to a non-toxic state, and cumulative toxicity is unlikely. This Order uses the 15:1 (D = 14) dilution ratio to

calculate WQBELs based on the acute water quality objective because that dilution conservatively represents short-term (acute) conditions. This Order uses the 130:1 (D = 129) to calculate WQBELs based on the chronic water quality objective. Actual initial dilution is used because ammonia is not a persistent pollutant and the Basin Plan states, "In most instances, ammonia will be diluted or degraded to a nontoxic state fairly rapidly." As such, there is unlikely to be cumulative toxicity effects associated with discharges containing elevated concentrations of ammonia. Therefore, granting dilution credits based on actual initial dilution is protective of water quality.

(c) Other Non-Bioaccumulative Pollutants. This Order grants a conservative dilution credit of 10:1 (D =9) for other non-bioaccumulative pollutants (excluding ammonia), including chronic toxicity. This 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:

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

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

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

Table F-9. WQBEL Calculations

Pollutant	Copper	Cyanide	Dioxin TEQ	Ammonia	Lead
Units	**µg/L**	**µg/L**	**µg/L**	**mg/L**	**ug/L**
Basis and Criteria type	Basin Plan Site-Specific Objective	Basin Plan Site-Specific Objective	CTR Human Health	BP & CTR SW Aquatic Life (Acute)	Basin Plan Site-Specific Objective
Criteria -Acute	3.9	-	-	4.66	-
Criteria -Chronic	2.5	-	-	-	-
Site-Specific Objective Criteria - Acute	9.4	9.4	-	-	69
Site-Specific Objective Criteria - Chronic	6.0	2.9	-	-	2.7
Water Effects Ratio (WER)	2.4	1	1	1	-
Lowest WQO	6.0	2.9	1.4E-08	4.66	2.7
Site Specific Translator - MDEL	0.66	-	-	-	-
Site Specific Translator - AMEL	0.38	-	-	-	-
Dilution Factor (D)	9	9	0	14	9
No. of samples per month	4	4	4	4	4
Aquatic life criteria analysis required? (Y/N)	Y	Y	N	Y	Y
HH criteria analysis required? (Y/N)	N	Y	Y	N	N
Applicable Acute WQO	14	9.4	-	4.66	69
Applicable Chronic WQO	16	2.9	-	-	2.7
HH Criteria	-	2.2 E+05	1.4E-08	N	-
Background (Maximum Conc. for Aquatic Life Calc.)	2.5	0.52	-	0.22	0.80
Background (Average Conc. for Human Health Calc.)	-	0.44	2.2E-08	-	-
Is the pollutant on the 303d list and/or bioaccumulative (Y/N)?	N	N	Y	N	N
ECA Acute	53	86	-	67	690
ECA Chronic	69	21	-	-	20
ECA HH	-	2.2 E+06	1.4E-08	-	-
No. of data points <10 or at least 80% of data reported non-detect? (Y/N)	N	N	Y	N	N
Avg of effluent data points	1.2	1.7	-	2.0	1.4
Std Dev of effluent data points	2.1	2.3	-	3.0	0.72
CV Calculated	1.7	1.4	-	1.5	0.52
CV (Selected) - Final	1.7	1.4	0.6	1.5	0.52
ECA Acute Mult99	0.13	0.15	-	0.14	0.36
ECA Chronic Mult99	0.23	0.28	-	-	0.57
LTA Acute	15	14	-	9.6	250
LTA Chronic	31	6.8	-	-	11
Minimum of LTAs	15	6.8	-	9.6	11

Pollutant	Copper	Cyanide	Dioxin TEQ	Ammonia	Lead
AMEL Mult95	2.6	2.3	1.6	2.4	1.5
MDEL Mult99	7.8	6.6	3.1	7.0	2.7
AMEL (Aquatic Life)	40	16	-	23	17
MDEL (Aquatic Life)	119	45	-	67	31
MDEL/AMEL Multiplier	3.0	2.8	2.0	2.9	1.9
AMEL (Human Health)	-	2.2 E+06	1.4E-08	-	-
MDEL (Human Health)	-	6.2 E+06	2.8E-08	-	-
Minimum of AMEL for Aq. Life vs HH	40	16	1.4E-08	23	17
Minimum of MDEL for Aq. Life vs HH	119	45	2.8E-08	67	31
Previous Order Limit - AMEL	37	21	1.4.E-08	26	3.7
Previous Order Limit - MDEL	120	40	2.8.E-08	67	7.8
Final Limit - AMEL	**37**	**16**	**1.4 E-08**	**23**	**3.7**
Final Limit - MDEL	**120**	**40**	**2.8 E-08**	**67**	**7.8**

iv. **Selenium Mass Emission Limitation**. A TMDL for selenium has been adopted for North San Francisco Bay, including a portion of the Sacramento/San Joaquin Delta, Suisun Bay, Carquinez Strait, San Pablo Bay, and Central San Francisco Bay. The TMDL establishes a wasteload allocation of 60 kg/year for the Discharger. Basin Plan section 7.2.4.5 allows the Discharger to discharge no more than its current load based on its selenium concentration and discharge volumes as reported from 2000 through 2012. Specifically, it says selenium WQBELs are to be calculated as the 95th percentile daily load based on representative data reported during 2000 through 2012 and are to be expressed in units of kilograms per day (kg/day). Because of the seasonal differences in treatment, the 95th percentile daily load was calculated seasonally. From April through October for 2000 through 2012, the 95th percentile was 0.36 kg/day. From November through March for 2000 through 2012, the 95th percentile was 0.69 kg/day. Therefore, this Order establishes a performance-based average monthly effluent limitation of 0.36 kg/day for April 1 through October 31 and 0.69 kg/day for November 1 through March 31. These calculations did not censor any available data since the higher values recorded in the winter months were the result of high rainfall and are representative of conditions in the Discharger's treatment pond, which more effectively removes selenium during warmer and drier months.

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

vi. **Chronic Toxicity.** This Order includes a chronic toxicity limitation based on Basin Plan section 4.5.5.3.2. The single-sample WQBEL of 10 TUc is based on the chronic

toxicity criterion of 1.0 TUc and a dilution of 10:1 (D = 9). The test species specified in the MRP is red abalone (*Haliotis rufescens*), which was the most sensitive species identified in the Discharger's November 8, 2019, final chronic toxicity screening report.

vii. **Total Coliform.** The total coliform effluent limitations are based on the Basin Plan Table 4-2A.

viii. **Enterococcus Bacteria.** This Order includes enterococcus effluent limitations based on the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy*, which requires limitations for discharges to receiving waters with the water contact recreation beneficial use. This Order accounts for a conservative initial dilution of 10:1 (D=9) to calculate the enterococcus effluent limitation (see Fact Sheet § IV.D.4.a.ii). To establish background conditions, the Discharger collected five receiving water samples near its outfall from April 2014 through May 2014. These five enterococci samples result in a geometric mean of 11.47 MPN/100 mL. (The units of most probable number and colony forming units are considered comparable for the purposes of this calculation.)

The enterococcus effluent limitation was calculated as specified in SIP section 1.4 using the following equation:

ECA = C + D (C – B)

where:

ECA = Effluent Concentration Allowance (effluent limitation)
C = water quality objective (30 CFU/100 mL, 110 CFU/100mL)
D = dilution factor (D = 9)
B = background concentration (11.47 MPN/100 mL)

This calculation results in a six-week rolling geometric mean enterococcus effluent limitation of 200 CFU/100 mL and a 90th percentile of all enterococcus bacteria samples collected in a calendar month limitation of 1,000 CFU/100mL.

ix. **Effluent Limitation Adjustments for Recycled Water Use.** This Order provides the Discharger with a process for applying for effluent limitation adjustments for recycled water use. These adjustments encourage wastewater recycling consistent with Basin Plan section 4.16 and State Water Board Resolution Nos. 77-1 and 2009-0011 by accounting for increases in pollutant concentrations resulting from recycling.

b. **Discharge Point Nos. 003 through 006**. For stormwater discharged from Discharge Point Nos. 003 through 006, this Order retains from the previous order the narrative WQBELs of no visible oil or color and imposes additional narrative WQBELs as set forth in Provision IV.B.4. These narrative requirements include best management practices in accordance with 40 C.F.R. section 122.44(k). For stormwater discharged from Discharge Point Nos. 003 through 006, this Order also imposes pH WQBELs based on Basin Plan section 3.3.9 because they are more stringent than the technology-based pH effluent limitations.

E. Discharge Requirement Considerations

1. **Antidegradation.** This Order complies with the antidegradation provisions of 40 C.F.R. section 131.12 and State Water Board Resolution 68-16. It does not authorize lowering water quality as compared to the level of discharge authorized in the previous order, which is the baseline by which to measure whether degradation will occur. This Order does not allow for an increased flow, a reduced level of treatment, or increased effluent limitations relative to the previous order.

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

   The State Water Board adopted the *Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California – Part 3, Bacteria Provisions and a Water Quality Standards Variance Policy* on August 7, 2018, which supersedes the effluent limitations in the Basin Plan. The new enterococcus limitations are based on a different averaging period than the previous limits and are therefore not directly comparable.

   Clean Water Act section 402(o) permits backsliding from water quality-based effluent limitations, provided such backsliding complies with Clean Water Act section 303(d)(4), which allows backsliding in impaired waters when the revised effluent limitation is based on a total maximum daily load (TMDL) and will ensure attainment of the water quality standard. Here, the previous order contained concentration-based selenium effluent limitations calculated according to SIP procedures and a mass-based effluent limitation based on a running average. It also stated that the Regional Water Board would amend the selenium effluent limitations to be consistent with TMDL wasteload allocations when a selenium TMDL was established. The North San Francisco Bay Selenium TMDL (Basin Plan § 7.2.4) adopted on November 18, 2015, established a wasteload allocation for the Tesoro Refining & Marketing Company at current loads. This Order implements the wasteload allocation and contains a mass-based selenium effluent limitation. Compliance with the revised selenium effluent limitation is consistent with the TMDL wasteload allocation and will help to ensure compliance with the water quality standard for selenium. Accordingly, the revised effluent limitation meets the exception to backsliding.

3. **Stringency of Requirements for Individual Pollutants.** This Order contains both technology-based and WQBELs for individual pollutants. The technology-based requirements implement minimum, applicable federal technology-based requirements. In addition, this Order contains more stringent 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 contains stormwater provisions consistent with the State Water Board's General Permit for Stormwater Discharges Associated with Industrial Activities (NPDES No. CAS000001) (Industrial General Permit), including requirements for the Discharger to prepare a Stormwater Pollution Prevention Plan, to evaluate BMP performance using stormwater action levels (stormwater action levels are not effluent limitations), and to submit an annual stormwater report.

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 evaluate monitoring data to verify that the reasonable potential analysis conclusions of this Order remain valid. This requirement is authorized pursuant to 40 C.F.R. section 122.41(h) and Water Code section 13267 and is necessary to inform the next permit reissuance and to ensure that the Discharger takes timely steps in response to any unanticipated change in effluent quality during the term of this Order.

3. Pollutant Minimization Program

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

4. 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. This Order requires the Discharger to implement pretreatment, source control and pollution prevention for identified sources. Additional actions may be necessary depending on the three-year rolling mean copper concentration in Suisun Bay. Data the San Francisco Estuary Institute compiled for 2011-2015 indicate no degradation of San Francisco Bay water quality with respect to copper (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.

c. Stormwater Pollution Prevention Plan and Annual Report. This provision is based on Basin Plan section 4.8 and is consistent with the requirements of *NPDES General Permit for Storm Water Discharges Associated with Industrial Activities* (State Water Board Order No. 2014-0057-DWQ). These narrative requirements include implementation of best management practices in accordance with 40 C.F.R. section 122.44(k).

d. Construction and Development Requirements for Stormwater. This provision clarifies when the Discharger must apply for coverage under the *NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities*, Order No. 2009-0009-DWQ.

e. **Conditions for Recycled Water Use Adjustment.** This provision protects beneficial uses by requiring the Discharger to ensure that recycled water use adjustments, if any are applied, will not cause toxicity. This provision does not authorize any increase in pollutant mass to the receiving water. It authorizes recycling of treated wastewater that could otherwise be discharged to the receiving water without further treatment.

f. **Average Annual Selenium Load.** This provision is based on Basin Plan section 7.2.4.5. The information will be used to confirm that selenium loads are consistent with wasteload allocations and evaluate whether the performance-based effluent limits established in this Order should be adjusted.

g. **Acceptance of Ballast Water.** This provision is necessary to ensure that ballast water discharges are not a pathway for invasive species to reach San Francisco Bay. It is consistent with California Code of Regulations, title 2, section 2284(a)(4), which requires approval by the California State Lands Commission to discharge ballast water to a facility. Such approval requires a treatment process adequate to ensure that the discharge of treated ballast water does not release invasive species.

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. **Influent Monitoring.** This Order does not require the Discharger to conduct monitoring of Facility influent. However, the Discharger has the option of using recycled water in exchange for effluent limitation adjustments, in which case the Discharger will need to conduct monitoring at Monitoring Locations INF-001 and INF-002.

2. **Effluent Monitoring.** Effluent flow monitoring is necessary to understand Facility operations. Monitoring for other parameters is necessary to evaluate compliance with this Order's effluent limitations and to conduct future reasonable potential analyses.

3. **Toxicity Testing**. Acute and chronic toxicity tests are necessary to evaluate compliance with this Order's effluent limitations.

   The Discharger conducted a chronic toxicity screening phase study for this permit reissuance, submitted in November 2019. Red abalone was found to be the most sensitive species. The MRP specifies that the red abalone (*Haliotis rufescens*) is to be used for chronic toxicity testing unless a more sensitive species is identified.

4. **Receiving Water Monitoring.** The Discharger is required to continue participating in the Regional Monitoring Program, which involves collecting data on pollutants and toxicity in San Francisco Bay water, sediment, and biota. The monitoring is necessary to characterize the receiving water and the effects of the discharge has on it.

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. The Discharger shall support the Regional Monitoring Program to collect data for receiving water. This table is for informational purposes only. The actual requirements are specified in the MRP and elsewhere in this Order.

Table F-10. Monitoring Requirements Summary

Parameter [1]	Influent INF-001 & INF-002	Effluent EFF-001 [2]	Effluent EFF-001-D1 & EFF-002-D2 [2]	Effluent EFF-003 thru 006 [2]	Receiving Water
Flow	[3]	Continuous/D	-	-	-
pH	-	Continuous/D	-	Each discharge [4]	-
Temperature	-	Continuous/D	-	-	-
COD	-	1/Month	-	Each discharge [5]	-
BOD_5	-	1/Month	-	Each discharge [5]	-
TSS	-	1/Week	-	Each discharge [4]	-
Specific conductance	-	-	-	Each discharge [4]	-
Total Organic Carbon	-	-	-	Each discharge [4]	-
Oil and Grease	-	1/Week	-	Each discharge [4]	-
Phenolic Compounds	-	1/Month	-	Each discharge [5]	-
Chromium, Total and VI	-	1/Month	-	Each discharge [5]	-
Sulfide	-	1/Month	-	-	-
Ammonia total as N	[3]	1/Month	-	-	-
Total Coliforrn	-	-	1/Month	-	-
Enterococci	-	-	1/Week	-	-
Acute Toxicity	-	1/Week	-	-	Support RMP
Chronic Toxicity	-	1/Quarter	-	-	Support RMP
Copper	[3]	1/Month	-	-	Support RMP
Lead	[3]	1/Month	-	-	Support RMP
Selenium	[3]	1/Week	-	-	Support RMP
Cyanide	[3]	1/Month	-	-	Support RMP
Dioxins and Furans	[3]	2/Year	-	-	Support RMP
All other priority pollutants	-	2/Year	-	-	Support RMP
Standard Observations	-	-	-	Each discharge [4]	-

Footnotes:

[1] The Discharger must also comply with the monitoring requirements in the Mercury and PCBs Watershed Permit (NPDES Permit No. CA0038849).

[2] The MRP defines these sampling frequencies.

[3] For discharge limit adjustments only.

[4] For Monitoring Locations EFF-005-T2NW, EFF-005-T2S-A, EFF-005-T2S-B, EFF-005-T2S-C, EFF-005-T2SW, EFF-005-T4NW, EFF-005-T4SW, and EFF-006, the minimum sampling frequency is to be twice per year.

[5] If and when supplemental effluent limitations in Table 8 of this Order become effective, the monitoring frequency for Monitoring Locations EFF-003 and EFF-004 is to be during each discharge event. The monitoring frequency for the remaining stormwater monitoring locations is to be daily during each storm event.

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. The public had access to the agenda and any changes in dates and locations through the Regional Water Board's website at 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, by e-mail, or by mail to the attention of Gaurav Mittal.

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 August 10, 2020.

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:

Date: September 9, 2020
Time: 9:00 a.m.
Contact: Gaurav Mittal, (510) 622-2407, gaurav.mittal@waterboards.ca.gov

Interested persons were provided notice of the hearing and information on how to participate. During 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 can change. The Regional Water Board web address is waterboards.ca.gov/sanfranciscobay, where one could access the current agenda for changes.

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 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 8:00 a.m. and 5:00 p.m. (except noon to 1:00 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 Gaurav Mittal, (510) 622-2407, gaurav.mittal@waterboards.ca.gov.

ATTACHMENT F-1

Derivation of Technology-Based Effluent Limitations
Marathon Martinez Refinery

References

1. 40 C.F.R. section 419, subpart B – Cracking Subcategory, *Effluent Limitation Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category* (2006)

2. *Development Document for Effluent Limitations Guidelines and New Source Performance Standards for the Petroleum Refining Point Source Category,* EPA/4401-82/014 (1982)

3. *Guide for the Application of Effluent Limitations Guidelines for the Petroleum Refining Industry,* U.S. EPA Office of Water Regulations and Standards (1985)

4. Marathon Martinez Refinery, NPDES Application for Permit Renewal, NPDES Permit No. CA0004961 (December 5, 2019)

5. Refinery Production Data from NPDES Application for Permit Renewal, Attachment 2C-IIIC – Basis for Reporting Production Rates

Applicable Definitions

Process Wastewater means any water, which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product. [40 C.F.R. § 401.11(q)]

Runoff means the flow of stormwater resulting from precipitation coming into contact with petroleum refinery property. [40 C.F.R. § 419.11(b)]

Ballast means the flow of waters, from a ship, that is treated along with refinery wastewaters in the main treatment system. [40 C.F.R. § 419.11(c)]

Contaminated Runoff means runoff that comes into contact with any raw material, intermediate product, finished product, by-product or waste product located on petroleum refinery property.
[40 C.F.R. section 419.11(g)]

Background

According to the Effluent Limitation Guidelines (ELGs) for the Cracking Subcategory of the Petroleum Refining Point Source Category at 40 C.F.R. part 419, subpart B, technology-based effluent limitations are to be based in part on a discharger's production rate. The Discharger's current production rate is 149,500 barrels per day (bbls/d) (the highest annual average production rate from 2015 through 2019). The ELGs also take into account a discharger's specific refinery processes and configuration as explained below.

<u>Process Wastewaters.</u> The ELGs include limits for process wastewaters based on best practicable control technology currently available (BPT), best available technology economically achievable (BAT), and best conventional pollutant control technology (BCT). The most stringent of the BPT, BAT, and

BCT limits apply. New Source Performance Standard limitations do not apply because the Facility was constructed prior to October 18, 1982.

The ELGs call for many limits to be calculated based on size factors and process factors. For the process wastewaters discharged at Discharge Point No. 001, the size factor and process factor are determined as follows:

Size Factor. Pursuant to the ELGs at 40 C.F.R. section 419.22(b)(1) for BPT, 40 C.F.R. section 419.23(b)(1) for BAT, and 40 C.F.R. section 419.24(b)(1) for BCT, the size factor for a crude production rate of 149,500 bbls/d is 1.35.

Process Factor. The process factor is derived from the total process configuration. To calculate the total process configuration, the process feedstock rate for each crude, cracking and coking, lube, and asphalt process[1] is divided by the overall production rate (149,500 bbls/d). The resulting ratios (process feedstock divided by overall production) are then added together, and the result is multiplied by a weight factor specific to each process. Derivation of the Facility's total process configuration is shown in the following table. The Discharger does not have lube or asphalt processes, so those process groups are not shown.

Table F-1A. Process Configurations

Process	Process Feedstock Rate (bbls/d)	Production Rate (bbls/d)	Process Feedstock / Production Ratio	Weight Factor	Process Configuration
Crude	-	-	-	-	-
Atm. Dist.	149,500	149,500	1.0	-	-
Vac. Dist.	133,600	149,500	0.894	-	-
Desalt.	149,500	149,500	1.0	-	-
Total	-	-	*2.894*	*1*	*2.89*
Cracking and Coking	-	-	-	-	-
Catalytic Cracking	60,800	149,500	0.407	-	-
Hydrocracking	31,500	149,500	0.211	-	-
Hydrotreating	134,900	149,500	0.902	-	-
Coking	40,000	149,500	0.267	-	-
Total	-	-	*1.787*	*6*	*10.72*
-	-	-	-	-	-
Total	**-**	**-**	**-**	**-**	**13.62**

Pursuant to the ELGs at 40 C.F.R. section 419.22(b)(2) for BPT, 40 C.F.R. section 419.232(b)(2) for BAT, and 40 C.F.R. section 419.22(b)(2) for BCT, the process factor for a total process configuration of 13.62 is 1.89.

Contaminated Runoff. The ELGs include limits for contaminated runoff based on BPT, BAT, and BCT. These limits apply to all stormwater discharges, except stormwater treated and discharged with process wastewaters through Discharge Point No. 001. The ELGs at 40 C.F.R. section 419.22(e)(2) and 419.23(f)(2) establish limits for oil and grease and total organic carbon (TOC). They also establish additional limits for biochemical oxygen demand (BOD_5), chemical oxygen demand (COD), total

[1] The specific process groups are listed in the *Guide for the Application of Effluent Limitations Guidelines for the Petroleum Refining Industry* (page 19).

suspended solids (TSS), phenolic compounds, pH, hexavalent chromium, and total chromium that apply if the limits for oil and grease or TOC are exceeded.

Determination of Process Wastewater Effluent Limitations

BPT. The following table shows the derivation of the process wastewater BPT limits for the Facility based on the following equation:

Effluent Limitation =
(Maximum Daily or Average Monthly Factor) x (Size Factor) x (Process Factor) x (Feed Stock Rate)

Table F-1B. BPT Limitations for Process Wastewaters

Pollutant	Maximum Daily Factor [1]	Average Monthly Factor [1]	Size Factor	Process Factor	Feed Stock Rate [2]	Maximum Daily Limit [3]	Average Monthly Limit [3]
BOD_5	9.9	5.5	1.35	1.89	149.5	3776	2098
TSS	6.9	4.4	1.35	1.89	149.5	2632	1678
COD	74.0	38.4	1.35	1.89	149.5	28227	14648
Oil and Grease	3.0	1.6	1.35	1.89	149.5	1144	610
Phenolics (4AAP)	0.074	0.036	1.35	1.89	149.5	28	14
Ammonia (as N)	6.6	3.0	1.35	1.89	149.5	2518	1144
Sulfide	0.065	0.029	1.35	1.89	149.5	25	11
Total Chromium	0.15	0.088	1.35	1.89	149.5	57	34
Hexavalent Chromium	0.012	0.0056	1.35	1.89	149.5	4.6	2.1

[1] From 40 C.F.R. § 419.22(a) (pounds per 1000 bbls of feedstock)
[2] 1,000 bbls/d
[3] Pounds per day (lbs/d)

BAT. The following table shows the derivation of the process wastewater BAT limits for the Facility based on the following equation:

Effluent Limitation =
(Maximum Daily or Average Monthly Factor) x (Size Factor) x (Process Factor) x (Feed Stock Rate)

Table F-1C. Process Wastewater BAT Limitations

Pollutant	Maximum Daily Factor [1]	Average Monthly Factor [1]	Size Factor	Process Factor	Feed Stock Rate [2]	Maximum Daily Limit [3]	Average Monthly Limit [3]
COD	74.0	38.4	1.35	1.89	149.5	28227	14648
Ammonia (as N)	6.6	3.0	1.35	1.89	149.5	2518	1144
Sulfide	0.065	0.029	1.35	1.89	149.5	25	11
pH	-	-	-	-	-	[4]	[4]

[1] From 40 C.F.R. § 419.23(a) (pounds per 1,000 bbls feedstock)
[2] 1,000 bbls/d
[3] Pounds per day (lbs/d)
[4] The pH is to be within the range of 6.0 to 9.0 as instantaneous limits.

To determine BAT limits for total and hexavalent chromium and phenolic compounds in process wastewaters, the ELGs require consideration of effluent factors and refinery processes. BAT effluent factors are presented at 40 C.F.R. section 419.23(c)(1); the refinery processes considered are the crude, cracking and coking, and reforming and alkylation processes, which correspond to those identified

within the *Guide for the Application of Effluent Limitations Guidelines for the Petroleum Refining Industry* (page 20).

Table F-1D. Process Feedstock Rates (bbls/d)

Crude	-
Atmospheric Distillation	149.5
Vacuum Distillation	133.6
Desalter	149.5
Total	**432.6**
Cracking and Coking	-
Catalytic Cracking	60.8
Coking	40.0
Hydrocracking	31.5
Hydrotreating	134.9
Total	**267.2**
Reforming and Alkylation	-
Reforming	26.4
Alkylation	13.2
Total	**39.6**

Based on the total feedstock rates for each process shown above, the following table shows the derivation of the BAT limits for total and hexavalent chromium and phenolic compounds using the following equation:

Effluent Limitation = (Maximum Daily or Average Monthly Factor) x (Process Feedstock Rate)

Table F-1E. Process Wastewater BAT Limitations (Chromium and Phenolics)

Process	Maximum Daily Factor [1]	Average Monthly Factor [1]	Process Feedstock Rate [2]	Maximum Daily Limit [3]	Average Monthly Limit [3]
Phenolic Compounds	-	-	-	-	-
Crude	0.013	0.0030	433	5.63	1.30
Cracking and Coking	0.147	0.036	267	39.28	9.62
Reforming and Alkylation	0.132	0.032	39.6	5.23	1.27
Limit (Sum)	-	-	-	**50.1**	**12.2**
Total Chromium	-	-	-	-	-
Crude	0.011	0.0040	433	4.76	1.73
Cracking and Coking	0.119	0.041	267	31.80	10.96
Reforming and Alkylation	0.107	0.037	39.6	4.24	1.47
Limit (Sum)	-	-	-	**40.8**	**14.2**
Hexavalent Chromium	-	-	-	-	-
Crude	0.00070	0.00030	433	0.30	0.13
Cracking and Coking	0.0076	0.0034	267	2.03	0.91
Reforming and Alkylation	0.0069	0.0031	39.6	0.27	0.12
Limit (Sum)	-	-	-	**2.61**	**1.15**

[1] From 40 C.F.R. § 419.23(c), lbs per 1,000 barrels feedstock
[2] 1,000 bbls/d
[3] Pounds per day (lbs/d)

BCT. The following table shows the derivation of the process wastewater BCT limits for the Facility based on the following equation:

Effluent Limitation =
(Maximum Daily or Average Monthly Factor) x (Size Factor) x (Process Factor) x (Feed Stock Rate)

Table F-1F. Process Wastewater BCT Limitations

Pollutant	Maximum Daily Factor [1]	Average Monthly Factor [1]	Size Factor	Process Factor	Feed Stock Rate [2]	Maximum Daily Limit [3]	Average Monthly Limit [3]
BOD_5	9.9	5.5	1.35	1.89	149.5	3776	2098
TSS	6.9	4.4	1.35	1.89	149.5	2632	1678
Oil and Grease	3.0	1.6	1.35	1.89	149.5	1144	610
pH	-	-	-	-	-	[4]	[4]

[1] From 40 C.F.R. § 419.24(a), pounds per 1,000 barrels feedstock
[2] 1,000 bbls/d
[3] Pounds per day (lbs/d)
[4] The pH is to be within the range of 6.0 to 9.0 as instantaneous limits.

Most Stringent Technology-Based Effluent Limitations for Process Wastewater. The following table presents the technology-based effluent limits for process wastewater discharged from Discharge Point No. 001. These limits are the most stringent of the BPT, BAT, and BCT limits calculated above. All are based on BPT, except for the chromium limits, which are based on BAT.

Table F-1G. Summary of Technology-Based Effluent Limitations for Process Wastewater

Pollutant	Maximum Daily Limit (lbs/day)	Average Monthly Limit (lbs/day)
BOD_5	3,800	2,100
TSS	2,600	1,700
COD	28,000	15,000
Oil and Grease	1,100	610
Phenolics (4AAP)	28	12
Ammonia (as N)	2,500	1,100
Sulfide	25	11
Total Chromium	41	14
Hex Chromium	2.6	1.1
pH	[1]	[1]

[1] The pH is to be within the range of 6.0 to 9.0 as instantaneous limits.

Determination of Contaminated Runoff Effluent Limitations

The ELGs at 40 C.F.R. section 419.22(e)(2) and 419.23(f)(2) establish a limit of 15 mg/L for oil and grease and 110 mg/L for total organic carbon (TOC). If contaminated stormwater discharges exceed the oil and grease limit (15 mg/L) or the total organic carbon limit (110 mg/L), additional concentration-based limits for BOD_5, TSS, COD, phenolic compounds, total chromium, hexavalent chromium, and pH must become effective immediately. The effluent limits for these pollutants are derived from the most stringent of BAT and BPT effluent concentration-based limits provided in the ELGs, found at 40 C.F.R. section 419.22(e)(2) and 419.23(f)(2). Tables summarizing these additional effluent limits are shown below:

Table F-1H. Effluent Limitations for Contaminated Runoff

Pollutant	Daily Maximum (mg/L)	Average Monthly (mg/L)
BOD_5	48	26
TSS	33	21
COD	360	180
Oil and Grease	15	8.0
Phenolic Compounds	0.35	0.17
Total Chromium	0.60	0.21
Hexavalent Chromium	0.062	0.028
pH	[1]	[1]

[1] Within the range of 6.0 to 9.0

Determination of Additional Effluent Limitation Allocations

If contaminated runoff or ballast water is comingled with process wastewater, additional mass-based effluent limitation allocations may be added to the mass-based process wastewater limits indicated in sections IV.A.2 and IV.A.3 of the Order. These additional effluent limitation allocations are derived from the most stringent concentration-based limits for contaminated runoff (see Table F-1H) or the table below for ballast water:

Table F-1I. Additional Ballast Water Effluent Limitation Allocations

Pollutant	Maximum Daily Concentration (mg/L) [1]	Average Monthly Concentration(mg/L) [1]
BOD_5	48	26
TSS	33	21
COD	470	240
Oil and Grease	15	8.0

[1] These values reflect the BPT-based effluent limits of 40 C.F.R. § 419.22(c).

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

November 2017

Contents

REGIONAL STANDARD PROVISIONS, AND MONITORING AND REPORTING REQUIREMENTS

APPLICABILITY

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

I. STANDARD PROVISIONS - PERMIT COMPLIANCE

A. Duty to Comply – Not Supplemented

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

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

1. **Contingency Plan**. The Discharger shall maintain a Contingency Plan as prudent in accordance with current facility emergency planning. The Contingency Plan shall describe procedures to ensure that existing facilities remain in, or are rapidly returned to, operation in the event of a process failure or emergency incident, such as employee strike, strike by suppliers of chemicals or maintenance services, power outage, vandalism, earthquake, or fire. The Discharger may combine the Contingency Plan and Spill Prevention Plan (see Provision I.C.2, below) into one document. In accordance with Regional Water Board Resolution No. 74-10, discharge in violation of the permit where the Discharger has failed to develop and implement a Contingency Plan as described below may be the basis for considering the discharge a willful and negligent violation of the permit pursuant to California Water Code section 13387. The Contingency Plan shall, at a minimum, provide for the following:

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

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

   c. Emergency standby power;

   d. Protection against vandalism;

   e. Expeditious action to repair failures of, or damage to, equipment, including any sewer lines;

   f. Reporting of spills and discharges of untreated or inadequately treated wastes, including measures taken to clean up the effects of such discharges; and

   g. Maintenance, replacement, and surveillance of physical condition of equipment and facilities, including any sewer lines.

2. **Spill Prevention Plan.** The Discharger shall maintain a Spill Prevention Plan to prevent accidental discharges and to minimize the effects of any such discharges. The Spill Prevention Plan shall do the following:

   a. Identify the possible sources of accidental discharge, untreated or partially-treated waste bypass, and polluted drainage;

   b. State when current facilities and procedures became operational and evaluate their effectiveness; and

   c. Predict the effectiveness of any proposed facilities and procedures and provide an implementation schedule with interim and final dates when the proposed facilities and procedures will be constructed, implemented, or operational.

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

1. **Operation and Maintenance Manual.** The Discharger shall maintain an Operation and Maintenance Manual to provide the plant and regulatory personnel with a source of information describing all equipment, recommended operational strategies, process control monitoring, and maintenance activities. To remain a useful and relevant document, the Operation and Maintenance Manual shall be kept updated to reflect significant changes in treatment facility equipment and operational practices. The Operation and Maintenance Manual shall be maintained in usable condition and be available for reference and use by all relevant personnel and Regional Water Board staff.

2. **Wastewater Facilities Status Report.** The Discharger shall maintain a Wastewater Facilities Status Report and regularly review, revise, or update it, as necessary. This report shall document how the Discharger operates and maintains its wastewater collection, treatment, and disposal facilities to ensure that all facilities are adequately staffed, supervised, financed, operated, maintained, repaired, and upgraded as necessary to provide adequate and reliable transport, treatment, and disposal of all wastewater from both existing and planned future wastewater sources under the Discharger's service responsibilities.

3. **Proper Supervision and Operation of Publicly-Owned Treatment Works (POTWs).** POTWs shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Title 23, section 3680, of the California Code of Regulations.

E. Property Rights – Not Supplemented

F. Inspection and Entry – Not Supplemented

G. Bypass – Not Supplemented

H. Upset – Not Supplemented

I. Other – Addition to Attachment D

1. Neither the treatment nor the discharge of pollutants shall create pollution, contamination, or nuisance as defined by California Water Code section 13050.

2. Collection, treatment, storage, and disposal systems shall be operated in a manner that precludes public contact with wastewater. If public contact with wastewater could reasonably occur on public property, warning signs shall be posted.

3. If the Discharger submits a timely and complete Report of Waste Discharge for permit reissuance, this permit shall continue in force and effect until the permit is reissued or the Regional Water Board rescinds the permit.

II. STANDARD PROVISIONS – PERMIT ACTION – Not Supplemented

III. STANDARD PROVISIONS – MONITORING

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

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

2. Minimum Levels. For the 126 priority pollutants, the Discharger should use the analytical methods listed in Table B unless the Monitoring and Reporting Program (MRP, Attachment E) requires a particular method or minimum level (ML). All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements.

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

a. Sample Collection Timing

i. The Discharger shall collect influent samples on varying days selected at random and shall not include any plant recirculation or other sidestream wastes, unless otherwise stipulated in the MRP. The Executive Officer may approve an alternative influent sampling plan if it is representative of plant influent and complies with all other permit requirements.

ii. The Discharger shall collect effluent samples on days coincident with influent sampling, unless otherwise stipulated by the MRP. If influent sampling is not required, the Discharger shall collect effluent samples on varying days selected at random, unless otherwise stipulated in the MRP. The Executive Officer may approve an alternative effluent sampling plan if it is representative of plant discharge and in compliance with all other permit requirements.

iii. The Discharger shall collect effluent grab samples during periods of daytime maximum peak flows (or peak flows through secondary treatment units for facilities that recycle effluent).

iv. Effluent sampling for conventional pollutants shall occur on at least one day of any multiple-day bioassay the MRP requires. During the course of the bioassay, on at least one day, the Discharger shall collect and retain samples of the discharge. In the event that a bioassay result does not comply with effluent limitations, the Discharger shall analyze the retained samples for pollutants that could be toxic to aquatic life and for which it has effluent limitations.

(a) The Discharger shall perform bioassays on final effluent samples; when chlorine is used for disinfection, bioassays shall be performed on effluent after chlorination and dechlorination; and

(b) The Discharger shall analyze for total ammonia nitrogen and calculate the amount of un-ionized ammonia whenever test results fail to meet effluent limitations.

b. Conditions Triggering Accelerated Monitoring

i. Average Monthly Effluent Limitation Exceedance. If the results from two consecutive samples of a constituent monitored in a particular month exceed the average monthly effluent limitation for any parameter (or if the required sampling frequency is once per month or less and the monthly sample exceeds the average monthly effluent limitation), the Discharger shall, within 24 hours after the results are received, increase its sampling frequency to daily until the results from the additional sampling show that the parameter complies with the average monthly effluent limitation.

ii. Maximum Daily Effluent Limitation Exceedance. If a sample result exceeds a maximum daily effluent limitation, the Discharger shall, within 24 hours after the result is received, increase its sampling frequency to daily until the results from two samples collected on consecutive days show compliance with the maximum daily effluent limitation.

iii. Acute Toxicity. If final or intermediate results of an acute bioassay indicate a violation or threatened violation (e.g., the percentage of surviving test organisms of any single acute bioassay is less than 70 percent), the Discharger shall initiate a new test as soon as practical or as described in applicable State Water Board plan provisions that become effective after adoption of these Regional Standard Provisions. The Discharger shall investigate the cause of the mortalities and report its findings in the next self-monitoring report.

iv. Chlorine. The Discharger shall calibrate chlorine residual analyzers against grab samples as frequently as necessary to maintain accurate control and reliable operation. If an effluent violation is detected, the Discharger shall collect grab samples at least every 30 minutes until compliance with the limitation is achieved, unless the Discharger monitors chlorine residual continuously. In such cases, the Discharger shall continue to conduct continuous monitoring.

v. **Bypass.** Except as indicated below, if a Discharger bypasses any portion of its treatment facility, it shall monitor flows and collect samples at affected discharge points and analyze samples for all constituents with effluent limitations on a daily basis for the duration of the bypass. The Discharger need not accelerate chronic toxicity monitoring. The Discharger also need not collect and analyze samples for mercury, dioxin-TEQ, and PCBs after the first day of the bypass. The Discharger may satisfy the accelerated acute toxicity monitoring requirement by conducting a flow-through test or static renewal test that captures the duration of the bypass (regardless of the method specified in the MRP). If bypassing disinfection units only, the Discharger shall only monitor bacteria indicators daily.

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

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

B. Standard Observations – Addition to Attachment D

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

   a. **Floating and Suspended Materials** (e.g., oil, grease, algae, and other macroscopic particulate matter) **—** presence or absence, source, and size of affected area.

   b. **Discoloration and Turbidity —** color, source, and size of affected area.

   c. **Odor —** presence or absence, characterization, source, and distance of travel.

   d. **Beneficial Water Use —** estimated number of water-associated waterfowl or wildlife, fisherpeople, and other recreational activities.

e. **Hydrographic Condition —** time and height of high and low tides (corrected to nearest National Oceanic and Atmospheric Administration location for the sampling date and time).

f. **Weather Conditions —** wind direction, air temperature, and total precipitation during five days prior to observation.

2. **Wastewater Effluent Observations.** The following requirements only apply when the MRP requires standard observations of wastewater effluent. Standard observations shall include the following:

   a. **Floating and Suspended Material of Wastewater Origin** (e.g., oil, grease, algae, and other macroscopic particulate matter) **—** presence or absence.

   b. **Odor —** presence or absence, characterization, source, distance of travel, and wind direction.

3. **Beach and Shoreline Observations.** The following requirements only apply when the MRP requires standard observations of beaches or shorelines. Standard observations shall include the following:

   a. **Material of Wastewater Origin —** presence or absence, description of material, estimated size of affected area, and source.

   b. **Beneficial Use —** estimate of number of people participating in recreational water contact, non-water contact, and fishing activities.

4. **Waste Treatment and/or Disposal Facility Periphery Observations.** The following requirements only apply when the MRP requires standard observations of the periphery of waste treatment or disposal facilities. Standard observations shall include the following:

   a. **Odor —** presence or absence, characterization, source, and distance of travel.

   b. **Weather Conditions —** wind direction and estimated velocity.

IV. STANDARD PROVISIONS – RECORDS

A. Records to be Maintained – Supplement to Attachment D, Provision IV.A

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

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

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

Monitoring records shall include the following:

1. **Analytical Information.** Records shall include analytical method detection limits, minimum levels, reporting levels, and related quantification parameters.

2. **Disinfection Process.** For the disinfection process, records shall include the following:
   - **a.** For bacteriological analyses:
     - **i.** Wastewater flow rate at the time of sample collection; and
     - **ii.** Required statistical parameters for cumulative bacterial values (e.g., moving median or geometric mean for the number of samples or sampling period identified in the MRP).
   - **b.** For the chlorination process (when chlorine is used for disinfection), at least daily average values for the following:
     - **i.** Chlorine residual of treated wastewater as it enters the chlorine contact basin (mg/L);
     - **ii.** Chlorine dosage (kg/day); and
     - **iii.** Dechlorination chemical dosage (kg/day).

3. **Wastewater Treatment Process Solids.** For each treatment unit process that involves solids removal from the wastewater stream, records shall include the following:
   - **a.** Total volume or mass of solids removed from each collection unit (e.g., grit, skimmings, undigested biosolids, or combination) for each calendar month or other time period as appropriate, but not to exceed annually; and
   - **b.** Final disposition of such solids (e.g., landfill, other subsequent treatment unit).

4. **Treatment Process Bypasses.** For all treatment process bypasses, including wet weather blending, records shall include the following:
   - **a.** Chronological log of treatment process bypasses;
   - **b.** Identification of treatment processes bypassed;
   - **c.** Beginning and ending dates and times of bypasses;
   - **d.** Bypass durations;
   - **e.** Estimated bypass volumes; and
   - **f.** Description of, or reference to other reports describing, the bypasses, their cause, the corrective actions taken (except for wet weather blending explicitly approved within the permit and in compliance with any related permit conditions), and any additional monitoring conducted.

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

C. Claims of Confidentiality – Not Supplemented

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information – Not Supplemented

B. Signatory and Certification Requirements – Not Supplemented

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

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

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

      i. Identification of all violations of effluent limitations or other waste discharge requirements found during the reporting period;

      ii. Details regarding the violations, such as parameters, magnitude, test results, frequency, and dates;

      iii. Causes of the violations;

      iv. Corrective actions taken or planned to resolve violations and prevent recurrences, and dates or time schedules for implementation (the Discharger may refer to previously submitted reports that address the corrective actions);

      v. Explanation for any data invalidation. Data should not be submitted in a self-monitoring report if it does not meet quality assurance/quality control standards. However, if the Discharger wishes to invalidate a measurement after submitting it in a self-monitoring report, the Discharger shall identify the measurement suspected to be invalid and state the Discharger's intent to submit, within 60 days, a formal request to invalidate the measurement. The formal request shall include the original measurement in question, the reason for invalidating the measurement, all relevant documentation that supports invalidation (e.g., laboratory sheet, log entry, test results), and a discussion of the corrective actions taken or planned (with a time schedule for completion) to prevent recurrence of the sampling or measurement problem;

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:

$$\text{Dioxin-TEQ} = \Sigma\ (C_x \times TEF_x \times BEF_x)$$

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

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

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

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

f. Annual Self-Monitoring Reports. By the date specified in the MRP, the Discharger shall submit an annual self-monitoring report covering the previous calendar year. The report shall contain the following:

i. Comprehensive discussion of treatment plant performance, including documentation of any blending or other bypass events, and compliance with the permit. This discussion shall include any corrective actions taken or planned, such as changes to facility equipment or operation practices that may be needed to achieve compliance, and any other actions taken or planned that are intended to improve the performance and reliability of wastewater collection, treatment, or disposal practices;

ii. List of approved analyses, including the following:

(a) List of analyses for which the Discharger is certified;

(b) List of analyses performed for the Discharger by a separate certified laboratory (copies of reports signed by the laboratory director of that laboratory need not be submitted but shall be retained onsite); and

(c) List of "waived" analyses, as approved;

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

iv. Results of facility report reviews. The Discharger shall regularly review, revise, and update, as necessary, the Operation and Maintenance Manual, Contingency Plan, Spill Prevention Plan, and Wastewater Facilities Status Report so these documents remain useful and relevant to current practices. At a minimum, reviews shall be conducted annually. The Discharger shall describe or summarize its review and evaluation procedures, recommended or planned actions, and estimated time schedule for implementing these actions. The Discharger shall complete changes to these documents to ensure that they remain up-to-date.

D. Compliance Schedules – Not supplemented

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

1. Oil or Other Hazardous Material Spills

a. Within 24 hours of becoming aware of a spill of oil or other hazardous material not contained onsite and completely cleaned up, the Discharger shall report as follows:

i. If the spill exceeds reportable quantities for hazardous materials listed in 40 C.F.R. part 302. The Discharger shall call the California Office of Emergency Services (800-852-7550).

ii. If the spill does not exceed reportable quantities for hazardous materials listed in 40 C.F.R., part 302, the Discharger shall call the Regional Water Board (510-622-2369).

b. The Discharger shall submit a written report to the Regional Water Board within five working days following either of the above telephone notifications unless directed otherwise by Regional Water Board staff. A report submitted electronically is acceptable. The written report shall include the following:

i. Date and time of spill, and duration if known;

ii. Location of spill (street address or description of location);

iii. Nature of material spilled;

iv. Quantity of material spilled;

v. Receiving water body affected, if any;

vi. Cause of spill;

vii. Estimated size of affected area;

viii. Observed impacts to receiving waters (e.g., oil sheen, fish kill, water discoloration);

ix. Corrective actions taken to contain, minimize, or clean up the spill;

x. Future corrective actions planned to prevent recurrence, and implementation schedule; and

xi. Persons or agencies notified.

2. Unauthorized Municipal Wastewater Treatment Plant Discharges[1]

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;

[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.

v. Level of treatment prior to discharge (e.g., raw wastewater, primary-treated wastewater, or undisinfected secondary-treated wastewater); and

vi. Identity of person reporting the unauthorized discharge.

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

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

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

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

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

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

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

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

F. Planned Changes – Not supplemented

G. Anticipated Noncompliance – Not supplemented

H. Other Noncompliance – Not supplemented

I. Other Information – Not supplemented

VI. STANDARD PROVISION – ENFORCEMENT – Not Supplemented

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS – Not Supplemented

VIII. DEFINITIONS – Addition to Attachment D

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

A. Arithmetic Calculations –

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

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

or

$$\text{Geometric Mean} = (C1xC2x\ldots xC_N)^{1/N}$$

2.

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

3. **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:

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

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.

4. **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):
Removal Efficiency (%) = 100 x [1-(Effluent Concentration/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, Analytical Methods, and Minimum Levels (µg/L)[2]

CTR No.	Pollutant/ Parameter	Analytical Method[3]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
1	Antimony	204.2	-	-	-	-	10	5	50	0.5	5	0.5	-	1000
2	Arsenic	206.3	-	-	-	20	-	2	10	2	2	1	-	1000
3	Beryllium	-	-	-	-	-	20	0.5	2	0.5	1	-	-	1000
4	Cadmium	200 or 213	-	-	-	-	10	0.5	10	0.25	0.5	-	-	1000
5a	Chromium (III)	SM 3500	-	-	-	-	-	-	-	-	-	-	-	-
5b	Chromium (VI)	SM 3500	-	-	-	10	5	-	-	-	-	-	-	1000
	Chromium (total)[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	-	-	-	-	-	-	-	-	-	-

[2] 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.

[3] 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.

[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 ug/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 ug/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[3]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
23	Chlorodibromomethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
24	Chloroethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
25	2-Chloroethylvinyl Ether	601	1	1	-	-	-	-	-	-	-	-	-	-
26	Chloroform	601	0.5	2	-	-	-	-	-	-	-	-	-	-
75	1,2-Dichlorobenzene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
76	1,3-Dichlorobenzene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
77	1,4-Dichlorobenzene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
27	Dichlorobromomethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
28	1,1-Dichloroethane	601	0.5	1	-	-	-	-	-	-	-	-	-	-
29	1,2-Dichloroethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
30	1,1-Dichloroethylene or 1,1-Dichloroethene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
31	1,2-Dichloropropane	601	0.5	1	-	-	-	-	-	-	-	-	-	-
32	1,3-Dichloropropylene or 1,3-Dichloropropene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
34	Methyl Bromide or Bromomethane	601	1.0	2	-	-	-	-	-	-	-	-	-	-
35	Methyl Chloride or Chloromethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
36	Methylene Chloride or Dichloromethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
37	1,1,2,2-Tetrachloroethane	601	0.5	1	-	-	-	-	-	-	-	-	-	-
38	Tetrachloroethylene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
40	1,2-Trans-Dichloroethylene	601	0.5	1	-	-	-	-	-	-	-	-	-	-
41	1,1,1-Trichloroethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
42	1,1,2-Trichloroethane	601	0.5	2	-	-	-	-	-	-	-	-	-	-
43	Trichloroethene	601	0.5	2	-	-	-	-	-	-	-	-	-	-
44	Vinyl Chloride	601	0.5	2	-	-	-	-	-	-	-	-	-	-
45	2-Chlorophenol	604	2	5	-	-	-	-	-	-	-	-	-	-
46	2,4-Dichlorophenol	604	1	5	-	-	-	-	-	-	-	-	-	-
47	2,4-Dimethylphenol	604	1	2	-	-	-	-	-	-	-	-	-	-
48	2-Methyl-4,6-Dinitrophenol or	604	10	5	-	-	-	-	-	-	-	-	-	-

CTR No.	Pollutant/ Parameter	Analytical Method[3]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
	Dinitro-2-methylphenol													
49	2,4-Dinitrophenol	604	5	5	-	-	-	-	-	-	-	-	-	-
50	2-Nitrophenol	604	-	10	-	-	-	-	-	-	-	-	-	-
51	4-Nitrophenol	604	5	10	-	-	-	-	-	-	-	-	-	-
52	3-Methyl-4-Chlorophenol	604	5	1	-	-	-	-	-	-	-	-	-	-
53	Pentachlorophenol	604	1	5	-	-	-	-	-	-	-	-	-	-
54	Phenol	604	1	1	-	50	-	-	-	-	-	-	-	-
55	2,4,6-Trichlorophenol	604	10	10	-	-	-	-	-	-	-	-	-	-
56	Acenaphthene	610 HPLC	1	1	0.5	-	-	-	-	-	-	-	-	-
57	Acenaphthylene	610 HPLC	-	10	0.2	-	-	-	-	-	-	-	-	-
58	Anthracene	610 HPLC	-	10	2	-	-	-	-	-	-	-	-	-
60	Benzo(a)Anthracene or 1,2 Benzanthracene	610 HPLC	10	5	-	-	-	-	-	-	-	-	-	-
61	Benzo(a)Pyrene	610 HPLC	-	10	2	-	-	-	-	-	-	-	-	-
62	Benzo(b)Fluoranthene or 3,4 Benzofluoranthene	610 HPLC	-	10	10	-	-	-	-	-	-	-	-	-
63	Benzo(ghi)Perylene	610 HPLC	-	5	0.1	-	-	-	-	-	-	-	-	-
64	Benzo(k)Fluoranthene	610 HPLC	-	10	2	-	-	-	-	-	-	-	-	-
74	Dibenzo(a,h)Anthracene	610 HPLC	-	10	0.1	-	-	-	-	-	-	-	-	-
86	Fluoranthene	610 HPLC	10	1	0.05	-	-	-	-	-	-	-	-	-
87	Fluorene	610 HPLC	-	10	0.1	-	-	-	-	-	-	-	-	-
92	Indeno(1,2,3-cd) Pyrene	610 HPLC	-	10	0.05	-	-	-	-	-	-	-	-	-
100	Pyrene	610 HPLC	-	10	0.05	-	-	-	-	-	-	-	-	-
68	Bis(2-Ethylhexyl)Phthalate	606 or 625	10	5	-	-	-	-	-	-	-	-	-	-
70	Butylbenzyl Phthalate	606 or 625	10	10	-	-	-	-	-	-	-	-	-	-
79	Diethyl Phthalate	606 or 625	10	2	-	-	-	-	-	-	-	-	-	-
80	Dimethyl Phthalate	606 or 625	10	2	-	-	-	-	-	-	-	-	-	-
81	Di-n-Butyl Phthalate	606 or 625	-	10	-	-	-	-	-	-	-	-	-	-
84	Di-n-Octyl Phthalate	606 or 625	-	10	-	-	-	-	-	-	-	-	-	-
59	Benzidine	625	-	5	-	-	-	-	-	-	-	-	-	-
65	Bis(2-Chloroethoxy)Methane	625	-	5	-	-	-	-	-	-	-	-	-	-
66	Bis(2-Chloroethyl)Ether	625	10	1	-	-	-	-	-	-	-	-	-	-
67	Bis(2-Chloroisopropyl)Ether	625	10	2	-	-	-	-	-	-	-	-	-	-
69	4-Bromophenyl Phenyl Ether	625	10	5	-	-	-	-	-	-	-	-	-	-

CTR No.	Pollutant/ Parameter	Analytical Method[3]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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	-	-	-	-	-	-	-	-	-	-	-

[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.

CTR No.	Pollutant/ Parameter	Analytical Method[3]	GC	GC MS	LC	Color	FAA	GFAA	ICP	ICP MS	SPGFAA	HYD RIDE	CVAA	DCP
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	-	-	-	-	-	-	-	-	-	-	-

ATTACHMENT S

STORMWATER PROVISIONS, MONITORING, AND REPORTING REQUIREMENTS

November 2017

Contents

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

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

a. Facility name and contact information;

b. Site map;

c. List of industrial materials;

d. Description of potential pollution sources;

e. Assessment of potential pollutant sources;

f. Minimum Best Management Practices (BMPs);

g. Advanced BMPs, if applicable;

h. Monitoring implementation plan;

i. Annual comprehensive facility compliance evaluation; and

j. 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).

K. 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:

a. 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);

b. 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);

c. 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;

d. Identification of all impervious areas, including paved areas, buildings, covered storage areas, or other roofed structures;

e. Locations where materials are directly exposed to precipitation and the locations where identified significant spills or leaks have occurred; and

f. 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).

L. 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.

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

a. 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.

b. 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.

c. Dust and Particulate Generating Activities. The SWPPP shall describe the discharge locations, source type, and characteristics of the dust or particulate pollutant.

d. 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.

e. 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.

f. 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.

N. 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:

a. Facility areas with likely sources of pollutants;

b. Pollutants likely to be present in industrial stormwater discharges;

c. Approximate quantity, physical characteristics (e.g., liquid, powder, solid), and locations of each industrial material handled, produced, stored, recycled, or disposed;

d. Degree to which the pollutants associated with such materials may be exposed to, and mobilized by, contact with stormwater;

e. Direct and indirect pathways by which pollutants may be exposed to stormwater;

f. Sampling, visual observation, and inspection records;

g. Effectiveness of existing BMPs to reduce or prevent pollutants in industrial stormwater discharges; and

h. 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.

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

a. 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, powers, 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 and 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

J. 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.