

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
SANTA ANA REGION

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**ORDER NO. R8-2019-0061**  
**NPDES NO. CAG918002**

GENERAL WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES TO SURFACE WATERS RESULTING FROM *DE MINIMIS* DISCHARGES, GROUNDWATER DEWATERING OPERATIONS, AND/OR GROUNDWATER CLEANUP/REMEDICATION OPERATIONS AT SITES WITHIN THE NEWPORT BAY WATERSHED

A Discharger, as described in the following table, who has complied with the requirements for coverage under this Order, is authorized to discharge under this Order, once the Executive Officer has issued an authorization letter, as described in this Order.

<b>Dischargers</b>	<i>De minimis</i> dischargers and parties who conduct groundwater dewatering and/or groundwater cleanup/remediation operations at sites within the Newport Bay Watershed and propose to discharge groundwater to surface waters.
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This Order was adopted by the Santa Ana Regional Water Quality Control Board on:	<b>December 6, 2019</b>
This Order shall become effective on:	<b>December 6, 2019</b>
This Order shall expire on:	<b>December 5, 2024</b>
The U.S. Environmental Protection Agency (USEPA) and the Santa Ana Regional Water Quality Control Board have classified the discharges regulated by this Order as <b>minor</b> discharges.	

I, Hope A. Smythe, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on December 6, 2019.

**Original Signed by:**  
**Hope A. Smythe, Executive Officer**

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## I. DISCHARGE INFORMATION

### A. Discharges Regulated by this Order

The types of discharges within the Newport Bay watershed regulated under this Order include the following discharge categories:

#### 1. *De minimis* discharges

- a. Discharges associated with well installation, development, test pumping and purging;
- b. Aquifer testing wastes;
- c. Discharges from potable water supply systems resulting from initial system startup, routine startup, sampling of influent flow, system failures, pressure releases, etc., when compliance with Total Maximum Daily Loads (TMDLs) is not addressed by Order WQ-2014-0194-DWQ;
- d. Discharges resulting from diverted stream flows;
- e. Other similar types of discharges as determined by the Santa Ana Regional Water Quality Control Board (Santa Ana Water Board) Executive Officer, which may pose a *de minimis* threat to water quality yet must be regulated under waste discharge requirements.

#### 2. Discharges from groundwater dewatering and/or remediation operations

- a. Dewatering from subterranean seepage and/or associated with protection of new or existing facilities;
- b. Groundwater dewatering at construction sites;
- c. Groundwater cleanup/remediation;
- d. Discharges of wastewater effluent associated with testing of selenium and nitrogen treatment technologies and Best Management Practices (BMPs) into surface water.

### B. Discharges Excluded from Coverage Under this Order

The following discharge categories are not covered under this Order:

- a. Discharges with pollutants of concern other than those for which effluent limitations are specified in this Order; and
- b. Discharges from hydro-testing of contaminated pipes, vessels or tanks.

## II. APPLICATION INFORMATION

### A. Existing Dischargers

Existing Dischargers previously authorized to discharge under Order No. R8-2007-0041 and Order No. R8-2005-0079 who wish to continue their discharge(s) and be regulated under the terms and conditions of this Order must complete sections I., II., III., IV., and VIII. of the Notice of Intent (Attachment B) and submit it, no later than 45 days after the

effective date of the Order. An Existing Discharger who submits the required portions of the Notice of Intent within the requisite timeframe shall temporarily be granted coverage to discharge under this Order, until discharge authorization is provided under section II.C of this Order. If no application is submitted within the requisite time frame, coverage to discharge shall be terminated and a complete Notice of Intent, with a new application fee, will need to be submitted consistent with Section II.B to resume permit coverage for the discharge.

## **B. New Dischargers**

At least 45 days before the start of a new discharge, the Discharger shall submit a complete Notice of Intent (Attachment B) to the Santa Ana Water Board office at the address on the cover page of this Order and obtain the authorization letter from the Executive Officer. The application shall include the following information:

1. Notice of Intent to be covered under the general permit.
2. A list of potential pollutants in the discharge and the anticipated concentration of each pollutant;
3. For groundwater cleanup/remediation projects, a site characterization study that defines the onsite contaminants, their properties, three-dimensional extent and concentration of contaminants in the subsurface, and a description of the geologic and hydrologic factors that control the migration of the contaminants.
4. A fixed hardness value for approval by the Executive Officer of the Santa Ana Water Board based on the 5th percentile of effluent hardness measurements or the average ambient receiving water hardness measurements for those sites polluted with leaded gasoline.
5. A report that shall include the following:
  - a. Chemical analysis of the untreated groundwater. A representative groundwater sample shall be analyzed for organic pollutants using EPA method 8260B, priority pollutants, total recoverable selenium, sulfate, electrical conductivity, total dissolved solids, total suspended solids, total nitrogen, total inorganic nitrogen, and hardness. The selenium analysis used shall assure analytical detection levels sufficient to assess compliance with the effluent limitations of this Order. Test results shall be reported with Minimum levels (ML) and method detection limit (MDL); laboratory analytical limits shall be sufficient to detect these constituents at the concentrations listed in this Order.
  - b. The name of the proposed receiving water body, including the location (Latitude and Longitude) of the discharge point (s);
  - c. The estimated average and maximum daily flow rates, the start date of discharge (if a new discharge), and the duration of the discharge, and the estimated total volume of the discharge;
  - d. A map showing the path from the point of initial discharge to the ultimate location of discharge;

- e. A list of known or suspected leaking underground tanks and other facilities or operations that have or may have impacted the quality of the underlying groundwater within the expected radius of influence of the project.
  - f. A discussion of the proposed dewatering and or cleanup project (if appropriate), including a review of the extraction system design and the status of definition of free product and dissolved product plumes for sites contaminated with petroleum hydrocarbon or solvents only (as appropriate);
  - g. A description of the proposed treatment system (if appropriate) and a certification report on the adequacy of each component of the proposed treatment system. This certification report shall contain a requirement-by-requirement analysis, based on accepted engineering practice, of how the process(es) and physical design(s) of the treatment system will ensure compliance with this Order. The design engineer shall affix his/her signature and engineering license number to this certification report. The report(s) shall also certify the following:
    - (1) All treatment facility startup and operation instruction manuals are adequate and available to operating personnel;
    - (2) All treatment facility maintenance and testing schedules are included in the treatment facility operation and maintenance manual (O&M Manual), which shall be kept readily accessible to onsite operating personnel; and
    - (3) Influent and effluent sampling locations and ports are located in areas where samples representative of the waste stream to be monitored can be obtained.
  - h. A discussion of a plan for the prevention of run-on, interception and diversion of runoff, and prevention of infiltration and runoff from contaminated soils stored on-site, if the discharge is associated with a groundwater remediation project and soils containing petroleum projects or other pollutants will be maintained on-site.
  - i. Any information deemed necessary by the Executive Officer.
6. The appropriate filing fee.

### **C. Effective Date of Coverage**

Coverage under this Order shall be effective on the date that the Executive Officer issues a discharge authorization letter, which shall include a self-monitoring and reporting program for the proposed discharge.

### **D. Termination of Coverage**

The Discharger shall inform the Santa Ana Water Board by a letter if coverage under this Order is no longer needed. Upon receipt of said letter, the Santa Ana Water Board Executive Officer or a designee shall issue a letter terminating coverage under this Order.

### III. FINDINGS

The Santa Ana Water Board finds:

#### A. Background.

In 2005, the Santa Ana Water Board adopted waste discharge requirements for long-term groundwater-related discharges for three transportation under-crossings for the City of Irvine (Order No. R8-2005-0079, NPDES No. CA8000406). In 2007, the Santa Ana Water Board adopted a new general permit for short-term groundwater-related discharges and *de minimis* discharges in the Newport Bay Watershed (Order No. R8-2007-0041, NPDES No. CAG918002). Order No. R8-2007-0041, was amended by Order No. R8-2009-0045 to include two categories of discharge that had been inadvertently excluded. This Order replaces Order Nos. R8-2005-0079 and R8-2007-0041.

Attachments A through J are incorporated into this Order and are part of the Order. More information regarding the permit history and the rationale for the effluent limits in this Order is presented in Attachment F.

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

#### B. Discharge Description.

This Order regulates two categories of discharges within the Newport Bay watershed: (1) *de minimis* discharges, and (2) discharges from groundwater dewatering and/or groundwater remediation/cleanup operations.

#### C. Legal Authorities.

This Order is issued pursuant to chapter 5.5 of division 7 of the California Water Code (§ 13370 et seq.), and section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U.S. Environmental Protection Agency (USEPA). This Order serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the Water Code (§ 13260 et seq.). It shall also serve as a National Pollutant Discharge Elimination System (NPDES) permit for point source discharges to surface waters.

#### D. Background and Rationale for Requirements.

The Santa Ana Water Board developed the requirements in this Order based on information obtained through issuance and enforcement of the prior general and individual permits for groundwater dewatering and cleanup discharges, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F) contains background information and the rationale for requirements in this Order and provides additional findings for the Order.



**E. California Environmental Quality Act (CEQA).**

Under Water Code section 13389, this action to adopt waste discharge requirements that serve as an NPDES permit is exempt from the provisions of chapter 3 of CEQA (commencing with section 21100) of division 13 of the Public Resources Code.

**F. Antidegradation Policy.**

Federal Regulation 40 C.F.R. § 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Quality Control Board (State Water Board) established California's antidegradation policy in State Board Resolution No. 68-16. Resolution No. 68-16 incorporates 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 Santa Ana Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the antidegradation provision of 40 CFR §131.12 and State Board Resolution No. 68-16. As discussed in the Fact Sheet, the discharge authorized by this Order are consistent with the federal antidegradation policy and State Water Board Resolution No. 68-16.

**G. Anti-Backsliding Requirements.**

Sections 402(o) and 303(d)(4) of the CWA and 40 C.F.R. § 122.44(l) prohibit backsliding in NPDES permits. Pursuant to these anti-backsliding provisions, effluent limitations in a reissued permit must be at least as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. As discussed in the Fact Sheet, this Order is consistent with applicable anti-backsliding requirements.

**H. Notification of Interested Parties.**

The Santa Ana Water Board has notified the Dischargers currently regulated under Order Nos. R8-2007-0041 and R8-2005-0079 and interested agencies and persons of its intent to renew waste discharge requirements for the types of discharges listed above and has provided them with an opportunity to submit their written comments and recommendations. Details of this notification are provided in the Fact Sheet (Attachment F) of this Order.

**I. Consideration of Public Comment.**

The Santa Ana Water Board, in a public meeting, heard and considered all comments pertaining to this Order. Details of the Public Hearing are provided in the Fact Sheet (Attachment F) of this Order.

THEREFORE, IT IS HEREBY ORDERED, that this Order supersedes Order No. R8-2007-0041 (as amended by Order No. R8-2009-0045) and Order No. R8-2005-0079 except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (commencing with §13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. This action in no way prevents the Santa Ana Water Board from taking enforcement action for a violation of the previous orders.

#### **IV. DISCHARGE PROHIBITIONS**

- a. The discharge of oil, trash, industrial waste sludge, or other solids directly to the surface waters or in any manner that will ultimately affect surface waters is prohibited unless that constituent is covered under this Order.
- b. The discharge of any substances in concentrations toxic to aquatic life, animal life, or plant life is prohibited.
- c. The discharge of wastes to property not owned or controlled by the Discharger is prohibited, except to surface waters as authorized under this Order.
- d. Odors, vectors, and other nuisances of waste origin are prohibited beyond the limits of each Discharger's facility.
- e. The addition of chemicals to the extracted groundwater, exclusive of chlorine to control biofouling in treatment systems, is prohibited except when approved in writing by the Executive Officer.
- f. There shall be no direct discharges of waste to Areas of Special Biological Significance such as the Newport Beach Marine Life Refuge and the Irvine Coast Marine Life Refuge.

#### **V. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS**

##### **A. Effluent Limitations**

##### **1. Numeric Effluent Limitations:**

The Discharger shall maintain compliance with the following limits specified in Tables 1 to 5:

**Table 1: Selenium Effluent Limitations Applicable to Discharges to Freshwater in the Newport Bay Watershed**

Tissue-based Water Column Effluent Limits <sup>1, 2</sup> (µg Se/L)			CTR-based Water Column Effluent Limits <sup>2</sup> (µg Se/L)	Conditional Mass-based Effluent Limits (lbs)
San Diego Creek Subwatershed	Santa Ana-Delhi Channel	Big Canyon Wash Subwatershed		
10	11	1	(see Table 2)	Optional. Applies when discharger meets the following conditions: 1. Participates in approved Offset and Trading Program 2. Offsets entirety of discharge (concentration x flow), including any specified offset ratio

1. Semi-annual arithmetic mean: April 1 through September 30 and October 1 through March 31.
2. Effluent limits apply year-round during non-wet weather (i.e. dry) conditions. Wet weather conditions are any day with 0.1 inches of rain or more, as measured at the Tustin-Irvine Ranch Rain Gauge Station, and the following three days (72 hours).

**Table 2: CTR Selenium Effluent Limitations**

Discharger	CTR Freshwater Chronic Criteria for Selenium (µg/L)	Coefficient of Variation	Effluent Limits (µg/L)	
			Daily (MDL)	Monthly (AML)
<b>Default</b>	<b>5</b>	<b>0.6</b>	<b>8.2</b>	<b>4.1</b>
IRWD Well 72	5	0.138	5.8	4.8
IRWD Well 78	5	0.348	7.0	4.5
IRWD Well ET-1	5	0.196	6.2	4.7
IRWD Well ET-2	5	0.324	6.9	4.5
IRWD Michelson Plant Dewatering	5	0.580	8.1	4.1

IRWD = Irvine Ranch Water District

**Table 3: Effluent Limitations Applicable to Discharges to Freshwater**

<b>Constituent</b>	<b>Maximum Daily Concentration Limit (µg/L)</b>	<b>Average Monthly Concentration Limit (µg/L)</b>
Total Recoverable Copper	See Section V.A.7 below and Attachment J	
Other Constituents in Table 5	See Table 5	

**Table 4: Effluent Limitations Applicable to Newport Bay**

<b>Constituent</b>	<b>Maximum Daily Concentration Limit (µg/L unless otherwise specified)</b>	<b>Average Monthly Concentration Limit (µg/L)</b>
Total Recoverable Arsenic	59	29
Total Recoverable Cadmium	15	7.6
Total Recoverable Chromium VI	82	41
Total Recoverable Copper	4.8	2.4
Total Recoverable Lead	13	6.6
Total Recoverable Mercury	0.012 (annual average)	
Total Recoverable Nickel	13	6.7
Total Recoverable Selenium	116	58
Total Recoverable Silver	1.9	0.95
Total Recoverable Zinc	90	45
Other Constituents listed in Table 5	See Table 5	See Table 5

**Table 5: Effluent Limitations Applicable to All Receiving Waters**

<b>Constituent</b>	<b>Maximum Daily Concentration Limit (µg/L unless otherwise specified)</b>	<b>Average Monthly Concentration Limit (µg/L)</b>
1,1,1-Trichloroethane (TCA)	10	5
1,1-Dichloroethane	10	5
1,1-Dichloroethylene	12	6
1,2-Dichloroethane	1.0	0.5
1,2-Dichloroethylene (sum of cis & trans)	20.1	10
1,2- Dichloroethylene (cis)	12	6
1,2-Dichloroethylene (trans)	20	10
1,4-Dioxane	6	3
Benzene	2	1
Carbon Tetrachloride	1	0.5
Chloroform	10	5
Dichlorobromomethane	10	5
Ethylbenzene	20	10
Methyl Ethyl Ketone	241	120
Methyl Isobutyl Ketone	241	120
Methyl Tertiary Butyl Ether (MTBE)	26	13
Naphthalene	20	10
Perchlorate	8	4
Tert-Butyl Alcohol (TBA)	34	12
Tetrachloroethylene (PCE)	10	5
Toluene	20	10
Trichloroethylene (TCE)	10	5
Vinyl Chloride	1	0.5
Xylene (Total)	20	10

1,2,3-Trichloropropane (1,2,3-TCP)	1.01	0.5
Mercury	0.012 (annual average)	
Total Inorganic Nitrogen (TIN)	1 mg/L (See Section V.A.4., below)	Not applicable
Total Residual Chlorine <sup>1</sup>	0.1 mg/L	“
Suspended Solids	75 mg/L	“
Sulfides	0.4 mg/L	“
Total Petroleum Hydrocarbons	100 µg/L (ppb)	“
Oil and Grease	15 mg/L	“

**2. Compliance with the Total Recoverable Selenium Limit:**

Pursuant to the Selenium TMDLs, compliance with the effluent limits in Table 1 will be determined as described below. The term “Regulated Party,” as defined in the Selenium TMDLs Implementation Plan, is included in the list of definitions in Attachment A.

**a. Option 1:**

Compliance with final effluent limits may be demonstrated through *any one* of the means identified in Part (1) below:

- (1) For a Regulated Party who opts to implement a BMP Strategic Plan:
  - A. Implementation of an approved BMP Strategic Plan (consistent with the approved Plan and schedule) for all areas where the Permittee is identified as a Regulated Party as defined in the Selenium TMDLs Implementation Plan OR
  - B. Attainment of tissue-based numeric targets over the specified averaging period, as measured in the Assessment Area as defined in the Selenium TMDLs Implementation Plan defined for the applicable Monitoring Plan. (compliance with final effluent limits may not be demonstrated through attainment of tissue-based numeric targets over the specified averaging period, as measured in the Assessment Area, until revised objectives (e.g., SSOs) are adopted) OR
  - C. Attainment of dry weather effluent limits over the specified averaging period in the receiving water, as measured at the Assessment Point as defined in the Selenium TMDLs Implementation Plan defined for the applicable Monitoring Plan OR
  - D. Attainment of conditional mass-based effluent limits, consistent with all requirements of the conditional mass-based effluent limits

<sup>1</sup> If chlorine is present or used for treatment or disinfection of wastes.

(attainment requires that the discharger meets the following conditions: (1) Participates in approved Offset and Trading Program and (2) Offsets entirety of discharge (concentration x flow) at the applicable ratio) OR

- E. Attainment of dry weather effluent limits over the specified averaging period at the point of discharge OR
- F. Attainment of a water column concentration at the point of discharge which is calculated to attain the water quality objective OR
- G. No discharge.

(2) Where the BMP Strategic Plan is not implemented consistent with the approved plan and schedule, a Regulated Party must demonstrate compliance through one option in 1.B through 1.G.

**b. Option 2**

For a Regulated Party who opts to implement an Individual Action Plan (IAP), compliance with effluent limits may be demonstrated through any one of the means identified below:

- A. Participation in an approved Offset and Trading Program OR
- B. Attainment of effluent limits over the specified averaging period at the point of discharge OR
- C. No discharge.

**3. Total Dissolved Solids Effluent Limit:**

The TDS concentration of the discharge shall not exceed the TDS limitations for the affected receiving water shown in Table 6 below (TDS Effluent Limits).

**Table 6: Total Dissolved Solids Effluent Limits**

Receiving Water	TDS 12-month running average (mg/L)
Reach 1, San Diego Creek, below Jeffrey Rd	1,500
Reach 2, San Diego Creek, above Jeffrey Rd to Headwaters	720

**4. Compliance with the Total Inorganic Nitrogen Effluent Limit:**

When the quality of *extracted/dewatered* groundwater discharges exceeds 1 mg/L Total Inorganic Nitrogen (TIN), the ambient total nitrogen (TN) mass in the discharges shall be reduced by 50%. That is, the average monthly mass of total nitrogen (TN) discharges shall not be greater than 50% of the mass of TN in the extracted groundwater. This limit applies unless the Discharger develops and implements, an offset program approved by the Executive

Officer (See Provisions VII.C.6.). The total nitrogen monthly mass emission rate for the extracted groundwater and discharged wastewater shall be determined by using the following formula:

$$\text{Mass (lbs/month) of extracted or discharged wastewater} = 8.34 \times Q \times C$$

Where:

Q= total flow of extracted or discharged within the month in million gallons

C= the sum of all measurements for the parameter within the month (in milligrams per liter) for the extracted or discharged wastewater divided by the total number of samples.

For non-groundwater discharges to San Diego Creek the TIN concentration of the discharge shall not exceed the TIN limitations for the affected receiving water shown in Table 7 below (Total Inorganic Nitrogen Effluent Limits).

**Table 7: Total Inorganic Nitrogen Effluent Limits**

Receiving Water	Total Inorganic Nitrogen Concentration 12-month running average (mg/L)
Reach 1, San Diego Creek, below Jeffrey Rd	13
Reach 2, San Diego Creek, above Jeffrey Rd to Headwaters	5

### 5. pH

The pH of the discharge shall be between 6.5 and 8.5 pH units (see also Receiving Water Limitations VI.A.2.h.)

### 6. Oil and Grease

There shall be no visible oil and grease in the discharge

### 7. Metals that are Hardness-Dependent

For discharges to freshwater<sup>2</sup> bodies, the maximum daily and average monthly effluent limitations for the metal constituent shall not exceed the concentrations tabulated in Attachment J of this Order, corresponding to the effluent or receiving water hardness as approved by the Executive Officer. For direct discharges into receiving water, this hardness value is the 5th percentile of effluent hardness measurements or the average ambient receiving water hardness measurements, whichever is more restrictive. Where

<sup>2</sup> Freshwaters are waters in which the salinity is equal to or less than one part per thousand 95% or more of the time.



discharges are into storm drains with wastewater/nuisance flows, the effluent 5<sup>th</sup> percentile hardness value shall be used.

**B. Land Discharge Specifications – Not Applicable**

**C. Reclamation Specifications – Not Applicable**

**VI. RECEIVING WATER LIMITATIONS**

**A. Surface Water Limitations**

1. The discharge of wastes shall not cause a violation of any applicable Water Quality Standard for receiving waters adopted by the Santa Ana Water Board or the State Board, as required by the CWA and any regulations adopted thereunder.
2. The discharge shall not cause any of the following:
  - a. Coloration of the receiving waters that causes a nuisance or adversely affects beneficial uses. The natural color of fish, shellfish or other inland, bay and estuarine water resources used for human consumption shall not be impaired.
  - b. Deposition of oil, grease, wax or other materials in the receiving waters in concentrations that result in a visible film or in coating objects in the water, or which cause a nuisance or adversely affect beneficial uses.
  - c. An increase in the amounts of suspended or settleable solids in the receiving waters that will adversely affect beneficial uses as a result of controllable water quality factors.
  - d. Taste or odor producing substances in the receiving waters at concentrations that cause a nuisance or adversely affect beneficial uses.
  - e. The presence of radioactive materials in the receiving waters in concentrations that is deleterious to human, plant or animal life.
  - f. The depletion of the dissolved oxygen concentration below 5.0 mg/L.
  - g. The temperature of the receiving waters to be raised above 90°F (32°C) during the period of June through October, or above 78°F (26°C) during the rest of the year.
  - h. Change the ambient pH levels more than 0.5 pH units.
  - i. The concentration of pollutants in the water column, sediments, or biota to adversely affect the beneficial uses of the receiving water. The discharge shall not result in the degradation of inland surface water communities and populations, including vertebrate, invertebrate, and plant species.

3. Pollutants not specifically mentioned and limited in this Order shall not be discharged at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health or animal life.
4. The discharge shall not result in acute toxicity in ambient receiving waters. The effluent shall be deemed to cause acute toxicity when the toxicity test of 100% effluent as required in Attachment E, results in failure of the test as determined using the pass or fail<sup>3</sup> test protocol specified in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (EPA/821-R-02-012, October 2002). The Discharger shall immediately stop the discharge whenever the discharge fails the toxicity test(s). Prior to resuming the discharge, the Discharger shall identify and correct the source of the toxicity to the satisfaction of the Executive Officer.

#### **B. Groundwater Limitations**

1. The discharge shall not cause the underlying groundwater to be degraded, to exceed water quality objectives, unreasonably affect beneficial uses, or cause a condition of pollution or nuisance.
2. The discharge, in combination with other sources, shall not cause underlying groundwater to contain waste constituents in concentrations greater than background water quality.
3. Groundwater discharges exceeding the Irvine groundwater management zone water quality objectives for TDS (910 mg/L) and TIN (7.9 mg/L) may be returned to the same management zone from which it was extracted without reduction of the TDS or TIN concentrations so long as the concentrations of those constituents are no greater than when the groundwater was first extracted. Incidental increases in the TDS and TIN concentrations (such as may occur during air stripping) of treated effluent will not be considered increases for the purposes of determining compliance with this discharge specification.

### **VII. PROVISIONS**

#### **A. Standard Provisions**

1. The Discharger shall comply with all Federal Standard Provisions included in Attachment D of this Order.
2. Neither the treatment nor the discharge of waste shall create, or threaten to create, a nuisance or pollution as defined by CWC §13050.

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<sup>3</sup> *Control survival must be 90% or greater for an acceptable test. The test "passes" if survival in the control and effluent concentration equals or exceeds 90%. The test "fails" if survival in the effluent is less than 90% and is significantly different from control survival (which must be 90% or greater), as determined by hypothesis testing.*

3. This Order expires on December 6, 2024. However, coverage under this Order shall continue in force and effect until a new Order is issued. Upon reissuance of a new Order, the Dischargers shall file a new application within 45 days of the effective date of the new order and obtain a new authorization to discharge from the Executive Officer.
4. The Executive Officer shall determine whether the proposed discharge is eligible for coverage under this Order, after which, the Executive Officer may;
  - a. Authorize the proposed discharge by transmitting a "Discharge Authorization Letter" to the discharge proponent (now an "Authorized Discharger") authorizing the initiation of the discharge under the conditions of this Order and any other conditions consistent with this Order which are necessary to protect the beneficial uses of the receiving waters; or,
  - b. Require the discharge proponent to obtain an individual NPDES permit prior to any discharge to surface waters within the Santa Ana Region.
5. The Executive Officer is authorized to issue discharge authorization letters to a Discharger proposing unknown future de minimis discharges at multiple locations within the Santa Region, provided that the general nature of the discharges and the general locations are reported and included in the application to discharge wastes under this general Order and that at least five days prior to each discharge, more detailed information regarding each discharge is reported.
6. The Discharger shall comply with all the requirements of this Order and the terms and conditions of the discharge authorization letter. The discharge authorization letter from the Executive Officer shall identify the discharge location(s), specify any conditions necessary to protect the beneficial uses of the receiving waters, and shall specify the Self-Monitoring Program for the proposed discharge in accordance with this Order. The discharge authorization letter may be terminated or revised by the Executive Officer at any time. Any and all discharge authorization letters, which may be issued by the Executive Officer pursuant to this Order, are incorporated by reference into this Order.
7. The Discharger shall assure that extraction wells at the project site are properly abandoned/demolished or sealed at the completion of the project, to prevent the occurrence of future groundwater contamination resulting from groundwater extraction wells.
8. The Discharger shall give advance notice to the Santa Ana Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order.
9. The Discharger shall take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.

10. The Discharger shall take all reasonable steps to minimize any adverse impacts to receiving waters resulting from noncompliance with any effluent limitations specified in this Order, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying discharge. When adverse impacts are identified following exceedance of effluent limitation(s), and/or violation of discharge prohibitions and provisions, Dischargers shall mitigate impacts in accordance with a plan approved by the Executive Officer. The proposed plan shall be submitted within 30 days of the finding of an adverse impact.
11. The Discharger shall, at all times, properly operate and maintain all facilities and systems of treatment (and related appurtenances) and control which are installed or used by the Discharger to achieve compliance with this Order and the conditions of the discharge authorization letter(s) from the Executive Officer. Proper operation and maintenance shall include the following:
  - a. Effective performance, adequate funding, adequate operator staffing and training and adequate laboratory and process controls and appropriate quality assurance procedures.
  - b. Regular maintenance and inspection of all systems.
  - c. Maintenance of records of the inspection results that shall be made available to the Santa Ana Water Board whenever required and demanded.
12. The Discharger shall comply with effluent standards or prohibitions established under CWA §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 these requirements.
13. This Order does not convey any property rights of any sort, or any exclusive privilege.
14. This Order is not transferable to any person except after notice to and approval by the Santa Ana Water Board.
15. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the Discharger from liabilities arising under federal, State, or local laws, nor guarantee the Discharger a capacity right in the receiving waters.
16. The provisions of this Order are severable, and if any provision of this Order, or the application of any provisions of this Order to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this Order shall not be affected thereby.
17. Any violation of this Order constitutes a violation of the CWA, its regulations, and the CWC, and is grounds for enforcement action and/or termination of the authorization to discharge.

18. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, State, or federal law enforcement entities.
19. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, discharge limitation (e.g., maximum daily effluent limitation), or receiving water limitation of this Order, the Discharger shall notify the Santa Ana Water Board by telephone (951) 782-4130 within 24 hours of having knowledge of such noncompliance that may endanger public health or the environment, and shall confirm this notification in writing within five days, unless Santa Ana Water Board staff waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and, prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the regular monitoring report.

**B. General TMDL WLA-Based Effluent Limit Compliance Provisions**

- a. The Discharger is responsible for complying with the assumptions and requirements of all TMDL WLA-based effluent limitations that are applicable to the Discharger under this Order.
- b. The dischargers shall comply with the applicable effluent limitations and/or receiving water limitations contained in this Order consistent with the assumptions and requirements of TMDL WLA's.
- c. The Dischargers may comply with effluent limitations and receiving water limitations contained in this Order using any lawful means including, but not limited to, use of an approved offset/trading program.

**C. Selenium TMDL WLA Provisions**

1. The tissue-based WLAs are based on probable water column concentrations derived from the biodynamic model, as detailed in the Linkage Analysis of the selenium TMDLs. The biodynamic model is directly incorporated herein to these WLAs and is represented by the following equations:

- i. **Fish tissue target of 8.1 or 5 µg Se/g dw (piscivorous fish):**  $C_{\text{water}} (\mu\text{g Se/L}) = \left[ \left( \left( \left( C_{\text{fish target}} / \text{TTF}_{\text{piscivorous fish}} \right) / \text{TTF}_{\text{invertivorous fish}} \right) / \text{TTF}_{\text{invertebrate}} \right) / K_d \right] * 1000$ ;
  - ii. **Fish tissue target of 8.1 or 5 µg Se/g dw (invertivorous fish):**  $C_{\text{water}} (\mu\text{g Se/L}) = \left[ \left( \left( C_{\text{fish target}} / \text{TTF}_{\text{invertivorous fish}} \right) / \text{TTF}_{\text{invertebrate}} \right) / K_d \right] * 1000$ ;
  - iii. **Fish tissue target of 8.1 or 5 µg Se/g dw (detritivorous fish):**  $C_{\text{water}} (\mu\text{g Se/L}) = \left[ \left( C_{\text{fish target}} / \text{TTF}_{\text{detritivorous fish}} \right) / K_d \right] * 1000$ ;
  - iv. **Bird egg target of 8.0 µg Se/g dw (piscivorous bird):**  $C_{\text{water}} (\mu\text{g Se/L}) = \left[ \left( \left( \left( C_{\text{bird target}} / \text{TTF}_{\text{bird}} \right) / \text{TTF}_{\text{invertivorous fish}} \right) / \text{TTF}_{\text{invertebrate}} \right) / K_d \right] * 1000$ ;
  - v. **Bird egg target of 8.0 µg Se/g dw (invertivorous bird):**  $C_{\text{water}} (\mu\text{g Se/L}) = \left[ \left( \left( \left( C_{\text{bird target}} / \text{TTF}_{\text{bird}} \right) / \text{TTF}_{\text{invertebrate}} \right) \right) / K_d \right] * 1000$
2. For the equations listed in Section VII.C.1,  $\text{TTF}_{\text{bird}}$  = trophic transfer factor from fish or invertebrates to bird egg,  $\text{TTF}_{\text{piscivorous fish}}$  = trophic transfer factor from small fish to predatory fish,  $\text{TTF}_{\text{invertivorous fish}}$  = trophic transfer factor from invertebrates to fish,  $\text{TTF}_{\text{detritivorous fish}}$  = trophic transfer factor from particulates to fish,  $\text{TTF}_{\text{invertebrate}}$  = trophic transfer factor from particulates to invertebrates,  $K_d$  = partitioning coefficient from dissolved selenium in water to particulates.
3. For the equations listed in Section VII.C.1, initial values for all TTFs and  $K_d$ s are specified in the Linkage Analysis of these selenium TMDLs. TTF values may vary by specific water body. In water bodies where predatory fish are not present, the  $\text{TTF}_{\text{predatory fish}}$  value should equal 1 to represent that one less step is occurring in the food chain.
4. During the development of the selenium TMDLs, a range of probable water column concentrations was derived from the tissue-based numeric targets, based on the values assumed for the variables in the equation. The initial WLA values selected are based upon consideration of the most sensitive endpoint in the watershed and existing tissue data. During Phase I of the selenium TMDLs, that endpoint has been identified as fish tissue for the protection of fish (numeric target of 8.1 µg Se/g dw) for the SDC and SADC subwatersheds and as bird egg tissue for the protection of birds (8.0 µg Se/g dw) in BCW.
5. During the TMDL Reconsideration and during Phase II of the selenium TMDLs, the biodynamic model inputs and resulting probable water column concentrations will be reevaluated and updated as necessary and per the schedule included in **Table 4.c. Se.2.** of the Basin Plan. Subject to review and written comment via a public participation process, if updates are determined to be appropriate, such revised values will then replace the initial values in the biodynamic model equations, resulting in revised allocations. Such revisions can be made via approval by the Executive Officer, per delegated authority by the Santa Ana Water Board, unless during the public review process a request is made to bring the modification before the Santa Ana Water Board for consideration.

6. The final CTR-based WLAs are to be achieved as soon as possible, but no later than 30 years from the effective date of the reconsidered TMDLs, as discussed in the Implementation Plan for the selenium TMDLs.
7. Compliance with WLAs for the San Diego Creek Subwatershed will be assessed in the receiving water at San Diego Creek at Campus Drive for Regulated Parties (as defined in the Implementation Plan other than MS4 Permittees) that opt to implement a BMP Strategic Plan consistent with the Implementation Plan.
8. Compliance with WLAs for the Santa Ana-Delhi Channel Subwatershed will be assessed in the receiving water at Santa Ana-Delhi Channel at Irvine Avenue for Regulated Parties (as defined in the Implementation Plan other than MS4 Permittees) that opt to implement a BMP Strategic Plan consistent with the Implementation Plan.
9. Compliance with WLAs for the Big Canyon Wash Subwatershed will be assessed in the receiving water at Big Canyon Wash at Back Bay Drive for Regulated Parties (as defined in the Implementation Plan other than MS4 Permittees) that opt to implement a BMP Strategic Plan consistent with the Implementation Plan.
10. Compliance with tissue-based WLAs will be assessed at 'end of pipe' for Individual Action Plan point sources that elect not to pursue an offset.
11. The CTR-based water column WLAs will no longer apply if and when revised objectives (e.g., SSOs) have been approved and are in effect and the current CTR chronic criterion for selenium in freshwater is de-promulgated.

#### **D. Selenium TMDL WLA-Based Effluent Limit Compliance Provisions**

The terms "Regulated Party," along with the list of "Other NPDES Permittees" as defined in the Selenium TMDLs Implementation Plan is included in the list of definitions in Attachment A.

The required Phase I implementation actions include the development and implementation of the following plans/programs for each subwatershed where the Discharger is identified in the selenium TMDLs as a Regulated Party:

- BMP Strategic Plan OR Individual Action Plan as described below
- Participation in the Offset and Trading Program (participation in the program by individual Regulated Parties is optional)
- Participation in Regional Monitoring Program OR development of monitoring program within Individual Action Plan
- Reporting

Dischargers who elect not to participate in a BMP Strategic Plan(s) must develop and implement an Individual Action Plan that identifies an acceptable means to attain the effluent limits. This alternative approach is provided for Other NPDES Permittees recognizing that groundwater dewatering discharges may be short-term in nature and a

tailored, individual approach may be more appropriate. Requirements for BMP Strategic Plans, Individual Action Plans, and an Offset/Trading Program are detailed below using the text from the selenium TMDLs with non-substantive reformatting for clarity. Monitoring and reporting requirements are detailed in Attachment E to this Order.

### **1. BMP Strategic Plan Requirements**

Dischargers opting to comply with the selenium effluent limit using the BMP Strategic Plan must satisfy the requirements described in this section,

BMP Strategic Plans must be developed for each area (San Diego Creek, Santa Ana-Delhi Channel, and Big Canyon Wash). The plans can be developed individually for each area or combined to address multiple areas (resulting in a minimum of one (1) and a maximum of three (3) plans).

Each BMP Strategic Plan must be submitted to the Executive Officer for approval by the date specified in Table 4.c.Se.2 of the Basin Plan (Table 8 and Table 9 below), and must be implemented upon approval. Each BMP Strategic Plan must be circulated for public review and comment for a period of no less than 30 days, and the Santa Ana Water Board shall hold a public hearing prior to considering approval of each plan. If no significant public comments are received, then the Executive Officer may approve the plan. As identified in the TMDLs and Allocations section, and as further described below, implementation of an approved BMP Strategic Plan, consistent with the actions and schedules identified in the Plan, shall provide the basis for effluent limits expressed as BMPs or BMP-based compliance options in the relevant NPDES permit.

Dischargers opting to comply via the BMP Strategic Plan will be collectively referred to as the “BMP Strategic Plan Implementation Group.” To be considered part of the BMP Strategic Plan Implementation Group, and therefore achieve compliance via the BMP Strategic Plan, the dischargers must:

- Establish participatory and financial obligations to be part of the BMP Strategic Plan Implementation Group
- Each discharger must actively participate and meet their financial obligations to be considered part of the BMP Strategic Plan Implementation Group. Dischargers who fail to meet their participatory and financial obligations will not be eligible to comply via the BMP Strategic Plan
- Implement the actions consistent with the schedules of the BMP Strategic Plan
- Provide a list of BMP Strategic Plan Implementation Group members to the Santa Ana Water Board with the annual report required by Provision VIII.B.6.e
- Notify the Santa Ana Water Board of any changes (additions or deletions) to the list of BMP Strategic Plan Implementation Group members

To be considered for approval by the Executive Officer, each BMP Strategic Plan must include the following:



**Baseline and Source Control Activities** – Identification of source control activities that prevent or minimize new or existing discharges of selenium (such as volume reduction BMPs). For example, volume reduction BMP fact sheets were developed by Newport Bay Watershed stakeholders in 2005 and five potential volume reduction BMPs were identified: (1) discharge to land; (2) discharge to sewer; (3) evaporation ponds; (4) off-site transportation; and (5) reinjection (RBF Inc., 2005: “*Volume Reducing Best Management Practices for Short-Term Groundwater-Related Discharges within Orange County*”). These volume reduction BMPs do not limit the type of source control BMPs that can be identified in the BMP Strategic Plan(s), but rather serve as examples.

**Selenium Reduction Projects** – Identification of projects that result in reductions of selenium, including the characteristics, timeframe, and estimated selenium removal for each project.

**BMP Effectiveness Monitoring** – Identification of the monitoring needed to assess the effectiveness of the BMPs implemented through the BMP Strategic Plan. To ensure an integrated and cohesive approach to monitoring, this monitoring will be incorporated as part of the Regional Monitoring Program (described below).

**BMP/Technology Evaluation** – Identification of the process and schedule for periodic assessment of selenium BMPs/treatment technologies. This review may include evaluation of journal articles, online references, technical reports, and communication with researchers and vendors to evaluate the most up-to-date information on selenium treatment. The following information must be identified for each potential BMP/treatment technology evaluated:

- Selenium removal capability and efficiency, and to the extent feasible, removal capability for other pollutants (e.g., nitrogen);
- Physical requirements and capabilities of the technology, such as operating flows, land and energy requirements, pre-treatment requirements, modular capabilities, portability of the treatment, lifespan of the treatment media, start-up and shut-down considerations, and operation and maintenance requirements;
- Potential discharge concerns, including any issues with selenium speciation, selenium concentration, nuisance factors, process waste streams, solid waste disposal, associated permitting requirements and costs; and,
- Capital and operations and maintenance costs.

**Adaptive Management** – Identification of the process and schedule for how new information (e.g., effectiveness of source control activities and selenium reduction projects, identification of new BMPs/treatment technologies, monitoring data, effectiveness of BMPs/treatment technologies upstream of wetlands to achieve reductions within wetlands) will be evaluated and how the plan may be modified based upon such information. Given the timeframe for

Phase I (a maximum of 6 years from the TMDL effective date), it is anticipated that only minor modifications to the Plans will occur in Phase I and that a full re-evaluation of the Plans will occur during the TMDL Reconsideration process. A more robust adaptive management process will be required during Phase II implementation (see below).

**Goals** – Clear, specific, quantifiable and measurable goals for the reduction of selenium must be identified. The goal(s) could take the form of a mass-based reduction, reduction in total selenium concentration, reduction in selenite concentrations, etc. The BMP Strategic Plan must clearly identify how achieving the goals will result in progress toward attaining the effluent limits as soon as possible (recognizing that in Phase I of these selenium TMDLs, attainment of the effluent limits is not the required or intended objective; effluent limits must be attained as soon as possible but no later than by the end of Phase II). The cumulative actions identified in the plans must be designed to meet the identified goals.

**Schedule** – For each element included in the BMP Strategic Plan, the anticipated dates must be identified for the implementation of each action.

## 2. Individual Action Plan

Dischargers may elect to identify and implement an alternative, acceptable means to comply with the final effluent limits through the development and implementation of an Individual Action Plan. As part of the Notice of Intent (NOI), the Individual Action Plan must be submitted to the Executive Officer for approval by the date specified in Table 4.c.Se.2 of the Basin Plan (Table 8 and Table 9 below) and implemented upon approval. Each Individual Action Plan must be circulated for public review and comment for a period of no less than 30 days, and the Santa Ana Water Board shall hold a public hearing prior to considering approval of each plan. If no significant public comments are received, then the Executive Officer may approve the plan. Discharges cannot commence until the Individual Action Plan is approved.

To be considered for approval by the Executive Officer, each Individual Action Plan must include the following:

**Volume Reduction BMPs** – Identification of volume reduction BMPs that prevent or minimize discharges of selenium prior to discharge. Volume reduction BMP fact sheets were developed by Newport Bay Watershed stakeholders in 2005 and five potential volume reduction BMPs were identified: (1) discharge to land, (2) discharge to sewer, (3) evaporation ponds, (4) off-site transportation, and (5) reinjection (RBF Inc., 2005: "*Volume Reducing Best Management Practices for Short-Term Groundwater-Related Discharges within Orange County*"). These Volume Reduction BMPs do not limit the type of volume reduction BMPs that can be identified in an Individual Action Plan, but rather serve as an example;

**Method of Attaining the Effluent Limits** – Identification of how the Individual Action Plan will result in attainment of the effluent limits. Methods of attainment may include:

- Participation in an approved Offset and Trading Program, such that the discharge is offset consistent with all requirements of the Offset and Trading Program and restrictions pertaining to downstream impacts; OR
- Implementation of BMPs to attain the effluent limits at the point of discharge<sup>4</sup>; OR
- No discharge (e.g., sewer the discharge).

**Schedule** – Identification of the timeframe of the discharge and the discrete dates for implementation of each action identified as part of the Individual Action Plan.

**Monitoring Program** – Identification of how the Individual Action Plan will demonstrate attainment of the effluent limits, per the method identified above, through monitoring. Where an Individual Action Plan opts to attain the effluent limits through an approved Offset and Trading Program, at a minimum, monitoring must be consistent with the monitoring requirements specified in the Monitoring section below. Where an Individual Action Plan opts to attain the effluent limits at the point of discharge, at a minimum (until it has been shown that the discharge meets the effluent limits), the monitoring must include water column monitoring for total selenium and flow (end of pipe). The monitoring program requirement can be satisfied individually (e.g., a separate and individual monitoring plan) or can be incorporated into the Regional Monitoring Program specified in the Monitoring section below. Where an Individual Action Plan opts to attain the effluent limits by sewerage the discharge, monitoring must include flow measurements (flow that is being seweraged)<sup>5</sup> and document that no discharge to surface waters is occurring.

**Reporting** – Identification of the frequency of reports provided to the Santa Ana Water Board. The frequency should take into account the underlying

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<sup>4</sup> *Attainment of the final WLAs at the point of discharge must be demonstrated in the NOI and compliance would need to be immediate. It may be feasible that the Discharger may want to utilize the Offset and Trading Program until BMPs are implemented to meet the final WLAs at the point of discharge.*

<sup>5</sup> *The sewerage agency will require certain monitoring to be conducted of water that enters the sewer system. This monitoring data may be utilized to fulfill, fully or in part, monitoring requirements for an Individual Action Plan.*

permit requirements. Contents of the reports are specified in the section on Reporting.

### **3. Offset and Trading Program**

Since, at the present time, there is no readily available, conventional selenium treatment technology that can be implemented in a reasonably practicable manner given the watershed-scale of the selenium problem, its diffuse origin (largely rising groundwater), and the limited land available for facility placement, it is not reasonable to prohibit such discharges where doing so would seriously jeopardize public safety, impede important groundwater remediation projects, or adversely affect the beneficial uses of receiving waters. In some places, point source discharges from groundwater dewatering facilities help support aquatic habitat that might otherwise be lost if the discharge were prohibited. To prevent these adverse effects, while continuing to protect water quality, it is appropriate and in the best interests of overall water quality to authorize the use of offsets and trading as an alternate method for demonstrating compliance<sup>6</sup>.

An Offset and Trading Program will allow Regulated Parties to demonstrate compliance with the applicable effluent limitation by reducing selenium loads from NPSs (primarily rising groundwater) in lieu of treating or ceasing their own point-source discharge(s). Implementation of this Offset and Trading Program allows available resources to be leveraged to address both point and non-point sources (the most significant and difficult to control) of selenium. The Offset and Trading Program will be managed so as to ensure that the net effect on water quality and beneficial uses of continued point source discharges mitigated by offsets is better than would be expected if the regulated discharge were prohibited altogether.

If Regulated Parties opt to develop an Offset and Trading Program, it must be submitted to the Executive Officer for approval by the date specified in Table 4.c.Se.2 of the Basin Plan (Table 8 and Table 9 below) and must be implemented upon approval. The Offset and Trading Program must include a plan and a schedule. The Offset and Trading Program plan and schedule shall be circulated for public review and comment for a period of no less than 30 days, and the Santa Ana Water Board shall hold a public hearing prior to considering approval of the plan. If no significant public comments are received, then the Executive Officer may approve the plan. This program will cover the entire Newport Bay watershed, though individual trades are limited by subwatershed as described below.

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<sup>6</sup> *Investigation and evaluation of potential selenium treatment technologies is a part of the adaptive management approach for implementation of these TMDLs. New, cost-effective, and practicable treatment technologies may be identified in the future. Consistent with this, a Regulated Party's eligibility to participate in the Offset and Trading Program is contingent, in part, on the demonstration that there is no reasonably feasible or practicable conventional treatment technology available that can achieve compliance with the applicable WQO for selenium at the point of discharge.*

To be considered for approval by the Executive Officer, the Offset and Trading Program must include or conform with all elements/definitions described below:

**a. Offset and Trading Program Elements**

**Program Administration:** The Offset and Trading Program must develop the process for, and identify the party responsible for, managing the program (including the Offset Accounting System described below).

**Trading Baseline:** A minimum level of effort or level of implementation that must be achieved before a project is eligible to generate credits. For purpose of calculating offset credits, the baseline level is equivalent to the mass-based effluent limit<sup>7</sup>.

**Credit Generation:** Selenium "credits" (offset credits) are created under either of the two following conditions:

- A diversion or treatment project reduces selenium loads (expressed as mass) below the baseline level.
- A Regulated Party reduces the average concentration of selenium in its point source discharge to below 5 µg/L, or below the applicable water column concentration if the CTR water quality objective is revised in the future. The mass-based credit is calculated by multiplying the discharge flow volume times the difference in concentration (i.e., the effluent concentration minus 5 µg/L or the applicable water column concentration).

**Offset Ratios:** Groundwater cleanup projects<sup>8</sup> must offset their discharge by a 1:1 ratio (e.g., acquire one pound [or fraction thereof] of offset credits for each pound [or fraction thereof] of selenium discharged [i.e., a 1:1 ratio]). All other permitted point-source discharges must offset their discharge by a 2:1 ratio (e.g., acquire two pounds of offset credits for each pound of selenium discharged). The 2:1 ratio serves as a "retirement ratio" that is applied to the estimated credits to set aside a portion of credits for net environmental benefit (e.g., ensuring that all projects with a 2:1 offset ratio that generate credits result in a reduction of NPSs).

**Prior Approval:** Any project for which offset credits are proposed to be generated by reducing existing selenium inputs to surface waters from one or more NPSs, must first be approved by the Executive Officer.<sup>9</sup> As an example, this approval could be modeled on the Los Angeles Regional

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<sup>7</sup> The mass-based WLAs are applicable on an individual Permittee basis. For example, if Permittee A discharges 5 lbs of selenium but implements a diversion project that removes 25 lbs of selenium, then 20 lbs of selenium credits are generated.

<sup>8</sup> Groundwater cleanup projects are those projects regulated under the groundwater remediation permits.

<sup>9</sup> Approval is needed for the initial project, not for individual trades of the offset credits. The trades of the offset credits will be documented in the offset accounting system.

Water Quality Control Board's and/or State Water Resources Control Board's approach for approval of full capture devices for trash, whereby the Santa Ana Water Board would create an approved list of BMPs to avoid approving each individual project. As the specifics must be detailed in the Offset and Trading Program, this approach is purely provided as an example for consideration.

**Offset Accounting:** The Offset and Trading program must develop and establish a selenium accounting system, consistent with the monitoring requirements identified below, which accurately characterizes any load reductions claimed as offset credits and discharges being offset by those credits. The Offset and Accounting System must identify how each project integrates with other selenium reduction efforts in the region including the relevant BMP Strategic Plan.

**Types of Trades:** Offsets and trades can occur between point source – point source and point source – non-point source.

**Timing:** Offset credits must be generated before they can be used to offset permitted-point source discharges. Offset credits automatically expire 12 months after they are created regardless of whether they have been used as an offset or not.

**Trading Area:** Offset credits may only be used as offsets in the same subwatershed (i.e., San Diego Creek, Santa Ana-Delhi Channel, or Big Canyon Wash) in which they were created.

**Monitoring:** Regulated Parties that rely on offsets and trading to demonstrate compliance will also be required to participate in a monitoring program, as described in the section on Monitoring. This program shall be designed to demonstrate the effectiveness of the offset and trading program in improving water quality. The program shall include, but may not be limited to, water quality monitoring and biological assessments downstream of the point-source discharge. This monitoring obligation may be satisfied by each discharger individually or by cooperating with other dischargers where doing so would be more cost-effective and efficient. The latter option is intended to increase the opportunities for smaller dischargers to participate in the program.

**b. Eligibility Requirements for the Offset and Trading Program**

Regulated Parties will be eligible to participate in the Offset and Trading Program, designed to achieve compliance with the applicable NPDES permit limitation by relying on credits generated from an offset and trading project approved by the Executive Officer, to offset selenium

loads in their point-source discharge, provided they demonstrate the following, as determined by the Executive Officer:

- (a) That there is no reasonably feasible or practicable conventional treatment technology available that can achieve compliance with the applicable WQO for selenium at the point of discharge.
- (b) That it is not feasible or practicable to eliminate<sup>10</sup> the discharge, that doing so would pose unreasonable risks to human health, public safety, or the natural environment, or that prohibiting the discharge would result in unreasonable economic hardship on the surrounding community, or result in greater selenium loading to the Newport Bay watershed than would occur in the absence of the offset project.
- (c) That the point source discharge that relies on offset credits to achieve compliance with the applicable effluent limit is not expected to unreasonably adversely affect beneficial uses of receiving waters downstream of the discharge outfall.

The Santa Ana Water Board will require point-source dischargers to re-confirm their eligibility for continued participation in the offset and trading program and to reassess the range of conventional treatment technologies each time a permit is renewed. The Santa Ana Water Board encourages coordination on treatment technologies in order to minimize redundant efforts and share the total cost as described in the BMP Strategic Plans.

### **c. Demonstrating Compliance with the Waste Load Allocation**

**Permit Authorization:** An offset credit may not be relied on to demonstrate effective compliance with an effluent limitation unless authorized by a permit (including, but not limited to, the existing Santa Ana Water Board orders and permits regulating discharges in the Newport Bay Watershed) and unless it has met the credit generation and prior approval requirements.

**Use of Credits:** Sufficient qualified offset credits must be acquired to offset the remaining selenium load (measured as mass), including any applicable offset ratios, in the point-source discharge.

**Compliance Assessment:** Satisfactory implementation of the Offset and Trading Program, in accordance with the terms and conditions specified by the Executive Officer, will constitute full compliance with the applicable effluent limitation specified to implement the relevant effluent limit. The Santa Ana Water Board retains discretion to revise the specific

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<sup>10</sup> *Individual Action Plan's must include Volume Reduction BMPs and, even if the discharge is reduced, it may be necessary and in the best interests of overall water quality for the remaining discharge to utilize the Offset and Trading Program as an alternate method for demonstrating compliance.*

offset requirements to maintain consistency with the TMDLs<sup>11</sup>. The Santa Ana Water Board also retains discretion to reauthorize or disallow continued reliance on pollutant offsets and trading projects to demonstrate compliance with the selenium effluent limitation implementing the effluent limit each time a discharge permit is renewed. Such a determination will include an assessment of the program's continued effectiveness in achieving greater water quality improvements than if the program were disallowed.

**Non-Compliance and Enforcement:** For Regulated Parties that rely on the Offset and Trading Program to demonstrate compliance with an NPDES effluent limitation, failure to comply with the terms and conditions specified by the Executive Officer at the time the Program is approved will be a violation of the discharge permit. Notwithstanding any other enforcement option already available, the Santa Ana Water Board may also elect to terminate eligibility to participate in the Offset and Trading Program, require a higher offset ratio from the non-compliant discharger, or impose additional terms and conditions to ensure full compliance by the non-compliant discharger.

#### **E. Nutrient TMDL Effluent Limit Compliance Provisions**

The Discharger may achieve compliance with the nitrogen limitations of this Order by the development and implementation of an offset program approved by the Santa Ana Water Board's Executive Officer. Any such offset program shall (1) ensure the loading of total nitrogen to surface waters as the result of groundwater dewatering and/or cleanup discharges does not exceed that allowed pursuant to the effluent limits in this Order, and (2) shall be completed as soon as possible.

The Santa Ana Water Board's Executive Officer has previously issued letters approving offset projects for nitrogen discharges from the City of Irvine's road undercrossing dewatering facilities (regulated under Order No. R8-2005-0079). These include:

- The Irvine Ranch Water District (IRWD) Treatment Wetlands in the San Joaquin Marsh (approved on April 26, 2007).
- The Cienega Field Demonstration Project (approved on April 26, 2007; project was terminated in September 2015)
- The Peters Canyon Wash Pipeline Project (approved on October 4, 2013)

The IRWD Treatment Wetlands and the Peters Canyon Wash Pipeline Project, as well as other nitrogen removal projects in the Newport Bay Watershed may be considered as nitrogen offset projects provided they are specifically approved by

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<sup>11</sup> *The specific offset requirements must be consistent with the TMDL. Any future revisions to the offset ratios, achieved through a Basin Plan Amendment, would be reflected in permit requirements.*



the Santa Ana Water Board's Executive Officer for compliance with the nitrogen effluent limits in this Order.

## **F. Monitoring and Reporting Program (MRP) Provisions**

### **1. General MRP Provisions**

The Discharger shall comply with the Monitoring and Reporting Program issued by the Executive Officer with the discharge authorization letter. The Executive Officer shall model individual Monitoring and Reporting Programs on that provided in Attachment E. However, the number of constituents to be monitored and the monitoring and reporting frequency may be modified on a case-by-case basis, based on the nature of the discharge being authorized. Revision of each individual monitoring and reporting program by the Executive Officer may be necessary to confirm that the Discharger is in compliance with the requirements and provisions contained in this Order. Revisions may be made by the Executive Officer at any time during the term of this Order, and may include a reduction or an increase in the number of constituents to be monitored, the frequency of monitoring, the number and size of samples collected, and the frequency for report submittal.

### **2. MRP Requirements for Compliance with the Selenium Effluent Limits**

Monitoring and reporting requirements for compliance with the Selenium effluent limits based on the TMDL WLAs are detailed in Sections V. and X., respectively, of Attachment E to this Order. The terms "Other NPDES Permittees" and "MS4 Permittees" as defined in the Selenium TMDLs Implementation Plan, is included in the definition for "Regulated Party" in Attachment A.

Dischargers must comply with the selenium implementation schedule listed in Table 6.1 Se.2 of the Selenium TMDLs. Phase 1 of Table 6.1 Se.2 is included below as Table 8.

The "TMDL effective date" listed in Table 8 and referred to elsewhere in this Order is June 20, 2019, the date on which USEPA approved the selenium TMDLs.

The selenium TMDLs specify that the Santa Ana Water Board will reconsider the TMDL as soon as possible after the completion of Phase I, but no later than eight years from the TMDL effective date (i.e. no later than June 20, 2027). Throughout the TMDL reconsideration period, Dischargers opting to participate in the Phase I BMP Strategic Plan will continue to implement the plan.

Phase II of the TMDL implementation schedule begins with the effective date of a reconsidered TMDL. The selenium TMDLs implementation and compliance schedule for Phase II (which is a continuation of Table 6.1 Se.2 of the Selenium TMDLs BPA) is included as a separate table (Table 9) below.

**Table 8: Selenium TMDLs Implementation and Compliance Schedule – Phase I**

Date	Action	Implemented By
3 months from TMDL effective date (June 20, 2019)	Submit Phase I BMP Strategic Plan for approval by the Executive Officer; implement upon approval	MS4 Permittees; Other NPDES Permittees (existing discharges) opting to participate in a BMP Strategic Plan
3 months from June 20, 2019	Submit Regional Monitoring Program for approval by the Executive Officer; implement upon approval.	MS4 Permittees; existing Other NPDES Permittees opting to participate in a BMP Strategic Plan (in lieu of an Individual Action Plan)
3 months from June 20, 2019	Submit Offset and Trading Program for approval by the Executive Officer; implement upon approval.	MS4 Permittees; existing Other NPDES Permittees opting to participate in an Offset and Trading Program
Submit with Notice of Intent	Submit Individual Action Plan OR documentation of participation in an approved BMP Strategic Plan	Other NPDES Permittees (new discharges) <sup>1</sup>
1 year from approval of Phase I BMP Strategic Plan, then annually thereafter	Submit annual report to Santa Ana Water Board	MS4 Permittees; Other NPDES Permittees opting to participate in a BMP Strategic Plan
As determined in the approved Individual Action Plan	Submit reports to Santa Ana Water Board	Other NPDES Permittees opting to implement an Individual Action Plan in lieu of participation in a BMP Strategic Plan
To be considered during the TMDL Reconsideration - 5 years from June 20, 2019	Complete any special studies and submit final report on study to Santa Ana Water Board	MS4 Permittees; Other NPDES Permittees opting to implement a Special Study

**Table 8: Selenium TMDLs Implementation and Compliance Schedule – Phase I**

<b>Date</b>	<b>Action</b>	<b>Implemented By</b>
Within 5 years from June 20, 2019	Complete development of selenium SSO	Santa Ana Water Board with support from MS4 Permittees and Other NPDES Permittees
6 years from June 20, 2019	Complete implementation of Phase I BMP Strategic Plans	MS4 Permittees; Other NPDES Permittees opting to participate in a BMP Strategic Plan (in lieu of an Individual Action Plan)

**Table 9: Selenium TMDLs Implementation and Compliance Schedule – Phase II**

<b>Date</b>	<b>Action</b>	<b>Implemented By</b>
6 months from effective date of reconsidered TMDL	Submit Phase II BMP Strategic Plan <sup>2</sup> for approval by the Executive Officer; implement upon approval	MS4 Permittees; Other NPDES Permittees (existing discharges) opting to participate in a BMP Strategic Plan
6 months from effective date of reconsidered TMDL	Submit Regional Monitoring Program for approval by the Executive Officer; implement upon approval	MS4 Permittees; existing Other NPDES Permittees opting to participate in a BMP Strategic Plan
Submit with Notice of Intent	Submit Individual Action Plan OR documentation of participation in an approved BMP Strategic Plan	Other NPDES Permittees (new discharges) <sup>1</sup> opting to implement an Individual Action plan in lieu of participation in the BMP Strategic Plan and Other NPDES Permittees opting to participate in a BMP Strategic Plan
1 year from approval of Phase II BMP Strategic Plan, then annually thereafter	Submit annual report to Santa Ana Water Board	MS4 Permittees; Other NPDES Permittees opting to participate in a BMP Strategic Plan
As determined in the approved Individual Action Plan	Submit reports to Santa Ana Water Board	Other NPDES Permittees (new discharges) opting to implement an Individual Action Plan in lieu of participation in the BMP Strategic Plan
9 years from June 20, 2019	Evaluate WLAs/LAs and submit report with recommendations to the Santa Ana Water Board <sup>3</sup>	MS4 Permittees; Other NPDES Permittees opting to participate in the BMP Strategic Plan
10 years from June 20, 2019	TMDL Reopener	Santa Ana Water Board

**Table 9: Selenium TMDLs Implementation and Compliance Schedule – Phase II**

Date	Action	Implemented By
19 years from June 20, 2019	Evaluate WLAs/LAs and submit report with recommendations to the Santa Ana Water Board <sup>3</sup>	MS4 Permittees; Other NPDES Permittees opting to participate in the BMP Strategic Plan
20 years from June 20, 2019	TMDL Reopener	Santa Ana Water Board
As soon as possible but no later than 30 years from June 20, 2019	Complete implementation of Phase II BMP Strategic Plans	MS4 Permittees; Other NPDES Permittees opting to participate in the BMP Strategic Plan
As soon as possible but no later than 30 years from June 20, 2019	Attain Final WLAs <sup>4</sup>	MS4 Permittees and Other NPDES Permittees opting to participate in a BMP Strategic Plan AND Other NPDES Permittees (new dischargers) opting to implement an Individual Action Plan in lieu of participation in the BMP Strategic Plan. Non-Point Source dischargers

Footnotes to Table 9:

1. *The TMDL considers that there may be new dischargers after the TMDL becomes effective (e.g., a short-term groundwater discharger that was not discharging at the time the TMDL became effective).*

2. *The schedule in the approved Phase II BMP Strategic Plan will include periodic updates and revisions, anticipated to be every 5 years throughout Phase II of these proposed selenium TMDLs. The schedule is subject to approval by the Executive Officer.*

3. *As the models are directly incorporated into the assumptions and requirements of the WLAs and LAs, the Santa Ana Water Board can re-evaluate the allocations at any time and, through a public review process, modify the allocations. The discrete tasks here reflect the minimum frequency for re-evaluation of the allocations. Any additional reviews beyond those specified in the implementation schedule would be at the discretion of the Santa Ana Water Board or at the request of Regulated Parties.*

*4. While the tissue-based WLAs and LAs are expected to result in attainment of the tissue-based numeric targets, bioaccumulation in the various foodwebs in the watershed may be different than what was modeled with the biodynamic model as part of the Linkage Analysis. Therefore, where tissue-based numeric targets are attained, the corresponding WLAs/LAs will also be deemed to be attained, regardless of the actual measured water column concentration.*

## **G. Special Provisions**

### **1. Reopener Provisions**

- a. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant (including organochlorine compounds) generated by special conditions included in this Order. These special conditions may be, but are not limited to whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.
- b. If more stringent applicable water quality standards are promulgated or approved pursuant to CWA §303, or amendments thereto, the Board will revise and modify this Order in accordance with such standards.
- c. This Order may be reopened to address any changes in State or federal plans, policies or regulations that would affect the quality requirements for the discharges.
- d. Any permit noncompliance constitutes a violation of the CWA and the California Water Code and is grounds for enforcement action; for permit or authorization letter termination, revocation and reissuance, or modification; the issuance of an individual permit; or for denial of a renewal application.
- e. This Order may be modified by the Santa Ana Water Board prior to the expiration date to include effluent or receiving water limitations for toxic constituents determined to be present in significant amounts in the discharge through the comprehensive monitoring program included as part of this Order.
- f. This Order may be modified, revoked and reissued, or terminated for cause. The filing of a request by a Discharger for modification, revocation and reissuance, or termination of this Order or a notification of planned changes or anticipated noncompliance does not stay any permit condition.
- g. This Order may be reopened to include applicable technology-based effluent limitations, as appropriate when and if selenium treatment technology appropriate for these types of discharge has been identified.

### **2. Best Management Practices and Pollution Prevention**

- a. Pollutant Minimization Program

The Discharger shall develop and conduct a Pollutant Minimization Program (PMP) as further described below when there is evidence (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, results of benthic or aquatic organism tissue sampling) that a priority pollutant is present in the effluent above an effluent limitation and either:

- (1) A sample result is reported as DNQ and the effluent limitation is less than the RL; or
- (2) A sample result is reported as Not Detected (ND) and the effluent limitation is less than the MDL, using reporting protocols described in MRP Section IX.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Santa Ana Water Board:

- (1) An annual review and semi-annual monitoring of potential sources of the reportable priority pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;
- (2) Quarterly monitoring for the reportable priority pollutant(s) in the influent to the wastewater treatment system;
- (3) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable priority pollutant(s) in the effluent at or below the effluent limitation;
- (4) Implementation of appropriate cost-effective control measures for the reportable priority pollutant(s), consistent with the control strategy; and
- (5) An annual status report that shall be sent to the Santa Ana Water Board including:
  - i. All PMP monitoring results for the previous year;
  - ii. A list of potential sources of the reportable priority pollutant(s);
  - iii. A summary of all actions undertaken pursuant to the control strategy; and
  - iv. A description of actions to be taken in the following year.

### **3. Construction, Operation and Maintenance Specifications**

An Operation and Maintenance (O&M) Manual shall be developed prior to the initiation of the discharge and shall be readily accessible to site operating personnel. The O&M Manual shall include the following:

- a. Detailed description of safe and effective operation and maintenance of treatment processes, process control instrumentation and equipment.
- b. Process and equipment inspection and maintenance schedules.
- c. Describe preventive (fail-safe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events.
- d. Identification and description of the possible sources of accidental loss, bypass of untreated or partially treated wastes, and polluted drainage including power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes and possible spills.

## **VIII.COMPLIANCE DETERMINATION**

### **A. Minimum Levels**

Compliance with Discharge Specification V.A.1. shall be based on the minimum levels specified in Attachment "H" of this Order, unless an alternative minimum level<sup>12</sup> (ML) is approved for the pollutant of concern by the Santa Ana Water Board's Executive Officer. If the Discharger develops a limit of quantitation (LOQ) specific to their matrix, the LOQ shall serve as the ML with the approval of the Executive Officer of the Santa Ana Water Board. If no minimum level is specified for a constituent, the method detection limit (MDL) specified in 40 CFR 136 shall be used. If no MDL is available, the lowest practicable detection limit shall be used with the approval of the Executive Officer. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

### **B. Time Interval**

Compliance determinations shall be based on available analyses for the time interval associated with the effluent limitation. Where only one sample analysis is available in a specified time interval (e.g., weekly, monthly, quarterly), that sample shall serve to characterize the discharge for the entire interval.

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<sup>12</sup> Minimum level is the concentration at which the entire analytical system must give a recognizable signal and acceptable 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.



### **C. Multiple Sample Data.**

When determining compliance with an AMEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

1. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
2. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.

### **D. Average Monthly Effluent Limitation (AMEL).**

If the average (or when applicable, the median determined by paragraph VIII.4., above, for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

### **E. Maximum Daily Effluent Limitation (MDEL).**

If a daily discharge (or when applicable, the median determined by paragraph VIII.4., above, for multiple sample data of a daily discharge) exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

### **F. Tert Butyl Alcohol**

Compliance determination with the Tert Butyl Alcohol (TBA) average monthly limit shall be based on all samples taken within the month or if the monitoring frequency requirement is once monthly, every two months or quarterly, a minimum of four test results from the most recent sample events.

### **G. Effect of Conducting a Pollutant Minimization Program (PMP).**

If a sample result for a priority pollutant, or the arithmetic mean or median of multiple sample results is below the RL, and there is evidence that the priority pollutant is present in the effluent above an effluent limitation and the Discharger conducts a PMP for the priority pollutant (as described in Provision VI.C.3), the Discharger shall not be deemed out of compliance.

### **H. One Sample Analysis.**

Compliance determinations shall be based on available analyses for the time interval associated with the effluent limitation. Where only one sample analysis is available in a specified time interval (e.g., monthly or weekly average), that sample shall serve to characterize the discharge for the entire interval. If quarterly sample results show noncompliance with the average monthly limit and that sample result is used for compliance determinations for each month of the quarter, then three separate violations of the average monthly limit shall be deemed to have occurred.

### **I. Single Sample vs. Group of Chemicals.**

Compliance with a single effluent limitation which applies to a group of chemicals (e.g., PCBs), based on a single sample shall be determined by considering the concentrations of individual members of the group to be zero if the analytical response for the individual chemical falls below the method detection limit (MDL) for that chemical.

### **J. Priority Pollutants.**

For priority pollutants, the Discharger shall be deemed out of compliance with an effluent limitation if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation.

Compliance determination shall be based on the reporting level (ML)<sup>13</sup> specified in Attachment "H" of this Order, unless an alternative reporting level is approved by the Santa Ana Water Board's Executive Officer. When there is more than one RL value for a given substance, the Discharger shall select the RL value that is below the calculated effluent limitation, and use its associated analytical method, listed in Attachment "H" of the M&RP. If no RL value is below the effluent limitation, then the Santa Ana Water Board will select the lowest RL value and its associated analytical method.

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<sup>13</sup> *Minimum level is the concentration at which the entire analytical system must give a recognizable signal and acceptable 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.*

**K. Non-Priority Pollutants.**

The discharge shall be considered to be in compliance with an effluent limitation if the arithmetic mean of all test results for the monitoring period is less than the constituent effluent limitation. Analytical results that are less than the approved reporting limit shall be assigned a value of zero.

## ATTACHMENT A – DEFINITIONS

**Arithmetic Mean ( $\mu$ )**, also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

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

where:  $\Sigma x$  is the sum of the measured ambient water concentrations  
n is the number of samples.

**Average Monthly Effluent Limitation (AMEL)** is 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)** is 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.

**Best Management Practices (BMPs)** are methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and non-structural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

**Bioaccumulative Pollutants** are those substances 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 Pollutants** are substances that are known to cause cancer in living organisms.

**Coefficient of Variation (CV)** is a measure of the data variability and is calculated as the estimated standard deviation divided by the arithmetic mean of the observed values.

**Criteria Continuous Concentration (CCC)** equals the highest concentration of a pollutant to which aquatic life can be exposed for an extended period of time (4 days) without deleterious effects.

**Criteria Maximum Concentration (CMC)** equals the highest concentration of a pollutant to which aquatic life can be exposed for a short period of time without deleterious effects.

**Daily Discharge** is defined as 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 will be considered as the result for the calendar day in which the 24-hour period ends.

**Detected, but Not Quantified (DNQ)** are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

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

**Dilution Ratio** is the critical low flow of the upstream receiving water divided by the flow of the effluent discharged.

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

**Estimated Chemical Concentration** is the estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

**Existing Discharger** means any Discharger that is not a new Discharger. An existing Discharger includes an "increasing Discharger" (i.e., an existing facility with treatment systems in place for its current discharge that is or will be expanding, upgrading, or modifying its existing permitted discharge after the effective date of this Policy).

**Infeasible** means not capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors.

**Inland Surface Waters** are all surface waters of the State that do not include the ocean, enclosed

bays, or estuaries.

**Instantaneous Maximum Effluent Limitation** is the 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** is the 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).

**Load Allocation (LA)** is the portion of receiving water's total maximum daily load that is allocated to one of its nonpoint sources of pollution or to natural background sources.

**Maximum Daily Flow** is the maximum flow sample of all samples collected in a calendar day.

**Maximum Daily Effluent Limitation (MDEL)** means the 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.

**MEC** is Maximum Effluent Concentration.

**Median** is the 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 the  $n/2$  and  $n/2+1$ ).

**Method Detection Limit (MDL)** is the minimum concentration of a substance that can be reported with 99 percent confidence that the analyte measured concentration is distinguishable from method blank results, as defined in 40 CFR Part 136, Appendix B.

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

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

**New Discharger** includes any building, structure, facility, or installation from which there is, or may be, a discharge of pollutants, the construction of which commenced after the effective date of this Policy.

**Not Detected (ND)** are those sample results less than the laboratory's MDL.

**Objectionable Bottom Deposits** are an accumulation of materials or substances on or near the bottom of a water body, which creates conditions that adversely impact aquatic life, human health, beneficial uses, or aesthetics. These conditions include, but are not limited to, the accumulation of pollutants in the sediments and other conditions that result in harm to benthic organisms, production of food chain organisms, or fish egg development. The presence of such deposits shall be determined by the Santa Ana Water Board on a case-by-case basis.

**Persistent Pollutants** are substances for which degradation or decomposition in the environment is nonexistent or very slow.

**Pollutant Minimization Program (PMP)** means 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 PMP shall be to reduce all potential sources of a priority pollutant(s) 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 bio-accumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Santa Ana Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan, if required pursuant to CWC § 13263.3(d), shall be considered to fulfill the PMP requirements.

**Pollution Prevention** means 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 CWC § 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 BOARD or SANTA ANA WATER BOARD.

**Process Optimization** means minor changes to the existing facility and treatment plant operations that optimize the effectiveness of the existing treatment processes.

**Public Entity** includes the federal government or a state, county, city and county, city, district, public authority, or public agency.

**Regulated Party** in the context of compliance with selenium effluent limitations, is defined in the amendment to the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan) to incorporate Total Maximum Daily Loads (TMDLs) for selenium in freshwater within the Newport Bay Watershed (Attachment A2 to Resolution No. R8-2017-0014). Regulated Parties are defined for each of the three separate areas covered by the selenium TMDLs as follows:

San Diego Creek Subwatershed

*MS4 Permittees:* County of Orange, Orange County Flood Control District, City of Irvine, City of Laguna Hills, City of Laguna Woods, City of Lake Forest, City of Newport Beach, City of Orange, City of Tustin, City of Santa Ana

Order No. R8-2019-0061, NPDES No. CAG918002  
General WDRs for Groundwater Discharges to Surface  
Waters within the Newport Bay Watershed

*Other NPDES Permittees:* General Groundwater Cleanup Permittees, Individual Groundwater Cleanup Permittees, General Groundwater Dewatering Permittees, Individual Groundwater Dewatering Permittees, IRWD (owner/operator of the IRWD Constructed Treatment Wetlands), University of California, Irvine (owner/operator of the San Joaquin Marsh Reserve)

Santa Ana-Delhi Channel

*MS4 Permittees:* County of Orange, Orange County Flood Control District, City of Costa Mesa, City of Santa Ana, City of Newport Beach

*Other NPDES Permittees:* General Groundwater Cleanup Permittees, Individual Groundwater Cleanup Permittees, General Groundwater Dewatering Permittees, Individual Groundwater Dewatering Permittees

Big Canyon Wash Subwatershed

*MS4 Permittees:* City of Newport Beach

*Other NPDES Permittees:* General Groundwater Cleanup Permittees Individual Groundwater Cleanup Permittees, General Groundwater Dewatering Permittees, Individual Groundwater Dewatering Permittees, California Department of Fish and Wildlife (DFW) (owner/operator of a mitigation area located at the downstream end of the Big Canyon Nature Park).

**Reporting Level (RL)** is the 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 Santa Ana Water Board either from Appendix 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. 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** is any water designated as municipal or domestic supply (MUN) in a Santa Ana Water Board basin plan.

**Standard Deviation ( $\sigma$ )** is a measure of variability that is calculated as follows:

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

where:

- x is the observed value;
- $\mu$  is the arithmetic mean of the observed values; and
- n is the number of samples.



**Toxicity Reduction Evaluation (TRE)** is a 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 chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

**Use Attainability Analysis** is a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological and economic factors as described in 40 CFR § 131.10(g) (40 CFR § 131.3, revised as of July 1, 1997).

**Waste Load Allocation (WLA)** is the portion of receiving water's total maximum daily load that is allocated to one of its point sources.

**Water Effect Ratio (WER)** is an appropriate measure of the toxicity of a material obtained in a site water divided by the same measure of the toxicity of the same material obtained simultaneously in a laboratory dilution water.

**12-Month Running Average Effluent Limitation (12-MRAEL)** is the highest allowable average of monthly discharges over last twelve months, calculated as the sum of all monthly discharges measured during last twelve months divided by the number of monthly discharges measured during that time period.

California Regional Water Quality Control Board  
Santa Ana Region

**NOTICE OF INTENT**

TO COMPLY WITH THE TERMS AND CONDITIONS OF THE GENERAL WASTE DISCHARGE REQUIREMENTS (WDRS) FOR DISCHARGES TO SURFACE WATERS RESULTING FROM DE MINIMIS DISCHARGES, GROUNDWATER DEWATERING OPERATIONS, AND/OR GROUNDWATER CLEANUP ACTIVITIES AT SITES WITHIN THE NEWPORT BAY WATERSHED (Order No. R8-2019-0061, NPDES No. CAG918002)

**I. PERMITTEE** (*Person/Agency Responsible for the Discharge*)

Person/Agency Name: \_\_\_\_\_

Address: \_\_\_\_\_

*Street* *City* *State* *ZIP*

Contact Person: \_\_\_\_\_; Phone: (\_\_\_\_\_) \_\_\_\_\_; Email: \_\_\_\_\_

**II. FACILITY**

Name: \_\_\_\_\_

Location: \_\_\_\_\_

*Street* *City* *State* *ZIP*

Contact Person: \_\_\_\_\_; Phone: (\_\_\_\_\_) \_\_\_\_\_; Email: \_\_\_\_\_

a. Projected Flow Rate (*gpd*): \_\_\_\_\_, b. Receiving Water (*identify*): \_\_\_\_\_

**III. BILLING INFORMATION** (*Where annual fee invoices should be sent*)

Person/Agency Name: \_\_\_\_\_

Address: \_\_\_\_\_

*Street* *City* *State* *ZIP*

Contact Person: \_\_\_\_\_; Phone: (\_\_\_\_\_) \_\_\_\_\_; Email: \_\_\_\_\_

**IV. INDICATE EXISTING PERMIT NUMBER:** (*if applicable*)

a. Individual permit Order No. \_\_\_\_\_ NPDES No. \_\_\_\_\_

b. General Permit Order No. R8-2007-0041- \_\_\_\_\_

c. Others (specify) \_\_\_\_\_

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*Remarks: If changes to facility ownership and/or treatment processes were made after the issuance of the discharge authorization letter, please provide a description of such changes on another sheet and submit it with this Notice of Intent.*

**V. OTHER REQUIRED INFORMATION - FOR NEW DISCHARGERS AND FOR NEW DISCHARGES AND LOCATIONS NOT PREVIOUSLY REPORTED.**

Attach to this form a COMPLETE characterization of your discharge. A complete characterization includes, but is not limited to:

- a. A paragraph or more describing the actual project(s), and the types of wastewater that are proposed to be discharged from the project(s); discharges subject to this Order are listed in section I.A of the Order. Please elaborate on the purpose of the activity, and how it creates the discharge. If more than one activity is planned, give a complete description of each discharge. Also, indicate the planned frequency of the discharges, (i.e. one time only, one week only, daily, weekly, monthly, as needed, etc.);
- b. A site characterization study that defines at minimum the following:
  - i. Onsite contaminant levels of petroleum hydrocarbons, solvents, metals, and/or salts;
  - ii. Contaminant properties;
  - iii. Three-dimensional subsurface extent of contaminants;
  - iv. And the geologic and hydrologic factors that control the migration of contaminants.
- c. The estimated average and maximum daily flow rate (gallons per day) of each discharge, as well as the frequency and duration of the discharge(s) and the date(s) when the discharge(s) are anticipated to start/end;
- d. The proposed discharge location(s) as latitude and longitude for each discharge point;
- e. A description of the proposed treatment system (if appropriate);
- f. The name/location of the initial receiving water (storm drain/creek), and the ultimate receiving water, such as the Pacific Ocean, Reach 3 of the Santa Ana River, etc.;
- g. A map showing the path from the point of initial discharge to the ultimate receiving water. Please try to limit your maps to size of 8.5" X 11";
- h. A list of known or suspected leaking underground tanks and other facilities or operations that have, or may have impacted the quality of the underlying groundwater within 200 feet of the site property lines for projects with expected discharge flow rates of less than 100,000 gallons per day and within 500 feet of the site property lines for projects with expected discharge flow rates of greater than 100,000 gallons per day;
- i. Specific requirements detailed in section II.B of the Order; and
- j. Any other information deemed necessary by the Executive Officer.

**VI. OTHER**

Attach additional sheets to explain any responses which need clarification. List attachments with titles and dates below:

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**VII. FEE**

The fee for coverage under this general order during FY 2018/19 is \$2268.00. Please contact the RWQCB for the current fee. Checks should be made payable to the State Water Resources Control Board or SWRCB. A fee must accompany this application for all new discharges.

**VIII. CERTIFICATION:**

*I certify under penalty of law that I am an authorized representative of the permittee identified in Part I., above, and that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. In addition, I certify that the permittee will comply with the terms and conditions stipulated in Order No. R8-2019-00061, including the monitoring and reporting program issued by the Executive Officer of the Santa Ana Water Board.*

Name: \_\_\_\_\_ Title: \_\_\_\_\_  
(type or print) (type or print)

Signature: \_\_\_\_\_ Email: \_\_\_\_\_

Date: \_\_\_\_\_

You will be notified by a representative of the Santa Ana Water Board within 30 days of receipt of your application. The notice will state if your application is complete or if there is additional information you must submit to complete your application, pursuant to CWC Division 7, § 13260.

## **ATTACHMENT D – FEDERAL STANDARD PROVISIONS**

### **I. Standard Provisions – Permit Compliance**

#### **A. Duty to Comply**

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the CWA and the CWC and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application (40 CFR §122.41(a)).
2. The Discharger shall comply with effluent standards or prohibitions established under CWA §307(a) of the for toxic pollutants and with standards for sewage sludge use or disposal established under CWA §405(d) 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 CFR §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 CFR §122.41(c)).

#### **C. Duty to Mitigate**

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

#### **E. Property Rights**

1. This Order does not convey any property rights of any sort or any exclusive privileges (40 CFR §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 CFR §122.5(c)).

#### **F. Inspection and Entry**

The Discharger shall allow the Santa Ana Water Board, State Board, USEPA, 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 (40 CFR §122.41(i) and CWC §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 (40 CFR §122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR §122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR §122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location. (40 CFR §122.41(i)(4).)

### **G. Bypass – Not Applicable**

### **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 CFR §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 CFR §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 CFR §122.41(n)(3)):
  - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR §122.41(n)(3)(i));
  - b. The permitted facility was, at the time, being properly operated (40 CFR §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 CFR §122.41(n)(3)(iii)); and

- d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR §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 CFR §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 CFR §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 CFR §122.41(b)).

### **C. Transfers**

This Order is not transferable to any person except after notice to the Santa Ana Water Board. The Santa Ana 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 CWC (40 CFR §§122.41(l)(3) and §122.61).

### **III. Standard Provisions – Monitoring**

- A.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity (40 CFR §122.41(j)(1)).
- B.** Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order (40 CFR §§122.41(j)(4) and 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 Santa Ana Water Board Executive Officer at any time (40 CFR §122.41(j)(2)).

#### **B. Records of monitoring information shall include:**

1. The date, exact place, and time of sampling or measurements (40 CFR §122.41(j)(3)(i));
2. The individual(s) who performed the sampling or measurements (40 CFR §122.41(j)(3)(ii));
3. The date(s) analyses were performed (40 CFR §122.41(j)(3)(iii));
4. The individual(s) who performed the analyses (40 CFR §122.41(j)(3)(iv));
5. The analytical techniques or methods used (40 CFR §122.41(j)(3)(v)); and
6. The results of such analyses (40 CFR §122.41(j)(3)(vi)).

#### **C. Claims of confidentiality for the following information will be denied (40 CFR §122.7(b)):**

1. The name and address of any permit applicant or Discharger (40 CFR §122.7(b)(1)); and
2. Permit applications and attachments, permits and effluent data. (40 CFR §122.7(b)(2).)



## **V. Standard Provisions – Reporting**

### **A. Duty to Provide Information**

The Discharger shall furnish to the Santa Ana Water Board, State Board, or USEPA within a reasonable time, any information which the Santa Ana Water Board, State Board, or USEPA 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 Santa Ana Water Board, State Board, or USEPA copies of records required to be kept by this Order (40 CFR §122.41(h) and CWC §13267).

### **B. Signatory and Certification Requirements**

1. All applications, reports, or information submitted to the Santa Ana Water Board, State Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below (40 CFR §122.41(k)).
2. 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 USEPA) (40 CFR §122.22(a)(3)).
3. All reports required by this Order and other information requested by the Santa Ana Water Board, State Board, or USEPA 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 CFR §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 CFR §122.22(b)(2)); and
  - c. The written authorization is submitted to the Santa Ana Water Board and State Board. (40 CFR §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 Santa Ana Water Board and State Board prior to or together with any reports, information, or applications, to be signed by an authorized representative (40 CFR §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 CFR §122.22(d)).

### **C. Monitoring Reports**

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order (40 CFR §122.22(l)(4)).
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Santa Ana Water Board or State Board for reporting results of monitoring of sludge use or disposal practices (40 CFR §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 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Santa Ana Water Board (40 CFR §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 CFR §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 CFR §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 submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission 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 (40 CFR §122.41(l)(6)(i)).
2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR §122.41(l)(6)(ii)):
  - a. Any unanticipated bypass that exceeds any effluent limitation in this Order (40 CFR §122.41(l)(6)(ii)(A));
  - b. Any upset that exceeds any effluent limitation in this Order (40 CFR §122.41(l)(6)(ii)(B)).
3. The Santa Ana 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 CFR §122.41(l)(6)(iii)).

### **F. Planned Changes**

The Discharger shall give notice to the Santa Ana 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 CFR §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 CFR §122.29(b) (40 CFR §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 (40 CFR §122.41(l)(1)(ii)).
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan (40 C.F.R. §122.41(l)(1)(iii)).

**G. Anticipated Noncompliance**

The Discharger shall give advance notice to the Santa Ana Water Board or State Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order 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 (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 Santa Ana Water Board, State Board, or USEPA, the Discharger shall promptly submit such facts or information (40 CFR §122.41(l)(8)).

**VI. Standard Provisions – Enforcement**

- A.** The Santa Ana Water Board is authorized to enforce the terms of this permit under several provisions of the CWC, including, but not limited to, §§13385, 13386, and 13387.

## Attachment E – Monitoring and Reporting Program

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## **Attachment E – Monitoring and Reporting Program (MRP)**

The Code of Federal Regulations (CFR) §122.48, requires that all NPDES permits specify monitoring and reporting requirements. The California Water Code (CWC) §§13267 and 13383 also authorize the Santa Ana Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement the federal and California regulations.

The Discharger shall implement the applicable MRP requirements as described within the discharge authorization letter issued by the Santa Ana Water Board Executive Officer.

### **I. GENERAL MONITORING PROVISIONS**

#### **A. Requirements Applicable to all Dischargers**

1. All sampling and sample preservation shall be in accordance with the current edition of “Standard Methods for the Examination of Water and Wastewater” (American Public Health Association).
2. All laboratory analyses shall be performed in accordance with test procedures under 40 CFR 136 (revised as of September 27, 2017) "Guidelines Establishing Test Procedures for the Analysis of Pollutants," promulgated by the USEPA, unless otherwise specified in this MRP. In addition, the Santa Ana Water Board and/or USEPA, at their discretion, may specify test methods that are more sensitive than those specified in 40 CFR Part 136.
3. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Board in accordance with CWC §13176 or conducted at a laboratory certified for such analyses by the USEPA or at laboratories approved by the Santa Ana Water Board's Executive Officer.
4. Whenever the Discharger monitors any pollutant more frequently than is required by this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharge monitoring report specified by the Executive Officer.
5. In conformance with federal regulations 40 CFR 122.45(c), analyses to determine compliance with the effluent limitations for metals shall be conducted using the total recoverable method. For Chromium (VI), the dissolved method in conformance with 40 CFR 136 may be used to measure compliance with the Chromium (VI) limitation.
6. Minimum Level (ML) is the concentration at which the entire analytical system must give a recognizable signal and acceptable 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.

7. Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analytical concentration is greater than zero, as defined in 40 CFR 136, Appendix B, revised as of April 11, 2007.
8. The Discharger shall require its testing laboratory to calibrate the analytical system down to the minimum level (ML) specified in Attachment "H" for priority pollutants with effluent limitations in this Order, unless an alternative reporting level is approved by the Santa Ana Water Board's Executive Officer. When there is more than one ML value for a given substance, the Discharger shall use the ML values, and their associated analytical methods, listed in Attachment "H" that are below the calculated effluent limitation. The Discharger may select anyone of those cited analytical methods for compliance determination. If no ML value is below the effluent limitation, then the lowest ML value and its associated analytical method, listed in Attachment "H" shall be used. Any internal quality control data associated with the sample must be reported when requested by the Executive Officer. The Santa Ana Water Board will reject the quantified laboratory data if quality control data is unavailable or unacceptable.
9. 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 reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
  - b. Sample results less than the reported ML, but greater than or equal to the laboratory's current MDL shall be reported as "Detected, but Not Quantified," or "DNQ." The estimated chemical concentration of the sample shall also be reported.
  - c. Sample results not detected above the laboratory's MDL shall be reported as "not detected" or "ND."
10. The Discharger shall submit to the Santa Ana Water Board reports necessary to determine compliance with effluent limitations and applicable wasteload allocations (WLAs) in this Order. The Discharger shall report with each sample result:
  - a. The reporting level achieved by the testing laboratory; and
  - b. The laboratory's current MDL, as determined by the procedure found in 40 CFR 136.
11. The Discharger shall have and implement an acceptable written quality assurance project plan (QAPP) for laboratory analyses that has been reviewed and approved by the Santa Ana Water Board's Executive Officer. Duplicate chemical analyses must be conducted on a minimum of ten percent (10%) of the samples, or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by the Santa Ana Water Board or



USEPA, the Discharger will participate in the NPDES discharge monitoring report QA performance study.

12. For receiving water monitoring and for those priority pollutants without effluent limitations, the Discharger shall require its testing laboratory to quantify constituent concentrations to the lowest achievable MDL as determined by the procedure found in 40 CFR 136. In situations where the most stringent applicable receiving water objective (freshwater or human health (consumption of organisms only)), as specified for that pollutant in 40 CFR 131.38 (*see Federal Register/ Vol. 65, No. 97/ Thursday, May 18, 2000/ Rules and Regulations*) is below the minimum level value specified in Attachment "H" and the Discharger cannot achieve an MDL value for that pollutant below the ML value, the Discharger shall submit justification why a lower MDL value cannot be achieved. Justification shall be submitted together with monthly monitoring reports.
13. For non-priority pollutants monitoring, all analytical data shall be reported with method detection limits, as determined by the procedure found in 40 CFR 136.
14. For every item of monitoring data where the requirements are not met, the monitoring report shall include a statement discussing the reasons for noncompliance, the actions undertaken or proposed that will bring the discharge into full compliance with requirements at the earliest time, and an estimate of the date when the Discharger will be in compliance. The Discharger shall notify the Santa Ana Water Board by letter when compliance with the time schedule has been achieved.
15. The Discharger shall assure that records of all monitoring information are maintained and accessible for a period of at least five years (this retention period supersedes the retention period specified in Section IV.A. of Attachment D) from the date of the sample, report, or application. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or by the request of the Santa Ana Water Board at any time. Records of monitoring information shall include:
  - a. The information listed in Attachment D - IV Standard Provisions – Records, subparagraph B. of this Order;
  - b. The laboratory which performed the analyses;
  - c. The date(s) analyses were performed;
  - d. The individual(s) who performed the analyses;
  - e. The modification(s) to analytical techniques or methods used;
  - f. All sampling and analytical results, including
    - (1) Units of measurement used;
    - (2) Minimum reporting level for the analysis (minimum level);
    - (3) Results less than the reporting level but above the method detection limit (MDL);

- (4) Data qualifiers and a description of the qualifiers;
    - (5) Quality control test results (and a written copy of the laboratory quality assurance plan);
    - (6) Dilution factors, if used; and
    - (7) Sample matrix type.
  - g. All monitoring equipment calibration and maintenance records;
  - h. All original strip charts from continuous monitoring devices;
  - i. All data used to complete the application for this Order; and,
  - j. Copies of all reports required by this Order.
  - k. Electronic data and information generated by the Supervisory Control and Data Acquisition (SCADA) System.
16. The flow measurement system shall be calibrated at least once per year to ensure continued accuracy.
17. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. In the event that continuous monitoring equipment is out of service for greater than a 24-hour period, the Discharger shall obtain a representative grab sample each day the equipment is out of service. The Discharger shall correct the cause(s) of failure of the continuous monitoring equipment as soon as practicable. In its monitoring report, the Discharger shall specify the period(s) during which the equipment was out of service and if the problem has not been corrected, shall identify the steps which the Discharger is taking or proposes to take to bring the equipment back into service and the schedule for these actions.
18. Monitoring and reporting shall be in accordance with the following:
- a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
  - b. Whenever the Discharger monitors any pollutant more frequently than is required by this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharge monitoring report specified by the Executive Officer.
  - c. A "grab" sample is defined as any individual sample collected in less than 15 minutes.
  - d. Daily samples shall be collected on each day of the week.
  - e. Monthly samples shall be collected on any representative day of each month.
  - f. Weekly samples shall be collected on any representative day of the week.

- g. Quarterly samples: A representative sample shall be taken on any representative day of January, April, July, and October and test results shall be reported by the last day of the month following the month that the sample was taken.
- h. Semi-annual samples shall be collected at the initiation of the project for the first sample and during January and July thereafter.
- i. Annual samples shall be collected in accordance with the schedule in Table 1.

**Table 1: Annual Sampling Schedule**

Year	Month of Annual Sample Collection
2020	October
2021	January
2022	April
2023	July
2024	October
2025	January

**B. Laboratory Certification**

Laboratories analyzing monitoring samples shall be certified by the State Water Resources Control Board’s Environmental Laboratory Accreditation Program, in accordance with the provision of CWC §13176, and must include quality assurance/quality control data with their reports.

**II. MONITORING LOCATIONS**

The Discharger shall establish monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order. The monitoring locations shall be located where representative samples of the discharge can be obtained, before the extracted groundwater is treated and discharged. The volume of daily extracted groundwater shall be recorded daily on a permanent log.

The monitoring locations shall be included within the discharge authorization letter issued by the Executive Officer of the Santa Ana Water Board, and shall for existing dischargers, absent direction to the contrary in the authorization letter, be the monitoring locations identified in previously submitted monitoring and reporting programs.

**III. INFLUENT MONITORING REQUIREMENTS – NOT APPLICABLE**

#### IV. STANDARD EFFLUENT MONITORING REQUIREMENTS

The following shall constitute the effluent monitoring program for discharges as applicable per the discharge authorization letter.

##### A. Petroleum Hydrocarbons and Other Organic Compounds

Table 2 lists the required parameters, sampling frequency, and analytical test method for petroleum hydrocarbons. Sampling and analysis are subject to the following conditions:

1. All samples must be collected as grab samples.
2. EPA Method 8015, modified for gasoline and/or diesel if present, must be used for petroleum hydrocarbons.
3. EPA Method 8260B must be used for volatile organic compounds and the entire suited of detected constituents must be reported.
4. Sampling for 1,2,3-Trichloropropane is not required if it is not present in groundwater.
5. The initial sampling frequency shall be as specified in Table 2. The sampling frequency may be adjusted based on the results.

**Table 2: Effluent Monitoring Program – Petroleum Hydrocarbons and other Organic Compounds**

Parameter	Unit	Sampling Frequency	Required Analytical Test Method
Total Petroleum Hydrocarbons	µg/L	Weekly	EPA Method 8015 Modified
Benzene	“	“	EPA Method 8260
Toluene	“	“	“
Xylene (total)	“	“	“
1,2,3-Trichloropropane	“	“	“
Ethylbenzene	“	“	“
Carbon Tetrachloride	“	“	“
Chloroform	“	“	“
Dichlorobromomethane	“	“	“

**Table 2: Effluent Monitoring Program – Petroleum Hydrocarbons and other Organic Compounds**

<b>Parameter</b>	<b>Unit</b>	<b>Sampling Frequency</b>	<b>Required Analytical Test Method</b>
Methyl Ethyl Ketone (MEK)	“	“	“
Methyl Isobutyl Ketone (MIBK)	“	“	“
Methyl tert-Butyl Ether (MTBE)	“	“	“
Naphthalene	“	“	“
Tetrachloroethylene (PCE)	“	“	“
Trichloroethylene (TCE)	“	“	“
1, 1-Dichloroethane (1,1-DCA)	“	“	“
1,2- Dichloroethane (1,2-DCA)	“	“	“
1, 1-Dichloroethylene (1,1-DCE)	“	“	“
1,2-Dichloroethylene (cis)	“	“	“
1,2-Dichloroethylene (trans)	“	“	“
1,1,1-Trichloroethane (1,1,1-TCA)	“	“	“
1,4-Dioxane	“	“	“
Tert-Butyl Alcohol (TBA)	“	“	“
Vinyl Chloride	“	“	“
Acrolein	“	“	“
Acrylonitrile	“	“	“
Ethylene Dibromide (EDB)	“	“	“
Total Phenols	mg/L	“	See Section I.A.2. and I.A.3., above
Perfluorooctanoic acid (PFOA)	ng/L	“	“
Perfluorooctane sulfonates (PFOS)	ng/L	“	“

**B. Dioxins and Furans**

Table 3 lists the required parameters, sampling frequency, and analytical test method for dioxins and furans. Dioxin testing is required for new dischargers only. Sampling and analysis are subject to the following conditions:

1. All samples must be collected as grab samples.

2. The Discharger shall use the USEPA approved test method 1613 for dioxins and furans.
3. The Discharger shall multiply each measured or estimated congener concentration by its respective toxic equivalency factor (TEF) as shown in Table 4 and report the sum of these values.

**Table 3: Effluent Monitoring Program – Dioxins/Furans**

<b>Parameter</b>	<b>Unit</b>	<b>Minimum Sampling Frequency</b>	<b>Required Analytical Test Method and Minimum Level, units, respectively</b>
2,3,7,8-TetraCDD	picograms per liter	Semi-annual (See I.A. 13.i. & 1.A.14.)	EPA Method 1613 See Section I.A.2. and I.A.3., above
1,2,3,7,8-PentaCDD	“	“	“
1,2,3,4,7,8-HexaCDD	“	“	“
1,2,3,6,7,8-HexaCDD	“	“	“
1,2,3,7,8,9-HexaCDD	“	“	“
1,2,3,4,6,7,8-HeptaCDD	“	“	“
OctaCDD	“	“	“
2,3,7,8-TetraCDF	“	“	“
1,2,3,7,8-PentaCDF	“	“	“
2,3,4,7,8-PentaCDF	“	“	“
1,2,3,4,7,8-HexaCDF	“	“	“
1,2,3,6,7,8-HexaCDF	“	“	“
1,2,3,7,8,9-HexaCDF	“	“	“
2,3,4,6,7,8-HexaCDF	“	“	“
1,2,3,4,6,7,8-HeptaCDF	“	“	“
1,2,3,4,7,8,9-HeptaCDF	“	“	“
OctaCDF	“	Semi-annual (See I.A. 9.i. & 1.A.10.)	“

**Table 4: Toxic Equivalency Factors for 2,3,7, 8-TCDD Equivalents**

<b>Congener</b>	<b>Toxicity Equivalence Factor</b>
2,3,7,8-TetraCDD	1
1,2,3,7,8-PentaCDD	1.0
1,2,3,4,7,8-HexaCDD	0.1
1,2,3,6,7,8-HexaCDD	0.1
1,2,3,7,8,9-HexaCDD	0.1
1,2,3,4,6,7,8-HeptaCDD	0.01
OctaCDD	0.0001
2,3,7,8-TetraCDF	0.1
1,2,3,7,8-PentaCDF	0.05
2,3,4,7,8-PentaCDF	0.5
1,2,3,4,7,8-HexaCDF	0.1
1,2,3,6,7,8-HexaCDF	0.1
1,2,3,7,8,9-HexaCDF	0.1
2,3,4,6,7,8-HexaCDF	0.1
1,2,3,4,6,7,8-HeptaCDF	0.01
1,2,3,4,7,8,9-HeptaCDF	0.01
OctaCDF	0.0001

**C. Metals**

Table 5 lists the required parameters, sampling frequency, and analytical test method for Miscellaneous constituents. Sampling and analysis are subject to the following conditions:

1. All samples must be collected as grab samples.
2. The Initial sampling frequency shall be as specified in Table 5. The sampling frequency may be adjusted based on the results.

**Table 5: Effluent Monitoring Program – Metals**

<b>Parameter</b>	<b>Fraction</b>	<b>Unit</b>	<b>Minimum Sampling Frequency</b>	<b>Required Analytical Test Method and Minimum Level, units, respectively</b>
Arsenic	Total Recoverable	µg/L	See Section IV.E	See Section I.A.2 & I.A.3
Cadmium	Total Recoverable	“	“	“
Copper	Dissolved & Total Recoverable	“	“	“
Lead	Dissolved & Total Recoverable	“	“	“
Mercury	Dissolved & Total Recoverable	“	“	Any USEPA-approved method that has a quantitation limit lower than the effluent limitation.
Nickel	Total Recoverable	“	“	See Section I.A.2 & I.A.3
Selenium	Total Recoverable	See Section VI.2		
Zinc	Dissolved & Total Recoverable	“	“	See Section I.A.2 & I.A.3

**D. Miscellaneous Constituents**

Table 6 lists the required parameters, sampling frequency, and analytical test method for Miscellaneous constituents. Sampling and analysis are subject to the following conditions:

1. All samples must be collected as grab samples.
2. Flow must be monitored using a flow meter.
3. Total Suspended Solids (TSS) monitoring is not required if all wastewater effluent will percolate prior to reaching receiving waters.
4. Monitoring for coliform organisms is only required for groundwater dewatering projects in the vicinity of active sewer lines.
5. The Initial sampling frequency shall be as specified in Table 6. The sampling frequency may be adjusted based on the results.



**Table 6: Effluent Monitoring Program – Miscellaneous Parameters**

<b>Parameter</b>	<b>Unit</b>	<b>Minimum Sampling Frequency</b>	<b>Required Analytical Test Method and Minimum Level, units, respectively</b>
Flow	gpd	Daily for the 1st week, weekly thereafter	See Section I.A.3., above
Perchlorate	µg/L	Weekly	See Section I.A.2. and I.A.3., above
Total Residual Chlorine <sup>1</sup>	mg/L	Weekly for the 1 <sup>st</sup> month, monthly thereafter	"
Methylene Blue Activated Substances (MBAS)	mg/L	Monthly	"
Oil and Grease	mg/L	"	"
Coliform Organisms <sup>2</sup>	MPN	"	"
Total Inorganic Nitrogen	mg/L	"	"
Total Phosphorous	mg/L	"	"
Sulfide	mg/L		
Sulfate	mg/L	"	"
Chloride	mg/L	"	"
Total Organic Carbon	mg/L	"	"
Total Suspended Solids	mg/L	"	"
pH	---	"	"
Temperature	°F	"	"
Dissolved Oxygen	mg/L	"	"
Hardness	mg/L	"	"
Total Alkalinity	mg CaCO <sub>3</sub> /L	"	"
Total Dissolved Solids	mg/L	Annual	
Electrical Conductance	µmhos/cm	See paragraph IV.E., below	"

<sup>1</sup> If chlorine is used for treatment or disinfection of wastes.

**Table 6: Effluent Monitoring Program – Miscellaneous Parameters**

<b>Parameter</b>	<b>Unit</b>	<b>Minimum Sampling Frequency</b>	<b>Required Analytical Test Method and Minimum Level, units, respectively</b>
Priority Pollutants other than those in previous tables above (see Paragraph IV.3., below and Attachment "G" )	µg/L	Once during the 1 <sup>st</sup> year & upon renewal	"
Toxicity Testing	Pass/ Fail	At project initiation & annually thereafter	(see Section V., below)

**E. Minimum Frequency of Sampling and Analysis**

Unless otherwise specified in Table 2 through Table 7, the minimum sampling and analysis frequency for constituents other than mercury shall be as specified in E.1 and E.2 below. Minimum sampling and analysis frequencies for mercury are specified in E.3 below.

**1. Discharge Rates of One Million Gallons per Day or More**

For projects that result in discharges of one million gallons per day (rngd) or more, daily grab samples for four consecutive days shall be taken and analyzed individually for the constituent required to be monitored. Subsequent samples shall be taken and analyzed once quarterly, unless directed otherwise by the Santa Ana Water Board’s Executive Officer. If the discharge does not last for more than a day, one composite sample taken for the duration of the discharge shall be analyzed.

**2. Discharge Rates Less than One Million Gallons per Day**

For all other projects that result in discharges of wastewater of less than one mgd, weekly sampling and analyses shall be conducted for the first month. Subsequent sampling and analyses shall be conducted once quarterly, unless directed otherwise by the Santa Ana Water Board’s Executive Officer.

**3. Mercury Monitoring**

- a. Dischargers with mercury effluent limitations that are authorized to discharge at a rate equal to or greater than five million gallons per day are required to conduct routine total mercury monitoring in the effluent at a frequency no less than once each calendar quarter for the duration of the permit.

<sup>2</sup> Only for groundwater dewatering projects in the vicinity of active sewer lines.

- b. Dischargers with mercury effluent limitations that are authorized to discharge at a rate less than five million gallons per day are required to conduct routine total mercury monitoring in the effluent at a frequency no less than once each year for the duration of the permit.
- c. Dischargers without mercury effluent limitations are required to conduct total mercury monitoring in the effluent at a frequency of no less than once per permit term.

## **V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS**

### **A. Test Methods**

The Discharger shall conduct acute toxicity testing as specified in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (EPA/821-R-02-012, October 2002). Using a control and 100% effluent, static renewal survival (pass/fail) tests for 96 hours shall be conducted using the two test species specified in Table 7 below corresponding to the onsite groundwater salinity, for the first required annual test under this permit. Based on the results, the Discharger shall determine the most sensitive test species. For the required succeeding toxicity monitoring, the Discharger shall use the most sensitive species with prior approval from the Santa Ana Water Board Executive Officer. The Discharger shall submit documentation supporting the Discharger's determination of the most sensitive test species. The effluent tests must be conducted concurrent with reference toxicant tests. The effluent and reference toxicant tests must meet all test acceptability criteria as specified in the acute manual (*Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" EPA/821-R-02-012, October 2002*). If the test acceptability criteria are not achieved, then the discharger must re-sample and re-test within 14 days. The test results must be reported according to the acute manual chapter on Report Preparation and shall be attached to the monitoring reports. The use of alternative methods for measuring acute toxicity may be considered by the Executive Officer on a case-by-case basis.

### **B. Procedure When Effluent Fails Toxicity Testing**

In the event that the effluent fails the required annual toxicity test, the Discharger shall stop any discharge of wastewater to waters of the U.S. and shall retest within 14 days of receiving the notice of failure and shall determine the cause of the failure. The Discharger shall stop any discharge of wastewater to waters of the U.S. until such time that the cause of toxicity is determined and appropriately addressed. Commencement of any discharge shall be with prior approval by the Executive Officer.

**Table 7: Toxicity Test Species**

Salinity of the Effluent or Receiving Water	Test Species	Test
Salinity less than 1,000 mg/L (one part per thousand)	Fathead minnow: <i>Pimephales promelas</i>	Larval survival test
	Water flea: <i>Ceriodaphnia dubia</i>	Survival test
Salinity equal to or greater than 1,000 mg/L (one part per thousand)	Silverside: <i>Menedia beryllina</i>	Survival test
	Pacific mysid: <i>Holmesimysis costata</i>	Survival test

## VI. SELENIUM EFFLUENT LIMIT COMPLIANCE MONITORING

### A. Individual Action Plan Monitoring

For Regulated Parties<sup>3</sup> implementing an Individual Action Plan, a monitoring program must be submitted as part of the Individual Action Plan, which is defined in the Implementation section of the Selenium TMDLs (Table 4.c.Se.2 of the Basin Plan; see Tables 6 and 7 of this Order). The Individual Action Plan monitoring program must identify how the discharger will demonstrate that their discharge meets the selenium effluent limits identified in this Order.

Where an Individual Action Plan opts to attain the selenium effluent limits through an approved Offset and Trading Program, at a minimum, monitoring must be consistent with the monitoring requirements specified in Section VI.B.3 below.

Where an Individual Action Plan opts to attain the selenium effluent limits at the point of discharge, at a minimum (until it has been shown that the discharge meets the selenium effluent limits), the monitoring must include water column monitoring for total selenium and flow (end of pipe). The monitoring program requirement can be satisfied individually (e.g., a separate and individual monitoring plan) or can be incorporated into the Regional Monitoring Program specified in Section VI.B below. Where an Individual Action Plan opts to attain the selenium effluent limits by sewerage the discharge, monitoring must include flow measurements (flow that is being seweraged)<sup>4</sup> and document that no discharge to surface waters is occurring.

<sup>3</sup> The term "Regulated Party," as defined in the Selenium TMDLs Implementation Plan, is included in the list of definitions in Attachment A. This definition also specifies the entities considered as "Other NPDES Permittees," and "MS4 Permittees."

<sup>4</sup> The sewerage agency will require certain monitoring to be conducted of water that enters the sewer system. This monitoring data may be utilized to fulfill, fully or in part, monitoring requirements for an Individual Action Plan.

## B. Regional Monitoring Program

For Regulated Parties implementing a BMP Strategic Plan, a Regional Monitoring Program must be developed and submitted as part of the applicable BMP Strategic Plan. The Regional Monitoring Program must be submitted to the Executive Officer for approval<sup>5</sup>, consistent with the schedule identified in Table 4.c.Se.2 of the Basin Plan (Tables 6 and 7 in this Order) and implemented upon that approval. A Regional Monitoring Program must be developed for each subwatershed area (San Diego Creek, Santa Ana-Delhi Channel, and Big Canyon Wash). The monitoring programs can be developed individually for each subwatershed or combined to address multiple subwatersheds (resulting in a minimum of one (1) and a maximum of three (3) monitoring programs) consistent with the applicable BMP Strategic Plan(s).

To be considered for approval by the Executive Officer, each Regional Monitoring Program must include the following elements:

- TMDL Evaluation Monitoring
- BMP Effectiveness Monitoring
- Offset and Trading Program Monitoring<sup>6</sup>
- Source Assessment Monitoring
- Other Considerations
- Special Studies
- Quality Assurance and Quality Control Measures

The above monitoring elements reflect the various aspects of these selenium TMDLs that are supported, informed and/or evaluated by monitoring in the watershed. In order to ensure integration of these elements and the various components of these selenium TMDLs within each watershed, the monitoring requirements are contained within one unified document, the Regional Monitoring Program.

Regulated Parties may, and are encouraged to, integrate the various monitoring requirements as appropriate and necessary (e.g., one monitoring location may provide data for multiple purposes). Additionally, Regulated Parties may, and are encouraged to, integrate or coordinate the monitoring requirements for this TMDL with other existing monitoring efforts (e.g., other TMDLs, the MS4 Permit, other regional monitoring programs, etc.).

The specific requirements for each element of the Regional Monitoring Program are detailed below.

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<sup>5</sup> It is expected that prior to Executive Officer approval, input and recommendations from the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife will be solicited concerning the proposed monitoring, particularly biological monitoring conducted as part of Assessment Area monitoring (see below).

<sup>6</sup> Only required where the Regulated Parties opt to implement an Offset and Trading Program.

## 1. TMDL Evaluation Monitoring

The purpose of the TMDL evaluation monitoring is to assess progress toward the attainment of the WLAs, LAs, and the tissue-based numeric targets<sup>7</sup>, consistent with CWC §13242.

The TMDL evaluation monitoring is divided into two categories:

### a. Assessment Point Monitoring

Assessment Point Monitoring will be used to assess, through water column monitoring, whether the WLAs and LAs are being attained. The assessment point within each of the subwatershed/channel areas is as follows:

- San Diego Creek subwatershed: San Diego Creek at Campus Drive
- Santa Ana-Delhi Channel: Santa Ana-Delhi Channel upstream of Irvine Ave
- Big Canyon Wash subwatershed: Big Canyon Wash at the outfall to Upper Newport Bay at Back Bay Drive.

The monitoring parameters for the Assessment Point Monitoring must consist of the following:

- Water column: selenium (total and dissolved)<sup>8</sup>
- Flow<sup>9</sup>

The frequency of sample collection must be sufficient to evaluate the WLAs and LAs (including the seasonal evaluation) and must be specified in the Regional Monitoring Program.

### b. Assessment Area Monitoring

Assessment area monitoring will be used to assess, through bird egg and fish tissue samples, attainment of the tissue-based numeric targets. Tissue samples must be collected throughout the subwatershed area. For instances where sufficient tissue samples cannot be collected from an assessment area, a surrogate parameter (e.g., macroinvertebrates such as crayfish; reptiles; amphibians) may be used. The surrogate parameter must be proposed in the Regional Monitoring Program and, therefore, is subject to approval by the Executive Officer. The purpose of the surrogate parameter is to allow for an alternative assessment, as appropriate, of the tissue-based numeric targets to avoid a default presumption of attainment or lack of attainment due to an insufficient number of tissue samples. Given that numeric targets have not

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<sup>7</sup> The monitoring program's purpose is not to determine permit compliance. Permit compliance will be determined as described in the TMDLs and Allocations section and Implementation Plan section.

<sup>8</sup> Selenium species in addition to total and dissolved selenium (collected at same time as assessment area monitoring is being conducted) should be considered but are not required for all monitoring events or locations.

<sup>9</sup> To be measured at a nearby gauge or estimated at the point of sample collection if a nearby gauge is not present (e.g., Big Canyon Wash).

been established for these surrogate parameters, they would be used for informative purposes (e.g., to observe trends over time) rather than to determine whether the TMDLs have been attained. Where sufficient tissue samples are not available, these selenium TMDLs do not default to the assessment of water column (per the Assessment Point Monitoring) to determine attainment of the TMDLs. Additionally, where sufficient tissue samples are not available, these selenium TMDLs do not default to a determination that the TMDLs have been attained.

The assessment areas are as follows:<sup>10</sup>

- San Diego Creek subwatershed
  - i. Peters Canyon Wash
  - ii. San Diego Creek
  - iii. Off-Channel Wetlands (IRWD Constructed Treatment Wetlands and San Joaquin Marsh Reserve (UCI Wetlands))
- Santa Ana-Delhi Channel
  - i. Santa Ana Gardens Channel
  - ii. Santa Ana Delhi Channel (upstream of proposed diversion)
- Big Canyon Wash subwatershed
  - i. Harbor View Nature Park
  - ii. Big Canyon Country Club Golf Course Pond 4 or 5
  - iii. Big Canyon Nature Park

At a minimum, the monitoring parameters for the Assessment Area Monitoring must consist of the following:

- **Bird Egg Tissue (individual eggs, contents only):** total selenium; targeted species include shorebirds such as avocets or stilts (invertivorous birds), grebes (omnivorous or insectivorous birds), coots (omnivorous or herbivorous birds) and terns (piscivorous birds); since not all species are expected to be available in any given year within each subwatershed area, the monitoring program must be flexible with regard to the species targeted.
- **Fish Tissue (composite, whole-body tissue analyses):** total selenium; targeted species include juvenile and adult fish of the *Centrarchidae* family (e.g., bluegill, largemouth bass) and smaller fish such as red shiners or mosquito fish; since not all species are expected to be available in any given year within each subwatershed area, the monitoring program must be flexible with regard to the species targeted.
- **Surrogate Parameters:** Field experience indicates that locations with limited habitat (e.g., Upper Peters Canyon Wash, Santa Ana-Delhi Channel, and Big Canyon Wash) may not reliably provide fish or bird eggs for collection. Therefore, the Regional Monitoring Program must identify appropriate surrogate parameters (e.g., larger macroinvertebrates, such as crayfish (tails only),

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<sup>10</sup> Each subwatershed, in its entirety, is the assessment area. The sub areas within the subwatersheds are identified to ensure that sampling occurs specifically within at least one of these areas.

exoskeleton removed), reptiles such as non-native turtles, or amphibians such as non-native frogs) for sampling. At a minimum, surrogate tissue samples will be analyzed for total selenium and percent solids.

The frequency of sample collection must be sufficient to evaluate the tissue-based numeric targets, provided sufficient samples can be collected during target sample collection times, and must be specified in the Regional Monitoring Program.<sup>11</sup> At a minimum, an attempt to collect samples must be conducted annually in each assessment area, unless and until the Executive Officer determines that sufficient tissue data has been obtained to adequately characterize conditions and a lower sample collection frequency is warranted. Bird egg collection should be conducted during the nesting season (generally March through August). Fish collection should be at the same time of year to capture the potential effects of fish as bird dietary items and for effects to fish reproduction (common timing for most of the target species).

## 2. BMP Effectiveness Monitoring

The purpose of the BMP effectiveness monitoring is to assess the effectiveness of the BMPs that have been implemented pursuant to the BMP Strategic Plan(s). Changes in selenium concentrations in receiving waters, fish tissue, and bird eggs as a result of BMPs can be evaluated on either a project-specific or regional basis (e.g., the assessment area), depending upon the location and scale of the BMP. In addition, depending upon the type of BMP implemented, additional parameters or factors may be warranted (e.g., selenium speciation; bacteriological monitoring). Therefore, the monitoring that is appropriate to assess BMP effectiveness will be project-specific. However, to ensure integration of the goals and purposes of the BMP Strategic Plan and the Regional Monitoring Program, a project-specific monitoring plan must be developed for each project. The project-specific monitoring can be approved either through the BMP Strategic Plan approval process (including periodic updates) or through the Regional Monitoring Program approval process (including periodic updates).

Each project-specific monitoring plan must be appended to the overall Regional Monitoring Program and address the following:

- Baseline conditions prior to the project;
- Monitoring locations and rationale for the monitoring locations. At a minimum, two (2) monitoring locations must be established: one immediately upstream of the BMP and one immediately downstream of the BMP. If warranted by the type of BMP implemented or its proximity to sensitive or important habitat, another monitoring location may be added

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<sup>11</sup> It is expected that prior to Executive Officer approval, input and recommendations from the U.S. Fish and Wildlife Service and the California Department of Fish and Wildlife will be solicited concerning the proposed monitoring, particularly biological monitoring conducted as part of Assessment Area monitoring (see below).



further downstream of the BMP<sup>12</sup>. For diversion projects, monitoring upstream is not required (though monitoring of the diverted water is required, in order to quantify the selenium removed by the diversion<sup>13</sup>). For all types of BMPs, downstream monitoring may be coordinated with other monitoring locations where appropriate;

- Monitoring parameters, which at a minimum must include selenium in water (total and dissolved)<sup>14</sup>;
- Frequency with which each selenium reduction BMP will be monitored once the BMP is constructed and fully functioning. Monitoring must be sufficient to determine performance and selenium reduction effectiveness; and
- Duration of the BMP effectiveness monitoring.

### 3. Offset and Trading Program Monitoring

The purpose of the offset and trading program monitoring component is to provide the data that verify the generation of credits, and to conduct assessments on the effects of the offsets and/or trades on receiving water conditions to prevent localized impacts. This monitoring element only applies to Regulated Parties that opt to participate in the Offset and Trading Program.

For Regulated Parties who are generating credits via a BMP, at a minimum, monitoring must include the following<sup>15</sup>:

- Influent water to the BMP (prior to treatment)
- Water Column: selenium (total and dissolved)
- Flow
- Effluent water from the BMP (after treatment)
- Water Column: selenium (total and dissolved)<sup>16</sup>
- Flow

For Regulated Parties who are generating credits via a diversion project, at a minimum, monitoring must include the following:

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<sup>12</sup> The same monitoring location(s) can potentially be utilized for different aspects of the Regional Monitoring Program (e.g., a TMDL Evaluation location can also serve as a BMP effectiveness monitoring location), provided that the monitoring location will provide the necessary information. The intent of requiring all monitoring aspects in one Regional Monitoring Program is to integrate all of the requirements such that the program is efficient, effective, and practical.

<sup>13</sup> The sewerage agency will require certain monitoring to be conducted of water that enters the sewer system. This monitoring data may be utilized to fulfill, fully or in part, monitoring requirements for the diversion projects.

<sup>14</sup> As determined on a project specific basis, the monitoring parameters may also include, if warranted, selenium species: selenate, selenite, and organic selenium.

<sup>15</sup> Note that the BMP itself will be assessed under the requirements specified in the BMP effectiveness monitoring aspect of the Regional Monitoring Program. The requirements specified here are specifically designed to assess the generation of credits for the Offset and Trading Program.

<sup>16</sup> Additional monitoring parameters may be required depending on the type of BMP being used (e.g., selenium species, bacteria, nutrients, dissolved oxygen).

- Influent water to the diversion
- Water Column: selenium (total and dissolved)
- Flow

For Regulated Parties who seek to use credits, at a minimum, monitoring must include the following:

- At the point of discharge:
  - Water Column: selenium (total and dissolved)
  - Flow
- Downstream of the point of discharge:
  - Water Column: selenium (total and dissolved). Water column monitoring conducted under the TMDL compliance monitoring element may be sufficient to satisfy this requirement.
  - Bird Egg Tissue: consistent with the requirements specified in the TMDL compliance monitoring element. Tissue monitoring conducted under the TMDL compliance monitoring element may be sufficient to satisfy this requirement.
  - Fish Tissue: consistent with the requirements specified in the TMDL compliance monitoring element. Tissue monitoring conducted under the TMDL compliance monitoring element may be sufficient to satisfy this requirement.

#### **4. Source Assessment Monitoring**

As BMPs needed to achieve these proposed selenium TMDLs are implemented, and as conditions in the subwatershed areas change over time, the collection of selenium source data in each of the subwatershed areas may be necessary to identify and assess significant remaining inputs that do not have BMPs. The need for and selection of additional sample collection locations will be based on the results of Assessment Point and Assessment Area monitoring. Each Regional Monitoring Program must provide for this monitoring element.

#### **5. Other Considerations**

In addition to the required elements of the Regional Monitoring Program (TMDL evaluation monitoring, BMP effectiveness monitoring, offset and trading program monitoring, and source assessment monitoring), other elements, such as those listed below, may be considered for inclusion in the Regional Monitoring Program. These elements are not required components of the Regional Monitoring Program, but may be considered as the program develops or added based on consultation with Santa Ana Water Board staff, and may change over time:

- **Selenium Speciation** – The chemical speciation of selenium is a critical consideration in assessing the potential impacts of selenium because the bioavailability and toxicity of selenium are greatly affected by its chemical forms. Additionally, the various chemical forms of selenium bioaccumulate at different rates. Monitoring aimed at collecting data on the chemical speciation of

selenium in the water column should be considered where appropriate. Where selenium speciation is included as part of the assessment area monitoring, the water column samples should be collected within each assessment area at the same location and same time as the fish collection occurs.

- **Additional Monitoring Sites** – Additional sites that provide meaningful data to support refinement of the TMDLs and/or BMP implementation may be considered. These sites would not be used for TMDL evaluation purposes (as detailed under “TMDL Evaluation Monitoring” above), but to support future decision-making.
- **Additional Monitoring Triggers** – As part of the overall adaptive management aspect of these selenium TMDLs, the Regional Monitoring Program may consider triggers where additional monitoring is warranted (e.g., tissue concentrations that are orders of magnitude higher than other samples).

## 6. Special Studies

Special studies are supplemental to the core, routine components of the Regional Monitoring Program. These studies are intended to answer discrete questions and are not intended to be part of the routine monitoring conducted through the Regional Monitoring Program. These studies can inform and fill data gaps that support refinement and/or modification to these proposed selenium TMDLs. Therefore, any special study conducted during Phase I must be completed consistent with the schedule in **Table 4.c.Se.2 of the Basin Plan (see Tables 6 and 7 in this Order)** in order to be considered during the TMDL Reconsideration.

As part of Phase I of these TMDLs, the following special studies may be implemented by the Regulated Parties or the Santa Ana Water Board:

- **Model Comparison:** This study would provide a comparison of the biodynamic model and a selenium BAF or BSAF model for the Newport Bay watershed. The purpose of the comparison would be to evaluate if the BAF/BSAF model performs equally well for the watershed and to consider revision of the modeling approach utilized for the linkage analysis portion of these selenium TMDLs.
- **Refinement of Site-Specific  $K_d$  values:** This study would focus on obtaining algae, fine organic surficial sediment, and suspended particulates from multiple locations in the watershed to aid in refining the partitioning coefficients used in the biodynamic model to predict the probable selenium water column concentrations needed to meet the numeric tissue targets.
- **Special Studies by Regulated Parties:** Additional special studies may be proposed during implementation of Phase I of the proposed selenium TMDLs as funding allows and as deemed necessary. To be considered during the TMDL Reconsideration process, the proposed special studies must meet the following requirements and be submitted to the Santa Ana

Water Board's Executive Officer for review and approval:

- **Purpose** – Identification of the data and/or information gap that will be filled by completion of the special study.
  - **Timeframe** – Identification of the timeframe for completing the special study. The special study must be completed within a time period that allows a sufficient amount of time for the results of the special study to be considered during the TMDL Reconsideration process.
  - **Link to TMDL Reconsideration** – Identification of the manner in which the results of the special study can be used to revise the TMDLs during the Reconsideration process.
- **Special Studies Requested by the Santa Ana Water Board:** The Santa Ana Water Board may identify the need for additional special studies during the implementation of these selenium TMDLs. Where warranted, the Santa Ana Water Board may issue a CWC §13267 Order. The Order would meet the requirements of CWC §13267 as well as identify the purpose, timeframe, and link to TMDL reconsideration.

#### **7. Quality Assurance and Quality Control Measures**

The Regional Monitoring Program must identify the quality assurance and quality control measures (QA/QC) that will be implemented. At a minimum, the Regional Monitoring Program must be consistent with the requirements of California's Surface Water Ambient Monitoring Program (SWAMP).

### **VII. LAND DISCHARGE MONITORING REQUIREMENTS – NOT APPLICABLE**

### **VIII. RECEIVING WATER MONITORING REQUIREMENTS – NOT APPLICABLE**

### **IX. REPORTING REQUIREMENTS**

#### **A. General Monitoring and Reporting Requirements**

1. The Discharger shall comply with all Federal Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. Discharge monitoring data shall be submitted in a format acceptable to the Santa Ana Water Board. Specific reporting format may include preprinted forms and/or electronic media. The results of all monitoring required by this Order shall be reported to the Santa Ana Water Board and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order.
3. All monitoring reports, or information submitted to the Santa Ana Water Board shall be signed and certified in accordance with 40 CFR §122.22 and shall be submitted under penalty of perjury.

4. Five business days prior to any discharge from locations already reported, the Discharger shall notify the Santa Ana Water Board staff by phone or e-mail indicating the date and time of the proposed discharge.
5. Five business days prior to any planned discharge<sup>17</sup> from locations not yet reported, the discharger shall notify the Santa Ana Water Board staff by phone or by a fax letter indicating the following:
  - a. Specific type of the proposed wastewater discharge (see listing on Finding 1 of the Order);
  - b. The estimated average and maximum daily flow rates;
  - c. The frequency and duration of the discharge;
  - d. The affected receiving water(s);
  - e. A description of the proposed treatment system (if appropriate); and
  - f. A description of the path from the point of initial discharge to the ultimate location of discharge (fax a map if possible);
6. Noncompliance Reporting
  - a. The discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided to the Executive Officer (951-782-4130) and the Office of Emergency Services (1-800-852-7550) orally within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the discharger becomes aware of the circumstances. The written submission 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.
  - b. Any violation of a maximum daily discharge limitation for any of the pollutants listed in this Order shall be included as information that must be reported within 24 hours.
  - c. The Santa Ana Water Board may waive the above required written report on a case-by-case basis.
7. Except for data determined to be confidential under CWA §308, all reports prepared in accordance with the terms of this Order shall be available for public inspection at the offices of the Santa Ana Water Board and the USEPA Regional Administrator. As required by the CWA, effluent data shall not be considered confidential.
8. For Dischargers discharging at a volume equal to or greater than 150,000 gallons

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<sup>17</sup> For those unplanned discharges, as much prior notification as possible is required before any discharge is initiated.

per day, the Discharger shall submit semi-annual reports that tabulate all measured flows and measured parameters within the most recent six-month period. Where discharges associated with these projects last less than 6 months, a report covering the period of discharges shall be submitted. Copies of these monitoring reports shall be submitted to the Santa Ana Water Board and to the Water Quality Director of the Orange County Water District at P.O. Box 8300, Fountain Valley, CA 92728-8300.

## **B. Self-Monitoring Reports (SMRs)**

1. Monitoring reports shall be submitted by the 30th day of each month following the monitoring period and shall include:
  - a. The results of all physical/chemical analyses for the previous month,
  - b. The daily flow data,
  - c. A copy of the receiving water observation log,
  - d. A summary of the month's activities including a report detailing compliance or noncompliance with the task for the specific schedule date, and
2. If no discharge occurs during the previous monitoring period, a letter to that effect shall be submitted in lieu of a monitoring report.
3. At any time during the term of this Order, the Santa Ana Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

## **C. BMP Strategic Plan Reporting**

For Regulated Parties implementing BMP Strategic Plan(s), an annual report must be submitted to the Santa Ana Water Board, consistent with the schedule identified in **Table 4.cSe.2**. BMP Strategic Plan Annual Reports must, at a minimum, address the following:

- **Baseline and Source Control Activities** – Detail the baseline and source control activities implemented during the reporting year.
- **Selenium Reduction Projects** – Detail the selenium reduction projects implemented during the reporting year, including the characteristics, timeframe, and resulting changes in selenium loading and concentration of each project, including as appropriate, any changes in selenium species, and any resultant changes in stream flows/hydrology.
- **Goals** – Evaluate progress in attainment of the goal(s) of the BMP Strategic Plan.

- **Schedule** – Verify that actions were implemented consistent with the approved BMP Strategic Plan schedule.
- **Monitoring Results** – Evaluate the results from the Regional Monitoring Program, including:
  - BMP effectiveness monitoring
  - Progress in attaining WLAs
  - Progress in attaining numeric targets
  - If applicable, results and recommendations from any special studies
- **BMP/Technology Evaluation** – When applicable per the schedule defined as part of an approved BMP Strategic Plan, provide any BMP/technology evaluations. Evaluations can be submitted as a separate, stand-alone report.
- **Adaptive Management** – Based upon the results of the reporting year, propose any minor modifications to the BMP Strategic Plan and/or Regional Monitoring Program, if necessary and appropriate.<sup>18</sup>
- **Data** – Submit data from the Regional Monitoring Program in Excel format to Santa Ana Water Board staff on a semi-annual basis if exceedances of the numeric targets are observed, and annually if exceedances of the numeric targets are not observed. Data must also be uploaded to the California Environmental Data Exchange Network (CEDEN) on an annual basis. If and as a specific need arises, respond to specific data requests by Santa Ana Water Board staff as soon as possible.

#### D. Individual Action Plan Reporting

Individual Action Plans are provided as part of these selenium TMDLs recognizing that certain discharges may be short-term in nature and that long-term participation in a BMP Strategic Plan may, thus, be inappropriate. Therefore, the reporting schedule will be determined on a case-by-case basis for each Regulated Party<sup>19</sup> opting to implement an Individual Action Plan. As noted above, the reporting schedule must be included as part of the Individual Action Plan, which is subject to approval by the Executive Officer. The Individual Action Plan reports must include the following:

- **Volume Reduction BMPs** – Detail the volume reduction BMPs implemented during the reporting period;
- **Method of Attaining the Final WLAs** – Describe the method of attaining the final WLAs during the reporting period:

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<sup>18</sup> Due to the compressed timeframe for Phase I, it is anticipated that only minor modifications to the BMP Strategic Plans will occur during Phase I. However, a more robust adaptive management process will be required during Phase II of these TMDLs.

<sup>19</sup> The term “Regulated Party,” as defined in the Selenium TMDLs Implementation Plan, is included in the list of definitions in Attachment A. This definition also specifies the entities considered as “Other NPDES Permittees,” and “MS4 Permittees.”

- Participation in an approved Offset and Trading Program, such that the discharge is offset consistent with the requirements of the Offset and Trading Program, including the applicable offset ratios and restrictions pertaining to impacts to downstream beneficial uses; OR
- Implementation of BMPs to attain the final WLAs at the point of discharge; OR
- No discharge (e.g., sewer the discharge).
- **Schedule** – Verify that actions were implemented consistent with the approved Individual Action Plan schedule.
- **Monitoring Results** – Evaluate the results of the Individual Action Plan monitoring program to demonstrate that the selected method to attain the final WLAs was effective.
- **Data** – Submit data from the Individual Action Plan Monitoring Program in Excel format to the Santa Ana Water Board’s Executive Officer for review and approval in accordance with the schedule identified in the permittees Individual Action Plan. Data must also be uploaded to the California Environmental Data Exchange Network (CEDEN).



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## **ATTACHMENT F – FACT SHEET**

This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order (Order No. R8-2019-0061). This Fact Sheet is incorporated into and is a part of the Order. If there are inconsistencies between the Fact Sheet and the Order, the provisions within the Order take precedent.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Dischargers in California. Some sections or subsections of this Order have therefore been identified as “not applicable” to this group of Dischargers. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to the Dischargers authorized to discharge wastewater under this Order.

### **I. BACKGROUND**

This Order replaces Order No. R8-2007-0041, NPDES No. CAG918002 as modified by Order No. R8-2009-0045. This Order also replaces Order No. R8-2005-0079, adopted by the Santa Ana Water Board on November 18, 2005.

Order No. R8-2007-0041, adopted by the California Santa Ana Water Board Quality Control Board, Santa Ana Region (Santa Ana Water Board) on March 27, 2009, is a general permit for discharges to surface waters in the Newport Bay Watershed from two categories of discharges:

- Discharges from groundwater dewatering and/or remediation/cleanup operations, and,
- *De minimis* discharges that pose an insignificant threat to water quality.

Order No. R8-2007-0041 was issued as a general permit to facilitate the processing of permit applications for many projects that would otherwise need to be covered under individual waste discharge requirements. It consolidated the requirements of two general permits for discharges within the San Diego Creek/Newport Bay watershed:

- Order No. R8-2007-0008, NPDES No. CAG918001 (General Groundwater Cleanup Permit for Discharges to Surface Waters of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Petroleum Hydrocarbons, Solvents, Metals and/or Salts), and
- Order No. R8-2004-0021, NPDES No. CAG998001 (General Waste Discharge Requirements for Short-term Groundwater-Related Discharges and *De Minimis* Wastewater Discharges to Surface Waters within the San Diego Creek/Newport Bay Watershed).

Discharges to surface water in the Newport Bay Watershed need to be covered separately because shallow groundwater in the watershed often contains elevated levels of nitrogen, selenium, and dissolved solids. The Santa Ana Water Board has adopted Total Maximum Daily Loads (TMDLs) for nitrogen and selenium in the Newport Bay Watershed. Wasteload allocations (WLAs) specified in these TMDLs must be incorporated into discharge permits.

This Order includes coverage for *de minimis* discharges in addition to groundwater dewatering and cleanup discharges that contain constituents of concern for which TMDLs have been established, and in particular, for selenium and nitrates which are known to occur in the shallow, perched groundwater aquifer that occurs in the freshwater portions of the Newport Bay watershed. *De minimis* discharges are included herein as selenium and nitrate concentrations vary considerably depending on where in the watershed the discharge is occurring, including where within the aquifer the groundwater is being discharged from since selenium concentrations, in particular, and nitrate are highly variable. Therefore, portions of the watershed may lie outside of the area of high selenium and nitrate discharges or within those areas and not exceed the effluent limits established in this order. The *de minimis* discharges regulated under this Order include those resulting from hydrostatic testing of vessels, pipelines, and tanks, from the maintenance of potable water supply pipelines, tanks, and reservoirs, from fire hydrant testing or flushing, non-contact cooling water, air conditioning condensate, and similar types of discharges.

Order No. R8-2007-0041 required compliance with the numeric selenium effluent limitations established in the permit by no later than December 20, 2009. In 2009, the schedule for compliance with the numeric selenium effluent limitations was extended through issuance of Time Schedule Order (TSO) No. R8-2009-0069. The TSO extended the compliance schedule for a maximum of five years from the date of adoption of the TSO or until such time as Order No. R8 2007-0041 was re-issued. Amendments to the TSO in 2013 (Order No. R8-2013-0060) and 2014 (Order No. RB-2014-0025) further extended the TSO expiration date to December 10, 2019, or until such time as Order No. R8-2007-0041 was re-issued to incorporate revised selenium effluent limitations to implement selenium TMDLs that were under development by the Santa Ana Water Board. These TMDLs were adopted by the Santa Ana Water Board in 2017 and approved by USEPA in June 2019.

Discharges from the City of Irvine's groundwater dewatering facilities are currently regulated under Order No. R8-2005-0079 (NPDES No. CA8000406). Two of the City of Irvine's groundwater dewatering facilities (Culver Drive undercrossing and Jeffrey Road undercrossing) discharge to Como Channel. Dry weather flows in the Como Channel are captured by the Peters Canyon Channel Pipeline and Water Reuse Project (Peters Canyon Pipeline) via an in-channel diversion structure located just upstream of Como Channel's confluence with Peter Canyon Channel. The Peters Canyon Pipeline project delivers this water in a pressure pipeline to Orange County Sanitation District for treatment removal of selenium and subsequently discharges to the Orange County Water District's Groundwater Replenishment System (GWRS). Flows from the City of Irvine's third groundwater dewatering facility (Jamboree Road undercrossing) discharge to the El Modena-Irvine Channel which is tributary to the Peters Canyon Channel. The City of Irvine's groundwater discharges will be covered under this Order and Order No. R8-2005-0079 will be rescinded.

Order No. R8-2007-0041 expired on November 1, 2012 but remains in full force and effect until replaced. Twenty-three Dischargers have been authorized to discharge wastewater under Order No. R8-2007-0041; of these, nine are still active.

## II. DISCHARGE INFORMATION

The types of wastewater discharges discharged within the Newport Bay watershed regulated under this Order include the following two discharge categories:

### De minimis Discharges

- a. Discharges associated with well installation, development, test pumping and purging;
- b. Aquifer testing wastes;
- c. Discharges from potable water supply systems resulting from initial system startup, routine startup, sampling of influent flow, system failures, pressure releases, etc., when compliance with Total Maximum Daily Loads (TMDLs) is not addressed by Order WQ-2014-0194-DWQ;
- d. Discharges resulting from diverted stream flows;
- e. Other similar types of discharges as determined by the Santa Ana Water Board Executive Officer, which may pose a *de minimis* threat to water quality yet must be regulated under waste discharge requirements.

### Groundwater Discharges

- a. Dewatering from subterranean seepage and/or associated with protection of new or existing facilities;
- b. Groundwater dewatering at construction sites;
- c. Groundwater cleanup/remediation; and,
- d. Discharges of wastewater effluent associated with testing of selenium and nitrogen treatment technologies and best management practices (BMPs) into surface water.

The following discharges are excluded from regulation under this Order:

- a. Dewatering with pollutants of concern other than those for which effluent limitations are specified in this Order, and;
- b. Discharges from hydro-testing of contaminated pipes, vessels, or tanks.

Groundwater Cleanup and Dewatering Discharges: As noted above, the shallow groundwater zone in the Newport Bay Watershed typically contains elevated levels of nitrogen, selenium, and dissolved solids. In addition, some areas of the groundwater zone in the Newport Bay Watershed have been degraded by industrial waste, fuel and oil wastes, military facility waste, and other pollutants. Contaminants of concern, may include, but are not limited to, the following general categories:

- a. Hydrocarbons, typically those derived from petroleum.
- b. Chemicals that are built on a hydrocarbon "skeleton," which include –
  - i. Ethers, such as 1,4-dioxane and methyl tert-butyl ether (MTBE);
  - ii. halogenated hydrocarbons, including many classes of chlorinated hydrocarbons used as solvents and pesticides; and
  - iii. per- and polyfluorinated alkyl substances (PFAS).
- c. Classes of biological control agents, beyond chlorinated pesticides, used in agriculture or for other purposes.
- d. Classes of synthetic organic compounds, such as endocrine disruptors and industrial additives.

- e. Metals, with an emphasis on the heavy metals because of their higher toxicity.
- f. Oxyanions, such as nitrate and perchlorate.
- g. Nitroaromatics such as TNT and nitramines such as RDX – essentially organo-nitrogen compounds.

The non-metal COCs, depending on their vapor pressure under a given set of conditions, may be volatile organic compounds (VOCs), semi volatile organic compounds (SVOCs), or non-volatile organic compounds (NVOCs).

The major Discharges currently enrolled in Order No. R8-2007-0041 are the City of Irvine, and the Irvine Ranch Water District (IRWD). The City of Irvine operates three dewatering facilities that have averaged a total flow of 56,000 gallons per day (gpd) for the past five years.

IRWD operates a set of wells associated with monitoring and treatment of a contaminated groundwater plume originating from the former Marine Corps Air Station (MCAS) El Toro. These wells have discharged an average of 115,000 gallons per day (gpd) over the past five years. IRWD also discharges flows from a dewatering operation at its Michelson Water Reclamation Plant. These dewatering discharges have averaged 144,000 gpd.

Discharges from Drinking Water Systems: In 2014, the State Water Resources Control Board (State Board) adopted a general order for drinking water system discharges to waters of the United States (Order No. WQ 2014-0194-DWQ). Discharges from drinking water systems that satisfy the TMDL-related eligibility criteria in Order WQ 2014-0194-DWQ and receive authorization to discharge under Order WQ 2014-0194-DWQ are excluded from this Order. One Discharger previously enrolled under Order No. R8-2007-0041, the Golden State Water Company, has terminated its coverage after receiving authorization to enroll under Order No. WQ 2014-0194-DWQ and terminated its coverage under. Another Discharger, IRWD, has enrolled in Order No. WQ 2014-0194-DWQ to cover its potable water discharges, while retaining coverage under R8-2007-0041 for its non-potable water discharges.

De minimis Discharges: The most common treatment required for *de minimis* discharges is settling and/or dechlorination. Settling is used for those discharges with high settleable solids concentration. Discharges with residual chlorine, such as wastewater from hydro-testing of pipes and storage tanks, swimming pool drainage, and development and purging of wells, must be dechlorinated, unless the concentration is depleted by natural processes prior to mixing with the receiving water.

### III. APPLICATION FOR COVERAGE UNDER THE GENERAL PERMIT ORDER

#### A. Existing Dischargers

Existing Dischargers previously authorized to discharge under Order No. R8-2007-0041 or Order No. R8-2005-0079 who wish to continue their discharge(s) and be regulated under the terms and conditions of this Order must complete sections I., II., III., IV., and VIII. of the Notice of Intent (Attachment B) and submit it, no later than 45 days after the effective date of the Order. If no application is submitted by that date, coverage to discharge shall be

terminated and a complete Notice of Intent, with a new application fee, will need to be submitted consistent with Section II.B to resume permit coverage for the discharge.

## **B. New Dischargers**

This Order requires each new Discharger<sup>1</sup> to submit to the Executive Officer a complete Notice of Intent for the proposed discharge at least 45 days before the start of a new discharge. In addition to the basic information on the first page of the NOI form (Attachment B), new Dischargers must include a complete characterization of the proposed discharge, which includes, but is not limited to:

1. Notice of Intent to be covered under the general permit.
2. A list of potential pollutants in the discharge and the anticipated concentration of each pollutant;
3. For groundwater cleanup/remediation projects, a site characterization study that defines the onsite contaminants, their properties, three-dimensional extent and concentration of contaminants in the subsurface, and a description of the geologic and hydrologic factors that control the migration of the contaminants.
4. A fixed hardness value for approval by the Executive Officer of the Santa Ana Water Board based on the 5th percentile of effluent hardness measurements or the average ambient receiving water hardness measurements for those sites polluted with leaded gasoline.
5. A report that shall include the following:
  - a. Chemical analysis of the untreated groundwater. A representative groundwater sample shall be analyzed for organic pollutants using EPA method 8260B, priority pollutants, total recoverable selenium, sulfate, electrical conductivity, total dissolved solids, total suspended solids, total nitrogen, total inorganic nitrogen, and hardness. The selenium analysis used shall assure analytical detection levels sufficient to assess compliance with the effluent limitations of this Order. Test results shall be reported with Minimum levels (ML) and method detection limit (MDL); laboratory analytical limits shall be sufficient to detect these constituents at the concentrations listed in this Order.
  - b. The name of the proposed receiving water body, including the location (Latitude and Longitude) of the discharge point (s);
  - c. The estimated average and maximum daily flow rates, the start date of discharge (if a new discharge), and the duration of the discharge, and the estimated total volume of the discharge;

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<sup>1</sup> "New discharger" refers to those proposing to discharge wastewater under Order No. R8-2019-0061 and not currently covered under Order No. R8-2007-0041 and those Dischargers who were covered under Order No R8-2007-0041 or other individual permits (e.g. Order No. R8-2005-0079) and failed to submit an updated NOI by January 20, 2020.



- d. A map showing the path from the point of initial discharge to the ultimate location of discharge;
  - e. A list of known or suspected leaking underground tanks and other facilities or operations that have or may have impacted the quality of the underlying groundwater within the expected radius of influence of the project.
  - f. A discussion of the proposed dewatering and or cleanup project (if appropriate), including a review of the extraction system design and the status of definition of free product and dissolved product plumes for sites contaminated with petroleum hydrocarbon or solvents only (as appropriate);
  - g. A description of the proposed treatment system (if appropriate) and a certification report on the adequacy of each component of the proposed treatment system. This certification report shall contain a requirement-by-requirement analysis, based on accepted engineering practice, of how the process(es) and physical design(s) of the treatment system will ensure compliance with this Order. The design engineer shall affix his/her signature and engineering license number to this certification report. The report(s) shall also certify the following:
    - (1) All treatment facility startup and operation instruction manuals are adequate and available to operating personnel;
    - (2) All treatment facility maintenance and testing schedules are included in the treatment facility operation and maintenance manual (O&M Manual), which shall be kept readily accessible to onsite operating personnel; and
    - (3) Influent and effluent sampling locations and ports are located in areas where samples representative of the waste stream to be monitored can be obtained.
  - h. A discussion of a plan for the prevention of run-on, interception and diversion of runoff, and prevention of infiltration and runoff from contaminated soils stored on-site, if the discharge is associated with a groundwater remediation project and soils containing petroleum projects or other pollutants will be maintained on-site.
  - i. Any information deemed necessary by the Executive Officer.
6. The appropriate filing fee.

#### **IV. APPLICABLE PLANS, POLICIES, AND REGULATIONS**

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

##### **A. Legal Authorities**

This Order is issued pursuant to CWC Chapter 5.5, Division 7 commencing with §13370 and CWA §402 and its implementing regulations adopted by the USEPA. It serves as WDRs pursuant to CWC Article 4, Chapter 4, Division 7 commencing with §13260. This

Order shall also serve as an NPDES permit for the point source discharges described herein to inland surface waters, estuarine, and ocean waters within the Santa Ana Region.

Pursuant to NPDES regulations at 40 Code of Federal Regulations (CFR) §122.28, States may request authority to issue general NPDES permits. On June 8, 1989, the State Board applied to the USEPA requesting revisions to its NPDES Program in accordance with 40 CFR §§122.28, 123.62, and 403.10, including a request to add general permit authority to its approved NPDES Program. On September 22, 1989, the USEPA, Region 9, approved the State Board's request, granting authorization for the State to issue general NPDES permits.

Pursuant to NPDES regulations at 40 CFR §122.28 (a) (2) general permits may regulate point source discharges that:

1. Involve the same or substantially similar types of operations,
2. Discharge the same types of wastes,
3. Require the same effluent limitations,
4. Require the same or similar monitoring, and
5. In the opinion of the Executive Officer, are more appropriately controlled under a general permit than under individual permits.

## **B. California Environmental Quality Act (CEQA)**

Under Water Code section 13389, this action to adopt waste discharge requirements that serve as an NPDES permit is exempt from the provisions of chapter 3 of CEQA (commencing with section 21100) of division 13 of the Public Resources Code.

## **C. State and Federal Regulations, Policies, and Plans**

- 1. Water Quality Control Plans.** The Santa Ana Water Board adopted a Water Quality Control Plan for the Santa Ana River Basin (hereinafter Basin Plan) that became effective on January 24, 1995. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, State Water Resources Control Board (State Board) Resolution No. 88-63 (Sources of Drinking Water Policy) requires that, with certain exceptions, the Santa Ana Water Board assign the municipal and domestic water supply use to water bodies.

On January 22, 2004, the Santa Ana Water Board adopted Resolution No. R8-2004-0001, amending the Basin Plan to incorporate revised boundaries for groundwater sub-basins, now termed "management zones", new nitrate-nitrogen and total dissolved solids (TDS) objectives for the new management zones, and new nitrogen and TDS management strategies applicable to both surface and ground waters.

The groundwater management zone (GWMZ) in the Newport Bay Watershed consists of a deep regional aquifer (the Irvine GWMZ) overlain by a shallow perched aquifer. The deep aquifer, an important component of the water supply for Orange County, is recharged naturally through infiltration along the flanks of the Santa Ana Mountains, and artificially through actively managed spreading basins along the Santa Ana River. The shallow aquifer is poorly transmissive, restricted in extent, and found largely in the central portion of the watershed in the Tustin Plain. Historically, this aquifer recharged through local vertical infiltration. Surface runoff in the watershed ponded seasonally in the area known as the Swamp of the Frogs, where shallow groundwater seeped to the surface. The quality and hydrology of the shallow groundwater has been altered by anthropogenic activities, beginning in the early part of the 20th century. Irrigated agriculture resulted in leaching of nitrates and other salts to the shallow groundwater. The Swamp of the Frogs was drained, and a network of channels was created to convey wastewater to Upper Newport Bay. A large portion of this wastewater consists of "baseflow" (seepage from shallow groundwater). Although seleniferous bedrock and soils occur naturally in parts of the watershed, the drainage modifications in the watershed have resulted in increased selenium mobility.

Most discharges targeted for coverage by this Order originate from the shallow, perched aquifer described above. This aquifer is not used for municipal water supply. Much of the surface water recharge to this semi-perched zone is ultimately returned to the surface through seepage into flood control channels that are excavated below the shallow groundwater table ("rising groundwater"). San Diego Creek and its tributaries, the Santa Ana-Delhi Channel and its tributaries, and Big Canyon Creek are all excepted from the MUN beneficial use designation.

The existing and potential beneficial uses of surface waters in the Newport Bay Watershed are designated in Chapter 3 of the Basin Plan and are listed in Table 1. This Order implements applicable provisions of the Basin Plan.

2017 Mercury Provisions: In April 2017, the State Water Board adopted Resolution No. 2017-0027, approving an amendment to the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries (ISWEBE Plan) in the State of California (mercury provisions). The ISWEBE Plan amendment was approved by USEPA in July 2017. The mercury provisions establish human health and wildlife objectives based on methylmercury concentrations in fish tissue. The mercury provisions include a table of water column concentrations derived from the methylmercury tissue objectives for use in reasonable potential analyses and development of effluent limitations. Regional Water Board staff have determined that the applicable water column concentration from the mercury provisions is 12 nanograms per liter (ng/L) for total mercury. For freshwater this determination is based on the applicability of the 12 ng/L concentration to flowing water bodies (such as creeks and streams), and the applicability of either or both of the wildlife habitat (WILD) or the rare, threatened or endangered species habitat (RARE) to freshwater streams in the Newport Bay Watershed. For saltwater this determination is based on the applicability of the 12 ng/L concentration to waters with tidal mixing (such as upper and lower Newport Bay), and the applicability of one or more of the WILD,

RARE, commercial and sportfishing (COMM ), and marine habitat (MAR) beneficial uses to Upper Newport Bay and to Lower Newport Bay. There are currently no tribal-related beneficial uses that have been established in the Newport Bay Watershed.

**Table 1: Basin Plan Beneficial Uses for the Newport Bay Watershed**

Receiving Water Name	Beneficial Uses
San Diego Creek and Tributaries	Ground water recharge (GWR) intermittent; water contact recreation (REC-1); non-contact water recreation (REC-2); warm freshwater habitat (WARM); and wildlife habitat (WILD).  Excepted from municipal and domestic supply (MUN)
Santa Ana-Delhi Channel and Tributaries	Non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); and rare, threatened, or endangered species (RARE).  Excepted from municipal and domestic supply (MUN)
Big Canyon Wash	Water contact recreation (REC-1); Non-contact water recreation (REC-2); warm freshwater habitat (WARM); wildlife habitat (WILD); and rare, threatened, or endangered species (RARE).  Excepted from municipal and domestic supply (MUN)
Upper Newport Bay	Water contact recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); preservation of Biological Habitats of Special Significance (BIOL); wildlife habitat (WILD); rare, threatened, or endangered species (RARE); spawning, reproduction and development (SPWN); marine habitat (MAR); shellfish harvesting (SHEL); and estuarine habitat (EST).  Excepted from municipal and domestic supply (MUN)
Lower Newport Bay	Navigation (NAV); water contact recreation (REC-1); non-contact water recreation (REC-2); commercial and sport fishing (COMM); wildlife habitat (WILD); rare, threatened, or endangered species (RARE); spawning, reproduction and development (SPWN); marine habitat (MAR); and shellfish harvesting (SHEL).  Excepted from municipal and domestic supply (MUN)
Groundwater	The existing and potential beneficial uses of the Irvine GWMZ designated in Chapter 3 of the Basin Plan are: a. Municipal and Domestic Supply, b. Agricultural Supply, c. Industrial Service Supply, and d. Industrial Process Supply.

**2. National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992 (see 40 CFR §131.36 et seq., as amended). Approximately forty water quality criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR, which established new criteria for toxics in the

State and incorporated the previously adopted criteria of the NTR (see 40 CFR §131.38 et seq., as amended). The NTR and CTR contain water quality criteria for priority toxic pollutants applicable to inland surface waters and enclosed bays and estuaries of the State.

3. **State Implementation Policy.** On March 2, 2000, the State 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 promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Santa Ana Water Board in the Basin Plan. The SIP became effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State 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 toxicity control. The requirements of this Order implement the SIP.
4. **Alaska Rule.** On March 30, 2000, at 40 CFR 131.32, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards become effective for CWA purposes [65 Fed. Reg. 24641 (April 27, 2000)]. Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000 must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA before May 30, 2000 may be used for CWA purposes, whether or not approved by USEPA.
5. **Antidegradation Policy.** 40 CFR §131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Board established California's antidegradation policy in State Board Resolution No. 68-16. Resolution No. 68-16 incorporates 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 Santa Ana Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Permitted discharges must be consistent with the antidegradation provision of 40 CFR §131.12 and State Board Resolution No. 68-16.

The *de minimis* discharges authorized under this Order are expected to have an insignificant effect on water quality and beneficial uses and therefore conform to applicable antidegradation provisions of NPDES regulations at 40 CFR §131.12 and with State Board Resolution No. 68-16. *De minimis* discharges are, by definition, insignificant threats to water quality and their inclusion in this Order is presumptively expected to not result in a lowering of water quality. Many of the *de minimis* discharges consist of potable water, which has higher water quality than the receiving water.

Discharges from groundwater dewatering remediation/cleanup projects, while meeting water quality standards, may result in a lowering of water quality for some constituents.

Permitting discharges from groundwater remediation/cleanup projects is in the maximum interests of the people of the state because (a) the purpose of these discharges is to improve groundwater quality which will benefit the people of the State; and (b) the degradation is limited in duration to the time necessary to complete the projects.

Permitting discharges from short-term construction-related groundwater dewatering projects and groundwater dewatering facilities is in the maximum interests of the people of the state because the degradation is limited in duration to the time necessary to complete the projects and the facilities are necessary to ensure public safety. The permanent groundwater dewatering facilities regulated by this Order protect the major sewage treatment plant in the watershed as well as road and rail undercrossings.

- 6. Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and 40 C.F.R. §122.44(l) prohibit backsliding in NPDES permits; Pursuant to these anti-backsliding provisions, effluent limitations in a reissued permit must be at least as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. This Order is consistent with applicable anti-backsliding requirements.

Effluent limits in this Order are at least as stringent as in Orders R8-2007-0041 and R8-2005-0079, except with respect to metals where effluent limitations were removed for existing discharges to freshwater based on new monitoring data submitted by the Dischargers.. The effluent limitations for discharges of selenium may, in certain cases, be less stringent than the effluent limitation in Order No, R8-2005-0079 or Order No. R8-2007-0041. The justification for these changes is explained below.

a. Metal Effluent Limits for Discharges to Freshwater:

A reasonable potential analysis using more recent effluent monitoring data from existing Dischargers collected pursuant to the requirements of Order R8-2007-0041 found that for freshwater discharges, effluent limitations were required only for copper and mercury (see Section V.C.3.c). Effluent limitations for arsenic, cadmium, chromium (III), chromium (VI), lead, nickel, silver, and zinc were thus removed.

- b. Selenium Effluent Limits for Freshwater: This Permit implements the WLAs of the Selenium TMDLs for Freshwater in the Newport Bay Watershed for Other NPDES Permittees through imposing effluent limitations based on either (1) the CTR, (2) subwatershed-specific water-column concentrations back-calculated from fish tissue data, or (3) mass-based effluent limits. Compliance options for

these effluent limitations are provided in Section V.A.3 of this Order “Compliance Determination”.

The selenium effluent limitations in Order No. R8-2007-0041 were based solely on the CTR criteria of 5 ug/L. The tissue-based effluent limitations in this Order for the San Diego Creek and Santa Ana Delhi Channel subwatersheds (10 µg/L and 11 µg/L respectively) are less stringent than the CTR while the tissue-based effluent limitation for the Big Canyon subwatershed (1 µg/L) is more stringent than the CTR. These tissue-based effluent limitations are derived largely from a data set of new selenium water and fish tissue concentrations, as well as other related data, that were collected in the Newport Bay Watershed after Order No. R8-2007-0041 was adopted. Tissue-based effluent limitations for selenium are considered to be more appropriate than the CTR when sufficient data are available. Discharges to which the mass-based selenium effluent limitations may be applied are conditional on implementation of approved offset/trading projects that do not result in downstream impacts to beneficial uses.

The Selenium TMDLs explicitly acknowledge that the WLAs may be adjusted over time if new information (information not available at the time of the adoption of the Selenium TMDLs) becomes available and justifies a higher WLA. Adjustment of the WLAs in this manner is consistent with the anti-backsliding provisions of the CWA

Such revisions as well as corresponding revisions to the effluent limitations shall be incorporated in this Order upon approval by the Executive Officer, per delegated authority by the Santa Ana Water Board, unless during the public review process, a request is made to bring the modification before the Santa Ana Water Board for consideration. If brought for consideration by the Santa Ana Water Board, adjustment to the WLAs, as well as corresponding revisions to effluent limitations, shall be incorporated into this Order upon approval

7. **Endangered Species Act.** 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. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act
8. **Monitoring and Reporting Requirements.** CWC §§13267 and 13383 authorize the to require technical and monitoring reports. 40 CFR §122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. The Monitoring and Reporting Program (MRP) establishes monitoring and reporting requirements to implement State and federal requirements. MRP requirements are provided in Attachment E. The specific MRP requirements for an individual discharger, which may include all or a portion of Attachment E, shall be identified within the discharge authorization letter issued by the Santa Ana Water Board



Executive Officer to each individual discharger that seeks coverage under this Order.

## **D. Impaired Water Bodies on CWA 303(d) List/TMDLs**

CWA §303(d) requires states to identify water bodies where water quality standards are not expected to be met after technology-based effluent limitations have been implemented for point sources. For all 303(d)-listed water bodies and pollutants, the Santa Ana Water Board has developed and/or plans to develop total maximum daily loads (TMDLs) that specify waste load allocations (WLA) for point sources and load allocations (LA) for non-point sources. These allocations form the basis, in part, for limitations in waste discharge requirements. TMDLs applicable to the Newport Bay Watershed are discussed below.

### **1. Nutrient TMDLs**

On April 17, 1998, the Santa Ana Water Board adopted Resolution No. 98-9, amending the Basin Plan to incorporate a Nutrient Total Maximum Daily Load (TMDL) for the Newport Bay/San Diego Creek Watershed. The TMDL was amended by Resolution No. 98-100 on October 9, 1998 and thereafter approved by the State Water Resources Control Board, Office of Administrative Law and the USEPA.

### **2. Selenium TMDLs**

In 2017, the Santa Ana Water Board adopted Resolution R8-2017-0014, establishing TMDLs for selenium in freshwater in the Newport Bay Watershed. The selenium TMDLs were approved by the State Board on September 20, 2018 (Resolution No. 2018-0041), by the Office of Administrative Law (OAL) on April 19, 2019, and by the USEPA on June 20, 2019. The selenium TMDLs apply to the following three freshwater subwatersheds of the Newport Bay Watershed:

- Santa Ana Delhi Channel Subwatershed
- San Diego Creek Subwatershed
- Big Canyon Wash Subwatershed

The selenium TMDLs established wasteload allocations (WLAs) for permitted groundwater dewatering, treatment or other similar operations discharging to freshwaters in the San Diego Creek, Santa Ana Delhi, and Big Canyon subwatersheds of the Newport Bay Watershed. The selenium TMDLs also specified several options for demonstrating compliance with the selenium WLAs that were intended to be explicitly incorporated into applicable permits. The incorporation of these WLAs into Order No. R8-2019-0061 is discussed in Section V below.

The 2017 selenium TMDLs replace selenium TMDLs established by USEPA in 2002. The 2017 TMDLs do not include WLAs for Upper and Lower Newport Bay. In addition, the most recent update of the CWA §303(d) list for the Santa Ana Region (the 2016 update) does not include selenium listings for either Upper or Lower Newport Bay.

The Santa Ana Water Board incorporated selenium effluent limitations for groundwater-related discharges beginning with Order No. R8-2004-0021. Stakeholders in the Newport Bay Watershed, concerned about achieving compliance with the CTR criteria for selenium, formed a voluntary program known as the Nitrogen and Selenium Management Program (NSMP), sponsored by a Working Group. The Working Group implemented a Work Plan that recommend revisions to the USEPA selenium TMDLs, to develop treatment technologies, and to participate in developing site-specific selenium objectives for the Newport Bay watershed. Order No. R8-2004-0021 included requirements that reflected the proposed NSMP Working Group approach and required implementation of a Work Plan to accomplish those specific tasks.

Order No. R8-2004-0021 provided that participation by dischargers in the NSMP Working Group and implementation of the approved Work Plan would constitute interim, performance-based limitations. The Order also allowed dischargers who did not wish to participate in the NSMP Working Group to implement a program approved by the Executive Officer to offset their selenium discharges.

Order No. R8-2007-0041 included the compliance options specified in Order No. R8-2004-0021 and required compliance with the numeric selenium limitations established in the permit by no later than December 20, 2009. In 2009, this compliance date was extended through issuance of Time Schedule Order (TSO) No. R8-2009-0069. The TSO extended the schedule for compliance for a maximum of five years from the date of adoption of the TSO or until such time as Order No. R8 2007-0041 was re-issued. Amendments to the TSO in 2013 (Order No. R8-2013-0060) and 2014 (Order No. RB-2014-0025) extended the TSO expiration date to December 10, 2019, or until such time as Order No. R8-2007-0041 was re-issued to incorporate revised selenium effluent limitations based on new selenium TMDLs adopted by the Santa Ana Water Board.

The WLAs in the 2017 selenium TMDLs include compliance options similar to those used in Order No. R8-2007-004.

The NSMP Working Group effort has resulted in specific recommendations for the development of site-specific objectives (SSOs) for selenium that, when fully approved, will replace the CTR-based selenium objectives in the Newport Bay watershed. These SSOs are reflected in the 2017 selenium TMDLs. The Working Group has prepared a draft BMP Strategic Plan that outlines the steps proposed to further address selenium BMP evaluation and implementation of the 2017 selenium TMDLs. Implementation of the BMP Strategic Plan is expected to result in compliance with the WLAs in the selenium TMDLs.

As the NSMP Working Group is no longer in existence, dischargers opting to comply with the selenium TMDLs via the BMP Strategic Plan will be collectively referred to as the “BMP Strategic Plan Implementation Group.”

### **3. Organochlorine TMDLs**

On June 14, 2002, USEPA Region 9 established TMDLs for fourteen toxic pollutants, including five organochlorine compounds, for San Diego Creek, Upper and Lower Newport Bay, and Rhine Channel. The organochlorine (OC) compounds included four legacy pesticides (1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane [DDT], chlordane, dieldrin and toxaphene) and polychlorinated biphenyls (PCBs). TMDLs were established for chlordane, total DDT, and total PCBs in all these waterbodies; dieldrin TMDLs were established for San Diego Creek, Lower Newport Bay, and Rhine Channel; and a TMDL for toxaphene was established only for San Diego Creek (USEPA, 2002).

The most recent water quality assessment performed for the 2016 update of the CWA §303(d) list resulted in listings for total DDT and toxaphene in San Diego Creek, and total DDT, chlordane and PCBs in Upper and Lower Newport Bay.

On July 15, 2011, the Santa Ana Water Board adopted a Basin Plan amendment to incorporate TMDLs for total DDT and toxaphene in San Diego Creek and total DDT, chlordane and total PCBs for Upper and Lower Newport Bay. Informational TMDLs were also adopted for chlordane and total PCBs in San Diego Creek. These TMDLs were approved by the State Water Board on October 16, 2012, and by USEPA on November 12, 2013.

The organochlorine compounds TMDLs include numeric targets based on the CTR ambient water quality criteria. However, the 2011 Organochlorine Compounds TMDLs did not assign WLAs to groundwater discharges. Organochlorine pollutants tend to tightly sorb to soil organic matter and are rarely found in groundwater. There is thus no reasonable potential that discharges regulated by this Order will contain organochlorine compounds. Therefore, this Order does not include effluent limitations or monitoring for organochlorine compounds.

### **4. Metals TMDLs.**

In 2002, USEPA established TMDLs for copper, lead, zinc, and cadmium in the Upper Bay, and copper, lead and zinc in the Lower Bay based on an impairment assessment conducted by USEPA staff (Total Maximum Daily Loads for Toxic Pollutants; San Diego Creek and Newport Bay, California. USEPA Region 9, June 14, 2002). USEPA also established cadmium, copper, lead, and zinc TMDLs for San Diego Creek. Cadmium, copper, lead, and zinc are known to bioaccumulate in benthic organisms, but do not generally bio-magnify up the food chain.

In 2006, the State Board assessed individual metals in Newport Bay and listed the Upper and Lower Bay for copper on the 303(d) list of Impaired Waters. No other individual metals were listed based on the State Board assessment, although USEPA's 2002 TMDLs remain in place. The State Board assessment also demonstrated no metals impairment in San Diego Creek.

The Impairment Assessment conducted by Santa Ana Water Board staff, based on data collected after 2002, showed that Upper and Lower Newport Bay are still impaired for dissolved copper in water based on exceedances of the CTR criterion (3.1 µg/L).

The Santa Ana Water Board is currently finalizing draft copper TMDLs to address the copper impairment in Newport Bay. When fully approved, these copper TMDLs will replace the TMDLs established by USEPA in 2002.

The Santa Ana Water Board's draft TMDLs identify copper antifouling paints are the largest sources of copper to the Bay and are six times higher than the second largest source which is runoff from the major tributaries. Neither the USEPA's 2002 metals TMDLs, nor the Santa Ana Water Board's draft copper TMDLs include WLAs for NPDES permits regulating groundwater discharges.

Newport Bay and San Diego Creek were first placed on the CWA §303(d) list for the general category "metals" in 1992. Individual metals were not listed. In 2002, USEPA established TMDLs for cadmium, copper, lead, and zinc in San Diego Creek and in Upper Newport Bay. USEPA also established TMDLs for copper, lead, and zinc in Lower Newport Bay. The State Water Board subsequently decided to remove general listings for "metals" from the CWA §303(d) list and replace them with specific pollutants when warranted. The State Board assessed available metals data in San Diego Creek and Newport Bay for the 2006 update of the CWA §303(d) list and did not find enough evidence to list any individual metals aside from copper in Upper and Lower Newport Bay. The USEPA copper TMDLs for Newport Bay does not specify wasteload allocations for groundwater discharges. The CWA §303(d) list was approved by USEPA on June 28, 2007. The most recent update of the CWA §303(d) list for the Santa Ana Region (the 2016 update) did not add new metal listings for the Newport Bay Watershed. The 2016 update was approved by the Santa Ana Water Board in April 2017, by the State Water Board in September 2017, and by USEPA in April 2019.

## **E. Other Plans, Policies and Regulations**

In most areas of the Newport Bay Watershed, there is no significant amount of receiving water at the point of discharge. Therefore, no mixing zone allowance is included in the calculation of effluent limits. Consequently, compliance with the effluent limits is required to be determined at the end of the discharge pipe or at a location prior to where the discharge enters the receiving water, or at a predetermined location within the receiving water,

## **V. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE PROHIBITIONS**

The CWA requires point source Dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR §122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR §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 the receiving water.

## A. Discharge Prohibition

The discharge prohibitions are based on the CWA, Basin Plan, State Water Resources Control Board's plans and policies, USEPA guidance and regulations, and previous permit provisions, and are consistent with the requirements set for other discharges regulated by waste discharge requirements adopted by the Santa Ana Water Board.

## B. Technology-Based Effluent Limitations

### 1. Scope and Authority

CWA §301 (b) and 40 CFR §122.44 require permits to, at a minimum, meet applicable technology-based requirements and any more stringent effluent limitations necessary to meet applicable water quality standards. The CWA requires the USEPA to develop effluent limitations, guidelines and standards (Effluent Limitations Guidelines - ELGs) representing application of best practicable treatment control technology (BPT), best available technology economically achievable (BAT), best conventional pollutant control technology (BCT), and best available demonstrated control technology for new sources (NSPS), for specific industrial categories. Where USEPA has not yet developed ELGs for a particular industry or a particular pollutant, CWA §402 (a) (1) and 40 CFR §125.3 authorize the use of best professional judgment (BPJ) to derive technology-based effluent limitations on a case-by-case basis. When BPJ is used, the permit writer must consider specific factors outlined at 40 CFR §125.3.

### 2. Applicable Technology-Based Effluent Limitations

This Order includes effluent limitations for total petroleum hydrocarbons, suspended solids, and sulfides that are based on best professional judgment. The limitations were established when the first general *de minimis* discharge order, Order No. 93-49, was adopted by the Santa Ana Water Board in 1993 and have been carried forward in all subsequent general orders. This Order also establishes technology-based effluent limitations for chlorinated hydrocarbons.

TPH: The 0.1 mg/L limit for total petroleum hydrocarbons is intended to be an indicator parameter to demonstrate that groundwater dewatering operations are not intercepting hydrocarbon plumes. Exceedances of this limit will require treatment prior to discharge.

TSS: The suspended solids limit of 75 mg/L is based on values that have been proven to be achievable in the field through the use of settling devices such as Baker Tanks, retention basins, etc.

Sulfides: Some dewatering operations, especially along the coast where ocean/bay sediments have been used to construct land masses, have encountered

groundwater containing high concentrations of hydrogen sulfide. When discharged, the sulfides are released to the atmosphere and have created odor nuisances. It has been found that the discharge of waters with less than 0.4 mg/L of sulfides should not cause such odor conditions. This level is easily achievable with current technology (usually chlorination).

Chlorinated Hydrocarbons: Effluent limitation guidelines for chlorinated hydrocarbons have not been developed for the category of Dischargers authorized to discharge by this Order. However, since authorized Dischargers are discharging treated wastewaters, it is appropriate to establish technology-based effluent limitations using Best Professional Judgment (BPJ) for chlorinated hydrocarbons.

## **C. Water Quality-Based Effluent Limitations (WQBELs)**

### **1. Scope and Authority**

CWA §301(b) and 40 CFR §122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

40 CFR §122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the 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 for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA §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 the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR §122.44(d)(1)(vi).

The process for determining reasonable potential and calculating WQBELs when necessary is intended to protect the designated uses of the receiving water as specified in the Basin Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria contained in the CTR and NTR.

The effluent limits that apply to the Discharger shall be identified within the discharge authorization letter issued by the Regional Board Executive Officer.

### **2. Applicable Beneficial Uses and Water Quality Criteria and Objectives**

#### **a. Beneficial Uses**

The receiving waters for discharges authorized by this Order are listed in Table 1 of this Fact Sheet (Section IV.C) along with their beneficial use designations. As shown in Table 1, all waters that may receive discharges authorized by this Order are excepted from the MUN beneficial use designation.

**b. Basin Plan Water Quality Objectives**

The Basin Plan contains a numeric water quality objective for total residual chlorine that is applicable to all inland surface waters and enclosed bays and estuaries.

The Basin Plan also contains numeric water quality objectives specific to San Diego Creek for TDS and for total inorganic nitrogen (TIN) (Table 2).

**Table 2: Basin Plan Numeric Water Quality Objectives for San Diego Creek**

Numeric Water Quality Objective	Reach 1 (below Jeffrey Road)	Reach 2 (above Jeffrey Road to Headwaters)
pH	6.5 ≤ pH ≤ 8.5	6.5 ≤ pH ≤ 8.5
TDS (mg/L)	1,500	720
Total Inorganic Nitrogen (mg/L)	13	5

**c. Nutrient TMDL Wasteload Allocations**

The nutrient TMDL establishes numeric targets that are based on a 50% reduction in nitrogen loading to Newport Bay and its freshwater tributaries. The TMDL requires that the 50% reduction be achieved no later than December 31, 2007 for summer loading (between April 1 and September 30); the 50% reduction in winter inputs (between October 1 and March 31) is to be achieved no later than December 31, 2012.

The nutrient TMDL includes nitrogen wasteload allocations for “undefined sources.” These which include rising groundwater, discharges associated with groundwater cleanup and dewatering, atmospheric deposition, open space inputs and in-bay sediment nitrogen. The load allocations for undefined sources require a 50% reduction in summer inputs by 2007, and a 50% reduction in winter inputs by 2012. These reductions have been achieved.

The Nutrient TMDL implementation plan supports the trading of pollutant allocations, where appropriate, as a potentially cost-effective method to achieve pollutant reduction. Stakeholders in the Newport Bay Watershed previously formed a voluntary program known as the Nitrogen and Selenium Management Program (NSMP), sponsored by a Working Group to address the requirements of Order No. R8-2007-0041. The Working Group funded a Work Plan that identified nutrient offset, trading or mitigation projects. Although the NSMP Working Group has disbanded, the nitrogen offset programs identified by the Working Group provide viable options for complying with this Order.

**d. Selenium TMDL Wasteload Allocations**

As described above, in 2017 the Santa Ana Water Board adopted TMDLs for selenium in three freshwater subwatersheds of the Newport Bay Watershed.

These TMDLs were approved by USEPA in 2019 and the selenium TMDL is included in Chapter 6 of the Basin Plan in Table 4.c.Se.1 and Table 4.c.Se.2.

The selenium effluent limits in this Order are based on the wasteload allocations specified in the selenium TMDLs. These wasteload allocations are reproduced below (using the exact text in the Basin Plan) as Table 3.

**Table 3: Final WLAs as a Semi-Annual Arithmetic Mean<sup>1</sup> (for Implementation Purposes)**

WLAs	Tissue-based Water Column WLAs 2,3,4,5,6,7,8 (Based upon Biodynamic Model) (µg Se/L)			CTR-based Water Column WLAs 2,8,14,16 (µg Se/L)	Conditional Mass-based WLAs 15,16 (lbs)
	San Diego Creek Subwatershed 9,12,13,16	Santa Ana-Delhi Channel 10,12,13,16	Big Canyon Wash Subwatershed 11,12,13,16		
MS4 Permittees					Optional. Applies when discharger meets the following conditions: participates in approved Offset and Trading Program  Offsets entirety of discharge (concentration x flow), including any specified offset ratio
Other NPDES Permittees	10	11	1	5	

(1) Semi-annual arithmetic mean: April 1 through September 30 and October 1 through March 31.

(2) Allocations apply year-round during non-wet weather (i.e. dry) conditions. Wet weather conditions are any day with 0.1 inches of rain or more, as measured at the Tustin-Irvine Ranch Rain Gauge Station, and the following three days (72 hours).

(3) The tissue-based WLAs are based on probable water column concentrations derived from the biodynamic model, as detailed in the Linkage Analysis of these selenium TMDLs. The biodynamic model is directly incorporated herein to these WLAs and is represented by the following equations:

(1) Fish tissue target of 8.1 or 5 µg Se/g dw (piscivorous fish):  $C_{water} (\mu\text{g Se/L}) = [(((C_{fish\ target} / TTF_{piscivorous\ fish}) / TTF_{invertivorous\ fish}) / TTF_{invertebrate}) / K_d] * 1000;$

(2) Fish tissue target of 8.1 or 5 µg Se/g dw (invertivorous fish):  $C_{water} (\mu\text{g Se/L}) = [((C_{fish\ target} / TTF_{invertivorous\ fish}) / TTF_{invertebrate}) / K_d] * 1000;$

(3) Fish tissue target of 8.1 or 5 µg Se/g dw (detritivorous fish):  $C_{water} (\mu\text{g Se/L}) = [(C_{fish\ target} / TTF_{detritivorous\ fish}) / K_d] * 1000;$



(4) Bird egg target of 8.0  $\mu\text{g Se/g dw}$  (piscivorous bird):  $C_{\text{water}} (\mu\text{g Se/L}) =$   
 $[(((C_{\text{bird target}}/\text{TTF}_{\text{bird}})/\text{TTF}_{\text{invertivorous fish}})/\text{TTF}_{\text{invertebrate}})/K_d]*1000;$

(5) Bird egg target of 8.0  $\mu\text{g Se/g dw}$  (invertivorous bird):  $C_{\text{water}} (\mu\text{g Se/L}) =$   
 $[(((C_{\text{bird target}}/\text{TTF}_{\text{bird}})/\text{TTF}_{\text{invertebrate}}))/K_d]*1000$

(4)  $\text{TTF}_{\text{bird}}$  = trophic transfer factor from fish or invertebrates to bird egg,  $\text{TTF}_{\text{piscivorous fish}}$  = trophic transfer factor from small fish to predatory fish,  $\text{TTF}_{\text{invertivorous fish}}$  = trophic transfer factor from invertebrates to fish,  $\text{TTF}_{\text{detritivorous fish}}$  = trophic transfer factor from particulates to fish,  $\text{TTF}_{\text{invertebrate}}$  = trophic transfer factor from particulates to invertebrates,  $K_d$  = partitioning coefficient from dissolved selenium in water to particulates.

(5) Initial values for all TTFs and  $K_d$ s are specified in the Linkage Analysis of these selenium TMDLs. TTF values may vary by specific water body. In water bodies where predatory fish are not present, the  $\text{TTF}_{\text{predatory fish}}$  value should equal 1 to represent that one less step is occurring in the food chain.

(6) During the development of the selenium TMDLs, a range of probable water column concentrations was derived from the tissue-based numeric targets, based on the values assumed for the variables in the equation. The initial WLA values selected are based upon consideration of the most sensitive endpoint in the watershed and existing tissue data. During Phase I of these selenium TMDLs, that endpoint has been identified as fish tissue for the protection of fish (numeric target of 8.1  $\mu\text{g Se/g dw}$ ) for the SDC and SADC subwatersheds and as bird egg tissue for the protection of birds (8.0  $\mu\text{g Se/g dw}$ ) in BCW.

(7) During the TMDL Reconsideration and during Phase II of these selenium TMDLs, the biodynamic model inputs and resulting probable water column concentrations will be reevaluated and updated as necessary and per the schedule included in **Table 4.c.**

**Se.2.** Subject to review and written comment via a public participation process, if updates are determined to be appropriate, such revised values will then replace the initial values in the biodynamic model equations, resulting in revised allocations. Such revisions can be made via approval by the Executive Officer, per delegated authority by the Santa Ana Water Board, unless during the public review process a request is made to bring the modification before the Santa Ana Water Board for consideration.

(8) The final allocations are to be achieved as soon as possible, but no later than 30 years from the effective date of the reconsidered TMDLs, as discussed in the Implementation Plan.

(9) Assessed in the receiving water at San Diego Creek at Campus Drive for Regulated Parties (as defined in the Implementation Plan other than MS4 Permittees) that opt to implement a BMP Strategic Plan consistent with the Implementation Plan.

(10) Assessed in the receiving water at Santa Ana-Delhi Channel at Irvine Avenue for Regulated Parties (as defined in the Implementation Plan other than MS4 Permittees) that opt to implement a BMP Strategic Plan consistent with the Implementation Plan.

(11) Assessed in the receiving water at Big Canyon Wash at Back Bay Drive for Regulated Parties (as defined in the Implementation Plan other than MS4 Permittees) that opt to implement a BMP Strategic Plan consistent with the Implementation Plan.

(12) Assessed at 'end of pipe' for Individual Action Plan point sources that elect not to pursue an offset. Compliance with allocations will be determined pursuant to the compliance options outlined under the heading "Compliance with WLAs". Such compliance options are directly incorporated herein as part of the assumptions and requirements of these WLAs.

- (13) Assessment location for the MS4 permittees (urban runoff) is the Costa Mesa Channel. This location was selected as a surrogate urban runoff site because the subwatershed is approximately 1 square mile in area, it has predominantly urban land uses, and it is outside of the areas impacted by rising groundwater.
- (14) The CTR-based water column WLAs will no longer apply to these selenium TMDLs if and when revised objectives (e.g., SSOs) have been approved and are in effect and the current CTR chronic criterion for selenium in freshwater is de-promulgated.
- (15) The Offset and Trading Program and any applicable offset ratios, described in the Implementation Plan, is incorporated herein to these conditional mass-based WLAs.
- (16) Compliance with allocations will be determined pursuant to the compliance options outlined under the heading "Compliance with WLAs". Such compliance options are directly incorporated herein as part of the assumptions and requirements of these WLAs.

The TMDL describes groundwater as the predominant source of selenium in the Newport Bay watershed, entering surface waters either through point source discharges (e.g., dewatering operations) or more commonly through non-point source (NPS) rising groundwater.

The selenium TMDLs established the selenium loading capacities for the freshwater waterbodies in the Newport Bay Watershed based on:

- 1) the water column concentration specified in the CTR, and
- 2) the water column concentrations predicted from the tissue-based numeric targets in the selenium TMDL.

The derivation of the predicted water column concentrations is described in the Linkage Analysis of the selenium TMDLs.

If and when revised selenium objectives (e.g., Site-Specific Objectives [SSOs]) are established, and the current CTR criterion is depromulgated for the Newport Bay watershed, the CTR water column-based loading capacities will no longer be in effect for these selenium TMDLs.

As there is inherent uncertainty with any model, including the biodynamic model, the actual water column concentrations at which the tissue-based targets are attained may differ from the predicted concentrations derived in the Linkage Analysis. Therefore, once the tissue-based numeric targets are attained, the tissue-based loading capacity/TMDL is equivalent to the water column concentrations that achieve those tissue-based concentrations.

Protection of beneficial uses requires consideration of both the periods of highest selenium exposure (dry weather flows) and the periods of greatest potential harm to the beneficial uses (breeding season and periods of embryonic and/or juvenile development). Dry weather conditions with flows occur year-round, and therefore, present potential periods of high selenium exposure all year. The period of potential greatest harm due to selenium exposure occurs seasonally (spring and early summer). As a result, consideration of seasonal variations could result in the development of different allocations for different periods of the

year or the application of the allocations only during the breeding season. However, to ensure protection of beneficial uses both during the sensitive period and from the higher selenium concentrations that occur during dry weather, a year-round application of the TMDLs and allocations during dry weather conditions is the most protective approach.

Further, to evaluate the influence of seasonality and to provide the most protective assessment of beneficial uses, an averaging period for the WLAs and LAs is appropriate. Averaging periods for the allocations are based on the potential impacts from selenium exposure and variability in observed receiving water data. Since the protection of beneficial uses is linked to chronic not acute selenium conditions, a semi-annual averaging period utilizing an arithmetic mean is appropriate for these TMDLs and allocations. The semi-annual averaging periods are defined as April 1 through September 30 and October 1 through March 31 each year.<sup>2</sup>

- **Phase II of these Selenium TMDLs: Selection of Protective Water Column Concentrations.** During TMDL reconsideration, water column concentrations will be re-evaluated to determine if adjustments to the allocations are necessary to attain the tissue-based numeric targets (and CTR water column-based targets, to the extent they remain in effect) during Phase II of these selenium TMDLs. This evaluation will likely entail running the biodynamic model with new data that have been collected through Phase I. The re-evaluation will include an assessment of additional tissue data collected pursuant to the required monitoring program for these selenium TMDLs to assess progress toward achieving the targets and to reassess the most sensitive endpoint for the selection of appropriate allocations.

Further, during the implementation of Phase II, a more robust process to periodically reassess the allocations will be implemented by the Santa Ana Water Board. During this process, allocations will be adjusted, as needed, over time to result in attainment of the tissue-based targets.

This approach, as well as the rationale for the approach, is the same as that described above for Phase I of these selenium TMDLs.

- **CTR Water Column-Based WLAs and LAs.** Until tissue-based objectives are approved, the CTR chronic criterion for selenium in freshwater

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<sup>2</sup> Note that this averaging period specifically applies to the concentration-based WLAs and LAs. As specifically noted in these selenium TMDLs, where the tissue-based numeric targets are attained, the WLAs/LAs shall be deemed to be attained. In evaluating the tissue-based numeric targets, an annual averaging period is more appropriate since bird eggs are only available during a very limited time of the year, and fish tissue and other biota should also be collected during the same timeframe that the birds are breeding since they constitute a likely source of selenium input. Because selenium concentrations in fish and bird egg tissue are expected to be much more variable than those in water, a geometric mean statistical approach should be employed for evaluating tissue data.

must serve as the final numeric target for selenium for the freshwater areas in the Newport Bay watershed. As a result, water column-based allocations based on the CTR are also included in these selenium TMDLs. However, the CTR water column-based allocations will no longer be in effect if, and when the CTR freshwater criterion has been replaced by revised objectives (e.g., SSOs).

- **Conditional Mass-Based WLAs.** Recognizing the lack of reasonable and feasible BMPs in the watershed, and that allowing certain discharges to be offset rather than prohibited may provide a greater net environmental benefit, conditional mass-based WLAs are included as an alternative to the concentration-based WLAs. As a requirement of the offset and trading program, discharges allowed pursuant to the offset and trading program cannot result in downstream impacts. Therefore, these conditional mass-based WLAs will result in attainment of the loading capacity and thereby attainment of the selenium TMDLs.
- **Attainment of Tissue-Based Numeric Targets.** While the tissue-based water column WLAs and LAs are expected to result in attainment of the tissue-based numeric targets, bioaccumulation in the various foodwebs in the watershed may be different than what was modeled with the biodynamic model as part of the Linkage Analysis. Therefore, where tissue-based numeric targets are attained, the corresponding WLAs/LAs will also be deemed to be attained, regardless of the actual measured water column concentration. This approach emphasizes that the water column concentrations are only surrogate measures, while the tissue-based targets provide for the direct assessment and protection of beneficial uses.
- **Direct Incorporation of the Biodynamic Model into the Tissue-Based WLAs and LAs.** The biodynamic model is directly incorporated into the tissue-based WLAs and LAs. As many assumptions and factors were utilized in developing the initial allocations, future data may warrant revising these assumptions and factors, thereby modifying the allocations. By incorporating the model directly into the allocations, it becomes part of the assumptions and requirements of the allocations and can be modified by the Santa Ana Water Board<sup>3</sup> without necessitating a Basin Plan Amendment. Any such modification to the allocations will be subject to a public review process. However, if future data indicate that a revised modeling approach is warranted (e.g., a bioaccumulation factor (BAF) approach in lieu of the biodynamic model), such a revision would necessitate a Basin Plan Amendment.
- **Assignment of WLAs and LAs at the Subwatershed Scale.** As the selenium TMDLs are based upon a determination of impairment for three subwatersheds (San Diego Creek, Santa Ana-Delhi Channel, and Big Canyon Wash), corresponding WLAs and LAs are also established for each subwatershed. While the San Diego Creek subwatershed contains various

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<sup>3</sup> *Per the Regional Water Board's delegation of authority, the Executive Officer may approve such modifications, subject to a public review and comment process. Upon request, such modifications may be considered directly by the Regional Water Board.*

areas, the water column concentration selected for the WLAs is based upon the Lower San Diego Creek analysis in the Linkage Analysis. Attainment of the allocations in Lower San Diego Creek is expected to result in reductions in both the San Joaquin Marsh Reserve (UCI Wetlands) and the IRWD Constructed Treatment Wetlands such that the tissue targets will be achieved; therefore, no separate allocations for these areas are established at this time.

- **Compliance Options.** To aid in ensuring permitting consistency with the intent of these selenium TMDLs, the WLAs include compliance options as part of the assumptions and requirements of the WLAs.

Options for complying with the selenium WLAs are specified in the TMDLs and are included in this Order. These options include development of a BMP Strategic Plan and/or and Offset and Trading Plan. The specifications for these plans are described in the selenium TMDLs and included in the Provisions of this Order.

#### **e. SIP, CTR, and NTR**

The California Toxics Rule specifies aquatic life numeric criteria for 23 priority toxic pollutants and numeric human health criteria for 57 priority toxic pollutants. These criteria apply to inland surface waters and enclosed bays and estuaries within the Santa Ana Region.

The SIP specifies procedures for implementing the CTR criteria. The procedures include those used to conduct reasonable potential analysis to determine the need for effluent limitations for priority and non-priority pollutants.

CTR criteria for the organic compounds benzene, toluene, carbon tetrachloride, dichlorobromomethane, tetrachloroethylene, trichloroethylene and 1,1-dichloroethylene were considered, but the CTR was only used as an effluent limit for 1,1-dichloroethylene. More stringent applicable standards were used as effluent limits for the other six organic compounds),

Effluent limits for selenium are based on the CTR's aquatic life criteria for selenium, however, as discussed below in Section V.C.3.d, this Order specifies that compliance with the selenium effluent limits will be based on compliance options that are listed in the selenium TMDLs.

Effluent limits for discharges to freshwater based on the CTR metal criteria are included in this Order. Two sets of effluent limits were developed: one set applicable to existing discharges, and a second set applicable to new dischargers with insufficient data to develop effluent limits specific to their discharges.

#### **f. Division of Drinking Water Maximum Contaminant Levels**

Effluent limits for benzene, carbon tetrachloride, methyl tertiary butyl ether (MTBE), tetrachloroethylene (PCE), trichloroethylene (TCE), 1,1-dichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, , and 1,2,3-

trichloropropane (TCP) are based on Maximum Contaminant Levels (MCLs) from the State Board's Division of Drinking Water.

### **3. Determining the Need for WQBELs**

NPDES regulations at 40 CFR 122.44(d)(1)(i) require permits to include WQBELs for all pollutants (non-priority or priority) "which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any narrative or numeric criteria within a State water quality standard" (have Reasonable Potential). Thus, assessing whether a pollutant has Reasonable Potential is the fundamental step in determining whether or not a WQBEL is required.

#### **a. Non-Priority Pollutants**

##### **i. Chlorine Residual**

This Order includes an effluent limit of 0.1 mg/L limit for total residual chlorine based on the numeric water quality objective established in the Basin Plan.

##### **ii. Total Dissolved Substances**

This Order includes effluent limits for TDS based on Basin Plan numeric water quality objectives established for Reaches 1 and 2 of San Diego Creek (Table 2).

##### **iii. Total Inorganic Nitrogen**

This Order implements relevant requirements of the Nutrient TMDL by specifying a TIN effluent limit of 1 mg/L for groundwater dewatering discharges when the TIN concentration in the effluent exceeds 1 mg/L. Dischargers may comply with this requirement by implementing a nitrogen offset project, such as participation in the diversion and treatment of San Diego Creek flows in the IRWD constructed wetlands in the San Joaquin Freshwater Marsh, diversion of high-nitrogen flows to the sanitary sewer, , and/or by implementing other nitrogen management strategies.

For non-groundwater discharges to San Diego Creek, this Order also includes TIN effluent limits based on the Basin Plan numeric water quality objectives established for San Diego Creek (Table 2).

#### **b. Priority Pollutants**

The SIP establishes implementation procedures for priority pollutant criteria promulgated by USEPA through the NTR and the CTR, and for priority pollutant objectives established in Basin Plans.

The SIP specifies procedures to (1) determine which priority pollutants require effluent limits, and (2) calculate effluent limits for those pollutants that have been identified as needing effluent limits.

The need for effluent limits (referred to as a “reasonable potential analysis” or RPA) is determined based on assessment of whether a discharge may (1) cause, (2) have a reasonable potential to cause, or (3) contribute to an excursion above any applicable priority pollutant criterion or objective.

Santa Ana Water Board staff performed an RPA for metals from existing Dischargers covered by Order No. R8-2007-0041. Data used for this analysis consisted of:

**Effluent Data:** Metals data were available from the Irvine Ranch Water District (IRWD) discharges from four groundwater wells (72, 78, ET-1 and ET-2), and from the Michelson Water Reclamation Plant (MWRP) dewatering operation. Data from the past five years (2014 to 2019) were assessed.

**Receiving Water Data:** The County of Orange’s WYLSED monitoring station in Peters Canyon Wash was used to define the minimum receiving water hardness (137 mg/L as calcium carbonate).

**Ambient/Background Water Quality Data:** The County of Orange’s CICF25 monitoring station in the Central Irvine Channel to define the ambient/background metals concentrations.

Data for the receiving water and ambient/background locations were obtained from annual reports submitted by the County of Orange pursuant to the area-wide Municipal Separate Stormwater System (MS4) permit for Orange County (Order No. R8-2009-0030). Three years of data were used: 2015/16 through 2017/18.

Following SIP procedures, Santa Ana Water Board staff identified the maximum effluent concentration (MEC) and maximum background (B) concentration for each metal and compared this information to the most stringent applicable water quality criterion (C).

**c. Reasonable Potential Determination**

The RPA resulted in the identification of copper and mercury as needing effluent limitations (Table 4).

**Table 4: Reasonable Potential Analysis for Metals**

Constituent	C <sup>1</sup> (µg/L)		MEC (µg/L)	B (µg/L)	Reasonable Potential
	Dissolved	Total Recoverable	Total Recoverable	Dissolved	
<i>City of Irvine</i>					
Arsenic	150	150	25.4	5.4	No
<i>Irvine Ranch Water District</i>					
Arsenic	150	150	30	5.4	No
Cadmium	2.8	3.2	0.819	15	No
Chromium III	230	270	< 0.01	--- <sup>2</sup>	No
Chromium VI	11	11	< 1.0	---	No
Copper	12	13	250	42	Yes
Lead	3.5	4.9	1.71	0.63	No
Mercury <sup>3,4</sup>	---	0.012	< 0.05	< 0.22	Yes
Nickel	68	70	7.68	6	No
Silver	5.9	7.3	< 0.028	< 0.2	No
Zinc	150	160	37.9	64	No
<u>Footnotes</u>					
1 Adjusted to receiving water hardness (137 mg/L) for hardness-dependent metal criteria					
2 "---" indicates no data available					
3 Mercury applicable objective from the 2017 Mercury Provisions					
4 Mercury objective and monitoring data are based on calendar year averages					
<u>Abbreviations</u>					
Most restrictive applicable water quality					
C standard/criteria					
MEC Maximum Effluent Concentration					
B Maximum Ambient/Background Concentration					

**4. WQBEL Calculations**

The effluent limit calculation procedure specified in the SIP stipulates that the average monthly effluent limitation is set equal to the effluent concentration allowance (ECA). The ECA is a value derived from the water quality objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation (CV) for the effluent monitoring data, to calculate a long-term average (LTA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (Technical Support Document for Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).



Where there is no mixing zone allowance and a CTR human health objective applies, the ECA is equal to the applicable human health objective. Therefore, in these circumstances, the average monthly effluent limit (AMEL) is equal to the human health objective. The SIP stipulates that where receiving waters are designated with the municipal water supply beneficial use (MUN), the human health objective for the consumption of water and organisms applies in calculating the effluent limitation; where the water is excepted from MUN, the human health objective for the consumption of organisms only applies. This Order includes effluent limits for discharges to receiving waters that are not designated MUN since all identified surface waters in the Newport Bay Watershed are excepted from the MUN beneficial use. For discharges to receiving waters, the AMELs were taken either from the CTR human health objectives for the consumption of organisms only or from the State Board's Division of Drinking Water's MCL.

Each AMEL was multiplied by a factor of 2.01 to determine the maximum daily concentration effluent limit. This factor is the average monthly effluent limit multiplier taken from the SIP. The multiplier corresponds to a coefficient of variation of 0.6 and a number of samples equal to four.

No mixing zone allowance is included in the calculation of effluent limits in this Order and, consequently, compliance with the effluent limits is required to be determined at the end of the discharge pipe for freshwater discharge. If a Discharger requests that a mixing zone allowance be included in the determination of appropriate effluent limits, a dilution model must be provided for approval.

This Order includes average monthly and maximum daily effluent limits (AMELs and MDELs) as required by federal regulations and the SIP. Effluent limits for selenium and metals were developed as described below.

**a. Selenium Effluent Limits**

Default selenium effluent limits and effluent limitations are shown on the first row of Table 5. Selenium effluent limits specific to discharges from the Irvine Ranch Water District (IRWD), based on coefficient of variation data from the past five years are also shown in Table 5. IRWD is currently the only active discharger enrolled in Order No. R8-2007-0041 that is currently required to monitor for selenium.

**b. Metals Effluent Limits**

For all metals other than mercury, the effluent limitations are based on the metals criteria in the California Toxics Rule (CTR). Mercury effluent limitations are based on the objectives in the Statewide Mercury Provisions adopted by the State Water Board in 2017.

The CTR expresses freshwater metal criteria for seven metals (cadmium, chromium III, copper, lead, nickel, silver, and zinc) as a function of hardness

(as  $\text{CaCO}_3$ ) and provides an equation for calculating these criteria. This Order includes a tabulation of calculated effluent limitations for these metals corresponding to fixed hardness values ranging from 1 to 400 mg/L at 1 mg/L increments (Attachment J). The CTR specifies that a hardness of 400 mg/L should be used for all hardness values above 400 mg/L.

Federal regulations require that the effluent limits for metals be expressed as the total recoverable form. The State Implementation Policy (SIP) stipulates that in the absence of site-specific information, the conversion factors provided in the CTR should be used to translate effluent limits expressed as dissolved concentrations to effluent limits expressed as total recoverable concentrations. Because site-specific metal translators have not been developed for the Newport Bay Watershed, the CTR dissolved metals criteria are translated into total recoverable criteria using the equations provided in the CTR, and the total recoverable effluent limitations are then determined using the SIP procedures.

This Order implements the hardness-dependent metals criteria by requiring Dischargers to submit hardness values for their discharge that will be used in determining the appropriate numeric limit for that specific metal constituent(s) in the discharge. The fixed hardness value, which shall be based on the 5th percentile of effluent hardness measurements or the ambient receiving water hardness measurements (whichever is more restrictive), shall be determined and submitted for approval by the Executive Officer of the Regional Water Board. Upon approval of the hardness value for the discharge, the effluent limit for metals discharges to freshwater bodies is determined from the table.

The CTR saltwater metals criteria apply for direct discharges to Newport Bay (except for mercury as described above). These criteria are not hardness-dependent.

Step 6 of the permit limit calculation procedure specified in the SIP stipulates that the average monthly effluent limitation is set equal to the effluent concentration allowance<sup>4</sup>. Where there is no mixing zone allowance and a CTR human health objective applies, the effluent concentration allowance is equal to the applicable human health objective. Therefore, in these circumstances, the average monthly limit (AML) is equal to the human health objective.

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<sup>4</sup> *The EFFLUENT CONCENTRATION ALLOWANCE (ECA) is a value derived from the water quality objective, dilution credit, and ambient background concentration that is used, in conjunction with the coefficient of variation for the effluent monitoring data, to calculate a long-term average (L TA) discharge concentration. The ECA has the same meaning as waste load allocation (WLA) as used in USEPA guidance (Technical Support Document for Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).*

The SIP stipulates that where receiving waters are designated with the municipal water supply beneficial use (MUN), the human health objective for the consumption of water and organisms applies in calculating the effluent limitation. Where the water is excepted from MUN, the human health objective for the consumption of organisms only applies. All surface waters in the Newport Bay Watershed are excepted from the MUN beneficial use, therefore, only human health objectives for the consumption of organisms only were used in calculating effluent limitations.

For discharges to receiving waters, the AMELs were taken either from the CTR human health objectives for the consumption of organisms only or from MCL's established by the State Water Board.

Table 6 below shows the calculations for deriving effluent limitations for metals that are not hardness dependent, including other constituents for freshwater discharges.

Effluent limitations for hardness dependent metals for freshwater discharges are tabulated in Attachment J of this Order. Table 7 shows the calculations for deriving effluent limitations for metals for saltwater discharges.

**Mercury.** This Order implements the statewide water quality standards for mercury that were adopted by the State Water Board in 2017 as an amendment to the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries in the State of California (mercury provisions). The mercury provisions establish human health and wildlife objectives based on methylmercury concentrations in fish tissue. The provisions also include a fish tissue water quality objective for protection of the endangered California least tern that is applicable to Upper Newport Bay.

Chapter IV.D.2 of the mercury provisions translate the methylmercury tissue objectives into water column concentrations for use in reasonable potential analyses and development of effluent limitations. Regional Water Board staff have determined that the applicable water column concentration from the mercury provisions is 12 nanograms per liter (ng/L) for total mercury because. For freshwater this determination is based on the applicability of the 12 ng/L concentration to flowing water bodies (such as creeks and streams), and the applicability of either or both of the wildlife habitat (WILD) or the rare, threatened or endangered species habitat (RARE) to freshwater streams in the Newport Bay Watershed. For saltwater this determination is based on the applicability of the 12 ng/L concentration to waters with tidal mixing (such as upper and lower Newport Bay), and the applicability of one or more of the WILD, RARE, commercial and sportfishing (COMM), and marine habitat (MAR) beneficial uses to Upper Newport Bay and to Lower Newport Bay. There are currently no tribal-related beneficial uses that have been established in the Newport Bay Watershed.

**Table 5: Calculated Freshwater Selenium Effluent Limitations**

Discharger	CTR Freshwater Chronic Criteria for Selenium (µg/L)	Coefficient of Variation	Effluent Limits (µg/L)	
			Daily (MDEL)	Monthly (AMEL)
<b>Default</b>	<b>5</b>	<b>0.6</b>	<b>8.2</b>	<b>4.1</b>
IRWD Well 72	5	0.138	5.8	4.8
IRWD Well 78	5	0.348	7.0	4.5
IRWD Well ET-1	5	0.196	6.2	4.7
IRWD Well ET-2	5	0.324	6.9	4.5
IRWD Michelson Plant Dewatering	5	0.580	8.1	4.1

## 5. Whole Effluent Toxicity

This Order does not specify numeric WET limits. However, this Order requires that the discharge shall not result in acute toxicity in ambient receiving waters. The effluent is deemed to cause acute toxicity when the toxicity test of 100% effluent as required in monitoring and reporting program, results in failure of the test as determined using the pass or fail test protocol specified in Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms (EPA/821-R-02-012, October 2002).

### D. Best Professional Judgement-Based Effluent Limitations

The applicable limits for oil and grease, total petroleum hydrocarbons, toluene, ethylbenzene, xylenes, chloroform, 1,2-dichloroethylene and naphthalene are carried over from Order No. R8-2007-0014 and are based on Best Professional Judgment (BPJ).

Since 1991, the same effluent limits for 1,2-dichloroethylene have been included in permits regulating these discharges. However, in 2003, effluent limitations for the two isomers (cis and trans) that make up 1,2-dichloroethylene were added. To avoid triggering the anti-backsliding provisions of the federal regulations, the effluent limitations for 1,2-dichloroethylene are retained, with the specific condition that the sum of the isomers cis-1,2-dichloroethylene and trans-1,2-dichloroethylene shall not exceed the effluent limitations for 1,2-dichloroethylene.

This Order specifies limits for methyl isobutyl ketone (MIBK), tert butyl alcohol (TBA), perchlorate and methyl ethyl ketone (MEK) that are the same as those specified in Order No. R8-2007-0041 and were based on notification levels identified by the California Department of Public Health/Office of Environmental Health Hazard Assessment (OEHHA). In the case of MEK, the notification level is for methyl isobutyl ketone (MIBK), which is in the same class of liquid organic compounds as MEK.

This Order specifies a limit of 1 µg/L for 1,4-dioxane based on a new notification level (NL) developed by OEHHA in November 2010.

## **E. Discharge Specifications**

Discharge limitations are included in this Order for those other chemicals of concern that typically pollute groundwater at service stations and similar sites within the San Diego Creek/Newport Bay watershed. In addition, the monitoring program includes analyses for additional constituents to determine the overall impact of individual discharges and to screen for unexpected chemicals.

Discharge Limitations established by this Order require authorized Dischargers to compare effluent data, generated through routine monitoring, to effluent limitations. Exceedance of any of the specified effluent limitations may trigger mandatory minimum penalties, accelerated monitoring for certain constituents and may lead to discontinuance

of coverage under this General Permit. The Discharge Specifications impose specific effluent limitations, assuring that authorized discharges are not creating adverse impacts on receiving water quality. When adverse impacts are highlighted following exceedance of

an effluent limitation(s), Dischargers are directed to confirm the findings, to mitigate impacts, to sewer or stop the discharge and/or to seek coverage under an individual NPDES permit.

## **F. Final Effluent Limitations**

### **1. Satisfaction of Anti-Backsliding Requirements**

With the exception of metals (in the entire watershed) and selenium (for direct discharges to Newport Bay) effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R8-2007-0041 and Order No. R8-2005-0079. See above discussion regarding Anti-Backsliding.

### **2. Satisfaction of Antidegradation Policy**

Discharges in conformance with the requirements of this Order will not result in a lowering of water quality and therefore conform to antidegradation requirements specified in Resolution No. 68-16, which incorporates the federal antidegradation policy at 40 CFR §131.12 where, as here, it is applicable.

For discharges containing pollutants for which TMDLs have been established, the effluent limits in this Order implement TMDL WLAs applicable to the types of discharges covered by this Order.

### **3. Stringency of Requirements for Individual Pollutants**

Water quality-based effluent limitations have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the

applicable standard pursuant to 40 CFR §131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. Apart from certain standards changes resulting from the N/TDS Basin Plan amendment, all beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless "applicable water quality standards for purposes of the CWA" pursuant to §131.21 (c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

#### **4. Basis and Summary of Final Effluent Limitations**

The freshwater selenium effluent limits in Table 5 are based on the CTR and calculated using the SIP procedures, however, the applicability of these effluent limits, relative to subwatershed-specific or mass-based effluent limits, will be determined pursuant to the selenium TMDLs as described above in Sections IV.D.2 and V.C.2.d.

The reasonable potential analysis for metals in freshwater (Table 4) lists the CTR criteria that were applied and used as the basis for the calculated effluent limits in Table 6. The metal effluent limits for saltwater (Table 7) also lists the CTR criteria that were used. Both freshwater and saltwater effluent limits were calculated using SIP procedures.

Table 8 summarizes the effluent limitations for VOCs and other organic compounds and provides the basis for those limitations.

**Table 6: Effluent Limitation Calculations: Non-Hardness-Dependent Metal Discharges to Freshwater (see Attachment J for hardness-dependent metals)**

Constituent	CTR Criteria expressed as total recoverable		Human Health Criteria - Organisms Only (µg/L)	ECA Multiplier (CV=0.6)		LTA	LTA Multiplier (CV=0.6)		Effluent Limitation	
	Aquatic Life Criteria (µg/L)			Acute =0.321	Chronic =0.527		MDEL =3.11	AMEL =1.55		
	CMC	CCC	Acute LTA	Chronic LTA	MDEL (µg/L)	AMEL (µg/L)	MDEL (µg/L)	AMEL (µg/L)		
Arsenic	340	150	---	109	79.1	79.1	246	123	246	123
Chromium VI	16	11	---	5.1	5.8	5.14	16.0	8.0	16	8.0
Mercury <sup>2,3</sup>	---	---	0.012	not applicable					0.012	
Selenium	---	5	---		2.6	2.6	8.2	4.1	8.2	4.1

Footnotes

- 1 "---" indicates no CTR criteria established
- 2 Mercury CTR criteria (0.051 µg/L) is replaced by objective from the 2017 Mercury Provisions
- 3 Mercury effluent limitation is expressed as a calendar year average

Abbreviations

- CTR California Toxics Rule
- ECA Effluent Concentration Allowance (equal to the Criteria when no dilution credits)
- CV Coefficient of Variation
- LTA Long Term Average
- MDEL Maximum Daily Effluent Limit
- AMEL Average Monthly Effluent Limit
- CMC Criterion Maximum Concentration (for acute exposure)
- CCC Criterion Continuous Concentration (for (chronic exposure)

**Table 7: Effluent Limitation Calculations: Metal Discharges to Saltwater**

Constituent	CTR Criteria (ug/L) expressed as total recoverable		ECA Multiplier (CV = 0.6)		LTA	LTA Multiplier (CV = 0.6)		Human Health Multiplier		Effluent Limitation (ug/L)		
	Saltwater Aquatic Life Criteria	Saltwater Human Health Criteria - Organisms Only	Acute 0.321	Chronic 0.527		MDEL 3.11	AMEL 1.55	MDEL 2.01				
	CMC	CCC	Acute LTA	Chronic LTA		MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	
Arsenic	69	36	---	22.1	19.0	19.0	59	29	---	---	59	29
Cadmium	42	9.4	---	13.5	4.95	5.0	15	7.7	---	---	15	7.7
Chromium VI	1100	50	---	353	26.4	26.4	82	41	---	---	82	41
Copper	5.8	3.7	---	1.86	1.95	1.86	5.8	2.9	---	---	5.8	2.9
Lead	220	8.5	---	70.6	4.48	4.48	14	6.9	---	---	14	6.9
Mercury <sup>2,3</sup>	---	---	0.012	not applicable							0.012	
Nickel	75	8.3	4,600	24.1	4.37	4.37	14	6.8	9,246	4,600	14	6.8
Selenium	290	71	---	93.1	37.4	37.4	116	58	---	---	116	58
Silver	2.2	---	---	0.71	---	0.71	2.2	1.09	---	---	2.2	1.09
Zinc	95	86	---	30.5	45.3	30.5	95	47	---	---	95	47

Footnotes

- 1 "----" indicates no CTR criteria established
- 2 Mercury CTR criteria (0.051 µg/L) is replaced by the objective from the 2017 Mercury Provisions
- 3 Mercury effluent limitation is expressed as a calendar year average

CTR California Toxics Rule

ECA Effluent Concentration Allowance (equal to the criteria when no dilution credits are specified)

CV Coefficient of Variation

LTA Long Term Average

MDEL Maximum Daily Effluent Limit

AMEL Average Monthly Effluent Limit

CMC Criterion Maximum Concentration (for acute exposure)

CCC Criterion Continuous Concentration (for (chronic exposure)



**Table 8: Basis and Summary of Final Effluent Limitations for VOCs and other Organics**

Constituent	Current Limitations		MCL Limitations (µg/L)	Best Professional Judgment Limitations (µg/L unless specified otherwise)	CTR Limitations: Human Health: Organisms Only (µg/L)
	Maximum Daily Limit (µg/L)	Average Monthly Limit (µg/L)			
Benzene	2	1	[1]		71
Toluene	20	10	150	[10]	200,000
Xylenes	20	10	1,750	[10]	
Ethylbenzene	20	10	300	[10]	
Carbon Tetrachloride	1	0.5	[0.5]		4.4
Chloroform	10	5		[5]	
Dichlorobromomethane	10	5		[5]	46
Methyl Ethyl Ketone	241	120		[120]	
Methyl Isobutyl Ketone (MIBK)	241	120		[120*]	
Methyl Tertiary Butyl Ether (MTBE)	26	13	[13]		
Naphthalene	20	10	17*	[10]	
Tetrachloroethylene (PCE)	10	5	[5]		8.85
Trichloroethylene (TCE)	10	5	[5]		81
1,1-Dichloroethane	10	5	[5]		
1,1-Dichloroethylene	6.4	3.2	6		[3.2]
1,2-Dichloroethylene (sum of cis & trans)	20	10		[10]	
1,2-Dichloroethylene (cis)	12	6	[6]		
1,2-Dichloroethylene (trans)	20	10	[10]		
1,1,1-Trichloroethane (TCA)	10	5	200	[5]	
Tert Butyl Alcohol (TBA)	24	12		[12*]	
1,4-Dioxane	2	1		[1*]	
Perchlorate	8	4	6*	[4]	
1,2,3-Trichloropropane (TCP)	0.001	0.005	[0.005]		

*Note: Limits marked with \* are Notification Levels; Limits in brackets [ ] are the criteria selected as effluent limits for this Order.*

## **VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS**

CWC §§13267 and 13383 authorize the Santa Ana Water Boards to require technical and monitoring reports. 40 CFR §122.48 requires all NPDES permits to specify recording and reporting of monitoring results. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement State and federal requirements.

The Executive Officer shall model individual Monitoring and Reporting Programs on that provided in Attachment E. However, the number of constituents to be monitored and the monitoring and reporting frequency may be modified on a case-by-case basis, based on the nature of the discharge being authorized. Revision of each individual monitoring and reporting program by the Executive Officer may be necessary to confirm that the Discharger is in compliance with the requirements and provisions contained in this Order. Revisions may be made by the Executive Officer at any time during the term of this Order, and may include a reduction or an increase in the number of constituents to be monitored, the frequency of monitoring, the number and size of samples collected, and the frequency for report submittal.

### **A. Influent Monitoring – Not Applicable**

### **B. Effluent Monitoring**

Dischargers are required to conduct monitoring of the permitted discharges in order to evaluate compliance with permit conditions and to allow ongoing characterization of discharges to determine potential adverse impacts and to determine continued suitability for coverage under the General Order.

In addition to discharge rate, effluent will typically be required to be monitored for selenium, nitrogen, TDS, pH, total suspended solids, total petroleum hydrocarbons, VOCs, sulfides and/or chlorine residual depending on the nature of the discharge.

Per- and polyfluoroalkyl substances (PFAS) are a large group of more than 3,000 synthetic organofluorine compounds that are used in the production of a wide range of industrial and household products. PFAS are persistent in the environment and highly mobile in water. The four major sources for PFAS are firefighting training/response sites, industrial sites, landfills, wastewater treatment plants/biosolids.

In August 2019, the State Water Board's Division of Drinking Water (DDW) established notification levels for perfluorooctane sulfonic acid (PFOS) and perfluorooctanoic acid (PFOA) (6.5 parts per trillion for PFOS and 5.1 parts per trillion for PFOA). PFOS and PFOA are no longer manufactured or imported into the United States but remain in the environment due to historical use. Notification levels are a nonregulatory, precautionary health-based measure for concentrations in drinking water that warrant notification and further monitoring and assessment.

This Order does not include effluent limits for PFOA and PFOS monitoring because of the low potential for discharges covered by this Order to reach waters with the MUN beneficial use. All surface waters in the Newport Bay Watershed are excepted from the MUN beneficial use, and surface waters. Furthermore, in the central part of the Newport Bay watershed, groundwater discharges to freshwater streams are unlikely to percolate to the deep regional aquifer (the Irvine GWMZ) because of the presence of an intervening, poorly transmissive shallow groundwater zone. As described above (Section IV.C.1) this shallow groundwater zone is not designated as MUN and is poorly connected to the Irvine GWMZ. Most channels/streams in the central portion of the Newport Bay Watershed are excavated (or have eroded) below the shallow groundwater table and receive inflow from the shallow groundwater zone rather than recharging groundwater.

However, this Order does require PFOA and PFOS monitoring for discharges originating from groundwater. Monitoring of groundwater discharges to areas outside of the shallow groundwater zone is warranted because these compounds have been detected in a portion of the Irvine GWMZ. IRWD, a Discharger under Order No. R8-2007-0041, currently monitors PFAS in groundwater affected by a volatile organic contaminant plume that originated from the former Marine Corps Air Station (MCAS), El Toro. PFAS detected in groundwater is believed to have originated from a fire-fighting training area on former MCAS El Toro.

### **C. Whole Effluent Toxicity Testing Requirements**

Whole effluent toxicity (WET) protects the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative "no toxics in toxic amounts" criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a shorter time period and measures mortality. A chronic toxicity test is conducted over a longer period of time and may measure mortality, reproduction, and growth.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental response on aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota.

This Order requires the Discharger to conduct acute toxicity testing of the effluent annually. This Order also requires the Discharger to conduct an Initial Investigation Toxicity Reduction Evaluation (TRE) program when the acute toxicity test fails. Based on a review of monitoring data, there have been instances in which acute test failures can be attributed to salinity additions required to conduct the test. When this situation occurs, the Discharger normally performs additional acute testing of the effluent coupled with testing for all the priority pollutants. If the additional acute testing still fails and the priority pollutant scan shows no pollutants at levels of concern, acute testing is stopped

and the acute test failure is presumed to be caused by ionic imbalance in the waste effluent (as described in relevant literature).

#### **D. Receiving Water Monitoring**

Many of the effluent limitations in this Order are not applicable if the effluent does not reach a flowing stream. Whenever there is a discharge and the Discharger asserts that the discharge percolated before it reached a stream with aquatic life, the Discharger is required to record in a permanent log the following information: (a) the date(s), time(s), and duration(s) of the discharge; (b) a description of the location where the discharge(s) percolated into the ground, (c) the climatic condition in the area during the discharge and (d) the name of the individual(s) who performed the observation.

For discharges that do reach a stream, the Discharger is required to make visual observations of the receiving water on a weekly basis for any visible oil sheen or coloration of the receiving water. The findings of these observations are required to be recorded in a permanent log.

In addition, dischargers with elevated selenium levels in their effluent, may need to undertake monitoring for selenium in receiving water as detailed in the MRP (Attachment E).

#### **E. Reporting Requirements**

Dischargers will be required to submit monitoring reports according to the schedule detailed in the MRP (Attachment E).

### **VII. RATIONALE FOR PROVISIONS**

#### **A. Standard Provisions**

Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR §122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR §122.42, are provided in Attachment D.

40 CFR §122.41(a)(1) and (b) through (n) establish conditions that apply to all State-issued NPDES permits. These conditions must be incorporated into the permits either expressly or by reference. If incorporated by reference, a specific citation to the regulations must be included in the Order. 40 CFR §123.25(a)(12) allows the state to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR §123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR §122.41(j)(5) and (k)(2) because the enforcement authority under the CWC is more stringent. In lieu of these conditions, this Order incorporates by reference CWC §13387(e).

## **B. Nutrient TMDL WLA Compliance Provisions**

The compliance provisions in the Order are expected to result in attainment of the WLAs.

## **C. Selenium TMDL WLA Compliance Provisions**

The compliance provisions in the Order are expected to result in attainment of the WLAs.

## **D. Special Provisions**

### **1. Reopener Provisions**

This provision is based on 40 CFR Part 123. The Santa Ana Water Board may reopen this Order to modify permit conditions and requirements. Causes for modifications include the promulgation of new regulations, or adoption of new regulations by the State Board or Santa Ana Water Board, including revisions to the Basin Plan.

## **VIII. PUBLIC PARTICIPATION**

The Santa Ana Water Board is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) general permit for discharges to surface waters that pose an insignificant (de minimis) threat to water quality within the Santa Ana Region. The Santa Ana Water Board encourages public participation in the WDR adoption process.

### **A. Notification of Interested Parties**

The Santa Ana Water Board has notified current enrollees under Order No. R8-2007-0041 (as amended by Order No. R8-2009-0045), the City of Irvine (Order No. R8-2005-0079), and interested agencies and persons of its intent to replace these Orders with new general waste discharge requirements and has provided them with an opportunity to submit their written comments and recommendations. Notification was also provided through the posting of a copy of the tentative Order at the Santa Ana Water Board website:

[http://www.waterboards.ca.gov/santaana/board\\_decisions/tentative\\_orders/index.shtml](http://www.waterboards.ca.gov/santaana/board_decisions/tentative_orders/index.shtml)  
on or before November 6, 2019.

### **B. Written Comments**

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments must be submitted either in person or by mail to the Executive Office at the Santa Ana Water Board at the address above on the cover page of this Order.

### **C. Public Hearing**

The Regional Water Board will hold a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: December 6, 2019  
Time: 9:00 A.M.  
Location: [City of Huntington Beach](#)  
Council Chambers  
2000 Main Street  
Huntington Beach, CA 92648

Interested persons are invited to attend. At the public hearing, the Regional Water Board will hear testimony, if any, pertinent to the discharge, WDRs, and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address <http://www.waterboards.ca.gov/santaana> where you can access the current agenda for changes in dates and locations.

### **D. Waste Discharge Requirements Petitions**

Any aggrieved person may petition the State Water Resources Control Board to review the decision of the Regional Water Board regarding the final WDRs. The petition must be submitted within 30 days of the Santa Ana Water Board's action to the following address:

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

### **E. Information and Copying**

Related documents, comments received, and other information are on file and may be inspected at the address above at any time between 9:00 a.m. and 3:00 p.m. Monday through Friday. Copying of documents may be arranged through the Santa Ana Water Board by calling (951) 782-4130.

### **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 Santa Ana Water Board, reference this 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 Ryan Harris at (951) 320-2008.

**ATTACHMENT G - EPA PRIORITY POLLUTANT LIST**

<b>EPA PRIORITY POLLUTANT LIST</b>		
<b>Metals</b>	<b>Acid Extractibles</b>	<b>Base/Neutral Extractibles (continuation)</b>
1. Antimony	45. 2-Chlorophenol	91. Hexachloroethane
2. Arsenic	46. 2,4-Dichlorophenol	92. Indeno (1,2,3-cd) Pyrene
3. Beryllium	47. 2,4-Dimethylphenol	93. Isophorone
4. Cadmium	48. 2-Methyl-4,6-Dinitrophenol	94. Naphthalene
5a. Chromium (III)	49. 2,4-Dinitrophenol	95. Nitrobenzene
5b. Chromium (VI)	50. 2-Nitrophenol	96. N-Nitrosodimethylamine
6. Copper	51. 4-Nitrophenol	97. N-Nitrosodi-N-Propylamine
7. Lead	52. 3-Methyl-4-Chlorophenol	98. N-Nitrosodiphenylamine
8. Mercury	53. Pentachlorophenol	99. Phenanthrene
9. Nickel	54. Phenol	100. Pyrene
10. Selenium	55. 2, 4, 6 – Trichlorophenol	101. 1,2,4-Trichlorobenzene
11. Silver	<b>Base/Neutral Extractibles</b>	<b>Pesticides</b>
12. Thallium	56. Acenaphthene	102. Aldrin
13. Zinc	57. Acenaphthylene	103. Alpha BHC
<b>Miscellaneous</b>	58. Anthracene	104. Beta BHC
14. Cyanide	59. Benzidine	105. Delta BHC
15. Asbestos (not required unless requested)	60. Benzo (a) Anthracene	106. Gamma BHC
16. 2,3,7,8-Tetrachlorodibenzo-P-Dioxin (TCDD)	61. Benzo (a) Pyrene	107. Chlordane
<b>Volatile Organics</b>	62. Benzo (b) Fluoranthene	108. 4, 4' - DDT
17. Acrolein	63. Benzo (g,h,i) Perylene	109. 4, 4' - DDE
18. Acrylonitrile	64. Benzo (k) Fluoranthene	110. 4, 4' - DDD
19. Benzene	65. Bis (2-Chloroethoxy) Methane	111. Dieldrin
20. Bromoform	66. Bis (2-Chloroethyl) Ether	112. Alpha Endosulfan
21. Carbon Tetrachloride	67. Bis (2-Chloroisopropyl) Ether	113. Beta Endosulfan
22. Chlorobenzene	68. Bis (2-Ethylhexyl) Phthalate	114. Endosulfan Sulfate
23. Chlorodibromomethane	69. 4-Bromophenyl Phenyl Ether	115. Endrin
24. Chloroethane	70. Butylbenzyl Phthalate	116. Endrin Aldehyde
25. 2-Chloroethyl Vinyl Ether	71. 2-Chloronaphthalene	117. Heptachlor
26. Chloroform	72. 4-Chlorophenyl Phenyl Ether	118. Heptachlor Epoxide
27. Dichlorobromomethane	73. Chrysene	119. PCB 1016



Order No. R8-2019-0061, NPDES No. CAG918002  
 General WDRs for Groundwater Discharges to Surface  
 Waters within the Newport Bay Watershed

28. 1,1-Dichloroethane	74. Dibenzo (a,h) Anthracene	120. PCB 1221
29. 1,2-Dichloroethane	75. 1,2-Dichlorobenzene	121. PCB 1232
30. 1,1-Dichloroethylene	76. 1,3-Dichlorobenzene	122. PCB 1242
31. 1,2-Dichloropropane	77. 1,4-Dichlorobenzene	123. PCB 1248
32. 1,3-Dichloropropylene	78. 3,3'-Dichlorobenzidine	124. PCB 1254
33. Ethylbenzene	79. Diethyl Phthalate	125. PCB 1260
34. Methyl Bromide	80. Dimethyl Phthalate	126. Toxaphene
35. Methyl Chloride	81. Di-n-Butyl Phthalate	
36. Methylene Chloride	82. 2,4-Dinitrotoluene	
37. 1,1,2,2-Tetrachloroethane	83. 2,6-Dinitrotoluene	
38. Tetrachloroethylene	84. Di-n-Octyl Phthalate	
39. Toluene	85. 1,2-Dipenylhydrazine	
40. 1,2-Trans-Dichloroethylene	86. Fluoranthene	
41. 1,1,1-Trichloroethane	87. Fluorene	
42. 1,1,2-Trichloroethane	88. Hexachlorobenzene	
43. Trichloroethylene	89. Hexachlorobutadiene	
44. Vinyl Chloride	90. Hexachlorocyclopentadiene	

**ATTACHMENT H – MINIMUM LEVELS**

**MINIMUM LEVELS IN PPB (µg/l)**

<b>Table 1- VOLATILE SUBSTANCES<sup>1</sup></b>	<b>GC</b>	<b>GCMS</b>
Acrolein	2.0	5
Acrylonitrile	2.0	2
Benzene	0.5	2
Bromoform	0.5	2
Carbon Tetrachloride	0.5	2
Chlorobenzene	0.5	2
Chlorodibromomethane	0.5	2
Chloroethane	0.5	2
Chloroform	0.5	2
Dichlorobromomethane	0.5	2
1,1 Dichloroethane	0.5	1
1,2 Dichloroethane	0.5	2
1,1 Dichloroethylene	0.5	2
1,2 Dichloropropane	0.5	1
1,3 Dichloropropylene (volatile)	0.5	2
Ethylbenzene	0.5	2
Methyl Bromide ( <i>Bromomethane</i> )	1.0	2
Methyl Chloride ( <i>Chloromethane</i> )	0.5	2
Methylene Chloride ( <i>Dichloromethane</i> )	0.5	2
1,1,2,2 Tetrachloroethane	0.5	1
Tetrachloroethylene	0.5	2
Toluene	0.5	2
trans-1,2 Dichloroethylene	0.5	1
1,1,1 Trichloroethane	0.5	2
1,1,2 Trichloroethane	0.5	2
Trichloroethylene	0.5	2
Vinyl Chloride	0.5	2
1,2 Dichlorobenzene (volatile)	0.5	2
1,3 Dichlorobenzene (volatile)	0.5	2
1,4 Dichlorobenzene (volatile)	0.5	2

**Selection and Use of Appropriate ML Value:**

ML Selection: When there is more than one ML value for a given substance, the discharger may select any one of those ML values, and their associated analytical methods, listed in this Attachment that are below the calculated effluent limitation for compliance determination. If no ML value is below the effluent limitation, then the discharger shall select the lowest ML value, and its associated analytical method, listed in the PQL Table.

<sup>1</sup> *The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.*

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ML Usage: The ML value in this Attachment represents the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences. Assuming that all method-specific analytical steps are followed, the ML value will also represent, after the appropriate application of method-specific factors, the lowest standard in the calibration curve for that specific analytical technique. Common analytical practices sometimes require different treatment of the sample relative to calibration standards.

Note: chemical names in parenthesis and italicized is another name for the constituent.

**MINIMUM LEVELS IN PPB (µg/l)**

<b>Table 2 – Semi-Volatile Substances<sup>2</sup></b>	<b>GC</b>	<b>GCMS</b>	<b>LC</b>
2-Chloroethyl vinyl ether	1	1	
2 Chlorophenol	2	5	
2,4 Dichlorophenol	1	5	
2,4 Dimethylphenol	1	2	
4,6 Dinitro-2-methylphenol	10	5	
2,4 Dinitrophenol	5	5	
2- Nitrophenol		10	
4- Nitrophenol	5	10	
4 Chloro-3-methylphenol	5	1	
2,4,6 Trichlorophenol	10	10	
Acenaphthene	1	1	0.5
Acenaphthylene		10	0.2
Anthracene		10	2
Benzidine		5	
Benzo (a) Anthracene (1,2 <i>Benanthracene</i> )	10	5	
Benzo(a) pyrene (3,4 <i>Benzopyrene</i> )		10	2
Benzo (b) Flouranthene (3,4 <i>Benzofluoranthene</i> )		10	10
Benzo(g,h,i)perylene		5	0.1
Benzo(k)fluoranthene		10	2
bis 2-(1-Chloroethoxyl) methane		5	
bis(2-chloroethyl) ether	10	1	
bis(2-Chloroisopropyl) ether	10	2	
bis(2-Ethylhexyl) phthalate	10	5	
4-Bromophenyl phenyl ether	10	5	
Butyl benzyl phthalate	10	10	
2-Chloronaphthalene		10	
4-Chlorophenyl phenyl ether		5	
Chrysene		10	5
Dibenzo(a,h)-anthracene		10	0.1
1,2 Dichlorobenzene (semivolatile)	2	2	
1,3 Dichlorobenzene (semivolatile)	2	1	
1,4 Dichlorobenzene (semivolatile)	2	1	
3,3' Dichlorobenzidine		5	
Diethyl phthalate	10	2	
Dimethyl phthalate	10	2	
di-n-Butyl phthalate		10	
2,4 Dinitrotoluene	10	5	
2,6 Dinitrotoluene		5	
di-n-Octyl phthalate		10	
1,2 Diphenylhydrazine		1	

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Fluoranthene	10	1	0.05
Fluorene		10	0.1
Hexachloro-cyclopentadiene	5	5	
1,2,4 Trichlorobenzene	1	5	

**MINIMUM LEVELS IN PPB (µg/l)**

<b>Table 2 - SEMI-VOLATILE SUBSTANCES<sup>2</sup></b>	<b>GC</b>	<b>GCMS</b>	<b>LC</b>	<b>COLOR</b>
Pentachlorophenol	1	5		
Phenol <sup>3</sup>	1	1		50
Hexachlorobenzene	5	1		
Hexachlorobutadiene	5	1		
Hexachloroethane	5	1		
Indeno(1,2,3,cd)-pyrene		10	0.05	
Isophorone	10	1		
Naphthalene	10	1	0.2	
Nitrobenzene	10	1		
N-Nitroso-dimethyl amine	10	5		
N-Nitroso -di n-propyl amine	10	5		
N-Nitroso diphenyl amine	10	1		
Phenanthrene		5	0.05	
Pyrene		10	0.05	

<b>Table 3– INORGANICS<sup>4</sup></b>	<b>FA A</b>	<b>GFA A</b>	<b>IC P</b>	<b>ICPM S</b>	<b>SPGF AA</b>	<b>HYDRIDE</b>	<b>CVA A</b>	<b>COLOR</b>	<b>DCP</b>
Antimony	10	5	50	0.5	5	0.5			1000
Arsenic		2	10	2	2	1		20	1000
Beryllium	20	0.5	2	0.5	1				1000
Cadmium	10	0.5	10	0.25	0.5				1000
Chromium (total)	50	2	10	0.5	1				1000
Chromium VI	5							10	
Copper	25	5	10	0.5	2				1000
Lead	20	5	5	0.5	2				1000 0
Mercury				0.5			0.2		
Nickel	50	5	20	1	5				1000
Selenium		5	10	2	5	1			1000
Silver	10	1	10	0.25	2				1000
Thallium	10	2	10	1	5				1000
Zinc	20		20	1	10				1000
Cyanide								5	

<sup>2</sup> With the exception of phenol by colorimetric technique, the normal method-specific factor for these substances is 1000, therefore, the lowest standards concentration in the calibration curve is equal to the above ML value for each substance multiplied by 1000.

<sup>3</sup> Phenol by colorimetric technique has a factor of 1.

<sup>4</sup> The normal method-specific factor for these substances is 1, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

**MINIMUM LEVELS IN PPB ( $\mu\text{g/l}$ )**

<b>Table 4- PESTICIDES – PCBs<sup>5</sup></b>	<b>GC</b>
Aldrin	0.005
alpha-BHC ( <i>a</i> -Hexachloro-cyclohexane)	0.01
beta-BHC ( <i>b</i> -Hexachloro-cyclohexane)	0.005
Gamma-BHC ( <i>Lindane</i> ; <i>g</i> -Hexachloro-cyclohexane)	0.02
Delta-BHC ( <i>d</i> -Hexachloro-cyclohexane)	0.005
Chlordane	0.1
4,4'-DDT	0.01
4,4'-DDE	0.05
4,4'-DDD	0.05
Dieldrin	0.01
Alpha-Endosulfan	0.02
Beta-Endosulfan	0.01
Endosulfan Sulfate	0.05
Endrin	0.01
Endrin Aldehyde	0.01
Heptachlor	0.01
Heptachlor Epoxide	0.01
PCB 1016	0.5
PCB 1221	0.5
PCB 1232	0.5
PCB 1242	0.5
PCB 1248	0.5
PCB 1254	0.5
PCB 1260	0.5
Toxaphene	0.5

Techniques:

GC - Gas Chromatography

GCMS - Gas Chromatography/Mass Spectrometry

HRGCMS - High Resolution Gas Chromatography/Mass Spectrometry (i.e., EPA 1613, 1624, or 1625)

LC - High Pressure Liquid Chromatography

FAA - Flame Atomic Absorption

GFAA - Graphite Furnace Atomic Absorption

HYDRIDE - Gaseous Hydride Atomic Absorption

CVAA - Cold Vapor Atomic Absorption

ICP - Inductively Coupled Plasma

ICPMS - Inductively Coupled Plasma/Mass Spectrometry

<sup>5</sup> *The normal method-specific factor for these substances is 100, therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 100.*

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SPGFAA - Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)  
DCP - Direct Current Plasma  
COLOR - Colorimetric



**ATTACHMENT I – TRIGGERS FOR MONITORING PRIORITY POLLUTANTS**

	CONSTITUENT	µg/L
1	Antimony	7
2	Arsenic	75
3	Beryllium	--
4	Cadmium	3.7
5a	Chromium III	120
5b	Chromium VI	5.5
6	Copper	14.2
7	Lead	12.2
8	Mercury	0.026
9	Nickel	30
10	Selenium	2.5
11	Silver	11.2
12	Thallium	2.8
13	Zinc	70
14	Cyanide	2.6
15	Asbestos	--
16	2,3,7,8-TCDD (Dioxin)	0.00000 0007
17	Acrolein	160
18	Acrylonitrile	0.03
19	Benzene	0.6
20	Bromoform	2.2
21	Carbon Tetrachloride	0.13
22	Chlorobenzene	340
23	Chlorodibromomethane	0.22
24	Chloroethane	--
25	2-Chloroethyl vinyl ether	--
26	Chloroform	--
27	Dichlorobromomethane	0.28
<b>28</b>	<b>1,1-Dichloroethane</b>	<b>5</b>
29	1,2-Dichloroethane	0.19
30	1,1-Dichloroethylene	0.029
31	1,2-Dichloropropane	0.26
32	1,3-Dichloro propylene	5
<b>33</b>	<b>Ethylbenzene</b>	<b>0.3</b>

	CONSTITUENT	µg/L
38	Tetrachloroethylene	0.4
<b>39</b>	<b>Toluene</b>	<b>0.15</b>
<b>40</b>	<b>1,2,-Trans-dichloroethylene</b>	<b>10</b>
<b>41</b>	<b>1,1,1-Trichloroethane</b>	<b>200</b>
42	1,1,2-Trichloroethane	0.3
43	Trichloroethylene	1.35
<b>44</b>	<b>Vinyl Chloride</b>	<b>0.5</b>
45	2-Chlorophenol	60
46	2,4-Dichlorophenol	46.5
47	2,4-Dimethylphenol	270
48	2-Methy-4,6-Dinitrophenol	6.7
49	2,4-Dinitrophenol	35
50	2-Nitrophenol	--
51	4-Nitrophenol	--
52	3-Methyl-4-Chlorophenol	--
53	Pentachlorophenol	0.14
54	Phenol	10500
55	2,4,6-Trichlorophenol	1.05
56	Acenaphthene	600
57	Acenaphthylene	--
58	Anthracene	4800
59	Benzidine	0.00006
60	Benzo (a) anthracene	0.0022
61	Benzo (a) pyrene	0.0022
62	Benzo (b) fluoranthene	0.0022
63	Benzo (g,h,i) pyrene	--
64	Benzo (k) fluoranthene	0.0022
65	Bis (2-Chloroethoxy) methane	--
66	Bis (2-Chloroethyl) ether	0.016
67	Bis (2-Chloroisopropyl) ether	700
68	Bis (2-ethylhexyl) phthalate	0.9
69	4-Bromophenyl phenyl ether	--
70	Butyl benzyl phthalate	1500
71	2-Chloronaphthalene	850

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	<b>CONSTITUENT</b>	<b>µg/L</b>
34	Methyl Bromide	24
35	Methyl Chloride	--
36	Methylene Chloride	2.4
37	1,1,2,2- Tetrachloroethane	0.085

	<b>CONSTITUENT</b>	<b>µg/L</b>
72	4-Chlororphenyl phenyl ether	--
73	Chrysene	0.0022
74	Dibenzo (a,h) anthracene	0.0022
<b>75</b>	<b><i>1,2-Dichlorobenzene</i></b>	<b><i>0.6</i></b>

See notes below for italicized constituents.

**ATTACHMENT I. -Continued**

	CONSTITUENT	µg/L
76	1,3-Dichlorobenzene	200
<b>77</b>	<b>1,4-Dichlorobenzene</b>	<b>5</b>
78	3,3-Dichlorobenzidine	0.02
79	Diethyl phthalate	11,500
80	Dimethyl phthalate	156,500
81	Di-N-butyl phthalate	1,350
82	2,4-Dinitrotoluene	0.055
83	2,6-Dinitrotoluene	--
84	Di-N-octyl phthalate	--
85	1,2-Diphenylhydrazine	0.02
86	Fluoranthene	150
87	Fluorene	650
88	Hexachlorobenzene	0.00038
89	Hexachlorobutadiene	0.22
<b>90</b>	<b>Hexachlorocyclopentadiene</b>	<b>50</b>
91	Hexachloroethane	0.95
92	Indeno (1,2,3-cd) pyrene	0.0022
93	Isophorone	4.2
<b>94</b>	<b>Naphthalene</b>	<b>17</b>
95	Nitrobenzene	8.5
96	N-Nitrosodimethylamine	0.00035
97	N-Nitrosodi-N-propylamine	0.0025
98	N-Nitrosodiphenylamine	2.5
99	Phenantrene	--

	CONSTITUENT	µg/L
100	Pyrene	480
<b>101</b>	<b>1,2,4-Trichlorobenzene</b>	<b>5</b>
102	Aldrin	0.00007
103	BHC Alpha	0.0020
104	BHC Beta	0.007
105	BHC Gamma	0.010
106	BHC Delta	--
107	Chlordane	0.00029
108	4,4-DDT	0.0003
109	4,4-DDE	0.0003
110	4,4-DDD	0.00042
111	Dieldrin	0.00007
112	Endosulfan Alpha	0.028
113	Endosulfan Beta	0.028
114	Endosulfan Sulfate	55
115	Endrin	0.018
116	Endrin Aldehyde	0.38
117	Heptachlor	0.00011
118	Heptachlor Epoxide	0.00005
119	PCB 1016	5
120	PCB 1221	5
125	PCB 1260	5
126	Toxaphene	0.00037

Notes:

1. For constituents not shown italicized, the values shown in the Table are fifty percent of the most stringent applicable receiving water objectives (freshwater or human health (consumption of water and organisms) as specified for that pollutant in 40 § CFR 131.38<sup>1</sup>).

<sup>1</sup> See Federal Register/ Vol. 65, No. 97 / Thursday, May 18, 2000 / Rules and Regulations.

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2. For constituents shown bold and italicized, the values shown in the Table are based on the California Department of Health Services maximum contaminant levels (MCLs) or Notification Level. Notification Level based trigger is underlined.
3. For hardness dependent metals, the hardness value used is 120 mg/L and for pentachlorophenol, the pH value used is 7.5 standard units

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
20	0.7	0.4	90	45	3.1	1.5	0.7	0.3	21	11	0.25	---	31	15
21	0.8	0.4	95	47	3.2	1.6	0.7	0.4	23	11	0.28	---	32	16
22	0.8	0.4	98	49	3.4	1.7	0.8	0.4	23	11	0.30	---	33	16
23	0.9	0.4	102	51	3.5	1.7	0.8	0.4	25	12	0.32	---	34	17
24	0.9	0.4	105	52	3.6	1.8	0.9	0.4	26	13	0.35	---	36	18
25	0.9	0.5	110	55	3.8	1.9	0.9	0.4	26	13	0.37	---	37	18
26	1.0	0.5	113	56	3.9	1.9	0.9	0.5	28	14	0.40	---	38	19
27	1.0	0.5	116	58	4.1	2.0	1.0	0.5	28	14	0.43	---	40	20
28	1.1	0.5	120	60	4.2	2.1	1.0	0.5	30	15	0.45	---	41	20
29	1.1	0.5	123	61	4.4	2.2	1.1	0.5	30	15	0.48	---	42	21
30	1.2	0.6	126	63	4.5	2.2	1.1	0.6	31	16	0.51	---	43	21
31	1.2	0.6	129	65	4.6	2.3	1.2	0.6	31	16	0.54	---	44	22
32	1.2	0.6	133	66	4.8	2.4	1.2	0.6	33	16	0.57	---	46	23
33	1.3	0.6	136	68	4.9	2.4	1.3	0.6	33	16	0.60	---	47	23
34	1.3	0.6	141	70	5.1	2.5	1.3	0.7	34	17	0.63	---	48	24
35	1.4	0.7	144	72	5.2	2.6	1.4	0.7	34	17	0.67	---	49	24
36	1.4	0.7	148	74	5.3	2.6	1.4	0.7	36	18	0.70	---	50	25
37	1.5	0.7	151	75	5.5	2.7	1.5	0.7	36	18	0.73	---	52	26
38	1.5	0.7	154	77	5.6	2.8	1.5	0.8	38	19	0.77	---	53	26
39	1.6	0.8	157	78	5.8	2.9	1.6	0.8	39	20	0.80	---	54	27
40	1.6	0.8	161	80	5.9	2.9	1.6	0.8	39	20	0.84	---	55	27
41	1.7	0.8	164	82	6.0	3.0	1.6	0.8	41	20	0.88	---	56	28
42	1.7	0.8	164	82	6.2	3.1	1.8	0.9	41	20	0.91	---	57	28
43	1.7	0.8	164	82	6.3	3.1	1.8	0.9	43	21	0.95	---	59	29
44	1.8	0.9	180	90	6.5	3.2	1.8	0.9	43	21	0.99	---	60	30
45	1.8	0.9	180	90	6.6	3.3	2.0	1.0	44	22	1.0	---	61	30

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
46	1.9	0.9	180	90	6.7	3.3	2.0	1.0	44	22	1.1	---	62	31
47	1.9	0.9	180	90	6.9	3.4	2.0	1.0	46	23	1.1	---	63	31
48	2.0	1.0	180	90	7.0	3.5	2.0	1.0	46	23	1.1	---	64	32
49	2.0	1.0	197	98	7.1	3.5	2.1	1.1	48	24	1.2	---	65	32
50	2.1	1.0	197	98	7.3	3.6	2.1	1.1	48	24	1.2	---	67	33
51	2.1	1.0	197	98	7.4	3.7	2.3	1.1	49	25	1.3	---	68	34
52	2.2	1.1	197	98	7.6	3.8	2.3	1.1	49	25	1.3	---	69	34
53	2.2	1.1	197	98	7.7	3.8	2.3	1.1	49	25	1.4	---	70	35
54	2.3	1.1	197	98	7.8	3.9	2.5	1.2	51	25	1.4	---	71	35
55	2.3	1.1	213	106	8.0	4.0	2.5	1.2	51	25	1.5	---	72	36
56	2.3	1.1	213	106	8.1	4.0	2.5	1.2	52	26	1.5	---	73	36
57	2.4	1.2	213	106	8.2	4.1	2.6	1.3	52	26	1.5	---	74	37
58	2.4	1.2	213	106	8.4	4.2	2.6	1.3	54	27	1.6	---	76	38
59	2.5	1.2	213	106	8.5	4.2	2.6	1.3	54	27	1.6	---	77	38
60	2.5	1.2	229	114	8.7	4.3	2.8	1.4	56	28	1.7	---	78	39
61	2.6	1.3	229	114	8.8	4.4	2.8	1.4	56	28	1.7	---	79	39
62	2.6	1.3	229	114	8.9	4.4	2.8	1.4	57	29	1.8	---	80	40
63	2.7	1.3	229	114	9.1	4.5	3.0	1.5	57	29	1.8	---	81	40
64	2.7	1.3	229	114	9.2	4.6	3.0	1.5	59	29	1.9	---	82	41
65	2.8	1.4	246	123	9.3	4.6	3.0	1.5	59	29	1.9	---	83	41
66	2.8	1.4	246	123	9.5	4.7	3.1	1.6	61	30	2.0	---	84	42
67	2.9	1.4	246	123	9.6	4.8	3.1	1.6	61	30	2.0	---	85	42
68	2.9	1.4	246	123	9.7	4.8	3.1	1.6	62	31	2.1	---	86	43
69	3.0	1.5	246	123	9.9	4.9	3.3	1.6	62	31	2.1	---	87	43
70	3.0	1.5	246	123	10.0	5.0	3.3	1.6	64	32	2.2	---	89	44
71	3.1	1.5	262	131	10.0	5.0	3.4	1.7	64	32	2.3	---	90	45
72	3.1	1.5	262	131	10.0	5.0	3.4	1.7	66	33	2.3	---	91	45

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
73	3.1	1.6	262	131	10.0	5.0	3.4	1.7	66	33	2.4	---	92	46
74	3.1	1.6	262	131	11.0	5.5	3.6	1.8	66	33	2.4	---	93	46
75	3.3	1.6	262	131	11.0	5.5	3.6	1.8	67	33	2.5	---	94	47
76	3.3	1.6	279	139	11.0	5.5	3.6	1.8	67	33	2.5	---	95	47
77	3.3	1.6	279	139	11.0	5.5	3.8	1.9	69	34	2.6	---	96	48
78	3.3	1.6	279	139	11.0	5.5	3.8	1.9	69	34	2.6	---	97	48
79	3.3	1.6	279	139	11.0	5.5	3.9	2.0	70	35	2.7	---	98	49
80	3.4	1.7	279	139	11.0	5.5	3.9	2.0	70	35	2.8	---	99	49
81	3.4	1.7	279	139	11.0	5.5	3.9	2.0	72	36	2.8	---	100	50
82	3.4	1.7	295	147	12.0	6.0	4.1	2.0	72	36	2.9	---	100	50
83	3.4	1.7	295	147	12.0	6.0	4.1	2.0	74	37	2.9	---	100	50
84	3.4	1.7	295	147	12.0	6.0	4.1	2.0	74	37	3.0	---	100	50
85	3.6	1.8	295	147	12.0	6.0	4.3	2.1	74	37	3.1	---	100	50
86	3.6	1.8	295	147	12.0	6.0	4.3	2.1	75	38	3.1	---	110	55
87	3.6	1.8	295	147	12.0	6.0	4.4	2.2	75	38	3.2	---	110	55
88	3.6	1.8	311	155	12.0	6.0	4.4	2.2	77	38	3.3	---	110	55
89	3.6	1.8	311	155	13.0	6.5	4.4	2.2	77	38	3.3	---	110	55
90	3.8	1.9	311	155	13.0	6.5	4.6	2.3	79	39	3.4	---	110	55
91	3.8	1.9	311	155	13.0	6.5	4.6	2.3	79	39	3.5	---	110	55
92	3.8	1.9	311	155	13.0	6.5	4.8	2.4	80	40	3.5	---	110	55
93	3.8	1.9	328	163	13.0	6.5	4.8	2.4	80	40	3.6	---	110	55
94	3.8	1.9	328	163	13.0	6.5	4.8	2.4	82	41	3.6	---	110	55
95	3.9	2.0	328	163	13.0	6.5	4.9	2.5	82	41	3.7	---	110	55
96	3.9	2.0	328	163	13.0	6.5	4.9	2.5	82	41	3.8	---	120	60
97	3.9	2.0	328	163	14.0	7.0	5.1	2.5	84	42	3.9	---	120	60
98	3.9	2.0	328	163	14.0	7.0	5.1	2.5	84	42	3.9	---	120	60
99	3.9	2.0	344	172	14.0	7.0	5.1	2.5	85	42	4.0	---	120	60

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
100	4.1	2.0	344	172	14.0	7.0	5.2	2.6	85	42	4.1	---	120	60
101	4.1	2.0	344	172	14.0	7.0	5.2	2.6	87	43	4.1	---	120	60
102	4.1	2.0	344	172	14.0	7.0	5.4	2.7	87	43	4.2	---	120	60
103	4.1	2.0	344	172	14.0	7.0	5.4	2.7	87	43	4.3	---	120	60
104	4.1	2.0	344	172	15.0	7.5	5.4	2.7	89	44	4.3	---	120	60
105	4.3	2.1	361	180	15.0	7.5	5.6	2.8	89	44	4.4	---	120	60
106	4.3	2.1	361	180	15.0	7.5	5.6	2.8	90	45	4.5	---	130	65
107	4.3	2.1	361	180	15.0	7.5	5.7	2.9	90	45	4.6	---	130	65
108	4.3	2.1	361	180	15.0	7.5	5.7	2.9	92	46	4.6	---	130	65
109	4.3	2.1	361	180	15.0	7.5	5.9	2.9	92	46	4.7	---	130	65
110	4.4	2.2	361	180	15.0	7.5	5.9	2.9	93	47	4.8	---	130	65
111	4.4	2.2	377	188	15.0	7.5	5.9	2.9	93	47	4.9	---	130	65
112	4.4	2.2	377	188	16.0	8.0	6.1	3.0	93	47	4.9	---	130	65
113	4.4	2.2	377	188	16.0	8.0	6.1	3.0	95	47	5.0	---	130	65
114	4.4	2.2	377	188	16.0	8.0	6.2	3.1	95	47	5.1	---	130	65
115	4.4	2.2	377	188	16.0	8.0	6.2	3.1	97	48	5.2	---	130	65
116	4.6	2.3	377	188	16.0	8.0	6.2	3.1	97	48	5.2	---	140	70
117	4.6	2.3	393	196	16.0	8.0	6.4	3.2	98	49	5.3	---	140	70
118	4.6	2.3	393	196	16.0	8.0	6.4	3.2	98	49	5.4	---	140	70
119	4.6	2.3	393	196	16.0	8.0	6.6	3.3	98	49	5.5	---	140	70
120	4.6	2.3	393	196	17.0	8.5	6.6	3.3	100	50	5.6	---	140	70
121	4.8	2.4	393	196	17.0	8.5	6.7	3.3	100	50	5.6	---	140	70
122	4.8	2.4	393	196	17.0	8.5	6.7	3.3	102	51	5.7	---	140	70
123	4.8	2.4	410	204	17.0	8.5	6.7	3.3	102	51	5.8	---	140	70
124	4.8	2.4	410	204	17.0	8.5	6.9	3.4	103	51	5.9	---	140	70
125	4.8	2.4	410	204	17.0	8.5	6.9	3.4	103	51	6.0	---	140	70
126	4.9	2.5	410	204	17.0	8.5	7.0	3.5	103	51	6.0	---	150	75



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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
127	4.9	2.5	410	204	18.0	9.0	7.0	3.5	105	52	6.1	---	150	75
128	4.9	2.5	410	204	18.0	9.0	7.2	3.6	105	52	6.2	---	150	75
129	4.9	2.5	410	204	18.0	9.0	7.2	3.6	107	53	6.3	---	150	75
130	4.9	2.5	426	212	18.0	9.0	7.2	3.6	107	53	6.4	---	150	75
131	4.9	2.5	426	212	18.0	9.0	7.4	3.7	108	54	6.5	---	150	75
132	5.1	2.5	426	212	18.0	9.0	7.4	3.7	108	54	6.5	---	150	75
133	5.1	2.5	426	212	18.0	9.0	7.5	3.8	108	54	6.6	---	150	75
134	5.1	2.5	426	212	18.0	9.0	7.5	3.8	110	55	6.7	---	150	75
135	5.1	2.5	426	212	19.0	9.5	7.7	3.8	110	55	6.8	---	150	75
136	5.1	2.5	443	221	19.0	9.5	7.7	3.8	111	56	6.9	---	160	80
137	5.2	2.6	443	221	19.0	9.5	7.7	3.8	111	56	7.0	---	160	80
138	5.2	2.6	443	221	19.0	9.5	7.9	3.9	113	56	7.1	---	160	80
139	5.2	2.6	443	221	19.0	9.5	7.9	3.9	113	56	7.2	---	160	80
140	5.2	2.6	443	221	19.0	9.5	8.0	4.0	113	56	7.2	---	160	80
141	5.2	2.6	443	221	19.0	9.5	8.0	4.0	115	57	7.3	---	160	80
142	5.2	2.6	459	229	19.0	9.5	8.2	4.1	115	57	7.4	---	160	80
143	5.4	2.7	459	229	20.0	10.0	8.2	4.1	116	58	7.5	---	160	80
144	5.4	2.7	459	229	20.0	10.0	8.4	4.2	116	58	7.6	---	160	80
145	5.4	2.7	459	229	20.0	10.0	8.4	4.2	116	58	7.7	---	160	80
146	5.4	2.7	459	229	20.0	10.0	8.5	4.2	118	59	7.8	---	170	85
147	5.4	2.7	459	229	20.0	10.0	8.5	4.2	118	59	7.9	---	170	85
148	5.4	2.7	475	237	20.0	10.0	8.5	4.2	120	60	8.0	---	170	85
149	5.6	2.8	475	237	20.0	10.0	8.7	4.3	120	60	8.1	---	170	85
150	5.6	2.8	475	237	21.0	10.4	8.7	4.3	121	60	8.2	---	170	85
151	5.6	2.8	475	237	21.0	10.4	8.9	4.4	121	60	8.2	---	170	85
152	5.6	2.8	475	237	21.0	10.4	8.9	4.4	121	60	8.3	---	170	85
153	5.6	2.8	475	237	21.0	10.4	9.0	4.5	123	61	8.4	---	170	85

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO <sub>3</sub> (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
154	5.7	2.9	475	237	21.0	10.4	9.0	4.5	123	61	8.5	---	170	85
155	5.7	2.9	492	245	21.0	10.4	9.2	4.6	125	62	8.6	---	170	85
156	5.7	2.9	492	245	21.0	10.4	9.2	4.6	125	62	8.7	---	170	85
157	5.7	2.9	492	245	21.0	10.4	9.2	4.6	125	62	8.8	---	180	90
158	5.7	2.9	492	245	22.0	10.9	9.3	4.7	126	63	8.9	---	180	90
159	5.7	2.9	492	245	22.0	10.9	9.3	4.7	126	63	9.0	---	180	90
160	5.9	2.9	492	245	22.0	10.9	9.5	4.7	128	64	9.1	---	180	90
161	5.9	2.9	508	253	22.0	10.9	9.5	4.7	128	64	9.2	---	180	90
162	5.9	2.9	508	253	22.0	10.9	9.7	4.8	128	64	9.3	---	180	90
163	5.9	2.9	508	253	22.0	10.9	9.7	4.8	129	65	9.4	---	180	90
164	5.9	2.9	508	253	22.0	10.9	9.8	4.9	129	65	9.5	---	180	90
165	5.9	2.9	508	253	22.0	10.9	9.8	4.9	131	65	9.6	---	180	90
166	6.1	3.0	508	253	22.9	11.4	10.0	5.0	131	65	9.7	---	180	90
167	6.1	3.0	524	261	22.9	11.4	10.0	5.0	131	65	9.8	---	190	95
168	6.1	3.0	524	261	23.0	11.4	10.2	5.1	133	66	9.9	---	190	95
169	6.1	3.0	524	261	23.0	11.4	10.2	5.1	133	66	10	---	190	95
170	6.1	3.0	524	261	23.0	11.4	10.3	5.1	134	67	10	---	190	95
171	6.2	3.1	524	261	23.0	11.4	10.3	5.1	134	67	10	---	190	95
172	6.2	3.1	524	261	23.0	11.4	10.3	5.1	136	68	10	---	190	95
173	6.2	3.1	524	261	23.0	11.4	10.5	5.2	136	68	10	---	190	95
174	6.2	3.1	541	270	24.0	11.9	10.5	5.2	136	68	11	---	190	95
175	6.2	3.1	541	270	24.0	11.9	10.7	5.3	138	69	11	---	190	95
176	6.2	3.1	541	270	24.0	11.9	10.7	5.3	138	69	11	---	190	95
177	6.4	3.2	541	270	24.0	11.9	10.8	5.4	139	69	11	---	190	95
178	6.4	3.2	541	270	24.0	11.9	10.8	5.4	139	69	11	---	200	100
179	6.4	3.2	541	270	24.0	11.9	11.0	5.5	139	69	11	---	200	100
180	6.4	3.2	541	270	24.0	11.9	11.0	5.5	141	70	11	---	200	100

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
181	6.4	3.2	557	278	24.0	11.9	11.1	5.6	141	70	11	---	200	100
182	6.4	3.2	557	278	25.0	12.4	11.1	5.6	143	71	11	---	200	100
183	6.6	3.3	557	278	25.0	12.4	11.3	5.6	143	71	11	---	200	100
184	6.6	3.3	557	278	25.0	12.4	11.3	5.6	143	71	12	---	200	100
185	6.6	3.3	557	278	25.0	12.4	11.5	5.7	144	72	12	---	200	100
186	6.6	3.3	557	278	25.0	12.4	11.5	5.7	144	72	12	---	200	100
187	6.6	3.3	574	286	25.0	12.4	11.6	5.8	146	73	12	---	200	100
188	6.6	3.3	574	286	25.0	12.4	11.6	5.8	146	73	12	---	200	100
189	6.7	3.3	574	286	26.0	12.9	11.8	5.9	146	73	12	---	210	104
190	6.7	3.3	574	286	26.0	12.9	11.8	5.9	148	74	12	---	210	104
191	6.7	3.3	574	286	26.0	12.9	12.0	6.0	148	74	12	---	210	104
192	6.7	3.3	574	286	26.0	12.9	12.0	6.0	149	74	12	---	210	104
193	6.7	3.3	574	286	26.0	12.9	12.0	6.0	149	74	13	---	210	104
194	6.7	3.3	590	294	26.0	12.9	12.1	6.0	149	74	13	---	210	104
195	6.9	3.4	590	294	26.0	12.9	12.1	6.0	151	75	13	---	210	104
196	6.9	3.4	590	294	26.0	12.9	12.3	6.1	151	75	13	---	210	104
197	6.9	3.4	590	294	27.0	13.4	12.3	6.1	152	76	13	---	210	104
198	6.9	3.4	590	294	27.0	13.4	12.5	6.2	152	76	13	---	210	104
199	6.9	3.4	590	294	27.0	13.4	12.5	6.2	152	76	13	---	210	104
200	6.9	3.4	606	302	27.0	13.4	12.6	6.3	154	77	13	---	220	109
201	7.0	3.5	606	302	27.0	13.4	12.6	6.3	154	77	13	---	220	109
202	7.0	3.5	606	302	27.0	13.4	12.8	6.4	156	78	14	---	220	109
203	7.0	3.5	606	302	27.0	13.4	12.8	6.4	156	78	14	---	220	109
204	7.0	3.5	606	302	27.0	13.4	12.9	6.5	156	78	14	---	220	109
205	7.0	3.5	606	302	27.9	13.9	12.9	6.5	157	78	14	---	220	109
206	7.0	3.5	606	302	27.9	13.9	13.1	6.5	157	78	14	---	220	109
207	7.2	3.6	623	310	27.9	13.9	13.1	6.5	159	79	14	---	220	109

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
208	7.2	3.6	623	310	27.9	13.9	13.3	6.6	159	79	14	---	220	109
209	7.2	3.6	623	310	28.0	13.9	13.3	6.6	159	79	14	---	220	109
210	7.2	3.6	623	310	28.0	13.9	13.4	6.7	161	80	15	---	220	109
211	7.2	3.6	623	310	28.0	13.9	13.4	6.7	161	80	15	---	230	114
212	7.2	3.6	623	310	28.0	13.9	13.6	6.8	162	81	15	---	230	114
213	7.4	3.7	623	310	29.0	14.4	13.6	6.8	162	81	15	---	230	114
214	7.4	3.7	639	319	29.0	14.4	13.8	6.9	162	81	15	---	230	114
215	7.4	3.7	639	319	29.0	14.4	13.8	6.9	164	82	15	---	230	114
216	7.4	3.7	639	319	29.0	14.4	13.9	6.9	164	82	15	---	230	114
217	7.4	3.7	639	319	29.0	14.4	13.9	6.9	164	82	15	---	230	114
218	7.4	3.7	639	319	29.0	14.4	14.1	7.0	164	82	16	---	230	114
219	7.5	3.8	639	319	29.0	14.4	14.1	7.0	164	82	16	---	230	114
220	7.5	3.8	639	319	29.0	14.4	14.3	7.1	164	82	16	---	230	114
221	7.5	3.8	656	327	29.5	14.7	14.3	7.1	164	82	16	---	230	114
222	7.5	3.8	656	327	29.5	14.7	14.4	7.2	164	82	16	---	240	119
223	7.5	3.8	656	327	29.9	14.9	14.4	7.2	164	82	16	---	240	119
224	7.5	3.8	656	327	29.9	14.9	14.6	7.3	164	82	16	---	240	119
225	7.7	3.8	656	327	29.9	14.9	14.6	7.3	164	82	16	---	240	119
226	7.7	3.8	656	327	29.9	14.9	14.8	7.4	164	82	16	---	240	119
227	7.7	3.8	672	335	29.9	14.9	14.8	7.4	164	82	17	---	240	119
228	7.7	3.8	672	335	29.9	14.9	14.9	7.4	164	82	17	---	240	119
229	7.7	3.8	672	335	30.9	15.4	14.9	7.4	180	90	17	---	240	119
230	7.7	3.8	672	335	30.9	15.4	15.1	7.5	180	90	17	---	240	119
231	7.9	3.9	672	335	30.9	15.4	15.1	7.5	180	90	17	---	240	119
232	7.9	3.9	672	335	30.9	15.4	15.2	7.6	180	90	17	---	240	119
233	7.9	3.9	672	335	30.9	15.4	15.2	7.6	180	90	17	---	250	124
234	7.9	3.9	688	343	30.9	15.4	15.4	7.7	180	90	18	---	250	124

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
235	7.9	3.9	688	343	30.9	15.4	15.4	7.7	180	90	18	---	250	124
236	7.9	3.9	688	343	30.9	15.4	15.6	7.8	180	90	18	---	250	124
237	7.9	3.9	688	343	31.9	15.9	15.6	7.8	180	90	18	---	250	124
238	8.0	4.0	688	343	31.9	15.9	15.7	7.8	180	90	18	---	250	124
239	8.0	4.0	688	343	31.9	15.9	15.7	7.8	180	90	18	---	250	124
240	8.0	4.0	688	343	31.9	15.9	15.9	7.9	180	90	18	---	250	124
241	8.0	4.0	705	351	31.9	15.9	15.9	7.9	180	90	18	---	250	124
242	8.0	4.0	705	351	31.9	15.9	16.1	8.0	180	90	19	---	250	124
243	8.0	4.0	705	351	31.9	15.9	16.2	8.1	180	90	19	---	250	124
244	8.2	4.1	705	351	31.9	15.9	16.2	8.1	180	90	19	---	260	129
245	8.2	4.1	705	351	32.8	16.3	16.4	8.2	180	90	19	---	260	129
246	8.2	4.1	705	351	32.8	16.3	16.4	8.2	180	90	19	---	260	129
247	8.2	4.1	705	351	32.8	16.3	16.4	8.2	180	90	19	---	260	129
248	8.2	4.1	721	359	32.8	16.3	16.4	8.2	180	90	19	---	260	129
249	8.2	4.1	721	359	32.8	16.3	16.4	8.2	180	90	19	---	260	129
250	8.4	4.2	721	359	32.8	16.3	16.4	8.2	180	90	20	---	260	129
251	8.4	4.2	721	359	32.8	16.3	16.4	8.2	180	90	20	---	260	129
252	8.4	4.2	721	359	32.9	16.4	16.4	8.2	180	90	20	---	260	129
253	8.4	4.2	721	359	33.9	16.9	16.4	8.2	180	90	20	---	260	129
254	8.4	4.2	721	359	33.9	16.9	16.4	8.2	180	90	20	---	260	129
255	8.4	4.2	738	368	33.9	16.9	16.4	8.2	197	98	20	---	260	129
256	8.5	4.2	738	368	33.9	16.9	18.0	9.0	197	98	20	---	270	134
257	8.5	4.2	738	368	33.9	16.9	18.0	9.0	197	98	21	---	270	134
258	8.5	4.2	738	368	33.9	16.9	18.0	9.0	197	98	21	---	270	134
259	8.5	4.2	738	368	33.9	16.9	18.0	9.0	197	98	21	---	270	134
260	8.5	4.2	738	368	33.9	16.9	18.0	9.0	197	98	21	---	270	134
261	8.5	4.2	738	368	34.4	17.2	18.0	9.0	197	98	21	---	270	134

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
262	8.5	4.2	754	376	34.4	17.2	18.0	9.0	197	98	21	---	270	134
263	8.7	4.3	754	376	34.4	17.2	18.0	9.0	197	98	21	---	270	134
264	8.7	4.3	754	376	34.4	17.2	18.0	9.0	197	98	22	---	270	134
265	8.7	4.3	754	376	34.4	17.2	18.0	9.0	197	98	22	---	270	134
266	8.7	4.3	754	376	34.9	17.4	18.0	9.0	197	98	22	---	270	134
267	8.7	4.3	754	376	34.9	17.4	18.0	9.0	197	98	22	---	280	139
268	8.7	4.3	754	376	34.9	17.4	18.0	9.0	197	98	22	---	280	139
269	8.9	4.4	770	384	35.9	17.9	18.0	9.0	197	98	22	---	280	139
270	8.9	4.4	770	384	35.9	17.9	18.0	9.0	197	98	22	---	280	139
271	8.9	4.4	770	384	35.9	17.9	18.0	9.0	197	98	23	---	280	139
272	8.9	4.4	770	384	35.9	17.9	18.0	9.0	197	98	23	---	280	139
273	8.9	4.4	770	384	35.9	17.9	18.0	9.0	197	98	23	---	280	139
274	8.9	4.4	770	384	35.9	17.9	18.0	9.0	197	98	23	---	280	139
275	8.9	4.4	770	384	35.9	17.9	19.7	9.8	197	98	23	---	280	139
276	9.0	4.5	787	392	35.9	17.9	19.7	9.8	197	98	23	---	280	139
277	9.0	4.5	787	392	36.1	18.0	19.7	9.8	197	98	23	---	280	139
278	9.0	4.5	787	392	36.1	18.0	19.7	9.8	197	98	24	---	280	139
279	9.0	4.5	787	392	36.1	18.0	19.7	9.8	197	98	24	---	290	144
280	9.0	4.5	787	392	36.1	18.0	19.7	9.8	197	98	24	---	290	144
281	9.0	4.5	787	392	36.9	18.4	19.7	9.8	213	106	24	---	290	144
282	9.2	4.6	787	392	36.9	18.4	19.7	9.8	213	106	24	---	290	144
283	9.2	4.6	803	400	36.9	18.4	19.7	9.8	213	106	24	---	290	144
284	9.2	4.6	803	400	36.9	18.4	19.7	9.8	213	106	24	---	290	144
285	9.2	4.6	803	400	37.7	18.8	19.7	9.8	213	106	25	---	290	144
286	9.2	4.6	803	400	37.7	18.8	19.7	9.8	213	106	25	---	290	144
287	9.2	4.6	803	400	37.7	18.8	19.7	9.8	213	106	25	---	290	144
288	9.2	4.6	803	400	37.7	18.8	19.7	9.8	213	106	25	---	290	144

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
289	9.3	4.7	803	400	37.7	18.8	19.7	9.8	213	106	25	---	290	144
290	9.3	4.7	819	408	37.7	18.8	19.7	9.8	213	106	25	---	299	149
291	9.3	4.7	819	408	37.7	18.8	19.7	9.8	213	106	25	---	299	149
292	9.3	4.7	819	408	37.7	18.8	19.7	9.8	213	106	26	---	299	149
293	9.3	4.7	819	408	37.7	18.8	21.3	10.6	213	106	26	---	299	149
294	9.3	4.7	819	408	37.7	18.8	21.3	10.6	213	106	26	---	299	149
295	9.5	4.7	819	408	38.9	19.4	21.3	10.6	213	106	26	---	299	149
296	9.5	4.7	819	408	38.9	19.4	21.3	10.6	213	106	26	---	299	149
297	9.5	4.7	819	408	38.9	19.4	21.3	10.6	213	106	26	---	299	149
298	9.5	4.7	836	417	38.9	19.4	21.3	10.6	213	106	27	---	299	149
299	9.5	4.7	836	417	38.9	19.4	21.3	10.6	213	106	27	---	299	149
300	9.5	4.7	836	417	38.9	19.4	21.3	10.6	213	106	27	---	299	149
301	9.5	4.7	836	417	39.3	19.6	21.3	10.6	213	106	27	---	299	149
302	9.7	4.8	836	417	39.3	19.6	21.3	10.6	213	106	27	---	309	154
303	9.7	4.8	836	417	39.3	19.6	21.3	10.6	213	106	27	---	309	154
304	9.7	4.8	836	417	39.3	19.6	21.3	10.6	213	106	27	---	309	154
305	9.7	4.8	852	425	39.3	19.6	21.3	10.6	213	106	28	---	309	154
306	9.7	4.8	852	425	39.3	19.6	21.3	10.6	213	106	28	---	309	154
307	9.7	4.8	852	425	39.3	19.6	21.3	10.6	213	106	28	---	309	154
308	9.8	4.9	852	425	39.3	19.6	21.3	10.6	229	114	28	---	309	154
309	9.8	4.9	852	425	39.3	19.6	21.3	10.6	229	114	28	---	309	154
310	9.8	4.9	852	425	40.9	20.4	21.3	10.6	229	114	28	---	309	154
311	9.8	4.9	852	425	40.9	20.4	21.3	10.6	229	114	29	---	309	154
312	9.8	4.9	869	433	40.9	20.4	22.9	11.4	229	114	29	---	309	154
313	9.8	4.9	869	433	40.9	20.4	22.9	11.4	229	114	29	---	319	159
314	9.8	4.9	869	433	40.9	20.4	22.9	11.4	229	114	29	---	319	159
315	10.0	5.0	869	433	40.9	20.4	22.9	11.4	229	114	29	---	319	159

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
316	10.0	5.0	869	433	40.9	20.4	22.9	11.4	229	114	29	---	319	159
317	10.0	5.0	869	433	41.0	20.4	22.9	11.4	229	114	30	---	319	159
318	10.0	5.0	869	433	41.0	20.4	22.9	11.4	229	114	30	---	319	159
319	10.0	5.0	885	441	41.0	20.4	22.9	11.4	229	114	30	---	319	159
320	10.0	5.0	885	441	41.0	20.4	22.9	11.4	229	114	30	---	319	159
321	10.2	5.1	885	441	41.0	20.4	22.9	11.4	229	114	30	---	319	159
322	10.2	5.1	885	441	41.0	20.4	22.9	11.4	229	114	30	---	319	159
323	10.2	5.1	885	441	41.0	20.4	22.9	11.4	229	114	30	---	319	159
324	10.2	5.1	885	441	41.0	20.4	22.9	11.4	229	114	31	---	319	159
325	10.2	5.1	885	441	42.6	21.2	22.9	11.4	229	114	31	---	329	164
326	10.2	5.1	885	441	42.6	21.2	22.9	11.4	229	114	31	---	329	164
327	10.2	5.1	901	449	42.6	21.2	22.9	11.4	229	114	31	---	329	164
328	10.3	5.1	901	449	42.6	21.2	22.9	11.4	229	114	31	---	329	164
329	10.3	5.1	901	449	42.6	21.2	22.9	11.4	229	114	31	---	329	164
330	10.3	5.1	901	449	42.6	21.2	24.6	12.3	229	114	32	---	329	164
331	10.3	5.1	901	449	42.6	21.2	24.6	12.3	229	114	32	---	329	164
332	10.3	5.1	901	449	42.6	21.2	24.6	12.3	229	114	32	---	329	164
333	10.3	5.1	901	449	42.6	21.2	24.6	12.3	229	114	32	---	329	164
334	10.3	5.1	918	457	42.6	21.2	24.6	12.3	229	114	32	---	329	164
335	10.5	5.2	918	457	42.6	21.2	24.6	12.3	246	123	32	---	329	164
336	10.5	5.2	918	457	42.6	21.2	24.6	12.3	246	123	33	---	329	164
337	10.5	5.2	918	457	42.6	21.2	24.6	12.3	246	123	33	---	339	169
338	10.5	5.2	918	457	42.6	21.2	24.6	12.3	246	123	33	---	339	169
339	10.5	5.2	918	457	42.6	21.2	24.6	12.3	246	123	33	---	339	169
340	10.5	5.2	918	457	43.9	21.9	24.6	12.3	246	123	33	---	339	169
341	10.7	5.3	934	466	43.9	21.9	24.6	12.3	246	123	33	---	339	169
342	10.7	5.3	934	466	44.3	22.1	24.6	12.3	246	123	34	---	339	169



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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
343	10.7	5.3	934	466	44.3	22.1	24.6	12.3	246	123	34	---	339	169
344	10.7	5.3	934	466	44.3	22.1	24.6	12.3	246	123	34	---	339	169
345	10.7	5.3	934	466	44.3	22.1	24.6	12.3	246	123	34	---	339	169
346	10.7	5.3	934	466	44.3	22.1	24.6	12.3	246	123	34	---	339	169
347	10.7	5.3	934	466	44.3	22.1	26.2	13.1	246	123	34	---	339	169
348	10.8	5.4	934	466	44.3	22.1	26.2	13.1	246	123	35	---	339	169
349	10.8	5.4	951	474	44.3	22.1	26.2	13.1	246	123	35	---	349	174
350	10.8	5.4	951	474	44.3	22.1	26.2	13.1	246	123	35	---	349	174
351	10.8	5.4	951	474	44.3	22.1	26.2	13.1	246	123	35	---	349	174
352	10.8	5.4	951	474	44.3	22.1	26.2	13.1	246	123	35	---	349	174
353	10.8	5.4	951	474	44.3	22.1	26.2	13.1	246	123	36	---	349	174
354	10.8	5.4	951	474	44.3	22.1	26.2	13.1	246	123	36	---	349	174
355	11.0	5.5	951	474	45.9	22.9	26.2	13.1	246	123	36	---	349	174
356	11.0	5.5	967	482	45.9	22.9	26.2	13.1	246	123	36	---	349	174
357	11.0	5.5	967	482	45.9	22.9	26.2	13.1	246	123	36	---	349	174
358	11.0	5.5	967	482	45.9	22.9	26.2	13.1	246	123	36	---	349	174
359	11.0	5.5	967	482	45.9	22.9	26.2	13.1	246	123	37	---	349	174
360	11.0	5.5	967	482	45.9	22.9	26.2	13.1	246	123	37	---	349	174
361	11.0	5.5	967	482	45.9	22.9	26.2	13.1	246	123	37	---	359	179
362	11.1	5.6	967	482	45.9	22.9	26.2	13.1	246	123	37	---	359	179
363	11.1	5.6	967	482	45.9	22.9	26.2	13.1	262	131	37	---	359	179
364	11.1	5.6	983	490	45.9	22.9	26.2	13.1	262	131	37	---	359	179
365	11.1	5.6	983	490	45.9	22.9	27.9	13.9	262	131	38	---	359	179
366	11.1	5.6	983	490	45.9	22.9	27.9	13.9	262	131	38	---	359	179
367	11.1	5.6	983	490	45.9	22.9	27.9	13.9	262	131	38	---	359	179
368	11.1	5.6	983	490	45.9	22.9	27.9	13.9	262	131	38	---	359	179
369	11.3	5.6	983	490	45.9	22.9	27.9	13.9	262	131	38	---	359	179

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
370	11.3	5.6	983	490	47.5	23.7	27.9	13.9	262	131	39	---	359	179
371	11.3	5.6	1000	498	47.5	23.7	27.9	13.9	262	131	39	---	359	179
372	11.3	5.6	1000	498	47.5	23.7	27.9	13.9	262	131	39	---	359	179
373	11.3	5.6	1000	498	47.5	23.7	27.9	13.9	262	131	39	---	369	184
374	11.3	5.6	1000	498	47.5	23.7	27.9	13.9	262	131	39	---	369	184
375	11.5	5.7	1000	498	47.5	23.7	27.9	13.9	262	131	39	---	369	184
376	11.5	5.7	1000	498	47.5	23.7	27.9	13.9	262	131	40	---	369	184
377	11.5	5.7	1000	498	47.5	23.7	27.9	13.9	262	131	40	---	369	184
378	11.5	5.7	1016	506	47.5	23.7	27.9	13.9	262	131	40	---	369	184
379	11.5	5.7	1016	506	47.5	23.7	27.9	13.9	262	131	40	---	369	184
380	11.5	5.7	1016	506	47.5	23.7	27.9	13.9	262	131	40	---	369	184
381	11.5	5.7	1016	506	47.5	23.7	27.9	13.9	262	131	41	---	369	184
382	11.6	5.8	1016	506	47.5	23.7	29.5	14.7	262	131	41	---	369	184
383	11.6	5.8	1016	506	47.5	23.7	29.5	14.7	262	131	41	---	369	184
384	11.6	5.8	1016	506	47.5	23.7	29.5	14.7	262	131	41	---	369	184
385	11.6	5.8	1016	506	49.2	24.5	29.5	14.7	262	131	41	---	379	189
386	11.6	5.8	1033	515	49.2	24.5	29.5	14.7	262	131	41	---	379	189
387	11.6	5.8	1033	515	49.2	24.5	29.5	14.7	262	131	42	---	379	189
388	11.6	5.8	1033	515	49.2	24.5	29.5	14.7	262	131	42	---	379	189
389	11.8	5.9	1033	515	49.2	24.5	29.5	14.7	262	131	42	---	379	189
390	11.8	5.9	1033	515	49.2	24.5	29.5	14.7	262	131	42	---	379	189
391	11.8	5.9	1033	515	49.2	24.5	29.5	14.7	279	139	42	---	379	189
392	11.8	5.9	1033	515	49.2	24.5	29.5	14.7	279	139	43	---	379	189
393	11.8	5.9	1033	515	49.2	24.5	29.5	14.7	279	139	43	---	379	189
394	11.8	5.9	1049	523	49.2	24.5	29.5	14.7	279	139	43	---	379	189
395	11.8	5.9	1049	523	49.2	24.5	29.5	14.7	279	139	43	---	379	189
396	12.0	6.0	1049	523	49.2	24.5	29.5	14.7	279	139	43	---	379	189

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 Attachment J: Calculated Total Recoverable Metals Effluent Limits for Discharges to Freshwater

Hardness as CaCO3 (mg/L)	Cd (ug/L)		Cr III (ug/L)		Cu (ug/L)		Pb (ug/L)		Ni (ug/L)		Ag (ug/L)		Zn (ug/L)	
	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL	MDEL	AMEL
397	12.0	6.0	1049	523	49.2	24.5	29.5	14.7	279	139	43	---	389	194
398	12.0	6.0	1049	523	49.2	24.5	29.5	14.7	279	139	44	---	389	194
399	12.0	6.0	1049	523	49.2	24.5	31.1	15.5	279	139	44	---	389	194
400	12.0	6.0	1049	523	49.2	24.5	31.1	15.5	279	139	44	---	389	194

Notes

Cd=Cadmium; Cr III=Chromium (III), Cu=Copper, Pb=Lead, Ni=Nickel, Ag=Silver, and Zn=Zinc

MDEL = Maximum Daily Effluent Limit

AMEL = Average Monthly Effluent Limit