

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION**

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**ORDER NO. R9-2022-0005
AS AMENDED BY ORDER NOS. R9-2024-0005 AND R9-2025-0001
NPDES NO. CA0107417**

**WASTE DISCHARGE REQUIREMENTS
FOR THE SOUTH ORANGE COUNTY WASTEWATER AUTHORITY
DISCHARGE TO THE PACIFIC OCEAN
THROUGH THE SAN JUAN CREEK OCEAN OUTFALL**

The following entities are Dischargers subject to waste discharge requirements (WDRs) set forth in this Order:

Table 1. Discharger Information

Discharger¹	Name of Facility	Facility Address
South Orange County Wastewater Authority (SOCWA)	San Juan Creek Ocean Outfall (SJCOO)	SJCOO starts at 33° 27' 42"N 117° 40' 57"W
SOCWA	J.B. Latham Wastewater Treatment Plant	34156 Del Obispo Street Dana Point, CA 92629 Orange County
Santa Margarita Water District	Chiquita Water Reclamation Plant	29960 Cow Camp Road, Rancho Mission Viejo, CA 92694 Orange County
Moulton Niguel Water District	3A Water Reclamation Plant	26801 Camino Capistrano Mission Viejo, CA 92653 Orange County
City of San Clemente	San Clemente Water Reclamation Plant	380 Avenida Pico San Clemente, CA 92672 Orange County
Santa Margarita Water District	Oso Creek Water Reclamation Plant	27402 East La Paz Road Mission Viejo, CA 92692 Orange County
Santa Margarita Water District	San Juan Capistrano Groundwater Treatment Plant	32470 Paseo Adelanto San Juan Capistrano, CA 92675 Orange County

¹ For purposes of this Order including Attachments A through F, and Attachment H, the term "Discharger(s)" shall mean SOCWA, Santa Margarita Water District, Moulton Niguel Water District, City of San Clemente, and South Coast Water District.

Discharger ¹	Name of Facility	Facility Address
South Coast Water District	South Coast Water District Groundwater Recovery Facility	33750 Stonehill Drive Dana Point, CA 92629 Orange County
City of San Clemente	Segunda Deshecha Runoff Plant	3115 Avenida Pico San Clemente, CA 92672 Orange County
South Coast Water District	Doheny Desalination Project	34400 Coast Highway Dana Point, CA 92629 Orange County 33° 27' 59"N 117° 40' 52"W
Santa Margarita Water District	Ranch Water Filtration Plant	30180 Cow Camp Road Rancho Mission Viejo, CA 92694 Orange County

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Secondary-treated wastewater, waste brine, and treated dry-weather urban runoff discharges	33° 26' 10" N	117° 41' 53" W	Pacific Ocean

This Order was adopted on:

March 9, 2022

This Order shall become effective on:

May 1, 2022

This Order shall expire on:

April 30, 2027

The Dischargers shall jointly file a Report of Waste Discharge (ROWD) as an application for reissuance of WDRs in accordance with title 23 of the California Code of Regulations, and an application for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit no later than 180 days prior to the Order expiration date. The United States Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) have classified this discharge as follows: **Major**

I, David W. Gibson, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of the Order adopted by the San Diego Water Board on the date indicated above, as amended by Order No. R9-2024-0005 on February 14, 2024, and by Order No. R9-2025-0001 on March 12, 2025.

David W. Gibson, Executive Officer

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1. Facility Information

Table 1 describes the facilities discussed in this Order (collectively, the Facilities). Information describing the Facilities is summarized in Table 1 and in sections 1 and 2 of the Fact Sheet (Attachment F). Section 1 of the Fact Sheet also includes information regarding the Dischargers' joint permit application.

2. Findings

The San Diego Water Board finds:

- 2.1. **Legal Authorities.** This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (Water Code) (commencing with section 13260). This Order is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit authorizing the Dischargers to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order. This Order also serves as the Water Code section 13142.5(b) determination for the proposed South Coast Water District (SCWD) Doheny Desalination Project.
- 2.2. **Background and Rationale for Requirements.** The San Diego Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for the requirements in this Order, is hereby incorporated into and constitutes Findings for this Order. Attachments A through E, and G are also incorporated into this Order.
- 2.3. **Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections 2.4, 2.5, 2.6, 4.3, 4.5, 4.6, and 5.2 are included to implement State of California (State) law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.
- 2.4. **Water Code Section 13142.5(b) Conditional Determination (applicable to the Doheny Desalination Project).** Water Code section 13142.5(b) requires that for each new or expanded coastal power plant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life. Chapter III.M of the *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan) provides the implementation provisions for desalination facilities to comply with Water Code section 13142.5(b). This Order implements the Water Code section 13142.5(b) determination described in Attachment H (Water Code section 13142.5(b) determination) of this Order for the Doheny Desalination Project in accordance with Ocean Plan requirements. In making this determination, the San Diego

Water Board evaluated a range of alternatives proposed by the Dischargers for the best available site, design, technology, and mitigation measures to minimize mortality of all forms of marine life and then determined the best combination of feasible alternatives to minimize mortality of all forms of marine life.

This Water Code section 13142.5(b) determination is conditional and a new Water Code section 13142.5(b) determination will be required if any of the following occur:

- 2.4.1. The Dischargers fail to submit any of the following documents to the San Diego Water Board for review and approval:
 - The Mitigation Area of Production Forgone (APF) Re-Evaluation Study Final Report, as required in section 6.3.2.3.3 of this Order;
 - The Larval Study Final Report, as required in section 6.3.2.4.3 of this Order; and
 - The Final Marine Life Mitigation Plan for the South Los Cerritos Wetlands Restoration Project, as required in section 6.3.2.5 of this Order.
- 2.4.2. The San Diego Water Board does not approve one or several of the documents required in sections 6.3.2.3 through 6.3.2.5 of this Order.
- 2.4.3. The Mitigation APF Re-Evaluation Study and/or Larval Study demonstrate that the mitigation requirements of this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project.
- 2.4.4. The Dischargers reduces the volume of wastewater discharged through the SJCOO below the flow rate required for a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001.
- 2.4.5. The Doheny Desalination Project's drinking water production flow rate increases above an average monthly flow rate of 5 MGD.
- 2.4.6. The brine discharge flow rate from the Doheny Desalination Project increases above a monthly average flow rate of 5.0 MGD.
- 2.4.7. The reverse osmosis (RO) recover rate for the Doheny Desalination Project differs from 50%, as determined by the final design plans for the Doheny Desalination Project.

If the Dischargers submit and the San Diego Water Board approves the Mitigation APF Re-Evaluation Study, the Larval Study, and the Final Marine Life Mitigation Plan, then the conditions in sections 2.4.1 and 2.4.2 of this Order will have no further effect. If the Dischargers fail to submit or the San Diego Water Board does not approve the Mitigation APF Re-Evaluation Study, the Larval Study, or the Final Marine Life Mitigation Plan, then the Dischargers shall apply for a new Water Code section 13142.5(b) determination.

If the Mitigation APF Re-Evaluation Study and/or Larval Study demonstrate that the mitigation requirements of this Order are sufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the condition in section 2.4.3 of this Order will have no further effect. If the Mitigation APF Re-Evaluation Study and/or Larval Study demonstrate that the mitigation requirements of this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers shall apply for a new Water Code section 13142.5(b) determination. If the Mitigation APF Re-Evaluation Study and/or Larval Study demonstrate that the mitigation requirements of this Order are excessive to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers may apply for a new Water Code section 13142.5(b) determination.

If the Dischargers do not reduce the volume of wastewater discharged through the SJCOO below the flow rate required for a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001, then the condition in section 2.4.4 of this Order will have no effect. If the Dischargers reduce the volume of wastewater discharged through the SJCOO below the flow rate required for a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001, then the Dischargers shall apply for a new Water Code section 13142.5(b) determination.

If the Dischargers do not increase the Doheny Desalination Project's drinking water production rate above an average monthly flow rate of 5 MGD, then the condition in section 2.4.5 of this Order will have no effect. If the Dischargers increase the Doheny Desalination Project's drinking water production rate above an average monthly flow rate of 5 MGD, then the Dischargers shall apply for a new Water Code section 13142.5(b) determination.

If the Dischargers do not increase the brine discharge flow rate from the Doheny Desalination Project above a monthly average flow rate of 5.0 MGD, then the condition in section 2.4.6 of this Order will have no effect. If the Dischargers increase the brine discharge flow rate from the Doheny Desalination Project above a monthly average flow rate of 5.0 MGD, then the Dischargers shall apply for a new Water Code section 13142.5(b) determination.

If the final design plans for the Doheny Desalination Project result in a RO recovery rate of 50%, then the condition in section 2.4.7 of this Order will have no further effect. If the final design plans for the Doheny Desalination Project result in a RO recovery rate other than 50%, then the Dischargers shall apply for a new Water Code section 13142.5(b) determination.

In addition, the Dischargers are required to apply for a new Water Code section 13142.5(b) determination in accordance with the Ocean Plan requirements if any potential future expansion of the Facility occurs, including any design change or operational change to the Doheny Desalination Project that could increase the

intake or mortality of any form of marine life beyond that which is approved under this Order. The San Diego Water Board's 13142.5(b) analysis for the expanded Facility may be limited to those expansions or other changes that result in the increased intake or mortality of all forms of marine life, unless the San Diego Water Board determines that additional measures that minimize intake and mortality of all forms of marine life are feasible for the existing portions of the Facility.

2.5. **California Environmental Quality Act (CEQA) for NPDES Permit.** The action to adopt an NPDES permit is exempt from the provisions of CEQA (Public Resources Code Section 21100, et seq.) in accordance with section 13389 of the Water Code.

2.6 **CEQA for Water Code section 13142.5(b) Determination.** The Water Code section 13142.5(b) determination set forth in Attachment H of this Order is issued under State law authority only and is a discretionary approval subject to compliance with CEQA. In June 2019, SCWD certified the *Doheny Ocean Desalination Plant Project Final Environmental Impact Report* (State Clearinghouse No. 2016031038) (Final EIR). The San Diego Water Board independently considered the environmental effects of the project as described in the Final EIR and addendums.

SCWD adopted a Mitigation Monitoring and Reporting Program (MMRP) pursuant to Public Resources Code section 21081.6 and CEQA Guidelines section 15097 to ensure that mitigation measures and revisions to the Doheny Desalination Project identified in the Final EIR are implemented. SCWD shall implement the MMRP described in the Final EIR as it pertains to resources within the San Diego Water Board's purview.

2.7 **Executive Officer Delegation of Authority.** The San Diego Water Board by prior resolution has delegated all matters that may legally be delegated to its Executive Officer to act on its behalf pursuant to Water Code section 13223. Therefore, the Executive Officer is authorized to act on the San Diego Water Board's behalf on any matter within this Order unless such delegation is unlawful under Water Code section 13223 or this Order explicitly states otherwise.

2.8 **Notification of Interested Parties.** The San Diego Water Board has notified the Dischargers and interested agencies and persons of its intent to prescribe WDRs for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of the notification are provided in the Fact Sheet.

2.9. **Consideration of Public Comment.** The San Diego Water Board, in a public meeting, heard and considered all comments pertaining to the discharge and the Water Code section 13142.5(b) determination. Details of the Public Hearing are provided in the Fact Sheet (Attachment F).

THEREFORE, IT IS HEREBY ORDERED, that this Order supersedes Order No. R9-2012-0012, as amended by Order Nos. R9-2014-0105 and R9-2017-0013, except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Dischargers shall comply with the requirements in this Order. The Dischargers are hereby authorized to discharge subject to WDRs in this Order at the discharge location described in Table 2 to the Pacific Ocean offshore of the coast of Orange County. This action in no way prevents the San Diego Water Board from taking enforcement action for past violations of Order No. R9-2012-0012, as amended.

3. Discharge Prohibitions

- 3.1 The discharge of waste from the J.B. Latham Wastewater Treatment Plant, Chiquita Water Reclamation Plant (WRP), 3A WRP, San Clemente WRP, and/or Oso Creek WRP not treated by a secondary treatment process and not in compliance with the effluent limitations specified in section 4.1 of this Order, or to a location other than Discharge Point No. 001, unless specifically regulated by this Order or separate WDRs, is prohibited.
- 3.2. The discharge of waste from the San Juan Capistrano Groundwater Treatment Plant, SCWD Groundwater Recovery Facility, Segunda Deshecha Runoff Plant, Doheny Desalination Project, or Ranch Water Filtration Plant not in compliance with the effluent limitations specified in section 4.1 of this Order, or to a location other than Discharge Point No. 001, unless specifically regulated by this Order or separate WDRs, is prohibited.
- 3.3. The Dischargers must comply with Discharge Prohibitions contained in the Ocean Plan, incorporated into this Order as if fully set forth herein and summarized in Attachment G, as a condition of this Order.
- 3.4. The Dischargers must comply with Discharge Prohibitions contained in chapter 4 of the *Water Quality Control Plan for the San Diego Basin* (Basin Plan), incorporated into this Order as if fully set forth herein and summarized in Attachment G, as a condition of this Order.
- 3.5 The discharge of waste from the Doheny Desalination Project to Discharge Point No. 001 is prohibited unless and until: 1) the Dischargers submit the Mitigation APF Re-Evaluation Study, as required in section 6.3.2.3 of this Order, 2) the Dischargers submit the Larval Study, as required in section 6.3.2.4 of this Order, 3) the Dischargers submit the Final Marine Life Mitigation Plan, as required in section 6.3.2.5 of this Order, 4) the San Diego Water Board has approved the Dischargers' Final Marine Life Mitigation Plan, 5) the Dischargers have obtained all permits and other governmental approvals necessary to implement all components of the approved Final Marine Life Mitigation Plan, and 6) the Dischargers have begun to implement any schedules and plans in accordance with the approved Final Marine Life Mitigation Plan.

4. Effluent Limitations and Discharge Prohibitions

4.1. Effluent Limitations and Performance Goals

4.1.1. Effluent Limitations – Discharge Point No. 001

4.1.1.1. **J.B. Latham Wastewater Treatment Plant.** The Discharger shall maintain compliance with the following effluent limitations for the J.B. Latham Wastewater Treatment Plant, with compliance measured at Monitoring Location M-001A, as described in the Monitoring and Reporting Program (MRP, Attachment E).

Table 3. J.B. Latham Wastewater Treatment Plant Effluent Limitations at Monitoring Location M-001A

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	13.0	--	--	--
Carbonaceous Biochemical Oxygen Demand 5-day @ 20 degrees Celsius (°C) (CBOD ₅)	milligram per liter (mg/L)	25	40	--	--
CBOD ₅	pounds per day (lbs/day) ¹	2,711	4,337	--	--
CBOD ₅	% Removal	≥85	--	--	--
Total Suspended Solids (TSS)	mg/L	30	45	--	--
TSS	lbs/day ¹	3,253	4,879	--	--
TSS	% Removal	≥85	--	--	--
Oil and Grease	mg/L	25	40	--	75
Oil and Grease	lbs/day ¹	2,711	4,337	--	8,132
Settleable Solids	milliliter per liter (ml/L)	1.0	1.5	--	3.0
Turbidity	nephelometric turbidity unit (NTU)	75	100	--	225
pH	standard units	--	--	6.0	9.0

Note for Table 3

1. The Mass Emission Rate (MER) limitations, in pounds per day (lbs/day), were calculated based on the following equation: $MER (lbs/day) = 8.34 \times Q \times C$, where Q is the permitted flow for the J.B. Latham Wastewater Treatment Plant (13.0 MGD) and C is the concentration (mg/L).

4.1.1.2. **Chiquita WRP.** The Discharger shall maintain compliance with the following effluent limitations for the Chiquita WRP, with compliance measured at Monitoring Location M-001B, as described in the MRP (Attachment E).

Table 4. Chiquita WRP Effluent Limitations at Monitoring Location M-001B

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	9.0	--	--	--
CBOD ₅	mg/L	25	40	--	--
CBOD ₅	lbs/day ¹	1,877	3,002	--	--
CBOD ₅	% Removal	≥85	--	--	--
TSS	mg/L	30	45	--	--
TSS	lbs/day ¹	2,252	3,378	--	--
TSS	% Removal	≥85	--	--	--
Oil and Grease	mg/L	25	40	--	75
Oil and Grease	lbs/day ¹	1,877	3,002	--	5,630
Settleable Solids	ml/L	1.0	1.5	--	3.0
Turbidity	NTU	75	100	--	225
pH	standard units	--	--	6.0	9.0

Note for Table 4

- The MER limitations, in lbs/day, were calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the permitted flow for the Chiquita WRP (9.0 MGD) and C is the concentration (mg/L).

4.1.1.3. **3A WRP.** The Discharger shall maintain compliance with the following effluent limitations for the 3A WRP, with compliance measured at Monitoring Location M-001C, as described in the MRP (Attachment E).

Table 5. 3A WRP Effluent Limitations at Monitoring Location M-001C

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	6.0	--	--	--
CBOD ₅	mg/L	25	40	--	--
CBOD ₅	lbs/day ¹	1,251	2,002	--	--
CBOD ₅	% Removal	≥85	--	--	--
TSS	mg/L	30	45	--	--
TSS	lbs/day ¹	1,501	2,252	--	--
TSS	% Removal	≥85	--	--	--
Oil and Grease	mg/L	25	40	--	75
Oil and Grease	lbs/day ¹	1,251	2,002	--	3,753
Settleable Solids	ml/L	1.0	1.5	--	3.0
Turbidity	NTU	75	100	--	225
pH	standard units	--	--	6.0	9.0

Note for Table 5

- The MER limitations, in lbs/day, were calculated based on the following equation: $MER (lbs/day) = 8.34 \times Q \times C$, where Q is the permitted flow for the 3A WRP (6.0 MGD) and C is the concentration (mg/L).

4.1.1.4. **San Clemente WRP.** The Discharger shall maintain compliance with the following effluent limitations for the San Clemente WRP, with compliance measured at Monitoring Location M-001D, as described in the MRP (Attachment E).

Table 6. San Clemente WRP Effluent Limitations at Monitoring Location M-001D

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	6.98	--	--	--
CBOD ₅	mg/L	25	40	--	--
CBOD ₅	lbs/day ¹	1,455	2,329	--	--
CBOD ₅	% Removal	≥85	--	--	--
TSS	mg/L	30	45	--	--
TSS	lbs/day ¹	1,746	2,620	--	--
TSS	% Removal	≥85	--	--	--
Oil and Grease	mg/L	25	40	--	75
Oil and Grease	lbs/day ¹	1,455	2,329	--	4,366
Settleable Solids	ml/L	1.0	1.5	--	3.0
Turbidity	NTU	75	100	--	225
pH	standard units	--	--	6.0	9.0

Note for Table 6

- The MER limitations, in lbs/day, were calculated based on the following equation: $MER (lbs/day) = 8.34 \times Q \times C$, where Q is the permitted flow for the San Clemente WRP (6.98 MGD) and C is the concentration (mg/L).

4.1.1.5. **San Juan Capistrano Groundwater Treatment Plant.** The Discharger shall maintain compliance with the following effluent limitations for the San Juan Capistrano Groundwater Treatment Plant, with compliance measured at Monitoring Location M-001E, as described in the MRP (Attachment E).

Table 7. San Juan Capistrano Groundwater Treatment Plant Effluent Limitations at Monitoring Location M-001E

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	2.2	--	--	--
TSS	mg/L	60	--	--	--
TSS	lbs/day ¹	1,101	--	--	--
Oil and Grease	mg/L	25	40	--	75

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Oil and Grease	lbs/day ¹	459	734	--	1,376
Settleable Solids	ml/L	1.0	1.5	--	3.0
Turbidity	NTU	75	100	--	225
pH	standard units	--	--	6.0	9.0

Note for Table 7

- The MER limitations, in lbs/day, were calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the permitted flow for the San Juan Capistrano Groundwater Treatment Plant (2.2 MGD) and C is the concentration (mg/L).

4.1.1.6. **SCWD Groundwater Recovery Facility.** The Discharger shall maintain compliance with the following effluent limitations for the SCWD Groundwater Recovery Facility, with compliance measured at Monitoring Location M-001F, as described in the MRP (Attachment E).

Table 8. SCWD Groundwater Recovery Facility Effluent Limitations at Monitoring Location M-001F

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	0.6	--	--	--
TSS	mg/L	60	--	--	--
TSS	lbs/day ¹	300	--	--	--
Oil and Grease	mg/L	25	40	--	75
Oil and Grease	lbs/day ¹	125	200	--	375
Settleable Solids	ml/L	1.0	1.5	--	3.0
Turbidity	NTU	75	100	--	225
pH	standard units	--	--	6.0	9.0

Note for Table 8

- The MER limitations, in lbs/day, were calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the permitted flow for the SCWD Groundwater Recovery Facility (0.6 MGD) and C is the concentration (mg/L).

4.1.1.7. **Segunda Deshecha Runoff Plant.** The Discharger shall maintain compliance with the following effluent limitations for the Segunda Deshecha Runoff Plant, with compliance measured at Monitoring Location M-001G, as described in the MRP (Attachment E).

**Table 9. Segunda Deshecha Runoff Plant Effluent Limitations
at Monitoring Location M-001G**

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	1.0	--	--	--
TSS	mg/L	60	--	--	--
TSS	lbs/day ¹	500	--	--	--
Oil and Grease	mg/L	25	40	--	75
Oil and Grease	lbs/day ¹	209	334	--	626
Settleable Solids	ml/L	1.0	1.5	--	3.0
Turbidity	NTU	75	100	--	225
pH	standard units	--	--	6.0	9.0

Note for Table 9

1. The MER limitations, in lbs/day, were calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the permitted flow for the Segunda Deshecha Runoff Plant (1.0 MGD) and C is the concentration (mg/L).

4.1.1.8. **Doheny Desalination Project.** The Discharger shall maintain compliance with the following effluent limitations for the Doheny Desalination Project with compliance measured at Monitoring Location M-001H, as described in the MRP (Attachment E).

**Table 10. Doheny Desalination Project Effluent Limitations
at Monitoring Location M-001H**

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	5.0 ²	--	--	--
TSS	mg/L	60	--	--	--
TSS	lbs/day ¹	2,502	--	--	--
Oil and Grease	mg/L	25	40	--	75
Oil and Grease	lbs/day ¹	1,043	1,668	--	3,128
Settleable Solids	ml/L	1.0	1.5	--	3.0
Turbidity	NTU	75	100	--	225
pH	standard units	--	--	6.0	9.0
Salinity	parts per thousand (ppt)	--	--	--	232.4

Note for Table 10

1. The MER limitation, in lbs/day, was calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the permitted flow for the Doheny Desalination Project (5.0 MGD) and C is the concentration (mg/L).

2. The flow limitation includes RO brine concentrate flow and the calcite contactor backwash flow. Periodic off-spec product water or flows during start-up and commissioning activities from the Doheny Desalination Project are not included.

4.1.1.9. The Dischargers shall maintain compliance with the following effluent limitations for Discharge Point No. 001, with compliance measured at Monitoring Location M-001, as described in the MRP (Attachment E).

Table 11. Effluent Limitations at Monitoring Location M-001

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
Flow	MGD	--	43.78	--	--
Chronic Toxicity ^{2,3}	Toxic Units Chronic (TUc)	--	--	101	--
Chlorinated Phenolics ⁴	µg/L	1.0E+02	--	4.0E+02	1.0E+03
Chlorinated Phenolics ⁴	lbs/day ⁵	3.3E+01	--	1.3E+02	3.3E+02
TCDD Equivalents ⁴	µg/L	--	3.9E-07	--	--
TCDD Equivalents ⁴	lbs/day ⁵	--	1.3E-07	--	--

Note for Table 11

1. The scientific “E” notation is used to express certain values. In scientific “E” notation, the number following the “E” indicates that position of the decimal point in the value. Negative numbers after the “E” indicate that the value is less than 1, and positive numbers after the “E” indicate that the value is greater than 1. In this notation, a value of 6.1E-02 represents 6.1 x 10⁻² or 0.061, 6.1E+02 represents 6.1 x 10² or 610, and 6.1E+00 represents 6.1 x 10⁰ or 6.1.
2. As specified in section 7.15 of this Order and section 3.3 of the MRP (Attachment E).
3. The chronic toxicity effluent limitation is protective of both the numeric acute and chronic toxicity 2019 Ocean Plan water quality objectives. The effluent limitation shall be implemented using *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995). Chronic toxicity expressed as Toxic Units Chronic (TUc) = 100/NOEC, where NOEC (No Observed Effect Concentration; also referred to as the No Observed Effect Level or NOEL) is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism.
4. Please see Attachment A of this Order for the definitions.
5. The MER limitation, in lbs/day, was calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is 38.78 MGD based on the previous permitted flow for the SJCOO and C is the concentration (mg/L). See Attachment F, section 4.4.1 for more information on the use of the previous permitted flow for the MERs.

4.1.1.10. **Ranch Water Filtration Plant.** The Discharger shall maintain compliance with the following effluent limitations for the Ranch Water Filtration Plant with compliance measured at Monitoring Location M-001I, as described in the MRP (Attachment E).

Table 12. Ranch Water Filtration Plant Effluent Limitations at Monitoring Location M-001I

Parameter	Unit	Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	1.34	--	--	--
TSS	mg/L	60	--	--	--
TSS	lbs/day ¹	671	--	--	--
Oil and Grease	mg/L	25	40	--	75
Oil and Grease	lbs/day ¹	279	447	--	838
Settleable Solids	ml/L	1.0	1.5	--	3.0
Turbidity	NTU	75	100	--	225
pH	standard units	--	--	6.0	9.0

Note for Table 12

1. The MER limitation, in lbs/day, was calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the permitted flow for the Ranch Water Filtration Plant (1.34 MGD) and C is the concentration (mg/L).

4.1.2. **Performance Goal**

Parameters that do not have reasonable potential to cause or contribute to an exceedance of water quality objectives, or for which reasonable potential to cause or contribute to an exceedance of water quality objectives cannot be determined, are referred to as performance goal parameters and are assigned the performance goals listed in Table 13. Performance goal parameters shall be monitored at Monitoring Location M-001, as described in the MRP (Attachment E). The performance goals in Table 13 are not water quality-based effluent limitations (WQBELs) and are not enforceable, as such. However, the Dischargers shall maintain, if not improve, the effluent quality to levels at or below the performance goals. The Dischargers shall report all exceedances of performance goals in the cover letter of the applicable self-monitoring report (SMR). Any two consecutive exceedances of the performance goals shall trigger an investigation into the cause of the exceedance. If the exceedance persists in three successive monitoring events, the Dischargers shall submit a written Performance Goal Exceedance Investigation Work Plan to the San Diego Water Board within 30 days of the Dischargers becoming aware of the third successive exceedance. The Performance Goal Exceedance Investigation Work Plan shall outline the investigative steps being taken, whether outside technical expertise is being retained to assist in the investigation, and the

proposed schedule for completing a Performance Goal Exceedance Report. The Performance Goal Exceedance Report shall include a description of the nature of the exceedance(s), the results of the investigation including the cause of the exceedance(s), the corrective actions taken, any proposed corrective measures, and a schedule for implementation, if necessary. The San Diego Water Board may reopen this Order to include effluent limitations for parameters that exceed performance goals.

Table 13. Performance Goals at Monitoring Location M-001

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
Arsenic, Total Recoverable	µg/L	5.1E+02	--	2.9E+03	7.8E+03
Arsenic, Total Recoverable	lbs/day ²	1.6E+02	--	9.5E+02	2.5E+03
Cadmium, Total Recoverable	µg/L	1.0E+02	--	4.0E+02	1.0E+03
Cadmium, Total Recoverable	lbs/day ²	3.3E+01	--	1.3E+02	3.3E+02
Chromium VI, Total Recoverable ³	µg/L	2.0E+02	--	8.1E+02	2.0E+03
Chromium VI, Total Recoverable ³	lbs/day ²	6.5E+01	--	2.6E+02	6.5E+02
Copper, Total Recoverable	µg/L	1.0E+02	--	1.0E+03	2.8E+03
Copper, Total Recoverable	lbs/day ²	3.3E+01	--	3.3E+02	9.2E+02
Lead, Total Recoverable	µg/L	2.0E+02	--	8.1E+02	2.0E+03
Lead, Total Recoverable	lbs/day ²	6.5E+01	--	2.6E+02	6.5E+02
Mercury, Total Recoverable	µg/L	4.0E+00	--	1.6E+01	4.0E+01
Mercury, Total Recoverable	lbs/day ²	1.3E+00	--	5.2E+00	1.3E+01
Nickel, Total Recoverable	µg/L	5.1E+02	--	2.0E+03	5.1E+03
Nickel, Total Recoverable	lbs/day ²	1.6E+02	--	6.5E+02	1.6E+03
Selenium, Total Recoverable	µg/L	1.5E+03	--	6.1E+03	1.5E+04
Selenium, Total Recoverable	lbs/day ²	4.9E+02	--	2.0E+03	4.9E+03
Silver, Total Recoverable	µg/L	5.5E+01	--	2.7E+02	6.9E+02
Silver, Total Recoverable	lbs/day ²	1.8E+01	--	8.6E+01	2.2E+02
Zinc, Total Recoverable	µg/L	1.2E+03	--	7.3E+03	1.9E+04
Zinc, Total Recoverable	lbs/day ²	3.9E+02	--	2.4E+03	6.3E+03
Cyanide, Total	µg/L	1.0E+02	--	4.0E+02	1.0E+03
Cyanide, Total	lbs/day ²	3.3E+01	--	1.3E+02	3.3E+02
Total Chlorine Residual	µg/L	2.0E+02	--	8.1E+02	6.1E+03
Total Chlorine Residual	lbs/day ²	6.5E+01	--	2.6E+02	2.0E+03
Ammonia, Total (as N)	µg/L	6.1E+04	--	2.4E+05	6.1E+05
Ammonia, Total (as N)	lbs/day ²	2.0E+04	--	7.8E+04	2.0E+05
Phenolic Compounds (non-chlorinated) ⁴	µg/L	3.0E+03	--	1.2E+04	3.0E+04
Phenolic Compounds (non-chlorinated) ⁴	lbs/day ²	9.8E+02	--	3.9E+03	9.8E+03

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
Endosulfan ⁴	µg/L	9.1E-01	--	1.8E+00	2.7E+00
Endosulfan ⁴	lbs/day ²	2.9E-01	--	5.9E-01	8.8E-01
Endrin	µg/L	2.0E-01	--	4.0E-01	6.1E-01
Endrin	lbs/day ²	6.5E-02	--	1.3E-01	2.0E-01
HCH (BHC) ⁴	µg/L	4.0E-01	--	8.1E-01	1.2E+00
HCH (BHC) ⁴	lbs/day ²	1.3E-01	--	2.6E-01	3.9E-01
Radioactivity	picocuries per liter (pCi/L)	5	--	--	--
Acrolein	µg/L	--	2.2E+04	--	--
Acrolein	lbs/day ²	--	7.2E+03	--	--
Antimony	µg/L	--	1.2E+05	--	--
Antimony	lbs/day ²	--	3.9E+04	--	--
Bis(2-chloroethoxy) Methane	µg/L	--	4.4E+02	--	--
Bis(2-chloroethoxy) Methane	lbs/day ²	--	1.4E+02	--	--
Bis(2-chloroisopropyl) Ether	µg/L	--	1.2E+05	--	--
Bis(2-chloroisopropyl) Ether	lbs/day ²	--	3.9E+04	--	--
Chlorobenzene	µg/L	--	5.8E+04	--	--
Chlorobenzene	lbs/day ²	--	1.9E+04	--	--
Chromium (III), Total Recoverable ³	µg/L	--	1.9E+07	--	--
Chromium (III), Total Recoverable ³	lbs/day ²	--	6.2E+06	--	--
Di-n-butyl Phthalate	µg/L	--	3.5E+05	--	--
Di-n-butyl Phthalate	lbs/day ²	--	1.1E+05	--	--
Dichlorobenzenes ⁴	µg/L	--	5.2E+05	--	--
Dichlorobenzenes ⁴	lbs/day ²	--	1.7E+05	--	--
Diethyl Phthalate	µg/L	--	3.3E+06	--	--
Diethyl Phthalate	lbs/day ²	--	1.1E+06	--	--
Dimethyl Phthalate	µg/L	--	8.3E+07	--	--
Dimethyl Phthalate	lbs/day ²	--	2.7E+07	--	--
4,6-dinitro-2-methylphenol	µg/L	--	2.2E+04	--	--
4,6-dinitro-2-methylphenol	lbs/day ²	--	7.2E+03	--	--
2,4-dinitrophenol	µg/L	--	4.0E+02	--	--
2,4-dinitrophenol	lbs/day ²	--	1.3E+02	--	--
Ethylbenzene	µg/L	--	4.1E+05	--	--
Ethylbenzene	lbs/day ²	--	1.3E+05	--	--
Fluoranthene	µg/L	--	1.5E+03	--	--
Fluoranthene	lbs/day ²	--	4.9E+02	--	--
Hexachlorocyclopentadiene	µg/L	--	5.9E+03	--	--

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
Hexachlorocyclopentadiene	lbs/day ²	--	1.9E+03	--	--
Nitrobenzene	µg/L	--	4.9E+02	--	--
Nitrobenzene	lbs/day ²	--	1.6E+02	--	--
Thallium, Total Recoverable	µg/L	--	2.0E+02	--	--
Thallium, Total Recoverable	lbs/day ²	--	6.5E+01	--	--
Toluene	µg/L	--	8.6E+06	--	--
Toluene	lbs/day ²	--	2.8E+06	--	--
Tributyltin	µg/L	--	1.4E-01	--	--
Tributyltin	lbs/day ²	--	4.6E-02	--	--
1,1,1-trichloroethane	µg/L	--	5.5E+07	--	--
1,1,1-trichloroethane	lbs/day ²	--	1.8E+07	--	--
Acrylonitrile	µg/L	--	1.0E+01	--	--
Acrylonitrile	lbs/day ²	--	3.3E+00	--	--
Aldrin	µg/L	--	2.2E-03	--	--
Aldrin	lbs/day ²	--	7.2E-04	--	--
Benzene	µg/L	--	6.0E+02	--	--
Benzene	lbs/day ²	--	1.9E+02	--	--
Benzidine	µg/L	--	7.0E-03	--	--
Benzidine	lbs/day ²	--	2.3E-03	--	--
Beryllium, Total Recoverable	µg/L	--	3.3E+00	--	--
Beryllium, Total Recoverable	lbs/day ²	--	1.1E+00	--	--
Bis(2-chloroethyl) Ether	µg/L	--	4.5E+00	--	--
Bis(2-chloroethyl) Ether	lbs/day ²	--	1.5E+00	--	--
Bis(2-ethylhexyl) Phthalate	µg/L	--	3.5E+02	--	--
Bis(2-ethylhexyl) Phthalate	lbs/day ²	--	1.1E+02	--	--
Carbon Tetrachloride	µg/L	--	9.1E+01	--	--
Carbon Tetrachloride	lbs/day ²	--	2.9E+01	--	--
Chlordane	µg/L	--	2.3E-03	--	--
Chlordane	lbs/day ²	--	7.5E-04	--	--
Chlorodibromomethane (Dibromochloromethane)	µg/L	--	8.7E+02	--	--
Chlorodibromomethane (Dibromochloromethane)	lbs/day ²	--	2.8E+02	--	--
Chloroform	µg/L	--	1.3E+04	--	--
Chloroform	lbs/day ²	--	4.2E+03	--	--
Dichlorodiphenyltrichloroethane (DDT) ⁴	µg/L	--	1.7E-02	--	--
DDT ⁴	lbs/day ²	--	5.6E-03	--	--
1,4-dichlorobenzene	µg/L	--	1.8E+03	--	--

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
1,4-dichlorobenzene	lbs/day ²	--	5.9E+02	--	--
3,3'-dichlorobenzidine	µg/L	--	8.2E-01	--	--
3,3'-dichlorobenzidine	lbs/day ²	--	2.6E-01	--	--
1,2-dichloroethane	µg/L	--	2.8E+03	--	--
1,2-dichloroethane	lbs/day ²	--	9.1E+02	--	--
1,1-dichloroethylene	µg/L	--	9.1E+01	--	--
1,1-dichloroethylene	lbs/day ²	--	2.9E+01	--	--
Dichlorobromomethane	µg/L	--	6.3E+02	--	--
Dichlorobromomethane	lbs/day ²	--	2.0E+02	--	--
Dichloromethane (Methylene Chloride)	µg/L	--	4.5E+04	--	--
Dichloromethane (Methylene Chloride)	lbs/day ²	--	1.5E+04	--	--
1,3-dichloropropene (1,3-Dichloropropylenes)	µg/L	--	9.0E+02	--	--
1,3-dichloropropene (1,3-Dichloropropylenes)	lbs/day ²	--	2.9E+02	--	--
Dieldrin	µg/L	--	4.0E-03	--	--
Dieldrin	lbs/day ²	--	1.3E-03	--	--
2,4-dinitrotoluene	µg/L	--	2.6E+02	--	--
2,4-dinitrotoluene	lbs/day ²	--	8.5E+01	--	--
1,2-diphenylhydrazine	µg/L	--	1.6E+01	--	--
1,2-diphenylhydrazine	lbs/day ²	--	5.2E+00	--	--
Halomethanes ⁴	µg/L	--	1.3E+04	--	--
Halomethanes ⁴	lbs/day ²	--	4.2E+03	--	--
Heptachlor	µg/L	--	5.1E-03	--	--
Heptachlor	lbs/day ²	--	1.6E-03	--	--
Heptachlor Epoxide	µg/L	--	2.0E-03	--	--
Heptachlor Epoxide	lbs/day ²	--	6.5E-04	--	--
Hexachlorobenzene	µg/L	--	2.1E-02	--	--
Hexachlorobenzene	lbs/day ²	--	6.9E-03	--	--
Hexachlorobutadiene	µg/L	--	1.4E+03	--	--
Hexachlorobutadiene	lbs/day ²	--	4.6E+02	--	--
Hexachloroethane	µg/L	--	2.5E+02	--	--
Hexachloroethane	lbs/day ²	--	8.2E+01	--	--
Isophorone	µg/L	--	7.4E+04	--	--
Isophorone	lbs/day ²	--	2.4E+04	--	--
N-nitrosodimethylamine	µg/L	--	7.4E+02	--	--
N-nitrosodimethylamine	lbs/day ²	--	2.4E+02	--	--
N-nitrosodi-N-propylamine	µg/L	--	3.8E+01	--	--
N-nitrosodi-N-propylamine	lbs/day ²	--	1.2E+01	--	--

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
N-nitrosodiphenylamine	µg/L	--	2.5E+02	--	--
N-nitrosodiphenylamine	lbs/day ²	--	8.2E+01	--	--
Polynuclear Aromatic Hydrocarbons (PAHs) ⁴	µg/L	--	8.9E-01	--	--
PAHs ⁴	lbs/day ²	--	2.9E-01	--	--
Polychlorinated Biphenyls (PCBs) ⁴	µg/L	--	1.9E-03	--	--
PCBs ⁴	lbs/day ²	--	6.2E-04	--	--
1,1,2,2-tetrachloroethane	µg/L	--	2.3E+02	--	--
1,1,2,2-tetrachloroethane	lbs/day ²	--	7.5E+01	--	--
Tetrachloroethylene (Tetrachloroethene)	µg/L	--	2.0E+02	--	--
Tetrachloroethylene (Tetrachloroethene)	lbs/day ²	--	6.5E+01	--	--
Toxaphene	µg/L	--	2.1E-02	--	--
Toxaphene	lbs/day ²	--	6.9E-03	--	--
Trichloroethylene (Trichloroethene)	µg/L	--	2.7E+03	--	--
Trichloroethylene (Trichloroethene)	lbs/day ²	--	8.8E+02	--	--
1,1,2-trichloroethane	µg/L	--	9.5E+02	--	--
1,1,2-trichloroethane	lbs/day ²	--	3.1E+02	--	--
2,4,6-trichlorophenol	µg/L	--	2.9E+01	--	--
2,4,6-trichlorophenol	lbs/day ²	--	9.5E+00	--	--
Vinyl Chloride	µg/L	--	3.6E+03	--	--
Vinyl Chloride	lbs/day ²	--	1.2E+03	--	--

Note for Table 13

1. The scientific "E" notation is used to express certain values. In scientific "E" notation, the number following the "E" indicates that position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation, a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^2 or 610, and 6.1E+00 represents 6.1×10^0 or 6.1.
2. The MER limitations, in lbs/day, were calculated based on the following equation: $MER (lbs/day) = 8.34 \times Q \times C$, where Q is 38.78 MGD based on the previous permitted flow for the SJCOO and C is the concentration (mg/L). See Attachment F, section 4.4.1 for more information on the use of the previous permitted flow for the MERs.
3. The Dischargers may, at their option, apply this performance goal as a total chromium performance goal.
4. Please see Attachment A for the definitions.
5. Not to exceed limits specified in title 17, division 1, chapter 5, subchapter 4, group 3, article 3, section 30253 of the California Code of Regulations (CCR), reference to section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect

4.2. Discharge Specifications

- 4.2.1. Waste management systems that discharge to the Pacific Ocean must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community.
- 4.2.2. Waste discharged to the ocean must be essentially free of:
 - 4.2.2.1. Material that is floatable or will become floatable upon discharge;
 - 4.2.2.2. Settleable material or substances that may form sediments which will degrade benthic communities or other aquatic life;
 - 4.2.2.3. Substances which will accumulate to toxic levels in marine waters, sediments, or biota;
 - 4.2.2.4. Substances that significantly decrease the natural light to benthic communities and other marine life; and
 - 4.2.2.5. Materials that result in aesthetically undesirable discoloration of the ocean surface.
- 4.2.3. Waste effluents shall be discharged in a manner which provides sufficient initial dilution to minimize the concentrations of substances not removed in the treatment.
- 4.2.4. Location of waste discharges must be determined after a detailed assessment of the oceanographic characteristics and current patterns to assure that:
 - 4.2.4.1. Pathogenic organisms and viruses are not present in areas where shellfish are harvested for human consumption or in areas used for swimming or other body-contact sports;
 - 4.2.4.2. Natural water quality conditions are not altered in areas designated as being of special biological significance or areas that existing marine laboratories use as a source of seawater; and
 - 4.2.4.3. Maximum protection is provided to the marine environment.
- 4.2.5. Waste that contains pathogenic organisms or viruses should be discharged a sufficient distance from shellfishing and water-contact sports areas to maintain applicable bacterial standards without disinfection. Where conditions are such that an adequate distance cannot be attained, reliable disinfection in conjunction with a reasonable separation of the discharge point from the area of use must be provided. Disinfection procedures that do not increase effluent toxicity and that constitute the least environmental and human hazard should be used.

4.3. Intake Specifications for Doheny Desalination Project

The intake of seawater shall comply with the following specifications:

- 4.3.1. The intake of seawater shall not exceed an average monthly of 10 MGD.

- 4.3.2. The intake of seawater shall be reduced to the minimum volume necessary to maintain operations of the Doheny Desalination Project.
- 4.3.3. To the maximum extent practicable, in-plant recycling of waste streams shall be maximized before intaking additional seawater.
- 4.3.4. The Dischargers shall cease intake of seawater except when intake of seawater is necessary to maintain operations of the Doheny Desalination Project or to comply with this Order.

4.4. Additional Discharge Specifications for Doheny Desalination Project

The discharge of effluent from the Doheny Desalination Project shall comply with the following: Wastewater from the Doheny Desalination Project must be discharged in a manner that provides sufficient initial dilution to comply with the effluent limitations and discharge specifications contained in section 4 of this Order and the receiving water limitations in section 5 of this Order, and in compliance with the discharge prohibitions contained in section 3 of this Order.

4.5. Land Discharge Specifications – Not Applicable

4.6. Recycling Specifications – Not Applicable

5. Receiving Water Limitations

5.1. Surface Water Limitation

The receiving water limitations set forth below for ocean waters are based on water quality objectives contained in the Basin Plan and Ocean Plan and are a required part of this Order. The discharge of waste shall not cause or contribute to violation of these limitations in the Pacific Ocean. Compliance with these limitations shall be determined from samples collected at stations representative of the area outside of the zone of initial dilution (ZID).

5.1.1. Bacterial Characteristics

- 5.1.1.1. Within a zone bounded by the shoreline and a distance of three nautical miles from the shoreline, including all kelp beds, the following bacterial objectives shall be maintained throughout the water column. The ZID for the ocean outfall is excluded.

5.1.1.1.1. Fecal Coliform

- 5.1.1.1.1.1. Thirty-day geometric mean of fecal coliform density not to exceed 200 colony forming units (CFU) per 100 milliliters (mL) calculated based on the five most recent samples from each site.

- 5.1.1.1.1.2. Single sample maximum not to exceed 400 CFU per 100 mL.

5.1.1.1.2. Enterococci

- 5.1.1.1.2.1. Six-week rolling geometric mean not to exceed 30 CFU per 100 mL, calculated weekly.

- 5.1.1.1.2.2. Statistical threshold value (STV) of 110 CFU per 100 mL not to be exceeded by more than 10 percent of samples collected in a calendar month, calculated in a static manner.
- 5.1.1.2. The ZID of any wastewater outfall shall be excluded from designation as kelp beds for purposes of bacterial standards. Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp beds for purposes of bacterial standards.
- 5.1.1.3. At all areas where shellfish may be harvested for human consumption, as determined by the San Diego Water Board, the median total coliform density (CFU) shall not exceed 70 per 100 ml throughout the water column, and not more than 10 percent of the samples shall exceed 230 per 100 ml.
- 5.1.2. Physical Characteristics**
- 5.1.2.1. Floating particulates and grease and oils shall not be visible.
- 5.1.2.2. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.
- 5.1.2.3. Natural light shall not be significantly reduced at any point outside the initial dilution zone as a result of the discharge of waste.
- 5.1.2.4. The rate of deposition of inert solids and the characteristics of inert solids in the ocean sediments shall not be changed such that benthic communities are degraded.
- 5.1.3. Chemical Characteristics**
- 5.1.3.1. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.
- 5.1.3.2. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.
- 5.1.3.3. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.
- 5.1.3.4. The concentration of substances set forth in chapter II, Table 3 of the Ocean Plan, shall not be increased in marine sediments to levels that would degrade indigenous biota.
- 5.1.3.5. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.
- 5.1.3.6. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.
- 5.1.3.7. The concentration of substances set forth in chapter II, Table 3 of the Ocean Plan shall not be exceeded in ocean waters.
- 5.1.3.8. Salinity shall not exceed a daily maximum of 2.0 ppt above natural background salinity measured no further than 100 meters (328 ft) horizontally

from each discharge point. There is no vertical limit to this zone. Natural background salinity, as measured at a reference location that is representative of the salinity resulting from natural processes without human influence at the discharge location, will be used to evaluate compliance with the salinity receiving water limitation. The reference location shall be without human influence including wastewater outfalls and brine discharges. The reference location for this Order is the automated shore station at the end of Scripps Pier operated by Scripps Institution of Oceanography. If this reference location becomes unavailable in the future, the Dischargers shall submit for the San Diego Water Board's review and acceptance a proposed alternative reference location representative of natural background salinity.

5.1.4. **Biological Characteristics**

- 5.1.4.1. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.
- 5.1.4.2. The natural taste, odor, color of fish, shellfish, or other marine resources used for human consumption shall not be altered.
- 5.1.4.3. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

5.1.4. **Radioactivity**

- 5.1.5.1. Discharge of radioactive waste shall not degrade marine life.
- 5.1.5.2. The radioactivity in the receiving waters shall not exceed limits specified in title 17, division 1, chapter 5, subchapter 4, group 3, section 30253 of the CCR. Reference to section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.

5.2. **Groundwater Limitations – Not Applicable**

6. **Provisions**

6.1. **Standard Provisions**

- 6.1.1. **Federal Standard Provisions.** The Dischargers shall comply with all Standard Provisions included in Attachment D of this Order.
- 6.1.2. **San Diego Water Board Standard Provisions.** The Dischargers shall comply with the following provisions. In the event that there is any conflict, duplication, or overlap between provisions specified by this Order, the more stringent provision shall apply.
 - 6.1.2.1. The wastewater facilities shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to title 23, division 3, chapter 26 of the CCR. The wastewater facilities shall be provided with a sufficient number of qualified personnel to operate the wastewater facilities effectively so as to achieve the required level of treatment at all times.

- 6.1.2.2. The expiration date of this Order is contained on page 2 of this Order. After the expiration date, the terms and conditions of this Order are automatically continued pending issuance of a new permit, provided that all requirements of USEPA's NPDES regulations at title 40 of the Code of Federal Regulations (40 CFR) section 122.6 and the State's regulations at title 23, division 3, chapter 9, article 3, section 2235.4 of the CCR regarding the continuation of expired permits and WDRs are met.
- 6.1.2.3. The Water Code section 13142.5(b) determination described in Attachment H of this Order does not expire and shall remain in effect unless: 1) the Dischargers propose a change in design or operation of the Doheny Desalination Project in a manner that could increase intake or mortality of marine life, consistent with the Ocean Plan definition of an expanded facility, 2) the Dischargers reduces the volume of wastewater discharged through the SJCOO below the flow rate required for a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001, or 3) if the Dischargers do not meet the requirements for the mitigation. Such a proposed change will require a new Water Code section 13142.5(b) determination for an expanded facility as required by the Ocean Plan chapter III.M.1.e.(5). If the Mitigation [Area of Production Forgone] APF Re-Evaluation Study and/or Larval Study demonstrate that the mitigation requirements of this Order are excessive to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers may apply for a new Water Code section 13142.5(b) determination.
- 6.1.2.4. The Dischargers shall maintain a copy of this Order for access in hard copy at a prominent on-site location at each facility or access in electronic format. The Order shall be available for access by site personnel, San Diego Water Board, State Water Resources Control Board (State Water Board), and USEPA or their authorized representative at all times. Electronic access to the Order through a device that provide on-line access on the premises of each facility shall be considered equivalent to on-site access.

6.2. Monitoring and Reporting Program (MRP) Requirements

- 6.2.1. The Dischargers shall comply with the MRP, and future revisions thereto, in Attachment E of this Order.
- 6.2.2. Notifications required to be provided under this Order to the San Diego Water Board shall be made to:
E-mail – SanDiego@waterboards.ca.gov, or
Telephone – (619) 516-1990, or
Facsimile – (619) 516-1994.

6.3. Special Provisions

6.3.1. Reopener Provisions

- 6.3.1.1. This Order may be reopened to modify provisions governing compliance with Water Code section 13142.5(b) and the Ocean Plan if a new Water Code section 13142.5(b) determination is required by the terms of this Order or if the Dischargers propose a change in design or operation of the Doheny Desalination Project in a manner that could increase intake or mortality of all forms of marine life, consistent with the Ocean Plan definition of an expanded facility, beyond that which is approved in this Water Code section 13142.5(b) Determination. This Order may be reopened at any time for modification of provisions governing compliance with the receiving water limitation for salinity as set forth in Ocean Plan section III.M.3.
- 6.3.1.2. This Order may be reopened for modification to include an effluent limitation if monitoring establishes that the discharge causes, has the reasonable potential to cause, or contributes to an excursion above a performance goal(s) set forth in section 4.1.2 of this Order or as otherwise described in Table 3 of the Ocean Plan. (40 CFR section 122.44(d)(1))
- 6.3.1.3. This Order may be reopened for modification of the monitoring and reporting requirements and/or special studies requirements, at the discretion of the San Diego Water Board. Such modification(s) may include, but is (are) not limited to, revision(s) (i) to implement recommendations from Southern California Coastal Water Research Project (SCCWRP); (ii) to develop, refine, implement, and/or coordinate a regional monitoring program; (iii) to develop and implement improved monitoring and assessment programs in keeping with San Diego Water Board Resolution No. R9 2012-0069, *Resolution in Support of a Regional Monitoring Framework*; and/or (iv) to add provisions to require the Dischargers to evaluate and provide information on cost and values of the MRP (Attachment E).
- 6.3.1.3. This Order may be modified, revoked and reissued, or terminated for cause in accordance with the provisions of 40 CFR parts 122, 124, and 125 at any time prior to its expiration under any of the following circumstances:
 - 6.3.1.3.1. Violation of any terms or conditions of this Order. (Water Code section 13381(a));
 - 6.3.1.3.2. Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts. (Water Code section 13381(b)); and
 - 6.3.1.3.3. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge. (Water Code section 13381(c)).
- 6.3.1.4. The filing of a request by the Dischargers for modifications, revocation and reissuance, or termination of this Order does not stay any condition of this Order. Notification by the Dischargers of planned operational or facility

- changes, or anticipated noncompliance with this Order does not stay any condition of this Order. (40 CFR section 122.41(f))
- 6.3.1.5. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under federal CWA section 307(a) for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in this Order, the San Diego Water Board may institute proceedings under these regulations to modify or revoke and reissue this Order to conform to the toxic effluent standard or prohibition. (40 CFR section 122.44(b)(1))
- 6.3.1.6. This Order may be reopened and modified for consistency with any new water quality control plan, policy, law, or regulation. (40 CFR section 122.62(a)(3))
- 6.3.1.7. This Order may be reopened and modified to revise effluent limitations as a result of future Ocean Plan, Basin Plan, and/or other statewide Water Quality Control Plan amendments; or the adoption of a total maximum daily load (TMDL) for the receiving water. (40 CFR section 122.62(a)(2))
- 6.3.1.8. This Order may be reopened upon submission by the Dischargers of adequate information, as determined by the San Diego Water Board, to provide for dilution credits or a mixing zone, as may be appropriate. (40 CFR section 122.62(a)(2))
- 6.3.1.9. This Order may also be reopened and modified, revoked and reissued, or terminated in accordance with the provisions of 40 CFR sections 122.44, 122.62 to 122.64, and 125.62. Causes for taking such actions include, but are not limited to, failure to comply with any condition of this Order, and endangerment to human health or the environment resulting from the permitted activity.
- 6.3.1.10. The performance goals, contained in section 4.1.2 of this Order, may be re-evaluated and modified during this Order term, or this Order may be modified to incorporate WQBELs, in accordance with the requirements set forth at 40 CFR sections 122.62 and 124.5.
- 6.3.1.12. This Order may be reopened and a new Water Code section 13142.5(b) determination may be made to update the APF estimates and resulting mitigation requirements for the Doheny Desalination Project based on the results of the Mitigation APF Re-Evaluation Study required in section 6.3.2.3 of this Order and/or the Larval Study required in section 6.3.2.4 of this Order.
- 6.3.1.13. This Order may be reopened, and a new Water Code section 13142.5(b) determination may be made if the Dischargers reduce the volume of wastewater discharged through the SJCOO below the flow rate required for a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001. The San Diego Water Board may include additional receiving water monitoring

requirements and mitigation requirements if the discharge through the SJCOO results in a negatively buoyant plume.

- 6.3.1.14. This Order may be reopened, and a new Water Code section 13142.5(b) determination may be made if the RO recovery rate for the Doheny Desalination Project differs from the 50% RO recovery rate used in this Order and Water Code section 13142.5(b) determination.

6.3.2. Special Studies, Technical Reports, and Additional Monitoring Requirements

6.3.2.1. Spill Prevention and Response Plans

- 6.3.2.1.1. For purposes of this section of the Order, a spill is a discharge that occurs at or downstream of the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, or San Clemente WRP headworks; at the San Juan Capistrano Groundwater Treatment Plant, SCWD Groundwater Recovery Facility, Doheny Desalination Project, or Ranch Water Filtration Plant; or within any of the associated land outfalls or SJCOO in violation of Discharge Prohibitions 3.1 or 3.2 of this Order. A spill includes a discharge, or any other type of emission or release of treated or untreated wastewater, or other waste due to system overflow, flow stoppage, system leaks and breaks, operational failure and/or infrastructure failure. The term “spill” as used in this section of the Order does not include sanitary sewer overflows from the sewage collection system that are reportable under separate WDRs. (See section 6.3.5.5 of this Order for more information.)

- 6.3.2.1.2. The Dischargers shall maintain a Spill Prevention Plan (SPP) and a Spill Response Plan (SRP) for the Facilities in an up-to-date condition and shall amend the SPP/SRP whenever there is a change (e.g., in the design, construction, operation, or maintenance of the sewerage system or sewerage facilities) which materially affects the potential for spills and the response required for each potential spill. The Dischargers shall review and amend the SPP/SRP as appropriate after each spill from the Facilities. The SPP/SRP and any amendments thereto shall be subject to the approval of the San Diego Water Board and shall be modified as directed by the San Diego Water Board. The Dischargers shall submit the SPP/SRP and any amendments thereto to the San Diego Water Board upon request of the San Diego Water Board. The Dischargers shall ensure that the up-to-date SPP/SRP is readily available to the Facilities personnel at all times and that the sewerage system personnel are familiar with it.

6.3.2.2. Spill Reporting Requirements

The Dischargers shall report spills, as defined in section 6.3.2.1.1 above, in accordance with the following procedures:

- 6.3.2.2.1. If a spill results in a discharge of treated or untreated wastewater that is equal to or exceeds 1,000 gallons, and/or results in a discharge to a drainage channel and/or surface water, or results in a discharge to a storm

drain that was not fully captured and returned to the sanitary sewer system, the Dischargers shall:

- 6.3.2.2.1.1. Report the spill to the San Diego Water Board by email at SanDiego@waterboards.ca.gov within 24 hours from the time the Dischargers become aware of the spill. If email communication is not possible, report the spill by telephone (619-516-1990) within 24 hours from the time the Dischargers become aware of the spill. The report shall include a description of the spill and its cause; the spill material; the duration of the spill including exact dates and times; the estimated spill volume and its destination; if the spill has not been terminated, the anticipated time it is expected to continue; and steps taken or planned to reduce and/or eliminate the spill.
- 6.3.2.2.1.2. Submit a written report by email at SanDiego@waterboards.ca.gov, as well as any additional pertinent information, to the San Diego Water Board no later than five days from the time the Dischargers become aware of the spill. The written report must be signed and certified as required by section 5 of the Standards Provisions (Attachment D).
- 6.3.2.2.1.3. The San Diego Water Board may waive the above-required written report under this provision on a case-by-case basis if the email or oral report has been received within 24 hours.
- 6.3.2.2.2. If a spill results in a discharge of treated or untreated wastewater less than 1,000 gallons and the discharge does not reach a drainage channel or surface waters, or results in a discharge to a storm drain that was fully captured and returned to the facility, the Dischargers are not required to notify the San Diego Water Board within 24 hours, or provide a 5-day written report.
- 6.3.2.2.3. For spills of waste material other than treated or untreated wastewater, including any such spills that may endanger human health or the environment, the Dischargers shall:
 - 6.3.2.2.3.1. Notify the San Diego Water Board by email at SanDiego@waterboards.ca.gov within 24 hours from the time the Dischargers become aware of the spill. If email communication is not possible, report the spill by telephone (619-516-1990) within 24 hours from the time the Dischargers become aware of the spill. The report shall include a description of the spill and its cause; the spill material; the duration of the spill including exact dates and times; the estimated spill volume and its destination; if the spill has not been terminated, the anticipated time it is expected to continue; and steps taken or planned to reduce and/or eliminate the spill.
 - 6.3.2.2.3.2. Submit a written report by email at SanDiego@waterboards.ca.gov, as well as any additional pertinent information, to the San Diego Water Board no later than five days from the time the Dischargers become aware of the

spill. The written report must be signed and certified as required by section 5 of the Standards Provisions (Attachment D).

- 6.3.2.2.3.3. The San Diego Water Board may waive the above-required written report under this provision on a case-by-case basis if the email or oral report has been received within 24 hours.
- 6.3.2.2.4. For all spills, the Dischargers shall include a detailed summary of spills in the monthly SMR for the month in which the spill occurred. If no spills occurred during the calendar month, the Dischargers shall report no spills in the monthly SMR for that calendar month.
- 6.3.2.2.5. The spill reporting requirements contained in this Order do not relieve the Dischargers of responsibilities to report spills to other agencies, such as the California Office of Emergency Services and the Orange County Health Care Agency.

6.3.2.3. **Mitigation Area of Production Forgone (APF) Re-Evaluation Study**

This Order requires 7.45 acres of mitigation to compensate for the marine life mortality associated with the additional discharge from the Doheny Desalination Project. The mitigation requirements of this Order were based on APF estimates using the methodology presented in *Brine Diffusers and Shear Mortality, prepared for Eastern Research Group* (Roberts 2018) modified for positively buoyant plumes to calculate the volume of water exposed to turbulence/shearing related mortality. Due to the lack of data and finalized design plans, several assumptions were used to estimate the APF, including RO recovery rates for the Doheny Desalination Project, baseline wastewater flows (i.e., the wastewater flows used to dilute the brine from the Doheny Desalination Project), and larval durations and habitat types for species present in the source waterbody. For the purposes of developing this Order, the San Diego Water Board assumed a RO recovery rate of 50%, a baseline wastewater flow of 13 MGD to dilute the brine from the Doheny Desalination Project, and a larval duration of 10 days to estimate the APF and to determine mitigation requirements. The Mitigation APF Re-Evaluation Study and the Larval Study required in section 6.3.2.4 of this Order will be used to verify the assumptions used in the APF estimates.

- 6.3.2.3.1. **Mitigation APF Re-Evaluation Study Work Plan.** No later than ninety (90) days after the adoption date of this Order, the Dischargers shall submit a Mitigation APF Re-Evaluation Study Work Plan that includes the following:
- A description of the modeling and data collection (e.g., entrainment study sampling design) efforts that will be used to confirm and, if necessary, revise the APF estimates;
 - An analysis of the actual and forecasted baseline wastewater flows based on recycled water projects expected to be approved within the next five years. The Dischargers may also propose an alternative method for estimating APF based on variable wastewater flow rates;

- A schedule for finalizing the design plans for the Doheny Desalination Project, including determining the actual RO recovery rates; and
- A schedule for submitting the final Mitigation APF Re-Evaluation Study Report. The schedule shall account for the completion of the Larval Study required in section 6.3.2.4 of this Order.

6.3.2.3.2. **Mitigation APF Re-Evaluation Study Work Plan Implementation.** The Dischargers shall implement the Mitigation APF Re-Evaluation Study Work Plan sixty (60) days after submission of the Mitigation APF Re-Evaluation Study Work Plan, unless otherwise directed in writing by the San Diego Water Board. The Dischargers shall notify the San Diego Water Board of the intent to initiate the proposed actions in the Mitigation APF Re-Evaluation Study Work Plan and shall comply with any conditions set by the San Diego Water Board. The San Diego Water Board may consult with other State agencies involved in the permitting of the Doheny Desalination Project, including but not limited to the State Water Board, the California Coastal Commission, the California State Lands Commission, and the California Department of Fish and Wildlife.

6.3.2.3.3. **Mitigation APF Re-Evaluation Study Final Report.** The Dischargers shall submit a Mitigation APF Re-Evaluation Study Final Report no later than March 30, 2025, unless an alternative date is approved by the San Diego Water Board. The Mitigation APF Re-Evaluation Study Final Report shall include an in-depth discussion, evaluation, interpretation, and tabulation of the data and APF modeling results supporting the interpretations and conclusions reached. The Mitigation APF Re-Evaluation Study Final Report must also include the final design plans for the Doheny Desalination Project. The Mitigation APF Re-Evaluation Study Final Report is subject to approval by the San Diego Water Board in consultation with the State Water Board, California Coastal Commission, and other State agencies involved in the permitting of the Doheny Desalination Project. If it is determined that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers shall apply for a new Water Code section 13142.5(b) determination. If it is determined that the mitigation requirements in this Order are excessive to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers may apply for a new Water Code section 13142.5(b) determination.

6.3.2.4. **Larval Study**

The Dischargers shall conduct and complete a Larval Study prior to the commencement of the Doheny Desalination Project discharge. The Larval Study shall be designed to determine the larval taxa and concentrations present in the SJCOO source waterbody. The Dischargers shall use the results of the Larval Study to inform the Mitigation APF Re-Evaluation Study described in section 6.3.2.3 of this Order, and to verify the taxa impacted by

the Doheny Desalination Project. The design of the Larval Study shall be consistent with Chapter III section M.2.e.(1)(a) of the Ocean Plan. At minimum, the Larval Study shall include monthly sampling at locations within the source waterbody for a period of one year. Samples shall be collected throughout the water column using a mesh size no greater than 335 microns. All fish eggs, fish larvae, and target invertebrate taxa shall be identified to the lowest taxonomical level practical and counted. The target taxa shall be determined in consultation with the SDRWQCB. A subset of the taxa to be analyzed for determination of APF shall be measured for purposes of determining age structure and larval duration.

- 6.3.2.4.1. **Larval Study Work Plan.** The Dischargers shall submit a Larval Study Work Plan to the San Diego Water Board for concurrence no later than ninety (90) days after the adoption of this Order. The Larval Study Work Plan shall include the following:
- A Quality Assurance Project Plan (QAPP) describing the project objectives and organization, functional activities, and quality assurance/quality control protocols;
 - Sampling methods, locations, frequency, and duration;
 - Identification procedures and types of marine organisms that will be identified; and
 - A schedule for initiating sampling and submission of the Larval Study Final Report.
- 6.3.2.4.2. **Larval Study Work Plan Implementation.** The Dischargers shall implement the Larval Study Work Plan ninety (90) days after submission of the Larval Study Work Plan, unless otherwise directed in writing by the San Diego Water Board. The Dischargers shall notify the San Diego Water Board of the intent to initiate the proposed actions included in the Larval Study Work Plan and comply with any conditions set by the San Diego Water Board.
- 6.3.2.4.3. **Larval Study Final Report.** The Dischargers shall submit a Larval Study Final Report ninety (90) after completion of the Larval Study. The Larval Study Final Report is subject to approval by the San Diego Water Board in consultation with the State Water Board, California Coastal Commission, and other State agencies involved in the permitting of the Doheny Desalination Project. If it is determined that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers shall apply for a new Water Code section 13142.5(b) determination. If it is determined that the mitigation requirements in this Order are excessive to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers may apply for a new Water Code section 13142.5(b) determination. The Larval Study Final Report shall include, at minimum, the following:

- A description of climatic and physical oceanographic conditions at the time of sampling (weather observations, wind and current speed and direction, swell or wave action, time of sampling, tide height, water temperature, etc.);
- A description of the sample collection, preservation, and identification procedures used in the study;
- A description of all targeted taxa identified within the source waterbody, including the habitats used by the species during their juvenile and adult life stages;
- An analysis of the larval duration and size of the organisms collected during the study;
- An analysis of the potential for taxa to be absent or undercounted due to unfavorable spawning conditions;
- An analysis of whether the larval duration used to calculate the APF in this Order accurately reflect the species present in the source waterbody; and
- An analysis of whether the taxa impacted by the Doheny Desalination Project come from habitats other than the proposed mitigation habitat. If so, the Dischargers shall develop mitigation ratios for San Diego Water Board concurrence.

6.3.2.5. **Final Marine Life Mitigation Plan**

- 6.3.2.5.1. No later than six months following the submission of the Mitigation APF Re-Evaluation Study Final Report described in section 6.3.2.3.3 of this Order, the Dischargers shall prepare and submit a Final Marine Life Mitigation Plan to compensate for the marine life and habitat impacts attributable to the construction and operation of the Doheny Desalination Project after minimizing intake and mortality of all forms of marine life through best available site, design and technology. The Final Marine Life Mitigation Plan must establish the specific steps and methods necessary to provide 7.45 acres of mitigation in the South Los Cerritos Wetlands Restoration Project to compensate for the marine life mortality impacts associated with the construction and operation of the Doheny Desalination Project. However, the acres of mitigation may be revised based on the results of the Mitigation APF Re-Evaluation Study required in section 6.3.2.3 of this Order and the mitigation ratios may be revised depending on the species impacted by the Doheny Desalination Project, as identified in the Larval Study required in section 6.3.2.4 of this Order. If the Mitigation APF Re-Evaluation Study and/or Larval Study demonstrate that the mitigation requirements of this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers shall apply for a new Water Code section 13142.5(b) determination. If the Mitigation APF Re-Evaluation Study and/or Larval Study demonstrate that the mitigation requirements of this Order are excessive to fully compensate for the mortality of all forms of marine life

associated with the Doheny Desalination Project, then the Dischargers may apply for a new Water Code section 13142.5(b) determination.

The Final Marine Life Mitigation Plan shall be refined to include additional details on the elements listed below:

- 6.3.2.5.1.1. Project objectives, site selection, site protection instrument (the legal arrangement or instrument that will be used to ensure the long-term protection of the compensatory mitigation project site), baseline site conditions, a mitigation work plan, a maintenance plan, a long-term management plan, an adaptive management plan, performance standards and success criteria, monitoring requirements, and financial assurances.
- 6.3.2.5.1.2. A schedule for implementation of the Final Marine Life Mitigation Plan.
- 6.3.2.5.1.3. Provisions authorizing the California Department of Fish and Wildlife, the California Coastal Commission, the California State Lands Commission, the San Diego Water Board, and the State Water Board to perform audits or site inspections of the proposed mitigation project.
- 6.3.2.5.1.4. A demonstration that the Final Marine Life Mitigation Plan provides for full mitigation for the operational lifetime of the Doheny Desalination Project. If the Doheny Desalination Project discharge commences prior to the mitigation project meeting performance standards, the Final Marine Life Mitigation Plan must account for the temporal loss of marine life and habitat productivity during the period extending from the commencement of Doheny Desalination Project discharge until the mitigation project meets performance standards.
- 6.3.2.5.2. The Dischargers shall implement the Final Marine Life Mitigation Plan upon approval by the San Diego Water Board in consultation with the State Water Board, the California Coastal Commission, and other State agencies having authority to condition the approval of the project and require mitigation. If the mitigation project is subject to CEQA, any review required under CEQA must be completed prior to the San Diego Water Board's approval of the Final Marine Life Mitigation Plan.

6.3.2.6. **Receiving Water Violation Assessment**

In the event of a violation of any receiving water limitation established within this Order, the San Diego Water Board may require the Dischargers to perform a special assessment to investigate the nature and cause of the receiving water violation. The receiving water assessment shall identify measures needed to ensure future compliance with receiving water limitations. The Dischargers shall submit the required assessment to the San Diego Water Board within 90 days of receipt of the San Diego Water Board's notification to perform a Receiving Water Violation Assessment

6.3.3. **Best Management Practices and Pollution Prevention**

Pollutant Minimization Program (PMP) - The goal of the PMP shall be to reduce all potential sources of a pollutant through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The San Diego Water Board may consider cost-effectiveness when establishing the requirements of a PMP. The completion and implementation of a Pollution Prevention Plan (PPP), if required pursuant to Water Code section 13263.3(d), shall be considered as fulfilling the PMP requirements.

- 6.3.3.1. Reporting protocols in the MRP (Attachment E) describe sample results that are to be reported as Detected, But Not Quantified (DNQ) or Not Detected (ND). Definitions for a reported Minimum Level (ML) and Method Detection Limit (MDL) are provided in the Ocean Plan and in Abbreviations and Definitions (Attachment A). These reporting protocols and definitions are used in determining the need to conduct a PMP, as follows:
 - 6.3.3.1.1. The Dischargers shall develop and conduct a PMP as further described below if all of the following conditions are true:
 - 6.3.3.1.1.1. The calculated effluent limitation is less than the reported ML; and
 - 6.3.3.1.1.2. The concentration of the pollutant is reported as DNQ; and
 - 6.3.3.1.1.3. There is evidence showing that the pollutant is present in the effluent above the calculated effluent limitation.
 - 6.3.3.1.2. Alternatively, the Dischargers shall develop and conduct a PMP as further described below if all of the following conditions are true:
 - 6.3.3.1.2.1. The calculated effluent limitation is less than the MDL; and
 - 6.3.3.1.2.2. The concentration of the pollutant is reported as ND; and
 - 6.3.3.1.2.3. There is evidence showing that the pollutant is present in the effluent above the calculated effluent limitation.
- 6.3.3.2. The PMP shall include, but not be limited to, the following actions and submittals acceptable to the San Diego Water Board:
 - 6.3.3.2.1. An annual review and semi-annual monitoring of potential sources of the reportable pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;
 - 6.3.3.2.2. Quarterly monitoring for the reportable pollutant(s) in the influent to the wastewater treatment system;
 - 6.3.3.2.3. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable pollutant(s) in the effluent at or below the effluent limitation;

- 6.3.3.2.4. Implementation of appropriate cost-effective control measures for the reportable pollutant(s), consistent with the control strategy; and
- 6.3.3.2.5. An annual status report that shall be sent to the San Diego Water Board including:
 - 6.3.3.2.5.1. All PMP monitoring results for the previous year;
 - 6.3.3.2.5.2. A list of potential sources of the reportable pollutant(s);
 - 6.3.3.2.5.3. A summary of all actions undertaken pursuant to the control strategy; and
 - 6.3.3.2.5.4. A description of actions to be taken in the following year.

6.3.4. **Construction, Operation and Maintenance Specifications**

- 6.3.4.1. **Publicly-Owned Treatment Works (POTWs)** - All proposed new treatment facilities and expansions of existing treatment facilities shall be completely constructed and operable prior to initiation of the discharge from the new or expanded facilities. The Dischargers shall submit a certification report for each new treatment facility, expansion of an existing treatment facility, and design capacity re-ratings, prepared by the design engineer. For design capacity re-ratings, the certification report shall be prepared by the engineer who evaluated the treatment facility design capacity. The signature and engineering license number of the engineer preparing the certification report shall be affixed to the report. If reasonable, the certification report shall be submitted prior to beginning construction of new treatment facilities or expansions of existing treatment facilities.
 - 6.3.4.1.1. The certification report shall:
 - 6.3.4.1.1.1. Identify the design capacity of the treatment facility, including the daily and 30-day design capacity;
 - 6.3.4.1.1.2. Certify the adequacy of each component of the treatment facility; and
 - 6.3.4.1.1.3. Contain a requirement-by-requirement analysis, based on acceptable engineering practices, of the process and physical design of the facility to ensure compliance with this Order.
 - 6.3.4.1.2. The Dischargers shall not initiate a discharge from a treatment facility at a daily flow rate in excess of its previously approved design capacity until:
 - 6.3.4.1.2.1. The certification report is received by the San Diego Water Board,
 - 6.3.4.1.2.2. The San Diego Water Board has received written notification of completion of construction (new or expanded treatment facilities only),
 - 6.3.4.1.2.3. An inspection of the facility has been made by the San Diego Water Board or its designated representatives (new or expanded treatment facilities only), and
 - 6.3.4.1.2.4. The San Diego Water Board has provided the Dischargers with written authorization to initiate discharge from a new or expanded treatment

facility or at a daily flow rate in excess of its previously approved design capacity.

- 6.3.4.2. The Facilities shall be protected against a 100-year frequency flood flows as defined by the Orange County Flood Control District (FCD).
- 6.3.4.3. The Facilities shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24-hour storm event as defined by the National Oceanic and Atmospheric Administration Atlas 14 Point Precipitation Frequency Estimates available at <https://www.nws.noaa.gov/oh/hdsc/index.html>.
- 6.3.4.4. The Facilities shall be protected against regional impacts of changing climate conditions (e.g., rising sea levels, flooding, higher storm surges, and changing hydrography, including more intense atmospheric rivers). Compliance with this requirement shall be implemented through development and implementation of applicable measures identified in the Climate Change Action Plan which is required to be submitted within three years of the effective date of this Order pursuant to section 6.1 of the MRP (Attachment E).
- 6.3.4.5. The Dischargers shall provide and maintain in good working order a sufficient alternate power source(s) to assure that, in the event of the loss, reduction, or failure of electrical power, each facility is in compliance with the terms and conditions of this Order. In addition to a sufficient alternate power source(s), backup systems may also include auxiliary power generators, retention storage capacity, emergency operation procedures, and other contingencies to ensure continuous operation of all critical devices and systems used in the conveyance, storage, treatment, recycling, or discharge of municipal wastewater in the event of the loss, reduction, or failure of electrical power. All equipment shall be located to minimize failure due to moisture, liquid spray, flooding, sea level rise, wildfires, and other physical phenomena. The alternate power source(s) shall be designed to permit inspection and maintenance and shall provide for periodic testing.

6.3.5. Special Provisions for Publicly-Owned Treatment Works (POTWs)

6.3.5.1. San Juan Ocean Outfall Capacity Report

No later than 180 days prior to this Order's expiration date, the Dischargers shall submit a written report to the San Diego Water Board regarding capacity of the San Juan Creek Ocean Outfall (SJCOO) that includes the following items:

- 6.3.5.1.1. The Dischargers' most current report on the SJCOO capacity conducted within one year of the expiration date of this Order;
- 6.3.5.1.2. The Dischargers' best estimate of when the average daily flow will equal or exceed the SJCOO capacity;

- 6.3.5.1.3. The Dischargers' intended schedule for studies, design, and other steps needed to provide additional capacity for the SJCOO and/or to control the flow rate before the flow rate is equal to the current outfall capacity;
- 6.3.5.1.4. The Dischargers' most current report on the physical condition of the SJCOO; and
- 6.3.5.1.5. A statement signed by a California Licensed Engineer certifying that the capacity of the SJCOO is at least 43.78 MGD (or the total permitted discharge from the Facilities, whichever is higher).
- 6.3.5.1.6. The report must be signed and agreed upon by each of the parties discharging through the SJCOO.

6.3.5.2. Ensuring Adequate Treatment Plant Capacity

Four years prior to reaching POTW design capacity, the Dischargers shall submit a Treatment Plant Capacity Report to the San Diego Water Board showing how flow volumes will be prevented from exceeding existing capacity or how capacity will be increased. A notification and copy of the report shall be sent to appropriate local elected officials, local permitting agencies, and the press. The required technical report shall be reviewed, approved, and jointly submitted to the San Diego Water Board by all planning and building departments having jurisdiction in the area served by the POTW.

Opportunities for public participation and involvement are required during the preparation and development of the technical report. The report shall be accompanied by a statement outlining how interested persons were involved in the preparation of the technical report.

If the San Diego Water Board finds that adequate steps are not being taken to address capacity concerns, the San Diego Water Board may adopt a Time Schedule Order or other enforcement order. Such action will be preceded by public notice and a public hearing.

6.3.5.3. Pretreatment Program

- 6.3.5.3.1. The Dischargers shall be responsible for the performance of all pretreatment requirements contained in 40 CFR part 403, including any subsequent revisions in 40 CFR part 403. Where 40 CFR part 403 or subsequent revisions place mandatory actions upon the Dischargers but do not specify a timetable for completion, the Dischargers shall complete the mandatory actions within six months of the issuance date of this Order, or the effective date of the revisions to 40 CFR part 403, whichever comes later. For violations of pretreatment requirements, the Dischargers shall be subject to enforcement actions, penalties, fines, and other remedies imposed by the USEPA and/or the San Diego Water Board, as provided in the federal CWA and/or the Water Code.
- 6.3.5.3.2. The Dischargers shall implement and enforce its approved pretreatment program, and all subsequent revisions, which are hereby made enforceable conditions of this Order. The Dischargers shall enforce the requirements

promulgated pursuant to sections 307(b), 307(c), 307(d), and 402(b) of the federal CWA with timely, appropriate, and effective enforcement actions. The Dischargers shall cause industrial users subject to federal categorical standards to achieve compliance no later than the date specified in those requirements, or in the case of a new industrial user, upon commencement of the discharge.

- 6.3.5.3.3. The Dischargers shall perform the pretreatment functions required by 40 CFR part 403, including, but not limited to:
 - 6.3.5.3.3.1. Implement the necessary legal authorities as required by 40 CFR section 403.8(f)(1);
 - 6.3.5.3.3.2. Enforce the pretreatment requirements under 40 CFR sections 403.5 and 403.6;
 - 6.3.5.3.3.3. Implement the programmatic functions as required by 40 CFR section 403.8 (f)(2); and
 - 6.3.5.3.3.4. Provide the requisite funding and personnel to implement the pretreatment program, as required by 40 CFR section 403.8(f)(3).
- 6.3.5.3.4. By March 1 of each year, the Dischargers shall submit an annual pretreatment report to the USEPA by email (R9Pretreatment@epa.gov); to the San Diego Water Board via the State Water Board's California Integrated Water Quality System (CIWQS) program website (https://www.waterboards.ca.gov/water_issues/programs/ciwqs/); and the Orange County Health Care Agency, Hazardous Materials Division, describing its pretreatment activities over the previous calendar year. In the event the Dischargers are not in compliance with any condition or requirement of this Order, or any pretreatment compliance inspection/audit requirements, the Dischargers shall include the reasons for noncompliance and state how and when it will comply with such conditions and requirements. The annual pretreatment report shall contain, but not be limited to, the following information:
 - 6.3.5.3.4.1. A summary of analytical results from representative flow-proportioned 24-hour composite sampling of the Dischargers' influent and effluent for the J.B. Latham Wastewater Treatment Plant, the Chiquita WRP, the 3A WRP, the San Clemente WRP, and the Oso Creek WRP for those pollutants known or suspected to be discharged by industrial users that the USEPA has identified under section 307(d) of the federal CWA. This will include an annual full priority pollutant scan. Wastewater sampling and analysis shall be performed in accordance with the minimum frequency of analysis required by the MRP (Attachment E). The Dischargers shall also provide influent and effluent monitoring data for non-priority pollutants, which the Dischargers believe may be causing or contributing to interference or pass through. The Dischargers are not required to sample and analyze for asbestos. Sludge sampling and analysis is addressed in

section 6.3.5.4 of this Order. Wastewater sampling and analysis shall be performed in accordance with 40 CFR part 136.

- 6.3.5.3.4.2. A discussion of upset, interference, or pass through, if any, at the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and/or San Clemente WRP, which the Dischargers know or suspect were caused by nondomestic users of the POTW system. The discussion shall include the reasons why the incidents occurred, any corrective actions taken, and, if known, the name and address of the responsible nondomestic user(s). The discussion shall also include a review of the applicable local pollutant limitations to determine whether any additional limitations or changes to existing limitations are necessary to prevent pass through, interference, or noncompliance with sludge disposal requirements.
- 6.3.5.3.4.3. An updated list of the Dischargers' Significant Industrial Users (SIUs) including their names and addresses, and a list of deletions, additions, and SIU name changes keyed to the previously submitted list. The Dischargers shall provide a brief explanation for each change. The list shall identify the SIUs subject to federal categorical standards by specifying which set(s) of standards are applicable to each SIU. The list shall also indicate which SIUs are subject to local limits.
- 6.3.5.3.4.4. The Dischargers shall characterize the compliance status of each SIU by providing a list or table for the following:
 - 6.3.5.3.4.4.1. Name of SIU and category, if subject to categorical standards;
 - 6.3.5.3.4.4.2. Type of wastewater treatment or control processes in place;
 - 6.3.5.3.4.4.3. Number of samples taken by SIU during the year;
 - 6.3.5.3.4.4.4. Number of samples and inspections by the Dischargers during the year;
 - 6.3.5.3.4.4.5. For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;
 - 6.3.5.3.4.4.6. A list of pretreatment standards (categorical or local) violated during the year, or any other violations;
 - 6.3.5.3.4.4.7. Industries in significant non-compliance (SNC) as defined at 40 CFR section 403.12(f)(2)(vii), at any time during the year;
 - 6.3.5.3.4.4.8. A summary of enforcement actions or any other actions taken against SIUs during the year. Describe the type of action, final compliance date, and the amount of fines and/or penalties collected, if any. Describe any proposed actions for bringing SIUs into compliance; and
 - 6.3.5.3.4.4.9. The name(s) of any SIU(s) required to submit a baseline monitoring report and any SIUs currently discharging under a baseline monitoring report.

- 6.3.5.3.4.5. A brief description of any programs the Dischargers implement to reduce pollutants from industrial users not classified as SIUs.
 - 6.3.5.3.4.6. A brief description of any significant changes in operating the pretreatment program which differ from the previous year, including, but not limited to, changes in the program's administrative structure, local limits, monitoring program, legal authority, enforcement policy, funding, and staffing levels;
 - 6.3.5.3.4.7. A summary of the annual pretreatment program budget, including the cost of pretreatment program functions and equipment purchases;
 - 6.3.5.3.4.8. A summary of activities to involve and inform the public of the pretreatment program, including a copy of the newspaper notice, if any, required by 40 CFR section 403.8(f)(2)(vii);
 - 6.3.5.3.4.9. A description of any changes in sludge disposal methods;
 - 6.3.5.3.4.10. A description of the program to quantify, characterize, regulate, and treat flow from low-flow urban runoff diversion systems and "first flush" industrial storm water diversion systems that are routed to the sanitary sewer collection system; and
 - 6.3.5.3.4.11. A discussion of any concerns not described elsewhere in the annual pretreatment report.
- 6.3.5.3.5. The Dischargers shall provide a written technical evaluation of the need to revise local limits under 40 CFR section 403.5(c)(1) following permit reissuance (40 CFR section 122.44(j)(2)(ii)). The local limits technical evaluation is due to the San Diego Water Board within 180 days of the effective date of this Order.

6.3.5.4. **Sludge (Biosolids) Disposal Requirements**

6.3.5.4.1. **General Requirements**

- 6.3.5.4.1.1. All biosolids generated by the Dischargers during the treatment of wastewater shall be used or disposed of in compliance with applicable portions of: 40 CFR part 503-for biosolids that are land applied, placed on a surface disposal site (dedicated land disposal site, monofill, or sludge-only parcel at a municipal landfill), or incinerated; 40 CFR part 258-for biosolids disposed of in a municipal solid waste landfill (with other materials); and 40 CFR part 257-for all biosolids use and disposal practices not covered under 40 CFR parts 258 or 503. The preparer of the biosolids is required under 40 CFR section 503.7 to ensure that the applicable requirements in 40 CFR 503 are met when the sewage sludge is applied to the land.

Requirements for biosolids that are applied for the purpose of enhancing plant growth or for land reclamation are set forth in 40 CFR part 503, subpart B (land application). Requirements for biosolids that are placed on land for the purpose of disposal are set forth in 40 CFR part 503, subpart C (surface disposal).

The Dischargers shall take all reasonable steps to ensure that all biosolids produced at the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP are used or disposed of in accordance with these rules, whether the Dischargers use or dispose of the biosolids itself, or transfers their biosolids to another party for further treatment, use, or disposal. The Dischargers are responsible for informing subsequent preparers, appliers, and disposers of requirements they must meet under these rules.

- 6.3.5.4.1.2. The Dischargers shall take all reasonable steps to prevent or minimize any biosolids use or disposal which has a likelihood of adversely affecting human health or the environment.
- 6.3.5.4.1.3. No biosolids shall be allowed to enter wetlands or other waters of the United States.
- 6.3.5.4.1.4. Biosolids treatment, storage, use, or disposal shall not contaminate groundwater.
- 6.3.5.4.1.5. Biosolids treatment, storage, use, or disposal shall not create a nuisance condition such as objectionable odors or flies.
- 6.3.5.4.1.6. The Dischargers shall take all reasonable steps to ensure that haulers transporting biosolids offsite for treatment, storage, use, or disposal are contractually required to take all necessary measures to keep the biosolids contained. Trucks hauling biosolids that are not classified Class A with respect to pathogens, as defined at 40 CFR section 503.32(a), shall be cleaned as necessary after loading and after unloading, so as to have no biosolids on the exterior of the truck, or wheels. Trucks hauling biosolids that are not Class A shall be tarped. All haulers must have and implement spill clean-up procedures. Trucks hauling biosolids that are not Class A shall not be used for hauling food or feed crops after unloading the biosolids unless the Dischargers submit a hauling description, to be approved by USEPA, describing how trucks will be thoroughly cleaned prior to adding food or feed.
- 6.3.5.4.1.7. If biosolids are stored for over two years from the time they are generated, the Dischargers must ensure compliance with all requirements for surface disposal under 40 CFR part 503, subpart C, or must submit a written notification to USEPA, State Water Board, and San Diego Water Board with the information specified under 40 CFR section 503.20(b), demonstrating the need for longer temporary storage. During storage of any length for non-Class A biosolids, whether on the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP site or offsite, adequate procedures must be taken to restrict access by the public and domestic animals.
- 6.3.5.4.1.8. Any biosolids treatment, disposal, or storage site shall have facilities adequate to divert surface runoff from adjacent areas, to protect the site boundaries from erosion, and to prevent any conditions that would cause

drainage from the materials to escape from the site. Adequate protection is defined as protection from at least a 100-year storm event as defined by the Orange County FCD and the highest tidal stage which may occur.

- 6.3.5.4.1.9. If the biosolids are land applied, there shall be adequate screening at the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP headworks and/or at the biosolids treatment units to ensure that all pieces of metal, plastic, glass, and other inert objects are removed.

6.3.5.4.2. **Inspection and Entry**

The USEPA, San Diego Water Board, State Water Board, or an authorized representative thereof, upon the presentation of credentials, shall be allowed by the Dischargers directly, or through contractual arrangements with their biosolids management contractors, to:

- 6.3.5.4.2.1. Enter upon all premises where biosolids produced by the Dischargers are treated, stored, used, or disposed of, by either the Dischargers or another party to whom the Dischargers transfer biosolids for further treatment, storage, use, or disposal;
- 6.3.5.4.2.2. Have access to and copy any records that must be kept by either the Dischargers or another party to whom the Dischargers transfer biosolids for further treatment, storage, use, or disposal, under the conditions of this Order or 40 CFR part 503; and
- 6.3.5.4.2.3. Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations used in biosolids treatment, storage, use, or disposal by either the Dischargers or another party to whom the Dischargers transfer biosolids for further treatment, storage, use, or disposal.

6.3.5.4.3. **Monitoring**

Biosolids shall be monitored for the following constituents, at the frequency stipulated in Table 1 of 40 CFR section 503.16:

- arsenic,
- cadmium,
- chromium,
- copper,
- lead,
- mercury,
- molybdenum,
- nickel,
- selenium,
- zinc, and
- total solids.

If biosolids are removed for use or disposal on a routine basis, sampling should be scheduled at regular intervals throughout the year. If biosolids are stored for an extended period prior to use or disposal, sampling may occur at regular intervals, or samples of the accumulated stockpile may be collected prior to use or disposal, corresponding to the tons accumulated in the stockpile over that period.

Monitoring shall be conducted using the methods in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods* (SW-846), or as otherwise required under 40 CFR section 503.8(b). All results must be reported on a 100% dry weight basis and records of all analyses must state on each page of the analytical results whether the reported results are expressed on an "as-is" or a "100% dry weight" basis.

6.3.5.4.4. **Pathogen and Vector Control**

- 6.3.5.4.4.1. Prior to land application, the permittee shall demonstrate that biosolids meet Class A or Class B pathogen reduction levels by one of the methods listed under 40 CFR section 503.32.
- 6.3.5.4.4.2. Prior to disposal on a surface disposal site, the Dischargers shall demonstrate that biosolids meet Class B pathogen reduction levels or ensure that the site is covered at the end of each operating day. If pathogen reduction is demonstrated using a "Process to Further Reduce Pathogens" or one of the "Processes to Significantly Reduce Pathogens," the Dischargers shall maintain daily records of the operating parameters used to achieve this reduction. If pathogen reduction is demonstrated by testing for fecal coliform and/or pathogens, samples must be collected at the frequency specified in Table 1 of 40 CFR section 503.16. If Class B is demonstrated using fecal coliform, at least seven grab samples must be collected during each monitoring period and a geometric mean calculated from these samples. The following holding times between sample collection and analysis shall not be exceeded: fecal coliform-24 hours when cooled to four °C; Salmonella spp. bacteria-24 hours when cooled to four °C; enteric viruses-two weeks when frozen; and helminth ova-one month when cooled to 4°C.
- 6.3.5.4.4.3. For biosolids that are land applied or placed on a surface disposal site, the Dischargers shall track and keep records of the operational parameters used to achieve the Vector Attraction Reduction requirements under 40 CFR section 503.33(b).

6.3.5.4.5. **Surface Disposal**

If biosolids are placed on a surface disposal site (dedicated land disposal site or monofill), a qualified groundwater scientist shall develop a groundwater monitoring program for the site, or shall certify that the placement of biosolids on the site will not contaminate an aquifer.

6.3.5.4.6. **Landfill Disposal**

Biosolids placed in a municipal landfill shall be tested by the Paint Filter Test (Method 9095) at the frequency specified in Table 1 of 40 CFR section 503.16, or more often if necessary, to demonstrate that there are no free liquids.

6.3.5.4.7. **Notifications**

The Dischargers, either directly or through contractual arrangements with their biosolids management contractors, shall comply with the following notification requirements.

6.3.5.4.7.1. Notification of Noncompliance

The Dischargers shall notify USEPA, the State Water Board, and the San Diego Water Board (for both Dischargers and use or disposal site) of any noncompliance with the biosolids within 24 hours if the noncompliance may endanger health or the environment. For other instances of noncompliance with the biosolids, the Dischargers shall notify USEPA, the State Water Board, and the San Diego Water Board of the noncompliance in writing within five working days of becoming aware of the noncompliance. The Dischargers shall require their biosolids management contractors to notify USEPA, the State Water Board, and the San Diego Water Board of any noncompliance within these same timeframes.

6.3.5.4.7.2. Interstate Notification

If biosolids are shipped to another state or tribal land, the Dischargers shall send 60 days prior notice of the shipment to the permitting authorities in the receiving state or tribal land, and the USEPA.

6.3.5.4.7.3. Land Application Notification

Prior to using any biosolids from the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP (other than composted biosolids) at a new or previously unreported site, the Dischargers shall notify USEPA, the State Water Board, and the San Diego Water Board. This notification shall include a description and topographic map of the proposed site(s), names and addresses of the applicator and site owner, and a listing of any State or local permits which must be obtained. It shall also include a description of the crops or vegetation to be grown, proposed loading rates, and a determination of agronomic rates.

Within a given monitoring period, if any biosolids do not meet the applicable metals concentration limits specified under 40 CFR section 503.13, then the Dischargers (or its contractor) must pre-notify USEPA, the State Water Board, and the San Diego Water Board, and determine the cumulative metals loading at that site to date, as required by 40 CFR section 503.12.

The Dischargers shall notify the applier of all subject requirements under 40 CFR part 503, including the requirement for the applier to certify that management practices, site restrictions, and applicable vector attraction reduction requirements have been met. The Dischargers shall require the applier to certify at the end of 38 months, following application of Class B biosolids, that harvesting restrictions in effect for up to 38 months have been met.

6.3.5.4.7.4. Surface Disposal Notification

Prior to disposal at a new or previously unreported site, the Dischargers shall notify USEPA, the State Water Board, and the San Diego Water Board. The notice shall include a description and topographic map of the proposed site, depth to groundwater, whether the site is lined or unlined, site operator and site owner, and any State or local permits. It shall also describe procedures for ensuring grazing and public access restrictions for three years following site closure. The notice shall include a groundwater monitoring plan or description of why groundwater monitoring is not required.

6.3.5.4.8. **Reporting**

The Dischargers shall submit an annual biosolids report to the State Water Board's CIWQS program website (https://www.waterboards.ca.gov/water_issues/programs/ciwqs/), to the USEPA Biosolids Coordinator (CDX NeT electronic reporting system), and, if applicable, to the Arizona Department of Environmental Quality Biosolids Program Coordinator by February 19 of each year for the period covering the previous calendar year. The report shall include:

- 6.3.5.4.8.1. The amount of biosolids generated that year, in dry metric tons, and the amount accumulated from previous years.
- 6.3.5.4.8.2. Results of all pollutant monitoring required under section 6.3.5.4.3 of this Order. Results must be reported on a 100% dry weight basis.
- 6.3.5.4.8.3. Demonstrations of pathogen and vector attraction reduction methods, as required under 40 CFR sections 503.17 and 503.27, and certifications.
- 6.3.5.4.8.4. Names, mailing addresses, and street addresses of persons who received biosolids for storage, further treatment, disposal in a municipal landfill, or other use or disposal method not covered above, and volumes delivered to each.
- 6.3.5.4.8.5. The following information must be submitted by the Dischargers as an attachment to the CDX NeT electronic reporting system, unless the Dischargers require its biosolids management contractors to report this information directly to the USEPA Biosolids Coordinator:

6.3.5.4.8.5.1. For land application sites:

- Locations of land application sites (with field names and numbers) used that calendar year, size of each field applied to, applicator, and site owner;
- Volumes applied to each field (in wet tons and dry metric tons), nitrogen applied, and calculated plant available nitrogen;
- Crops planted, dates of planting and harvesting;
- For biosolids exceeding 40 CFR section 503.13 Table 3 metals concentrations, the locations of sites where the biosolids were applied and cumulative metals loading at the sites to date;
- Certifications of management practices at 40 CFR section 503.14; and
- Certifications of site restrictions at 40 CFR section 503.32(b)(5).

6.3.5.4.8.5.2 For surface disposal sites:

- Locations of sites, site operator and site owner, size of parcel on which biosolids were disposed;
- Results of any required groundwater monitoring;
- Certifications of management practices at 40 CFR section 503.24; and
- For closed sites, the date of site closure and certifications of management practices for three years following site closure.

6.3.5.4.9. **All reports shall be submitted to:**

State Water Board's CIWQS program website
(https://www.waterboards.ca.gov/water_issues/programs/ciwqs/)

Regional Biosolids Coordinator
United States Environmental Protection Agency
EPA's CDX NeT electronic reporting system

If applicable,
Biosolids Program Coordinator
Arizona Department of Environmental Quality
Mail Code: 5415B-1
1110 West Washington Street
Phoenix, AZ 85007

6.3.5.5. **Sewage Collection System**

SOCWA's member agencies are subject to the requirements of, and must comply with State Water Board Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems* (Statewide General SSO Order), including monitoring and reporting requirements as amended by State Water Board Order No. WQ 2013-0058-EXEC and any subsequent amendment/reissuance order. SOCWA's member agencies are also subject to the requirements of, and must comply with the San Diego Water Board Order No. R9-2007-0005, *Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region*

(Regional General SSO Order), and any subsequent amendment/reissuance order.

Regardless of the coverage obtained under Order No. 2006-0003-DWQ or Order No. R9-2007-0005, SOCWA's member agencies' collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, SOCWA's member agencies must report any noncompliance (40 CFR sections 122.44(1)(6) and (7)), properly operate and

maintain its collection system (40 CFR section 122.41(e)), and mitigate or prevent any discharge from the collection system in violation of this Order (40 CFR section 122.41(d)).

6.3.5.6. Resource Recovery from Anaerobically Digestible Material

If the Dischargers plan to receive hauled-in anaerobically digestible material for injection into an anaerobic digester, the Dischargers shall notify the San Diego Water Board and develop and implement Standard Operating Procedures (SOPs) for this activity. The SOPs shall be developed prior to receiving hauled-in anaerobically digestible material. The SOPs shall address material handling, including unloading, screening, or other processing prior to anaerobic digestion; transportation; spill prevention; and spill response. In addition, the SOPs shall address avoidance of the introduction of materials that could cause interference, pass through, or upset of the treatment processes; avoidance of prohibited material; vector control; odor control; operation and maintenance; and the disposition of any solid waste segregated from introduction to the digester. The Dischargers shall train its staff on the SOPs and shall maintain records for a minimum of three years for each load received, describing the hauler, waste type, and quantity received. In addition, the Dischargers shall maintain records for a minimum of three years for the disposition, location, and quantity of cumulative pre-digestion-segregated solid waste hauled offsite.

6.3.5.7. Asset Management Plan

The Dischargers shall develop and submit to the San Diego Water Board within 180 days of the effective date of this Order an Asset Management Plan (AMP) to ensure proper operation and maintenance of the POTWs. The Dischargers may rely on existing documents to develop the AMP. The AMP shall include the following elements:

6.3.5.7.1. Rehabilitation and Replacement Plan

The AMP shall identify and prioritize upcoming asset rehabilitation and replacement projects costing greater than \$5,000 and outline a proposed schedule for completion of each project.

6.3.5.7.2. Maintenance Plan

The AMP shall identify individual or categories of maintenance activities and frequency with which they are performed. The Maintenance Plan shall estimate ongoing and projected cost of maintenance activities.

6.3.5.7.3. System Map

A map of the system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the wastewater treatment plant shall incorporate assets from the asset management inventory. The map shall be color-coded to identify maintenance and rehabilitation priorities.

6.3.5.7.4. Funding

The AMP shall create an accounting of current and projected funding sources, relevant expenses and financial reserves. Expenses may include operational, administrative, interest, or capital expenses. Funding sources may include federal, State, local or private grants, loans, or bonds, as well as connection and user fees.

6.3.5.7.5. System Projections

The AMP shall evaluate growth projections of population and service area and potential vulnerabilities resulting from climate change over the next 30 years.

6.3.5.7.6. Asset Management Software

The AMP shall incorporate software to inventory all critical assets valued over \$5,000 into a single database, automate work order production and tracking, and prioritize system maintenance and rehabilitation projects. Assets may include, but are not limited to, sewer lines, manholes, outfalls, pump stations, force mains, catch basins, and wastewater treatment facility assets. Each entry shall include:

- Name and identification number
- Location (GPS coordinate or equivalent identifier)
- Current performance/condition
- Purchase and installation date
- Purchase price
- Replacement cost
- Quantitative consequence of failure
- Quantitative likelihood of failure

- 6.3.5.7.7 The Dischargers shall implement the AMP within 60 days following submission to the San Diego Water Board, unless otherwise directed in writing by the San Diego Water Board Executive Officer.
- 6.3.5.7.8. The Dischargers shall reevaluate and update the AMP as needed at least 180 days prior to the expiration date of this Order. The Dischargers shall timely provide each updated or revised AMP to the San Diego Water Board.
- 6.3.6. **Other Special Provisions – Not Applicable**
- 6.3.7. **Compliance Schedules – Not Applicable**

7. Compliance Determination

Compliance with the effluent limitations contained in section 4 of this Order will be determined as specified below:

7.1. Compliance with Average Monthly Effluent Limitation (AMEL)

If the average of daily discharges over a calendar month exceeds the AMEL for a given parameter, an alleged violation will be flagged and the Dischargers will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of noncompliance in a 31-day month). The average of daily discharges over the calendar month that exceeds the AMEL for a parameter will be considered out of compliance for that month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Dischargers will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

7.2. Compliance with Average Weekly Effluent Limitation (AWEL)

If the average of daily discharges over a calendar week (Sunday through Saturday) exceeds the AWEL for a given parameter, an alleged violation will be flagged and the Dischargers will be considered out of compliance for each day of that week for that parameter, resulting in seven days of noncompliance. The average of daily discharges over the calendar week that exceeds the AWEL for a parameter will be considered out of compliance for that week only. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Dischargers will be considered out of compliance for that calendar week. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

7.3. Compliance with Maximum Daily Effluent Limitation (MDEL)

The MDEL shall apply to flow-weighted 24-hour composite samples, or grab samples, as specified in the MRP (Attachment E). If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and the Dischargers will be considered out of compliance for that parameter for that one

day only within the reporting period. For any one day during which no sample is taken, no compliance determination can be made for that day.

7.4. Compliance with Instantaneous Minimum Effluent Limitation

The instantaneous minimum effluent concentration limitation shall apply to grab sample determinations. If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, an alleged violation will be flagged and the Dischargers will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both are lower than the instantaneous minimum effluent limitation would result in two instances of noncompliance with the instantaneous minimum effluent limitation).

7.5. Compliance with Instantaneous Maximum Effluent Limitation

The instantaneous maximum effluent concentration limitation shall apply to grab sample determinations. If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, an alleged violation will be flagged and the Dischargers will be considered out of compliance for that parameter for that single sample. Non-compliance for each sample will be considered separately (e.g., the results of two grab samples taken within a calendar day that both exceed the instantaneous maximum effluent limitation would result in two instances of noncompliance with the instantaneous maximum effluent limitation).

7.6. Compliance with Six-Month Median Effluent Limitation

If the median of daily discharges over any 180-day period exceeds the six-month median effluent limitation for a given parameter, an alleged violation will be flagged and the Dischargers will be considered out of compliance for each day of that 180-day period for that parameter. The next assessment of compliance will occur after the next sample is taken. If only a single sample is taken during a given 180-day period and the analytical result for that sample exceeds the six-month median, the Dischargers will be considered out of compliance for the 180-day period. For any 180-day period during which no sample is taken, no compliance determination can be made for the six-month median limitation.

7.7. Mass and Concentration Limitations

Compliance with mass and concentration effluent limitations for the same parameter shall be determined separately with their respective limitations. When the concentration of a constituent in an effluent sample is determined to be ND or DNQ, the corresponding MER determined from that sample concentration shall also be reported as “ND” or “DNQ.”

7.8. Percent Removal

Compliance with percent removal requirements for average monthly percent removal of CBOD₅ and TSS shall be determined separately for each wastewater

treatment facility discharging through an outfall. For each wastewater treatment facility, the monthly average percent removal shall be calculated according to the following equation:

Monthly average percent removal = the monthly average influent concentration minus the monthly average effluent concentration, divided by the monthly average influent concentration, multiplied by 100.

7.9. Compliance with Single-constituent Effluent Limitations

The Dischargers shall be deemed out of compliance with an effluent limitation or discharge specification if the concentration of the constituent in the monitoring sample is greater than the effluent limitation or discharge specification and greater than or equal to the ML.

7.10. Compliance with Effluent Limitations Expressed as a Sum of Several Constituents

The Dischargers are out of compliance with an effluent limitation that applies to the sum of a group of chemicals (e.g., PCBs) if the sum of the individual pollutant concentrations is greater than the effluent limitation. Individual pollutants of the group will be considered to have a concentration of zero if the constituent is reported as ND or DNQ.

7.11. Multiple Sample Data Reduction

The concentration of the pollutant in the effluent may be estimated from the result of a single sample analysis or by a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses when all sample results are quantifiable (i.e., greater than or equal to the reported ML). When one or more sample results are reported as ND or DNQ, the central tendency concentration of the pollutant shall be the median (middle) value of the multiple samples. If, in an even number of samples, one or both of the middle values is ND or DNQ, the median will be the lower of the two middle values.

7.12. Mass Emission Rate (MER)

The MER, in lbs/day, shall be obtained from the following calculation for any calendar day:

$$\text{MER (lbs/day)} = 8.34 \times Q \times C$$

In which Q and C are the flow rate in MGD and the constituent concentration in mg/L, respectively, and 8.34 is a conversion factor (lbs/gallon of water). If a composite sample is taken, then C is the concentration measured in the composite sample and Q is the average flow rate occurring during the period over which the samples are composited.

7.13. Bacterial Standards and Analysis

7.13.1. The geometric mean used for determining compliance with bacterial standards is calculated with the following equation:

Geometric Mean = $(C_1 \times C_2 \times \dots \times C_n)^{1/n}$

Where n is the number of days samples were collected during the period and C is the concentration of bacteria (CFU/100 mL) found on each day of sampling.

- 7.13.2. The STV used for determining compliance with bacterial standards shall not be exceeded by more than 10 percent of the samples collected in a calendar month, collected in a static manner.
- 7.13.3. Sample dilutions for fecal coliform bacterial analyses should be performed so the range of values extends from 2 to 16,000 CFU. Sample dilutions for enterococci bacterial analyses shall range from 1 to 10,000 CFU per 100 mL. The detection methods used for each analysis shall be reported with the results of the analysis. Detection methods used for fecal coliform shall be those listed in 40 CFR part 136 or any improved method determined by the San Diego Water Board (and approved by USEPA) to be appropriate. Detection methods used for enterococci shall be those presented in USEPA publication USEPA 600/4-85/076, *Test Methods for Escherichia coli and Enterococci in Water by Membrane Filter Procedure*, listed under 40 CFR part 136, and any other method approved by the San Diego Water Board.

7.14. Single Operational Upset (SOU)

A SOU that leads to simultaneous violations or more than one pollutant parameter shall be treated as a single violation and limits the Dischargers' liability in accordance with the following conditions:

- 7.14.1. A SOU is broadly defined as a single unusual event that temporarily disrupts the usually satisfactory operation of a system in such a way that it results in violation of multiple pollutant parameters.
- 7.14.2. Dischargers may assert SOU to limit liability only for those violations which the Dischargers submitted notice of the upset as required in section 1.8 of Attachment D.
- 7.14.3. For purposes outside of Water Code sections 13385(h) and (i), determination of compliance and civil liability (including any more specific definition of SOU), the requirements for Dischargers to assert the SOU limitation of liability, and the manner of counting violations, shall be in accordance with the *USEPA Memorandum Issuance of Guidance Interpreting Single Operational Upset* (September 27, 1989).
- 7.14.4. For purposes of Water Code sections 13385(h) and (i), determination of compliance and civil liability (including any more specific definition of SOU), the requirements for Dischargers to assert the SOU limitation of liability, and the manner of counting violations shall be in accordance with Water Code section 13385(f)(2).

7.15. Chronic Toxicity

Chronic toxicity is used to measure the acceptability of waters for supporting a healthy marine biota until approved methods are developed to evaluate biological response. Compliance with the chronic toxicity effluent limit established in section 4.1.1.9 of this Order for Discharge Point No. 001 shall be determined using critical life stage toxicity tests in accordance with procedures prescribed by the Ocean Plan (2019) and restated in the MRP (Attachment E). Chronic toxicity shall be expressed as Toxic Units Chronic (TUc), where:

$$\text{TUc} = 100 / \text{NOEC}$$

where NOEC is the No Observed Effect Concentration (also referred to as the No Observed Effect Level or NOEL) and is expressed as the maximum percent of effluent that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test. The MDEL for chronic toxicity is exceeded and a violation will be flagged when a chronic toxicity test results in greater than or equal to 101 TUc. The MDEL for chronic toxicity is set at the IWC for the discharge (1.0% effluent ²).

² IWC = 1/minimum initial dilution factor (Dm) = 1/100 = 0.01 = 1.0%

ATTACHMENT A – ABBREVIATIONS AND DEFINITIONS

Part 1. – Abbreviations

For the abbreviations with an asterisk (*), see Part 2 of Attachment A (Glossary of Common Terms) for further definition.

Abbreviation	Definition
40 CFR	Title 40 of the Code of Federal Regulations
AMEL*	Average Monthly Effluent Limitation
AMP	Asset Management Plan
APF	Area of Production Forgone
AQUA	Aquaculture
ASBS*	Areas of Special Biological Significance
AUV	Autonomous Underwater Vehicle
AWEL*	Average Weekly Effluent Limitation
Basin Plan	<i>Water Quality Control Plan for the San Diego Basin</i>
BIOL	Preservation of Biological Habitats of Special Significance
BMZ	Brine Mixing Zone
BOD ₅	Biochemical Oxygen Demand (5-Day @ 20°C)
BPJ	Best Professional Judgement
BRI	Benthic Response Index
°C	Degrees Celsius
CBOD ₅	Carbonaceous Biochemical Oxygen Demand (5-Day @ 20°C)
CCAP	Climate Change Action Plan
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CFU	Colony Forming Units
CIWQS	California Integrated Water Quality System
CO ₂	Carbon Dioxide
COMM	Commercial and Sport Fishing
CSM	Conceptual Site Model
CTD	Conductivity-Temperature-Depth
CWA	Clean Water Act
DAF	Dissolved Air Flotation
ddPCR	Droplet Digital Polymerase Chain Reaction
DDT*	Dichlorodiphenyltrichloroethane
DDW	State Water Board, Division of Drinking Water
Desalination Amendment	<i>Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) Addressing Desalination Facility Intakes, Brine Discharges, and the Incorporation of Other Non-substantive Changes</i>
Desalination Amendment Final Staff Report	<i>Final Staff Report Including the Final Substitute Environmental Documentation</i>

Abbreviation	Definition
Discharger(s)	For purposes of this Order, Attachments A through F, and Attachment H, the term “Discharger(s)” shall mean SOCWA and/or Santa Margarita Water District, Moulton Niguel Water District, City of San Clemente, and South Coast Water District.
DMR*	Discharge Monitoring Report
DNQ*	Detected, But Not Quantified
EC25	Effects Concentration at 25 Percent
ELAP	Environmental Laboratory Accreditation Program
ELGs	Effluent Limitation Guidelines
eSMR	Electronic Self-Monitoring Reports
ETM	Empirical Transport Model
°F	Degrees Fahrenheit
Facilities	J.B. Latham Wastewater Treatment Plant, Chiquita Water Reclamation Plant (WRP), 3A WRP, San Clemente WRP, Oso Creek WRP, San Juan Capistrano Groundwater Treatment Plant, South Coast Water District (SCWD) Groundwater Recovery Facility, Segunda Deshecha Runoff Plant, Doheny Desalination Project, Ranch Water Filtration Plant, the associated land outfalls, and San Juan Creek Ocean Outfall (SJCOO)
FCD	Flood Control District
GHD	GHD Inc.
GPS	Global Positioning System
HCH*	Hexachlorocyclohexane
Ho	Hypothesis
IND	Industrial Service Supply
IU	Industrial User
IWC*	“In-Stream” Waste Concentration
IWS	Industrial Waste Survey
lbs/day	Pounds per Day
LC	Lethal Concentration
LC 50	Percent Waste Giving 50 Percent Survival of Test Organisms
MAR	Marine Habitat
MCRT	Mean Cell Residence Time
MDEL*	Maximum Daily Effluent Limitation
MDL*	Method Detection Limit
MEC	Maximum Effluent Concentration
MER	Mass Emission Rate
MF	Microfiltration
mg/kg	Milligram per Kilogram
mg/L	Milligram per Liter
MGD	Million Gallons per Day
MIGR	Migration of Aquatic Organisms
ML*	Minimum Level
ml	Milliliter

Abbreviation	Definition
ml/L	Milliliter per Liter
mmhos/cm	Millimhos per Centimeter
MNWD	Moulton Niguel Water District
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System
NAV	Navigation
ND*	Not Detected
ng/kg	Nanogram per Kilogram
NOEC	No Observed Effect Concentration
NOEL	No Observed Effect Level
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
Ocean Plan	<i>Water Quality Control Plan for Ocean Waters of California</i>
PAHs*	Polynuclear Aromatic Hydrocarbons
PCBs*	Polychlorinated Biphenyls
pCi/L	Picocuries per Liter
PMP*	Pollutant Minimization Program
PMSD	Percent Minimum Significant Difference
POTWs	Publicly-Owned Treatment Works
PPP	Pollution Prevention Plan
ppt	Parts per Thousand
PTMP	Plume Tracking Monitoring Plan
PWTS	Portable Water Treatment System
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
RARE	Rare, Threatened, or Endangered Species
REC-1	Contact Water Recreation
REC-2	Non-Contact Water Recreation
RCRA	Resource Conservation and Recovery Act
Regional General SSO Order	California Regional Water Quality Control Board Region 9, San Diego Region Order No. R9-2007-0005, <i>Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region</i>
Revised Compliance Matrix	<i>Doheny Ocean Desalination Project – Phase 1 Project Ocean Plan Compliance Matrix</i> dated January 14, 2021
RL	Reporting Level
RO	Reverse Osmosis
ROTV	Remotely Operated Towed Vehicle
ROWD	Report of Waste Discharge
RPA	Reasonable Potential Analysis
San Diego Water Board	California Regional Water Quality Control Board, San Diego Region
SCCWRP	Southern California Coastal Water Research Project

Abbreviation	Definition
SCWD	South Coast Water District
SHELL	Shellfish Harvesting
SIC	Standard Industrial Classification
SIUs	Significant Industrial Users
SJCOO	San Juan Creek Ocean Outfall
SMR	Self-Monitoring Report
SMWD	Santa Margarita Water District
SOCWA	South Orange County Wastewater Authority
SOPs	Standard Operating Procedures
SOU	Single Operational Upset
SPP	Spill Prevention Plan
SPWN	Spawning, Reproduction, and/or Early Development
SRP	Spill Response Plan
SSMPs	Sanitary Sewer Management Plans
SSO*	Sanitary Sewer Overflow
State Water Board	State Water Resources Control Board
Statewide General SSO Order	State Water Board Order No. 2006-0003-DWQ, <i>Statewide General Waste Discharge Requirements for Sanitary Sewer Systems</i>
STV	Statistical Threshold Value
TAC	Test Acceptability Criteria
TBELs	Technology-Based Effluent Limitations
TCDD*	Tetrachlorodibenzodioxin
TIE*	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TRE*	Toxicity Reduction Evaluation
TSD	Technical Support Document
TSS	Total Suspended Solids
TUa	Toxic Units Acute
TUc*	Toxic Units Chronic
UF	Ultrafiltration
µg	Microgram
µg/kg	Microgram per Kilogram
µg/L	Microgram per Liter
UM3	USEPA Modeling Application Visual Plumes
U.S.C.	United States Code
USEPA	United States Environmental Protection Agency
Water Code	California Water Code
WDRs	Waste Discharge Requirements
WET	Whole Effluent Toxicity
WILD	Wildlife Habitat
WRP	Water Reclamation Plant
WQBELs	Water Quality-Based Effluent Limitations
ZID	Zone of Initial Dilution

Part 2. – Definitions

30-day average

The arithmetic mean of pollutant parameter values of samples collected in a period of 30 consecutive days.

6-Month Median Effluent Limitation

The highest allowable moving median of all daily discharges for any 180-day period.

Anaerobically Digestible Material

Inedible kitchen grease as defined in section 19216 of the Food and Agricultural Code and food material as defined in title 14, division 7, chapter 3.1, article 1, section 17582(a)(20) of the California Code of Regulations (CCR).

Antidegradation

Policies which ensure protection of water quality for a particular body where the water quality exceeds levels necessary to protect fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as outstanding natural resource waters.

Area of Production Forgone (APF)

An estimate of the area that is required to produce (replace) the same amount of larvae or propagules that are removed via entrainment at desalination facilities intakes. APF is calculated by multiplying the proportional mortality by the source water body, which are both determined using an empirical transport model.

Areas of Special Biological Significance (ASBS)

Those areas designated by the State Water Resources Control Board (State Water Board) as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of State Water Quality Protection Areas.

Average Monthly Effluent Limitation (AMEL)

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

Average Weekly Effluent Limitation (AWEL)

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

Beneficial Uses

The uses of water necessary for the survival or wellbeing of man, plants, and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals. "Beneficial Uses" of the waters of the State of California that may

be protected against include, but are not limited to, domestic, municipal, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. In the Basin Plan, existing beneficial uses are uses that were attained in the surface or ground water on or after November 28, 1975; and potential beneficial uses are uses that would probably develop in future years through the implementation of various control measures. "Beneficial Uses" are equivalent to "Designated Uses" under federal law. (Water Code section 13050(f)).

Bioaccumulation

The accumulation of contaminants in the tissues of organisms through any route, including respiration, ingestion, or direct contact with contaminated water, sediment, food, or dredged material.

Biosolids

Nutrient-rich organic materials resulting from the treatment of sewage sludge. When treated and processed, sewage sludge becomes biosolids which can be safely recycled and applied as fertilizer to sustainably improve and maintain productive soils and stimulate plant growth.

Brine

Brine is the byproduct of desalinated water having a salinity concentration greater than a desalination facility's intake source water.

Brine Mixing Zone (BMZ)

The area where salinity may exceed 2.0 parts per thousand above natural background salinity, or the concentration of salinity approved as part of an alternative receiving water limitation. The standard brine mixing zone shall not exceed 100 meters (328 feet) laterally from the point(s) of discharge and throughout the water column. An alternative brine mixing zone, if approved as described in the Ocean Plan chapter III.M.3.d, shall not exceed 200 meters (656 feet) laterally from the point(s) of discharge and throughout the water column. The brine mixing zone is an allocated impact zone where there may be toxic effects on marine life due to elevated salinity.

Bypass

The intentional diversion of waste streams from any portion of a treatment facility. (40 CFR section 122.41(m)(1)(i).)

Chlordane

Shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

Chlorinated Phenolics

The sum of 4-chloro-3-methylphenol, 2-chlorophenol, pentachlorophenol, 2,4,5-trichlorophenol, and 2,4,6-trichlorophenol.

Chronic Toxicity

Chronic toxicity is the measure of the sub-lethal effects of a discharge or ambient water sample (e.g., reduced growth or reproduction). Certain chronic toxicity tests include an additional measurement of lethality. Compliance with the effluent limitation for chronic toxicity in this Order is demonstrated by conducting chronic toxicity tests for the effluent as described in section 7.15 of this Order and section 3.3 of the MRP (Attachment E). Chronic Toxicity effluent limitation is expressed as Toxic Units Chronic (TUc) and is calculated by the following equation:

$$TUc = 100/NOEC$$

where NOEC is the No Observed Effect Concentration (also referred to as the No Observed Effect Level or NOEL) or the maximum percent effluent that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test.

Composite Sample

A composite sample is defined as a combination of at least eight sample aliquots of at least 100 ml, collected at periodic intervals during the operating hours of a facility over a 24-hour period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically. The 100 ml minimum volume of an aliquot does not apply to automatic self-purging samplers. If one 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.

A grab sample is an individual sample of at least 100 ml collected at a randomly selected time over a period not exceeding 15 minutes.

Daily Discharge

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.

A composite sample is defined as a combination of at least eight sample aliquots of at least 100 ml, collected at periodic intervals during the operating hours of a facility over a 24-hour period. For volatile pollutants, aliquots must be combined in the laboratory

immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically. The 100 ml minimum volume of an aliquot does not apply to automatic self-purging samplers. If one 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.

A grab sample is an individual sample of at least 100 ml collected at a randomly selected time over a period not exceeding 15 minutes.

Degrade

Degradation shall be determined by comparison of the waste field and reference site(s) for characteristic species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

Desalination Facility

An industrial facility that processes water to remove salts and other components from the source water to produce water that is less saline than the source water.

Detected, But Not Quantified (DNQ)

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

Dichlorobenzenes

Shall mean the sum of 1,2- and 1,3-dichlorobenzene.

Dichlorodiphenyltrichloroethane (DDT)

Shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

Discharge of a Pollutant

Discharge of a pollutant means: (a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source," or (b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger."

“Discharge” when used without qualification means the “discharge of a pollutant.” (40 CFR section 122.2)

Discharge Monitoring Reports (DMRs)

The DMRs means the United States Environmental Protection Agency (USEPA) uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by “approved States” as well as by USEPA. USEPA will supply DMRs to any approved state upon request. The USEPA national forms may be modified to substitute the state agency name, address, logo, and other similar information, as appropriate, in place of USEPA’s.

Downstream Ocean Waters

Waters downstream with respect to ocean currents.

Dredged Material

Any material excavated or dredged from the navigable waters of the United States, including material otherwise referred to as “spoil.”

Empirical Transport Model (ETM)

A methodology for determining the spatial area known as the source water body that contains the source water population, which are the organisms that are at risk of entrainment as determined by factors that may include but are not limited to biological, hydrodynamic, and oceanographic data. ETM can also be used to estimate proportional mortality (Pm).

Enclosed Bays

Indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Endosulfan

The sum of endosulfan-alpha and -beta and endosulfan sulfate.

Estuaries and Coastal Lagoons

Estuaries and Coastal Lagoons are waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by section 12220 of the Water Code, Suisun Bay,

Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

Facilities

Collectively refers to the J.B. Latham Wastewater Treatment Plant, Chiquita Water Reclamation Plant (WRP), 3A WRP, San Clemente WRP, Oso Creek WRP, San Juan Capistrano Groundwater Treatment Plant, South Coast Water District (SCWD) Groundwater Recovery Facility, Segunda Deshecha Runoff Plant, Doheny Desalination Project, Ranch Water Filtration Plant, the associated land outfalls, and San Juan Creek Ocean Outfall (SJCOO).

Feasible

For the implementation of Ocean Plan section III.M, feasible shall mean capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

Halomethanes

The mean the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

HCH

The mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

Initial Dilution

The process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and non-buoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the San Diego Water Board, whichever results in the lower estimate for initial dilution.

Instantaneous Maximum Effluent Limitation

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

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).

In-stream Waste Concentration (IWC)

The concentration of a toxicant of effluent in the receiving water after mixing (the inverse of the dilution factor). A discharge of 100% effluent will be considered the IWC whenever mixing zones or dilution credits are not authorized by the applicable Water Board.

Interference

A discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- (1) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- (2) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the federal CWA, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Kelp Beds

For purposes of the bacteriological standards of the Ocean Plan, kelp beds are significant aggregations of marine algae of the genera *Macrocystis* and *Nereocystis*. Kelp beds include the total foliage canopy of *Macrocystis* and *Nereocystis* plants throughout the water column.

Mariculture

The culture of plants and animals in marine waters independent of any pollution source.

Material

(a) In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial; (b) For purposes of the Ocean Plan relating to waste disposal, dredging and the disposal of dredged material and fill, MATERIAL means matter of any kind or description which is subject to regulation as waste, or any material dredged from the navigable waters of the United States. See also, DREDGED MATERIAL.

Maximum Daily Effluent Limitation (MDEL)

The highest allowable daily discharge of a pollutant.

Method Detection Limit (MDL)

The minimum concentration of a substance that can be reported with 99 percent confidence that the measured concentration is distinguishable from method blank results, as defined in 40 CFR part 136, Attachment B.

Minimum Level (ML)

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.

Natural Background Salinity

The salinity at a location that results from naturally occurring processes and is without apparent human influence. For purposes of determining natural background salinity, the San Diego Water Board may approve the use of: 1) The mean monthly natural background salinity shall be determined by averaging 20 years of historical salinity data in the proximity of the proposed discharge location and at the depth of the proposed discharge when feasible. When historical data are not available, natural background salinity shall be determined by measuring salinity at depth of the proposed discharge for 3 years, on a weekly basis prior to a desalination facility discharging brine, and the mean monthly natural salinity shall be used to determine natural background salinity; or 2) The actual salinity at a reference location, or reference locations, that is representative of natural background salinity at the discharge location. The reference locations shall be without apparent human influence, including wastewater outfalls and brine discharges. Either method to establish natural background salinity may be used for the purpose of determining compliance with the receiving water limitation and the effluent limitation for salinity. If a reference location(s) is used for compliance monitoring, the permit should specify that historical data shall be used if reference location data becomes unavailable. An owner or operator shall submit to the regional water board all necessary information to establish natural background salinity.

Natural Light

Reduction of natural light may be determined by the San Diego Water Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the San Diego Water Board.

Not Detected (ND)

Those sample results less than the laboratory's MDL.

Ocean Waters

The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

Pass Through

A discharge which exits the POTW into waters of the United States in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other

sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Percent Removal

A percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the monthly average values of the raw wastewater influent pollutant concentrations to the facility and the monthly average values of the effluent pollutant concentrations for a given time period. (40 CFR 133.101(j))

PAHs (polynuclear aromatic hydrocarbons)

The sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4 benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

PCBs (polychlorinated biphenyls)

The sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

Phenolic Compounds (non-chlorinated)

The sum of 2,4-dimethylphenol, 4,6-dinitro-2-methylphenol, 2,4-dinitrophenol, 2-methylphenol, 4-methylphenol, 2-nitrophenol, 4-nitrophenol, and phenol.

Pollutant

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean: (a) Sewage from vessels; or (b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well used either to facilitate production or for disposal purposes is approved by authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Pollutant Minimization Program (PMP)

A program to reduce all potential sources of a pollutant through pollutant minimization (control) strategies, including pollution prevention measures, in order to maintain the effluent concentration at or below the effluent limitation.

Publicly Owned Treatment Works (POTW)

POTW means a treatment works as defined by section 212 of the federal Clean Water Act (CWA), which is owned by a State or municipality (as defined by section 502(4) of the federal CWA). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid

nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in section 502(4) of the federal CWA, which has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

Recycled Water

Recycled water means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource.

Reported Minimum Level (ML)

The reported ML (also known as the Reporting Level or RL) is the ML (and its associated analytical method) chosen by the Dischargers 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 San Diego Water Board either from Appendix II of the Ocean Plan in accordance with II.C.5.a. of the Ocean Plan or established in accordance with section III.C.5.b. of the Ocean Plan. 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 reported ML.

Salinity

A measure of the dissolved salts in a volume of water. Salinity shall be measured using a standard method approved by the San Diego Water Board (e.g. Standard Method 2520 B, USEPA Method 120.1, USEPA Method 160.1) and reported in parts per thousand. For historical salinity data not recorded in parts per thousand, the San Diego Water Board may accept converted data at their discretion.

Sanitary Sewer Overflow (SSO)

An SSO is any overflow, spill, release, discharge or diversion of untreated or partially treated wastewater from a sanitary sewer system. SSOs include: (i) Overflows or releases of untreated or partially treated wastewater that reach waters of the United States; (ii) Overflows or releases of untreated or partially treated wastewater that do not reach waters of the United States; and (iii) Wastewater backups into buildings and on private property that are caused by blockages or flow conditions within the publicly-owned portion of a sanitary sewer system.

Sanitary Sewer System

Any system of pipes, pump stations, sewer lines, or other conveyances, upstream of a wastewater treatment plant headworks used to collect and convey wastewater to the publicly owned treatment facility. Temporary storage and conveyance facilities (such as vaults, temporary piping, construction trenches, wet wells, impoundments, tanks, etc.)

are considered to be part of the sanitary sewer system, and discharges into these temporary storage facilities are not considered to be SSOs.

Seawater

Salt water that is in or from the ocean. For implementation of section III.M of the Ocean Plan, seawater includes tidally influenced waters in coastal estuaries and coastal lagoons and underground salt water beneath the seafloor, beach, or other contiguous land with hydrologic connectivity to the ocean.

Severe Property Damage

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

Shellfish

Organisms identified by the California Department of Health Services as shellfish for public health purposes (i.e., mussels, clams, and oysters).

Significant Difference

Defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

Six-Month Median Effluent Limitation

See 6-Month Median above for definition of this term.

Sludge

Any solid, semisolid, or liquid waste generated from a municipal, commercial, or industrial wastewater treatment plant, water supply treatment plant, or air pollution control facility or any other such waste having similar characteristics and effect.

Source Waterbody

The spatial area that contains the organisms that are at risk of entrainment at a desalination facility* as determined by factors that may include, but are not limited to, biological, hydrodynamic, and oceanographic data.

State Water Quality Protection Areas (SWQPAs)

Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All Areas of Special Biological Significance (ASBS) that were previously designated by the State Water Board in Resolutions 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

Statistical Threshold Value (STV)

A set value that approximates the 90th percentile of the water quality distribution for a bacterial population.

Subsurface Intake

For the purpose of implementing Chapter III.M of the Ocean Plan, subsurface intake is an intake withdrawing seawater from the area beneath the ocean floor or beneath the surface of the earth inland from the ocean.

Tetrachlorodibenzodioxin (TCDD) Equivalents

The sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

Isomer Group	Toxicity Equivalency Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

Thirty-Day Average

See 30-day average above for definition of this term.

Toxicity Identification Evaluation (TIE)

A set of procedures conducted 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.

Toxicity Reduction Evaluation (TRE)

A study conducted in a stepwise 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.

Trash

Trash means all improperly discarded solid material from any production, manufacturing, or processing operation including, but not limited to, products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic or natural materials.

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 Dischargers. 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.

Waste

As used in the Ocean Plan, waste includes a Dischargers' total discharge, of whatever origin, i.e., gross, not net, discharge.

Water Quality Control Plans

There are two types of water quality control plans - Basin Plans and Statewide Plans. Regional Boards adopt Basin Plans for each region based upon surface water hydrologic basin boundaries. The Regional Basin Plans designates or describes (1) existing and potential beneficial uses of ground and surface water; (2) water quality objectives to protect the beneficial uses; (3) implementation programs to achieve these objectives; and (4) surveillance and monitoring activities to evaluate the effectiveness of the water quality control plan. The Statewide Plans address water quality concerns for surface waters that overlap Regional Board boundaries, are statewide in scope, or are otherwise considered significant and contain the same four elements. Statewide Water Quality Control Plans include the Ocean Plan, the Enclosed Bays and Estuaries Plan, the Inland Surface Waters Plan, and the Thermal Plan. A water quality control plan consists of a designation or establishment for the waters within a specified area of (1) beneficial uses to be protected, (2) water quality objectives, and (3) a program of implementation needed for achieving water quality objectives (Water Code section 13050(j)).

Water Quality Objectives

Numerical or narrative limits on constituents or characteristics of water designed to protect designated beneficial uses of the water. (Water Code section 13050(h)). California's water quality objectives are established by the State and Regional Water Boards in the Water Quality Control Plans.

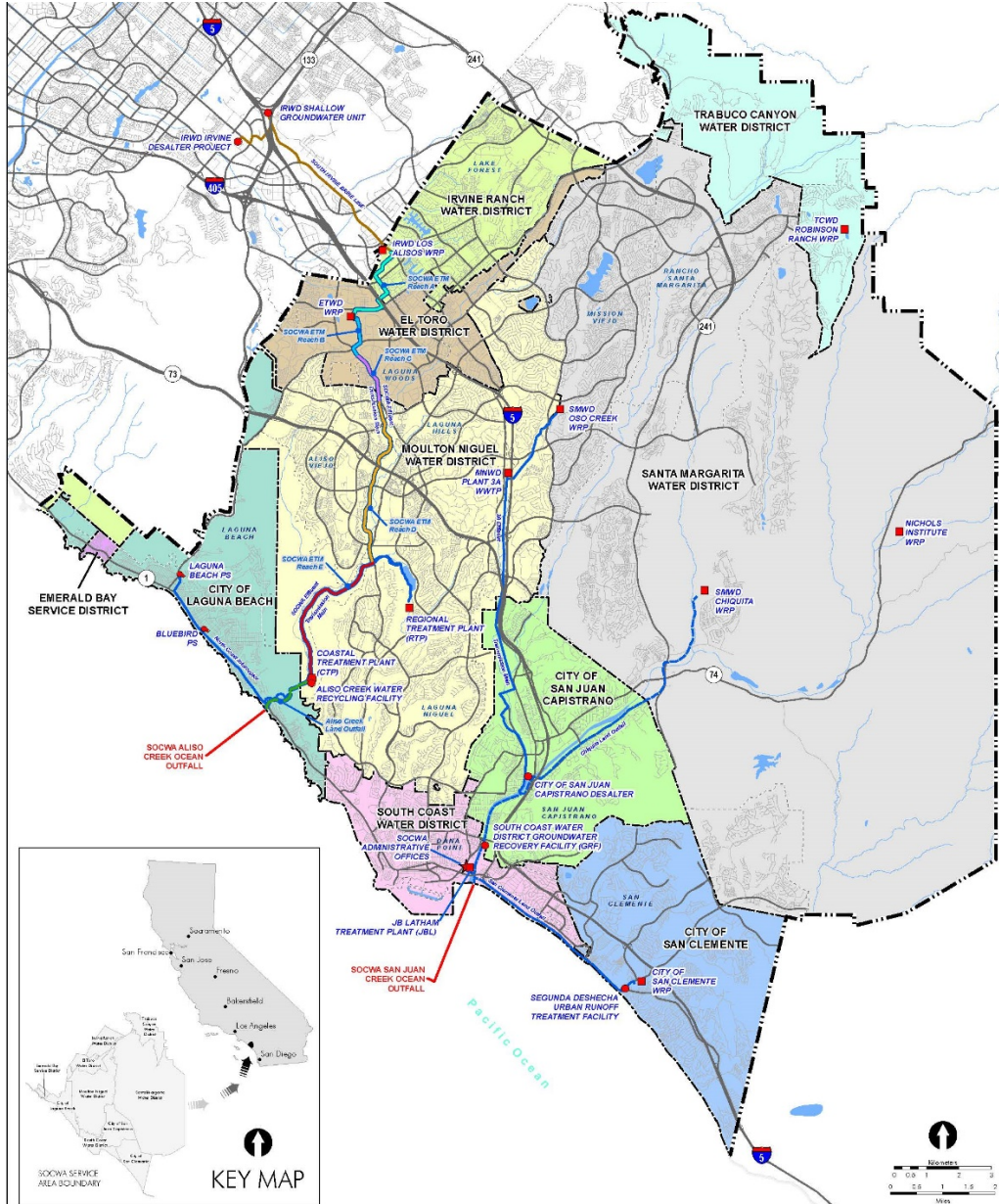
Water Quality Standards

Provisions of State or federal law which consist of a designated use or uses for waters of the United States and water quality criteria for such waters based upon such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (40 CFR section 131.3(i)).

Under State law, the Water Boards establish beneficial uses and water quality objectives in their water quality control plans or basin plans. Together with an antidegradation policy, these beneficial uses and water quality objectives serve as water quality standards under the Clean Water Act. In Clean Water Act parlance, state beneficial uses are called “designated uses” and state water quality objectives are called “criteria.” Throughout this Order, the relevant term is used depending on the statutory scheme

ATTACHMENT B – MAP

Map 1 - SOCWA Facilities³ and Service Area
(South Coast Water District Doheny Desalination Project not shown)



Map 2 - SOCWA Water Quality Monitoring Stations San Juan Creek Ocean Outfall

³ Facilities collectively refers to the J.B. Latham Wastewater Treatment Plant, Santa Margarita Water District (SMWD) Chiquita Water Reclamation Plant (WRP), SMWD/Moulton Niguel Water District 3A WRP, San Clemente WRP, SMWD Oso Creek WRP, San Juan Capistrano Groundwater Treatment Plant, South Coast Water District (SCWD) Groundwater Recovery Facility, Segunda Deshecha Runoff Plant, SCWD Doheny Desalination Project, the associated land outfalls, and San Juan Creek Ocean Outfall (SJCOO).

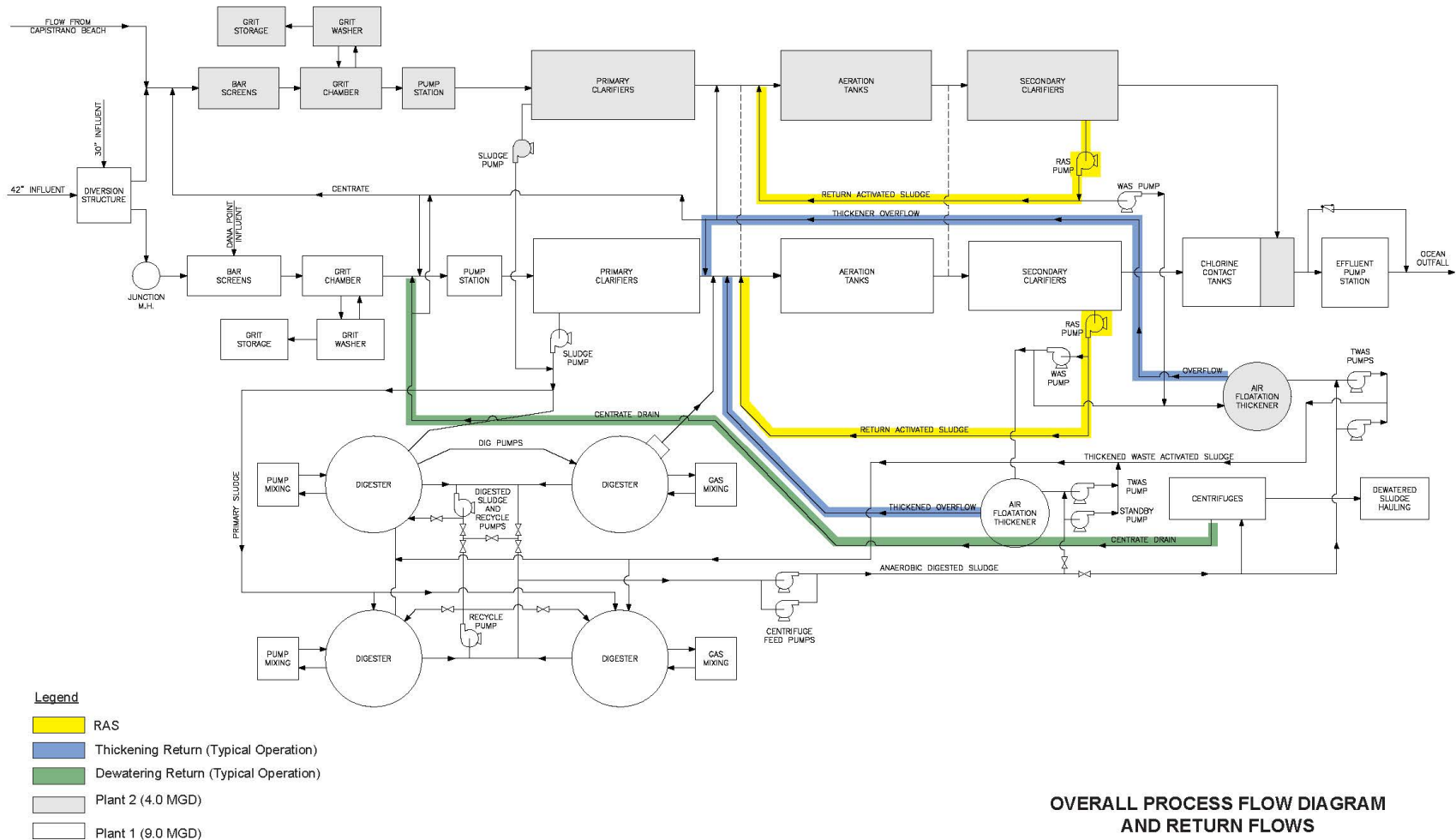


Map 3 - Proposed South Coast Water District Doheny Desalination Project

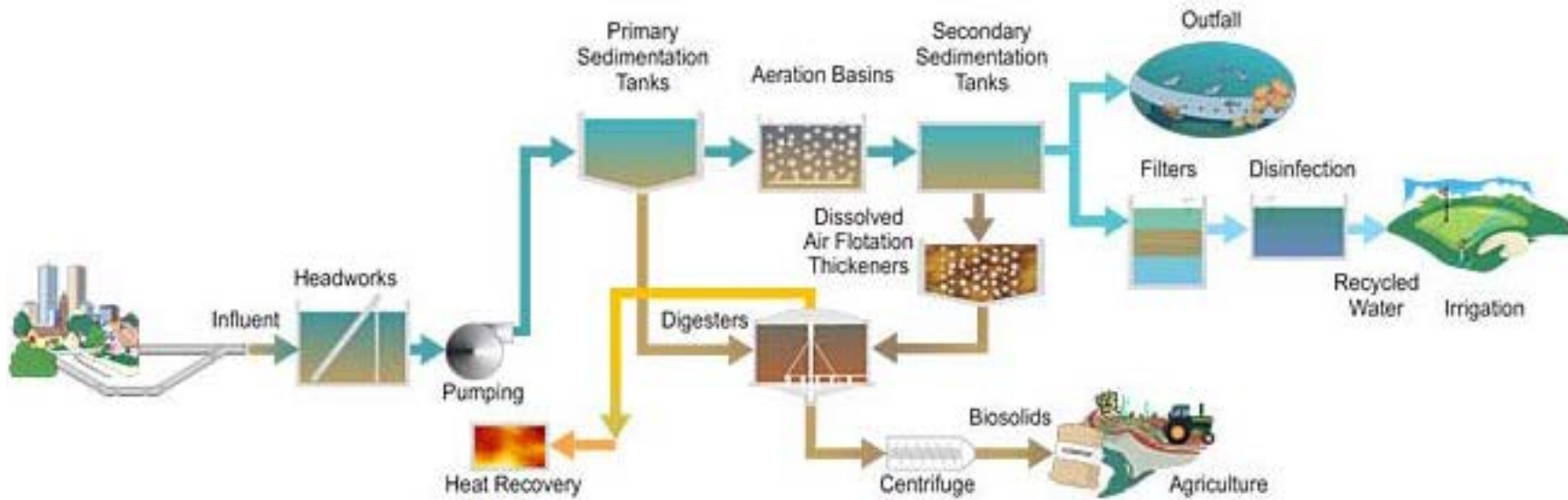


ATTACHMENT C – FLOW SCHEMATICS

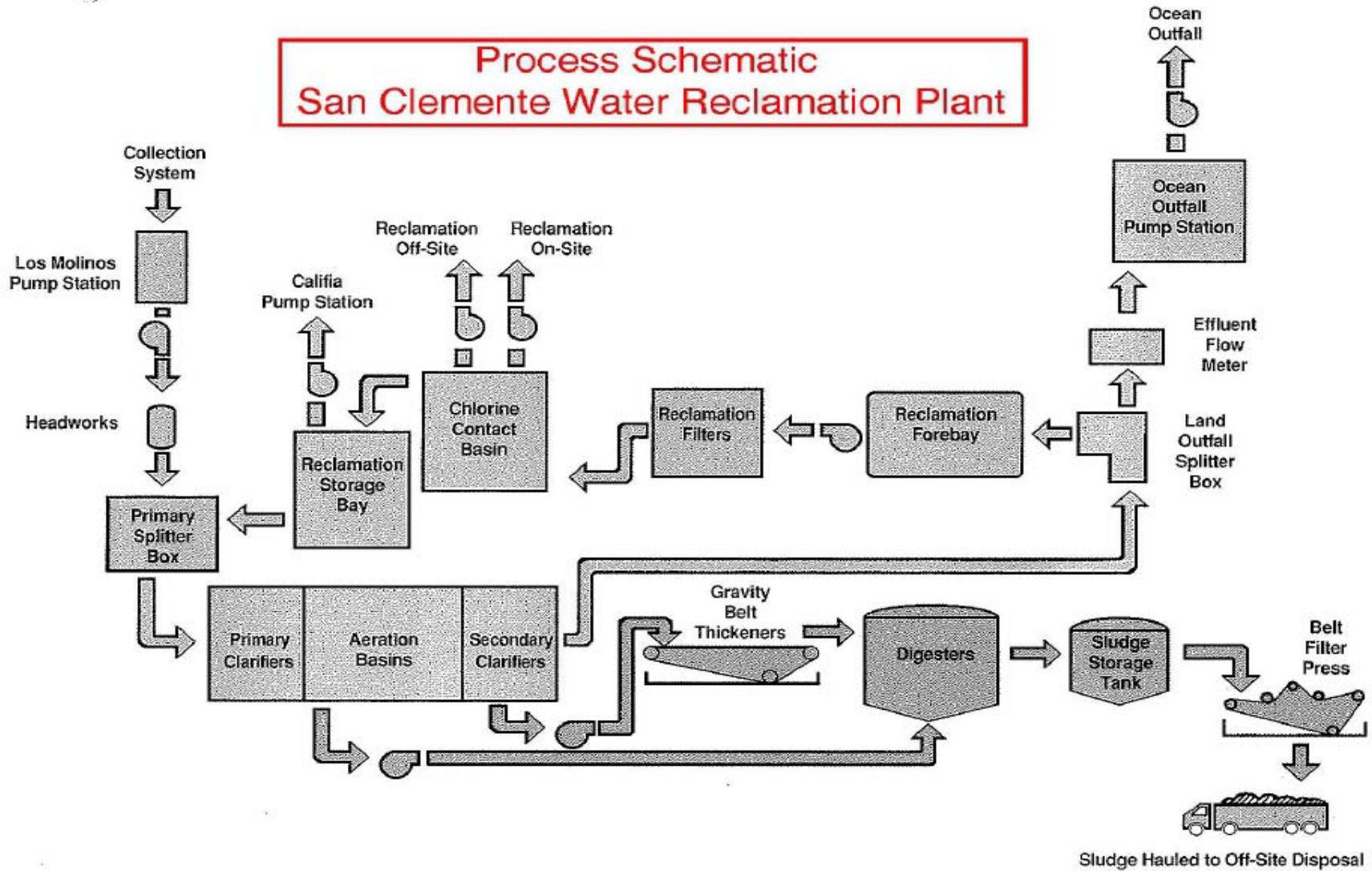
Flow Schematic 1 – SOCWA J.B. LATHAM WASTEWATER PLANT



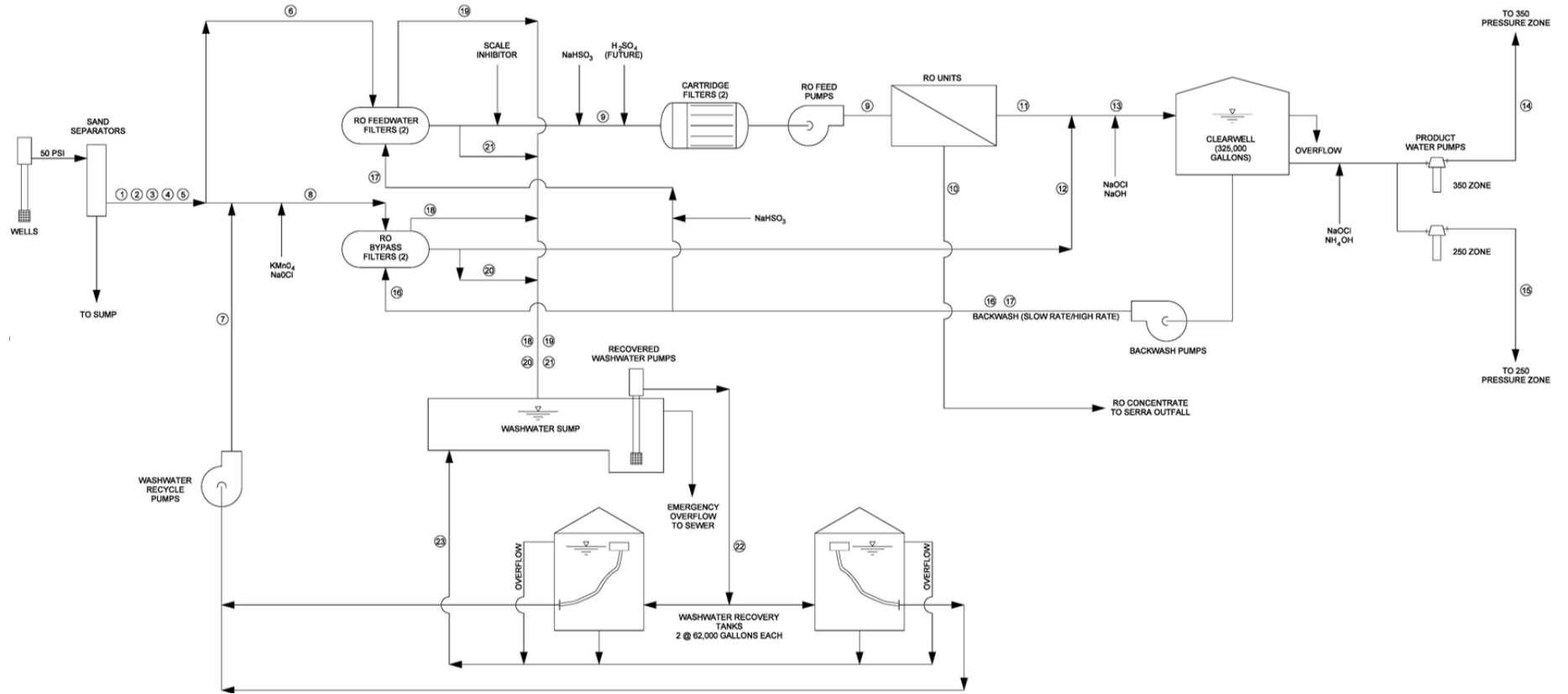
Flow Schematic 3 – Santa Margarita Water District/Moulton Niguel Water District 3A Water Reclamation Plant Flow



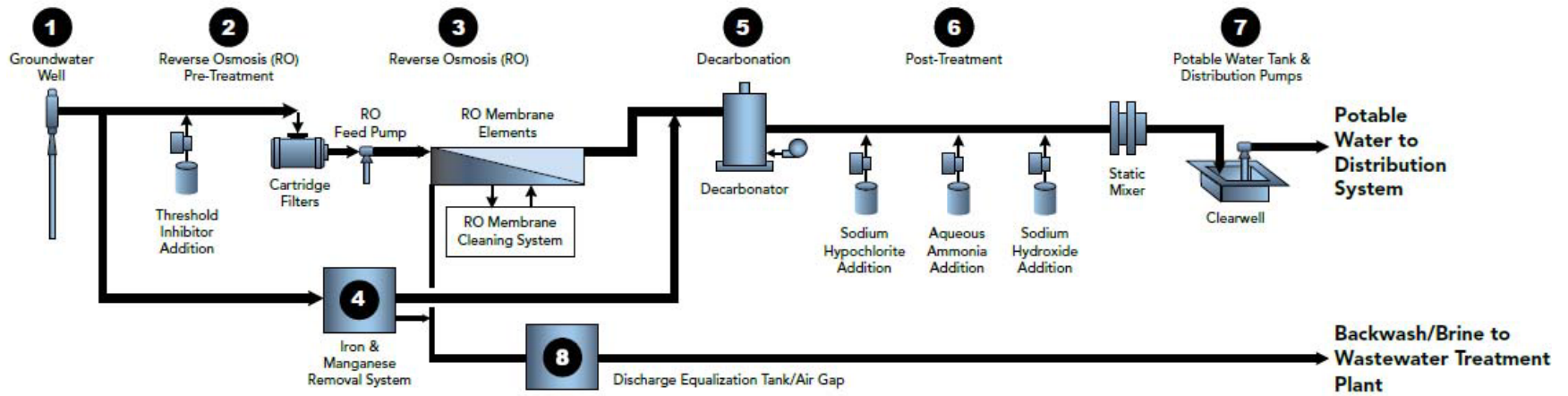
Flow Schematic 4 – San Clemente Water Reclamation Plant



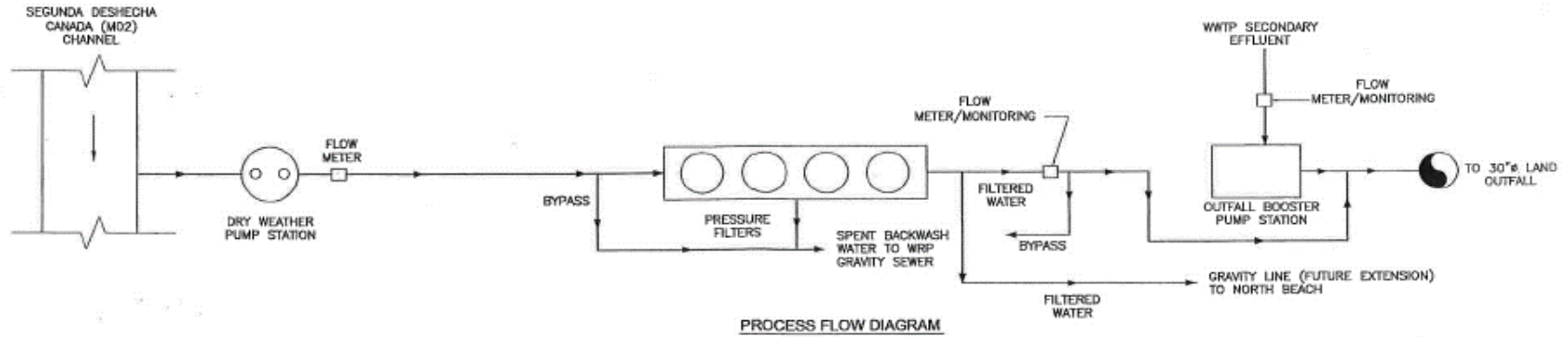
Flow Schematic 5 – San Juan Capistrano Groundwater Treatment Plant



Flow Schematic 6 – South Coast Water District Groundwater Recovery Facility



Flow Schematic 7 - San Clemente Segunda Deshecha Runoff Plant



Flow Schematic 8 – South Coast Water District Doheny Desalination Project

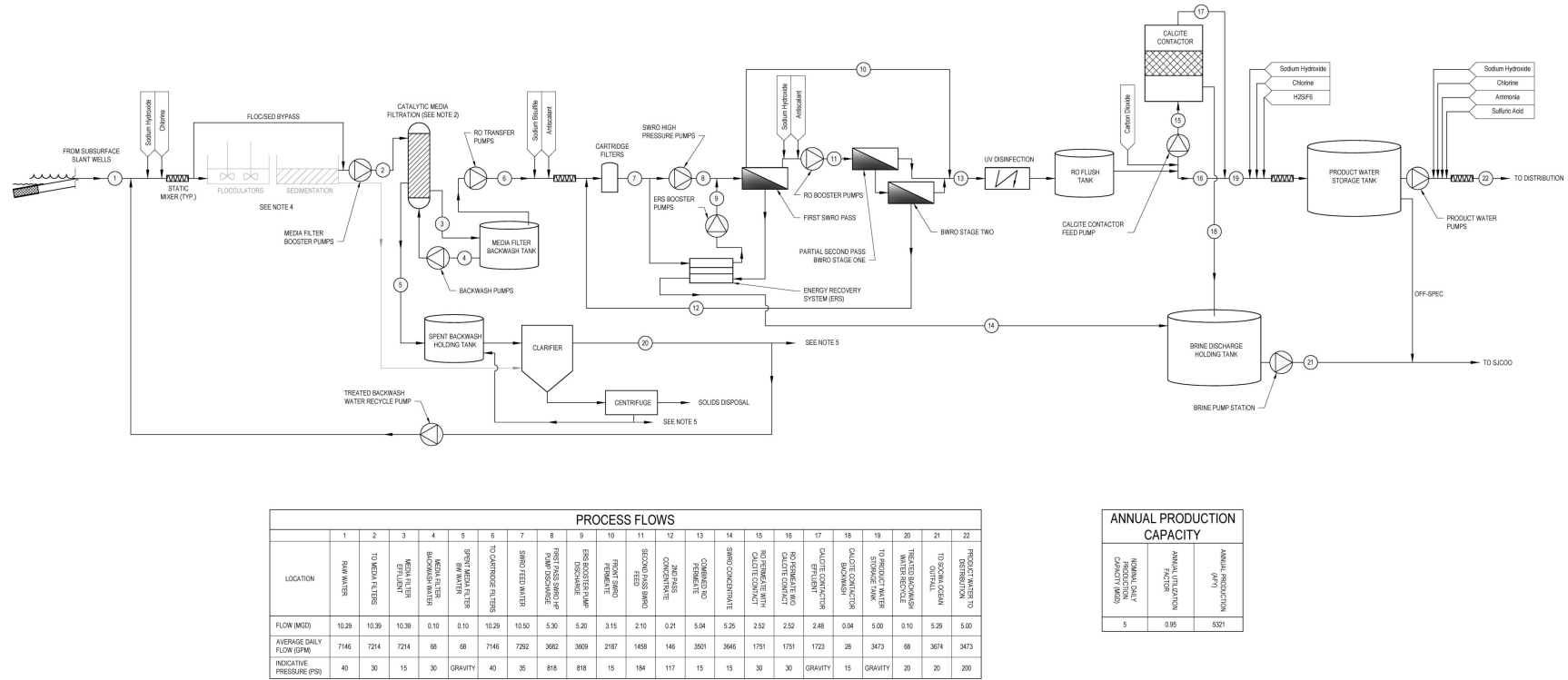
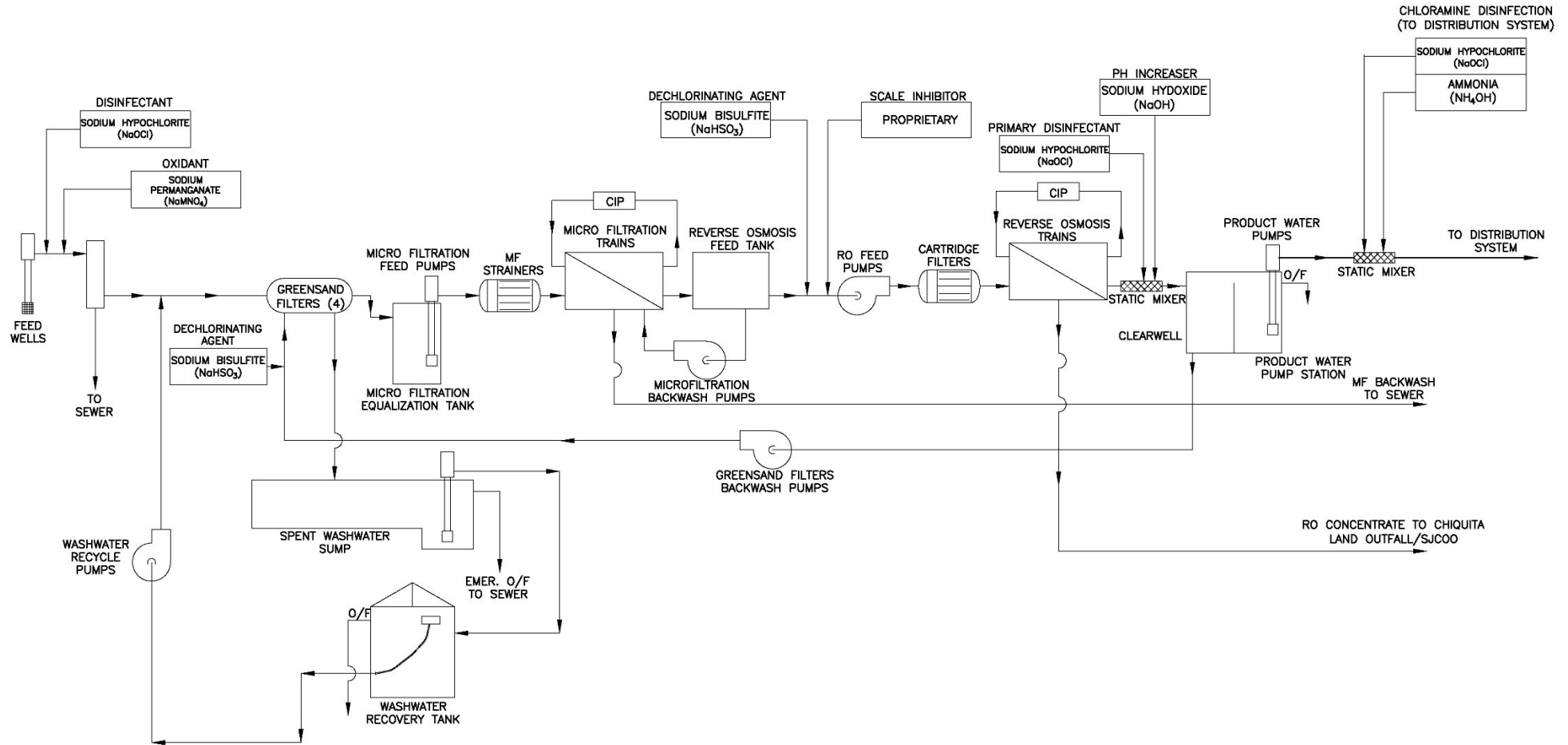


Figure 10 Proposed Doheny Desalination Plant Process Flow Diagram and Preliminary Water Balance

Flow Schematic 9 – Ranch Water Filtration Plant



ATTACHMENT D – STANDARD PROVISIONS

1. Standard Provisions – Permit Compliance

1.1. Duty to Comply

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

1.2. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Dischargers 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 section 122.41(c).)

1.3. Duty to Mitigate

The Dischargers 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 section 122.41(d).)

1.4. Proper Operation and Maintenance

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

1.5. Property Rights

- 1.5.1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR section 122.41(g).)
- 1.5.2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations. (40 CFR section 122.5(c).)

1.6. Inspection and Entry

The Dischargers shall allow the San Diego Water Board, State Water Resources Control Board (State Water 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 (33 U.S.C. section 1318(a)(4)(b); 40 CFR section 122.41(i); Water Code, sections 13267, 13383):

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

1.7. Bypass

1.7.1. Definitions

- 1.7.1.1. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR section 122.41(m)(1)(i).)
- 1.7.1.2. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR section 122.41(m)(1)(ii).)
- 1.7.2. **Bypass not exceeding limitations.** The Dischargers may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance 1.7.3, 1.7.4, and 1.7.5 below. (40 CFR section 122.41(m)(2).)
- 1.7.3. **Prohibition of bypass.** Bypass is prohibited, and the San Diego Water Board may take enforcement action against the Dischargers for bypass, unless (40 CFR section 122.41(m)(4)(i)):

- 1.7.3.1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR section 122.41(m)(4)(i)(A));
- 1.7.3.2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR section 122.41(m)(4)(i)(B)); and
- 1.7.3.3. The Dischargers submitted notice to the San Diego Water Board as required under Standard Provisions – Permit Compliance 1.7.5 below. (40 CFR section 122.41(m)(4)(i)(C).)
- 1.7.4. The San Diego Water Board may approve an anticipated bypass, after considering its adverse effects, if the San Diego Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance 1.7.3 above. (40 CFR section 122.41(m)(4)(ii).)

1.7.5. **Notice**

- 1.7.5.1. Anticipated bypass. If the Dischargers know in advance of the need for a bypass, it shall submit prior notice, if possible, at least 10 days before the date of the bypass. The notice shall be sent to the San Diego Water Board. As of December 2023, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting 5.10 below. Notices shall comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR section 122.41(m)(3)(i).)
- 1.7.5.2. Unanticipated bypass. The Dischargers shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the San Diego Water Board. As of December 2023, a notice shall also be submitted electronically to the initial recipient defined in Standard Provisions – Reporting 5.10 below. Notices shall comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR section 122.41(m)(3)(ii).)

1.8. **Upset**

Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Dischargers. 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 section 122.41(n)(1).)

- 1.8.1. **Effect of an upset.** An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance 1.8.2 below are met. No determination made during administrative review of claims that

noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. (40 CFR section 122.41(n)(2).)

1.8.2. **Conditions necessary for a demonstration of upset.** The Dischargers who wish to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR section 122.41(n)(3)):

1.8.2.1. An upset occurred and that the Dischargers can identify the cause(s) of the upset (40 CFR section 122.41(n)(3)(i));

1.8.2.2. The permitted facility was, at the time, being properly operated (40 CFR section 122.41(n)(3)(ii));

1.8.2.3. The Dischargers submitted notice of the upset as required in Standard Provisions – Reporting 5.5.2.2 below (24-hour notice) (40 CFR section 122.41(n)(3)(iii)); and

1.8.2.4. The Dischargers complied with any remedial measures required under Standard Provisions – Permit Compliance 1.3 above. (40 CFR section 122.41(n)(3)(iv).)

1.8.3. Burden of proof. In any enforcement proceeding, the Dischargers seeking to establish the occurrence of an upset have the burden of proof. (40 CFR section 122.41(n)(4).)

2. Standard Provisions – Permit Action

2.1. General

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

2.2. Duty to Reapply

If the Dischargers wish to continue an activity regulated by this Order after the expiration date of this Order, the Dischargers must apply for and obtain a new permit. (40 CFR section 122.41(b).)

2.3. Transfers

This Order is not transferable to any person except after notice to the San Diego Water Board. The San Diego Water Board may require modification or revocation and reissuance of the Order to change the name of the Dischargers and incorporate such other requirements as may be necessary under the federal CWA and the Water Code. (40 CFR sections 122.41(l)(3), 122.61.)

3. Standard Provisions – Monitoring

3.1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR section 122.41(j)(1).)

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

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

4. Standard Provisions – Records

- 4.1. The Dischargers 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 San Diego Water Board Executive Officer at any time. (40 CFR section 122.41(j)(2).)
- 4.2. Records of monitoring information shall include:
- 4.2.1. The date, exact place, and time of sampling or measurements (40 CFR section 122.41(j)(3)(i));
- 4.2.2. The individual(s) who performed the sampling or measurements (40 CFR section 122.41(j)(3)(ii));
- 4.2.3. The date(s) analyses were performed (40 CFR section 122.41(j)(3)(iii));
- 4.2.4. The individual(s) who performed the analyses (40 CFR section 122.41(j)(3)(iv));
- 4.2.5. The analytical techniques or methods used (40 CFR section 122.41(j)(3)(v)); and
- 4.2.6. The results of such analyses. (40 CFR section 122.41(j)(3)(vi).)

- 4.3. Claims of confidentiality for the following information will be denied (40 CFR section 122.7(b)):
- 4.3.1. The name and address of any permit applicant or Dischargers (40 CFR section 122.7(b)(1)); and
- 4.3.2. Permit applications and attachments, permits and effluent data. (40 CFR section 122.7(b)(2).)

5. Standard Provisions – Reporting

5.1. Duty to Provide Information

The Dischargers shall furnish to the San Diego Water Board, State Water Board, or USEPA within a reasonable time, any information which the San Diego Water Board, State Water 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 Dischargers shall also furnish to the San Diego Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR section 122.41(h); Water Code, sections 13267, 13383.)

5.2. Signatory and Certification Requirements

- 5.2.1. All applications, reports, or information submitted to the San Diego Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting 5.2.2, 5.2.3, 5.2.4, 5.2.5, and 5.2.6 below. (40 CFR section 122.41(k).)
- 5.2.2. 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 section 122.22(a)(3).)
- 5.2.3. All reports required by this Order and other information requested by the San Diego Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting 5.2.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- 5.2.3.1. The authorization is made in writing by a person described in Standard Provisions – Reporting 5.2.2 above (40 CFR section 122.22(b)(1));
- 5.2.3.2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named

individual or any individual occupying a named position.) (40 CFR section 122.22(b)(2)); and

- 5.2.3.3. The written authorization is submitted to the San Diego Water Board and State Water Board. (40 CFR section 122.22(b)(3).)
- 5.2.4. If an authorization under Standard Provisions – Reporting 5.2.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting 5.2.3 above must be submitted to the San Diego Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR section 122.22(c).)
- 5.2.5. Any person signing a document under Standard Provisions – Reporting 5.2.2 or 5.2.3 above shall make the following certification:

“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.” (40 CFR section 122.22(d).)
- 5.2.6. Any person providing the electronic signature for documents described in Standard Provisions – 5.2.1, 5.2.2, or 5.2.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting 5.2, and shall ensure that all relevant requirements of 40 CFR part 3 (Cross-Media Electronic Reporting) and 40 CFR part 127 (NPDES Electronic Reporting Requirements) are met for that submission. (40 CFR section 122.22(e).)

5.3. Monitoring Reports

- 5.3.1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR section 122.41(l)(4).)
- 5.3.2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the San Diego Water Board or State Water Board. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting 5.10 and comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR section 122.41(l)(4)(i).)
- 5.3.3. If the Dischargers monitor any pollutant more frequently than required by this Order using test procedures approved under 40 CFR part 136, or another method required for an industry-specific waste stream under 40 CFR chapter 1, subchapter N, the results of such monitoring shall be included in the calculation

and reporting of the data submitted in the DMR or reporting form specified by the San Diego Water Board or State Water Board. (40 CFR section 122.41(l)(4)(ii).)

- 5.3.4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR section 122.41(l)(4)(iii).)

5.4. Compliance Schedules

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

5.5. Twenty-Four Hour Reporting

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

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

As of December 2023, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted to the San Diego Water Board and must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting 5.10. The reports shall comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. The San Diego Water Board may also require the Dischargers to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 CFR section 122.41(l)(6)(i).)

- 5.5.2. The following shall be included as information that must be reported within 24 hours:

- 5.5.2.1. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR section 122.41(l)(6)(ii)(A).)
- 5.5.2.2. Any upset that exceeds any effluent limitation in this Order. (40 CFR section 122.41(l)(6)(ii)(B).)

5.5.3. The San Diego Water Board may waive the above required written report on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR section 122.41(l)(6)(ii)(B).)

5.6. Planned Changes

The Dischargers shall give notice to the San Diego 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 section 122.41(l)(1)):

- 5.6.1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR section 122.29(b) (40 CFR section 122.41(l)(1)(i)); or
- 5.6.2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR section 122.41(l)(1)(ii).)
- 5.6.3. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under 40 CFR section 122.42(a)(1) (see Additional Provisions—Notification Levels 7.1.1). (40 CFR section 122.41(l)(1)(ii).)

5.7. Anticipated Noncompliance

The Dischargers shall give advance notice to the San Diego Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order's requirements. (40 CFR section 122.41(l)(2).)

5.8. Other Noncompliance

The Dischargers shall report all instances of noncompliance not reported under Standard Provisions – Reporting 5.3, 5.4, and 5.5 above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting 5.5 above. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in Standard Provision – Reporting 5.5 and the applicable required data in appendix A to 40 CFR part 127. The San Diego Water Board may also require the Dischargers to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section. (40 CFR section 122.41(l)(7).)

5.9. Other Information

When the Dischargers become 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 San Diego Water Board, State Water Board, or USEPA, the Dischargers shall promptly submit such facts or information. (40 CFR section 122.41(l)(8).)

5.10. Initial Recipient for Electronic Reporting Data

The owner, operator, or the duly authorized representative is required to electronically submit NPDES information specified in appendix A to 40 CFR part 127 to the initial recipient defined in 40 CFR section 127.2(b). USEPA will identify and publish the list of initial recipients on its website and in the Federal Register, by State and by NPDES data group (see 40 CFR section 127.2(c)). USEPA will update and maintain this listing. (40 CFR section 122.41(l)(9).)

6. Standard Provisions – Enforcement

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

7. Additional Provisions – Notification Levels

Publicly-Owned Treatment Works (POTWs) - All POTWs shall provide adequate notice to the San Diego Water Board of the following (40 CFR section 122.42(b)):

- 7.1. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the federal CWA if it were directly discharging those pollutants (40 CFR section 122.42(b)(1)); and
- 7.2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order. (40 CFR section 122.42(b)(2).)
- 7.3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW. (40 CFR section 122.42(b)(3).)

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

Section 308 of the federal Clean Water Act (CWA) and sections 122.41(h), (j)-(l), 122.44(i), and 122.48 of title 40 of the Code of Federal Regulations (40 CFR) require that all National Pollutant Discharge Elimination System (NPDES) permits specify monitoring and reporting requirements. California Water Code (Water Code) section 13383 also authorizes the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. Pursuant to this authority, this MRP establishes conditions for the South Orange County Wastewater Authority (SOCWA) to conduct routine or episodic self-monitoring of the discharges regulated under this Order at specified effluent and receiving water monitoring locations. The MRP requires the Dischargers to report the results to the San Diego Water Board with information necessary to evaluate discharge characteristics and compliance status. While the San Diego Water Board is not required to consider MRP costs, it recognizes that monitoring and reporting costs can be a significant burden. The San Diego Water Board estimates that the burden and cost of compliance with the MRP may range from \$350,000 to \$400,000 per year. The San Diego Water Board has assessed this MRP to reduce and eliminate unnecessary or overlapping monitoring and reporting requirements where appropriate. The MRP is reasonable given the needs and benefits of the reports.

The purpose of the MRP is to determine and ensure compliance with effluent limitations and other requirements established in this Order, assess treatment efficiency, characterize effluents, and characterize the receiving water and the effects of the discharge on the receiving water. The MRP also specifies requirements concerning the proper use, maintenance, and installation of monitoring equipment and methods, and the monitoring type intervals and frequency necessary to yield data that are representative of the activities and discharges regulated under this Order.

Each monitoring section contains an introductory paragraph summarizing why the monitoring is needed and the key management questions the monitoring is designed to answer. In developing the list of key management questions, the San Diego Water Board considered four basic types of information for each question:

- (1) Management Information Need – Why does the San Diego Water Board need to know the answer?
- (2) Monitoring Criteria – What monitoring will be conducted for deriving an answer to the question?
- (3) Expected Product – How should the answer be expressed and reported?
- (4) Possible Management Actions – What actions will be potentially influenced by the answer?

The framework for this monitoring program has three components that comprise a range of spatial and temporal scales: 1. core monitoring, 2. regional monitoring, and 3. special studies.

1. Core monitoring consists of the basic site-specific monitoring necessary to measure compliance with individual effluent limits and/or impacts to receiving water quality. Core monitoring is typically conducted in the immediate vicinity of the discharge by examining local scale spatial effects.

2. Regional monitoring provides information necessary to make assessments over large areas and serves to evaluate cumulative effects of all anthropogenic inputs. Regional monitoring data also assists in the interpretation of core monitoring studies. In the event that a regional monitoring effort takes place during the permit cycle in which the MRP does not specifically address regional monitoring, the San Diego Water Board may allow relief from aspects of core monitoring components in order to encourage participation pursuant to section 5 of this MRP.
3. Special studies are directed monitoring efforts designed in response to specific management or research questions identified through either core or regional monitoring programs. Often, they are used to help understand core or regional monitoring results, where a specific environmental process is not well understood, or to address unique issues of local importance.

1. General Monitoring Provisions

- 1.1. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitoring discharge. All samples shall be taken at the monitoring points specified in section 2, Table E-1 and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the San Diego Water Board.
- 1.2. All monitoring instruments and devices used by the Dischargers to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The flow measurement devices shall be installed, calibrated at least once per year (i.e., no more than 12 months between calibrations) or more frequently, and maintained to ensure that the accuracy of the measurement is consistent with the accepted capability of that type of device. The flow measurement devices selected shall be capable of measuring flows with a maximum deviation of less than ± 5 percent from true discharge rates throughout the range of expected discharge volumes.
- 1.3. Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved at 40 CFR part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the CWA* as amended, or an alternative test procedure (ATP) approved by USEPA, or by the San Diego Water Board when there are no methods specified for a pollutant at 40 CFR part 136.
- 1.4. Data produced and reports submitted pursuant to this Order shall be generated by a laboratory accredited by the State of California Environmental Laboratory Accreditation Program (ELAP). The laboratory must hold a valid certificate of accreditation for the analytical test method specified in 40 CFR 136, an ATP approved by USEPA, or by the San Diego Water Board when there are no methods specified for a pollutant at 40 CFR part 136. The laboratory must include quality assurance/quality control data in all data reports required by this Order and submit electronic data as required by the San Diego Water Board. Data generated using field tests is exempt pursuant to California

Water Code Section 13176. Additional information on ELAP can be accessed at:
https://www.waterboards.ca.gov/drinking_water/certlic/labs/index.shtml.

- 1.5. Records of monitoring information shall include information required under Standard Provision, Attachment D, section 4 of this Order.
- 1.6. The Dischargers shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of 10 percent of the samples or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. The Dischargers should have a success rate equal or greater than 80 percent.
- 1.7. The Dischargers shall ensure that the results of the Discharge Monitoring Report-Quality Assurance (DMR-QA) Study or the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Resources Control Board (State Water Board) at the following address:

State Water Resources Control Board Quality Assurance Program Officer
Office of Information Management and Analysis
State Water Resources Control Board
1001 I Street, Sacramento, CA 95814
- 1.8. Analysis for toxic pollutants, including chronic toxicity, with effluent limitations or performance goals based on water quality objectives and criteria of the *Water Quality Control Plan for the San Diego Basin* (Basin Plan) and the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) shall be conducted in accordance with procedures described in the Ocean Plan and restated in this MRP.
- 1.9. The Dischargers shall ensure that analytical procedures used to evaluate compliance with effluent limitations or performance goals established in this Order use minimum levels (ML) no greater than the applicable effluent limitations or performance goals and are consistent with the requirements of the Ocean Plan and 40 CFR part 136, or otherwise approved by USEPA and authorized by the San Diego Water Board. If no authorized ML value is below the effluent limitation, then the method must achieve an ML no greater than the lowest ML value provided in the Ocean Plan and/or 40 CFR part 136.

2. Monitoring Locations

The Dischargers shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order. The north latitude and west longitude information in Table E-1 are approximate for administrative purposes.

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	M-INFA	At a location where all influent flows to the J.B. Latham Wastewater Treatment Plant are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected.
--	M-INFB	At a location where all influent flows to the Santa Margarita Water District Chiquita Water Reclamation Plant (WRP) are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected.
--	M-INFC	At a location where all influent flows to the Santa Margarita Water District/Moulton Niguel Water District 3A WRP are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected.
--	M-INFD	At a location where all influent flows to the San Clemente WRP are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected.
001	M-001	At a location where representative samples of commingled effluent from all contributors to the San Juan Creek Ocean Outfall (SJCOO) can be collected. Monitoring shall be performed in the sampling vault in the Doheny State Beach Park through a sampling port in the outfall pipe.
--	M-001A	Downstream of any in-plant return flows at the J.B. Latham Wastewater Treatment Plant where representative samples of effluent treated solely at the J.B. Latham Wastewater Treatment Plant can be collected, prior to commingling with other discharges contributing to the SJCOO.
--	M-001B	Downstream of any in-plant return flows at the Chiquita WRP where representative samples of effluent treated solely at the Chiquita WRP can be collected, prior to commingling with other discharges contributing to the SJCOO.
--	M-001C	Downstream of any in-plant return flows at the 3A WRP where representative samples of effluent treated solely at the 3A WRP can be collected, prior to commingling with other discharges contributing to the SJCOO.
--	M-001D	Downstream of any in-plant return flows at the San Clemente WRP where representative samples of effluent treated solely at the San Clemente WRP can be collected, prior to commingling with other discharges contributing to the SJCOO.
--	M-001E	Brine discharge from the San Juan Capistrano Groundwater Treatment Plant, prior to commingling with other discharges contributing to the SJCOO.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	M-001F	Brine discharge from the South Coast Water District (SCWD) Groundwater Recovery Facility, prior to commingling with other discharges contributing to the SJCOO.
--	M-001G	Treated effluent from the Segunda Deshecha Runoff Plant, prior to commingling with other discharges contributing to the SJCOO.
--	M-001H	Brine and backwash discharge from the SCWD Doheny Desalination Project, prior to commingling with other discharges contributing to the SJCOO.
--	M-001I	Brine from the Ranch Water Filtration Plant, prior to commingling with other discharges contributing to the SJCOO
--	N1	Nearshore station; At the 30-foot depth contour, 6,000 feet down-coast from the outfall (approximately: 33°26'33"N 117°40'15"W)
--	N2	Nearshore station; At the 30-foot depth contour, 4,000 feet down-coast from the outfall (approximately: 33°26'42"N 117°40'36"W)
--	N3	Nearshore station; At the 30-foot depth contour, 2,000 feet down-coast from the outfall (approximately: 33°26'52"N 117°40'56"W)
--	N4	Nearshore station; At the 30-foot depth contour, 2,000 feet up-coast from the outfall (approximately: 33°27'14"N 117°41'35"W)
--	N5	Nearshore station; At the 30-foot depth contour, 4,000 feet up-coast from the outfall (approximately: 33°27'20"N 117°41'57"W)
--	N6	Nearshore station; At the 30-foot depth contour, 6,000 feet up-coast from the outfall (approximately: 33°27'25"N 117°42'21"W)
--	A1	Offshore Station; Southeast corner of a 2,000 ft x 2,000 ft square having one side parallel to shore and the intersection of its diagonals at the center of the outfall (approximately: 33°26'9"N 117°41'35"W)
--	A2	Offshore Station; Southwest corner of a 2,000 ft x 2,000 ft square having one side parallel to shore and the intersection of its diagonals at the center of the outfall (approximately: 33°25'56"N 117°41'48"W)
--	A3	Offshore Station; Northwest corner of a 2,000 ft x 2,000 ft square having one side parallel to shore and the intersection of its diagonals at the center of the outfall (approximately: 33°26'5"N 117°42'3"W)
--	A4	Offshore Station; Northeast corner of a 2,000 ft x 2,000 ft square having one side parallel to shore and the intersection of its diagonals at the center of the outfall (approximately: 33°26'19"N 117°41'50"W)

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	A5	Offshore Station; At the center of the diagonals of a 2,000 ft x 2,000 ft square having one side parallel to shore and the intersection of its diagonals at the center of the outfall (approximately: 33°26'7"N 117°41'50"W)
--	A6	Offshore Station; 6 ft upcoast of northern end of the outfall along the same isobath of Station A5 (GPS coordinates to be provided by the Dischargers)
--	A7	Offshore Station; 6 ft downcoast of the southern end of the outfall along the same isobath of Station A5 (GPS coordinates to be provided by the Dischargers)
--	B1	Offshore Station (Reference); 1 mile downcoast from the outfall, and over the same depth contour as station A5 (approximately: 33°25'41"N 117°40'55"W)
--	B2	Offshore Station (Reference); 1 mile upcoast from the outfall, and over the same depth contour as station A5 (approximately: 33°26'38"N 117°42'47"W)
--	T1	Trawl Station; Begin trawl slightly downcoast of station B1, first trawl to be away from station heading downcoast along the same depth contour as station B1 (approximately: 33°25'41"N 117°40'55"W)
--	T2	Trawl Station; Begin trawl slightly downcoast of station A5, first trawl to be away from station heading downcoast along the same depth contour as station A5 (approximately: 33°26'7"N 117°41'50"W)
--	T3	Trawl Station; Begin trawl slightly upcoast of station B2, first trawl to be away from station heading upcoast along the same depth contour as station B2 (approximately: 33°26'38"N 117°42'47"W)
--	RF1	Rig Fishing Station; 8,000 feet southeast of the outfall (approximately: 33°25'25"N 117°40'31"W)
--	RF2	Rig Fishing Station; At the outfall diffuser (approximately: 33°26'7"N 117°41'50"W)
--	RF3	Rig Fishing Station; 8,000 feet northwest of the outfall (approximately: 33°26'48"N 117°43'10"W)

3. Core Monitoring Requirements

3.1. Influent Monitoring Requirements

Influent monitoring is the collection and analysis of samples or measurements of wastewater prior to the treatment processes. Influent monitoring of a wastewater stream prior to entering the treatment plant is necessary to address the following question:

- (1) Is the pretreatment program effectively controlling pollutant loads from industrial facilities?

- (2) What is the frequency of unexpected industrial discharges (or pollutants loads) which can cause or contribute to an upset in the wastewater process?
- (3) Is the influent inhibiting or disrupting the plant, its treatment processes or operations, or its sludge processes, use, or disposal?
- (4) Are the SOCWA RTP, SOCWA CTP, Los Aliso WRP, and El Toro Water District WRP complying with permit conditions including, but not limited to, carbonaceous biochemical oxygen demand (5-day @ 20 degrees Celsius (°C)) (CBOD₅) and total suspended solids (TSS) percent removal limitations?

The Dischargers shall monitor the influent at Monitoring Locations M-INFA, M-INFB, M-INFC, and M-INFD as described in Table E-2 below.

Table E-2. Influent Monitoring (M-INFA, M-INFB, M-INFC, and M-INFD)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	million gallons per day (MGD)	Recorder/ Totalizer	Continuous	--
CBOD ₅	milligram per liter (mg/L)	24-hr Composite	1/Week	As required under 40 CFR part 136.
TSS	mg/L	24-hr Composite	1/Week	As required under 40 CFR part 136.
Acenaphthene	microgram per liter (µg/L)	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Acrolein	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Acrylonitrile	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Benzene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Benzidine	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Carbon tetrachloride	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Chlorobenzene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
1,2,4-trichlorobenzene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Hexachlorobenzene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
1,2-dichloroethane	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
1,1,1-trichloroethane	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Hexachloroethane	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
1,1-dichloroethane	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
1,1,2-trichloroethane	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
1,1,2,2-tetrachloroethane	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Chloroethane	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Bis(2-chloroethyl) ether	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
2-chloroethyl vinyl ethers	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
2-chloronaphthalene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
2,4,6-trichlorophenol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Parachlorometa cresol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Chloroform	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
2-chlorophenol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
1,2-dichlorobenzene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
1,3-dichlorobenzene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
1,4-dichlorobenzene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
3,3-dichlorobenzidine	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
1,1-dichloroethylene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
1,2-trans-dichloroethylene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
2,4-dichlorophenol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
1,2-dichloropropane	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
1,3-dichloropropylene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
2,4-dimethylphenol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
2,4-dinitrotoluene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
2,6-dinitrotoluene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
1,2-diphenylhydrazine	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Ethylbenzene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Fluoranthene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
4-chlorophenyl phenyl ether	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
4-bromophenyl phenyl ether	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Bis(2-chloroisopropyl) ether	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Bis(2-chloroethoxy) methane	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Methylene chloride	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Methyl chloride	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Methyl bromide	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Bromoform	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Dichlorobromomethane	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Chlorodibromomethane	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Hexachlorobutadiene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Hexachlorocyclopentadiene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Isophorone	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Naphthalene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Nitrobenzene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
2-nitrophenol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
4-nitrophenol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
2,4-dinitrophenol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
4,6-dinitro-o-cresol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
N-nitrosodimethylamine	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
N-nitrosodiphenylamine	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
N-nitrosodi-n-propylamine	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Pentachlorophenol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Phenol	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Bis(2-ethylhexyl) phthalate	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Butyl benzyl phthalate	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Di-n-Butyl Phthalate	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Di-n-octyl phthalate	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Diethyl Phthalate	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Dimethyl phthalate	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Benzo(a) anthracene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Benzo(a) pyrene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Benzo(b) fluoranthene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Benzo(k) fluoranthene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Chrysene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Acenaphthylene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Anthracene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Benzo(ghi) perylene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Fluorene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Phenanthrene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Dibenzo(a,h) anthracene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Indeno (1,2,3-cd) pyrene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Pyrene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Tetrachloroethylene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Toluene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Trichloroethylene	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Vinyl chloride	µg/L	Grab	1/Year ¹	As required under 40 CFR part 136.
Aldrin	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Dieldrin	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Chlordane	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
4,4-DDT	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
4,4-DDE	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
4,4-DDD	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Alpha-endosulfan	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Beta-endosulfan	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Endosulfan sulfate	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Endrin	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Endrin aldehyde	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Heptachlor	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Heptachlor epoxide	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Alpha-BHC	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Beta-BHC	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Gamma-BHC	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Delta-BHC	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
PCBs	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Toxaphene	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Antimony, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Arsenic, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Beryllium, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Cadmium, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Chromium, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Copper, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Cyanide, Total	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Lead, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Mercury, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Nickel, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Selenium, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Silver, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Thallium, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
Zinc, Total Recoverable	mg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.
TCDD equivalents	µg/L	24-hr Composite	1/Year ¹	As required under 40 CFR part 136.

Notes for Table E-2

1. Pursuant to section 6.3.5.3.4.1 of the Order, the Dischargers shall conduct a full priority pollutant scan of the influent once per year.

3.2. Effluent Monitoring Requirements

Effluent monitoring is the collection and analysis of samples or measurements of effluents, after all treatment processes, to determine and quantify contaminants and to demonstrate compliance with applicable effluent limitations, standards, and other requirements of this Order.

Effluent monitoring is necessary to address the following questions:

- (1) Does the effluent comply with permit effluent limitations, performance goals, and other requirements of this Order, thereby ensuring that water quality standards are achieved in the receiving water?
- (2) What is the mass of constituents that are discharged daily, monthly, or annually?
- (3) Is the effluent concentration or mass changing over time?
- (4) Are the Facilities⁴ being properly operated and maintained to ensure compliance with the conditions of this Order?
- (5) What are the concentrations of nutrients in the effluent that may contribute to algal blooms and ocean acidification in the receiving water?
- (6) Is the daily average salinity of the discharge at Monitoring Location M-001 at or below natural background receiving water salinity, thereby ensuring a positively buoyant plume? The reference location for this Order is the automated shore station at the end of Scripps Pier operated by Scripps Institution of Oceanography. If this reference location becomes unavailable in the future, the Dischargers shall submit for the San Diego Water Board’s review and acceptance a proposed alternative reference location representative of natural background salinity.

⁴ Facilities collectively refers to the J.B. Latham Wastewater Treatment Plant, Santa Margarita Water District (SMWD) Chiquita Water Reclamation Plant (WRP), SMWD/Moulton Niguel Water District 3A WRP, San Clemente WRP, SMWD Oso Creek WRP, San Juan Capistrano Groundwater Treatment Plant, South Coast Water District (SCWD) Groundwater Recovery Facility, Segunda Deshecha Runoff Plant, SCWD Doheny Desalination Project, Ranch Water Filtration Plant, the associated land outfalls, and San Juan Creek Ocean Outfall (SJCOO).

(7) What is the relationship between conductivity and salinity?

3.2.1. The Dischargers shall monitor the effluent at Monitoring Locations M-001A, M-001B, M-001C and M-001D as described in Table E-3 below. Effluent monitoring is only required for the monitoring location(s) that have flow during the monitoring period.

Table E-3. Effluent Monitoring (M-001A, M-001B, M-001C and M-001D)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/Totalizer	Continuous	--
CBOD ₅	mg/L	24-hr Composite	1/Day ^{1,2,3}	As required under 40 CFR part 136.
TSS	mg/L	24-hr Composite	1/Day ^{1,2,3}	As required under 40 CFR part 136.
Oil and Grease	mg/L	Grab	1/Month ^{1,4}	As required under 40 CFR part 136.
Settleable Solids	milliliter per liter (ml/L)	Grab	1/Day ²	As required under 40 CFR part 136.
Turbidity	nephelometric turbidity unit (NTU)	24-hr Composite	1/Week ⁴	As required under 40 CFR part 136.
pH	standard units	Grab	1/Day ²	As required under 40 CFR part 136.
Total Dissolved Solids (TDS)	mg/L	Meter	Continuous	As required under 40 CFR part 136.

Notes for Table E-3

1. The Dischargers shall calculate and report the mass emission rate (MER) of the constituent for each sample taken. The MER shall be calculated in accordance with section 7.12 of this Order.
2. Applies 5 days per week except 7 days per week for at least 1 week during July or August of each year.
3. The Dischargers shall calculate the monthly average percent removal for CBOD₅ and TSS in accordance with section 7.8 of this Order.
4. The minimum frequency of monitoring for this constituent shall increase to twice the minimum frequency specified, if any analysis for this constituent yields a result higher than the applicable effluent limitation or performance goal specified in this Order. The increased minimum frequency of monitoring shall remain in effect until the results of a minimum of four consecutive analyses for this constituent are below all applicable effluent limitations or performance goals specified in this Order.

3.2.2. The Dischargers shall monitor the effluent at Monitoring Location M-001 (Discharge Point No. 001) as described in Table E-4 below.

Table E-4. Effluent Monitoring (M-001)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/ Totalizer	Continuous	--
Temperature	Degrees Fahrenheit (°F)	Grab	1/Week	As required under 40 CFR part 136.
Dissolved Oxygen	mg/L	Grab	1/Week	As required under 40 CFR part 136.
TDS ¹	mg/L	Meter	Continuous	As required under 40 CFR part 136.
Salinity ^{1,2}	parts per thousand (ppt)	Meter	Continuous	As required under 40 CFR part 136.
Conductivity	mmhos/cm	Meter	Continuous	As required under 40 CFR part 136.
Salinity	ppt	Grab	1/Week	Standard Method 2520B
Fecal Coliform	Number/100 ml	Grab	1/Quarter ³	As required under 40 CFR part 136.
Enterococci	Colony Forming Units (CFU)/100 ml	Grab	1/Quarter ³	As required under 40 CFR part 136.
Arsenic, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Cadmium, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Chromium (VI), Total Recoverable ⁶	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Copper, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Lead, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Mercury, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Nickel, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Selenium, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Silver, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Zinc, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Cyanide, Total	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136. ⁷
Total Chlorine Residual	µg/L	Grab	1/Day ^{4,8}	As required under 40 CFR part 136.
Ammonia Nitrogen, Total (as N)	mg/L	24-hr Composite	1/Month ^{4,5}	As required under 40 CFR part 136.
Chronic Toxicity	Toxic Units Chronic (TUC)	24-hr Composite	1/Quarter	9
Phenolic Compounds (nonchlorinated) ¹⁰	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Phenolic Compounds (chlorinated) ¹⁰	µg/L	24-hr Composite	1/Month ^{4,5}	As required under 40 CFR part 136.
Endosulfan ¹⁰	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Endrin	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
HCH ¹⁰	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Radioactivity	picocuries per liter (pCi/L)	24-hr Composite	2/Year ⁵	As required under 40 CFR part 136.
Acrolein	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Antimony, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Bis (2-chloroethoxy) Methane	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Bis (2-chloroisopropyl) Ether	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Chlorobenzene	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Chromium (III), Total Recoverable ⁶	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Di-n-butyl Phthalate	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Dichlorobenzenes ¹⁰	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Diethyl Phthalate	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Dimethyl Phthalate	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
4,6-dinitro-2-methylphenol	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
2,4-dinitrophenol	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Ethylbenzene	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Fluoranthene	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Hexachlorocyclopentadiene	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Nitrobenzene	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Thallium, Total Recoverable	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Toluene	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Tributyltin	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
1,1,1-trichloroethane	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Acrylonitrile	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Aldrin	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Benzene	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Benzidine	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Beryllium, Total Recoverable	µg/L	24-hr composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Bis (2-chloroethyl) Ether	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Bis (2-ethylhexyl) Phthalate	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Carbon Tetrachloride	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Chlordane	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Chlorodibromomethane	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Chloroform	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Dichlorodiphenyltrichloroethane (DDT) ¹⁰	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
1,4-dichlorobenzene	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
3,3'-dichlorobenzidine	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
1,2-dichloroethane	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
1,1-dichloroethylene	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Dichlorobromomethane	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Dichloromethane (Methylene Chloride)	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
1,3-dichloropropene	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Dieldrin	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
2,4-dinitrotoluene	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
1,2-diphenylhydrazine	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Halomethanes ¹⁰	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Heptachlor	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Heptachlor Epoxide	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Hexachlorobenzene	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Hexachlorobutadiene	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Hexachloroethane	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Isophorone	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
N-nitrosodimethylamine	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
N-nitrosodi-N-propylamine	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
N-nitrosodiphenylamine	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Polynuclear Aromatic Hydrocarbons (PAHs) ¹⁰	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Polychlorinated Biphenyls (PCBs) ¹⁰	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
TCDD equivalents ¹⁰	µg/L	24-hr Composite	1/Month ^{4,5}	As required under 40 CFR part 136.
1,1,2,2-tetrachloroethane	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Tetrachloroethylene	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Toxaphene	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Trichloroethylene	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
1,1,2-trichloroethane	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
2,4,6-trichlorophenol	µg/L	24-hr Composite	2/Year ^{4,5}	As required under 40 CFR part 136.
Vinyl Chloride	µg/L	Grab	2/Year ^{4,5}	As required under 40 CFR part 136.
Ammonium ¹¹	mg/L	24-hr Composite	1/Month ^{4,12}	As required under 40 CFR part 136.
Nitrogen, Total ¹³	mg/L	24-hr Composite	1/Month ^{4,12}	As required under 40 CFR part 136.
Nitrogen, Total Organic ¹⁴	mg/L	24-hr Composite	1/Month ^{4,12}	As required under 40 CFR part 136.
Nitrate	mg/L	24-hr Composite	1/Month ^{4,12}	As required under 40 CFR part 136.
Nitrite	mg/L	24-hr Composite	1/Month ^{4,12}	As required under 40 CFR part 136.
Phosphorus, Total (as P)	mg/L	24-hr Composite	1/Month ^{4,12}	As required under 40 CFR part 136.
Phosphate	mg/L	24-hr Composite	1/Month ^{4,12}	As required under 40 CFR part 136.
Carbon, Total Organic	mg/L	24-hr Composite	1/Month ^{4,12}	As required under 40 CFR part 136.
Carbon, Dissolved Inorganic ¹⁵	mg/L	24-hr Composite	1/Month ^{4,12}	As required under 40 CFR part 136.
Iron, Dissolved	mg/L	24-hr Composite	1/Month ^{4,12}	As required under 40 CFR part 136.
Alkalinity	mg/L CaCO ₃	24-hr Composite	1/Month ¹²	As required under 40 CFR part 136.

Notes for Table E-4

1. The Dischargers shall report the daily average for salinity and TDS.

2. The Dischargers shall also report in the natural background receiving water salinity, as determined at the Scripps Institution of Oceanography Pier or an alternative location approved by the San Diego Water Board.
3. Monitoring is only required if the overall compliance rate with the receiving water limitations for bacterial characteristics at section 5.1.1 of this Order is below 90% within a rolling one-year period or a single monitoring location exceeds the bacteria receiving water limitations more than 50% of the time within a rolling one-year period at the offshore stations near the SJCOO, excluding offshore stations A5, A6, and A7 (i.e., A1 through A4), and the source of the exceedances are unknown. If required, the Dischargers shall monitor the effluent on the same day as the receiving water monitoring for the same parameter.
4. The Dischargers shall calculate and report the MER of the constituent for each sample taken. The MER shall be calculated in accordance with section 7.12 of this Order.
5. The minimum frequency of monitoring for this constituent shall increase to twice the minimum frequency specified, if any analysis for this constituent yields a result higher than the applicable effluent limitation or performance goal specified in this Order. The increased minimum frequency of monitoring shall remain in effect until the results of a minimum of four consecutive analyses for this constituent are below all applicable effluent limitations or performance goals specified in this Order.
6. The Dischargers may, at their option, meet this performance goal as a total chromium performance goal and monitor for total recoverable chromium in lieu of total recoverable chromium (III) or total recoverable chromium (VI).
7. If the Dischargers can demonstrate to the satisfaction of the San Diego Water Board (subject to approval of an ATP by USEPA) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, performance goals may be evaluated with the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR part 136, as revised May 14, 1999.
8. Monitoring of total chlorine residual is not required on days when none of the treatment units that are subject to this Order use chlorine for disinfection. If only one sample is collected for total chlorine residual analysis on a particular day, that sample must be collected at the time when the concentration of total chlorine residual in the discharge would be expected to be greatest. The times of chlorine discharges on the days that samples are collected, and the time at which samples are collected, shall be reported.
9. As specified in section 7.15 of this Order and section 3.3 of this MRP (Attachment E).
10. Please see Attachment A of this Order for the definitions.
11. Ammonium may be determined by conversion from ammonia-nitrogen.
12. The minimum sampling frequency shall be once per month for a period of one year. After one year of monthly sampling, minimum sampling frequency shall be reduced to once per quarter.
13. Total nitrogen is the sum of total organic nitrogen, ammonia nitrogen, nitrate nitrogen, and nitrite nitrogen.
14. Total organic nitrogen can be derived by subtracting ammonia nitrogen from total kjeldahl nitrogen
15. Dissolved inorganic carbon may be estimated using results of pH and alkalinity.

3.2.3. The Dischargers shall monitor the effluent at Monitoring Locations M-001E, M-001F, M-001G, and M-001I as described in Table E-5 below. Effluent monitoring is only required for the monitoring location(s) that have flow during the monitoring period.

Table E-5. Effluent Monitoring (M-001E, M-001F, M-001G, and M-001I)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/Totalizer	Continuous	--
TSS	mg/L	24-hr Composite ¹	1/Day ^{2,3}	As required under 40 CFR part 136.
Oil and Grease	mg/L	Grab	1/Month ^{2,4}	As required under 40 CFR part 136.
Settleable Solids	ml/L	Grab	1/Week ⁴	As required under 40 CFR part 136.
Turbidity	NTU	24-hr Composite ¹	1/Week ⁴	As required under 40 CFR part 136.
pH	Standard Units	Grab	1/Day ³	As required under 40 CFR part 136.
TDS	mg/L	24-hr Composite ¹	1/Week	As required under 40 CFR part 136.

Notes for Table E-5

1. If the discharge is intermittent, the 24-hr composite may be composed of samples taken from less than a 24-hr period. If 24-hr composite is not possible (e.g., a 24-hr composite would not yield sufficient volume to perform analytical testing), the Dischargers may take a grab in lieu of the 24-hr composite. The Dischargers shall document and report the day(s) and reason(s) it was not able to collect a 24-hr composite.
2. The Dischargers shall calculate and report the MER of the constituent for each sample taken. The MER shall be calculated in accordance with section 7.12 of this Order.
3. Applies 5 days per week, except 7 days per week for at least 1 week during July or August of each year.
4. The minimum frequency of monitoring for this constituent shall increase to twice the minimum frequency specified, if any analysis for this constituent yields a result higher than the applicable effluent limitation or performance goal specified in this Order. The increased minimum frequency of monitoring shall remain in effect until the results of a minimum of four consecutive analyses for this constituent are below all applicable effluent limitations or performance goals specified in this Order.

3.2.4. The Dischargers shall monitor the effluent at Monitoring Location M-001H as described in Table E-6 below. Effluent monitoring is only required if there is flow during the monitoring period.

Table E-6. Effluent Monitoring (M-001H)

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/Totalizer	Continuous	--
TSS	mg/L	24-hr Composite ¹	1/Day ^{2,3}	As required under 40 CFR part 136.
Oil and Grease	mg/L	Grab	1/Month ^{2,4}	As required under 40 CFR part 136.
Settleable Solids	ml/L	Grab	1/Week ⁴	As required under 40 CFR part 136.
Turbidity	NTU	24-hr Composite ¹	1/Week ⁴	As required under 40 CFR part 136.
pH	standard units	Grab	1/Day ³	As required under 40 CFR part 136.
Conductivity	mmhos/cm	Grab	1/Day ³	As required under 40 CFR part 136.
Salinity	ppt	Grab	1/Week	Standard Method 2520B

Notes for Table E-6

1. If the discharge is intermittent, the 24-hr composite may be composed of samples taken from less than a 24-hr period. If 24-hr composite is not possible (e.g., a 24-hr composite would not yield sufficient volume to perform analytical testing), the Dischargers may take a grab in lieu of the 24-hr composite. The Dischargers shall document and report the day(s) and reason(s) it was not able to collect a 24-hr composite.
2. The Dischargers shall calculate and report the MER of the constituent for each sample taken. The MER shall be calculated in accordance with section 7.12 of this Order.
3. Applies 5 days per week, except 7 days per week for at least 1 week during July or August of each year.
4. The minimum frequency of monitoring for this constituent shall increase to twice the minimum frequency specified, if any analysis for this constituent yields a result higher than the applicable effluent limitation or performance goal specified in this Order. The increased minimum frequency of monitoring shall remain in effect until the results of a minimum of four consecutive analyses for this constituent are below all applicable effluent limitations or performance goals specified in this Order.

3.3. Whole Effluent Toxicity Testing Requirements

The WET refers to the overall aggregate toxic effect of an effluent measured directly by an aquatic toxicity test(s). The control of WET is one approach this Order uses to control the discharge of toxic pollutants. WET tests evaluate the 1) aggregate toxic effects of all chemicals in the effluent including additive, synergistic, or antagonistic

toxicity effects; 2) the toxicity effects of unmeasured chemicals in the effluent; and 3) variability in bioavailability of the chemicals in the effluent.

Monitoring to assess the overall toxicity of the effluent is required to answer the following questions:

- (1) Does the effluent comply with effluent limitations for toxicity thereby ensuring that water quality standards are achieved in the receiving water?
- (2) If the effluent does not comply with effluent limitations for toxicity, are unmeasured pollutants causing risk to aquatic life?
- (3) If the effluent does not comply with effluent limitations for toxicity, are pollutants in combinations causing risk to aquatic life?

3.3.1. **Discharge In-stream Waste Concentration (IWC) for Chronic Toxicity**

The chronic IWC is calculated by dividing 100 percent by the dilution ratio. The chronic toxicity IWC is 0.42 percent effluent.

3.3.2. **Sample Volume and Holding Time**

The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume of the effluent shall be collected to perform the required toxicity test. Sufficient sample volume shall also be collected during accelerated monitoring for subsequent Toxicity Identification Evaluation (TIE) studies, if necessary, at each sampling event. All toxicity tests shall be conducted as soon as possible following sample collection. No more than 36 hours shall elapse before the conclusion of sample collection and test initiation.

3.3.3. **Chronic Marine Species and Test Methods**

If effluent samples are collected from outfalls discharging to receiving waters with salinity >one ppt, the Dischargers shall conduct the following chronic toxicity tests on effluent samples, at the Discharge IWC (1.0 percent effluent), in accordance with species and test methods in *Short-Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine Estuarine Organisms* (EPA/600/R-95/136, 1995). Artificial sea salts or hypersaline brine shall be used to increase sample salinity if needed. In no case shall these species be substituted with another test species unless written authorization from the San Diego Water Board is received.

- 3.3.3.1. A static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01). If laboratory-held cultures of the topsmelt, *Atherinops affinis*, are not available for testing, then the Dischargers shall conduct a static renewal toxicity test with the inland silverside, *Menidia beryllina* (Larval Survival and Growth Test Method 1006.01), found in the third edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (EPA-821-R-02-014, 2002; Table IA, 40 CFR part 136). Additional species may be used by the Dischargers if approved by the San Diego Water Board.

3.3.3.2. A static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus*/sand dollar, *Dendraster excentricus* (Fertilization Test Method 1008.0 or Larval Development Test Method); or a static non-renewal toxicity test with the red abalone, *Haliotis rufescens* (Larval Shell Development Test Method).

3.3.3.3. A static non-renewal toxicity test with the giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0).

3.3.4. **Species Sensitivity Screening**

Species sensitivity screening shall be conducted during this Order's first required sample collection, or within 24 months of the most recent screening, whichever is later.

For each suite during the species sensitivity screening, the Dischargers shall collect a single effluent sample to initiate and concurrently conduct three toxicity tests using the fish, an invertebrate, and the alga species previously referenced. This sample shall also be analyzed for the parameters required on a monthly frequency for the discharge, during that given month. As allowed under the test method for the *Atherinops affinis*, a second and third sample shall be collected for use as test solution renewal water as the seven-day toxicity test progresses. The species exhibiting the highest Toxic Units Chronic (TUc) at the discharge IWC is considered the most sensitive species for that suite.

If the first suite of rescreening tests demonstrates that the same species is the most sensitive, then the rescreening does not need to include more than one suite of tests. If a different species is the most sensitive or if there is ambiguity, then the Dischargers shall proceed with suites of screening tests for a minimum of three, but not to exceed five suites.

Species sensitivity rescreening is required every 24 months. The Dischargers shall rescreen with the marine vertebrate species, a marine invertebrate species, and the alga species previously referenced, and continue to monitor with the most sensitive species.

The species used during routine monitoring shall be the most sensitive species from the most recent species sensitivity screening.

During the calendar month, toxicity tests used to determine the most sensitive test species shall be reported as effluent compliance monitoring results for the chronic toxicity maximum daily effluent limitation (MDEL).

3.3.5. **Quality Assurance (QA) and Additional Requirements**

The QA measures, instructions, and other recommendations and requirements are found in the test methods manual previously referenced. Additional requirements are specified below.

3.3.5.1. The discharge is subject to an MDEL for chronic toxicity based on TUc using the No Observed Effect Concentration (NOEC; also referred to as the No Observed Effect Level or NOEL) approach described in *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and*

Estuarine Organisms, EPA-821/600/R-95/136. TUc is calculated by the following equation: "TUc = 100 / NOEC".

- 3.3.5.2. If the effluent toxicity test does not meet all test acceptability criteria (TAC) specified in the referenced test method, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995), the test should be declared invalid, then the Dischargers must resample and re-test within 14 days of test termination.
- 3.3.5.3. Dilution water and control water, including brine controls, shall be 1-mircrometer-filtered uncontaminated natural seawater, hypersaline brine prepared using uncontaminated natural seawater, or laboratory water prepared and used as specified in the test methods manual. Dilution water and control water, including brine controls, shall be uncontaminated natural water, as specified in the test methods manual. If dilution water and control water is different from test organism culture water, then a second control using culture water shall also be used.
- 3.3.5.4. Reference toxicant testing shall be conducted in accordance with *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995). All reference toxicant test results should be reviewed and reported using the effects concentration at 25 percent (EC25).
- 3.3.5.5. The Dischargers shall perform toxicity tests on final effluent samples. Chlorine and ammonia shall not be removed from the effluent sample prior to toxicity testing, unless explicitly authorized under this section of this MRP and the rationale is explained in the Fact Sheet (Attachment F).

3.3.6. Reporting

The Self-Monitoring Report (SMR) shall include a full laboratory report for each toxicity test. This report shall be prepared using the format and content of the test methods manual chapter called Report Preparation⁵, and shall include:

- 3.3.6.1. The valid toxicity test results for the NOEC approach, reported in TUc at the chronic toxicity IWC for the discharge. All toxicity test results (whether identified as valid or otherwise) conducted during the calendar month shall be reported on the SMR due date specified in Table E-10.
- 3.3.6.2. Summary water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia).
- 3.3.6.3. The statistical methods used to calculate the endpoints.
- 3.3.6.4. Statistical program output results, including graphical plots, for each toxicity test.

⁵ Section 10 of *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to the West Coast Marine and Estuarine Organisms*, August 1995, EPA/600/R-95-136, https://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=524691

- 3.3.6.5. Graphical plots clearly showing the laboratory's performance for the reference toxicant for the previous 20 tests and the laboratory's performance for the control mean, control standard deviation, and control coefficient of variation for the previous 12-month period.
- 3.3.6.6. Any additional quality assurance/quality control (QA/QC) documentation or any additional chronic toxicity-related information, upon written request from the San Diego Water Board.

3.3.7 Preparation of an Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan

The Dischargers shall prepare and submit a copy of the Dischargers' Initial Investigation TRE Work Plan to the San Diego Water Board for approval within 90 days of the effective date of this Order. If the San Diego Water Board does not disapprove the work plan within 60 days, the work plan shall become effective. The Dischargers shall use USEPA manual EPA/833B-99/002 (municipal), or most current version, as guidance. The TRE Work Plan shall describe the steps that the Dischargers intend to follow if toxicity is detected, and shall include, at a minimum:

- A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency;
- A description of the Dischargers' methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of the Facilities; and
- If a TIE is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

3.3.8. Accelerated Monitoring Schedule for Maximum Daily Single Result

The maximum daily single result of greater than or equal to 101 TUc shall be used to determine if accelerated testing needs to be conducted.

Once the Dischargers become aware that the maximum daily single result is greater than or equal to 101 TUc, the Dischargers shall notify the San Diego Water Board and implement an accelerated monitoring schedule within five calendar days of the receipt of the result. However, if the sample is contracted out to a commercial laboratory, the Dischargers shall ensure that the San Diego Water Board is notified, and the first of six accelerated monitoring tests is initiated within seven calendar days of the Dischargers becoming aware of the result. The accelerated monitoring schedule shall consist of six toxicity tests (including the discharge IWC), conducted at approximately two-week intervals, over a twelve-week period; in preparation for the TRE process and associated reporting, these results shall also be reported using the EC25. If each of the accelerated toxicity tests results in less than 101 TUc, the Dischargers shall return to routine monitoring for the next monitoring period. If one of the accelerated toxicity tests results in greater than or equal to 101 TUc, the Dischargers shall immediately implement the TRE Process conditions set forth below. During accelerated monitoring schedules, chronic toxicity tests results shall be used to determine effluent compliance for the chronic toxicity MDEL.

3.3.9. TRE Process

During the TRE Process, minimum effluent monitoring shall resume and results for chronic toxicity tests reported in TUC shall be used to determine effluent compliance for the chronic toxicity MDEL.

- 3.3.9.1. Preparation and Implementation of Detailed TRE Work Plan. The Dischargers shall immediately initiate a TRE using, according to the type of treatment facility, *USEPA manual Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/833/B-99/002, 1999) and, within 15 days of receiving validated results, submit to the San Diego Water Board a Detailed TRE Work Plan, which shall follow the Initial Investigation TRE Work Plan revised as appropriate for this toxicity event. The TRE Work Plan shall include the following information, and comply with additional conditions set by the San Diego Water Board:
 - Further actions by the Dischargers to investigate, identify, and correct the causes of toxicity;
 - Actions the Dischargers will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and
 - A schedule for these actions, progress reports, and the final report.
- 3.3.9.2. TIE Implementation. The Dischargers may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and test method and, as guidance, USEPA manuals: *Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures* (EPA/600/6-91/003, 1991); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993); *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* (EPA/600/6-91/005, 1991); and *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996). The TIE should be conducted on the species demonstrating the most sensitive toxicity response.
- 3.3.9.3. Many recommended TRE elements parallel required or recommended efforts for source control, pollution prevention, and storm water control programs. Whenever possible, TRE efforts should be coordinated with such efforts. As toxic substances are identified or characterized, the Dischargers shall continue the TRE by determining the sources and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with toxicity evaluation parameters.
- 3.3.9.4. The Dischargers shall continue to conduct the minimum effluent monitoring while the TRE and/or TIE process is taking place. Additional accelerated monitoring and TRE Work Plans are not required once a TRE is begun.
- 3.3.9.5. The San Diego Water Board recognizes that toxicity may be episodic and identification of causes and reduction of sources of toxicity may not be successful

in all cases. Upon approval from the San Diego Water Board, the TRE may be ended at any stage if routine monitoring finds there is no longer toxicity.

- 3.3.9.6. TRE/TIE results. The San Diego Water Board shall be notified no later than 30 days from completion of each aspect of TRE/TIE analyses. Prior to the completion of the final TRE/TIE report, the Dischargers shall provide status updates in the monthly SMRs, indicating which TRE/TIE steps are underway, which steps have been completed, and the estimated time to completion of the final TRE/TIE report.
- 3.3.9.7. TRE/TIE Final Report. The final TRE/TIE report shall be submitted to the San Diego Water Board within 30 days of report completion. At minimum, the TRE/TIE Final Report should include the following:
- A description of the probable source and cause of the toxicity effluent limitation exceedances (if known);
 - A summary of the findings including a tabulation, evaluation, and interpretation of the data generated;
 - A list of corrective actions taken or planned by the Dischargers to reduce toxicity so that the Dischargers can achieve consistent compliance with the toxicity effluent limitation of this Order and prevent recurrence of exceedances of the limitation; and
 - If the exceedances of the toxicity effluent limitation have not been corrected, the anticipated time it is expected to continue and a time schedule for the steps planned to reduce, eliminate, and prevent recurrence of the exceedances.
- 3.3.9.8. The San Diego Water Board may consider the results of any TRE/TIE studies in an enforcement action.

3.4. Land Discharge Monitoring Requirements – Not Applicable

3.5. Recycling Monitoring Requirements – Not Applicable

4. Receiving Water Monitoring Requirements

The receiving water monitoring requirements set forth below are designed to measure the effects of the SJCOO discharge on the receiving ocean waters, including effects on coastal water quality, seafloor sediments, and marine life. The overall receiving water monitoring program is intended to answer the following questions:

- (1) Does the receiving water meet water quality standards?
- (2) Are the receiving water conditions getting better or worse over time?
- (3) What is the relative contribution of the Facilities discharge to pollution in the receiving water?
- (4) What are the effects of the discharge on the receiving waters?

Receiving water in the vicinity of the SJCOO shall be conducted as specified below. This program is intended to document conditions, within the zone of initial dilution (ZID), within the waste field where initial dilution is completed, at reference stations, and at other areas beyond the ZID where discharge impacts might be reasonably expected. Station location, sampling, sample preservation, and analyses, when not specified, shall be by methods approved by the San Diego Water Board. The monitoring program may be modified by

the San Diego Water Board at any time. The Dischargers may also submit a list of proposed changes with supporting rationale to these monitoring requirements that it considers to be appropriate to the San Diego Water Board for approval.

All receiving water monitoring shall be conducted in accordance with restrictions and requirements established by the State of California Department of Fish and Wildlife and this Order. During monitoring events, sample stations shall be located using a land-based microwave positioning system or a satellite positioning system such as global positioning system (GPS).

In the event that the Dischargers are unable to obtain a sample from a monitoring station(s) due to safety, legal, or other reasons, collection of samples at such station(s) can be omitted. If safe, the visual observations listed in footnote no. 1 to Table E-7 below shall still be recorded and reported in the monthly SMR to the San Diego Water Board for these stations at the time of the sample collection. If practicable, an effort should be made to return to the sampling station that was omitted and collect the sample during safer conditions within the same reporting period. In the event that a monitoring location is omitted, the Dischargers shall submit a statement to the San Diego Water Board containing, at a minimum, the following information:

- The monitoring station(s) that was omitted;
- The date the monitoring station was omitted; and
- A description of the circumstances for omitting the collection of data at the monitoring station.

4.1. Nearshore and Offshore Water Quality Monitoring Requirements

The nearshore for the purposes of monitoring and assessment is considered to extend from the shoreline to a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline. Offshore for the purposes of monitoring and assessment is considered to extend beyond the nearshore zone. Nearshore and offshore monitoring is necessary to answer the following questions:

- (1) Is natural light significantly reduced at any point outside the ZID as a result of the discharge?
- (2) Does the discharge cause a discoloration of the ocean surface?
- (3) Does the discharge of oxygen demanding waste cause the dissolved oxygen concentration to be depressed at any time more than 10 percent from that which occurs naturally outside the ZID?
- (4) Does the discharge of waste cause the pH to change at any time more than 0.2 units from that which occurs naturally outside the ZID?
- (5) Does the discharge of waste cause the salinity to become elevated in the receiving water?
- (6) Is the wastewater plume encroaching upon receiving water areas used for swimming, surfing, diving, and shellfish harvesting?
- (7) What is the fate of the discharge plume?
- (8) Is fecal indicator bacteria present outside the ZID? If so, is the bacteria human source?

4.1.1. Nearshore and offshore stations listed in Table E-1 (N1 through N6, A1 through A7, B1, and B2) shall be monitored as described in Table E-7 below. To the extent practicable, receiving water monitoring for salinity shall be conducted at times when the monitoring locations are most likely affected by the discharge.

Table E-7. Nearshore and Offshore Water Quality Monitoring Requirements

Parameter	Units	Sample Type	Sampling Frequency
Visual Observations	--	Visual ¹	1/Quarter
Fecal Coliform	Number/100 ml	Grab ^{2,3}	1/Quarter
Enterococci	CFU/100 ml	Grab ^{2,3}	1/Quarter
Temperature and Depth	°C, meters	4	1/Quarter ⁵
Dissolved Oxygen	mg/L	4	1/Quarter ⁵
Light Transmittance	percent	4	1/Quarter ⁵
pH	standard units	4	1/Quarter ⁵
Salinity ⁶	ppt	4	1/Quarter ⁵
Colored Dissolved Organic Matter (CDOM)	ppb	4	1/Quarter ⁵
HF183	Number of copies (molecules)/100 mL	Grab ⁷	1/Quarter ⁸
Spectrophotometric pH ⁹	standard units	Grab	1/Quarter
Alkalinity, Total ⁹	mg/L CaCO ₃	Grab	1/Quarter

Notes for Table E-7

1. Visual observations of the surface water conditions at the designated receiving water stations shall be conducted in such a manner as to enable the observer to describe and report the presence, if any, of floatables of sewage origin. Observations of wind (direction and speed), weather (cloudy, sunny, or rainy), direction of current, tidal conditions (high or low), water color, oil and grease, turbidity, and odor shall be recorded. The proximity of recreational and commercial vessels to monitoring locations shall also be recorded. These observations shall be taken whenever a sample is collected.
2. At the surface for nearshore stations N1 through N6 and surface and mid-depth for offshore stations A1 through A5, B1, and B2.
3. Samples for fecal coliform and enterococci shall be collected on the same day fecal coliform and enterococci are sampled at Monitoring Location M-001, if monitoring for these parameters is required at M-001.
4. For offshore stations A1 through A7, B1, and B2, temperature, depth, dissolved oxygen, light transmittance, pH, CDOM, and salinity profile data shall be measured throughout the entire water column using a conductivity-temperature-depth (CTD) profiler during the quarterly sampling events. Depth profile measurements shall be obtained using multiple sensors to measure parameters through the entire water column (from the surface to as close to the bottom as practicable). For nearshore stations N1 through N6, temperature, depth, dissolved oxygen, light transmittance, pH, CDOM, and salinity shall be measured throughout the entire water column by a CTD profiler or at the surface by grab samples.

5. If the daily average salinity of the discharge at Monitoring Location M-001 is above natural background salinity, the monitoring frequency at offshore stations A1 through A7, B1, and B2 shall be increased to once per month, for a minimum of one month (i.e., one sampling event), until the daily average salinity at M-001 is below natural background salinity. The reference location for this Order is the automated shore station at the end of Scripps Pier operated by Scripps Institution of Oceanography. If this reference location becomes unavailable in the future, the Dischargers shall submit for the San Diego Water Board's review and acceptance a proposed alternative reference location representative of natural background salinity.
6. The Dischargers shall also report the natural background salinity as measured at the Scripps Institution of Oceanography Pier or an alternative location approved by the San Diego Water Board.
7. If required, samples shall be collected at the surface and mid-depth at offshore stations A1 through A4, B1, and B2 and analyzed in accordance with section 4.1.2 of this MRP.
8. HF183 monitoring is required only if the overall compliance rate with the receiving water limitations for bacterial characteristics at section 5.1.1 of this Order is below 90% within a rolling one-year period or a single monitoring location exceeds the bacteria receiving water limitations more than 50% of the time within a rolling one-year period at the offshore stations near the SJCOO, excluding offshore stations A5, A6, and A7 (i.e., offshore stations A1 through A4).
9. Monitoring for alkalinity and spectrophotometric pH is recommended, but not required. If monitoring is conducted, it is recommended that the monitoring be consistent with the methods described in section 4.1.3 of this MRP.

4.1.2. **Human Associated HF183 Genetic Marker Monitoring Requirements.** The human associated HF183 genetic marker (HF183) monitoring requirement specified below is required if the overall compliance rate with the receiving water limitations for bacterial characteristics at section 5.1.1 of this Order is below 90% within a rolling one-year period or a single monitoring location exceeds the bacteria receiving water limitations more than 50% of the time within a rolling one-year period for offshore stations near the SJCOO excluding offshore stations A5, A6, and A7 (i.e., offshore stations A1 through A4), and the source of the exceedances is unknown. If the source of where the fecal contamination causing the bacteria receiving water limitation exceedances originated is known (e.g., the discharge through the SJCOO or some other known source), the Dischargers shall submit a written report to the San Diego Water Board describing the specific cause and source of the exceedances and if human fecal waste is the cause, a strategy for prioritizing the bacterial receiving water sites for remediation. The written report shall be submitted to the San Diego Water Board within 90 days of becoming aware of the cause and source of the exceedances. If the San Diego Water Board concurs with the conclusions of the report, HF183 monitoring is not required. If HF183 monitoring is required, the San Diego Water Board will direct the Dischargers in writing to implement the HF183 monitoring and development of a strategy for remediating the bacterial receiving water sites based on measured human fecal waste levels. The San Diego Water Board will provide the Dischargers with a written explanation regarding the need for the information and the evidence that supports requiring the Dischargers to provide the information. HF183 monitoring may

be terminated once both the source of the bacteria exceedances is determined and the basis for the remediation strategy is determined to the satisfaction of the San Diego Water Board.

- 4.1.2.1. **Sample Collection.** If required, the Dischargers shall collect samples for HF183 concurrently with samples collected for fecal coliform at the offshore stations A1 through A4, B1, and B2, and in accordance with EPA method 1696, or an alternative method proposed by the Dischargers with comparable accuracy, unless the alternative method is not accepted by the San Diego Water Board. Samples shall be filtered through a membrane filter as soon as possible, but sample filtration shall be initiated no later than 6 hours after sample collection. Following filtration, the membrane filter shall be stored at -80 °C for later analysis.
- 4.1.2.2. **Sample Analysis.** If a result for fecal coliform exceeds the single sample maximum receiving water limitation of 400 CFU per 100 mL (section 5.1.1.1.2 of this Order), the Dischargers shall analyze the HF183 sample that was collected concurrently with the fecal coliform sample that exceeded the receiving water limitation. Samples shall be analyzed in accordance with EPA method 1696, the droplet digital polymerase chain reaction (ddPCR) method developed by the Southern California Coastal Waters Research Project (SCCWRP), or an alternative method proposed by the Dischargers with comparable accuracy, unless the alternative method is not accepted by the San Diego Water Board. If the Dischargers propose to use the ddPCR method, the Dischargers shall submit a QA/QC procedure for acceptance by the San Diego Water Board. The Dischargers shall follow all quality control and quality assurance procedures outlined in the method or as approved by the San Diego Water Board. If the results for fecal coliform are below receiving water limitations, the Dischargers may discard the HF183 sample.
- 4.1.2.3. **Sample Results (if applicable).** Sample results for HF183 shall be submitted with the monthly SMRs to the State Water Board's California Integrated Water Quality System (CIWQS) as an attachment in PDF format.
- 4.1.3. **Total Alkalinity and Spectrophotometric pH Monitoring Requirements.** Monitoring for total alkalinity and spectrophotometric pH is recommended, but not required. The San Diego Water Board recommends using the results for pH measured by spectrophotometric analysis to calibrate the pH results measured by the CTD profiler and to calculate aragonite saturation state. The pH measurements calibrated by the spectrophotometric pH and alkalinity measurements described below will be used for informational purposes only. Compliance with the pH receiving water limitation in section 5.1.3.2 of this Order will be determined based on the pH measurements calibrated according to USEPA approved 40 CFR part 136 methods.
 - 4.1.3.1. **Monitoring Locations and Sample Collection.** If monitoring for spectrophotometric pH and total alkalinity is conducted, the San Diego Water Board recommends that the monitoring be consistent with the methods described in *An evaluation of potentiometric pH sensors in coastal monitoring applications* (McLaughlin et al. 2017). Grab samples for spectrophotometric pH and alkalinity should be collected at the surface, thermocline, and bottom at offshore stations

locations A1 and B2. It is recommended that a duplicate sample at the bottom at offshore station location A1 is collected during each sampling event. For stations A1 and B2, grab samples should be collected by Niskin bottles attached to the same device as the CTD used to collect profile samples. Water from the Niskin bottles should be transferred to 500 mL Pyrex bottles and overfilled by a minimum of 250 mL leaving approximately 1% headspace. All bottles should be fixed with approximately 120 µL of saturated mercury (II) chloride solution and stored at room temperature until analysis.

- 4.1.3.2. **Sample Analysis.** If monitoring is conducted, the San Diego Water Board recommends the grab samples for pH be measured using the spectrophotometric technique described in *An automated system for spectrophotometric seawater pH measurements* (Carter et al. 2013), estimating pH at 25 degrees Celsius on the total hydrogen ion scale using m-cresol purple dye indicator and pH calibration equations based on *Purification and characterization of meta-cresol purple for spectrophotometric seawater pH measurements* (Liu et al. 2011). It is recommended that grab samples for total alkalinity be measured by a two-stage, potentiometric, and open-celled titration using coulometrically analyzed hydrochloric acid as described in *Reference material for oceanic CO2 analysis: A method for the certification of total alkalinity* (Dickson et al. 2003). The San Diego Water Board recommends the Dischargers use the spectrophotometric pH and total alkalinity results to calibrate and adjust the pH samples collected quarterly by the CTD and to calculate the aragonite saturation state. If results are not available for submittal with the quarterly SMR, the Dischargers may submit the results by email to SanDiego@waterboards.ca.gov.

4.2. Benthic Monitoring Requirements

Seafloor sediments integrate constituents that are discharged to the ocean. Most particles that come from the ACOO discharge, and any associated contaminants, will eventually settle to the seafloor where they are incorporated into the existing sediments. Sediments can accumulate these particles over the years until the point where sediment quality is degraded and beneficial uses are impaired.

Benthic organisms are strongly affected by sediment contaminant exposure because these organisms often live in continual direct contact with sediment/pore water, and many species ingest significant quantities of sediment as a source of nutrition. Because the benthos are dependent on their surroundings, they serve as a biological indicator that reflects the overall conditions of the aquatic environment.

The assessment of sediment quality with respect to sediment chemistry, sediment toxicity and benthic community condition is necessary to answer the following questions:

- (1) Is the dissolved sulfide concentration of waters in sediments significantly increased above that present under natural conditions?
- (2) Is the concentration of substances set forth in Table 3 of the Ocean Plan for protection of marine aquatic life in marine sediments at levels which would degrade the benthic community?

- (3) Is the concentration of organic pollutants in marine sediments at levels that would degrade the benthic community?
- (4) Are benthic communities degraded as a result of the discharge?
- (5) Is the sediment quality changing over time?
- (6) Has the sediment quality and benthic communities changed due to the discharge from the Doheny Desalination Project?

The assessment of sediment quality to evaluate potential effects of the SJCOO discharge and compliance with narrative water quality standards specified in the Ocean Plan consist of the measurement and integration of three lines of evidence: 1) physical and chemical properties of seafloor sediments, 2) seafloor sediment toxicity to assess bioavailability and toxicity of sediment contaminants, and 3) ecological status of the biological communities (benthos) that live in or on the seafloor sediments.

4.2.1. **Sediment Assessment for Physical and Chemical Properties**

- 4.2.1.1. **Sediment Sampling Stations and Monitoring Frequency.** The sediment monitoring program is designed to assess spatial and temporal trends at the offshore stations and to assess benthic habitat condition in terms of physical and chemical composition (e.g., grain-size distribution, sediment chemistry). Sediment samples for assessment of sediment chemistry shall be collected, at minimum, once during the permit term prior to the commencement of the Doheny Desalination Project discharge at each of the offshore stations listed in Table E-1 (A1 through A7, B1, and B2). A second sediment chemistry sampling event may be required after the commencement of the Doheny Desalination Project discharge. The timing of the second sediment chemistry sampling event shall be determined in the Before-After Control-Impact Study Work Plan described in section 6.3.1 of this MRP. Results from sediment monitoring are due no later than 180 days prior to the expiration date of this Order.
- 4.2.1.2. **Sediment Sample Collection Methods.** Sediment samples shall be taken using a 0.1-square meter modified Van Veen grab sampler. Samples for grain-size and chemical analyses shall be taken from the top two centimeters of the surface sediment. Sediment samples for physical and chemical properties shall be taken concurrently with and adjacent to (as much as possible) the sediment samples for toxicity and benthic community condition. Bulk sediment chemical analysis shall include at a minimum the set of constituents listed in Table E-8.
- 4.2.1.3. **Sediment Chemistry Test Methods.** Sediment chemistry is the measurement of the concentration of chemicals of concern in sediments. The chemistry line of evidence is used to assess the potential overall exposure risk to benthic organisms from pollutants in surficial sediments. Chemical analysis of sediment shall be conducted using USEPA-approved methods, methods developed by the National Oceanic and Atmospheric Administration's National Status and Trends for Marine Environmental Quality, or methods developed in conjunction with the Southern California Bight Regional Monitoring Program. For chemical analysis of sediment, samples shall be reported on a dry weight basis.

Sediment monitoring for physical and chemical properties shall be conducted at the offshore stations listed in Table E-1 (A1 through A7, B1, and B2) for the parameters identified in Table E-8:

Table E-8. List of Parameters to Characterize Sediment Contamination Exposure and Effect

Parameter	Units	Type of Sample	Minimum Frequency
Sediment Grain Size	micrometer (µm)	Grab	1/Permit Term ¹
Total Organic Carbon	Percent	Grab	1/Permit Term ¹
Total Nitrogen	Percent	Grab	1/Permit Term ¹
Acid Volatile Sulfides	milligram/kilogram (mg/kg)	Grab	1/Permit Term ¹
Dissolved Sulfide	mg/kg	Grab	1/Permit Term ¹
Aluminum	mg/kg	Grab	1/Permit Term ¹
Antimony	mg/kg	Grab	1/Permit Term ¹
Arsenic	mg/kg	Grab	1/Permit Term ¹
Cadmium	mg/kg	Grab	1/Permit Term ¹
Total Chromium	mg/kg	Grab	1/Permit Term ¹
Copper	mg/kg	Grab	1/Permit Term ¹
Iron	mg/kg	Grab	1/Permit Term ¹
Lead	mg/kg	Grab	1/Permit Term ¹
Manganese	mg/kg	Grab	1/Permit Term ¹
Mercury	mg/kg	Grab	1/Permit Term ¹
Nickel	mg/kg	Grab	1/Permit Term ¹
Selenium	mg/kg	Grab	1/Permit Term ¹
Silver	mg/kg	Grab	1/Permit Term ¹
Tin	mg/kg	Grab	1/Permit Term ¹
Zinc	mg/kg	Grab	1/Permit Term ¹
PCBs	nanogram/kilogram (ng/kg)	Grab	1/Permit Term ¹
2,4-DDD	ng/kg	Grab	1/Permit Term ¹
4,4-DDD	ng/kg	Grab	1/Permit Term ¹
2,4-DDE	ng/kg	Grab	1/Permit Term ¹
4,4-DDE	ng/kg	Grab	1/Permit Term ¹
2,4-DDT	ng/kg	Grab	1/Permit Term ¹
4,4-DDT	ng/kg	Grab	1/Permit Term ¹
Aldrin	ng/kg	Grab	1/Permit Term ¹
Alpha-Chlordane	ng/kg	Grab	1/Permit Term ¹
Dieldrin	ng/kg	Grab	1/Permit Term ¹
Endosulfan	ng/kg	Grab	1/Permit Term ¹
Endrin	ng/kg	Grab	1/Permit Term ¹
Gamma-BHC	ng/kg	Grab	1/Permit Term ¹
Heptachlor	ng/kg	Grab	1/Permit Term ¹
Heptachlor Epoxide	ng/kg	Grab	1/Permit Term ¹

Parameter	Units	Type of Sample	Minimum Frequency
Hexachlorobenzene	ng/kg	Grab	1/Permit Term ¹
Mirex	ng/kg	Grab	1/Permit Term ¹
Trans-Nonachlor	ng/kg	Grab	1/Permit Term ¹
Acenaphthene	microgram/ kilogram (µg/kg)	Grab	1/Permit Term ¹
Acenaphthylene	µg/kg	Grab	1/Permit Term ¹
Anthracene	µg/kg	Grab	1/Permit Term ¹
Benzo(a)anthracene	µg/kg	Grab	1/Permit Term ¹
Benzo(b)fluoranthene	µg/kg	Grab	1/Permit Term ¹
Benzo(k)fluoranthene	µg/kg	Grab	1/Permit Term ¹
Benzo(ghi)perylene	µg/kg	Grab	1/Permit Term ¹
Benzo(a)pyrene	µg/kg	Grab	1/Permit Term ¹
Benzo(e)pyrene	µg/kg	Grab	1/Permit Term ¹
Biphenyl	µg/kg	Grab	1/Permit Term ¹
Chrysene	µg/kg	Grab	1/Permit Term ¹
Dibenzo(ah)anthracene	µg/kg	Grab	1/Permit Term ¹
Fluoranthene	µg/kg	Grab	1/Permit Term ¹
Fluorene	µg/kg	Grab	1/Permit Term ¹
Indeno(1,2,3-cd)pyrene	µg/kg	Grab	1/Permit Term ¹
Naphthalene	µg/kg	Grab	1/Permit Term ¹
1-Methylnaphthalene	µg/kg	Grab	1/Permit Term ¹
2-Methylnaphthalene	µg/kg	Grab	1/Permit Term ¹
2,6-Dimethylnaphthalene	µg/kg	Grab	1/Permit Term ¹
2,3,5-Trimethylnaphthalene	µg/kg	Grab	1/Permit Term ¹
Perylene	µg/kg	Grab	1/Permit Term ¹
Phenanthrene	µg/kg	Grab	1/Permit Term ¹
1-Methylphenanthrene	µg/kg	Grab	1/Permit Term ¹
Pyrene	µg/kg	Grab	1/Permit Term ¹

Notes for Table E-8

- At minimum, sediment chemistry monitoring shall occur once before the Doheny Desalination Project discharge commences. A second sampling event may be required after the Doheny Desalination Project discharge commences.

4.2.2. Sediment Toxicity

- 4.2.2.1. Toxicity Sampling Stations and Frequency.** Sediment toxicity is a measure of the response of invertebrates exposed to surficial sediments under controlled laboratory conditions. The sediment toxicity line of evidence is used to assess both pollutant-related biological effects and exposure. Sediment samples for assessment of toxicity shall be monitored, at minimum, once during the permit term prior to the commencement of the Doheny Desalination Project discharge at each of the offshore stations listed in Table E-1 (A1 through A7, B1, and B2). A second sediment toxicity sampling event may be required after the commencement of the

Doheny Desalination Project discharge. The timing of the second sediment toxicity sampling event shall be determined in the Before-After Control-Impact Study Work Plan described in section 6.3.1 of this MRP. Results from sediment toxicity sampling are due no later than 180 days prior to the expiration date of this Order.

- 4.2.2.2. **Sediment Toxicity Collection Methods.** Sediment samples shall be taken using a 0.1-square meter modified Van Veen grab sampler. Samples for toxicity analyses shall be taken from the top two centimeters of the surface sediment. Sediment samples for toxicity shall be taken concurrently with and adjacent to (as much as possible) the sediment samples for physical and chemical properties, and benthic community condition.
- 4.2.2.3. **Sediment Toxicity Test Methods.** Sediment toxicity tests shall utilize alternative amphipod species (*Eohaustorius estuaries*, *Leptocheirus plumulosus*, *Rhepoxynius abronius*) and be conducted in accordance with EPA 600/R-94/0925 (USEPA, 1994), *Methods for Assessing the Toxicity of Sediment-associated Contaminants with Estuarine and Marine Amphipods*, and the most recent Southern California Bight Project sediment toxicity testing guidelines (currently *Bight'18 Toxicology Laboratory Manual*, B'18 Toxicology Committee, June 27, 2018). Response criteria shall include mortality, emergence from sediment during exposure, and ability to rebury in clean sediment at the end of the 10-day exposure period.
- 4.2.2.4. **Data Analysis.** Analysis of sediment toxicity shall include a calculation of the mean control normalized response.

4.2.3. Benthic Community Condition

- 4.2.3.1. **Benthic Community Sampling Stations and Frequency.** Sediment samples for assessment of benthic community structure shall be collected at minimum, once during the permit term prior to the commencement of the Doheny Desalination Project discharge at each of the offshore stations listed in Table E-1 (A1 through A7, B1, and B2). A second benthic community sampling event may be required after the commencement of the Doheny Desalination Project discharge. The timing of the second benthic sampling event shall be determined in the Before-After Control-Impact Study Work Plan described in section 6.3.1 of this MRP. One sample per station shall be collected for analysis of benthic community structure. Results from benthic community sampling are due no later than 180 days prior to the expiration date of this Order.
- 4.2.3.2. **Benthic Community Sample Collection Methods.** Benthic community samples shall be collected using the guidance specified in the most recent field manual developed for the Southern California Bight Regional Monitoring Program (current field operations manual is available at: <https://ftp.sccwrp.org/pub/download/BIGHT18/Bight18SedQualityFieldManual.pdf>). The benthic samples shall be collected using a 0.1-square meter modified Van Veen grab sampler. These grab samples shall be taken concurrently with and adjacent to (as much as possible) samples collected for sediment physical and chemical properties, and toxicity. The samples shall be sieved using a 1.0-

millimeter mesh screen. The benthic organisms retained on the sieve shall be fixed in 10 percent buffered formalin and transferred to at least 70 percent ethanol within two to seven days of storage. All benthic invertebrates in the screened sample shall be identified to the lowest possible taxon and enumerated (counted).

4.2.3.3. **Benthic Community Analysis.** Analysis of benthic community structure shall include determination of the number of species, number of individuals per species, and total numerical abundance present. The following parameters or metrics shall be calculated for each 0.1-square meter grab sample and summarized by station, as appropriate:

- Number of species;
- Total numerical abundance;
- Benthic Response Index (BRI);
- Swartz's 75 percent dominance index;
- Shannon-Weiner's diversity index (H);
- Multivariate pattern analyses (e.g., ordination and classification analyses); and
- Pielou evenness index (J).

4.2.4. **Benthic Monitoring Work Plan**

4.2.4.1. **Benthic Monitoring Work Plan.** The Dischargers shall submit to the San Diego Water Board within 180 days after the effective date of this Order, a Benthic Monitoring Work Plan to implement the sediment monitoring program. The Benthic Monitoring Work Plan shall include the following elements:

- A Quality Assurance Project Plan (QAPP) describing the project objectives and organization, functional activities, and quality assurance/quality control protocols;
- Protocols for sediment sample collection and processing;
- Proposed methods for analyzing sediment data and integrating the three lines of evidence (i.e., sediment physical and chemical properties, sediment toxicity, and benthic community condition); and
- Schedule for completion of sample collection and submission of the results.

4.2.4.2. **Benthic Monitoring Work Plan Implementation.** The Dischargers shall implement the Benthic Monitoring Work Plan sixty (60) days after submission of the Benthic Monitoring Work Plan, unless otherwise directed in writing by the San Diego Water Board. The Dischargers shall notify the San Diego Water Board of the intent to initiate the proposed actions included in the Benthic Monitoring Work Plan; and comply with any conditions set by the San Diego Water Board.

4.3. **Fish and Macroinvertebrates Monitoring Requirements**

Many pollutants discharged into receiving waters have the potential to bioaccumulate and persist in tissues of aquatic organisms, including marine fishes. Chemical pollutants that bioaccumulate tend to biomagnify as they pass through the aquatic food chain. Therefore, fish monitoring data is required to assess the human health risks for individuals who may consume fish and to assess trends of contaminants levels in fish tissue over time.

Aquatic benthic macroinvertebrates are excellent indicators of ecosystem health because they are ubiquitous, abundant, diverse, and typically sedentary. The growth, survival, and reproduction of many species of aquatic invertebrates are all sensitive to changes in environmental health, making analysis of assemblage structure a good ecosystem monitoring tool.

Fish and invertebrate monitoring is necessary to answer the following questions:

- (1) Does the concentration of pollutants in fish, shellfish, or other marine organisms used for human consumption bioaccumulate to levels that are harmful to human health?
- (2) Does the concentration of pollutants in marine life bioaccumulate to levels that degrade marine communities?
- (3) Are the concentrations of pollutants in fish and other marine organisms changing over time?
- (4) Is the health of fish changing over time?
- (5) Are the populations of selected species of fish and invertebrates changing over time?

4.3.1. **Fish and Invertebrate Trawls**

4.3.1.1. **Fish and Invertebrate Trawl Frequency and Locations.** Fish and invertebrate trawls shall be conducted to assess the structure of demersal fish and megabenthic invertebrate communities, while the presence of priority pollutants in fish shall be analyzed from species captured using both trawling and rig fishing techniques. Single community trawls for fish and invertebrates shall be conducted, at minimum, once during the permit term prior to the commencement of the Doheny Desalination Project discharge at the three biological transect (trawl) stations T1, T2, and T3 listed in Table E-1. A second fish and invertebrate trawling event may be required after the commencement of the Doheny Desalination Project discharge. The timing of the second fish and invertebrate trawling event shall be determined in the Before-After Control-Impact Study Work Plan described in section 6.3.1 of this MRP. The trawl stations represent one area near Discharge Point No. 001 (station T2), one area upcoast of Discharge Point No. 001 (station T3), and one area downcoast of Discharge Point No. 001 (station T1). The Dischargers shall notify the San Diego Water Board of the intent to initiate the fish and invertebrate trawls, no later than 30 days before the survey. Results from the fish and invertebrate trawls are due no later than 180 days prior to the expiration date of this Order.

4.3.1.2. **Fish and Invertebrate Trawl Method.** Trawls shall be conducted using a Marinovich 7.62-meter (25-foot) head rope otter trawl, using the guidance specified in the most recent field manual developed for the Southern California Bight Regional Monitoring Program. Captured organisms shall be identified at all stations.

In order to minimize negative impacts that may occur due to unsuccessful trawling efforts associated with unusual environmental conditions, the requirement to conduct trawls during any given period may be postponed or waived at the

discretion of the Executive Officer of the San Diego Water Board upon receipt of written justification provided by the Dischargers. Examples of such unusual events include the presence of large populations of red tuna crabs (*Pleuroncodes planipes*) associated with El Niño and the occurrence of large squid egg masses that prevent hauling in the trawl nets.

- 4.3.1.3. **Fish and Invertebrate Community Structure Analysis.** All demersal fishes and megabenthic invertebrates collected by trawls shall be identified by species if possible. For fish, community structure analysis shall consist of determining the standard length and total wet weight, total number of individuals per species, the total numerical abundance of all fish, species richness, species diversity (H'), and multivariate pattern analyses (e.g., ordination and classification analyses). The presence of any physical abnormalities or disease symptoms (e.g., fin erosion, external lesions, and tumors) or external parasites shall also be recorded. For invertebrates, community structure shall be summarized as the total number of individuals per species, the total numerical abundance of all invertebrates, species richness, and species diversity (H').
- 4.3.1.4. **Fish Liver Tissue Chemical Analysis.** Chemical analyses of fish tissues shall be performed, at minimum, once during the permit term prior to the commencement of the Doheny Desalination Project discharge on target species collected at or near the trawl stations. A second fish tissue sampling event may be required after the commencement of the Doheny Desalination Project discharge. The timing of the second fish tissue event will be determined in the Before-After Control-Impact Study Work Plan described in section 6.3.1 of this MRP. The three trawl stations are classified into three zones for the purpose of collecting sufficient numbers of fish for tissue analyses. Trawl Zone 2 represents the nearfield zone, defined as the area within a 0.5-km radius of trawl station T2; Trawl Zone 1 is considered the southern farfield zone, and is defined as the area centered within a 1-km radius of trawl station T1; and Trawl Zone 3 is considered the northern farfield zone, defined as the area within a 1-km radius of trawl station T3.

Liver tissues shall be analyzed during each survey from fishes collected in each of the above three trawl zones. No more than a maximum of five 10-minute (bottom time) trawls shall be required per zone in order to acquire sufficient numbers of fish for composite samples; these trawls may occur anywhere within a defined zone. If sufficient numbers of trawl zone target species cannot be, or are unlikely to be, captured by trawling, fish for tissue analysis from these areas may be collected using alternative methods such as those described below under Rig Fishing in section 4.3.2.2 of this MRP (e.g., hook and line, baited lines). Three replicate composite samples shall be prepared from each trawl zone, with each composite consisting of tissues from at least three individual fish of the same species. Each individual fish that will be used for fish tissue analysis shall be aged using otoliths or scales. The liver tissue shall be analyzed for the constituents listed in the Table E-9.

- 4.3.1.4. **Fish Targeted for Chemical Analysis.** The species of fish targeted for tissue analysis from the trawl sites shall be primarily flatfish including, but not limited to,

Pacific sanddab (*Citharichthys sordidus*), longfin sanddab (*Citharichthys xanthostigma*), bigmouth sole (*Hippoglossina stomata*), and hornyhead turbot (*Pleuronichthys verticalis*). If sufficient numbers of these primary flatfish species are not present in a zone, secondary target species such as the longspine combfish (*Zaniolepis latipinnis*), California scorpionfish (*Scorpaena guttata*), California lizardfish (*Synodus lucioceps*) may be collected as necessary.

4.3.2. Rig Fishing

- 4.3.2.1. **Rig Fishing Frequency.** Fish muscle tissues shall be analyzed, at minimum, once during the permit term prior to the commencement of the Doheny Desalination Project discharge from fishes collected in each of the three rig fishing zones described below in order to monitor the uptake of pollutants in selected species. A second fish tissue sampling event may be required after the commencement of the Doheny Desalination Project discharge. The timing of the second fish tissue event will be determined in the Before-After Control-Impact Study Work Plan described in section 6.3.1 of this MRP. The Dischargers shall notify the San Diego Water Board of the intent to initiate sample collection, no later than 30 days before sampling. Results from the fish muscle tissue analyses are due no later than 180 days prior to the expiration date of this Order.
- 4.3.2.2. **Rig Fishing Method and Location.** The fish shall be collected by hook and line or by setting baited lines from within zones surrounding rig fishing stations RF1, RF2, and RF3 listed in Table E-1. Rig Fishing Zone 2 is the nearfield area centered within a 0.5-km radius of station RF2; Rig Fishing Zone 1 represents the southern farfield area centered within 1-km radius of station RF1; and Rig Fishing Zone 3 represents the northern farfield area centered within a 1-km radius of station RF3. There are no depth requirements for these three rig fishing zones with regards to the collection of fishes for tissue analysis. Fish samples shall be identified to species, with number of individuals per species, standard length and wet weight recorded. Each individual fish used for fish tissue analysis shall be aged using otoliths or scales. Physical abnormalities and disease symptoms shall be also recorded and itemized (e.g., fin rot, lesions, and tumors).
- 4.3.2.3. **Rig Fishing Targeted Species.** The species of fish targeted for tissue analysis from the rig fishing stations shall be representative of those caught by recreational and/or commercial fishery activities in the region. The species targeted for muscle tissue analysis shall be primarily rockfish (*Sebastes spp.*), excluding species restricted by the California Department of Fish and Wildlife. If sufficient numbers of rockfish are not present or cannot be caught in a particular zone, secondary target species (e.g., scorpionfish and lingcod) may be collected and analyzed as necessary.
- 4.3.2.4. **Rig Fishing Collection.** Three replicate composite samples of the target species shall be obtained from each zone, with each composite consisting of a minimum of three individual fish. Muscle tissue shall be chemically analyzed for the constituents specified in Table E-9.

Table E- 9. List of Parameters to Characterize Fish Tissue

Parameter	Units	Type of Sample	Minimum Frequency
Total Lipids	percent	Composite	1/Permit Term ¹
Aluminum	mg/kg	Composite	1/Permit Term ¹
Antimony	mg/kg	Composite	1/Permit Term ¹
Arsenic	mg/kg	Composite	1/Permit Term ¹
Cadmium	mg/kg	Composite	1/Permit Term ¹
Chromium	mg/kg	Composite	1/Permit Term ¹
Copper	mg/kg	Composite	1/Permit Term ¹
Iron	mg/kg	Composite	1/Permit Term ¹
Lead	mg/kg	Composite	1/Permit Term ¹
Manganese	mg/kg	Composite	1/Permit Term ¹
Mercury	mg/kg	Composite	1/Permit Term ¹
Nickel	mg/kg	Composite	1/Permit Term ¹
Selenium	mg/kg	Composite	1/Permit Term ¹
Silver	mg/kg	Composite	1/Permit Term ¹
Tin	mg/kg	Composite	1/Permit Term ¹
Zinc	mg/kg	Composite	1/Permit Term ¹
PCBs	ng/kg	Composite	1/Permit Term ¹
2,4-DDD	ng/kg	Composite	1/Permit Term ¹
4,4-DDD	ng/kg	Composite	1/Permit Term ¹
2,4-DDE	ng/kg	Composite	1/Permit Term ¹
4,4-DDE	ng/kg	Composite	1/Permit Term ¹
2,4-DDT	ng/kg	Composite	1/Permit Term ¹
4,4-DDT	ng/kg	Composite	1/Permit Term ¹
Aldrin	ng/kg	Composite	1/Permit Term ¹
Alpha-Chlordane	ng/kg	Composite	1/Permit Term ¹
Dieldrin	ng/kg	Composite	1/Permit Term ¹
Endosulfan	ng/kg	Composite	1/Permit Term ¹
Endrin	ng/kg	Composite	1/Permit Term ¹
Gamma-BHC	ng/kg	Composite	1/Permit Term ¹
Heptachlor	ng/kg	Composite	1/Permit Term ¹
Heptachlor Epoxide	ng/kg	Composite	1/Permit Term ¹
Hexachlorobenzene	ng/kg	Composite	1/Permit Term ¹
Mirex	ng/kg	Composite	1/Permit Term ¹
Trans-Nonachlor	ng/kg	Composite	1/Permit Term ¹
Acenaphthene	µg/kg	Composite	1/Permit Term ¹
Acenaphthylene	µg/kg	Composite	1/Permit Term ¹
Anthracene	µg/kg	Composite	1/Permit Term ¹
Benzo(a)anthracene	µg/kg	Composite	1/Permit Term ¹
Benzo(b)fluoranthene	µg/kg	Composite	1/Permit Term ¹
Benzo(k)fluoranthene	µg/kg	Composite	1/Permit Term ¹
Benzo(ghi)perylene	µg/kg	Composite	1/Permit Term ¹

Parameter	Units	Type of Sample	Minimum Frequency
Benzo(a)pyrene	µg/kg	Composite	1/Permit Term ¹
Benzo(e)pyrene	µg/kg	Composite	1/Permit Term ¹
Biphenyl	µg/kg	Composite	1/Permit Term ¹
Chrysene	µg/kg	Composite	1/Permit Term ¹
Dibenzo(ah)anthracene	µg/kg	Composite	1/Permit Term ¹
Fluoranthene	µg/kg	Composite	1/Permit Term ¹
Fluorene	µg/kg	Composite	1/Permit Term ¹
Indeno(123cd)pyrene	µg/kg	Composite	1/Permit Term ¹
Naphthalene	µg/kg	Composite	1/Permit Term ¹
1-Methylnaphthalene	µg/kg	Composite	1/Permit Term ¹
2-Methylnaphthalene	µg/kg	Composite	1/Permit Term ¹
2,6-Dimethylnaphthalene	µg/kg	Composite	1/Permit Term ¹
2,3,5-Trimethylnaphthalene	µg/kg	Composite	1/Permit Term ¹
Perylene	µg/kg	Composite	1/Permit Term ¹
Phenanthrene	µg/kg	Composite	1/Permit Term ¹
1-Methylphenanthrene	µg/kg	Composite	1/Permit Term ¹
Pyrene	µg/kg	Composite	1/Permit Term ¹

Notes for Table E-9

1. At minimum, fish tissue monitoring shall occur once during the permit term prior to the commencement of the Doheny Desalination Project discharge. A second sampling event may be required after the commencement of Doheny Desalination Project discharge.

4.4. California Environmental Data Exchange Network

In addition to submitting SMRs, the Dischargers shall also ensure that all the receiving water monitoring results are submitted to the California Environmental Data Exchange Network (CEDEN) or an equivalent database that is linked to CEDEN no later than 120 days after analyses have been completed or reports are received if analyses are conducted by an outside laboratory. Any data not accepted by CEDEN is not required to be submitted. A statement certifying that all applicable monitoring results have been timely uploaded into CEDEN or an equivalent database shall be submitted annually by March 1 of each year. Only monitoring results from the following requirements shall be reported in CEDEN:

- Nearshore and offshore water quality (section 4.1 of this MRP);
- Sediment assessment for physical and chemistry properties (section 4.2.1 of this MRP);
- Sediment toxicity (section 4.2.2 of this MRP);
- Benthic community condition (section 4.2.3 of this MRP);
- Fish and macroinvertebrate diver surveys, when CEDEN is updated to accept the data (section 4.3.1 of this MRP);
- Rig fishing (section 4.3.2 of this MRP); and
- Unified Beach Water Quality Monitoring and Assessment Program (section 5.3 of this MRP).

4.5. Receiving Water Status and Trends

4.5.1. **Receiving Water Monitoring Report.** The Dischargers shall submit a receiving water monitoring report once no later than 180 days prior to the expiration date of this Order. The receiving water monitoring report shall cover the following requirements:

- Nearshore and offshore water quality (section 4.1 of this MRP);
- Sediment assessment for physical and chemistry properties (section 4.2.1 of this MRP);
- Sediment toxicity (section 4.2.2 of this MRP);
- Benthic community condition (section 4.2.3 of this MRP);
- Fish and invertebrate trawls (section 4.3.1 of this MRP);
- Rig fishing (section 4.3.2 of this MRP); and
- Plume tracking, if applicable (section 6.2 of this MRP).

4.5.2. The report shall include, as a minimum, the following information:

- A description of climatic and receiving water characteristics at the time of sampling (weather observations, floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling, tide height, etc.);
- A description of sampling stations, including, if such information is available, differences unique to each station (e.g., station location, sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.);
- A description of the sample collection and preservation procedures used in the survey;
- A description of the specific method used for laboratory analysis;
- An analysis of receiving water salinity results at offshore stations A1 through A7, B1 and B2 in comparison to natural background salinity, as measured at Scripps Institution of Oceanography Pier or an alternative location approved by the San Diego Water Board;
- An in-depth discussion, evaluation (e.g., detailed statistical analyses), interpretation and tabulation of the data including interpretations and conclusions as to whether applicable receiving water limitations in this Order have been attained at each station;
- A narrative summary of general observations, including any abnormal conditions; and
- An in-depth discussion addressing the questions proposed in each section of the Receiving Water Monitoring Requirements of this MRP.

4.5.3. **State of the Ocean Report.** The Dischargers shall present an oral report to the San Diego Water Board summarizing the conclusions of the receiving water monitoring report. The State of the Ocean Report shall be given once no later than 180 days prior to the expiration date of this Order. If an oral report cannot be scheduled for a San Diego Water Board meeting, the San Diego Water Board may approve submission of a written State of the Ocean Report. The State of the Ocean Report shall include, at minimum, the following elements:

- Description of the monitoring effort completed;
- The status and trends of receiving water quality conditions; and
- Plans for future monitoring efforts.

5. Regional Monitoring Requirements

Regional ocean water monitoring provides information about the sources, fates, and effects of anthropogenic contaminants in the coastal marine environment necessary to make assessments over large areas. The large-scale assessments provided by regional monitoring describe and evaluate cumulative effects of all anthropogenic inputs and enable better decision-making regarding protection of beneficial uses of ocean waters. Regional monitoring data assists in the interpretation of core monitoring studies by providing a more accurate and complete characterization of reference conditions and natural variability. Regional monitoring also leads to methods standardization and improved quality control through inter-calibration exercise. The coalitions implementing regional monitoring enable sharing of technical resources, trained personnel, and associated costs. Focusing these resources on regional issues and developing a broader understanding of pollutants effects in ocean waters enables the development of more rapid and effective response strategies. Based on all of these considerations the San Diego Water Board supports regional approaches to monitoring ocean waters.

The Dischargers shall, as directed by the San Diego Water Board, participate with other regulated entities, other interested parties, and the San Diego Water Board in development and implementation of new and improved monitoring and assessment programs for ocean waters in the San Diego Region and discharges to those waters. These programs shall be developed and implemented so as to answer the following questions:

- (1) What are the status and trends of conditions in ocean waters in the San Diego Region with regard to beneficial uses? For example:
 - i. Are fish and shellfish safe to eat?
 - ii. Is water quality safe for swimming?
 - iii. Are ecosystems healthy?
- (2) What are the primary stressors causing or contributing to conditions of concern?
- (3) What are the major sources of the stressors causing or contributing to conditions of concern?
- (4) Are the actions taken to address such stressors and sources effective (i.e., environmental outcomes)?

Development and implementation of new and improved monitoring and assessment programs for ocean waters will be guided by the following:

- The Ocean Plan;
- San Diego Water Board Resolution No. R9-2012-0069, *Resolution in Support of a Regional Monitoring Framework*;
- San Diego Water Board staff report entitled *A Framework for Monitoring and Assessment in the San Diego Region*; and
- Other guidance materials, as appropriate.

5.1. Kelp Bed Canopy Monitoring Requirements

Kelp consists of a number of species of brown algae. Along the central and southern California coast, giant kelp (*Macrocystis pyrifera*) is the largest species colonizing rocky, and in some cases sandy, subtidal habitats. Giant kelp is an important component of coastal and island communities in southern California, providing food and habitat for numerous animals. Monitoring of the kelp beds is necessary to answer the following questions:

- (1) What is the maximum areal extent of the coastal kelp bed canopies each year?
- (2) What is the variability of the coastal kelp bed canopy over time?
- (3) Are coastal kelp beds disappearing? If yes, what are factors that could contribute to the disappearance?
- (4) Are new coastal kelp beds forming?

The Dischargers shall participate with other Southern California ocean dischargers in an ongoing regional survey of coastal kelp beds in the Southern California Bight. The intent of these surveys is to provide an indication of the health of these kelp beds, recognizing that the extent of kelp bed canopies may change due to a variety of influences.

Kelp beds shall be monitored by means of vertical aerial infrared photography to determine the maximum areal extent of the canopies of coastal kelp beds each year. Surveys shall be conducted as close as possible to when kelp bed canopies are at their greatest extent during the year. The entire San Diego Region coastline, from the international boundary to the San Diego Region/Santa Ana Region boundary shall be photographed on the same day.

Annually by October 1, the Dischargers shall submit to the San Diego Water Board a report which summarizes the data, analyses, assessment, and images produced by the surveys. The report is a joint collaboration among multiple ocean dischargers in the Southern California (e.g., Regional 9 Kelp Survey Consortium member agencies). In addition to the kelp bed canopies, the images shall show onshore reference points, locations of all ocean outfalls and diffusers, artificial reefs, areas of known hard-bottom substrate (i.e., rocky reefs), and depth contours at intervals of 30-foot mean lower low water (MLLW). The report shall also be made available in a user-friendly format on a website that is readily available to the public.

The surveys shall be conducted on a “continuous improvement” basis, as needed improvements shall be made in monitoring, analysis, assessment, and/or documentation. For example, these could include:

- More sophisticated analysis of patterns, correlations, and cycles that may be related to the extent of kelp bed canopies; or
- Projects to improve understanding of influences on kelp beds or of how the extent of the canopies of various kelp beds has changed since the early 20th century.

5.2. Southern California Bight Monitoring Program Participation Requirements

The Dischargers shall, as directed by the San Diego Water Board, participate in the Southern California Bight Regional Monitoring Program coordinated by the Southern California Coastal Water Research Project (SCCWRP), or any other coordinator named

by the San Diego Water Board, pursuant to Water Code section 13383, and 40 CFR section 122.48. The intent of the Southern California Bight Regional Monitoring Program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the Southern California Bight.

During these coordinated sampling efforts, a portion of the Dischargers' receiving water sampling and analytical effort, as defined in section 4 of this MRP, may be reallocated to provide a regional assessment of the impact of the discharge of wastewater to the Southern California Bight. In that event, the San Diego Water Board shall notify the Dischargers in writing that a portion of the requirements to perform the receiving water sampling and analytical effort defined in section 4 of this MRP is suspended for the duration of the reallocation. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. The level of resources in terms of sampling and analytical effort redirected from the receiving water monitoring program required under section 4 of this MRP shall approximately equal the level of resources provided to implement the regional monitoring and assessment program, unless the San Diego Water Board and the Dischargers agree otherwise. The specific scope and duration of the receiving water monitoring program reallocation and redirection shall be determined in writing by the San Diego Water Board, in consultation with the Dischargers.

5.3. Unified Beach Water Quality Monitoring and Assessment Program

The Dischargers shall continue to participate in the Unified Regional Beach Water Quality Monitoring and Assessment Program in south Orange County in collaboration with the South Orange County municipal separate storm sewer system (MS4) copermitees and Orange County Health Care Agency.

Future revisions to the unified program may be made by the San Diego Water Board Executive Officer, provided that the unified program, as revised, remains consistent with and meets the requirements of State law, including the Ocean Plan, for beach water quality monitoring and related public notification and reporting. Revisions to the section 13383 letter directive are subject to a thirty-day public comment period, subject to a request for a hearing before the San Diego Water Board, and may be appealed to the State Water Board.

All receiving water monitoring results obtained through the Unified Beach Water Quality Monitoring and Assessment Program shall be uploaded to CEDEN as described in section 4.4 of this MRP.

6. Special Studies Requirements

6.1. Climate Change Action Plan

The Dischargers shall prepare and submit a Climate Change Action Plan (CCAP) within three years of the effective date of this Order. The Dischargers may make use of existing climate-change-related plans to comply with this requirement. Changing climate conditions may fundamentally alter the way devices and systems used in the storage, treatment, collection, and conveyance of wastewater are designed and operated.

Climate change research indicates the overarching driver of change is increased atmospheric carbon dioxide (CO₂) from human activity. The increased CO₂ emissions trigger changes to climatic patterns, which increase sea level and the intensity of coastal storm surges (Δ Sea Level) lead to more erratic local weather patterns (Δ Weather Patterns), increased incidents of flooding and wildfires, trigger a gradual warming of freshwater and ocean temperatures (Δ Water Temperature), and trigger changes to ocean water chemistry (Δ Water pH). The CCAP shall identify the magnitude and timing of projected regional impacts on the Facilities (including sewers, pipes and other conveyances), and operations ability to meet the requirements of this Order due to climate change if current trends continue. The CCAP shall also identify steps being taken or planned to address greenhouse gas emissions attributable to wastewater treatment plants, solids handling, and effluent discharge processes.

The CCAP shall also identify steps being taken or planned to address flooding, sea level rise, and wildfire risks; volatile rain period impacts (both dry and wet weather); challenges in accommodating high and low wastewater flows; impacts on process design parameters due to higher biochemical oxygen demand, ammonia (as N), and TSS influent concentrations; impacts on wastewater treatment operations and quality; the potential need to adjust NPDES permit conditions and the Dischargers' pollution control program; the financing needed to pay for planned actions; schedules to update the CCAP as more information on climate change and its effect become more available; and any other factors as appropriate. Any impacts or risks projected to jeopardize permit compliance must be addressed by a plan that includes scheduled risk assessments and mitigation measures as needed to maintain compliance.

6.2. Plume Tracking Study

Plume tracking is a single study or ongoing program designed to assess dispersion and fate of the wastewater plume discharged from the SJCOO. The monitoring surveys for the Plume Tracking Study shall be implemented after the Doheny Desalination Project discharge commences and the intake water quality has reached a stable state. If the Doheny Desalination Project discharge has not commenced or the intake water quality has not stabilized during the permit term, the Plume Tracking Study monitoring surveys may not occur during this permit term. However, the Dischargers shall still comply with requirements to submit a Plume Tracking Monitoring Plan (PTMP) Work Plan and PTMP as described in sections 6.2.2 and 6.2.3 of this MRP, respectfully. The Plume Tracking Study shall be designed to address, at minimum, the following questions:

- (1) Are the current monitoring locations and methods adequate to determine whether the wastewater plume is encroaching on water recreational areas, including, but not limited to, areas used for swimming, scuba diving, surfing, and fishing? If not, what monitoring locations and/or methods are more appropriate?
- (2) How does the brine discharge from the San Juan Capistrano Groundwater Treatment Plant, SCWD Groundwater Recovery Facility, Doheny Desalination Project, Ranch Water Filtration Plant, and future brine discharges (along with increased recycled water use and decreased outfall discharge flows) affect the dynamics of the wastewater plume and initial dilution?

- (3) Does the wastewater plume have the potential to interact with wastewater plumes from other ocean outfalls or other sources of pollution, such as storm water?
- (4) What is the fate of the wastewater plume in typical and atypical oceanographic conditions, and when and under what conditions is the wastewater plume no longer distinguishable from ambient receiving water?
- (5) What parameters are most useful for assessing the presence of a wastewater plume?
- (6) What is the variability in the degree of initial dilution that occurs under typical and atypical oceanographic conditions?
- (7) At what distance is the wastewater plume no longer distinguishable from the ambient receiving water?

The Dischargers shall develop and submit the following:

- 6.2.1. **Conceptual Site Model (CSM).** The Dischargers shall construct a CSM based on available site-specific data such as the effluent quality at SJCOO, occurrence of waste constituents in the receiving water and sediment, and direction and magnitude of surface and subsurface currents. The CSM shall include three-dimensional spatial extent and temporal variability of the waste constituents in the receiving water; and the location and exposure points of actual and potential receptors (humans and marine life).

The CSM shall be refined and updated as data becomes available. The initial CSM shall include a discussion of the level of uncertainty of conclusions, outline data gaps in the initial CSM, and describe the additional work needed to complete the CSM. Updates to the CSM shall be included in the plume tracking semiannual progress reports required in section 6.2.4 of this MRP. The initial CSM shall be submitted to the San Diego Water Board with the work plan described in section 6.2.2 of this MRP.

- 6.2.2. **Plume Tracking Monitoring Plan (PTMP) Work Plan.** The Dischargers shall develop and submit to the San Diego Water Board within 180 days of the effective date of this Order, a PTMP Work Plan designed to guide the collection of information to produce the final PTMP described in section 6.2.3 of this MRP. The PTMP Work Plan shall include, but is not limited to, the following:

- 6.2.2.1. The CSM;
- 6.2.2.2. Evaluation of available technology that may assist with the Plume Tracking Study;
- 6.2.2.3. Specific questions that will be answered with the Plume Tracking Study;
- 6.2.2.4. A description of the approach to be taken for conducting a feasibility analysis for:
 - 6.2.2.4.1. Installation and operation by the Dischargers of a permanent, real-time oceanographic mooring system located near the terminal diffuser structure of the SJCOO;
 - 6.2.2.4.2. Utilizing advanced oceanographic sampling technologies such as an autonomous underwater vehicle (AUV) or remotely operated towed vehicle (ROTV) either alone or in conjunction with an SJCOO real-time mooring; and

- 6.2.2.4.3. An alternative method identified during the evaluation of available technologies that may assist with the PTMP.
- 6.2.2.5. Schedule for completion of all activities and submission of a final PTMP report as described in section 6.2.3 below.

The Dischargers shall implement the PTMP Work Plan to develop the final PTMP as directed by the San Diego Water Board sixty (60) days after Board approval of the PTMP Work Plan. The Dischargers shall notify the San Diego Water Board of the intent to initiate the proposed actions included in the PTMP Work Plan; and comply with any conditions set by the San Diego Water Board.

- 6.2.3. **Plume Tracking Monitoring Plan (PTMP).** The Dischargers shall, in consultation with the San Diego Water Board, prepare and submit a final PTMP, prepared in accordance with the approved PTMP Work Plan, to evaluate dispersion and fate of the wastewater plume discharged from the SJCOO. The PTMP shall include, but is not limited to, the following elements:

- 6.2.3.1. A feasibility analysis, including an assessment of advantages, disadvantages, cost, usefulness, and effectiveness of the following:
 - 6.2.3.1.1. Installation and operation by the Dischargers of a permanent, real-time oceanographic mooring system located near the terminal diffuser structure of the SJCOO. The mooring system shall be designed to measure, at minimum, direction and velocity of subsurface currents, and ocean stratification. If determined to be feasible, this element shall also include:
 - 6.2.3.1.1.1. A plan for implementation of the SJCOO real-time mooring system, including data acquisition and processing; and
 - 6.2.3.1.1.2. Provision for networking the SJCOO system to be compatible with similar systems being deployed by other dischargers in the San Diego Region, as well as a third-party system operated by the University of California, San Diego, Scripps Institution of Oceanography in the coastal waters off the City of Del Mar.
 - 6.2.3.1.2. Utilizing advanced oceanographic sampling technologies such as an AUV or ROTV either alone or in conjunction with an SJCOO real-time mooring system.
 - 6.2.3.1.3. An alternative approach proposed by the Dischargers to answer the questions posed above for the Plume Tracking Study, if applicable.
- 6.2.3.2. A detailed description of recommended actions;
- 6.2.3.3. A monitoring plan to implement the recommended actions; and
- 6.2.3.4. A detailed description and schedule for completion of all activities planned to implement the recommendations in the PTMP, and the schedule for submission of the final results of the Plume Tracking Study as described in section 6.2.5 of this MRP.

The PTMP shall be submitted in accordance with the timeframe outlined in the approved PTMP Work Plan described in section 6.2.2 of this MRP.

- 6.2.4. **PTMP Implementation.** The Dischargers shall initiate implementation of the PTMP sixty (60) days after submission in accordance with the schedule contained in the PTMP, unless otherwise directed by the San Diego Water Board. The Dischargers shall notify the San Diego Water Board of the intent to initiate the proposed actions included in the PTMP; and comply with any conditions set by the San Diego Water Board. The Dischargers shall submit semiannual progress reports on implementation of the PTMP to the San Diego Water Board on February 1 and August 1 of each year.
- 6.2.5. **Plume Tracking Study Results.** Unless otherwise directed by the San Diego Water Board, the final results of the Plume Tracking Study shall be submitted with the Receiving Water Monitoring Report and be included in the State of the Ocean report required in section 4.5 of this MRP. The Receiving Water Monitoring Report shall include in-depth discussion, evaluation, interpretation, and tabulation of the project data. Report interpretations and conclusions shall include the state of the receiving waters around the SJCOO and the estimated locations of the SJCOO plume during the study.
- 6.2.6. **Receiving Water Monitoring Recommendations Report.** The Dischargers shall submit a Receiving Water Monitoring Recommendations Report that includes recommendations for future nearshore and offshore monitoring, including potential modifications to the locations of monitoring stations to better assess the impact of the discharge through the SJCOO. The Dischargers shall also evaluate the feasibility of event-based monitoring, including collecting samples during certain oceanographic conditions at locations where the plume is most likely to occur. The Receiving Water Monitoring Recommendations Report shall be submitted to the San Diego Water Board no later than 180 days after the completion of the Plume Tracking Study, unless an extension is granted by the San Diego Water Board.

6.3. Before-After Control-Impact Study

Pursuant to Chapter III section M.4.a(2) of the Ocean Plan, the Dischargers shall conduct a Before-After Control-Impact Study that evaluates the differences in biological communities at reference locations and at the discharge location before and after the discharge from the Doheny Desalination Project commences. For purpose of determining the before condition (i.e., pre-Doheny Desalination Project discharge) of the discharge location and reference locations, the Dischargers shall conduct the receiving water monitoring requirements contained in sections 4.1 through 4.3 of this MRP. The Dischargers shall also consider historical receiving water monitoring results when evaluating the before condition. The after condition (i.e., post-Doheny Desalination Project discharge) shall, at a minimum, include the same monitoring requirements defined in sections 4.1 through 4.3 of this MRP. However, the Doheny Desalination Project discharge may not commence until the last year of the term of this Order and the results may not be available for inclusion in the submittal of the Report of Waste Discharge for reissuance of this Order. Therefore, this Order does not specify the post-discharge monitoring to evaluate the “after” condition of the biological communities at reference locations and at the discharge location. Instead, the post-discharge monitoring shall be based on the Before-After Control-Impact Study Work Plan discussed below in section 6.3.1 of this MRP.

- 6.3.1. **Before-After Control-Impact Study Work Plan.** The Dischargers shall submit a Before-After Control-Impact Study Work Plan to the San Diego Water Board for concurrence no later than ninety (90) days after the adoption of this Order. The Before-After Control-Impact Study Work Plan shall include the following:
- A QAPP describing the project objectives and organization, functional activities, and quality assurance/quality control protocols;
 - The types of biological monitoring that will be conducted and included in the Before-After Control-Impact Study. At minimum, the Dischargers shall monitor sediment chemistry and toxicity, benthic communities (i.e., sediment infauna and demersal fish and macroinvertebrates), and bioaccumulation in fish tissue;
 - The monitoring locations that will be used in the Before-After Control-Impact Study; and
 - A schedule for initiating pre- and post-discharge monitoring and submission of the Before-After Control-Impact Study Report.
- 6.3.2. **Before-After Control-Impact Study Work Plan Implementation.** The Dischargers shall implement the Before-After Control-Impact Study Work Plan ninety (90) days after submission of the Before-After Control-Impact Study Work Plan, unless otherwise directed in writing by the San Diego Water Board. The Dischargers shall notify the San Diego Water Board of the intent to initiate the proposed actions included in the Before-After Control-Impact Study Work Plan and comply with any conditions set by the San Diego Water Board.
- 6.3.3. **Before-After Control-Impact Study Report.** The Dischargers shall submit a Before-After Control-Impact Study Report 180 days after completion of the post-discharge monitoring used to evaluate the after condition. The Before-After Control-Impact Study Report shall include, at minimum, the following:
- A description of climatic and oceanographic conditions at the time of sampling (weather observations, wind speed and direction, swell or wave action, time of sampling, tide height, water temperature, etc.);
 - A description of the sample collection preservation procedures, and laboratory analysis methods;
 - A narrative summary of general observations, including any abnormal conditions; and
 - An in-depth discussion, evaluation (e.g., detailed statistical analyses), interpretation, and tabulation of the data including interpretations and conclusions as to whether the biological communities in the vicinity of the SJCOO have changed or have been impacted as a result of the Doheny Desalination Project discharge.

7. Reporting Requirements

7.1. General Monitoring and Reporting Requirements

- 7.1.1. The Dischargers shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

7.1.2. The Dischargers shall report all instances of noncompliance not reported under sections 5.5, 5.7, and 5.8 of the Standard Provisions (Attachment D) at the time monitoring reports are submitted.

7.2. Self-Monitoring Reports (SMRs)

7.2.1. The Dischargers shall electronically submit SMRs using the State Water Board’s [CIWQS program website](https://www.waterboards.ca.gov/water_issues/programs/ciwqs/) (https://www.waterboards.ca.gov/water_issues/programs/ciwqs/). The CIWQS website will provide additional information for SMR submittal in the event there will be a planned or unplanned service interruption for electronic submittal. SMRs must be signed and certified as required by section 5 of the Standards Provisions (Attachment D). The Dischargers shall maintain sufficient staffing and resources to ensure it submits SMRs that are complete and timely. This includes provision for training and supervision of individuals on how to prepare and submit SMRs.

7.2.2. The Dischargers shall report in the SMR the results for all monitoring specified in this MRP under sections 3 through 4. The Dischargers shall submit SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. SMRs are to include all new monitoring results obtained since the last SMR was submitted. If the Dischargers monitor any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.

7.2.3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-10. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	First day of second calendar month following month of sampling.
Daily	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	First day of second calendar month following month of sampling.
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	First day of second calendar month following month of sampling.

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 st day of calendar month through last day of calendar month	First day of second calendar month following month of sampling.
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
Semiannually	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31	August 1 February 1
Once during the permit term	Permit effective date	Permit term	No later than 180 days prior to the expiration date of this Order

7.2.4. **Reporting Protocols.** The Dischargers shall report with each sample result the applicable reported Minimum Level (reported ML, also known as the Reporting Level, or RL) and the current Method Detection Limit (MDL), as determined by the procedure in 40 CFR part 136.

The Dischargers shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

- 7.2.4.1. 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).
- 7.2.4.2. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported.

For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ. The laboratory may, if such information is available, include numerical estimates of the data quality for the reported result. Numerical estimates of data quality may be percent accuracy (\pm a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.
- 7.2.4.3. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
- 7.2.4.4. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time are the

Dischargers to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

- 7.2.5. **Compliance Determination.** Compliance with effluent limitations for reportable pollutants shall be determined using sample reporting protocols defined above and in Attachment A of this Order. For purposes of reporting and administrative enforcement by the San Diego Water Board and State Water Board, the Dischargers shall be deemed out of compliance with effluent limitations if the concentration of the reportable pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported ML.
- 7.2.6. **Multiple Sample Data.** When determining compliance with a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses and the data set contains one or more reported determinations of DNQ or ND, the Dischargers shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- 7.2.6.1. 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.
- 7.2.6.2. 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.
- 7.2.7. The Dischargers shall submit SMRs in accordance with the following requirements:
- 7.2.7.1. The Dischargers shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Dischargers are not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Dischargers shall electronically submit the data in a tabular format as an attachment.
- 7.2.7.2. The Dischargers shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements and/or exceedance of performance goals; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.
- 7.2.7.3. The Dischargers shall add all violations, including violations of receiving water limitations, to CIWQS under the "Violations" tab.

7.3. Discharge Monitoring Reports (DMRs)

The DMRs are USEPA reporting requirements. The Dischargers shall electronically certify and submit DMRs together with SMRs using Electronic Self-Monitoring Reports (eSMR) module eSMR 2.5 or any upgraded version. Electronic DMRs submittal shall be in addition to eSMR submittal. Information about electronic DMRs submittal is available at the DMR website (https://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring/).

7.4. Other Reports

The following reports are required under Special Provisions (sections 4.1 and 6.3 of this Order), sections 1, 3, 4, 5, and 6 of this MRP, and the California Code of Regulations (CCR). The reports shall be submitted to the San Diego Water Board using the State Water Board’s CIWQS program website, unless otherwise noted. The reports must be signed and certified as required by section 5 of the Standards Provisions (Attachment D). The CIWQS website will provide additional information for SMR submittal in the event of a planned or unplanned service interruption for electronic submittal.

Table E-11. Other Reports

Report	Location of requirement	Due Date
Report of Waste Discharge (ROWD) (for reissuance)	Page 2 of the Order	No later than 180 days before the Order expiration date
Performance Goal Exceedance Investigation Work Plan	Section 4.1.2	30 days after the third successive exceedance of a performance goal
Performance Goal Exceedance Report	Section 4.1.2	As specified in the Performance Goal Exceedance Investigation Work Plan
Mitigation Area of Production Forgone (APF) Re-Evaluation Study Work Plan	Section 6.3.2.3.1	No later than 90 days after the adoption of this Order
Mitigation APF Re-Evaluation Study Final Report	Section 6.3.2.3.3	No later than March 30, 2025
Larval Study Work Plan	Section 6.3.2.4.1	No later than 90 days after the adoption date of this Order
Larval Study Final Report	Section 6.3.2.4.3	No later than 90 days after the completion of the Larval Study
Final Marine Life Mitigation Plan	Section 6.3.2.5	No later than six months after the completion of the Mitigation APF Re-Evaluation Study Final Report
San Juan Creek Ocean Outfall Capacity Report	Section 6.3.5.1.	No later than 180 days prior to this Order’s expiration date
Treatment Plant Capacity Report	Section 6.3.5.2	Four years prior to reaching plant design capacity ¹
Annual Pretreatment Report	Section 6.3.5.3.4	Annually no later than March 1

Report	Location of requirement	Due Date
Annual Biosolids Report	Section 6.3.5.4.8	Annually no later than February 19
Asset Management Plan	Section 6.3.5.7	Within 180 days of the effective date of this Order
DMR-QA Study	Section 1.7 of this MRP	Annually no later than December 31 ²
Initial Investigation TRE Work Plan	Section 3.3.7 of this MRP	Within 90 days of the effective of this Order
Benthic Monitoring Work Plan	Section 4.2.4 of this MRP	Within 180 days of the effective date of this Order
California Environmental Data Exchange Network Data Submittal Certification	Section 4.4 of this MRP	Annually no later than March 1
Receiving Water Monitoring Report	Section 4.5.1 and 4.5.2 of this MRP	No later than 180 days prior to the expiration date of this Order
State of the Ocean Report	Section 4.5.3 of this MRP	No later than 180 days prior to the expiration date of this Order
Kelp Bed Canopy Report	Section 5.1 of this MRP	Annually no later than October 1
CCAP	Section 6.1 of this MRP	No later than three years of the effective date of this Order
PTMP Work Plan	Section 6.2.2 of this MRP	Within 180 days of the effective date of this Order
PTMP	Section 6.2.3 of this MRP	As specified in the Plume Tracking Monitoring Plan Work Plan
Plume Tracking Semiannual Progress Report	Section 6.2.4 of this MRP	After implementation of PTMP January 1 through June 30: due August 1 July 1 through December 31: due February 1
Receiving Water Monitoring Recommendations Report	Section 6.2.6 of this MRP	No later than 180 days after the completion of the Plume Tracking Study
Before-After Control-Impact Study Work Plan	Section 6.3.1 of this MRP	No later than 90 days after the adoption date of this Order
Before-After Control-Impact Study Report	Section 6.3.3 of this MRP	No later than 180 days after the completion of the post-discharge monitoring

Notes for Table E-11

1. Submit in person or by mail to the San Diego Water Board office (2375 Northside Drive, Suite 100, San Diego, CA 92108) or by email at SanDiego@waterboards.ca.gov.
2. See section 1.7. of this MRP for instructions on how to submit the study.

ATTACHMENT F – FACT SHEET
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ATTACHMENT F – FACT SHEET

As described in section 2.2 of this Order, the California Regional Water Quality Control Board, San Diego Region (San Diego Water Board) incorporates this Fact Sheet as findings of the San Diego Water Board supporting the issuance of this Order. This Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for dischargers in the State of California (State). Only those sections or subsections of this Order that are specifically identified as “not applicable” have been determined not to apply to these Dischargers. Sections or subsections of this Order not specifically identified as “not applicable” are fully applicable to these Dischargers.

1. Permit Information

The following table summarizes administrative information related to the Facilities.⁶

Table F-1. Facility Information

Type of Information	Facility/Discharger Information
WDID	9 000000175
Discharger(s)	For purposes of this Order, Attachments A through F, and Attachment H, the term “Discharger(s)” shall mean SOCWA and/or Santa Margarita Water District, Moulton Niguel Water District, City of San Clemente, and South Coast Water District.
Name of Discharge Structure	San Juan Creek Ocean Outfall (SJCOO) SJCOO starts at 33° 27' 42"N 117° 40' 57"W
Facility and Facility Address	J.B. Latham Wastewater Treatment Plant 34156 Del Obispo Street Dana Point, CA 92629, Orange County
Facility and Facility Address	Santa Margarita Water District Chiquita Water Reclamation Plant (WRP) 28793 Ortega Highway, San Juan Capistrano, CA 92675, Orange County
Facility and Facility Address	Santa Margarita Water District/Moulton Niguel Water District 3A WRP 26801 Camino Capistrano, Mission Viejo, CA 92653, Orange County
Facility and Facility Address	San Clemente WRP 380 Avenida Pico, San Clemente, CA 92672, Orange County
Facility and Facility Address	Santa Margarita Water District Oso Creek WRP 27402 East La Paz Road, Mission Viejo, CA 92692, Orange County

⁶ Collectively refers to the J.B. Latham Wastewater Treatment Plant, Santa Margarita Water District (SMWD) Chiquita Water Reclamation Plant (WRP), SMWD/Moulton Niguel Water District 3A WRP, San Clemente WRP, SMWD Oso Creek WRP, San Juan Capistrano Groundwater Treatment Plant, South Coast Water District (SCWD) Groundwater Recovery Facility, Segunda Deshecha Runoff Plant, SCWD Doheny Desalination Project, Ranch Water Filtration Plant, the associated land outfalls, and San Juan Creek Ocean Outfall (SJCOO).

Type of Information	Facility/Discharger Information
Facility and Facility Address	San Juan Capistrano Groundwater Treatment Plant 32470 Paseo Adelanto, San Juan Capistrano, CA 92675, Orange County
Facility and Facility Address	South Coast Water District (SCWD) Groundwater Recovery Facility 33750 Stonehill Drive, Dana Point, CA 92629, Orange County
Facility and Facility Address	Segunda Deshecha Runoff Plant 3115 Avenida Pico, San Clemente, CA 92672, Orange County
Facility and Facility Address	South Coast Water District Doheny Desalination Project 34400 Coast Highway, Dana Point, CA 92629, Orange County 33° 27' 59"N 117° 40' 52"W
Facility and Facility Address	Santa Margarita Water District Ranch Water Filtration Plant 30180 Cow Camp Road, Rancho Mission Viejo, CA 92694, Orange County
Facility Contact, Title and Phone	Amber Boone, Acting General Manager, (949) 234-5409
Authorized Person to Sign and Submit Reports	Amber Boone, Acting General Manager, (949) 234-5409
Mailing Address	34156 Del Obispo Street, Dana Point, CA 92629
Billing Address	Same as mailing address
Type of Facility	Publicly-owned Treatment Works (POTW), groundwater desalination facilities, and urban runoff treatment facility
Major or Minor Facility	Major
Threat to Water Quality	1
Complexity	A
Pretreatment Program	Y
Recycling Requirements	Producer and Distributor (regulated under separate waste discharge requirements (WDRs))
Facility Permitted Flow	<ul style="list-style-type: none"> • J.B. Latham Wastewater Treatment Plant – 13.0 million gallons per day (MGD) • Chiquita WRP – 9.0 MGD • 3A WRP – 6.0 MGD • San Clemente WRP – 6.98 MGD • Oso Creek WRP – 0 MGD • San Juan Capistrano Groundwater Treatment Plant - 2.2 MGD • SCWD Groundwater Recovery Facility – 0.60 MGD • Segunda Deshecha Runoff Plant – 1.0 MGD • Doheny Desalination Project – 5.0 MGD • Ranch Water Filtration Plant – 1.34 MGD • SJCOO – 43.78 MGD

Type of Information	Facility/Discharger Information
Facility Design Flow	<ul style="list-style-type: none"> • J.B. Latham Wastewater Treatment Plant – secondary-treatment capacity of 13.0 MGD • Chiquita WRP – primary-treatment capacity of 9.0 MGD, secondary-treatment capacity of 12.0 MGD, and tertiary-treatment capacity of 6.0 MGD • 3A WRP – secondary-treatment capacity of 6.0 MGD and tertiary-treatment capacity of 2.4 MGD • San Clemente WRP – secondary-treatment capacity of 6.98 MGD and tertiary-treatment capacity of 3.7 MGD • Oso Creek WRP –secondary-treatment and tertiary-treatment capacity of 3.3 MGD • San Juan Capistrano Groundwater Treatment Plant – extracts and treats up to 5.2 MGD of groundwater to produce up to 2.2 MGD of waste brine. • SCWD Groundwater Recovery Facility – extracts and treats groundwater to produce up to 0.60 MGD of waste brine. • Segunda Deshecha Runoff Plant – extracts and treats up to 1.01 MGD of dry weather urban runoff flow to produce up to 1.0 MGD of treated urban runoff. • Doheny Desalination Project –treats seawater to produce up to 5.0 MGD of potable water. • Ranch Water Filtration Plant – projected to treat up to 5000 acre-feet per year of groundwater to product potable water. • SJCOO – 24 MGD (gravity flow) and 80 MGD (pumped flow)
Watershed	Pacific Ocean
Receiving Water	Pacific Ocean
Receiving Water Type	Ocean waters

1.1. The South Orange County Wastewater Authority (SOCWA) is a public joint powers authority established pursuant to California Government Code section 6500 et seq. and owned by the following member agencies: the City of Laguna Beach, the City of San Clemente, the City of San Juan Capistrano, El Toro Water District, Emerald Bay Service District, Irvine Ranch Water District, Moulton Niguel Water District (MNWD), Santa Margarita Water District (SMWD), South Coast Water District (SCWD), and Trabuco Canyon Water District.

SOCWA is the owner and operator of the J.B. Latham Wastewater Treatment Plant (a POTW) and the SJCOO. The SMWD is the owner and operator of the Chiquita WRP (a POTW), Ranch Water Filtration Plant, Chiquita Land Outfall, and Oso Creek WRP (a POTW). The SMWD and MNWD jointly own the 3A WRP (a POTW) and the 3A Effluent Transmission Main. The MNWD operates the 3A WRP. The City of San Clemente is the owner and operator of the San Clemente WRP (a POTW), the Segunda Deshecha Runoff Plant (an urban runoff treatment plant), and the San Clemente Land Outfall. The SMWD owns and operates the San Juan Capistrano Groundwater Treatment Plant (a groundwater treatment plant). The SCWD owns and operates the SCWD Groundwater Recovery Facility (a

groundwater treatment plant). Once constructed and operational, SCWD will own and operate the Doheny Desalination Project. Each of the SOCWA member agencies owns, operates, and maintains its own sanitary sewer system which conveys wastewater to the associated wastewater treatment plant. SOCWA does not own or operate any portion of a sanitary sewer collection system. SOCWA holds the member agency responsible for meeting this Order's requirements for the facility/facilities that the member agency owns and/or operates.

The J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, San Clemente WRP, Segunda Deshecha Runoff Plant, San Juan Capistrano Groundwater Treatment Plant, SCWD Groundwater Recovery Facility, Doheny Desalination Project, Ranch Water Filtration Plant, Chiquita Land Outfall, 3A Effluent Transmission Main, San Clemente Land Outfall, any other associated land outfalls, and SJCOO are collectively referred to as the Facilities. The sewers, pipes and other conveyances of SOCWA's member agencies' collection systems, to the extent they convey wastewater to a POTW, are part of the Facilities and subject to this Order (40 CFR 403.3(q); Attachment A, definition of POTW).

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

- 1.2. The Facilities discharge wastewater through the SJCOO to the Pacific Ocean, a water of the United States. The Dischargers were previously regulated by Order No. R9-2012-0012 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0107611, adopted on April 11, 2012, and expired on May 31, 2017. Attachment B provides a map of the area around the Facilities. Attachment C provides flow schematics of the Facilities.
- 1.3. The Dischargers jointly filed a Report of Waste Discharge (ROWD) and submitted an application for reissuance of its WDRs and NPDES permit on November 28, 2016. In the 2016 application, the Dischargers requested an increase in the total effluent flow to the SJCOO to allow a brine discharge of up to 1.0 MGD from the proposed Santa Margarita Water District (SMWD) Regional Brine System. As originally designed, the SMWD Regional Brine System would have conveyed reverse osmosis (RO) concentrate from the SMWD Lake Mission Viejo Advanced Water Purification Facility to the SJCOO. The Dischargers submitted an updated ROWD and application on May 30, 2018 to provide missing information. The application was deemed complete on July 11, 2018. The Dischargers submitted an updated ROWD and application on March 13, 2020. In the March 2020 application, the Dischargers requested another increase in the total effluent flow to the SJCOO to allow a brine discharge of up to 9.4 MGD⁷ from the proposed Doheny Desalination Project, in addition to the proposed discharge from the SMWD Lake Mission Viejo Advanced Water Purification Facility. The Dischargers submitted an updated ROWD and application on December 14, 2020, January 14, 2021, and April 23, 2021 to provide missing information. In the April 2021 application,

⁷ A brine discharge of up to 9.4 MGD corresponds to a RO recovery rate of 35% and a product water rate of 5 MGD.

SOCWA informed the San Diego Water Board that the proposed SMWD Regional Brine System will be designed to discharge waste brine to the sewer collection system leading to the J.B. Latham Wastewater Treatment Plant, not to the SJCOO as originally planned. Therefore, this Order does not directly regulate discharges from the SMWD Lake Mission Viejo Advanced Water Purification Facility to the SJCOO. In total, the Dischargers propose increasing the total flow from the SJCOO from 38.78 MGD to 43.78 MGD.

The following site visits were conducted to observe operations and collect additional data to develop permit limitations and requirements for waste discharge: May 18, 2016, at the San Juan Capistrano Groundwater Treatment Plant; February 7, 2018, at the SCWD Groundwater Recovery Facility; May 15, 2020, at the Chiquita WRP and SJCOO; June 5, 2020, at the 3A WRP and Oso Creek WRP; June 17, 2020, at the J.B. Latham Wastewater Treatment Plant; and June 18, 2020, at the San Clemente WRP and Segunda Deshecha Runoff Plant. The final design and construction of the Doheny Desalination Project have not been completed; thus, the San Diego Water Board has not conducted a site visit

- 1.4. Regulations at title 40 of the Code of Federal Regulations (40 CFR) section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, this Order limits the duration of the discharge authorization. However, pursuant to California Code of Regulations (CCR), title 23, section 2235.4, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Dischargers comply with all federal NPDES requirements for continuation of expired permits.
- 1.5 Water Code section 13142.5(b) requires that for each new or expanded coastal powerplant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life. Chapter III.M of the *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan) provides the implementation provisions for desalination facilities to comply with Water Code section 13142.5(b).
- 1.6 The San Diego Water Board has evaluated a range of feasible alternatives for the best available site, design, technology, and mitigation measures for the Doheny Desalination Project to minimize the intake and mortality of all forms of marine life and has determined the best combination of feasible alternatives to minimize intake and mortality of all forms of marine life (Ocean Plan chapter III.M.2.a(2)) . Attachment H summarizes the San Diego Water Board's findings in support of its Water Code section 13142.5(b) determination. This Water Code section 13142.5(b) determination is based upon available information.

2. Facility Description

2.1. Description of Wastewater and Biosolids Treatment and Controls

2.1.1. J.B. Latham Wastewater Treatment Plant

The J.B. Latham Wastewater Treatment Plant is located at 34156 Del Obispo Street, Dana Point, California and provides wastewater treatment to a population of approximately 120,000 residents⁸ within the service area/boundaries of the City of San Juan Capistrano, SCWD, and SMWD. During times of off-peak influent flows, the J.B. Latham Wastewater Treatment Plant also receives dry-weather runoff flows. The J.B. Latham Wastewater Treatment Plant also may receive flows diverted from the Oso Creek WRP when the Oso Creek WRP is not producing recycled water.

As shown in the process schematic in Attachment C, the J.B. Latham Wastewater Treatment Plant provides secondary treatment through parallel 4-MGD and 9-MGD treatment trains. The 4-MGD treatment train handles wastewater flow from the Dana Point Interceptor. The 9-MGD treatment train handles wastewater flows conveyed via the Oso Creek and San Juan Creek Interceptors. Wastewater treatment processes for both treatment trains include screening, aerated grit removal, primary sedimentation, and secondary treatment with activated sludge aeration and secondary sedimentation.

Solids processing at the J.B. Latham Wastewater Treatment Plant includes thickening (secondary sludge), anaerobic digestion, and centrifuge dewatering. Grit and screenings from the J.B. Latham Wastewater Treatment Plant are hauled to a sanitary landfill, and dewatered biosolids from the J.B. Latham Wastewater Treatment Plant are hauled to either a sanitary landfill or a contractor-operated compost site.

Secondary-treated wastewater from the J.B. Latham Wastewater Treatment Plant is discharged directly to the SJCOO under this Order. From February 2019 to January 2020, the reported average influent daily flow to the J.B. Latham Wastewater Treatment Plant was 6.49 MGD and the average effluent daily flow from the J.B. Latham Wastewater Treatment Plant to the SJCOO was 6.49 MGD.

2.1.2. Santa Margarita Water District Chiquita Water Reclamation Plant (Chiquita WRP)

The Chiquita WRP is located at 28793 Ortega Highway, San Juan Capistrano, California and provides wastewater treatment to a population of approximately 107,000 residents⁹ within the service area/boundaries of the SMWD and Trabuco Canyon Water District.

⁸ Discharger's ROWD states, "Population estimate provided by SOCWA. Corresponds to a wastewater flow contribution of 54 gallons per capita per day, based on the average J.B. Latham Wastewater Treatment Plant influent flow of 6.51 MGD during January 2015 through June 2016."

⁹ Discharger's ROWD states, "Estimated population based on a Chiquita [WRP] average influent flow of 5.87 MGD during January 2015 through June 2016, and an estimated 55 gallons per capita per day wastewater flow contribution."

The Chiquita WRP provides secondary-treatment with the following wastewater treatment unit operations and processes: screening, grit removal, primary clarification (9.0-MGD capacity), and a combination of (1) high-rate trickling filtration and recirculation (6.0-MGD capacity) and (2) activated sludge aeration and secondary clarification (6.0-MGD capacity). The 2020 Chiquita WRP inspection report states that SMWD was in the process of installing another secondary clarifier (at the time, the design was done and out for bid). SMWD also planned to add new aeration basins. The projected operational date of the new basins was by the end of June 2021 and will increase the aeration basin from 6 MGD to 9 MGD. A portion of the secondary-treated wastewater receives tertiary treatment through chemical addition/flash mixing, tertiary filtration, and chlorination disinfection.

The San Diego Water Board's Order No. 97-52, *Waste Discharge and Recycling Requirements for the South Orange County Wastewater Authority, Orange County*, establishes recycled water requirements for the reuse of tertiary-treated wastewater from the Chiquita WRP in the San Diego Region.

Waste activated sludge from the Chiquita WRP is thickened, digested, and dewatered, using belt filter press. Approximately 40 percent of dewatered biosolids from the Chiquita WRP are directed to the Prima Deshecha landfill, while the remaining biosolids are trucked to contract composting operations. Screenings removed from the wastewater in the preliminary treatment process are sent to a Class 1 sanitary landfill in Simi Valley.

Under this Order, secondary-treated wastewater not recycled at the Chiquita WRP is discharged to the Chiquita Land Outfall, which then discharges to the SJCOO. From February 2019 to January 2020, the reported average influent daily flow to the Chiquita WRP was 5.51 MGD and the average effluent daily flow from the Chiquita WRP to the SJCOO was 1.90 MGD.

2.1.3. Santa Margarita Water District/Moulton Niguel Water District 3A Water Reclamation Plant (3A WRP)

The 3A WRP is located at 26801 Camino Capistrano, Mission Viejo, California and provides wastewater treatment to a population of approximately 33,000 residents¹⁰ within the service area/boundaries of the MNWD and SMWD.

Secondary-treatment capacity at the 3A WRP is 6.0 MGD and includes the following wastewater treatment unit operations and processes: screening, aerated grit removal, primary sedimentation, and secondary treatment with activated sludge aeration and secondary sedimentation. A portion of the secondary-treated wastewater receives tertiary treatment through chemical addition, tertiary filtration, and disinfection (2.4-MGD capacity).

¹⁰ Discharger's ROWD states, "Estimated population based on a 3A Water Reclamation Plant average influent flow of 1.81 MGD during January 2015 through June 2016, and an estimated 55 gallons per capita per day wastewater flow contribution."

Biosolids are treated through dissolved air floatation, anaerobic digestion, and centrifuge dewatering. Dewatered biosolids are hauled to either the Prima Deshecha Landfill in Orange County or the Otay Landfill in San Diego County. Screenings and grit from the 3A WRP are transported by a private contractor to a Class 1 sanitary landfill in Simi Valley.

Under this Order, secondary-treated wastewater not recycled at the 3A WRP is discharged to the 3A Effluent Transmission Main, which connects to the Chiquita Land Outfall, which then discharges to the SJCOO. From February 2019 to January 2020, the reported average influent daily flow to the 3A WRP was 1.66 MGD and the average effluent daily flow from the 3A WRP to the SJCOO was 0.92 MGD.

2.1.4. San Clemente Water Reclamation Plant (San Clemente WRP)

The San Clemente WRP is located at 380 Avenida Pico, San Clemente, California and provides wastewater treatment to a population of approximately 53,000 residents¹¹ within the service area of the City of San Clemente and SMWD. The San Clemente WRP also receives urban runoff flows from several diversion points within the City of San Clemente.

The San Clemente WRP has a secondary-treatment capacity of 6.98 MGD with the following wastewater treatment unit operations and processes: screening, grit removal, primary clarification, and secondary treatment with activated sludge aeration and secondary clarification. A portion of the secondary-treated wastewater receives tertiary treatment, which includes filtration and chlorination. The tertiary-treatment capacity is 3.7 MGD.

The San Diego Water Board's Order No. R9-2003-0123 establishes reclamation requirements for the reuse of tertiary-treated wastewater from the San Clemente WRP in the San Diego Region.

Grit and screenings are hauled to a sanitary landfill. Settled primary sludge and skimmings are pumped to a two-stage anaerobic digestion process. Sludge processing includes thickening, two-stage anaerobic digestion, centrifuge dewatering, and transported to a sanitary landfill for disposal or trucked to contractor-operated composting facilities.

Under this Order, secondary-treated wastewater not recycled at the San Clemente WRP is discharged to the San Clemente Land Outfall, which then discharges to the SJCOO. From February 2019 to January 2020, the reported average influent daily flow to the San Clemente WRP was 3.71 MGD and the average effluent daily flow from the San Clemente WRP to the SJCOO was 2.82 MGD.

¹¹ Discharger's ROWD states, "Population estimate provided by the City of San Clemente. Corresponds to a wastewater flow contribution of 61 gallons per capita per day, based on an average San Clemente WRF influent flow of 3.23 MGD during January 2015 through June 2016."

2.1.5. San Juan Capistrano Groundwater Treatment Plant

The San Juan Capistrano Groundwater Treatment Plant is located at 32470 Paseo Adelanto, San Juan Capistrano, California and treats up to 5.2 MGD of extracted groundwater to produce potable water. Groundwater treatment includes preliminary filtration (sand separators); iron and manganese pretreatment (potassium permanganate and sodium hypochlorite addition followed by green-sand filtration); chemical addition (addition of sulfuric acid, sodium bisulfite and scale inhibitor); cartridge filtration; RO treatment; aeration; pH adjustment (sodium hydroxide and ammonia hydroxide); and disinfection (sodium hypochlorite). The San Juan Capistrano Groundwater Treatment Plant discharges up to 2.2 MGD of the waste brine from the RO to the Chiquita Land Outfall, which then discharges to the SJCOO. From February 2019 to January 2020, the reported average effluent daily flow from the San Juan Capistrano Groundwater Treatment Plant to the SJCOO was 0.52 MGD.

2.1.6. South Coast Water District Groundwater Recovery Facility

The SCWD Groundwater Recovery Facility is located at 33750 Stonehill Drive, Dana Point, California. At this facility, SCWD treats extracted groundwater from the Lower San Juan Groundwater Basin to produce potable supply. Treatment includes pretreatment (threshold inhibitor and cartridge filtration); RO treatment; decarbonation (pH adjustment); and stabilization/disinfection (sodium hypochlorite, aqueous ammonia, and sodium hydroxide). A portion of the extracted groundwater bypasses RO treatment and is treated for iron and manganese removal. The SCWD discharges up to 0.6 MGD of the resulting waste brine from the RO and iron/manganese backwash to the Chiquita Land Outfall, which discharges to the SJCOO. From February 2019 to January 2020, the reported average effluent daily flow from the SCWD Groundwater Recovery Facility to the SJCOO was 0.16 MGD.

2.1.7. Segunda Deshecha Runoff Plant

The Segunda Deshecha Runoff Plant is located at 3115 Avenida Pico, San Clemente, California. At this facility, the City of San Clemente diverts up to 1.01 MGD of dry weather urban runoff flows from the Segunda Deshecha (M02) Flood Control Channel through the Segunda Deshecha Runoff Plant for treatment by preliminary screening and pressure filtration. The Segunda Deshecha Runoff Plant discharges up to 1.0 MGD of treated urban runoff to the San Clemente Land Outfall for conveyance to the SJCOO. The filter backwash water from the treatment facility is discharged into the San Clemente WRP sewer collection system. From February 2019 to October 2021, the City of San Clemente reported no discharge from the Segunda Deshecha Runoff Plant to the SJCOO.

2.1.8. SCWD Doheny Desalination Project

The proposed Doheny Desalination Project will be located at 34400 Coast Highway, Dana Point, CA 92629, Orange County. Once constructed and operational, this facility will treat seawater to produce up to 5 MGD of drinking water. The facility will consist of a subsurface slant well water intake system, an

ocean water conveyance pipeline, a desalination facility, a brine disposal system, a brine discharge tank, a product water storage tank and distribution system, and a solids handling facility. The treatment system will likely include pretreatment consisting of flocculation, sedimentation, catalytic media filtration, RO membranes, and post treatment conditioning, which will include UV disinfection, calcite contactors, and a product water storage tank sized to provide necessary chlorine contact time. The RO membranes will be cleaned periodically with low and high pH RO cleaning chemicals that are National Sanitation Foundation-certified. These chemicals will be neutralized on-site and discharged to the sanitary sewer system.

RO brine concentrate and the calcite contactor backwash will be discharged to the Brine Discharge Holding Tank. The Brine Discharge Holding Tank would allow for brine storage during periods of low wastewater flows to the SJCOO. The Brine Pump Station will discharge the RO brine concentrate and the calcite contactor backwash to the SJCOO, where it will commingle with existing wastewater stream from the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, 3A WRP, and San Clemente WRP. Off-spec product water would also be discharged from the Product Water Storage Tank to the SJCOO and commingled with the existing wastewater stream.

Preliminary design of the facility has been completed, and SCWD will utilize a design-build contractor for final facility design and construction which will include a product water recovery rate between 35% to 60%. The Doheny Desalination Project will have an initial potable water capacity of 5 MGD, with a potential expansion to 15 MGD in future phases.

Based on a RO recovery rate of 50% and a drinking water production of 5 MGD, this Order regulates the subsurface intake flows of 10 MGD and the Doheny Desalination Project effluent flows of 5 MGD.

2.1.9. Santa Magarita Water District Ranch Water Filtration Plant

The proposed Ranch Water Filtration Plant will be located at 30180 Cow Camp Road, Rancho Mission Viejo, CA 92694, Orange County. Once constructed and operational, this facility will treat groundwater to produce drinking water.

By 2040, up to 5000 acre-feet of water will be leased from the Rancho Mission Viejo Water Company. There are nine wells that will be the predominant source of water supplied to the Ranch Water Filtration Plant from the Rancho Mission Viejo Water Company. SOCWA reviewed the water quality results for the nine wells over a period from 1966 through 2023.

In the letter dated October 27, 2023, SOCWA stated, "There were non-detects for all volatile organic compounds, posing no risk of performance goal exceedances for the proposed 30% brine reject rate of the [Ranch Water Filtration Plant]. The influent stream is dominated by higher concentrations of iron and manganese which is proposed to be treated. Total dissolved solids averaged 730 mg/L for 161 sampling events." SOCWA also projected that the water quality of the waste brine from the proposed Ranch Water Filtration Plant will be like the

water quality of the waste brine from the San Juan Capistrano Groundwater Treatment Plant. The San Juan Capistrano Groundwater Treatment Plant has been meeting its effluent limitation requirements since June 2012, except for two exceedances for oil and grease in March 2022.

The treatment system will likely include pretreatment consisting of green sand filters, microfiltration, and RO membranes. SOCWA/SMWD plans to discharge a maximum of 1.34 MGD of waste brine from the RO membranes to the Chiquita Land Outfall and SJCOO.

2.1.10 Land Outfalls Tributary to the SJCOO

The secondary-treated wastewater from the Chiquita WRP and waste brine from the Ranch Water Filtration Plant discharges to the start of the Chiquita Land Outfall, a 6.0-mile-long pipeline with a capacity of 42 MGD. The waste brine from the San Juan Capistrano Groundwater Treatment Plant and SCWD Groundwater Recovery Facility also discharges to the Chiquita Land Outfall and commingles with the secondary-treated wastewater from the Chiquita WRP and waste brine from the Ranch Water Filtration Plant.

The secondary-treated wastewater from the 3A WRP discharges to the start of the 3A Effluent Transmission Main, a 5.9-mile-long pipeline with a capacity of 6.0 MGD. The 3A Effluent Transmission Main discharges to the Chiquita Land Outfall. The effluent from the five facilities above discharges from the Chiquita Land Outfall to the SJCOO.

The secondary-treated wastewater from the San Clemente WRP and the treated runoff from the Segunda Deshecha Runoff Plant discharges to the San Clemente Land Outfall, a 4.4-mile-long pipeline with a capacity of 14 MGD. The San Clemente Land Outfall discharges to the SJCOO.

The secondary-treated wastewater from the J.B. Latham Wastewater Treatment Plant and the brine from the Doheny Desalination Project discharge directly to the SJCOO.

Attachment B provides maps of the Facilities. Table F-2 below summarizes the land outfalls, pipeline sizes, and rated capacity of each facility discharging to the land outfall.

Table F-2. Land Outfalls

Land Outfall	Pipeline Capacity (MGD)	Reach Length (mile)	Facilities Discharging to the Land Outfall Reach (Rated Capacity of Each Facility in MGD)	Rated Capacity of Upstream Facilities (MGD)
3A Effluent Transmission Main	6.0	5.9	3A WRP (6.0)	6.0
Chiquita Land Outfall	42	6.0	Chiquita WRP (9.0) Ranch Water Filtration Plant (1.34) San Juan Capistrano Groundwater Treatment Plant (2.2) SCWD Groundwater Recovery Facility (0.6) 3A WRP (6.0)	19.14
San Clemente Land Outfall	14	4.4	San Clemente WRP (6.98) Segunda Deshecha Runoff Plant (1.0)	7.98

2.2. Discharge Points and Receiving Waters

SOCWA is the owner and operator of the SJCOO, which has been in existence since 1978. The outfall extends 10,334 feet (ft) offshore in a southwesterly direction from the mouth of San Juan Creek (or approximately 10,550 ft offshore in a southwest direction from Doheny State Beach at San Juan Creek). The inshore end of the diffuser is located approximately 10,334 feet offshore at a depth of approximately 100 ft. The SJCOO terminates with a 216-foot diffuser collinear with the rest of the outfall and then extends 1,272 feet in a northwesterly direction perpendicular to the rest of the outfall. The SJCOO diffuser terminates at Latitude 33°26'10" North, Longitude 117°41'53" West. The 216-foot collinear portion of the diffuser has a total of 16 2.85-inch-diameter diffuser ports that are spaced at approximately 27-foot intervals on alternating sides. The 1,272-foot perpendicular portion of the diffuser has a total of 107 3.03-inch-diameter diffuser ports and 2 5.0-inch-diameter diffuser ports that are located at approximate 24-foot intervals on alternating sides.¹² The capacity of the SJCOO is 24 MGD with gravity flow and 80 MGD with pumping. Effluent pumping to the SJCOO is required when peak flow conditions coincide with extreme high tide conditions.

¹² The previous order, Order No. R9-2012-0012, Attachment F, Fact Sheet, section II.B incorrectly states "Ports on the diffuser pipes are spaced 24 inches apart on each side of the diffuser pipe and staggered." Order No. R9-2012-0012, Attachment H, Dilution Model Information, second paragraph incorrectly states "The diffuser has 125 discharge ports which are spaced in 2 feet intervals on alternating sides." However, Order No. R9-2012-0012, Attachment H, section B.6 states, "The ROWD indicated that the ports were approximately 24 feet apart. Both sides of the diffuser are being modeled on one side of the diffuser; a value of 12 feet was entered into the model."

From February 2019 to January 2020, the reported average effluent daily flow to the SJCOO was 12.9 MGD and the maximum flow was 34.4 MGD (February 15, 2019).

The Dischargers previously determined the minimum probable initial dilution (initial dilution) factor for the SJCOO, using the computer model Visual Plumes, to be 100 parts seawater per 1 part wastewater (100:1). Based on the data collected by the Dischargers during the term of Order No. R9-2006-0054, the San Diego Water Board re-evaluated the initial dilution using Visual Plumes. Based on this re-evaluation, the probable initial dilution factor was calculated to be 162:1. For reasons explained in Attachment H of Order No. R9-2012-0012, the initial dilution factor of 100:1 was retained in Order No. R9-2012-0012.

On December 31, 2018, SOCWA submitted the *Hydrodynamic Modeling Study for the San Juan Creek and Aliso Creek Ocean Outfalls*¹³, dated May 14, 2018, to the San Diego Water Board. SOCWA provided a supplemental dilution analysis¹⁴, dated January 14, 2020. The results of the study support an initial dilution factor was of 162:1. However, in SOCWA's April 2021 ROWD, SOCWA states, "In the absence of an antidegradation analysis for this increased initial dilution, SOCWA requests that the 100:1 initial dilution currently assigned within Order No. R9-2012-0012 [previous order] be retained in the updated SJCOO NPDES permit." Thus, this Order retains use of the minimum probable dilution factor of 100:1 for the determination of effluent limitations.

2.3. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data

Effluent limitations contained in the previous order, Order No. R9-2012-0012, for discharges from the Facilities and representative monitoring data obtained at Monitoring Locations M-001A, M-001B, M-001C, M-001D, M-001E, M-001F, M-001G, and M-001 (Discharge Point No. 001) from April 2012 to October 2021 are as follows:

¹³ *Hydrodynamic Modeling of Dilution Capacity for the Aliso Creek and San Juan Creek Ocean Outfalls*. Michael Baker International. May 14, 2018.

¹⁴ *Plumes 18b Dilution Sensitivity Analysis of Combined Discharges of SOCWA Wastewater and Brine from the Doheny Desalination Project*. Michael Baker International. January 14, 2020.

Table F-3. Historical Effluent Limitations and Monitoring Data at Monitoring Location M-001A

Parameter	Units	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Highest Average Monthly Discharge ¹	Highest Average Weekly Discharge ¹	Highest Instantaneous Maximum ¹
Flow	MGD	13.0	---	---	10.16	---	---
Carbonaceous Biochemical Oxygen Demand 5-day @ 20 degrees Celsius (°C) (CBOD ₅)	mg/L	25	40	--	11.5	16.3	--
CBOD ₅	lbs/day ²	2,711	4,337	---	820	1,030	--
CBOD ₅	% Removal	85 ³	---	---	92.0 ³	---	---
Total Suspended Solids (TSS)	mg/L	30	45	---	14.4	23.2	---
TSS	lbs/day ²	3,253	4,879	---	1,097	2,349	---
TSS	% Removal	85 ³	---	---	76.8 ³	---	---
Oil and Grease	mg/L	25	40	75	<2	<2	<2
Oil and Grease	lbs/day ²	2,711	4,337	8,132	<121	<121	<121
Settleable Solids	ml/L	1.0	1.5	3.0	0.4	1.1	5.1
Turbidity	NTU	75	100	225	7.1	11.6	11.6
pH	standard units	---	---	6.0 – 9.0 ⁴	---	---	6.6 – 8.0 ⁴

Notes for Table F-3

1. Monitoring data from April 2012 to October 2021.
2. Mass emission rate (MER) effluent limitations are based on the permitted flow rate for the J.B. Latham Wastewater Treatment Plant (13.0 MGD).
3. Minimum value.
4. Instantaneous minimum and maximum value.

Table F-4. Historical Effluent Limitations and Monitoring Data at Monitoring Location M-001B

Parameter	Units	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Highest Average Monthly Discharge ¹	Highest Average Weekly Discharge ¹	Highest Instantaneous Maximum ¹
Flow	MGD	9.0	---	---	6.5	---	---
CBOD ₅	mg/L	25	40	---	39.4	92	---
CBOD ₅	lbs/day ²	1,877	3,002	---	592	746	---
CBOD ₅	% Removal	85 ³	---	---	80.6 ³	---	---
TSS	mg/L	30	45	---	130.5	381	---
TSS	lbs/day ²	2,252	3,378	---	1,049	3,620	---
TSS	% Removal	85 ³	---	---	48.5 ³	---	---
Oil and Grease	mg/L	25	40	75	2.1	2.1	4.1
Oil and Grease	lbs/day ²	1,877	3,002	5,630	31	31	31
Settleable Solids	ml/L	1.0	1.5	3.0	0.5	2.5	4.5
Turbidity	NTU	75	100	225	14.83	35.4	35.4
pH	standard units	---	---	6.0 – 9.0 ⁴	---	---	6.7 – 8.0 ⁴

Notes for Table F-4

1. Monitoring data from April 2012 to October 2021.
2. MER effluent limitations are based on the permitted flow rate for the Chiquita WRP (9.0 MGD).
3. Minimum value.
4. Minimum and maximum value.

Table F-5. Historical Effluent Limitations and Monitoring Data at Monitoring Location M-001C

Parameter	Units	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Highest Average Monthly Discharge ¹	Highest Average Weekly Discharge ¹	Highest Instantaneous Maximum ¹
Flow	MGD	6.0	---	---	2.21	---	---
CBOD ₅	mg/L	25	40	---	27	99	---
CBOD ₅	lbs/day ²	1,251	2,002	---	427	1,827	---

Parameter	Units	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Highest Average Monthly Discharge ¹	Highest Average Weekly Discharge ¹	Highest Instantaneous Maximum ¹
CBOD ₅	% Removal	85 ³	---	---	95.2 ³	---	---
TSS	mg/L	30	45	---	43.8	166.4	---
TSS	lbs/day ²	1,501	2,252	---	712	3,061	---
TSS	% Removal	85 ³	---	---	88 ³	---	---
Oil and Grease	mg/L	25	40	75	1.9	1.9	1.9
Oil and Grease	lbs/day ²	1,251	2,002	3,753	<12	<12	<12
Settleable Solids	ml/L	1.0	1.5	3.0	0.4	0.8	3.5
Turbidity	NTU	75	100	225	6.68	9.2	9.2
pH	standard units	---	---	6.0 – 9.0 ⁴	---	---	6.0 – 8.5 ⁴

Notes for Table F-5

1. Monitoring data from April 2012 to October 2021.
2. MER effluent limitations are based on the permitted flow rate for the 3A WRP (6.0 MGD).
3. Minimum value.
4. Minimum and maximum value.

Table F-6. Historical Effluent Limitations and Monitoring Data at Monitoring Location M-001D

Parameter	Units	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Highest Average Monthly Discharge ¹	Highest Average Weekly Discharge ¹	Highest Instantaneous Maximum ¹
Flow	MGD	6.98	---	---	3.95	---	---
CBOD ₅	mg/L	25	40	---	9.7	17.3	---
CBOD ₅	lbs/day ²	1,455	2,329	---	231	477	---
CBOD ₅	% Removal	85 ³	---	---	87.4 ³	---	---
TSS	mg/L	30	45	---	17	27.6	---
TSS	lbs/day ²	1,726	2,620	---	426	771	---
TSS	% Removal	85 ³	---	---	86.3 ³	---	---

Parameter	Units	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Highest Average Monthly Discharge ¹	Highest Average Weekly Discharge ¹	Highest Instantaneous Maximum ¹
Oil and Grease	mg/L	25	40	75	<2	<2	<2
Oil and Grease	lbs/day ²	1,251	2,002	4,366	<64	<64	<64
Settleable Solids	ml/L	1.0	1.5	3.0	1	3.5	20
Turbidity	NTU	75	100	225	6.13	19.81	49
pH	standard units	---	---	6.0 – 9.0 ⁴	---	---	6.75 – 7.98 ⁴

Notes for Table F-6

1. Monitoring data from April 2012 to October 2021.
2. MER effluent limitations are based on the permitted flow rate for the San Clemente WRP (6.98 MGD).
3. Minimum value.
4. Minimum and maximum value.

Table F-7. Historical Effluent Limitations and Monitoring Data at Monitoring Location M-001E

Parameter	Units	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Highest Average Monthly Discharge ¹	Highest Average Weekly Discharge ¹	Highest Instantaneous Maximum ¹
Flow	MGD	2.2	---	---	1.52	---	---
TSS	mg/L	60	---	---	37	---	---
TSS	lbs/day ²	1,101	---	---	290	---	---
Oil and Grease	mg/L	25	40	75	21	21	21
Oil and Grease	lbs/day ²	459	734	1,376	66	66	66
Settleable Solids	ml/L	1.0	1.5	3.0	<0.1	<0.1	<0.1
Turbidity	NTU	75	100	225	10	10	10
pH	standard units	---	---	6.0 – 9.0 ³	---	---	6.3 – 8.4 ³

Notes for Table F-7

1. Monitoring data from April 2012 to October 2021.
2. MER effluent limitations are based on the permitted flow rate for the San Juan Capistrano Groundwater Treatment Plant (2.2 MGD).
3. Minimum and maximum value.

Table F-8. Historical Effluent Limitations and Monitoring Data at Monitoring Location M-001F

Parameter	Units	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Highest Average Monthly Discharge ¹	Highest Average Weekly Discharge ¹	Highest Instantaneous Maximum ¹
Flow	MGD	0.6	---	---	0.521	---	---
TSS	mg/L	60	---	---	55.5	---	---
TSS	lbs/day ²	300	---	---	3,651	---	---
Oil and Grease	mg/L	25	40	75	<2	<2	<2
Oil and Grease	lbs/day ²	125	200	375	3.27	3.27	<3.27
Settleable Solids	ml/L	1.0	1.5	3.0	13.8 ³	13.8 ³	13.8 ³
Turbidity	NTU	75	100	225	49.9	49.9	49.9
pH	standard units	---	---	6.0 – 9.0 ⁴	---	---	6.5 – 8.3 ³

Notes for Table F-8

- 1 Monitoring data from April 2012 to October 2021.
2. MER effluent limitations are based on the permitted flow rate for the SCWD Groundwater Recovery Facility (0.60 MGD)
3. The Dischargers reported a settleable solids concentration of 13.8 ml/L in November 2014 for Monitoring Location M-001F. However, from May 31, 2012 to March 14, 2017, the compliance point for SCWD Groundwater Recovery Facility was Monitoring Location M-001, not Monitoring Location M-001F. Thus, the November 2014 concentrations at Monitoring Location M-001F were not effluent violations.
- 4 Minimum and maximum value.

Table F-9. Historical Effluent Limitations and Monitoring Data at Monitoring Location M-001G

Parameter	Units	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Highest Average Monthly Discharge ¹	Highest Average Weekly Discharge ¹	Highest Instantaneous Maximum ¹
Flow	MGD	1.0	---	---	0 ²	---	---
TSS	mg/L	60	---	---	NA ³	NA	---
TSS	lbs/day ⁴	500	---	---	NA	NA	---
Oil and Grease	mg/L	25	40	75	NA	NA	NA

Parameter	Units	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Highest Average Monthly Discharge ¹	Highest Average Weekly Discharge ¹	Highest Instantaneous Maximum ¹
Flow	MGD	1.0	---	---	0 ²	---	---
Oil and Grease	lbs/day ⁴	209	334	626	NA	NA	NA
Settleable Solids	ml/L	1.0	1.5	3.0	NA	NA	NA
Turbidity	NTU	75	100	225	NA	NA	NA
pH	standard units	---	---	6.0 – 9.0 ⁵	---	---	NA

Notes for Table F-9

1. Monitoring data from April 2012 to October 2021.
2. The Dischargers reported no discharge from the facility during the term of the previous order.
3. NA=Not Applicable. The Dischargers reported no discharge during the term of the previous order.
4. MER effluent limitations are based on the permitted flow rate for the Segunda Deshecha Runoff Plant (1.0 MGD).
5. Minimum and maximum value.

Table F-10. Historical Effluent Limitations and Monitoring Data at Monitoring Location M-001^{1,2,3}

Parameter	Units	Average Monthly Effluent Limitation ¹	Highest Average Monthly Discharge ^{1,2}
Flow	MGD	34.37	19.7
TCDD Equivalents	µg/L	9.3E-07	2.96E-06
TCDD Equivalents	lbs/day ³	2.7E-07	6.6E-07

Notes for Table F-10

1. Scientific “E” notation is used to express certain values. In scientific “E” notation, the number following the “E” indicates that position of the decimal point in the value. Negative numbers after the “E” indicate that the value is less than 1, and positive numbers after the “E” indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1 x 10⁻² or 0.061, 6.1E+02 represents 6.1 x 10² or 610, and 6.1E+00 represents 6.1 x 10⁰ or 6.1.
2. Monitoring data from April 2012 to October 2021.
3. TCDD Equivalents MER effluent limitations are based on the permitted flow rate for the SJCOO (38.78 MGD).

2.4. Compliance Summary

As of April 2021, the Dischargers have reported the following alleged violations of Order No. R9-2012-0012:

- 2.4.1. Order No. R9-2012-0012, section III.A prohibits discharges from the Facilities to a location other than the Discharge Point No. 001, unless specifically regulated by this Order or separate waste discharge requirements.
 - 2.4.1.1. On January 22, 2017, SOCWA spilled 100 gallons of primary-treated wastewater from the J.B. Latham Wastewater Treatment Plant. The Discharger reported that the spill did not reach receiving waters.
 - 2.4.1.2. On October 31, 2019, SOCWA spilled approximately 300 gallons of secondary-treated wastewater. The spill entered a storm drain adjacent to San Juan Creek.
 - 2.4.1.3. As stated in this Fact Sheet under section 6.2.5.5, reports for sanitary sewer overflows from the sanitary sewer systems are available at the State Water Board Public SSO Report Database.¹⁵
- 2.4.2. Order No. R9-2012-0012, section IV.A.1.a, Table 7 states that the settleable solids instantaneous maximum in the J.B. Latham Wastewater Treatment Plant effluent (Monitoring Location M-001A) shall not exceed 3.0 ml/L. The J.B. Latham Wastewater Treatment Plant effluent exceeded the settleable solids instantaneous maximum on November 21, 2019, with a reported value of 5.1 ml/L.
- 2.4.3. Order No. R9-2012-0012, section IV.A.1.a, Table 8 states that the CBOD₅ average weekly in the Chiquita WRP effluent (Monitoring Location M-001B) shall not exceed 40 mg/L. The Chiquita WRP effluent exceeded the CBOD₅ average weekly on May 28, 2018, with a reported average weekly value of 92 mg/L.
- 2.4.4. Order No. R9-2012-0012, section IV.A.1.a, Table 8 states that the CBOD₅ average monthly in the Chiquita WRP effluent (Monitoring Location M-001B) shall not exceed 25 mg/L. The Chiquita WRP effluent exceeded the CBOD₅ average monthly on May 28, 2018, with a reported average weekly value of 39.4 mg/L.
- 2.4.5. Order No. R9-2012-0012, section IV.A.1.a, Table 8 states that the TSS average weekly in the Chiquita WRP effluent (Monitoring Location M-001B) shall not exceed 45 mg/L and 3,378 lbs/day. The Chiquita WRP effluent exceeded the TSS average weekly on the following days:
 - 2.4.5.1. April 22, 2017 with reported average weekly values of 292 mg/L and 3,620 lbs/day.

¹⁵

https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_main

- 2.4.5.2. June 2, 2018 with reported average weekly values of 381 mg/L.
- 2.4.6. Order No. R9-2012-0012, section IV.A.1.a, Table 8 states that the TSS average monthly in the Chiquita WRP effluent (Monitoring Location M-001B) shall not exceed 30 mg/L. The Chiquita WRP effluent exceeded the TSS average monthly on the following days:
- 2.4.6.1. April 30, 2017, with a reported value of 87.87 mg/L.
- 2.4.6.2. May 31, 2018, with a reported value of 130 mg/L.
- 2.4.7. Order No. R9-2012-0012, section IV.A.1.a, Table 8 states that the TSS average monthly percent removal in the Chiquita WRP effluent (Monitoring Location M-001B) shall not be less than 85 percent. The Chiquita WRP effluent did not meet the TSS average monthly percent removal on April 30, 2017, with a reported value of 80.2 percent and on May 31, 2018, with a reported value of 70 percent.
- 2.4.8. Order No. R9-2012-0012, section IV.A.1.a, Table 8 states that the settleable solids instantaneous maximum in the Chiquita WRP effluent (Monitoring Location M-001B) shall not exceed 3.0 ml/L. The Chiquita WRP effluent exceeded the settleable solids instantaneous maximum on February 14 and 26, 2019 with reported values of 4.5 and 3.5 ml/L, respectively.
- 2.4.9. Order No. R9-2012-0012, section IV.A.1.a, Table 8 states that the settleable solids weekly average in the Chiquita WRP effluent (Monitoring Location M-001B) shall not exceed 1.5 ml/L. The Chiquita WRP effluent exceeded the settleable solids weekly average on August 25, 2018, with a reported value of 2.5 ml/L.
- 2.4.10. Order No. R9-2012-0012, section IV.A.1.a, Table 9 states that the CBOD₅ average weekly in the 3A WRP effluent (Monitoring Location M-001C) shall not exceed 40 mg/L. The 3A WRP effluent exceeded the CBOD₅ average weekly on October 10, 2015, with a reported average weekly value of 99 mg/L.
- 2.4.11. Order No. R9-2012-0012, section IV.A.1.a, Table 9 states that the CBOD₅ average monthly in the 3A WRP effluent (Monitoring Location M-001C) shall not exceed 25 mg/L. The 3A WRP effluent exceeded the CBOD₅ average monthly on October 31, 2015, with a reported average weekly value of 27 mg/L.
- 2.4.12. Order No. R9-2012-0012, section IV.A.1.a, Table 9 states that the settleable solids instantaneous maximum in the 3A WRP effluent (Monitoring Location M-001C) shall not exceed 3.0 ml/L. The 3A WRP effluent exceeded the settleable solids instantaneous maximum on April 24, 2015, with a reported value of 3.5 ml/L.
- 2.4.13. Order No. R9-2012-0012, section IV.A.1.a, Table 9 states that the TSS average weekly in the 3A WRP effluent (Monitoring Location M-001C) shall not exceed 45 mg/L and 2,252 lbs/day. The 3A WRP effluent exceeded the TSS average weekly on October 10, 2015 with reported average weekly values of 166 mg/L and 3,061 lbs/day.

- 2.4.14. Order No. R9-2012-0012, section IV.A.1.a, Table 9 states that the TSS average monthly in the 3A WRP effluent (Monitoring Location M-001C) shall not exceed 30 mg/L. The 3A WRP effluent exceeded the TSS average monthly on October 31, 2015, with a reported average monthly value of 44 mg/L.
- 2.4.15. Order No. R9-2012-0012, section IV.A.1.a, Table 10 states that the settleable solids instantaneous maximum in the San Clemente WRP effluent (Monitoring Location M-001D) shall not exceed 3.0 ml/L. The San Clemente WRP effluent exceeded the settleable solids instantaneous maximum on the following days:
- 2.4.15.1. December 24, 2013, with a reported value of 4.5 ml/L.
- 2.4.15.2. December 25, 2013, with a reported value of 10 ml/L.
- 2.4.15.3. November 27, 2015, with reported values of 8.5, 20.0, and 5.0 ml/L
- 2.4.15.4. April 2, 2018, with a reported value of 7.5 ml/L.
- 2.4.15.5. July 19, 2018, with a reported value of 10.0 ml/L.
- 2.4.16. Order No. R9-2012-0012, section IV.A.1.a, Table 10 states that the settleable solids average weekly in the San Clemente WRP effluent (Monitoring Location M-001D) shall not exceed 1.5 ml/L. The San Clemente WRP effluent exceeded the settleable solids average weekly on the following days:
- 2.4.16.1. December 28, 2013, with a reported average weekly value of 3.5 ml/L.
- 2.4.16.2. November 28, 2015, with a reported average weekly value of 3.7 ml/L.
- 2.4.16.3. April 1, 2018, with a reported average weekly value of 1.58 ml/L.
- 2.4.17. Order No. R9-2012-0012, section IV.A.1.a, Table 10 states that the settleable solids average monthly in the San Clemente WRP effluent (Monitoring Location M-001D) shall not exceed 1.0 ml/L. The San Clemente WRP effluent exceeded the settleable solids average monthly on November 30, 2015, with a reported average monthly value of 1.4 ml/L.
- 2.4.18. Order No. R9-2012-0012, section IV.A.1.b, Table 13 states that the settleable solids average weekly in the SCWD Groundwater Recovery Facility effluent (as measured at Monitoring Location M-001) shall not exceed 1.5 ml/L. The SCWD Groundwater Recovery Facility effluent exceeded the settleable solids average weekly on the following days on April 5 and 30, 2014 with average weekly values of 1.7 ml/L.
- 2.4.19. Order No. R9-2012-0012, section IV.A.1.c, Table 14 states that the average monthly for TCDD Equivalents in the SJCOO effluent (as measured at Monitoring Location M-001) shall not exceed 3.9E-07 µg/L. The SJCOO effluent exceeded the average monthly for TCDD Equivalents on February 2017 and February 2019, with average monthly values of 2.93E-07 and 3.96E-06 µg/L, respectively.
- 2.4.20. Order No. R9-2012-0012, section VI.C.2.b.iv states "For all spills, the Discharger shall include a detailed summary of spills in the monthly self-

monitoring report (SMR) for the month in which the spill occurred.” The original submittal of the December 2015 monthly SMR did not include the 300-gallon sludge spill that occurred on December 7, 2015 at the J.B. Latham Wastewater Treatment Plant. The spill was later added to the December 2015 SMR on March 31, 2016.

- 2.4.21. Order No. R9-2012-0012, Attachment D, section I.D requires the Dischargers to properly operate and maintain all facilities and systems of treatment and control. The Discharger had the following operational problems:
 - 2.4.21.1. On December 7, 2015, the Discharger spilled 300 gallons of digester sludge at the J.B. Latham Wastewater Treatment Plant. The spill was contained and did not leave the facility boundary.
 - 2.4.21.2. On March 12, 2016, the Dischargers had a line break at the 3A WRP discharging an estimated 500 gallons of secondary-treated wastewater. The spill was contained and did not leave the facility boundary.
- 2.4.22. Order No. R9-2012-0012, Attachment E, section III.A.1, Table E-2 requires CBOD₅ influent monitoring at the Chiquita WRP (Monitoring Location M-INFB) at least five days per week. The Dischargers failed to meet this requirement at Monitoring Location M-INFB on May 25, 2013.
- 2.4.23. Order No. R9-2012-0012, Attachment E, section IV.A.1, Table E-3 requires CBOD₅ effluent monitoring at the J.B. Latham Wastewater Treatment Plant (Monitoring Location M-001A) at least five days per week. The Discharger failed to meet this requirement at Monitoring Location M-001A on September 28, 2018 due to quality control issues.
- 2.4.24. Order No. R9-2012-0012, Attachment E, section IV.A.1, Table E-3 requires biochemical oxygen demand (5-day @ 20°C) (BOD₅) effluent monitoring at the J.B. Latham Wastewater Treatment Plant (Monitoring Location M-001A) at least once per month. The Discharger failed to meet this requirement at Monitoring Location M-001A during the month of January 2015 due to quality control issues.
- 2.4.25. Order No. R9-2012-0012, Attachment E, section IV.A.1, Table E-3 requires CBOD₅, pH, settleable solids, and TSS effluent monitoring at the Chiquita WRP (Monitoring Location M-001B) at least five days per week. The Dischargers failed to meet this requirement for CBOD₅ at Monitoring Location M-001B on the following days due to quality control issues or failure to analyze on December 23, 2016, February 23, 2018, May 25, 2018, and August 31, 2018. The Dischargers also failed to meet this requirement for CBOD₅, pH, settleable solids, and TSS at Monitoring Location M-001B during the week of February 16 and 23, 2020 (reporting only four of the required five results).
- 2.4.26. Order No. R9-2012-0012, Attachment E, section III.A.1, Table E-2 requires BOD₅ influent monitoring at the 3A WRP (Monitoring Location M-INFC) at least once per month. The Dischargers failed to meet this requirement at Monitoring Location M-INFC during the month of November 2013.

- 2.4.27. Order No. R9-2012-0012, Attachment E, section IV.A.1, Table E-3 requires CBOD₅ effluent monitoring at the 3A WRP (Monitoring Location M-001C) at least five days per week. The Dischargers failed to meet this requirement at Monitoring Location M-001C on December 13, 2017 due to quality control issues and on June 18 and 21, 2019 due to the effluent composite sampler malfunctioning and staff not properly communicating the issue.
- 2.4.28. Order No. R9-2012-0012, Attachment E, section IV.A.1, Table E-3 requires TSS effluent monitoring at the 3A WRP (Monitoring Location M-001C) at least five days per week. The Dischargers failed to meet this requirement at Monitoring Location M-001C on June 18 and 21, 2019 due to the effluent composite sampler malfunctioning and staff not properly communicating the issue.
- 2.4.29. Order No. R9-2012-0012, Attachment E, section IV.A.1, Table E-3 requires settleable solids effluent monitoring at the 3A WRP (Monitoring Location M-001C) at least five days per week. The Dischargers failed to meet this requirement at Monitoring Location M-001C on June 21, 2019 due to the effluent composite sampler malfunctioning and staff not properly communicating the issue.
- 2.4.30. Order No. R9-2012-0012, Attachment E, section IV.A.1, Table E-3 requires weekly turbidity effluent monitoring and monthly oil and grease effluent monitoring at the 3A WRP (Monitoring Location M-001C). The Dischargers failed to meet this requirement at Monitoring Location M-001C on September 9, 2016 and April 8, 2017.
- 2.4.31. Order No. R9-2012-0012, Attachment E, section IV.A.1, Table E-3 requires BOD₅ effluent monitoring at the 3A WRP (Monitoring Location M-001C) at least once per month. The Dischargers failed to meet this requirement at Monitoring Location M-001C during the month of January 2015 due to quality control issues.
- 2.4.32. Order No. R9-2012-0012, Attachment E, section IV.A.1, Table E-3 requires CBOD₅, pH, settleable solids, and TSS effluent monitoring at the San Clemente WRP effluent (Monitoring Location M-001D) at least five days per week. The Dischargers failed to meet this requirement at Monitoring Location M-001D on May 18, 2018 due to quality control issues. The Dischargers failed to meet this requirement for CBOD₅ at Monitoring Location M-001D on June 26, 2019 due to laboratory error. The Dischargers failed to meet this requirement at Monitoring Location M-001D on November 30, 2020 due to operator error.
- 2.4.33. Order No. R9-2012-0012, Attachment E, section IV.B.1, Table E-4 requires chlorinated phenolics effluent monitoring at the SJCOO (Monitoring Location M-001) at least twice per year. The Dischargers failed to meet this requirement at Monitoring Location M-001 during the first half of 2017. The analyte 2,4,5-trichlorophenol is one of the constituents that make up the chlorinated phenolics sum but was not tested by the contract laboratory.

- 2.4.34. Order No. R9-2012-0012, Attachment E, section IV.C.1, Table E-5 requires TSS, settleable solids, oil and grease, turbidity, pH, and conductivity monitoring at the San Juan Capistrano Groundwater Treatment Plant effluent (Monitoring Location M-001E) at least once per month. The Dischargers failed to meet this requirement at Monitoring Location M-001E during the month of November 2019. The Dischargers conducted the monitoring on a day with no flow. The average monthly flow at M-001E for the month of November 2019 was reported as 0.341 MGD.
- 2.4.35. Order No. R9-2012-0012, Attachment E, section X.A.3 states “The Discharger shall report all instances of noncompliance not reported under Attachment D, Sections V.E, V.G, and V.H, of this Order at the time monitoring reports are submitted.” The Dischargers failed to report the August 25, 2018 settleable solids average weekly effluent violation in the monthly self-monitoring report cover letter.
- 2.4.36. Order No. R9-2012-0012, Attachment E, section X.B.3 states that the Dischargers shall submit the December 2019 and fourth quarter 2019 self-monitoring reports by February 1, 2020. The Dischargers submitted the reports on February 3, 2020, two days late.
- 2.4.37. Order No. R9-2012-0012, Attachment E, section X.B.4 states that the Dischargers shall not use a Minimum Level (ML) that is greater than that specified in Appendix II of the Ocean Plan. In the December 2015 monitoring report, the Dischargers reported a ML that is greater than the ML specified in Appendix II of the Ocean Plan for three parameters.

2.5. Planned Changes

The Dischargers plan to construct the Doheny Desalination Project during the term of this Order. The Doheny Desalination Project is described in section 2.1.8 of this Fact Sheet.

The Dischargers plan to design and construct a new facility, the Ranch Water Filtration Plant, to produce additional local water and discharge the waste brine to the SJCOO via the Chiquita Land Outfall.

By email dated May 16, 2023, SOCWA and SMWD requested an amendment to the 2022 Order to add waste brine discharges from the proposed Ranch Water Filtration Plant to the San Juan Creek Ocean Outfall. Amending Order No. R9-2025-0001 add the proposed Ranch Water Filtration Plant to this Order.

3. Applicable Plans, Policies, and Regulations

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

3.1. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (Water Code) (commencing with section 13260). This Order

is also issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the U. S. Environmental Protection Agency (USEPA) and chapter 5.5, division 7 of the Water Code (commencing with section 13370). It shall serve as an NPDES permit authorizing the Dischargers to discharge into waters of the United States at the discharge location described in Table 2 subject to the WDRs in this Order. This Order also includes the San Diego Water Board’s Water Code section 13142.5(b) determination for the Doheny Desalination Project.

3.2. California Environmental Quality Act (CEQA)

3.2.1 **CEQA for NPDES Permit.** Under Water Code section 13389, this action to adopt 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.

3.2.2 **CEQA for Water Code section 13142.5(b) Determination.** Compliance with CEQA is required for those provisions in this Order that are based on State law only. This Order’s determination that the Doheny Desalination Project complies with Water Code section 13142.5(b) is based on consideration of State law only and is subject to CEQA compliance. In June 2019, SCWD certified the *Doheny Ocean Desalination Plant Project Final Environmental Impact Report (State Clearinghouse No. 2016031038) (Final EIR)* for the Doheny Desalination Project. The San Diego Water Board independently considered the environmental effects of the project as described in the Final EIR.

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

3.3.1. **Water Quality Control Plan.** The San Diego Water Board adopted a Water Quality Control Plan for the San Diego Basin (Basin Plan) on September 8, 1994, that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for the Pacific Ocean and other receiving waters addressed through the plan. Subsequent revisions to the Basin Plan have also been adopted by the San Diego Water Board and approved by the State Water Resources Control Board (State Water Board). Beneficial uses applicable to the Pacific Ocean specified in the Basin Plan are summarized in Table F-11:

Table F-11. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pacific Ocean	<ul style="list-style-type: none"> • Industrial service supply (IND); • Navigation (NAV); • Water contact recreation (REC-1); • Non-contact recreation (REC-2); • Commercial and sport fishing (COMM); • Preservation of biological habitats of special significance (BIOL);

		<ul style="list-style-type: none"> • Wildlife habitat (WILD); • Rare, threatened, or endangered species (RARE); • Marine habitat (MAR); • Aquaculture (AQUA); • Migration of aquatic organisms (MIGR); • Spawning, reproduction, and/or early development (SPWN); and • Shellfish harvesting (SHELL).
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In order to protect the beneficial uses, the Basin Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Basin Plan.

3.3.2. **California Ocean Plan.** The State Water Board adopted the Ocean Plan in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, 2005, 2009, 2012, 2015, and 2018. The State Water Board adopted the latest amendment on August 7, 2018, the USEPA approved the amendment on March 22, 2019, and it became effective on March 22, 2019. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized in Table F-12:

Table F-12. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
001	Pacific Ocean	<ul style="list-style-type: none"> • IND; • REC-1; • REC-2, including aesthetic enjoyment; • NAV; • COMM; • Mariculture; • Preservation and enhancement of designated Areas of Special Biological Significance (ASBS); • Rare and endangered species; • MAR; • Fish migration; • Fish spawning; and • SHELL.

In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Ocean Plan.

3.3.3. **Antidegradation Policy.** Federal regulation 40 CFR section 131.12 requires that the State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established

California's antidegradation policy in State Water Board Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*. Resolution 68-16 is deemed to incorporate the federal antidegradation policy where the federal policy applies under federal law. Resolution 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The San Diego Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must be consistent with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution 68-16.

- 3.3.4. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the federal CWA and federal regulations at 40 CFR section 122.44(l) restrict backsliding in NPDES permits. These Anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed.
- 3.3.5. **Endangered Species Act Requirements.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code, sections 2050 to 2097) or the federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limitations, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare and endangered species. The Dischargers are responsible for meeting all requirements of the applicable Endangered Species Act.
- 3.3.6. **Sewage Sludge and Biosolids.** This Order does not authorize any act that results in violation of requirements administered by USEPA to implement 40 CFR part 503, *Standards for the Use or Disposal of Sewage Sludge*. These standards regulate the final use or disposal of sewage sludge that is generated during the treatment of domestic sewage in a municipal wastewater treatment facility. The Dischargers are responsible for meeting all applicable requirements of 40 CFR part 503 that are under USEPA's enforcement authority.

3.4. Impaired Water Bodies on the CWA section 303(d) List

In April 2018, USEPA-approved the list of impaired water bodies, prepared by the State Water Board pursuant to federal CWA section 303(d), which are not expected to meet applicable water quality standards after implementation of technology-based effluent limitations (TBELs) for point sources. The 303(d) list for water in the Pacific Ocean in the vicinity of the SJCOO include:

- San Juan Creek mouth as impaired for cadmium, cooper, indicator bacteria, nickel, and total ammonia;
- 0.03 miles along the Pacific Ocean shoreline, Lower San Juan hydrologic subarea, at surf zone municipal separate storm sewer system (MS4) outfall at Doheny State Beach for indicator bacteria;

- 0.03 miles along the Pacific Ocean shoreline, Lower San Juan hydrologic subarea, at San Juan Creek as impaired for indicator bacteria; and
- 0.03 miles along the Pacific Ocean shoreline at each of the following locations for indicator bacteria: 1,000 feet south of surf zone MS4 outfall at Doheny State Beach, at North Doheny State Park Campground, 2,000 feet south of surf zone MS4 outfall at Doheny State Beach, 3,000 feet south of surf zone MS4 outfall at Doheny State Beach, at South Doheny State Park Campground, and 4,000 feet south of surf zone MS4 outfall at Doheny State Beach.

Several total maximum daily loads (TMDLs) for bacteria indicators have been adopted and approved within San Diego Region; however, these TMDLs did not contain applicable wasteload allocations for the discharges from the SJCOO. Nonetheless, this Order implements receiving water objectives for bacterial indicators.

3.5. Other Plans, Policies and Regulations

- 3.5.1. **Secondary Treatment Regulations.** Part 133 of 40 CFR establishes the minimum levels of effluent quality to be achieved by secondary treatment. These limitations, established by the USEPA, are incorporated into this Order, except where more stringent limitations are required by other applicable plans, policies, or regulations.
- 3.5.2. **Storm Water.** Pursuant to Order No 2014-0057-DWQ, NPDES Permit No. CAS000001, the Statewide *General Permit for Stormwater Discharges Associated with Industrial Activities* (Industrial General Permit), sewerage treatment plants are classified (per Occupational Safety and Health Administration) as Standard Industrial Classification (SIC) code 4952 or Sewerage Systems. SIC code 4952 ([INo.](#)) falls within the Regulated SIC Code for enrollment under the Industrial General Permit. The eligibility for enrollment under the Industrial General Permit is not based on treatment design flow or capacity of the sewerage treatment plants. It is the industrial activity that is regulated. The J.B. Latham Wastewater Treatment Plant, Chiquita WRP, 3A WRP, and San Clemente WRP have the same SIC code (4952) and are enrolled under the Industrial General Permit. The list of SIC codes can be found at https://www.waterboards.ca.gov/water_issues/programs/stormwater/sicnum.shtml.
- 3.5.3. **Pretreatment.** Discharges of pollutants that may interfere with operations of a POTW are regulated by USEPA's pretreatment regulations at 40 CFR part 403. These regulations require dischargers to develop and implement pretreatment programs that impose limitations on industrial users of the POTWs.
- 3.5.4. **Water Code Section 13142.5(b) Determination.** Water Code section 13142.5(b) requires that for each new or expanded coastal power plant or other industrial installation using seawater for cooling, heating, or industrial processing, best available site, design, technology, and mitigation measures

feasible shall be used to minimize the intake and mortality of all forms of marine life. Chapter III.M of the Ocean Plan provides the implementation provisions for desalination facilities to comply with Water Code section 13142.5(b).

The San Diego Water Board has analyzed separately as independent considerations, and in combination, a range of intake design alternatives proposed by the Dischargers and has determined that the Doheny Desalination Project will use the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life. Attachment H to this Order summarize the considerations and basis for this Water Code section 13142.5(b) determination.

Any proposed changes in the design or operation of the Doheny Desalination Project that could increase the intake or mortality of all forms of marine life beyond that which is approved by this Order or the Water Code section 13142.5(b) determination in Attachment H would meet the definition of an expanded facility within the meaning of the Ocean Plan. (See Ocean Plan, chapter III.M.1(b)(2).) Any such expansion or a reduction in the volume of wastewater available for dilution of brine will require a new Water Code section 13142.5(b) determination in accordance with chapter III.M.2(a)(5) of the Ocean Plan.

4. Rationale for Effluent Limitations and Discharge Specifications

The federal 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 NPDES permits. There are two principal bases for effluent limitations in the Code of Federal Regulations: 40 CFR section 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR section 122.44(d) requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water. Where applicable technology-based limitations and standards and WQBELs both result in effluent limitations, the more protective numeric limitation shall be applied.

4.1. Discharge Prohibitions

This Order retains the discharge prohibitions from the previous Order, Order No. R9-2012-0012, as described below. Discharges from the Facilities to surface waters in violation of prohibitions contained in this Order are violations of the federal CWA and therefore are subject to third party lawsuits. Discharges from the Facilities to land in violation of prohibitions contained in this Order are violations of the Water Code and are not subject to third party lawsuits under the federal CWA because the Water Code does not contain provisions allowing third party lawsuits.

- 4.1.1. Order No. R9-2012-0012 contained Discharge Prohibition III.A, which prohibited discharges to a location other than Discharge Point No. 001, unless specifically regulated by Order No. R9-2012-0012 or separate WDRs. This

prohibition has been retained in this Order as Discharge Prohibitions 3.1 and 3.2. Discharge Prohibitions 3.1 and 3.2 also prohibit discharges not in compliance with the effluent limitations specified in section 4.1 of this Order.

- 4.1.2. Order No. R9-2012-0012 contained Discharge Prohibitions III.B and III.C, which required compliance with the discharge prohibitions of the Ocean Plan and Basin Plan, respectively. These prohibitions have been retained in this Order as Discharge Prohibitions 3.3 and 3.4.
- 4.1.3. This Order adds Discharge Prohibition 3.5 to prohibit discharges from the Doheny Desalination Project unless and until other studies, plans, and permits/approvals are completed to ensure the Doheny Desalination Project meets all local, State, and federal requirements, including the Ocean Plan.

4.2. Technology-Based Effluent Limitations

4.2.1. Scope and Authority

Section 301(b) of the federal CWA and implementing USEPA permit regulations at 40 CFR section 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge from the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR part 133. Discharges must also meet TBELs based on Ocean Plan Table 4.

Regulations promulgated in 40 CFR section 125.3(a)(1) require TBELs for municipal dischargers to be placed in NPDES permits based on secondary treatment standards or equivalent to secondary treatment standards.

The federal CWA established the minimum performance requirements for POTWs (defined in section 304(d)(1)). Section 301(b)(1)(B) of that federal CWA requires that such treatment works must, as a minimum, meet effluent limitations based on secondary treatment as defined by the USEPA Administrator.

Based on this statutory requirement, USEPA developed secondary treatment regulations, which are specified in 40 CFR part 133. These technology-based regulations apply to all municipal wastewater treatment plants and identify the minimum level of effluent quality attainable by secondary treatment in terms of BOD, TSS, and pH.

In compliance with 40 CFR sections 122.45(f)(1) and 423.15, mass-based limitations have also been established in this Order for conventional, nonconventional, and toxic pollutants, with some exceptions. Section 122.45(f)(2) of 40 CFR allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass-based limitations provided in 40 CFR section

122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH, turbidity, and settleable solids.

Mass-based effluent limitations were calculated using the following equation:
 $\text{lbs/day} = \text{flow (MGD)} \times \text{pollutant concentration (mg/L)} \times 8.34.$

4.2.2. Applicable Technology-Based Effluent Limitations

- 4.2.2.1. **Federal Regulations.** This Order establishes AWELs and AMELs for CBOD₅ and TSS, and an average monthly percent removal of at least 85 percent for CBOD₅ and TSS based on secondary treatment standards for POTWs established in 40 CFR part 133.

Part 133 of 40 CFR establishes the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD₅ and TSS. Section 133.102(a)(4) of 40 CFR allows for effluent limitations for CBOD₅ to be applied in lieu of effluent limitations for BOD₅ where BOD₅ may not provide a reliable measure of the oxygen demand of the effluent. USEPA has determined that a 30-day average effluent limitation of 25 mg/L and a 7-day average effluent limitation of 40 mg/L are effectively equivalent to the secondary treatment standards for BOD₅. Consistent with Order No. R9-2012-0012, this Order includes effluent limitations for CBOD₅.

Section 133.102 of 40 CFR, in describing the minimum level of effluent quality attainable by secondary treatment, states that the 30-day average percent removal of CBOD₅ and TSS shall not be less than 85 percent. Consistent with the prior order, Order No. R9-2012-0012, this Order contains limitations requiring an average of 85 percent removal of CBOD₅ and TSS over each calendar month.

The secondary treatment regulations at 40 CFR part 133 also require that pH be maintained between 6.0 and 9.0 standard units.

These TBELs based on secondary treatment standards are applicable to each of the POTWs (J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP) prior to the commingling of their respective effluents with any other wastewater. Thus, compliance with these effluent limitations must be determined at Monitoring Locations M-001A, M-001B, M-001C, and M-001D, respectively, upstream of the location where these wastewaters commingle with other wastewaters.

Section 122.45(d) of 40 CFR require that all permit limitations be expressed, unless impracticable, as average monthly effluent limitations (AMELs) and average weekly effluent limitations (AWELs) for POTWs. TBELs based on secondary treatment standards for CBOD₅, TSS, and pH are summarized in Table F-13 below, applying AMELs in lieu of 30-day average and AWELs in lieu of 7-day average.

Table F-13. Summary of TBELs Based on Secondary Treatment Standards

Parameter	Unit	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Minimum Effluent Limitation	Instantaneous Maximum Effluent Limitation
CBOD ₅	mg/L	25	40	--	--
CBOD ₅	% Removal	≥85	--	--	--
TSS	mg/L	30	45	--	--
TSS	% Removal	≥85	--	--	--
pH	standard units	--	--	6.0	9.0

4.2.2.2. **Ocean Plan.** The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. Therefore, the discharge of wastewater to the Pacific Ocean at Discharge Point No. 001 is subject to the Ocean Plan.

The Ocean Plan establishes water quality objectives, general requirements for management of waste discharged to the ocean, effluent quality requirements for waste discharges, discharge prohibitions, and general provisions. Further, Table 4 of the Ocean Plan establishes TBELs for POTWs and industrial discharges for which effluent limitation guidelines (ELGs) have not been established. This Order carries over numeric effluent limitations based on Table 4 of the Ocean Plan from Order No. R9-2012-0012 for the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, San Clemente WRP, San Juan Capistrano Groundwater Treatment Plant, SCWD Groundwater Recovery Facility, and Segunda Deshecha Runoff Plant at Monitoring Locations M-001A, M-001B, M-001C, M-001D, M-001E, M-001F, and M-001G. Numeric effluent limitations based on Table 4 of the Ocean Plan are being established in this Order for the Doheny Desalination Project at M-001H and for Ranch Water Filtration Plant at M-001I.

Because secondary treatment standards contain effluent limitations for TSS that are more stringent than Table 4 of the Ocean Plan, the more stringent effluent limitations for TSS have been applied to discharges from the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP.

Table 4 of the Ocean Plan requires dischargers to, as a monthly average, achieve a percent removal of 75 percent for suspended solids from the influent stream before discharging wastewater to the Pacific Ocean, except that the effluent limitation to be met shall not be less than 60 mg/L. The discharges generated at the Segunda Deshecha Runoff Plant, San Juan Capistrano Groundwater Treatment Plant, SCWD Groundwater Recovery Facility, and Doheny Desalination Project, and Ranch Water Filtration Plant are considered an industrial discharge and are subject to Ocean Plan Table 4 limits prior to commingling with other discharges to the SCOO. The TBELs from the Ocean Plan are summarized in Table F-14:

Table F-14. Summary of TBELs on Table 4 of the Ocean Plan

Parameter	Unit	Average Monthly Effluent Limitation	Average Weekly Effluent Limitation	Instantaneous Maximum Effluent Limitation	Instantaneous Maximum Effluent Limitation
Oil and Grease	mg/L	25	40	--	75
TSS	mg/L	60 ¹	--	--	--
TSS	% Removal	1	--	--	--
Settleable Solids	ml/L	1.0	1.5	--	3.0
Turbidity	NTU	75	100	--	225
pH	standard units	--	--	6.0	9.0

Note for Table F-14

- Table 4 of the Ocean Plan requires that the Dischargers shall, as a monthly average, remove 75 percent of suspended solids from the influent stream before discharging wastewater to the Pacific Ocean, except that the effluent limitation to be met shall not be less than 60 mg/L.

4.2.2.3. **Effluent Flow.** This Order carries over the effluent flow limitations from Order No. R9-2012-0012 for Monitoring Locations M-001A, M-001B, M-001C, M-001D, M-001E, M-001F, and M-001G. This Order also adds an effluent flow limitation for the Doheny Desalination Project at Monitoring Location M-001H and for the Ranch Water Filtration Plant at Monitoring Location M-001I. The flow limitation at Monitoring Location M-001H (5.0 MGD) is based on a RO recovery rate of 50% and a drinking water production flow rate of 5 MGD (5.0 MGD). Based on the added flow limitation at Monitoring Location M-001H, this Order increases the total permitted flow to the SJCOO (Monitoring Location M-001) from 38.78 MGD to 43.78 MGD. The flow limitation at Monitoring Location M-001I (1.34 MGD) is based on the Ranch Water Filtration Plant’s expected maximum discharge rate (see letter from SOCWA dated October 27, 2023). This added flow limitation at Monitoring Location M-001I does not increase the total permitted flow to the SJCOO (Monitoring Location M-001). The San Diego Water Board established effluent limitations for flow based on the design flow capacity/facility description of the Facilities as reported in the ROWD. The effluent flow limitations are a component of this Order to ensure proper operation and maintenance of treatment processes and systems.¹⁶ Proper operation includes ensuring flows stay within the

¹⁶ Section 6.3.5.2 of this Order also requires the Discharger to submit a treatment plant capacity report to the San Diego Water Board showing how flow volumes will be prevented from exceeding existing capacity or how capacity will be increased four years prior to reaching POTW design capacity.

design capacity of the process treatment units¹⁷ and conveyance systems.¹⁸ Operating beyond the design capacity may result in insufficient treatment and/or discharges that threaten beneficial uses. Furthermore, federal regulations require that NPDES permit effluent limitations, standards, or prohibitions for POTWs be calculated based on design flow.¹⁹ In compliance with applicable regulations, the mass-based effluent limitations in this Order are calculated based on design flow of the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP.

4.3. Water Quality-Based Effluent Limitations (WQBELs)

4.3.1. Scope and Authority

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

Section 122.44(d)(1)(i) of 40 CFR requires 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, WQBELs must be established using: (1) USEPA criteria guidance under the federal CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed State criterion or policy interpreting the State's narrative criterion, supplemented with other relevant information, as provided in 40 CFR section 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 Ocean 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 Ocean Plan.

4.3.2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan and Ocean Plan designate beneficial uses, establish water quality objectives, and contain implementation programs and policies to achieve those objectives for all waters.

4.3.2.1. Basin Plan. The beneficial uses specified in the Basin Plan applicable to the Pacific Ocean are summarized in section 3.3.1 of this Fact Sheet.

¹⁷ See 40 CFR section 122.41 (e).

¹⁸ See 40 CFR section 122.41 (e).

¹⁹ See 40 CFR section 122.45 (b)(1).

The Basin Plan water quality objective for dissolved oxygen applicable to ocean waters is stated as follows: “The dissolved oxygen concentration in ocean waters shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.”

The Basin Plan states, “The pH value shall not be changed at any time more than 0.2 pH units from that which occurs naturally.”

- 4.3.2.2. **Ocean Plan.** The beneficial uses specified in the Ocean Plan for the Pacific Ocean are summarized in section 3.3.2 of this Fact Sheet. The Ocean Plan also includes water quality objectives for the ocean receiving water for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity.

Table 3 of the Ocean Plan includes the following water quality objectives for toxic pollutants and whole effluent toxicity (WET):

- Six-month median, daily maximum, and instantaneous maximum objectives for 19 chemicals and chemical characteristics, including total chlorine residual, for the protection of marine aquatic life.
- 30-day average objectives for 20 non-carcinogenic chemicals for the protection of human health. These have been applied as AMELs.
- 30-day average objectives for 42 carcinogenic chemicals for the protection of human health. These have been applied as AMELs.
- Daily maximum objectives for acute and chronic toxicity.

4.3.3. **Determining the Need for WQBELs**

The San Diego Water Board evaluated the need for effluent limitations for non-conventional and toxic pollutant parameters, based on water quality objectives in Table 3 of the Ocean Plan. The evaluation was performed in accordance with 40 CFR section 122.44(d) and guidance for statistically determining the “reasonable potential” for a discharged pollutant to exceed an objective, as outlined in the revised *Technical Support Document for Water Quality-based Toxics Control* (TSD; EPA/505/2-90-001, 1991) and the Ocean Plan Reasonable Potential Analysis (RPA) Amendment that was adopted by the State Water Board on April 21, 2005. The statistical approach combines knowledge of effluent variability (as estimated by a coefficient of variation) with the uncertainty due to a limited amount of effluent data to estimate a maximum effluent value at a high level of confidence. This estimated maximum effluent value is based on a lognormal distribution of daily effluent values. Projected receiving water values (based on the estimated maximum effluent value or the reported maximum effluent value and minimum probable initial dilution) can then be compared to the appropriate objective to determine potential for an exceedance of that objective and the need for an effluent limitation. According to the Ocean Plan amendment, the RPA can yield three endpoints: 1) Endpoint 1, an effluent limitation is required and monitoring is required; 2) Endpoint 2, an effluent limitation is not required and the San Diego Water Board may require monitoring; and 3) Endpoint 3, the RPA is

inconclusive, monitoring is required, and an existing effluent limitation may be retained or a permit reopener clause may be included to allow inclusion of an effluent limitation if future monitoring warrants the inclusion. Endpoint 3 is typically the result when there are fewer than 16 data points and all are censored data (i.e., below quantitation or method detection levels (MDLs) for an analytical procedure).

The implementation provisions for Table 3 of the Ocean Plan specify that the minimum probable initial dilution is the lowest average initial dilution within any single month of the year. Dilution estimates are to be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents, of sufficient strength to influence the initial dilution process, flow across the discharge structure. Before establishing a dilution credit for a discharge, it must first be determined if, and how much, receiving water is available to dilute the discharge.

In 2000, the Dischargers determined the minimum probable initial dilution factor to be 100:1 for the discharge of up to 30 MGD of secondary-treated wastewater and 1.05 MGD of waste brine through the SJCOO, using the computer model UMERGE. An initial dilution factor of 100 was used in prior Order Nos. R9-2000-0013 and R9-2006-0054.

In 2012, the San Diego Water Board reevaluated the initial dilution and determined the minimum probable initial dilution factor to be 162:1 for the discharge of up to 38.78 MGD of effluent through the SJCOO using the U.S. Environmental Protection Agency (USEPA) approved computer modeling package Visual Plumes with the UM3 model. An initial dilution factor of 162:1 represents an increase from the initial dilution factor of 100:1 assigned in the prior Order Nos. R9-2000-0013 and R9-2006-0054 and would result in WQBELs that are less stringent than those established in the prior Order Nos. R9-2000-0013 and R9-2006-0054. An initial dilution factor of 100:1 was used in the prior Order No. R9-2012-0012 for calculating WQBELs. Additional details of the 2012 initial dilution computer modeling results are provided in Attachment H of Order No. R9-2012-0012 and in the San Diego Water Board records.

On December 31, 2018, SOCWA submitted the *Hydrodynamic Modeling Study of Dilution Capacity for the San Juan Creek and Aliso Creek Ocean Outfalls*, dated May 14, 2018, to the San Diego Water Board. A supplemental document titled *Plumes 18b Dilution Sensitivity Analysis of Combined Discharges of SOCWA Wastewater and Brine from the Doheny Desalination Project* was submitted by SOCWA in January 2020. Based on the 2018 study and supplemental document, the minimum probable initial dilution factor of 162:1 with a 34.9-meter horizontal spread was calculated using the previously permitted flow rate of 38.78 MGD and the October 2013 receiving water data for determining the lowest average initial dilution within any single month of the year. As in the 2012 initial dilution model, the new calculated dilution factor (162:1) represents an increase from the current dilution factor (100:1) and would result in WQBELs that are less stringent than those established in the prior Order Nos. R9-2000-0013, R9-2006-0054, and R9-

2012-0012. Also, in SOCWA's April 2021 ROWD, SOCWA states, "In the absence of an antidegradation analysis for this increased initial dilution, SOCWA requests that the 100:1 initial dilution currently assigned within Order No. R9-2012-0012 [previous order] be retained in the updated SJCOO NPDES permit." Thus, for the purposes of developing this Order, an initial dilution factor of 100:1 is used in this Order.

Conventional pollutants were not considered as part of the RPA. TBELs for these pollutants are included in this Order as described in section 4.2 of this Fact Sheet.

Using the RPcalc 2.0 software tool developed by the State Water Board for conducting RPAs, the San Diego Water Board has conducted the RPA for the constituents listed in Table F-15 below. To ensure that the most conservative data was used for the RPA, the projected combined effluent data was calculated using the most conservative data from the Doheny Desalination Project pilot study (assuming a 60% recovery rate) and the most recent five years of data for the SJCOO at Monitoring Location M-001. The flow-weighted data combined for the commingled effluent was then calculated using the following equation:

$$C = [(C1 * Q1) + (C2 * Q2)] / (Q1 + Q2) \text{ where,}$$

C = the concentration of the constituent for the combined discharge ($\mu\text{g/L}$)
C1 = the maximum effluent concentration (MEC) of the constituent from the SJCOO from the last five years ($\mu\text{g/L}$)
Q1 = previously permitted flow from the SJCOO 38.78 MGD)
C2 = the concentration of the constituent from the Doheny Desalination Project pilot study ($\mu\text{g/L}$)
Q2 = proposed permitted flow for the Doheny Desalination Project (5.0 MGD)

After calculating the flow-weighted data for the proposed discharge, this data was compared to the MECs from Monitoring Location M-001. The greater of the two values was then used for the RPA. Arsenic, cadmium, chromium VI, and silver were the only constituents for which the projected flow-weighted value was greater than the MECs from the SJCOO data. Therefore, the calculated flow-weighted data was used to conduct the RPA for arsenic, cadmium, chromium VI, and silver, and monitoring data from Monitoring Location M-001 was used for all other constituents.

For constituents that do not display reasonable potential, this Order includes desirable maximum effluent concentrations (MECs) which were derived using effluent limitation determination procedures described below and are referred to in this Order as "performance goals." A narrative limit statement to comply with all Ocean Plan objectives requirements is provided for those parameters not displaying reasonable potential. The Dischargers are required to monitor for these constituents as stated in the Monitoring and Reporting Program (MRP, Attachment E) of this Order in order to gather data for use in RPAs for future permit reissuances.

Effluent data provided in the Dischargers' monitoring reports for the Facilities from January 2016 through October 2021 were used in the RPA. The most recent 5 years of effluent data was used for the RPA since it best represents current facility operations and discharge. A minimum probable initial dilution of 100:1 was considered in this evaluation.

A summary of the RPA results is provided in Table F-15:

Table F-15. RPA Results Summary

Parameter	Units	N ¹	MEC ^{2,3}	Most Stringent Criteria	Background	RPA Endpoint ⁴
Arsenic	µg/L	15	5	8 ⁵	3 ⁶	2
Cadmium	µg/L	15	<0.01	1 ⁵	0	3
Chromium (VI)	µg/L	16	0.03	2 ⁵	0	3
Copper	µg/L	15	33	3 ⁵	2 ⁶	2
Lead	µg/L	15	1.8	2 ⁵	0	2
Mercury	µg/L	16	0.1	0.04 ⁵	0.0005 ⁶	2
Nickel	µg/L	15	15	5 ⁵	0	2
Selenium	µg/L	15	3.4	15 ⁵	0	2
Silver	µg/L	15	0.3	0.7 ⁵	0.16 ⁶	3
Zinc	µg/L	15	150	20 ⁵	8 ⁶	2
Cyanide	µg/L	15	7.1	1 ⁵	0	3
Total Chlorine Residual	µg/L	---	---	2 ⁵	0	7
Ammonia	µg/L	108	36,200	600 ⁵	0	2
Acute Toxicity	TUa	8	---	0.3 ⁹	0	3
Chronic Toxicity	TUc	31 ¹⁰	>1000	1 ⁹	0	1
Phenolic Compounds	µg/L	15	<0.031	30 ⁵	0	3
Chlorinated Phenolics	µg/L	16	108	1 ⁵	0	1
Endosulfan	µg/L	15	0.06	0.009 ⁵	0	2
Endrin	µg/L	15	<0.0007	0.002 ⁵	0	3
HCH	µg/L	15	<0.0008	0.004 ⁵	0	3
Radioactivity	picocuries per liter (pCi/L)	15	42	11	0	3
Acrolein	µg/L	14	<0.76	220 ¹²	0	3
Antimony	µg/L	14	7.8	1,200 ¹²	0	2
Bis(2-chloroethoxyl)methane	µg/L	14	<0.059	4.4 ¹²	0	3
Bis(2-chloroisopropyl)ether	µg/L	14	<0.04	1,200 ¹²	0	3
Chlorobenzene	µg/L	14	<0.058	570 ¹²	0	3
Chromium (III)	µg/L	13	<0.0012	190,000 ¹²	0	3
Di-n-butyl phthalate	µg/L	14	0.79	3,500 ¹²	0	3
Dichlorobenzenes	µg/L	14	<0.043	5,100 ¹²	0	3
Diethyl phthalate	µg/L	14	<0.094	33,000 ¹²	0	3

Parameter	Units	N ¹	MEC ^{2,3}	Most Stringent Criteria	Background	RPA Endpoint ⁴
Dimethyl phthalate	µg/L	14	<0.06	820,000 ¹²	0	3
4,6-Dinitro-2-methylphenol	µg/L	14	<0.84	220 ¹²	0	3
2,4-Dinitrophenol	µg/L	14	<0.96	4 ¹²	0	3
Ethylbenzene	µg/L	14	<0.11	4,100 ¹²	0	3
Fluoranthene	µg/L	14	<0.041	15 ¹²	0	3
Hexachlorocyclopentadiene	µg/L	14	<0.03	58 ¹²	0	3
Nitrobenzene	µg/L	14	<0.06	4.9 ¹²	0	3
Thallium	µg/L	14	4.2	2 ¹²	0	3
Toluene	µg/L	14	<0.06	85,000 ¹²	0	3
Tributyltin	µg/L	14	<0.001	0.0014 ¹²	0	3
1,1,1-Trichloroethane	µg/L	14	<0.08	540,000 ¹²	0	3
Acrylonitrile	µg/L	14	<0.19	0.1 ¹²	0	3
Aldrin	µg/L	14	<0.0007	0.000022 ¹²	0	3
Benzene	µg/L	14	<0.12	5.9 ¹²	0	3
Benzidine	µg/L	14	<0.73	0.000069 ¹²	0	3
Beryllium	µg/L	14	<0.05	0.033 ¹²	0	3
Bis(2-chloroethyl) ether	µg/L	14	<0.038	0.045 ¹²	0	3
Bis(2-ethylhexyl) phthalate	µg/L	14	<0.59	3.5 ¹²	0	3
Carbon tetrachloride	µg/L	14	<0.09	0.9 ¹²	0	3
Chlordane	µg/L	14	<0.0003	0.000023 ¹²	0	3
Chlorodibromomethane	µg/L	14	0.06	8.6 ¹²	0	3
Chloroform	µg/L	14	<0.11	130 ¹²	0	3
DDT	µg/L	14	<0.0005	0.00017 ¹²	0	3
1,4-Dichlorobenzene	µg/L	9	<0.24	18 ¹²	0	3
3,3-Dichlorobenzidine	µg/L	14	<0.59	0.0081 ¹²	0	3
1,2-Dichloroethane	µg/L	14	<0.12	28 ¹²	0	3
1,1-Dichloroethylene	µg/L	14	<0.07	0.9 ¹²	0	3
Dichlorobromomethane	µg/L	14	<0.09	6.2 ¹²	0	3
Dichloromethane (Methylene Chloride)	µg/L	14	<0.1	450 ¹²	0	3
1,3-Dichloropropene (1,3-Dichloropropylenes)	µg/L	14	<0.1	8.9 ¹²	0	3
Dieldrin	µg/L	14	<0.0005	0.00004 ¹²	0	3
2,4-Dinitrotoluene	µg/L	14	<0.03	2.6 ¹²	0	3
1,2-Diphenylhydrazine	µg/L	14	<0.044	0.16 ¹²	0	3
Halomethanes	µg/L	7	<0.12	130 ¹²	0	3
Heptachlor	µg/L	14	<0.0007	0.00005 ¹²	0	3
Heptachlor Epoxide	µg/L	14	<0.0004	0.00002 ¹²	0	3

Parameter	Units	N ¹	MEC ^{2,3}	Most Stringent Criteria	Background	RPA Endpoint ⁴
Hexachlorobenzene	µg/L	14	<0.01	0.00021 ¹²	0	3
Hexachlorobutadiene	µg/L	14	<0.05	14 ¹²	0	3
Hexachloroethane	µg/L	14	<0.05	2.5 ¹²	0	3
Isophorone	µg/L	14	<0.04	730 ¹²	0	3
N-nitrosodimethylamine	µg/L	14	<0.063	7.3 ¹²	0	3
N-nitrosodi-N-propylamine	µg/L	14	<0.03	0.38 ¹²	0	3
N-nitrosodiphenylamine	µg/L	7	<0.13	2.5 ¹²	0	3
PAHs	µg/L	14	0.041	0.0088 ¹²	0	3
PCBs	µg/L	14	<0.02	0.000019 ¹²	0	3
TCDD equivalents	µg/L	12	3.96E-06	3.9E-09 ¹²	0	1
1,1,2,2-Tetrachloroethane	µg/L	14	<0.06	2.3 ¹²	0	3
Tetrachloroethylene (Tetrachloroethene)	µg/L	14	<0.09	2 ¹²	0	3
Toxaphene	µg/L	14	<0.01	0.00021 ¹²	0	3
Trichloroethylene (Trichloroethene)	µg/L	14	<0.10	27 ¹²	0	3
1,1,2-Trichloroethane	µg/L	14	<0.08	9.4 ¹²	0	3
2,4,6-Trichlorophenol	µg/L	14	<0.03	0.29 ¹²	0	3
Vinyl Chloride	µg/L	14	<0.08	36 ¹²	0	3

Notes for Table F-15

- Number of data points available for the RPA.
- If there is a detected value, the highest reported value is summarized in the table. If there are no detected values, the lowest MDL is summarized in the table.
- Note that the reported MEC does not account for dilution. The RPA does account for dilution; therefore, it is possible for a parameter with an MEC in exceedance of the most stringent criteria not to present a reasonable potential (i.e., Endpoint 2).
- End Point 1 – Reasonable potential determined, limit required, monitoring required.
End Point 2 – Discharge determined not to have reasonable potential; monitoring may be established.
End Point 3 – RPA was inconclusive, carry over previous limitations if applicable, and establish monitoring
- Based on the six-Month Median in the Table 3 of the Ocean Plan.
- Background concentrations contained in Table 5 of the Ocean Plan.
- Chlorination of effluent only occurs prior to recycling. Off-spec water from the Doheny Desalination Project may be discharged to the SJCOO after chlorination; however, off-spec water from Doheny Desalination Project will be commingled with effluent from the other facilities prior to discharge to the outfall. Based on this information, no reasonable potential exists.
- Acute toxicity monitoring was not required in Order No. R9-2012-0012 and thus no monitoring data for acute toxicity was provided by the Dischargers.
- Based on the Daily Maximum in Table 3 of the Ocean Plan.

10. Includes results for Giant Kelp (germination and growth).
11. Not to exceed limits specified in title 17, division 1, chapter 5, subchapter 4, group 3, article 3, section 30253 of the CCR. Levels of radioactivity that exceed the applicable criteria are not expected in the discharge.
12. Based on the 30-Day Average in Table 3 of the Ocean Plan.

Endpoint 1

Reasonable potential to cause or contribute to an exceedance of water quality objectives contained within the Ocean Plan (i.e., Endpoint 1) was determined for chronic toxicity, chlorinated phenolics, and TCDD equivalents and effluent limitations (based on the initial dilution of 100:1, as discussed below) have been retained from Order No. R9-2012-0012 or have been established in this Order.

The MRP (Attachment E) is designed to obtain additional information for these constituents to determine if reasonable potential exists for these constituents in future permit renewals and/or updates.

Endpoint 2

Consistent with 40 CFR section 122.44(l)(2)(i)(B), effluent limitations from the previous Order, Order No. R9 2012-0012, were not retained for constituents that were not deemed to have reasonable potential to cause an exceedance of a water quality objective. Instead, performance goals have been assigned for these constituents. Except as discussed below, parameters for which Endpoint 2 was concluded are determined not to have reasonable potential, thus this Order does not establish effluent limitations for these parameters.

Endpoint 3

For parameters for which Endpoint 3 was concluded, reasonable potential was inconclusive. For parameters for which Endpoint 3 was concluded and previous effluent limitations had not been established in the prior Order No. R9-2012-0012, performance goals have been retained. For parameters for which Endpoint 3 was concluded and previous effluent limitations had been established in Order No. R9-2012-0012, effluent limitations have been retained. Endpoint 3 was not determined for any parameters with previous effluent limitations established in Order No. R9-2012-0012.

Bacterial Indicators

This Order does not include effluent limitations for bacterial indicators for the following reasons:

- The discharge point (Discharge Point No. 001) is located at the terminus of the SJCOO, 10,334 feet offshore at a depth of 100 feet.
- The minimum probable initial dilution factor is 100:1.
- The San Diego Water Board is not aware of any shellfish harvesting within the zone of initial dilution of the SJCOO.

- There are no kelp beds within the zone of initial dilution of the SJCOO.
- Each year between January 2016 and March 2021:
 - One hundred percent of the nearshore and offshore receiving water monitoring results for total coliform complied with the Ocean Plan single sample maximum,
 - Between 96 percent to 100 percent of the nearshore and offshore receiving water monitoring results for fecal coliform complied with the Ocean Plan single sample maximum, and
 - Between 99 percent to 100 percent of the nearshore and offshore receiving water monitoring results for enterococcus complied with the Ocean Plan single sample maximum.

4.3.4. WQBEL Calculations

4.3.4.1. From the Table 3 water quality objectives of the Ocean Plan, effluent limitations and performance goals are calculated according to the following equation for all pollutants, except for acute toxicity (if applicable) and radioactivity:

- Ce = Co + Dm (Co – Cs) where,
- Ce = the effluent limitation (µg/L)
- Co = the water quality objective to be met at the completion of initial dilution (µg/L)
- Cs = background seawater concentration
- Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

4.3.4.2. As discussed in section 4.3.3 above, the Dm of 100:1 was retained from the previous Order, Order No. R9-2012-0012.

4.3.4.3. Table 5 of the Ocean Plan establishes background concentrations for some pollutants to be used when determining reasonable potential (represented as “Cs”). In accordance with Table 3 implementing procedures of the Ocean Plan, Cs equals zero for all pollutants not established in Table 5 of the Ocean Plan. The background concentrations provided in Table 5 of the Ocean Plan are summarized in Table F-16 below:

Table F-16. Pollutants Having Background Concentrations

Pollutant	Background Seawater Concentration
Arsenic, Total Recoverable	3 µg/L
Copper, Total Recoverable	2 µg/L
Mercury, Total Recoverable	0.0005 µg/L
Silver, Total Recoverable	0.16 µg/L
Zinc, Total Recoverable	8 µg/L

4.3.4.4. As an example, effluent limitations for total chlorine residual were determined as follows.

Water quality objectives from the Ocean Plan for chlorinated phenolics are:

Table F-17. Example Parameter Water Quality Objectives

Parameter	Units	Six-Month Median	Daily Maximum	Instantaneous Maximum
Chlorinated Phenolics	µg/L	1	4	10

Using the equation, $C_e = C_o + D_m (C_o - C_s)$, effluent limitations/performance goals are calculated as follows.

Chlorinated Phenolics:

$$C_e = 1 + 100 (1 - 0) = 101 \text{ (Six-Month Median)}$$

$$C_e = 4 + 100 (4 - 0) = 404 \text{ (Daily Maximum)}$$

$$C_e = 10 + 100 (10 - 0) = 1,010 \text{ (Instantaneous Maximum)}$$

Based on the implementing procedures described above, effluent limitations and performance goals have been calculated for all parameters in Table 3 of the Ocean Plan and incorporated into this Order.

- 4.3.4.5. Section 122.45(f)(1) of the 40 CFR requires effluent limitations be expressed in terms of mass, with some exceptions, and 40 CFR section 122.45(f)(2) allows pollutants that are limited in terms of mass to additionally be limited in terms of other units of measurement. However, section III.C.4.j of the Ocean Plan requires that mass limitations be established for all parameters in Table 3 of the Ocean Plan. This Order includes effluent limitations expressed in terms of mass and concentration. In addition, pursuant to the exceptions to mass limitations provided in 40 CFR section 122.45(f)(1), some effluent limitations are not expressed in terms of mass, such as pH and temperature, and when the applicable standards are expressed in terms of concentration (e.g., California Toxics Rule criteria and maximum contaminant levels) and mass limitations are not necessary to protect the beneficial uses of the receiving water.

Mass-based effluent limitations were calculated using the following equation:
lbs/day = permitted flow (MGD) x pollutant concentration (mg/L) x 8.34

- 4.3.4.6. Based on the results of the RPA, a summary of the WQBELs established in this Order are provided in the table below.

Table F-18. Summary of WQBELs at Monitoring Location M-001

Parameter	Unit	Six-Month Effluent Limitation ¹	Average Monthly Effluent Limitation ¹	Maximum Daily Effluent Limitation ¹	Instantaneous Maximum Effluent Limitation ¹
Chronic Toxicity ^{2,3}	“Pass”/“Fail”	--	--	“Pass”	--
Chlorinated Phenolics	µg/L	1.0E+02	--	4.0E+02	1.0E+03

Parameter	Unit	Six-Month Median Effluent Limitation ¹	Average Monthly Effluent Limitation ¹	Maximum Daily Effluent Limitation ¹	Instantaneous Maximum Effluent Limitation ¹
Chlorinated Phenolics	lbs/day ⁴	3.3E+01	--	1.3E+02	3.3E+02
TCDD Equivalents	µg/L	--	3.9E-07	--	--
TCDD Equivalents	lbs/day ⁴	--	1.3E-07	--	--

Notes for Table F-18

1. The scientific “E” notation is used to express certain values. In scientific “E” notation, the number following the “E” indicates that position of the decimal point in the value. Negative numbers after the “E” indicate that the value is less than 1, and positive numbers after the “E” indicate that the value is greater than 1. In this notation, a value of 6.1E-02 represents 6.1 x 10⁻² or 0.061, 6.1E+02 represents 6.1 x 10² or 610, and 6.1E+00 represents 6.1 x 10⁰ or 6.1.
2. As specified in section 7.15 of this Order and section 3.3 of the MRP (Attachment E).
3. A numeric WQBEL is established because effluent data showed that there is reasonable potential for the effluent to cause or contribute to an exceedance of the chronic toxicity water quality objective. The chronic toxicity effluent limitation is protective of both the numeric acute and chronic toxicity 2019 Ocean Plan water quality objectives. The effluent limitation will be implemented using *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995). Chronic toxicity expressed as Toxic Units Chronic (TUc) = 100/NOEC, where NOEC (No Observed Effect Concentration) is the maximum percent effluent or receiving water that causes no observable effect on a test organism.
4. The MER limitation, in lbs/day, was calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is 38.78 MGD based on the previous permitted flow for the SJCOO and C is the concentration (mg/L). See Attachment F, section 4.4.1 for more information on the use of the previous permitted flow for the MERs.

4.3.5. Performance Goals

Constituents that do not have reasonable potential to cause or contribute to an exceedance of water quality objectives have been assigned performance goals. Pursuant to Water Code section 13383, this Order includes monitoring and reporting requirements related to performance goals. Performance goals serve to maintain existing treatment levels and effluent quality and supports State and federal antidegradation policies. Additionally, performance goals provide all interested parties with information regarding the expected level of pollutants in the discharge that should not be exceeded in order to maintain compliance with the water quality objectives established in the Ocean Plan in the ocean receiving waters and the overall pollutant control performance of the Facilities. Performance goals are not effluent limitations or standards for the regulation of the discharge. Effluent concentrations above the performance goals will not be

considered as violations of this Order but serve as indicators that the effluent may be causing or contributing to an exceedance of water quality objectives. However, any two consecutive exceedances of the performance goals will trigger an investigation into the cause of the exceedance. If the exceedance persists in three successive monitoring events, the Dischargers are required submit a Performance Goal Exceedance Investigation Work Plan to the San Diego Water Board within 30 days of the Dischargers becoming aware of the third successive exceedance. The Performance Goal Exceedance Investigation Work Plan is required to outline the investigative steps being taken, whether outside technical expertise is being retained to assist in the investigation, and the proposed schedule for completing a Performance Goal Exceedance Report. The Performance Goal Exceedance Report is required to include a description of the nature of the exceedance(s), the results of the investigation including the cause of the exceedance(s), the corrective actions taken, any proposed corrective measures, and a schedule for implementation, if necessary. Repeated exceedances of performance goals may prompt the San Diego Water Board to reopen and amend this Order to replace performance goals for constituents of concern with effluent limitations, or the San Diego Water Board may coordinate such actions with the next permit reissuance. The Dischargers are in violation of this Order if it does not comply with the performance goal investigation and reporting requirements, when required by the terms of this Order. A summary of the performance goals is provided in Table F-19 below.

Table F-19. Summary of Performance Goals at Monitoring Location M-001

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
Arsenic, Total Recoverable	µg/L	5.1E+02	--	2.9E+03	7.8E+03
Arsenic, Total Recoverable	lbs/day ²	1.6E+02	--	9.5E+02	2.5E+03
Cadmium, Total Recoverable	µg/L	1.0E+02	--	4.0E+02	1.0E+03
Cadmium, Total Recoverable	lbs/day ²	3.3E+01	--	1.3E+02	3.3E+02
Chromium VI, Total Recoverable ³	µg/L	2.0E+02	--	8.1E+02	2.0E+03
Chromium VI, Total Recoverable ³	lbs/day ²	6.5E+01	--	2.6E+02	6.5E+02
Copper, Total Recoverable	µg/L	1.0E+02	--	1.0E+03	2.8E+03
Copper, Total Recoverable	lbs/day ²	3.3E+01	--	3.3E+02	9.2E+02
Lead, Total Recoverable	µg/L	2.0E+02	--	8.1E+02	2.0E+03
Lead, Total Recoverable	lbs/day ²	6.5E+01	--	2.6E+02	6.5E+02
Mercury, Total Recoverable	µg/L	4.0E+00	--	1.6E+01	4.0E+01
Mercury, Total Recoverable	lbs/day ²	1.3E+00	--	5.2E+00	1.3E+01
Nickel, Total Recoverable	µg/L	5.1E+02	--	2.0E+03	5.1E+03
Nickel, Total Recoverable	lbs/day ²	1.6E+02	--	6.5E+02	1.6E+03
Selenium, Total Recoverable	µg/L	1.5E+03	--	6.1E+03	1.5E+04
Selenium, Total Recoverable	lbs/day ²	4.9E+02	--	2.0E+03	4.9E+03

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
Silver, Total Recoverable	µg/L	5.5E+01	--	2.7E+02	6.9E+02
Silver, Total Recoverable	lbs/day ²	1.8E+01	--	8.6E+01	2.2E+02
Zinc, Total Recoverable	µg/L	1.2E+03	--	7.3E+03	1.9E+04
Zinc, Total Recoverable	lbs/day ²	3.9E+02	--	2.4E+03	6.3E+03
Cyanide, Total	µg/L	1.0E+02	--	4.0E+02	1.0E+03
Cyanide, Total	lbs/day ²	3.3E+01	--	1.3E+02	3.3E+02
Total Chlorine Residual	µg/L	2.0E+02	--	8.1E+02	6.1E+03
Total Chlorine Residual	lbs/day ²	6.5E+01	--	2.6E+02	2.0E+03
Ammonia, Total (as N)	µg/L	6.1E+04	--	2.4E+05	6.1E+05
Ammonia, Total (as N)	lbs/day ²	2.0E+04	--	7.8E+04	2.0E+05
Phenolic Compounds (non-chlorinated)	µg/L	3.0E+03	--	1.2E+04	3.0E+04
Phenolic Compounds (non-chlorinated)	lbs/day ²	9.8E+02	--	3.9E+03	9.8E+03
Endosulfan	µg/L	9.1E-01	--	1.8E+00	2.7E+00
Endosulfan	lbs/day ²	2.9E-01	--	5.9E-01	8.8E-01
Endrin	µg/L	2.0E-01	--	4.0E-01	6.1E-01
Endrin	lbs/day ²	6.5E-02	--	1.3E-01	2.0E-01
HCH (BHC)	µg/L	4.0E-01	--	8.1E-01	1.2E+00
HCH (BHC)	lbs/day ²	1.3E-01	--	2.6E-01	3.9E-01
Radioactivity	picocuries per liter (pCi/L)	4	--	--	--
Acrolein	µg/L	--	2.2E+04	--	--
Acrolein	lbs/day ²	--	7.2E+03	--	--
Antimony	µg/L	--	1.2E+05	--	--
Antimony	lbs/day ²	--	3.9E+04	--	--
Bis(2-chloroethoxy) Methane	µg/L	--	4.4E+02	--	--
Bis(2-chloroethoxy) Methane	lbs/day ²	--	1.4E+02	--	--
Bis(2-chloroisopropyl) Ether	µg/L	--	1.2E+05	--	--
Bis(2-chloroisopropyl) Ether	lbs/day ²	--	3.9E+04	--	--
Chlorobenzene	µg/L	--	5.8E+04	--	--
Chlorobenzene	lbs/day ²	--	1.9E+04	--	--
Chromium (III), Total Recoverable ³	µg/L	--	1.9E+07	--	--
Chromium (III), Total Recoverable ³	lbs/day ²	--	6.2E+06	--	--
Di-n-butyl Phthalate	µg/L	--	3.5E+05	--	--
Di-n-butyl Phthalate	lbs/day ²	--	1.1E+05	--	--

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
Dichlorobenzenes	µg/L	--	5.2E+05	--	--
Dichlorobenzenes	lbs/day ²	--	1.7E+05	--	--
Diethyl Phthalate	µg/L	--	3.3E+06	--	--
Diethyl Phthalate	lbs/day ²	--	1.1E+06	--	--
Dimethyl Phthalate	µg/L	--	8.3E+07	--	--
Dimethyl Phthalate	lbs/day ²	--	2.7E+07	--	--
4,6-dinitro-2-methylphenol	µg/L	--	2.2E+04	--	--
4,6-dinitro-2-methylphenol	lbs/day ²	--	7.2E+03	--	--
2,4-dinitrophenol	µg/L	--	4.0E+02	--	--
2,4-dinitrophenol	lbs/day ²	--	1.3E+02	--	--
Ethylbenzene	µg/L	--	4.1E+05	--	--
Ethylbenzene	lbs/day ²	--	1.3E+05	--	--
Fluoranthene	µg/L	--	1.5E+03	--	--
Fluoranthene	lbs/day ²	--	4.9E+02	--	--
Hexachlorocyclopentadiene	µg/L	--	5.9E+03	--	--
Hexachlorocyclopentadiene	lbs/day ²	--	1.9E+03	--	--
Nitrobenzene	µg/L	--	4.9E+02	--	--
Nitrobenzene	lbs/day ²	--	1.6E+02	--	--
Thallium, Total Recoverable	µg/L	--	2.0E+02	--	--
Thallium, Total Recoverable	lbs/day ²	--	6.5E+01	--	--
Toluene	µg/L	--	8.6E+06	--	--
Toluene	lbs/day ²	--	2.8E+06	--	--
Tributyltin	µg/L	--	1.4E-01	--	--
Tributyltin	lbs/day ²	--	4.6E-02	--	--
1,1,1-trichloroethane	µg/L	--	5.5E+07	--	--
1,1,1-trichloroethane	lbs/day ²	--	1.8E+07	--	--
Acrylonitrile	µg/L	--	1.0E+01	--	--
Acrylonitrile	lbs/day ²	--	3.3E+00	--	--
Aldrin	µg/L	--	2.2E-03	--	--
Aldrin	lbs/day ²	--	7.2E-04	--	--
Benzene	µg/L	--	6.0E+02	--	--
Benzene	lbs/day ²	--	1.9E+02	--	--
Benzidine	µg/L	--	7.0E-03	--	--
Benzidine	lbs/day ²	--	2.3E-03	--	--
Beryllium, Total Recoverable	µg/L	--	3.3E+00	--	--
Beryllium, Total Recoverable	lbs/day ²	--	1.1E+00	--	--
Bis(2-chloroethyl) Ether	µg/L	--	4.5E+00	--	--
Bis(2-chloroethyl) Ether	lbs/day ²	--	1.5E+00	--	--

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
Bis(2-ethylhexyl) Phthalate	µg/L	--	3.5E+02	--	--
Bis(2-ethylhexyl) Phthalate	lbs/day ²	--	1.1E+02	--	--
Carbon Tetrachloride	µg/L	--	9.1E+01	--	--
Carbon Tetrachloride	lbs/day ²	--	2.9E+01	--	--
Chlordane	µg/L	--	2.3E-03	--	--
Chlordane	lbs/day ²	--	7.5E-04	--	--
Chlorodibromomethane (Dibromochloromethane)	µg/L	--	8.7E+02	--	--
Chlorodibromomethane (Dibromochloromethane)	lbs/day ²	--	2.8E+02	--	--
Chloroform	µg/L	--	1.3E+04	--	--
Chloroform	lbs/day ²	--	4.2E+03	--	--
Dichlorodiphenyltrichloroethane (DDT)	µg/L	--	1.7E-02	--	--
Dichlorodiphenyltrichloroethane (DDT)	lbs/day ²	--	5.6E-03	--	--
1,4-dichlorobenzene	µg/L	--	1.8E+03	--	--
1,4-dichlorobenzene	lbs/day ²	--	5.9E+02	--	--
3,3'-dichlorobenzidine	µg/L	--	8.2E-01	--	--
3,3'-dichlorobenzidine	lbs/day ²	--	2.6E-01	--	--
1,2-dichloroethane	µg/L	--	2.8E+03	--	--
1,2-dichloroethane	lbs/day ²	--	9.1E+02	--	--
1,1-dichloroethylene	µg/L	--	9.1E+01	--	--
1,1-dichloroethylene	lbs/day ²	--	2.9E+01	--	--
Dichlorobromomethane	µg/L	--	6.3E+02	--	--
Dichlorobromomethane	lbs/day ²	--	2.0E+02	--	--
Dichloromethane (Methylene Chloride)	µg/L	--	4.5E+04	--	--
Dichloromethane (Methylene Chloride)	lbs/day ²	--	1.5E+04	--	--
1,3-dichloropropene (1,3-Dichloropropylenes)	µg/L	--	9.0E+02	--	--
1,3-dichloropropene (1,3-Dichloropropylenes)	lbs/day ²	--	2.9E+02	--	--
Dieldrin	µg/L	--	4.0E-03	--	--
Dieldrin	lbs/day ²	--	1.3E-03	--	--
2,4-dinitrotoluene	µg/L	--	2.6E+02	--	--
2,4-dinitrotoluene	lbs/day ²	--	8.5E+01	--	--

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
1,2-diphenylhydrazine	µg/L	--	1.6E+01	--	--
1,2-diphenylhydrazine	lbs/day ²	--	5.2E+00	--	--
Halomethanes	µg/L	--	1.3E+04	--	--
Halomethanes	lbs/day ²	--	4.2E+03	--	--
Heptachlor	µg/L	--	5.1E-03	--	--
Heptachlor	lbs/day ²	--	1.6E-03	--	--
Heptachlor Epoxide	µg/L	--	2.0E-03	--	--
Heptachlor Epoxide	lbs/day ²	--	6.5E-04	--	--
Hexachlorobenzene	µg/L	--	2.1E-02	--	--
Hexachlorobenzene	lbs/day ²	--	6.9E-03	--	--
Hexachlorobutadiene	µg/L	--	1.4E+03	--	--
Hexachlorobutadiene	lbs/day ²	--	4.6E+02	--	--
Hexachloroethane	µg/L	--	2.5E+02	--	--
Hexachloroethane	lbs/day ²	--	8.2E+01	--	--
Isophorone	µg/L	--	7.4E+04	--	--
Isophorone	lbs/day ²	--	2.4E+04	--	--
N-nitrosodimethylamine	µg/L	--	7.4E+02	--	--
N-nitrosodimethylamine	lbs/day ²	--	2.4E+02	--	--
N-nitrosodi-N-propylamine	µg/L	--	3.8E+01	--	--
N-nitrosodi-N-propylamine	lbs/day ²	--	1.2E+01	--	--
N-nitrosodiphenylamine	µg/L	--	2.5E+02	--	--
N-nitrosodiphenylamine	lbs/day ²	--	8.2E+01	--	--
Polynuclear Aromatic Hydrocarbons (PAHs)	µg/L	--	8.9E-01	--	--
PAHs	lbs/day ²	--	2.9E-01	--	--
Polychlorinated Biphenyls (PCBs)	µg/L	--	1.9E-03	--	--
PCBs	lbs/day ²	--	6.2E-04	--	--
1,1,2,2-tetrachloroethane	µg/L	--	2.3E+02	--	--
1,1,2,2-tetrachloroethane	lbs/day ²	--	7.5E+01	--	--
Tetrachloroethylene (Tetrachloroethene)	µg/L	--	2.0E+02	--	--
Tetrachloroethylene (Tetrachloroethene)	lbs/day ²	--	6.5E+01	--	--
Toxaphene	µg/L	--	2.1E-02	--	--
Toxaphene	lbs/day ²	--	6.9E-03	--	--
Trichloroethylene (Trichloroethene)	µg/L	--	2.7E+03	--	--

Parameter	Unit	Six-Month Median ¹	Average Monthly ¹	Maximum Daily ¹	Instantaneous Maximum ¹
Trichloroethylene (Trichloroethene)	lbs/day ²	--	8.8E+02	--	--
1,1,2-trichloroethane	µg/L	--	9.5E+02	--	--
1,1,2-trichloroethane	lbs/day ²	--	3.1E+02	--	--
2,4,6-trichlorophenol	µg/L	--	2.9E+01	--	--
2,4,6-trichlorophenol	lbs/day ²	--	9.5E+00	--	--
Vinyl Chloride	µg/L	--	3.6E+03	--	--
Vinyl Chloride	lbs/day ²	--	1.2E+03	--	--

Notes for Table F-19

1. The scientific "E" notation is used to express certain values. In scientific "E" notation, the number following the "E" indicates that position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation, a value of 6.1E-02 represents 6.1 x 10⁻² or 0.061, 6.1E+02 represents 6.1 x 10² or 610, and 6.1E+00 represents 6.1 x 10⁰ or 6.1.
2. The MER limitation, in lbs/day, was calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is 38.78 MGD based on the previous permitted flow for the SJCOO and C is the concentration (mg/L). See Attachment F, section 4.4.1 for more information on the use of the previous permitted flow for the MERs.
3. Dischargers may, at their option, apply this performance goal as a total chromium performance goal.
4. Not to exceed limits specified in title 17, division 1, chapter 5, subchapter 4, group 3, article 3, section 30253 of the CCR, reference to section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.

4.3.6. Water Quality Limitations for Salinity

Chapter III.M.3.b.(1) of the Ocean Plan requires the inclusion of a receiving water limitation for salinity. The Ocean Plan states “Discharges shall not exceed a daily maximum of 2.0 parts per thousand (ppt) above natural background salinity measured no further than 100 meters (328 feet) horizontally from each discharge point. There is no vertical limit to this zone.”

This Order includes an effluent limitation based on the following formula from Chapter III.M.3.b.(2) of the Ocean Plan:

$$C_e = C_o + D_m \cdot (2.0 \text{ ppt})$$

Where:

C_e = the effluent concentration limitation in ppt

C_o = the salinity concentration to be met at the completion of initial dilution (i.e., C_o = 2.0 ppt + C_s)

C_s = the natural background salinity in ppt (Mean monthly natural background salinity shall be determined by averaging 20 years of

historical salinity* data in the proximity of the proposed discharge location and at the depth of the proposed discharge, when feasible.)

Dm = minimum probable initial dilution expressed as parts seawater per part brine discharge

The natural background salinity at the Scripps Pier operated by Scripps Institution of Oceanography (Scripps Pier Bottom, ~5 meters) was calculated from data collected from January 2000 through December 2019, ranging from 30.4 through 33.9 practical salinity unit (psu). The unit psu is almost equivalent to ppt. Using the lowest background salinity (representative of the most conservative limitation), the following salinity effluent limitation would result:

$$C_e = (2.0 \text{ ppt} + 30.4 \text{ ppt}) + 100*(2.0 \text{ ppt}) = 232.4 \text{ ppt.}$$

The Dischargers have confirmed that the diluted effluent will not exceed 232.4 ppt, and the supporting studies²⁰ concludes that the maximum salinity from the discharge of brine would be 51.5, 67.0, and 83.8 ppt, using a RO recovery rate of 35%, 50%, and 60%, respectively. Based on this information, the proposed brine discharge from the Doheny Desalination Project is expected to meet the salinity effluent limitation calculated above to ensure compliance with the receiving water limitation for salinity.

4.3.7. Whole Effluent Toxicity (WET)

- 4.3.7.1. The WET testing protects receiving waters from the aggregate toxic effect of a mixture of pollutants in the effluent. Because of the nature of discharges into the POTW sewershed, it is possible that toxic constituents could be present in the Facilities effluent or could have synergistic or additive effects.
- 4.3.7.2. For chronic toxicity, the previous Order, Order No. R9-2012-0012, established a performance goal of 101 TUc and quarterly monitoring. From January 2015 through January 2020, the maximum reported effluent chronic toxicity values were greater than 1000 TUc (July 9, 2013), 200 TUc (August 20, 2013 and September 21, 2021), and 500 TUc (October 13, 2020). Using Steps 1 through 12 of the RPA procedures from the Ocean Plan, the effluent has reasonable potential to cause an exceedance of the narrative water quality objective for chronic toxicity (i.e., Endpoint 1). Thus, this Order adds the effluent limitation for chronic toxicity.

This Order contains a reopener to require the San Diego Water Board to modify the effluent limitations for toxicity, if necessary, to make it consistent with any new policy, law, or regulation.

- 4.3.7.3. For acute toxicity, Order No. R9-2012-0012 removed the performance goals and monthly monitoring for acute toxicity. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted over a short or a longer period of time and may measure mortality,

²⁰ *Plumes 18b Dilution Sensitivity Analysis of Combine Discharges of SOCWA Wastewater and Brine from the Doheny Desalination Project*. Michael Baker International. January 14, 2020.

reproduction, and growth. A chemical at a low concentration could have chronic effects but no acute effects until the chemical was at a higher concentration. Thus, chronic toxicity is a more stringent requirement than acute toxicity. To ensure the aggregated impacts of pollutants present within the Dischargers' effluent does not result in the presence of toxicity within the receiving water, this Order establishes effluent limitations for chronic toxicity.

4.4. Final Effluent Limitation Considerations

4.4.1. Satisfaction of Anti-Backsliding Requirements

NPDES permits must conform with anti-backsliding requirements discussed in section 3.3.4 of this Fact Sheet. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed.

The Dischargers are proposing an additional facility (the proposed Doheny Desalination Project) that will connect to the permitted facilities (SJCOO at Monitoring Location M-001). This addition will increase the permitted flow to the SJCOO at Monitoring Location M-001 from 38.78 MGD to 43.78 MGD; however, the concentration- and mass-based effluent limitations/performance goals at Monitoring Location M-001 will remain as stringent as in the previous order, Order No. R9-2012-0012, as requested by SOCWA. Thus, the increase in permitted flow will not increase the concentration-based effluent limitations and will therefore not result in the additional loading of pollutants. This Order applies new TBELs to the proposed Doheny Desalination Project at the new monitoring location, Monitoring Location M-001H as described in the MRP (Attachment E).

This permit complies with all applicable federal and State anti-backsliding regulations.

4.4.2. Satisfaction of Antidegradation Policies

The WDRs for the Dischargers must conform with antidegradation requirements discussed in section 3.3.3 of this Fact Sheet. The antidegradation policies require that beneficial uses and the water quality necessary to maintain those beneficial uses in the receiving waters of the discharge shall be maintained and protected, and, if existing water quality is better than the quality required to maintain beneficial uses, the existing water quality shall be maintained and protected unless allowing a lowering of water quality is necessary to accommodate important economic and social development or consistent with maximum benefit to the people of California. When a significant lowering of water quality is allowed by the San Diego Water Board, an antidegradation analysis is required in accordance with the State Water Board's Administrative Procedures Update (July 2, 1990), *Antidegradation Policy Implementation for NPDES Permitting*.

The San Diego Water Board does not anticipate a lowering of water quality due to the increase in the permitted flow since an additional loading of pollutants to the receiving water will not be permitted in this Order. Additionally, the Dischargers will be using the preferred intake technology of a subsurface intake

for intake of seawater to the Doheny Desalination Project and will be combining the waste brine with effluent from the J.B. Latham Wastewater Treatment Plant prior to discharge to the outfall. It is anticipated that the proposed discharge will comply with all Ocean Plan receiving water standards and requirements for desalination facilities.

This Order complies with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16, and no degradation of the receiving water is expected.

4.4.3. Stringency of Requirements for Individual Pollutants

This Order contains both TBELs and WQBELs for individual pollutants. The TBELs consist of restrictions on CBOD₅, TSS, oil and grease, settleable solids, turbidity, and pH. Restrictions on these pollutants are discussed in section 4.2 of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements. These limitations are not more stringent than required by the federal CWA.

WQBELs have been 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. The procedures for calculating the individual WQBELs are based on the Ocean Plan, which was approved by USEPA on February 14, 2006, and has since been further amended. 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 federal CWA" pursuant to 40 CFR section 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the requirements of the federal CWA.

4.5. Interim Effluent Limitations – Not Applicable

4.6. Intake and Discharge Specifications

Sections 4.2 and 4.3 of the Order provide narrative requirements for the intake of seawater and the discharge of effluent from the Doheny Desalination Project. These provisions of the Order are necessary to implement the requirements specified in the Ocean Plan. The intake specifications implement chapter III.M.2.(d)(1) of the Ocean Plan; and discharge specifications implement chapter III.A.2 of the Ocean Plan.

4.7. Land Discharge Specifications – Not Applicable

4.8. Recycling Specifications – Not Applicable

5. Rationale for Receiving Water Limitations

Receiving water limitations of this Order are derived from the water quality objectives for ocean waters established by the Basin Plan and the Ocean Plan. For the natural

background salinity, the reference location for this Order is the automated shore station at the end of Scripps Pier operated by Scripps Institution of Oceanography. If this reference location becomes unavailable in the future, the Dischargers are required to submit for the San Diego Water Board's review and acceptance a proposed alternative reference location representative of natural background salinity.

Prior to 2009, the San Diego Water Board interpreted the Bacteriological Water-contact Standards of the Ocean Plan to apply only in the zone bounded by the shoreline and a distance 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and within kelp beds. The Ocean Plan provides that these Bacteriological Standards also apply in designated areas outside this zone used for water contact sports, as determined by the Regional Water Boards (i.e., all waters designated with the contact water recreation (REC-1) beneficial use). These designated areas must be specifically defined in the Basin Plan. Because the San Diego Water Board has designated the ocean waters with the REC-1 beneficial use in the Basin Plan, the Ocean Plan Bacteriological Standards apply throughout State territorial marine waters in the San Diego Region, which extend from surface to bottom, out to three nautical miles from the shoreline. This interpretation has been confirmed by USEPA.

The Ocean Plan Bacteria Standards were amended in February 2019 and include new standards for fecal coliform and enterococci. As a result, this Order includes receiving water limitations for fecal coliform and enterococci based on the 2019 Ocean Plan Bacteria Standards

6. Rationale for Provisions

6.1. Standard Provisions

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

Sections 122.41(a)(1) and (b) through (n) of 40 CFR 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. Section 123.25(a)(12) of 40 CFR allows the State to omit or modify conditions to impose more stringent requirements. In accordance with 40 CFR section 123.25, this Order omits federal conditions that address enforcement authority specified in 40 CFR sections 122.41(j)(5) and (k)(2) because the enforcement authority under the Water Code is more stringent. In lieu of these conditions, this Order incorporates by reference Water Code section 13387(e).

6.2. Special Provisions

6.2.1. Reopener Provisions

This Order may be re-opened and modified, revoked and reissued, or terminated for cause in accordance with the provisions of 40 CFR parts 122, 123, 124, and

125. The San Diego Water Board may reopen the permit to modify permit conditions and requirements. Causes for modification include, but are not limited to, revisions to effluent limitations, receiving water requirements, monitoring and reporting requirements; participation in the Southern California Coastal Water Research Project (SCCWRP) monitoring program or other regional or water body monitoring coalition as determined by the San Diego Water Board; revisions to sludge use or disposal practices; or adoption of new or revised regulations, water quality control plans, or policies by the State Water Board or the San Diego Water Board, including revisions to the Basin Plan or Ocean Plan.

This Order may be reopened to modify provisions governing compliance with Water Code section 13142.5(b) and the Ocean Plan if the Dischargers propose a change in design or operation of the Doheny Desalination Project in a manner that could increase intake or mortality of all forms of marine life, consistent with the Ocean Plan definition of an expanded facility, beyond that which is approved in this Water Code section 13142.5(b) Determination.

Causes for modifications to the Doheny Desalination Project operations that are expected to result in an increased intake or mortality of all forms of marine life will require a new Water Code section 13142.5(b) determination by the San Diego Water Board. This Order may also be reopened to modify provisions governing compliance with Water Code section 13142.5(b) and the Ocean Plan if the volume of wastewater available for dilution of the brine decreases below the required flow rate needed for a positively buoyant plume. This Order may also be reopened to modify the mitigation requirements based on the results of the Mitigation APF Re-Evaluation Study. This Order may be reopened at any time for modification of provisions governing compliance with the receiving water limitation for salinity as set forth in Ocean Plan chapter III.M.3.

6.2.2. Special Studies and Additional Monitoring Requirements

6.2.2.1. Spill Prevention and Response Plans

The federal CWA largely prohibits any discharge of pollutants from point sources to waters of the United States except as authorized under an NPDES permit. In general, any point source discharge of sewage effluent to waters of the United States must comply with technology-based, secondary treatment standards, at a minimum, and any more stringent requirements necessary to meet applicable water quality standards and other requirements. The unpermitted discharge of wastewater to waters of the United States is illegal under the federal CWA. Further, the Basin Plan prohibits discharges of waste to land, except as authorized by WDRs or the terms described in Water Code section 13264. The Basin Plan also prohibits the unauthorized discharge of treated or untreated sewage to waters of the State or to a storm water conveyance system. Further, Discharge Prohibitions 3.1 and 3.2 of this Order prohibits the discharge of waste from the Facilities to a location other than Discharge Point No. 001.

Sanitary collection and treatment systems experience periodic failures resulting in discharges that may affect waters of the United States and/or State. There are many factors which may affect the likelihood of a spill. To ensure appropriate funding, management, and planning to reduce the likelihood of a spill, and to increase the level of response if a spill does occur, this Order requires the Dischargers to maintain and implement Spill Prevention and Response Plans.

6.2.2.2. **Spill Reporting Requirements**

To determine compliance with Discharge Prohibitions 3.1 and 3.2 and provide appropriate notification to the general public for the protection of public health, spill reporting requirements have been established in section 6.3.2.2 of this Order.

6.2.2.3. **Mitigation Area of Production Foregone (APF) Re-Evaluation Study**

This Order requires 7.45 acres of mitigation to compensate for the marine life mortality associated with the Doheny Desalination Project construction, operation, intake, and discharge. The mitigation requirements were determined based on Area of Production Foregone (APF) estimates using the methodology described in *Brine Diffusers and Shear Mortality, prepared for Eastern Research Group* (Roberts 2018) modified for positively buoyant plumes to calculate the volume of water exposed to shearing related mortality. Several assumptions were used in the APF calculations. Of the assumptions made, the RO recovery rates for the Doheny Desalination Project, larval durations of species expected to be present in the source waterbody, and baseline wastewater flows (i.e., wastewater flows used to dilute the brine from the Doheny Desalination Project) will have a significant effect on APF estimates. As described in sections 2.4 and 6.1.2.3 of this Order, if the Mitigation APF Re-Evaluation Study and/or Larval Study demonstrate that the mitigation requirements of this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers shall apply for a new Water Code section 13142.5(b) determination. Sections 2.4 and 6.1.2.3 of this Order also state “If the Mitigation APF Re-Evaluation Study and/or Larval Study demonstrate that the mitigation requirements of this Order are excessive to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers may apply for a new Water Code section 13142.5(b) determination.

The Dischargers provided APF estimates using RO recovery rates ranging from 35% to 60% recovery. The actual RO recovery rate will remain unknown until the design plans for the Doheny Desalination Project have been finalized. In the absence of information on the actual design RO recovery rates, the San Diego Water Board assumed a RO recovery rate of 50% for estimating the APF and determining mitigation requirements, which is expected to be closer to the actual design RO recovery rate. In the San Diego

Water Board's experience, a RO recovery rate of approximately 50% is typical for this type of facility.

Turbulence/shearing mortality associated with the discharge of brine from the Doheny Desalination Project is limited to organisms one millimeter or less in size. The Dischargers did not conduct a larval study to determine the species present in the source waterbody. Instead, the Dischargers stated that most larvae from fish species are greater than one millimeter and are not affected by the discharge; however, some fish eggs are less than one millimeter and could be affected by the discharge. The San Diego Water Board, in consultation with the State Water Board; California Coastal Commission; and Dr. Peter Raimondi, a well-known expert in Empirical Transport Model (ETM)/APF analyses, noted that there are likely species present in the source waterbody that are less than one millimeter in size that could be affected by the discharge, such as some species of invertebrates. In the absence of information of actual species identified in the source waterbody, the San Diego Water Board assumed a larval duration 10 days, which may be representative of the larval durations of some invertebrate species. However, section 6.3.2.4 of the Order requires the Dischargers to conduct a Larval Study to confirm the species present in the source waterbody.

Chapter III.M. 2.e of the Ocean Plan requires that desalination projects fully mitigate for the impacts of marine life. Because the Doheny Desalination Project brine discharge commingles with wastewater effluent prior to being discharged through the SJCOO, the San Diego Water Board must determine the incremental impacts of turbulence/shearing mortality caused by the addition of the brine. Generally, the incremental impact of turbulence/shearing mortality is determined from the difference between the impact caused by baseline wastewater flows and the impact from the commingled wastewater and brine flows. The Dischargers provided APF estimates using a range of baseline wastewater flows. With a 50% RO recovery rate, the APF estimates increase with increasing baseline wastewater flows. For all RO recovery rates, there was no incremental impacts when the baseline wastewater flow was 8 MGD. The San Diego Water Board used the APF estimate based on a baseline wastewater flow of 13 MGD, which is similar to the average wastewater flow discharged through the SJCOO from 2016 through 2020 (i.e., 11.9 MGD).

Table F-20 below shows the APF estimates for the various alternative assumptions of larval durations, RO recovery rates, and baseline wastewater flows.

Table F-20. Summary of APF Estimates

RO Recovery Rate (%)	Baseline Wastewater Flow (MGD)	APF Estimate: 3-Day Larval Duration (Acres)	APF Estimate: 10-Day Larval Duration (Acres)	APF Estimate: 30-Day Larval Duration (Acres)
35%	8	-	-	-
35%	13	4.74	15.80	47.25
35%	18.9	4.32	14.39	43.06
35%	31	4.23	14.07	42.1
50%	8	-	-	-
50%	13	2.23	7.45	22.3
50%	18.9	2.26	7.53	22.57
50%	31	2.48	8.26	24.75
60%	8	-	-	-
60%	13	1.43	4.77	14.29
60%	18.9	1.66	5.54	16.61
60%	31	1.66	5.52	16.53

Because the San Diego Water Board relied on several alternative assumptions put forward by the Dischargers to calculate the APF, the APF estimates may not accurately reflect the impacts to marine life resulting in mitigation requirements that may be either insufficient or excessive to compensate for the mortality of marine life caused by the Doheny Desalination Project. Therefore, section 6.3.2.3 of this Order requires the Dischargers to conduct a Mitigation APF Re-Evaluation Study to re-evaluate the APF estimates based on data and finalized design parameters rather than assumptions. If it is determined that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination. If it is determined that the mitigation requirements in this Order are excessive to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers may apply for a new Water Code section 13142.5(b) determination.

6.2.2.4. Larval Study

This Order requires the Dischargers to conduct a Larval Study prior to the commencement of the Doheny Desalination Project discharge. The Larval Study will be designed to determine the larval concentration and species present in the SJCOO source waterbody. The Dischargers will use the results of the of the Larval Study for the Mitigation APF Re-Evaluation Study described in section 6.3.2.3 of this Order. The Larval Study may also be used

to develop mitigation ratios if it is determined that the species impacted by the discharge from the Doheny Desalination Project come from habitats other than wetland/estuarine habitats. The APF estimates used in this Order were conceptually based on the expected species present in the source waterbody due to the lack of site-specific larval data. The Larval Study will consist of, at minimum, monthly sampling at locations within the source waterbody for a period of one year and is modeled after the entrainment study for open ocean intakes contained in chapter III section M.2.e(1)(a) of the Ocean Plan. If it is determined that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination. If it is determined that the mitigation requirements in this Order are excessive to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers may apply for a new Water Code section 13142.5(b) determination.

6.2.2.5. Final Marine Life Mitigation Plan

Water Code section 13142.5(b) requires that the best available mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life. The Ocean Plan provides requirements at chapter III.M.2.e. to implement mitigation measures in compliance with Water Code section 13142.5(b). The Ocean Plan provisions require that the Dischargers estimate the marine life mortality resulting from construction and operation of the Doheny Desalination Project that would occur following implementation of the best available site, design, and technology measures.

The Dischargers submitted a draft Marine Life Mitigation Plan that outlines the steps needed to provide 7.45 acres of mitigation to compensate for the mortality associated with the operation of the Doheny Desalination Project. The Dischargers propose to restore a portion of the South Los Cerritos Wetlands, as part of a larger South Los Cerritos Wetland Restoration Project led by the Los Cerritos Wetland Authority. Several of details of the Dischargers' specific restoration project will be determined as the larger South Los Cerritos Wetland Restoration Project progresses. The mitigation requirements of this Order may also change based on the results of the Mitigation APF Re-Evaluation Study and Larval Study. Therefore, section 6.3.2.5 of the Order requires a Final Marine Life Mitigation Plan to ensure adequate mitigation is provided in compliance with the Ocean Plan and Water Code section 13142.5(b), and to provide additional details on the specific restoration activities to take place.

6.2.2.5. Receiving Water Violation Assessment

In the event of a violation of any receiving water limitation established within this Order, the San Diego Water Board may require the Dischargers to perform a special assessment. The purpose of the special assessment shall

be to investigate the nature and cause of the receiving water violation and identify measures needed to ensure future compliance with receiving water limitations. The Dischargers are required to submit the required assessment to the San Diego Water Board within 90 days of receipt of the San Diego Water Board notification of the need to perform a Receiving Water Limitation Violation Assessment. The results of the assessment will assist the Dischargers and the San Diego Water Board in determining permit compliance and appropriate corrective actions for the protection of water quality and designated beneficial uses.

6.2.3. Best Management Practices and Pollution Prevention

The Pollutant Minimization Program (PMP) is based on the requirements of the section III.C.9 of the Ocean Plan. The goal of the program is to reduce potential sources of pollutants by using source control measures if the specified circumstances occur.

6.2.4. Construction, Operation, and Maintenance Specifications

6.2.4.1. **Publicly-Owned Treatment Works (POTWs)** - This Order carries over provisions from the previous Order, Order No. R9-2012-0012 to ensure that new treatment facilities and expansions of existing treatment facilities are completely constructed and operable prior to initiation of the discharge from the new or expanded facilities.

6.2.4.2. This Order carries over a provision from the previous Order, Order No. R9-2012-0012 to ensure the Facilities are protected against the impact of storm events.

6.2.4.3. This Order adds a provision to ensure the Facilities are protected against regional impacts due to climate change (e.g., sea level rise and floods).

6.2.4.4. This Order adds a provision based on the requirements of 40 CFR section 122.41(e) to ensure the Facilities have adequate power.

6.2.5. Special Provisions for Publicly-Owned Treatment Works (POTWs)

6.2.5.1. San Juan Creek Ocean Outfall (SJCOO) Capacity Report

To ensure that sufficient capacity is available to accommodate potential population growth in the future, this Order requires the Dischargers to evaluate the capacity of the SJCOO during the term of the permit and submit their findings to the San Diego Water Board. Sufficient capacity to accommodate potential growth is necessary to ensure proper ongoing operations and maintenance of the SJCOO.

6.2.5.2. Ensuring Adequate Treatment Plant Capacity

The previous Order, Order No. R9-2012-0012, required the Dischargers to submit a report four years prior to the time wastewater flows are projected to reach plant capacity, as stated in title 23, division 3, chapter 9, article 2, sections 2232 and 2235.3 of the CCR. The requirement states:

“Four years prior to reaching POTW design capacity, the Dischargers shall submit a Treatment Plant Capacity Report to the San Diego Water Board showing how flow volumes will be prevented from exceeding existing capacity or how capacity will be increased. A notification and copy of the report shall be sent to appropriate local elected officials, local permitting agencies, and the press. The required technical report shall be reviewed, approved, and jointly submitted to the San Diego Water Board by all planning and building departments having jurisdiction in the area served by the POTW.

Opportunities for public participation and involvement are required during the preparation and development of the technical report. The report shall be accompanied by a statement outlining how interested persons were involved in the preparation of the technical report.”

If the San Diego Water Board finds that the technical report indicates adequate steps are not being taken to address the capacity problem, the San Diego Water Board will adopt a time schedule order or other enforcement order. Such action will be preceded by notice and a hearing. Adequate steps to address capacity problems are necessary to ensure proper ongoing operations and maintenance of the POTWs.

6.2.5.3. **Pretreatment Program**

The federal CWA section 307(b), and federal regulations, 40 CFR part 403, require POTWs to develop an acceptable industrial pretreatment program. A pretreatment program is required to prevent the introduction of pollutants, which will interfere with treatment plant operations or sludge disposal and prevent pass through of pollutants that exceed water quality objectives, standards, or permit limitations. Pretreatment requirements are imposed pursuant to 40 CFR part 403.

The Dischargers' implementation and enforcement of its approved pretreatment program is an enforceable condition of this Order. If the Dischargers fail to perform the pretreatment functions, the San Diego Water Board, the State Water Board, or USEPA may take enforcement actions against the Dischargers as authorized by the federal CWA and Water Code.

6.2.5.4. **Sludge (Biosolids) Requirements**

The use and disposal of biosolids within the United States is regulated under State and federal laws and regulations, including permitting requirements and technical standards included in 40 CFR part 503. The Dischargers are required to comply with the standards and time schedules contained in 40 CFR part 503 for biosolids used or disposed of within the United States

Title 27, division 2, subdivision 1, section 20005 of the CCR establishes approved methods for the disposal of collected screenings, residual sludge, biosolids, and other solids removed from liquid wastes. Requirements to ensure the Dischargers dispose of solids in compliance with State and federal regulations have been included in this Order.

6.2.5.5. **Collection System**

The State Water Board issued Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer System* (Statewide General SSO Order) on May 2, 2006. The State Water Board amended the MRP for the Statewide General SSO Order through Order WQ 2013-0058-EXEC on August 6, 2013. The Statewide General SSO Order requires public agencies that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a POTW to enroll for coverage and comply with the Statewide General SSO Order. The Statewide General SSO Order requires agencies to develop Sanitary Sewer Management Plans (SSMPs) and report all sanitary sewer overflows, among other requirements and prohibitions.

The Statewide General SSO Order contains requirements for operation and maintenance of collection systems and for reporting and mitigating sanitary sewer overflows that are more extensive, and therefore, more stringent than the requirements under federal standard provisions. The member agencies that are discharging wastewater into the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP are enrolled in the Statewide General SSO Order.

The San Diego Water Board issued Order No. R9-2007-0005, *Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region* (Regional General SSO Order). The Regional General SSO Order is more stringent and prescriptive than the Statewide General SSO Order. The member agencies that are discharging wastewater into the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP are also enrolled in the Regional General SSO Order.

Regardless of the coverage obtained under Order No. 2006-0003-DWQ or Order No. R9-2007-0005, SOCWA's member agencies' sewage collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, SOCWA's member agencies must report any noncompliance (40 CFR sections 122.44(1)(6) and (7)), properly operate and maintain its collection system [40 CFR section 122.41(e)], and mitigate or prevent any discharge from the collection system in violation of this Order [40 CFR section 122.41(d)].

Sanitary sewer overflows that are reported under the Statewide General SSO Order and Regional General SSO Order are available to the public at the State Water Board Public SSO Report Database.²¹

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https://ciwqs.waterboards.ca.gov/ciwqs/readOnly/PublicReportSSOServlet?reportAction=criteria&reportId=sso_main

6.2.5.6. Requirements for Receipt of Anaerobically Digestible Material

Some POTWs choose to accept organic material such as food waste, fats, oils, and grease into their anaerobic digesters for co-digestion to increase production of methane and other biogases for energy production and to prevent such materials from being discharged into the collection system, which could cause sanitary sewer overflows. The California Department of Resources Recycling and Recovery has proposed an exemption from requiring Process Facility/Transfer Station permits where this activity is regulated under WDRs or NPDES permits. The proposed exemption is restricted to anaerobically digestible material that has been prescreened, slurried, and processed/conveyed in a closed system to be co-digested with regular POTW sludge. The proposed exemption requires that a POTW develop Standard Operating Procedures (SOPs) for the proper handling, processing, tracking, and management of the anaerobically digestible material before it is received by the POTW.

The SOPs are required for POTWs that accept hauled food waste, fats, oil, and grease for injection into anaerobic digesters. The development and implementation of SOPs for management of these materials is intended to allow the California Department of Resources Recycling and Recovery to exempt this activity from separate and redundant permitting programs. If the POTW does not accept food waste, fats, oil, or grease for resource recovery purposes, it is not required to develop and implement SOPs.

6.2.5.7. Asset Management Plan

This Order requires the Dischargers to develop and implement an Asset Management Plan. Asset management is the practice of managing infrastructure capital assets to minimize the total cost of owning and operating these assets while delivering the desired service levels. Many utilities use asset management to pursue and achieve sustainable infrastructure. A high-performing asset management program includes detailed asset inventories, operation and maintenance tasks, and long-range financial planning. Standard Provision 1.4 in Attachment D of this Order is based on the requirements of 40 CFR section 122.41(e) and requires the Dischargers to properly operate and maintain all facilities and systems of treatment and control which are installed or used by the Dischargers to achieve compliance with the conditions of this Order. Asset management planning provides a framework for setting and operating quality assurance procedures and ensuring the Dischargers have sufficient financial and technical resources to continually maintain a targeted level of service and the operational integrity of the POTWs. Asset management requirements have been established in this Order to ensure compliance with Standard Provision 1.4 in Attachment D of this Order and the requirements of 40 CFR section 122.41(e).

6.2.6. Other Special Provisions – Not Applicable

6.2.7. Compliance Schedules – Not Applicable

7. Rationale for Monitoring and Reporting Requirements

Federal CWA section 308 and 40 CFR sections 122.41(h), (j)-(l), 122.44(i), and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Water Code section 13383 also authorizes the San Diego Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The MRP (Attachment E) establishes monitoring, reporting, and recordkeeping requirements that implement federal and State requirements. The reports required by the MRP (Attachment E) are needed to ensure compliance with the Order, protect beneficial uses, and obtain other benefits as described in this Fact Sheet and the MRP (Attachment E). The purpose of the MRP is to determine and ensure compliance with effluent limitations and other requirements established in this Order, assess treatment efficiency, characterize effluents, and characterize the receiving water and the effects of the discharge on the receiving water. The MRP also specifies requirements concerning the proper use, maintenance, and installation of monitoring equipment and methods, and the monitoring type intervals and frequency necessary to yield data that are representative of the activities and discharges regulated under this Order. Thus, the burdens, including costs, of the MRP (Attachment E) required by this Order bear a reasonable relationship to the need for and benefits to be obtained from the MRP (Attachment E). The following provides the rationale for the monitoring and reporting requirements contained in the MRP (Attachment E) for the Facilities.

7.1. Core Monitoring Requirements

7.1.1. Influent Monitoring

Influent monitoring is required to determine the effectiveness of the source control program, to assess the performance of treatment facilities, and to evaluate compliance with effluent limitations. Influent monitoring frequencies and sample types for flow, CBOD₅, and TSS have been retained from the previous Order, Order No. R9-2012-0012, for the J.B. Latham Wastewater Treatment Plant, Chiquita WRP, Oso Creek WRP, 3A WRP, and San Clemente WRP. However, this Order lists the influent monitoring parameters required for the pretreatment program in section 6.3.5.3 of this Order. This Order also removes influent monitoring for BOD₅ because this Order does not contain any effluent limitations for BOD₅.

Refer to section 3.1 of the MRP (Attachment E) of this Order.

7.1.2. Effluent Monitoring

Effluent monitoring is required to determine compliance with the conditions of this Order, to identify operational problems, to improve plant performance, and to conduct reasonable potential analyses for subsequent orders. Effluent monitoring also provides information on wastewater characteristics for use in interpreting water quality and biological data. Effluent monitoring requirements have been carried over from the previous Order, Order No. R9-2012-0012 with the following exceptions:

- 7.1.2.1. This Order removes effluent monitoring for BOD₅ because this Order does not contain any limitations for BOD₅.
- 7.1.2.2. This Order adds a trigger to increase monitoring frequency if the applicable effluent limitation or performance goal specified in this Order is exceeded.
- 7.1.2.3. This Order increases the monitoring frequency of settleable solids and turbidity from once per month to once per week at monitoring locations M-001E, M-001F, and M-001G to be consistent with the NPDES permits in the San Diego Region.
- 7.1.2.4. This Order increases the monitoring frequency of pH and TSS from once per month to once per day at monitoring locations M-001E, M-001F, and M-001G to be consistent with the NPDES permits in the San Diego Region.
- 7.1.2.5. This Order replaces the requirement to monitor for conductivity with a requirement to monitor for TDS and increases the frequency from once per month to once per week at monitoring locations M-001E, M-001F, and M-001G to be consistent with the NPDES permits in the San Diego Region.
- 7.1.2.6. This Order adds monitoring requirements for the Doheny Desalination Project at Monitoring Location M-001H. Monitoring is required to assess compliance with the established effluent limitations.
- 7.1.2.7. This Order adds weekly monitoring requirements for salinity at Monitoring Location M-001 using Standard Method 2520B. Salinity measurement will be used to verify the relationship between salinity and conductivity.
- 7.1.2.8. This Order increases the monitoring frequency of conductivity at Monitoring Location M-001 from once per month to continuous to determine compliance with the salinity receiving water limitation at section 5.1.3.8 of this Order. This Order also requires the Dischargers monitor salinity and TDS continuously and report the average daily salinity and TDS of the effluent at Monitoring Location M-001. Based on modeling for the Doheny Desalination Project, the Dischargers stated that the combined discharge from Facilities will result in an effluent salinity below natural background receiving water salinity; therefore, if the salinity of the effluent is below natural background receiving water salinity, the Dischargers will be in compliance with the salinity receiving water limitation.
- 7.1.2.9. This Order adds quarterly monitoring requirements for fecal coliform and enterococci to document the effluent's relationship with the receiving water monitoring data. This requirement only applies if the overall compliance with the receiving water limitations for bacterial characteristics at section 5.1.1 of this Order is below 90% within a rolling one-year period or a single monitoring location exceeds the bacteria receiving water limitations more than 50% of the time within a rolling one-year period at the offshore stations near the SJCOO, excluding offshore station A5, A6, and A7 (i.e., offshore stations A1 through A4), and the source of the exceedance is unknown.

7.1.2.10. This Order adds monthly monitoring requirements for ammonium, total nitrogen, nitrate, nitrite, total organic nitrogen, total phosphorus, phosphate, total organic carbon, dissolved inorganic carbon, dissolved iron, and alkalinity to gather data on the contribution of the discharge to ocean acidification, hypoxia, and harmful algal blooms. After one year of monitoring these parameters, the monitoring frequency for these parameters may be reduced from monthly to quarterly. This chemistry data will be used in the ocean acidification and hypoxia model currently under development by the Southern California Coastal Water Research Project (SCCWRP) to improve understanding of how changing seawater chemistry conditions manifest as adverse biological effects in vulnerable marine organisms. While atmospheric carbon dioxide is the main driver of ocean acidification, increasing evidence suggests wastewater discharges of organic carbon and nutrients to ocean waters may contribute to ocean acidification and hypoxia, particularly on smaller spatial scales. Upon discharge to ocean waters, organic carbon is broken down by bacteria, which consume dissolved oxygen during the decomposition process, triggering hypoxic conditions, increasing carbon dioxide (CO₂) levels and lowering pH. When nutrients such as nitrogen and phosphorus are introduced to ocean waters, they can trigger algae blooms which create more dissolved CO₂ when the algae die. Following death of the algae, the algae decomposed by bacteria further decreases dissolved oxygen levels and increases acidity.

Ocean acidification and hypoxia, and the potential contribution of anthropogenic nutrients (such as those from wastewater treatment plants) to ocean acidification and hypoxia is a high priority issue for the Ocean Plan triennial review. (See Issue F of the State Water Board's *Proposed Final Staff Report and Work Plan for 2019 Review of the Water Quality Control Plan for Ocean Waters of California*, October 18, 2019). Additionally, the West Coast Ocean Acidification and Hypoxia Science Panel recommends that California actively employ strategies that address local factors that can reduce the frequency and severity of ocean acidification and hypoxic events. A first step in addressing local factors is to better understand the local factors, which includes knowing the magnitude of nutrients discharged from wastewater treatment plants to the ocean environment.

7.1.2.11. This Order increases the monitoring frequency for chlorinated phenolics compounds and TCDD equivalents from semiannually to monthly to determine compliance with the effluent limitations and to ensure a sufficient dataset for performing a more statistically-sound RPA for the reissuance of this Order.

7.1.2.12. For this Order, the Dischargers may apply the performance goal for both chromium (VI) and chromium (III) as a total chromium performance goal. The Ocean Plan allows dischargers to meet the objective for chromium (VI) as a total chromium objective (footnote a, of Table 3 of the Ocean Plan). Total chromium includes both chromium (VI) and chromium (III) and applicable

federal regulations in 40 CFR part 136 under the federal CWA do not specify an analytical method for chromium (III)²². Thus, this Order allows the Dischargers to also meet the objective for chromium (III) as a total chromium objective. If the Dischargers only monitors for total chromium to meet the requirements for both chromium (VI) and chromium (III), the total chromium data will be used to determine if reasonable potential exists for both chromium (VI) and chromium (III) in future permit reissuances and/or updates.

- 7.1.2.13. This Order requires the Dischargers compare the salinity of the effluent at Monitoring Location M-001 to natural background salinity, as determined at the Scripps Pier or an alternative location approved by the San Diego Water Board.
- 7.1.2.14. This Order add monitoring requirements for TDS at Monitoring Locations M-001A, M-001B, M-001C, and M-001D. This monitoring will be used for investigational purposes if the salinity of the effluent at M-001 becomes elevated such that the plume discharge through the SJCOO is no longer positively buoyant.

Refer to section 3.2 of the MRP (Attachment E) of this Order.

7.1.3. Whole Effluent Toxicity Testing Requirements

This Order contains chronic toxicity effluent limitations as described in section 4.3.7 of this Fact Sheet.

Consistent with the requirements of the Ocean Plan, section 3.3.7 of the MRP (Attachment E) requires the Dischargers to develop an Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan and submit the Initial Investigation TRE Work Plan within 90 days of the effective date of this Order. The Initial Investigation TRE Work Plan must describe steps the Dischargers intend to follow if the effluent limitation for chronic toxicity is exceeded.

Section III.C.10 of the Ocean Plan requires a TRE if a discharge consistently exceeds an effluent limitation based on a toxicity objective in Table 3 of the Ocean Plan. To determine if the discharge consistently exceeds the toxicity effluent limitation, this Order requires the Dischargers to notify the San Diego Water Board and to accelerate toxicity testing if the effluent limitation for chronic toxicity is exceeded in any one test. If any of the additional tests demonstrate toxicity, in accordance with section III.C.10 of the Ocean Plan, the Dischargers are required to submit a Detailed TRE Work Plan in accordance with its submitted Initial Investigation TRE Work Plan and USEPA guidance²³ which shall

²² In order to obtain a value for chromium (III), two separate methods must be used: one for total chromium determination and one for chromium (VI) determination. The value for chromium (III) is obtained by subtracting the chromium (VI) value from the total chromium value.

²³ See (a) *TRE Guidance for Municipal Wastewater Treatment Plants* (EPA 833-B-99-002, 1999); (b) *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070); *Toxicity Identification Evaluation, Phase I* (EPA/600/6-91/005F); (c) *Methods for Aquatic Toxicity*

include further steps taken by the Dischargers to investigate, identify, and correct the causes of toxicity; actions the Dischargers will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and a schedule for these actions. The Dischargers may also implement a Toxicity Identification Evaluation (TIE), as necessary, based upon the magnitude and persistence of toxicity effluent limitation exceedances. Once the source of toxicity is identified, the Dischargers must take all reasonable steps to reduce the toxicity to meet the chronic toxicity effluent limitation identified in section 4.1.1.9 of this Order.

The above accelerated monitoring (a minimum of six succeeding tests performed at 14-day intervals) is based on the probability of encountering at least one toxicity exceedance assuming a true, but unknown level of occurrence.

Within 30 days of completion of the TRE, the Dischargers must submit the results of the TRE, including a summary of the findings, data generated, a list of corrective actions taken or planned to achieve consistent compliance with the toxicity effluent limitation of this Order and prevent recurrence of exceedances of the effluent limitation, and a time schedule for implementation of any planned corrective actions. The Dischargers must implement any planned corrective actions in the TRE Final Report in accordance with the specified time schedule, unless otherwise directed in writing by the San Diego Water Board. The corrective actions and time schedule must be modified at the direction of the San Diego Water Board.

Refer to section 3.3 of the MRP (Attachment E) of this Order.

7.2. Receiving Water Monitoring Requirements

The receiving water and sediment monitoring requirements set forth below are designed to measure the effects of the SJCOO discharge on the receiving water. These monitoring requirements will remain in effect on an interim basis, pending development of a new and updated monitoring and assessment program.

Refer to section 4 of the MRP (Attachment E) of this Order.

7.2.1. Nearshore and Offshore Water Quality Monitoring Requirements

Nearshore and offshore water quality monitoring is required to determine if the effluent is causing or contributing to exceedances of the water quality standards outside of the ZID, to determine the fate of the effluent plume, evaluate the contribution of the discharge to ocean acidification, and to gather data for future permit reissuances. Nearshore and offshore monitoring requirements have been carried over from the previous Order, Order No. R9-2012-0012, with the following exceptions:

- 7.2.1.1. For nearshore monitoring requirements, this Order adds monitoring requirements for temperature, depth, dissolved oxygen, light transmittance,

Identification Evaluations, Phase II (EPA/600/R-92/080); (d) *Methods for Aquatic Toxicity Identification Evaluations, Phase III* (EPA/600/R-92/081); and (e) *Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document* (EPA/600/R-96-054, 1996).

pH, colored dissolved organic matter (CDOM), and salinity to better understand the characteristics of the wastewater plume, evaluate compliance with receiving water limitations, and incorporate the requirements of Ocean Plan.

- 7.2.1.2. For offshore monitoring requirements, this Order changes the pH monitoring from a grab sample at the surface to profile monitoring and dissolved oxygen and light transmittance grab samples at the surface, mid-depth, and bottom to profile monitoring. These changes are also made to better understand the characteristics of the wastewater plume.
- 7.2.1.3. For offshore monitoring requirements, this Order adds monitoring requirements for CDOM to be consistent with Appendix III section 10.1 of the Ocean Plan.
- 7.2.1.4. For nearshore and offshore monitoring requirements, monitoring for *enterococcus* bacteria has been changed to monitoring for enterococci and monitoring requirements for total coliform has been removed. These changes reflect the new bacterial provisions contained in the 2018 amendment to the Ocean Plan.
- 7.2.1.5. Monitoring frequency at nearshore and offshore stations has been reduced from monthly to quarterly to help offset the costs of additional monitoring requirements and the development of a Plume Tracking Study. However, this Order requires the monitoring frequency for receiving water characteristics (i.e., temperature, depth, dissolved oxygen, light transmittance, pH, CDOM, and salinity) at the offshore stations be increased from quarterly to monthly for a minimum of one month if the salinity of the discharge at Monitoring Location M-001 is above natural background salinity as measured by at the Scripps Pier or an alternative location approved by the San Diego Water Board. The Discharge may reduce the frequency back to quarterly once the salinity at Monitoring Location M-001 is below natural background salinity.
- 7.2.1.6. In the event of recurring exceedances of bacterial standards in the receiving water, this Order requires the Dischargers to monitor for the human associated HF183 genetic marker (HF183) to confirm if fecal contamination associated with the bacterial exceedances is from a human source. The need for this monitoring will be triggered if the overall compliance rate with the receiving water limitations for bacterial characteristics at section 5.1.1 of this Order falls below 90% within a rolling one-year period or a single monitoring location exceeds the bacteria receiving water limitations more than 50% of the time within a rolling one-year period at the offshore stations near the SJCOO, excluding offshore stations A5, A6, and A7 (i.e., offshore stations A1 through A4), and the source of the exceedances is unknown. If the source of where the fecal contamination causing the bacteria receiving water limitation exceedances originated is known (e.g., storm events, the discharge through the SJCOO, or some other known source), the Dischargers are required to submit a written report to the San Diego Water Board describing the specific

cause and source of the exceedances and if human fecal waste is the cause, a strategy for prioritizing the bacterial receiving water sites for remediation. If the San Diego Water Board concurs with the conclusions of the report, HF183 monitoring is not required. If HF183 monitoring is required, the San Diego Water Board will direct the Dischargers in writing to implement the HF183 monitoring and development of a strategy for remediating the bacterial receiving water sites based on measured human fecal waste levels. The San Diego Water Board will provide the Dischargers with a written explanation regarding the need for the information and the evidence that supports requiring the Dischargers to provide the information. If directed to implement HF183 monitoring, the Dischargers are required to collect samples for HF183 concurrently with samples collected for fecal coliform at the offshore and/or nearshore stations experiencing the exceedances. The human associated HF183 genetic marker, derived from the 16S rRNA gene of *Bacteroides*, is increasingly being used to identify human sources of sewage pollution in coastal waters. Monitoring for the HF183 genetic marker under this Order will be used to confirm the presence of human fecal material when the single sample maximum receiving water limitation for fecal coliform is exceeded in the receiving ocean waters. After the San Diego Water Board implements the requirement to collect samples for the HF183 genetic marker, analysis of HF183 is only required if the concurrently collected sample for fecal coliform exceeds the single sample maximum receiving water limitation. Results for the HF183 monitoring will be used for investigative purposes, there is no receiving water limitation expressed in terms of the HF183 genetic marker.

- 7.2.1.7. This Order recommends, but does not require, the Dischargers monitor for pH by spectrophotometric technique and total alkalinity at a subset of offshore stations, as recommended by SCCWRP to provide more precise measure of pH in the receiving water. Increased precision of pH measurements will allow for better evaluation of changes in pH due to ocean acidification. Compliance with the pH receiving water limitation in section 5.1.3.2 of this Order will be based on the pH measurements calibrated according to USEPA approved 40 CFR 136 methods. Measurements of pH by spectrophotometric technique and total alkalinity is used provide a more precise measure of pH in the receiving water and to calibrate the pH measurements collected by potentiometric sensors (i.e., glass electrodes) attached to conductivity-temperature-depth (CTD) profile samplers utilized during routine receiving water monitoring. Section 5.1.3.2 of this Order requires that pH shall not be changed at any time more than 0.2 standard units from that which occurs naturally. The imprecision of pH measurement technology (e.g., glass electrodes) has been well documented in the scientific literature. The margin of error associated with using dated technology to measure pH can be greater than 0.2 pH units, which makes it impossible to achieve the precision required to measure compliance with the pH receiving water limitation in section 5.1.3.2 of this Order. However, calibrating glass electrodes with measurements of pH by spectrophotometric techniques and total alkalinity in

the laboratory can increase the precision of the glass electrodes measurements collected in the field. A 2017 study suggests that pH measurements with this calibration method can be used to differentiate trends or spatial difference greater than 0.2 pH units, while the uncalibrated potentiometric glass electrodes can be used to differentiate trends or spatial difference greater than 0.5 pH units.²⁴

In addition to imprecision of glass electrodes, emerging evidence suggests that monitoring parameters other than pH, especially aragonite saturation state (relevant to shell-building in calcifying organisms) and partial pressure of carbon dioxide (relevant to fish behavior and navigation) is needed to assess ocean acidification effects (see The West Coast Ocean Acidification and Hypoxia Science Panel, Major Findings, Recommendations, and Actions, Appendix G at Pgs. 26-27 available at:

https://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/926_WestCoastOAHSciencePanel.pdf). While the main driver of ocean acidification

is due to atmospheric carbon dioxide, the discharge of anthropogenic nutrients from wastewater treatment plants may exacerbate ocean acidification, especially on smaller spatial scales. A recent study suggests that nutrients from wastewater effluent can provide a significant source of nitrogen for nearshore productivity in Southern California waters, and may be equivalent to upwelling on smaller spatial scales that are more relevant to algal blooms. Anthropogenic nutrients from wastewater effluent may increase algal blooms. As these algal blooms die off, the decay promotes bacterial respiration resulting in increased carbon dioxide, lower pH, and decreases in oxygen (e.g., hypoxia). This Order also recommends the Dischargers calculate aragonite saturation state to evaluate the potential effects of the discharge on ocean acidification.

- 7.2.1.7. This Order adds two additional offshore monitoring locations located near the SJCOO to evaluate the effects of the Doheny Desalination Project on water quality.

Refer to sections 4.1 of the MRP (Attachment E) of this Order.

7.2.2. Benthic Monitoring Requirements

Sediments integrate constituents that are discharged to the ocean. Most particles that come from the SJCOO discharge, and any associated contaminants, will eventually settle to the seafloor where they are incorporated into the existing sediments. Sediments can accumulate these particles over the years until the point where sediment quality is degraded and beneficial uses are impaired.

Consistent with Appendix III, section 6 of the Ocean Plan, section 4.2 of the MRP (Attachment E) requires periodic assessment of sediment quality to evaluate

²⁴ McLaughlin, K., Nezlin, N.P., Weisberg, S.B., Dickson, A.G., Booth, J.A., Cash, C.L., Feit, A., Gully, J.R., Johnson, S., Latker, A., Mengel, M.J., Robertson, G.L., Steele, A., & Terriquez, L. (2017b). An evaluation of potentiometric pH sensors in coastal monitoring applications. *Limnology and Oceanography: Methods*, 15, 679-689. doi: 10.1002/lom3.10191

potential effects of the SJCOO discharge and compliance with narrative water quality standards specified in the Ocean Plan. The required assessment consists of the measurement and integration of three lines of evidence: 1) physical and chemical properties of seafloor sediments, 2) seafloor sediment toxicity to assess bioavailability and toxicity of sediment contaminants, and 3) ecological status of the biological communities (benthos) that live in or on the seafloor sediments.

The benthic community is strongly affected by sediment composition (e.g., sand, silt, and clay distributions), sediment quality (e.g., chemistry, toxicity), and water quality. Because benthic macroinvertebrates (e.g., infauna) are dependent on their surroundings, they often serve as important biological indicators that reflect the overall conditions of the marine environment.

Benthic monitoring requirements have been updated from the previous Order, Order No. R9-2012-0012, to include two additional sediment monitoring locations and to provide more detail on monitoring frequency, methods, and analyses. This Order adds monitoring requirements for selenium, iron, tin, aluminum, total nitrogen, total organic carbon, antimony, manganese, selenium, tin, hexachlorobenzene, acid volatile sulfides, dissolved sulfide, and additional pesticides to help determine if concentrations of pollutants in marine sediments are at levels that would degrade the benthic community. This Order removes the monitoring requirements for BOD, sulfides, chemical oxygen demand, cyanide, and radioactivity. While the Ocean Plan requires annual monitoring for sediment chemistry, the San Diego Water Board reduced the frequency to, at minimum, once per permit term prior to the commencement of the Doheny Desalination Project discharge to offset costs of the Plume Tracking Study and other monitoring requirements. However, the Dischargers may be required to conduct a second benthic monitoring event after the commencement of the Doheny Desalination Project discharge. Given the schedule for the commencement of the Doheny Desalination Project discharge, the timing of the second benthic monitoring event will be determined in the Before-After Control Impact Study Work Plan described in Attachment E, section 6.3.1 of this Order.

This Order also requires sediment toxicity analyses at each offshore station. Sediment toxicity is a measure of the response of invertebrates exposed to surficial sediments under controlled laboratory conditions. The sediment toxicity line of evidence is used to assess both pollutant-related biological effects and exposure and provides a measure of exposure to all pollutants present, including non-traditional or unmeasured chemicals.

This Order requires the development of a Benthic Monitoring Work Plan, which includes a schedule for completion of sediment sampling and submission of the results, protocols for sediment sample collection and processing, and the proposed methods for analyzing the sediment data and integrating the three lines of evidence. Benthic monitoring results are due no later than 180 days before the expiration of this Order.

Results to the sediment monitoring will also be used for the Before-After Control-Impact analysis to evaluate the impact of the Doheny Desalination Project on biological communities, pursuant to Chapter III section M.4.a(2) of the Ocean Plan.

Refer to section 4.2 of the MRP (Attachment E) of this Order.

7.2.3. Fish and Macroinvertebrate Monitoring Requirements

Marine aquatic invertebrates are excellent indicators of ecosystem health because they are ubiquitous, abundant, diverse, and typically sedentary. The growth, survival, and reproduction of aquatic invertebrates are all sensitive to declines in environmental health, making analysis of assemblage structure a good ecosystem monitoring tool. Additionally, many pollutants discharged into receiving waters have the potential to bioaccumulate and persist in the tissues of aquatic organisms, including marine fishes. Chemical pollutants that bioaccumulate tend to magnify in concentration as they pass through the aquatic food chain. Fish monitoring data is required to assess the human health risks for individuals who may consume fish and to assess trends of contaminants levels in the receiving water over time.

Fish and invertebrate monitoring requirements have been updated from Order No. R9-2012-0012. This Order replaces the requirement to conduct diver surveys with a requirement to conduct community trawl surveys. Community trawl surveys are the standard method for evaluating fish and invertebrate communities around ocean outfalls, and allows for better data comparability with other outfalls in the San Diego Region and regional monitoring programs, such as the Southern California Bight Regional Monitoring Program. This Order requires fish and invertebrate trawls, at minimum, once during the permit term prior to the commencement of the Doheny Desalination Project discharge. However, the Dischargers may be required to conduct a second fish and invertebrate trawling event after the commencement of the Doheny Desalination Project discharge. Given the schedule for the commencement of the Doheny Desalination Project discharge, the timing of the second trawling event will be determined in the Before-After Control Impact Study Work Plan described in Attachment E, section 6.3.1 of this Order. The results of the fish and invertebrate monitoring are due no later than 180 days before the expiration of this Order.

Consistent with appendix III, section 9 of the Ocean Plan, this Order also requires the analyses of fish tissue samples, at minimum, once per permit term prior to the commencement of the Doheny Desalination Project discharge to determine if concentrations of pollutants are bioaccumulating to levels that are harmful to human health or degrade marine communities. The Dischargers may be required to conduct a second fish tissue sampling event after the commencement of the Doheny Desalination Project discharge. Given the schedule for the commencement of the Doheny Desalination Project discharge, the timing of the second fish tissue sampling event will be determined in the Before-After Control Impact Study Work Plan described in Attachment E, section

6.3.1 of this Order. The fish targeted for tissue analysis are: 1) flatfish, which have greater exposure to pollutants sources such as sediment and sediment-dwelling prey; and 2) rockfish, which are commonly targeted by commercial and recreational fishers. Flatfish tissue samples will be collected at or near the trawl stations. The three trawl stations are classified into three zones for the purpose of collecting sufficient numbers of fish for tissue analyses. Trawl Zone 2 represents the nearfield zone, defined as the area within a 0.5-km radius of station T2; Trawl Zone 1 is considered the southern farfield zone, and is defined as the area centered within a 1-km radius of station T1; and Trawl Zone 3 is considered the northern farfield zone, defined as the area within a 1-km radius of station T3. Rockfish tissue sample will be collected by hook and line or by setting baited lines from within zones surrounding rig fishing stations RF1, RF2, and RF3. Rig Fishing Zone 2 is the nearfield area centered within a 0.5-km radius of station RF2; Rig Fishing Zone 1 represents the southern farfield area centered within 1-km radius of station RF1; and Rig Fishing Zone 3 represents the northern farfield area centered within a 1-km radius of station RF3. Fish and invertebrate monitoring results are due no later than 180 days before the expiration of this Order.

Results to the fish and invertebrate trawls and fish tissue monitoring will also be used for the Before-After Control-Impact analysis to evaluate the impact of the Doheny Desalination Project on biological communities, pursuant to Chapter III section M.4.a(2) of the Ocean Plan.

Refer to section 4.3 of the MRP (Attachment E) of this Order.

7.2.4. Receiving Water Monitoring Reporting Requirements

7.2.4.1. California Environmental Data Exchange Network

The California Environmental Data Exchange Network (CEDEN) is a central database to find and share information about the State's water bodies, including streams, lakes, rivers, and the coastal ocean. Many groups in the State monitor water quality, aquatic habitat, and wildlife health to ensure good stewardship of our ecological resources. CEDEN aggregates this data and makes it accessible to environmental managers and the public. CEDEN requires a minimum level of quality assurance and quality control measures to ensure the data reported are of sufficient quality. When developing integrated reports for listing impaired water bodies pursuant to Clean Water Act section 303(d), Regional Water Quality Control Boards must rely on data submitted to CEDEN to make determinations of water quality. Data not included in CEDEN are generally not permissible to be included in the integrated reports.

This Order requires the Dischargers submit applicable receiving water monitoring data to CEDEN or an equivalent database that is linked to CEDEN to ensure the monitoring data is available to the San Diego Water Board for integrated reports and is easily accessible to the public and other environmental managers. Additionally, the requirement to submit receiving water monitoring data to CEDEN is consistent with the San Diego Water

Board's A Framework for Monitoring and Assessment in the San Diego Region, endorsed by the San Diego Water Board in December 2012 through Resolution No. R9-2012-0069. CEDEN currently does not accept all receiving water monitoring data collected pursuant to this Order; however, CEDEN is periodically updated to accept additional data. The Dischargers are only required to submit data that is accepted by CEDEN until such time CEDEN is updated to accept the data. The Dischargers are required to submit an annual certification that all applicable receiving water monitoring data has been timely uploaded to CEDEN.

7.2.4.2. Receiving Water Monitoring Report

This Order requires the Dischargers submit a Receiving Water Monitoring Report once per permit term. The main objectives of the Receiving Water Monitoring Report is to 1) evaluate compliance with the receiving water limitations of this Order including California Ocean Plan water quality objectives and water-contact bacteriological standards; 2) identify any biological or chemical changes in the receiving water that may be associated with the wastewater discharge and 3) answer the key regulatory questions posed in the MRP that the receiving water monitoring program was designed to answer. The assessment and evaluation of the receiving water monitoring data in the Receiving Water Monitoring Report documents any effects of wastewater discharge, other anthropogenic influences (e.g., storm water discharge, urban runoff), or natural factors (e.g., climate changes) on coastal water quality, seafloor sediment conditions, and local marine organisms. The Receiving Water Monitoring Report helps educate the public about potential water quality impacts resulting from the discharge.

7.2.4.3. State of the Ocean

This Order requires the Dischargers present a State of the Ocean oral report to the San Diego Water Board at a public Board meeting. The State of the Ocean oral report summarizes the conclusions of the Receiving Water Monitoring Report, including a description of the monitoring efforts completed, the status and trends of receiving water quality conditions, and plans for future monitoring efforts. Similar to the Receiving Water Monitoring Report, the State of the Ocean oral report helps educate the public about potential water quality impacts resulting from the discharge in a more concise and approachable manner. In addition to educating the public, the State of the Ocean oral report also allows for public participation by providing a forum for the public to comment on the findings presented by the Dischargers.

Refer to section 4.5.3 of the MRP (Attachment E) of this Order.

7.2.5. Groundwater – Not Applicable

7.3. Regional Monitoring Requirements

Regional ocean water monitoring provides information about the sources, fates, and effects of anthropogenic contaminants in the coastal marine environment

necessary to make assessments over large areas. The large-scale assessments provided by regional monitoring describe and evaluate cumulative effects of all anthropogenic inputs and enable better decision-making regarding protection of beneficial uses of ocean waters. Regional monitoring data assists in the interpretation of core monitoring studies by providing a more accurate and complete characterization of reference conditions and natural variability. Regional monitoring also leads to methods standardization and improved quality control through inter-calibration exercise. The coalitions implementing regional monitoring enable sharing of technical resources, trained personnel, and associated costs. Focusing these resources on regional issues and developing a broader understanding of pollutants effects in ocean waters enables the development of more rapid and effective response strategies. Based on all of these considerations the San Diego Water Board supports regional approaches to monitoring ocean waters.

Consistent with Appendix III section 1 of the Ocean Plan, the Dischargers may be required by the San Diego Water Board, to participate with other regulated entities, other interested parties, and the San Diego Water Board in development and implementation of new and improved monitoring and assessment programs for ocean waters in the San Diego Region and discharges to those waters.

Refer to section 5 of the MRP (Attachment E) of this Order.

7.3.1. Kelp Bed Canopy Monitoring Requirements

Kelp consists of a number of species of brown algae. Along the central and southern California coast, giant kelp (*Macrocystis pyrifera*) is the largest species colonizing rocky, and in some cases sandy, subtidal habitats. Giant kelp is an important component of coastal and island communities in southern California, providing food and habitat for numerous animals.

Refer to section 5.1 of the MRP (Attachment E) of this Order.

7.3.2. Southern California Bight Regional Monitoring Program Participation Requirements

The Southern California Bight (Bight), defined as the concave bend of the shoreline extending from Point Conception to Punta Colonet in Mexico, is host to unique, biologically diverse marine ecosystems that have long been vulnerable to the impacts of human activity. The coastal zone of the Bight hosts nearly 22 million United States residents that engage in a wide variety of industrial, military, and recreational activities. Approximately 5,600 miles of watersheds, half of which is highly developed, drain into the Bight. The Southern California Bight Regional Monitoring Program brings together researchers and water-quality managers to pool their resources and work together to investigate the condition of marine ecosystems both spatially and temporally, and extend greater protections to the Bight's diverse habitats and natural resources.

Consistent with Appendix III section 1 of the Ocean Plan, the Dischargers may be required to participate in the Southern California Bight Regional Monitoring

Program coordinated by SCCWRP, or any other coordinator named by the San Diego Water Board, pursuant to Water Code section 13383, and 40 CFR section 122.48. The intent of the Southern California Bight Regional Monitoring Program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled scientific resources of the Bight.

During these coordinated sampling efforts, the Dischargers' receiving water sampling and analytical effort, as defined in section 4 of the MRP (Attachment E), may be reallocated to provide a regional assessment of the impact of the discharge of wastewater to the Bight. In that event, the San Diego Water Board shall notify the Dischargers in writing that a portion of the requirement to perform the receiving water sampling and analytical effort defined in section 4 of the MRP (Attachment E) is suspended for the duration of the reallocation. Anticipated modifications to the monitoring program will be coordinated so as to provide a more comprehensive picture of the ecological and statistical significance of monitoring results and to determine cumulative impacts of various pollution sources. The level of resources in terms of sampling and analytical effort redirected from the receiving water monitoring program required under section 4 of the MRP (Attachment E) shall equal the level of resources provided to implement the regional monitoring and assessment program, unless the San Diego Water Board and the Dischargers agree otherwise. The specific scope and duration of the receiving water monitoring program reallocation and redirection will be determined and set by the San Diego Water Board, in consultation with the Dischargers.

Refer to section 5.2 of the MRP (Attachment E) of this Order.

7.3.3. Unified Beach Water Quality Monitoring and Assessment Program

The Dischargers are required to continue to participate in shoreline monitoring activities conducted under the Unified Regional Beach Water Quality Monitoring and Assessment Program in south Orange County in collaboration with the south Orange County MS4 copermitees and Orange County Health Care Agency.

Future revisions to the unified program may be made by the San Diego Water Board Executive Officer, provided that the unified program, as revised, remains consistent with and meets the requirements of State law, including the Ocean Plan, for beach water quality monitoring and related public notification and reporting. Revisions to the section 13383 letter directive are subject to a thirty-day public comment period, the revisions are subject to a request for a hearing before the San Diego Water Board, and may be appealed to the State Water Board.

Refer to section 5.3 of the MRP (Attachment E) of this Order.

7.4. Special Studies Requirements

- 7.4.1. Climate Change Action Plan** Changing climate conditions may fundamentally alter the way wastewater facilities are designed and operated. Climate change research indicates the overarching driver of change is

increased atmospheric carbon dioxide (CO₂) from human activity. The increased CO₂ emissions trigger changes to climatic patterns, which increase the intensity of sea level rise and coastal storm surges (Δ Sea Level), lead to more erratic rainfall and local weather patterns (Δ Weather Patterns), trigger a gradual warming of freshwater and ocean temperatures (Δ Water Temperature), and trigger changes to ocean water chemistry (Δ Water pH). The changes to the sea level and weather patterns may affect the Facilities (e.g., flooding, increased influent flows during wet weather, wildfires, and heat waves). The changes to the water temperature and pH may affect how the receiving waters reacts to the discharges.

The California Public Resources Code (Public Resources Code) recognizes that anthropogenic greenhouse gas emissions responsible for climate change are also driving major shifts in the chemical properties of the world's oceans (Public Resources Code section 35630(c)). Furthermore, Governor Newsom's Executive Order N-10-1920 directs state agencies to prepare a water resiliency portfolio that meets the needs of California's communities, economy, and environment. The State Water Board's Resolution No. 2017-0012, Comprehensive Response to Climate Change, and the San Diego Water Board's Resolution No. R9-2018-0051, Addressing Threats to Beneficial Uses from Climate Change, also require a proactive approach to climate change in all state and regional actions.

Based on all of these considerations, this Order requires the Dischargers to prepare and submit a Climate Change Action Plan (CCAP) within three years of the effective date of this Order.

Refer to section 6.1 of the MRP (Attachment E) of this Order.

- 7.4.2. Plume Tracking Study.** This Order includes a requirement to develop a Plume Tracking Study. At minimum, this Order requires the Dischargers submit a Plume Tracking Monitoring Plan Work Plan and Plume Tracking Monitoring Plan. However, the plume tracking surveys may not occur during this permit term as the Doheny Desalination Project is expected to significantly change the dynamics of the wastewater plume discharged through the SJCOO and the Doheny Desalination Project may not commence discharging until the last year of the permit term and the intake water quality may not stabilize for an additional ten months to four years. Plume tracking is necessary to determine if the plume is moving towards the shore or surface where it may encroach upon water recreation areas. Additionally, plume direction and mixing have a direct effect on sediment loading as the direction of the plume determines where the discharged particles will eventually settle. While nearshore and offshore monitoring can identify if the plume is encroaching upon the water recreation area during typical oceanographic conditions, infrequent sampling at preset intervals is unable to capture atypical oceanographic conditions that may lead to abnormal plume behavior. The Plume Tracking Study will be used to evaluate whether the monitoring methods and locations established in Order

Nos. R9-2006-0054 and R9-2012-0012 and reinstated in this Order are still appropriate and applicable. Doheny Desalination Project

Refer to section 6.2 of the MRP (Attachment E) of this Order.

- 7.4.3. **Before-After Control-Impact Study.** Pursuant to Chapter III section M.4.a(2) of the Ocean Plan, this Order requires the Dischargers to conduct a Before-After Control-Impact Study that will evaluate the differences between biological communities at a reference site and at the discharge location before and after the discharge from the Doheny Desalination Project commences. Attachment E, section 4.1 through 4.3 of this Order includes the core receiving water monitoring requirements to evaluate the before condition (i.e., the pre-Doheny Desalination Project discharge condition). Additionally, the Dischargers have been conducting receiving water monitoring in the vicinity of the SJCOO for decades. The Dischargers are required to consider the historical receiving water monitoring data in the analysis of the before condition. The receiving water monitoring requirements for the after condition (i.e., post-Doheny Desalination Project discharge) will be guided by the Before-After Control-Impact Study Work Plan. The Doheny Desalination Project is not expected to commence discharging until January 2026 and the salinity of the Doheny Desalination Project intake water is not expected to stabilize for an additional ten months to four years. This Order is set to expire on April 30, 2027; therefore, results of the post-discharge monitoring for the Before-After Control-Impact Study may not be available prior to the reissuance of next NPDES permit or the submittal of the ROWD. Given the schedule for the commencement of the Doheny Desalination Project discharge, it is likely the post-discharge monitoring will not occur during the permit term of this Order. The Before-After Control-Impact Study Work Plan requires the Dischargers to provide the types of biological monitoring that will be included in the Before-After Control-Impact Study and a schedule for the pre- and post-discharge monitoring and submittal of the Before-After Control-Impact Study Report.

Refer to section 6.3 of the MRP (Attachment E) of this Order.

7.5. Other Monitoring Requirements

Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program. Under the authority of section 308 of the federal CWA (33 U.S.C. section 1318), USEPA requires major and selected minor permittees under the NPDES Program to participate in the annual DMR-QA Study Program. The DMR-QA Study evaluates the analytical ability of laboratories that routinely perform or support self-monitoring analyses required by NPDES permits. There are two options to satisfy the requirements of the DMR-QA Study Program: (1) The Dischargers can obtain and analyze a DMR-QA sample as part of the DMR-QA Study; or (2) Per the waiver issued by USEPA to the State Water Board, the Dischargers can submit the results of the most recent Water Pollution Performance Evaluation Study from its own laboratories or its contract laboratories. A Water Pollution Performance Evaluation Study is similar to the DMR-QA Study. Thus, it also evaluates a laboratory's ability

to analyze wastewater samples to produce quality data that ensure the integrity of the NPDES Program. The Dischargers are required to ensure that the results of the DMR-QA Study or the results of the most recent Water Pollution Performance Evaluation Study are submitted annually to the State Water Board. The State Water Board's Quality Assurance Program Officer will send the DMR-QA Study results or the results of the most recent Water Pollution Performance Evaluation Study to USEPA's DMR-QA Coordinator and Quality Assurance Manager.

Refer to section 1.7 of the MRP (Attachment E) of this Order.

8. Public Participation

The San Diego Water Board has considered the issuance of WDRs that will serve as an NPDES permit for the Facilities. As a step in the WDR adoption process, the San Diego Water Board staff developed tentative WDRs and encouraged public participation in the WDR adoption process by providing a period of a minimum of 30 days for public review and comment on the Tentative Order.

8.1. Notification of Interested Parties

The San Diego Water Board notified the Dischargers and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided by posting a Notice of Public Hearing and Comment and the tentative WDRs on the San Diego Water Board's website for the duration of the public comment period. The Tentative Order was posted on the San Diego Water Board website and emailed to the Dischargers and all known interested parties on January 4, 2022.

The public also had access to the meeting agenda including all supporting documents and any changes in meeting dates and locations through the San Diego Water Board's website at: <https://www.waterboards.ca.gov/sandiego/>.

8.2. Written Comments

Interested persons were invited to submit written comments concerning tentative WDRs as provided through the notification process. Comments were due either in person or by mail to the Executive Office at the San Diego Water Board at 2375 Northside Drive, Suite 100, San Diego, CA 92108.

To be fully responded to by staff and considered by the San Diego Water Board, the written comments were due at the San Diego Water Board office by 5:00 p.m. on February 3, 2022.

8.3. Public Hearing

The San Diego Water Board held a public hearing on the tentative WDRs during its regular Board meeting on the following date and time and at the following location:

Date: March 9, 2022
Time: 9:00 AM
Location: City of Mission Viejo
City Council Chambers
200 Civic Center
Mission Viejo, CA 92691

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

8.4. Reconsideration of Waste Discharge Requirements

Any person aggrieved by this action of the San Diego Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and CCR, title 23, sections 2050. The State Water Board must receive the petition by 5:00 p.m., within 30 calendar days of the date of adoption of this Order at the following address, except that if the thirtieth day following the date of this Order falls on a Saturday, Sunday, or State holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Petitions may be sent in as follows:

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

In Person:
State Water Resources Control Board
Office of Chief Counsel
1001 I Street
Sacramento, California 95814

By email:
waterqualitypetitions@waterboards.ca.gov

By fax:
(916) 341-5199

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

8.5. Information and Copying

The ROWD, other supporting documents, and comments received are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the San Diego Water Board by calling (619) 516-1990.

8.6. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the San Diego Water Board, reference these Facilities, and provide a name, address, and phone number.

8.7. Additional Information

Requests for additional information or questions regarding this Order should be directed to Ms. Joann Lim by email at Joann.Lim@waterboards.ca.gov or by phone at (619) 521-3362.

**ATTACHMENT G – DISCHARGE PROHIBITIONS CONTAINED IN THE OCEAN
PLAN AND BASIN PLAN**

1. Ocean Plan Discharge Prohibitions
 - 1.1. The Discharge of any radiological chemical, or biological warfare agent or high-level radioactive waste into the ocean is prohibited.
 - 1.2. Waste shall not be discharged to designated Areas of Special Biological Significance except as provided in chapter III.E. of the Ocean Plan.
 - 1.3. Pipeline discharge of sludge to the ocean is prohibited by federal law; the discharge of municipal and industrial waste sludge directly to the ocean, or into a waste stream that discharges to the ocean, is prohibited. The discharge of sludge digester supernatant directly to the ocean, or to a waste stream that discharges to the ocean without further treatment, is prohibited.
 - 1.4. The by-passing of untreated wastes containing concentrations of pollutants in excess of those of Table 3 or Table 4 [of the Ocean Plan] to the ocean is prohibited, except as allowed by Federal Standard Provisions I.G and I.H (Attachment D).
 - 1.5. The discharge of trash to surface waters of the State or the deposition of trash where it may be discharged into surface waters of the State is prohibited.
2. Basin Plan Discharge Prohibitions
 - 2.1. The discharge of waste to waters of the State in a manner causing, or threatening to cause a condition of pollution, contamination or nuisance as defined in Water Code section 13050, is prohibited.
 - 2.2. The discharge of waste to land, except as authorized by WDRs of the terms described in Water Code section 13264 is prohibited.
 - 2.3. The discharge of pollutants or dredged or fill material to waters of the United States except as authorized by an NPDES permit or a dredged or fill material permit (subject to the exemption described in Water Code section 13376) is prohibited.
 - 2.4. Discharges of recycled water to lakes or reservoirs used for municipal water supply or to inland surface water tributaries thereto are prohibited, unless the San Diego Water Board issues an NPDES permit authorizing such a discharge; the proposed discharge has been approved by the State of California Department of Public Health and the operating agency of the impacted reservoir; and the discharger has an approved fail-safe long-term disposal alternative.

- 2.5. The discharge of waste to inland surface waters, except in cases where the quality of the discharge complies with applicable receiving water quality objectives, is prohibited. Allowances for dilution may be made at the discretion of the San Diego Water Board. Consideration would include streamflow data, the degree of treatment provided and safety measures to ensure reliability of facility performance. As an example, discharge of secondary effluent would probably be permitted if streamflow provided 100:1 dilution capability.
- 2.6. The discharge of waste in a manner causing flow, ponding, or surfacing on lands not owned or under the control of the discharger is prohibited, unless the discharge is authorized by the San Diego Water Board.
- 2.7. The dumping, deposition, or discharge of waste directly into waters of the State, or adjacent to such waters in any manner which may permit it's being transported into the waters, is prohibited unless authorized by the San Diego Water Board.
- 2.8. Any discharge to a storm water conveyance system that is not composed entirely of storm water is prohibited unless authorized by the San Diego Water Board. [The federal regulations, 40 CFR section 122.26(b)(13), define storm water as storm water runoff, snow melt runoff, and surface runoff and drainage. 40 CFR section 122.26(b)(2) defines an illicit discharge as any discharge to a storm water conveyance system that is not composed entirely of storm water except discharges pursuant to an NPDES permit and discharges resulting from firefighting activities.] [section 122.26 amended at 56 FR 56553, November 5, 1991; 57 FR 11412, April 2, 1992].
- 2.9. The unauthorized discharge of treated or untreated sewage to waters of the State or to a storm water conveyance system is prohibited.
- 2.10. The discharge of industrial wastes to conventional septic tank/subsurface disposal systems, except as authorized by the terms described in Water Code section 13264, is prohibited.
- 2.11. The discharge of radioactive wastes amenable to alternative methods of disposal into the waters of the State is prohibited.
- 2.12. The discharge of any radiological, chemical, or biological warfare agent into waters of the State is prohibited.
- 2.13. The discharge of waste into a natural or excavated site below historic water levels is prohibited unless the discharge is authorized by the San Diego Water Board.
- 2.14. The discharge of sand, silt, clay, or other earthen materials from any activity, including land grading and construction, in quantities which cause deleterious bottom deposits, turbidity or discoloration in waters of the State or which unreasonably affect, or threaten to affect, beneficial uses of such waters is prohibited.

ATTACHMENT H – WATER CODE SECTION 13142.5(b) DETERMINATION

The California Regional Water Quality Control Board, San Diego Region (San Diego Water Board), in consultation with the State Water Resources Control Board (State Water Board), has determined that the South Coast Water District (SCWD) Doheny Desalination Project, as proposed, provides the best available site, design, technology, and mitigation measures feasible to minimize the intake and mortality of all forms of marine life while considering construction, operation, and maintenance costs, consistent with the requirements of California Water Code (Water Code) section 13142.5(b).

SCWD, a member agency of South Orange County Wastewater Authority (SOCWA), proposes to construct and operate the Doheny Desalination Project, a new desalination plant designed to withdraw up to 10.0 million gallons per day (MGD) of seawater (reverse osmosis (RO) Feed) from the Pacific Ocean using subsurface intake wells to produce up to 5 MGD of potable drinking water.²⁵ Wastewater from the Doheny Desalination Project, including waste brine from the desalination process, will commingle with other wastewater in the San Juan Creek Ocean Outfall (SJCOO) before discharge to the Pacific Ocean.

Water Code section 13142.5(b) provides that “For each new or expanded coastal powerplant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life.”

On May 6, 2015, the State Water Board adopted the *Amendment to the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) Addressing Desalination Facility Intakes, Brine Discharges, and the Incorporation of Other Non-substantive Changes* (Desalination Amendment). The State Water Board also approved the supporting *Final Staff Report Including the Final Substitute Environmental Documentation* (Desalination Amendment Final Staff Report) on May 6, 2015. The Desalination Amendment provides specific direction to regional water boards for making Water Code section 13142.5(b) determinations when permitting new or expanded seawater desalination facilities to ensure a consistent statewide approach for minimizing intake and mortality of marine life and protecting water quality and related beneficial uses of ocean waters at and near desalination facilities. The San Diego Water Board’s role in making a Water Code section 13142.5(b) determination is to evaluate a range of feasible²⁶ alternatives for the best available site, design, technology, and mitigation measures to minimize intake and mortality of all forms of marine life, and then to determine the best combination of feasible alternatives to minimize intake and mortality of all forms of marine life. (Ocean Plan chapter III.M.2.a(2).)

²⁵ SCWD intends to construct a facility with an initial capacity of up to 5 MGD, with potential for future expansions up to 15 MGD.

²⁶ The Ocean Plan provides in Appendix I that “feasible” for the purposes of Chapter III.M of the Ocean Plan means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

On March 11, 2020, SCWD submitted a request for a Water Code section 13142.5(b) determination for the Doheny Desalination Project. SCWD provided several documents with the March 2020 request, including: *Attachment A, Doheny Ocean Desalination Project – Phase 1 Project, Ocean Plan Compliance Matrix*; *Attachment A1 – Project Description, Excerpted from the Final Environmental Impact Report, June 27, 2019* (header: *Doheny Ocean Desalination Project Draft Environmental Impact Report*, footer: *May 17, 2018*); and *Attachment A2 - Additional Exhibits* (including maps, site plans, and process flow diagrams). GHD Inc. (GHD), SCWD’s contractor, provided additional information in a transmittal letter dated July 17, 2020, which included the *Doheny Ocean Desalination Project Model Update and Refinement using Results from Onshore and Offshore Geophysical Surveys and Exploratory Borehole Data*, dated March 1, 2018 [2018 Geoscience modeling report]. Also, the Dischargers submitted a revised *Doheny Ocean Desalination Project – Phase 1 Project Ocean Plan Compliance Matrix* dated January 14, 2021 (Revised Compliance Matrix).

In May 2018, SCWD released the *Draft Environmental Impact Report State Clearinghouse No. 2016031038 Doheny Ocean Desalination Project* (Draft EIR). In June 2019, SCWD certified the *Final Environmental Impact Report and Responses to Public Comments, State Clearinghouse No. 2016031038, Doheny Ocean Desalination Project* (Final EIR). The Final EIR provides a project-level analysis for the production of 5 MGD of potable drinking water. The Final EIR also includes a programmatic-level analysis for the potential future project of producing 15 MGD of potable drinking water. SCWD drafted the Final EIR with the intent that it would be relied on for future regulatory permits and approvals, including this Water Code section 13142.5(b) determination. The San Diego Water Board independently considered the environmental effects of the project as described in the Final EIR and addendums.

The Dischargers submitted an amended Report of Waste Discharge (ROWD) and application for reissuance of its WDRs and NPDES permit, dated March 13, 2020 amended to include the Doheny Desalination Project. The Dischargers submitted revised ROWDs and applications on December 14, 2020, January 14, 2021, and April 23, 2021.

The Dischargers requested that the Doheny Desalination Project be permitted for a range of operating flowrates to allow flexibility for the design-build construction of the Doheny Desalination Project. Table H-1 lists the possible intake and discharge flowrates. The San Diego Water Board developed this Order and Water Code section 13142.5(b) determination based on a 50% RO recovery rate.

Table H-1: Doheny Desalination Project Range of Operating Flowrates

Reverse Osmosis % Recovery Rate	RO Feed Flow Rate (MGD)	Brine Discharge (Concentrate) Flow Rate (MGD)	Drinking Water Production Flow Rate (MGD)
35	14.4	9.4	5.0
45	11.2	6.2	5.0
50	10.0	5.0	5.0
60	8.4	3.4	5.0

The San Diego Water Board conducted a Water Code section 13142.5(b) analysis of the proposed operations at the Doheny Desalination Project in accordance with Ocean Plan chapter III.M. In conducting the analysis, the San Diego Water Board independently reviewed the record for development of this Order, including the ROWD, supplemental documents, and the Draft and Final EIRs. Table H-2 below sets forth the San Diego Water Board’s preliminary analysis of the proposed Doheny Desalination Project that will provide the best available site, design, technology, and mitigation measures to minimize intake and mortality of all forms of marine life.

The Dischargers’ ROWD, SCWD’s request for a Water Code section 13142.5(b) determination, and other information submitted by the Dischargers (or their contractors) in support of this request are available upon request. All documents, data, correspondence, and other materials that are identified in this attachment are incorporated herein by this reference and made part of the record hereto.

Table H-2: Water Code Section 13142.5(b) Determination

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
1	2.a	Water Code section 13142.5(b) Determinations for New and Expanded Facilities: Site, Design, Technology, and Mitigation Measures Feasibility Considerations. General Considerations:	See findings below for subsections under III.M.2.a.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
2	2.a.(1)	<p>The owner or operator shall submit a request for a Water Code section 13142.5(b) determination to the appropriate regional water board as early as practicable. This request shall include sufficient information for the regional water board to conduct the analyses described below. The regional water board in consultation with the State Water Board staff may require an owner or operator to provide additional studies or information if needed, including any information necessary to identify and assess other potential sources of mortality to all forms of marine life. All studies and models are subject to the approval of the regional water board in consultation with State Water Board staff. The regional water board may require an owner or operator to hire a neutral third-party entity to review studies and models and make recommendations to the regional water board.</p>	<p>On March 11, 2020, SCWD submitted a request for a Water Code section 13142.5(b) determination. The Dischargers submitted a Revised Compliance Matrix dated January 14, 2021.</p> <p>The San Diego Water Board, in consultation with the State Water Board, reviewed the request and the Revised Compliance Matrix, and determined that it was unnecessary for the Dischargers to hire a neutral third-party entity to review studies and models and make recommendations.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
3	2.a.(2)	<p>The regional water board shall conduct a Water Code section 13142.5(b) analysis of all new and expanded desalination facilities. A Water Code section 13142.5(b) analysis may include future expansions at the facility. The regional water board shall first analyze separately as independent considerations a range of feasible alternatives for the best available site, the best available design, the best available technology, and the best available mitigation measures to minimize intake and mortality of all forms of marine life. Then, the regional water board shall consider all four factors collectively and determine the best combination of feasible alternatives to minimize intake and mortality of all forms of marine life. The best combination of alternatives may not always include the best alternative under each individual factor because some alternatives may be mutually exclusive, redundant, or not feasible in combination.</p>	<p>The San Diego Water Board conducted a Water Code section 13142.5(b) analysis of the Doheny Desalination Project. In doing so, the San Diego Water Board analyzed separately as independent considerations a range of feasible alternatives for the best available site, design, technology, and mitigation to minimize the intake and mortality of all forms of marine life.</p> <p>The San Diego Water Board analyzed and considered all four factors collectively to determine the best combination of feasible alternatives to minimize intake and mortality of all forms of marine life.</p> <p>This table summarizes the San Diego Water Board’s analysis and findings for the separate and combined considerations of various feasible alternatives for the Water Code section 13142.5(b) determination.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
4	2.a.(3)	The regional water board’s Water Code section 13142.5(b) analysis for expanded facilities may be limited to those expansions or other changes that result in the increased intake or mortality of all forms of marine life, unless the regional water board determines that additional measures that minimize intake and mortality of all forms of marine life are feasible for the existing portions of the facility.	Not Applicable (N/A). The Doheny Desalination Project is a new facility, not expanded facility.
5	2.a.(4)	In conducting the Water Code section 13142.5(b) determination, the regional water boards shall consult with other state agencies involved in the permitting of that facility, including, but not limited to: California Coastal Commission, California State Lands Commission, and California Department of Fish and Wildlife. The regional water board shall consider project-specific decisions made by other state agencies; however, the regional water board is not limited to project-specific requirements set forth by other agencies and may include additional requirements in a Water Code section 13142.5(b) determination.	In conducting the Water Code section 13142.5(b) determination, the San Diego Water Board consulted with the State Water Board, California Coastal Commission, the California State Lands Commission, the California Department of Fish and Wildlife, and the California Department of Parks and Recreation.

6	2.a.(5)	<p>A regional water board may expressly condition a Water Code section 13142.5(b) determination based on the expectation of the occurrence of a future event. Such future events may include, but are not limited to, the permanent shutdown of a co-located power plant with intake structures shared with the desalination facility, or a reduction in the volume of wastewater available for the dilution of brine. The regional water board must make a new Water Code section 13142.5(b) determination if the foreseeable future event occurs.</p>	<p>This Water Code section 13142.5(b) determination is conditioned in part on the submission and approval by the San Diego Water Board of the Mitigation APF Re-Evaluation Study²⁷, the Larval Study²⁷, and the Final Marine Life Mitigation Plan²⁷.</p> <p>If the conclusions of the Mitigation APF Re-Evaluation Study and/or the Larval Study demonstrate that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination.</p> <p>This Water Code section 13142.5(b) determination is also conditioned on the expectation that the Dischargers will not reduce the volume of wastewater discharged through the SJCOO below the flow rate required to maintain a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001, the Doheny Desalination Project's drinking water production flow rate will not increase over an average monthly of 5.0 MGD, and the brine discharge flow rate from the Doheny Desalination Project will not increase above a monthly average flow rate of 5.0 MGD. The Dischargers are required to apply for a new Water Code section 13142.5(b) if the volume of wastewater is reduced below the flow rate required to maintain a positively buoyant plume more than 5% of the time over a 6-month</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>period based on the average daily salinity at Monitoring Location M-001, the drinking water production flow rate increases over an average monthly of 5.0 MGD, or the brine discharge flow rate increases above a monthly average flow rate of 5.0 MGD.</p> <p>This Water Code section 13142.5(b) determination is also conditioned on a 50% RO recovery rate for the Doheny Desalination Project. If the final design plans for the Doheny Desalination Project result in a RO recovery rate other than 50%, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination.</p>
7	2.a.(5)(a)	<p>The owner or operator shall provide notice to the regional water board as soon as it becomes aware that the expected future event will occur and shall submit a new request for a Water Code section 13142.5(b) determination to the regional water board at least one year prior to the event occurring. If the owner or operator does not become aware that the event will occur at least one year prior to the event occurring, the owner or operator shall submit the request as soon as possible.</p>	See Finding 6.

²⁷ The Mitigation APF Re-Evaluation Study Final Report, the Larval Study, and the Final Marine Life Mitigation Plan is subject to approval by San Diego Water Board in consultation with the State Water Board, the California Coastal Commission, other State agencies involved in the permitting of the Doheny Desalination Project.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
8	2.a.(5)(b)	The regional water board may allow up to five years from the date of the event for the owner or operator to make modifications to the facility required by a new Water Code section 13142.5(b) determination, provided that the regional water board finds that 1) any water supply interruption resulting from the facility modifications requires additional time for water users to obtain a temporary replacement supply, or 2) such a compliance period is otherwise in the public interest and reasonably required for modification of the facility to comply with the determination.	See Finding 6.
9	2.a.(5)(c)	If the regional water board makes a Water Code section 13142.5(b) determination for a desalination facility that will be co-located with a power plant, the regional water board shall condition its determination on the power plant remaining in compliance with the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling.	N/A. The Doheny Desalination Project is not co-located with a power plant. As such, the Water Code section 13142.5(b) determination does not require a condition that the power plant remain in compliance with the Water Quality Control Policy on the Use of Coastal and Estuarine Waters for Power Plant Cooling.

<p>10</p>	<p>2.b</p>	<p>Site Location: Site is the general onshore and offshore location of a new or expanded facility. There may be multiple potential facility design configurations within any given site. The regional water board shall require that the owner or operator evaluate a reasonable range of nearby sites, including sites that would likely support subsurface intakes. For each potential site, in order to determine whether a proposed facility site is the best available site feasible to minimize intake and mortality of all forms of marine life, the regional water board shall require the owner or operator to:</p>	<p>In Section 5.0 of the Draft EIR, SCWD analyzed the feasibility of locating the Doheny Desalination Project and its infrastructure at an alternative site and concluded that the consideration of an alternative site for the Doheny Desalination Project is unnecessary because the construction, operation, and maintenance of the Doheny Desalination Project will not result in any significant environmental impacts at the proposed site given the mitigation measures and project design features described in the Draft EIR to avoid or lessen potential impacts. The Draft EIR also stated that SCWD is unaware of any feasible alternative location that would avoid or lessen significant impacts of the project.</p> <p>To assess whether or not SCWD has selected the best location consistent with the requirements of the Ocean Plan, the San Diego Water Board required the Dischargers to consider alternative sites that could support a desalination plant. In response, the Dischargers analyzed two alternative sites, one in the vicinity of Aliso Creek in the City of Laguna Beach (Aliso Creek Site) and the other at the southwest corner of Marine Corps Base, Camp Pendleton (Camp Pendleton Site).</p> <p>Based on the Dischargers' alternative site analysis, the San Diego Water Board determined that the proposed location of the Doheny Desalination Project in the City of Dana Point with subsurface intakes located at Doheny State Beach is the best site available due to the feasibility of subsurface</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>intakes, the ability to dilute the waste brine with wastewater and discharge through an existing ocean outfall structure, the lack of construction mortality, and the distance of the discharge location from Marine Protected Areas.</p> <p>The San Diego Water Board determined the alternative sites were inferior to the proposed site.</p> <p>The Camp Pendleton Site does not have an ocean outfall structure or wastewater available for dilution. Siting this project at the Camp Pendleton Site would result in salinity and construction-related mortality. While the Aliso Creek Site has an ocean outfall structure and wastewater available for dilution, the outfall structure is located in the vicinity of the Laguna Beach State Marine Conservation Area (SMCA) and Dana Point SMCA, which are sensitive habitats.</p>

11	2.b.(1)	Consider whether subsurface intakes are feasible.	<p>Subsurface intakes are feasible at the proposed site. The site location for the Doheny Desalination Project at Doheny State Beach was chosen specifically because subsurface intakes are feasible at this location.</p> <p>SCWD proposes to utilize subsurface slant wells to withdraw seawater from underneath the ocean floor, eliminating the effects of impingement and entrainment on marine life. The slant wells will be developed in “clusters” or “pods,” and each wellhead cluster will be encased in a fully buried cast-in place concrete vault following the completion of the slant wells. The wellhead vaults will provide ease of access and maintenance and will be located far enough from the shoreline to provide adequate protection from the effects of sea level rise and beach retreat.</p> <p>SCWD conducted slant well pilot testing at the mouth of San Juan Creek, at Doheny State Beach, to determine the feasibility of the subsurface intakes for the Doheny Desalination Project. SCWD operated the slant wells continuously for 18 months from December 28, 2010 to April 24, 2012 (Pilot Study). In a transmittal letter, dated July 17, 2020, GHD stated that the Pilot Study was successful and found that the construction and operation of subsurface intakes using slant wells along Doheny State Beach is feasible.</p> <p>The subsurface slant wells intake system is consistent with the preferred subsurface intake technology described in chapter</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>III.M.2.d(1)(a) of the Ocean Plan. Subsurface intakes are established as the preferred intake technology because they are the best method for minimizing intake and mortality of all forms of marine life. (Desalination Amendment Final Staff Report, pp. 69-70).</p> <p>For the alternative sites, the Dischargers stated that it's unclear if the offshore geology at the Aliso Creek Site and Camp Pendleton Site, would be suitable for subsurface intakes. However, the San Diego Water Board assumed subsurface intakes were feasible at the alternative sites.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
12	2.b.(2)	Consider whether the identified need for desalinated water is consistent with an applicable adopted urban water management plan prepared in accordance with Water Code section 10631, or if no urban water management plan is available, other water planning documents such as a county general plan or integrated regional water management plan.	<p>The identified need for desalinated water is consistent with SCWD’s 2020 Urban Water Management Plan (UWMP)²⁸. SCWD aims to decrease its reliance on imported water through a variety of projects, including the Doheny Desalination Project. As identified in section 6.7.1 of the UWMP, 5 MGD of drinking water from the Doheny Desalination Project is planned as Phase I (also known as the “Local” Project) with potential future expansions up to 15 MGD (a potential future “regional” project). Consistent with the UWMP, the Doheny Desalination Project will provide SCWD with a high quality, locally controlled, and drought-proof drinking water supply. The Doheny Desalination Project will also serve as an emergency back-up water supply should imported water deliveries be interrupted.</p> <p>The identified need for desalinated water is also consistent with the 2018 Municipal Water District of Orange County (MWDOC) Orange County Water Reliability Study (Reliability Study)²⁹. The Reliability Study states, “The Study analysis indicates that the San Juan Watershed Project and the Doheny Project both provide cost-effective annual supplies and emergency supplies”.</p> <p>This Water Code section 13142.5(b) determination is specific to the production of up to 5 MGD of potable drinking water.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
13	2.b.(3)	Analyze the feasibility of placing intake, discharge, and other facility infrastructure in a location that avoids impacts to sensitive habitats and sensitive species.	<p>Intake: See Finding 11. The Doheny Desalination Project, as proposed, will comply with the Ocean Plan Desalination Amendment’s preference in chapter III.M.2.d (1)(a) for subsurface intakes within the ocean floor that will avoid impacts to sensitive habitats and sensitive species from the intake of seawater. Subsurface intakes are the environmentally preferred intake option because they do not impinge or entrain marine life. Additionally, subsurface wells will have minimal to no construction-related impacts on marine life. Sections 8.3 and 12.2 of the Desalination Amendment Final Staff Report provide detailed information supporting the preference for subsurface intakes.</p> <p>The western snowy plover (<i>Charadrius alexandrinus nivosus</i>) is known to occasionally forage and roost at Doheny State Beach. However, there are no Special Protection Zones or critical habitat listed for this species. Project construction will include consultation with United States Fish and Wildlife Service to determine appropriate minimization and avoidance measures. Doheny State Beach is an active public recreation area and given that the slant well drill rig work areas have been</p>

²⁸ SCWD 2020 Urban Water Management Plan is available at this website: https://www.scwd.org/ T6_R81.php (as of December 24, 2021)

²⁹ Reliability Study is available at this website: [Microsoft Word - OC Water Reliability Study 2018 - Briefing \(December 12 Revision\) \(mwdoc.com\)](#) (as of February 7, 2022)

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>located away from the beach, there are no significant impacts anticipated to western snowy plovers during construction. The area will be monitored during construction for wintering birds, as well as nesting pairs, with appropriate measures taken as determined by California Department of Fish and Wildlife and United States Fish and Wildlife Service. The drill rig work areas will be screened for noise and light attenuation (as discussed in the Draft EIR Section 4.10, Noise and Vibration, and Section 4.1, Aesthetics, Light, and Glare).</p> <p>As noted in Finding 11, the San Diego Water Board assumed subsurface intakes are feasible for both the Aliso Creek Site and Camp Pendleton Site. The San Diego Water Board also assumes the construction related impact for the subsurface intakes would be similar to that described above for the proposed site for the Doheny Desalination Project.</p> <p>Discharge: The Doheny Desalination Project proposes to use the existing SJCOO to discharge brine, calcite contactor backwash, and off-spec product water to the Pacific Ocean. Using the existing ocean outfall infrastructure for these discharges avoids constructing new discharge infrastructure that could potentially impact sensitive habitats and sensitive species. Using the</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>SJCOO for the discharge also implements the Ocean Plan’s preferred alternative of commingling the waste brine with an existing wastewater stream to dilute the brine to generate a mixture that is close to the receiving waters’ natural background salinity and is positively buoyant at the point of discharge. This method of discharge can prevent the formation of dense toxic brine plumes and consequently minimize intake and mortality of all forms of marine life.</p> <p>Similar to the proposed site for the Doheny Desalination Project, the Aliso Creek Site has an existing ocean outfall structure and wastewater available for dilution. However, the outfall structure at the Aliso Creek Site is located in the vicinity of the Laguna Beach SMCA and Dana Point SMCA, which are sensitive habitats.</p> <p>Unlike the proposed site for the Doheny Desalination Project, the Camp Pendleton Site does not have an existing ocean outfall structure and does not have wastewater available for dilution. The offshore area where the ocean outfall could be constructed at the Camp Pendleton Site is also near a kelp bed, a sensitive habitat.</p> <p>Other Facility Infrastructure: As stated in the ROWD, the well heads, pipelines, and other infrastructure at the proposed site for the Doheny Desalination Project are located within the Doheny State</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>Beach Park (campground, park, and parking lot) and industrial areas owned by SCWD, minimizing the impact to sensitive habitats and species. (See Raw Water Conveyance Layout with Staging and Construction Laydown Areas, 2021 ROWD, page 508.)</p> <p>Unlike the proposed site for the Doheny Desalination Project, the Aliso Creek Site is not near suitable local or regional potable distribution lines and would likely require new distribution piping potentially within or near the Aliso and Wood Canyons Wilderness Park. Construction of distribution lines could impact sensitive areas.</p> <p>Similar to the Aliso Creek Site, the Camp Pendleton Site is not near suitable local or regional potable distribution lines and is at the end of the South Orange County potable water network. Several miles of pipeline would be required to deliver the product water, which could impact sensitive areas.</p>

14	2.b.(4)	<p>Analyze the direct and indirect effects on all forms of marine life resulting from facility construction and operation, individually and in combination with potential anthropogenic effects on all forms of marine life resulting from other past, present, and reasonably foreseeable future activities within the area affected by the facility.</p>	<p>As described in section 4.3 of the Draft EIR, the effects on all forms of marine life resulting from the construction and operation of the Doheny Desalination Project is not significant on a project level primarily due to the siting of slant wells away from the beach where shorebirds are more prevalent, the use of subsurface intake wells, the use of an existing ocean outfall structure, and the plans to blend the brine with an existing wastewater discharge to the ocean. Past and present activities include the existing wastewater discharge through the existing ocean outfall and non-point source discharges (e.g., urban runoff), both of which are regulated by San Diego Water Board permits. The EIR also analyzed reasonably foreseeable cumulative impacts to marine life. The EIR found that the Doheny Desalination Project's impacts to marine life are not significant on a project level and not cumulatively considerable. The Doheny Desalination Project was designed to avoid sensitive marine biological resources by using the Ocean Plan Desalination Amendment's preferred design and technologies.</p> <p>Future activities could include an expansion of the Doheny Desalination Project to produce 15 MGD of product water and/or a decrease in the amount of wastewater available to blend with the brine from the Doheny Desalination Project. Both future activities would require a new Water Code section 13142.5(b) determination. Additionally, changing climate conditions may</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			fundamentally alter the way desalination plants are designed and operated. Therefore, Attachment E section 6.1 of this Order requires the Dischargers submit a Climate Change Action Plan within three years of the effective date of this Order.
15	2.b.(5)	Analyze oceanographic geologic, hydrogeologic, and seafloor topographic conditions at the site, so that the siting of a facility, including the intakes and discharges, minimizes the intake and mortality of all forms of marine life.	As described in section 4.3 of the Draft EIR, the Doheny Desalination Project’s offshore components would be located under the seabed of the Pacific Ocean. For the purposes of subsurface slant well siting and design, the offshore hydrogeology was studied by SCWD through a series of technical studies. These studies demonstrated that the areas offshore of San Juan Creek Lagoon and Capistrano Beach Park have sufficiently deep ancient alluvial deposits (referred to as “paleo channels”) to provide adequate ocean water transmitting into the proposed subsurface intake wells. The Doheny Desalination Project proposes to discharge the waste brine and wastewater through the existing discharge infrastructure, the SJCOO. Using the existing infrastructure avoids construction in the seafloor.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
16	2.b.(6)	Analyze the presence of existing discharge infrastructure, and the availability of wastewater to dilute the facility’s brine discharge.	<p>The Doheny Desalination Project proposes to discharge brine, calcite contactor backwash, and off-spec product water to the ocean through the existing SJCOO.</p> <p>The Doheny Desalination Project proposes to dilute the waste brine with commingled treated wastewater effluent flows from wastewater treatment and water reclamation plants³⁰ and to discharge the combined wastewater stream through the SJCOO. The Dischargers expect a sufficient flow rate of wastewater will be available to dilute the waste brine from the Doheny Desalination Project and to produce a positively buoyant plume.</p>

³⁰ The brine from the Doheny Desalination Project will be diluted by commingling with the effluent from the J.B. Latham Wastewater Treatment Plant, Santa Margarita Water District (SMWD) Chiquita Water Reclamation Plant (WRP), SMWD/ Moulton Niguel Water District 3A WRP, San Clemente WRP, SMWD Oso Creek WRP, San Juan Capistrano Groundwater Treatment Plant, South Coast Water District (SCWD) Groundwater Recovery Facility, and Segunda Deshecha Runoff Plant.

17	2.b.(7)	<p>Ensure that the intake and discharge structures are not located within a Marine Protected Area (MPA) or State Water Quality Protection Areas (SWQPA) with the exception of intake structures that do not have marine life mortality associated with the construction, operation, and maintenance of the intake structures (e.g., slant wells). Discharges shall be sited at a sufficient distance from an MPA or SWQPA so that the salinity within the boundaries of an MPA or SWQPA does not exceed natural background salinity. To the extent feasible, surface intakes shall be sited so as to maximize the distance from an MPA or SWQPA.</p>	<p>The intake structure will be located within the ocean floor in the Doheny State Beach. The proposed design of the intake structure will utilize slant wells. The construction of the slant wells will take place within the Doheny State Beach Park (campground, park, and parking lot) to avoid marine life mortality. The subsurface intake slant wells are the preferred method in the Ocean Plan to minimize marine life mortality during construction, operation, and maintenance. Thus, the construction, operation, and maintenance of the intake structure slant wells will avoid impacts to marine life mortality.</p> <p>The existing discharge infrastructure, the SJCOO, and the location of the proposed subsurface intakes do not fall within a State Marine Protected Area (MPA). The nearest MPA is the Dana Point SMCA, which is approximately one linear mile from the proposed location of the subsurface intakes and is separated by the Dana Point harbor. The Dana Point SMCA is also approximately one mile from the SJCOO. As stated in the ROWD, the worst-case scenario brine only discharge will result in a BMZ less than 1 meter from the SJCOO, based on a 50% RO recovery rate. Therefore, the salinity of the discharge through the SJCOO will not cause salinity to be elevated within the boundaries of an MPA. However, the Dischargers expect sufficient wastewater will be available to dilute the waste brine from the Doheny Desalination Project such that the commingled effluent discharged through the</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			SJCOO will be below natural background salinity.
18	2.c	Design: Design is the size, layout, form, and function of a facility, including the intake capacity and the configuration and type of infrastructure, including intake and outfall structures. The regional water board shall require that the owner or operator perform the following in determining whether a proposed facility design is the best available design feasible to minimize intake and mortality of all forms of marine life:	See findings below for subsections under III.M.2.c.

<p>19</p>	<p>2.c.(1)</p>	<p>For each potential site, analyze the potential design configurations of the intake, discharge, and other facility infrastructure to avoid impacts to sensitive habitats and sensitive species.</p>	<p>See Finding 13. In Section 5.0 of the Draft EIR, SCWD concluded that the consideration of an alternative site for the Doheny Desalination Project is not necessary because the proposed site does not have any significant environmental impacts with incorporation of the EIR mitigation measures and project design features that avoid or lessen potential impacts. The Draft EIR also stated that SCWD is not aware of any feasible alternative location that would avoid or lessen significant impacts of the project. However, the San Diego Water Board required the Dischargers to consider alternative sites that could support a desalination plant. In response, the Dischargers analyzed two alternative sites, the Aliso Creek Site and Camp Pendleton Site.</p> <p>Intake: See Finding 13. The Doheny Desalination Project, as proposed, will implement the Ocean Plan Desalination Amendment's preferred subsurface intake technology to withdraw seawater underneath the ocean floor to avoid impacts to sensitive habitats and sensitive species from the intake of seawater. The Dischargers stated that it is unclear if the geology at both the Aliso Creek Site and the Camp Pendleton Site are suitable for subsurface intakes.</p> <p>Discharge: See Findings 13-16. The Doheny Desalination Project proposes to use existing discharge infrastructure, the SJCOO, to discharge waste brine, calcite contactor backwash, and off-spec product water that is diluted and</p>
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			<p>commingled with wastewater. Using existing infrastructure avoids constructing new discharge infrastructure that could potentially impact sensitive habitats and sensitive species. Using the SJCOO for the discharge also implements the Ocean Plan's preferred alternative of discharge by commingling the waste brine with wastewater.</p> <p>Similar to the proposed site for the Doheny Desalination Project, the Aliso Creek Site has an existing ocean outfall structure and wastewater available for dilution. However, the outfall structure at the Aliso Creek Site is located in the vicinity of the Laguna Beach SMCA and Dana Point SMCA, which are sensitive habitats. Therefore, the Aliso Creek Site is less favorable than the proposed site for the Doheny Desalination Project in terms of discharge related impacts.</p> <p>Unlike the proposed site for the Doheny Desalination Project, the Camp Pendleton Site does not have an existing ocean outfall structure and does not have wastewater available for dilution. The offshore area where the ocean outfall could be constructed at the Camp Pendleton Site is near a kelp bed, a sensitive habitat. Therefore, the Camp Pendleton Site is less favorable than the proposed site for the Doheny Desalination Project in terms of discharge related impacts.</p> <p>Other Facility Infrastructure: The well head and pipeline locations and construction methods for the proposed Doheny Desalination Project were specifically chosen to</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>avoid areas of Doheny State Beach with sensitive habitats and species, such as western snowy plovers.</p> <p>Unlike the proposed site for the Doheny Desalination Project, the Aliso Creek Site is not near a suitable local or regional potable distribution lines and would likely require new distribution piping potentially within or near the Aliso and Wood Canyons Wilderness Park. Construction of distribution lines could impact sensitive habitats. Therefore, the Aliso Creek Site is less favorable than the proposed site for the Doheny Desalination Project in terms of infrastructure related impacts.</p> <p>Similar to the Aliso Creek Site, the Camp Pendleton Site is not near suitable local or regional potable distribution lines and is at the end of the South Orange County potable water network. Several miles of pipeline would be required to deliver the product water, which could impact sensitive habitats. Therefore, the Camp Pendleton Site is less favorable than the proposed site for the Doheny Desalination Project in terms of infrastructure related impacts.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
20	2.c.(2)	If the regional water board determines that subsurface intakes are not feasible and surface water intakes are proposed instead, analyze potential designs for those intakes in order to minimize the intake and mortality of all forms of marine life.	See Finding 11. The San Diego Water Board has found that subsurface intakes are feasible.
21	2.c.(3)	Design the outfall so that the BMZ does not encompass or otherwise adversely affect existing sensitive habitat.	See Finding 17. The BMZ will be a sufficient distance from the Dana Point SMCA to not adversely affect existing sensitive habitat.

22	2.c.(4)	<p>Design the outfall so that discharges do not result in dense, negatively buoyant plumes that result in adverse effects due to elevated salinity or hypoxic conditions occurring outside the BMZ. An owner or operator must demonstrate that the outfall meets this requirement through plume modeling and/or field studies. Modeling and field studies shall be approved by the regional water board in consultation with State Water Board staff.</p>	<p>Waste brine from the Doheny Desalination Project will be commingled with wastewater and discharged to the Pacific Ocean through the SJCOO. If the waste brine flow is diluted with a sufficient flow rate of wastewater, the plume is expected to be positively buoyant.²⁹ According to the Discharger’s Revised Compliance Matrix, “In rare occasions very low wastewater flow (less than 5 MGD) may result in a temporary dense (negatively buoyant) plume.... A dense (negatively buoyant) discharge, if any, would be brief, confined to an area less than two acres and would only be slightly above ambient ocean salinity.” Between January 2016 and December 2020, the flow rate through the SJCOO was only less than 5 MGD on one day - April 8, 2019. Also, SCWD states that their modeling results demonstrate that the discharge would continue to comply with Ocean Plan standards even if brine were to comprise 100 percent of the SJCOO discharge flow and the plume was negatively buoyant. Given these considerations, the occurrence of a brief negatively buoyant plume is not expected to cause adverse effects or hypoxic conditions.</p> <p>If the Dischargers reduce the volume of wastewater discharged through the SJCOO below the flow rate required for a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001, then the Dischargers are required to</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			apply for a new Water Code section 13142.5(b) determination.
23	2.c.(5)	Design outfall structures to minimize the suspension of benthic sediments.	The Dischargers are not designing a new outfall structure; the Dischargers propose to discharge the waste brine from the Doheny Desalination Project through an existing outfall structure, the SJCOO. As discussed in Finding 22, SCWD expects a positively buoyant plume most of the time with a dense, negatively buoyant plume only temporarily during rare occasions of very low wastewater flows. A positively buoyant plume will rise towards the ocean surface away from the ocean floor, minimizing the suspension of benthic bottom sediments. Additionally, the velocity of the discharge through the SJCOO is expected to be minimal, further minimizing the suspension of benthic sediments. See Finding 22.
24	2.d	Technology: Technology is the type of equipment, materials, and methods that are used to construct and operate the design components of the desalination facility. The regional water board shall apply the following considerations in determining whether a proposed technology is the best available technology feasible to minimize intake and mortality of all forms of marine life:	See findings below for subsections under III.M.2.d.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
25	2.d.(1)(a)	Subject to chapter M.2.a.(2), the regional water board in consultation with State Water Board staff shall require subsurface intakes unless it determines that subsurface intakes are not feasible based upon a comparative analysis of the factors listed below for surface and subsurface intakes. A design capacity in excess of the need for desalinated water as identified in chapter III.M.2.b.(2) shall not be used by itself to declare subsurface intakes as not feasible.	SCWD conducted a pilot test of subsurface intakes using slant wells at the mouth of San Juan Creek at Doheny State Beach and found that the construction and operation of subsurface intakes using slant wells along Doheny State Beach is feasible. The San Diego Water Board is requiring subsurface intakes utilizing slant wells for the Doheny Desalination Project in compliance with the Ocean Plan Desalination Amendment.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
26	2.d.(1)(a)(i)	<p>The regional water board shall consider the following factors in determining feasibility of subsurface intakes: geotechnical data, hydrogeology, benthic topography, oceanographic conditions, presence of sensitive habitats, presence of sensitive species, energy use for the entire facility; design constraints (engineering, constructability), and project life cycle cost. Project life cycle cost shall be determined by evaluating the total cost of planning, design, land acquisition, construction, operations, maintenance, mitigation, equipment replacement and disposal over the lifetime of the facility, in addition to the cost of decommissioning the facility. Subsurface intakes shall not be determined to be economically infeasible solely because subsurface intakes may be more expensive than surface intakes. Subsurface intakes may be determined to be economically infeasible if the additional costs or lost profitability associated with subsurface intakes, as compared to surface intakes, would render the desalination facility not economically viable. In addition, the regional water board may evaluate other site- and facility-specific factors.</p>	See Findings 11, 13-15, 17, 19, and 25.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
27	2.d.(1)(a)(ii)	If the regional water board determines that subsurface intakes are not feasible for the proposed intake design capacity, it shall determine whether subsurface intakes are feasible for a reasonable range of alternative intake design capacities. The regional water board may find that a combination of subsurface and surface intakes is the best feasible alternative to minimize intake and mortality of marine life and meet the identified need for desalinated water as described in chapter III.M.2.b.(2).	N/A. Subsurface intakes are feasible.
28	2.d.(1)(b)	Installation and maintenance of a subsurface intake shall avoid, to the maximum extent feasible, the disturbance of sensitive habitats and sensitive species.	The construction and maintenance of the subsurface slant wells will take place within the Doheny State Beach Park (campground, park, and parking lot), areas that have already been disturbed. Thus, the impact to marine life from construction and maintenance of the subsurface slant wells will avoid, to the maximum extent feasible, the disturbance of sensitive habitats and sensitive species.
29	2.d.(1)(c)	If subsurface intakes are not feasible, the regional water board may approve a surface water intake subject to the following conditions:	N/A. Subsurface intakes are feasible.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
30	2.d.(1)(c)i	The regional water board shall require that surface water intakes be screened. Screens must be functional while the facility is withdrawing seawater.	N/A. The Doheny Desalination Project will use subsurface intakes to withdraw seawater from underneath the ocean floor and will not require screening at the point of seawater withdrawal.
31	2.d.(1)(c)ii	In order to reduce entrainment, all surface water intakes must be screened with a 1.0 mm (0.04 in) or smaller slot size screen when the desalination facility is withdrawing seawater.	N/A. The Doheny Desalination Project will use subsurface intakes to withdraw seawater from underneath the ocean floor and will not require screening at the point of seawater withdrawal.

32	2.d.(1)(c)iii	<p>An owner or operator may use an alternative method of preventing entrainment so long as the alternative method results in intake and mortality of eggs, larvae, and juvenile organisms that is less than or equivalent to a 1.0 mm (0.04 in) slot size screen. The owner or operator must demonstrate the effectiveness of the alternative method to the regional water board. The owner or operator must conduct a study to demonstrate the effectiveness of the alternative method, and use an Empirical Transport Model (ETM)/ Area of Production Forgone (APF) approach to estimate entrainment. The study period shall be at least 12 consecutive months. Sampling for environmental studies shall be designed to account for variation in oceanographic or hydrologic conditions and larval abundance and diversity such that abundance estimates are reasonably accurate. Samples must be collected using a mesh size no larger than 335 microns and individuals collected shall be identified to the lowest taxonomical level practicable. The ETM/APF analysis shall evaluate entrainment for a broad range of species, species morphologies, and sizes under the environmental and operational conditions that are representative of the entrained species and the conditions at the full-scale desalination facility. At their discretion, the regional water boards may permit the use of</p>	<p>N/A. The Doheny Desalination Project will use subsurface intakes to withdraw seawater from underneath the ocean floor and will thereby eliminate the effects of impingement and entrainment on marine life.</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
		existing entrainment data to meet this requirement.	
33	2.d.(1)(c)iv	In order to minimize impingement, through-screen velocity at the surface water intake shall not exceed 0.15 meters per second (0.5 feet per second, ft/sec).	N/A. The Doheny Desalination Project will use subsurface intakes to withdraw seawater from underneath the ocean floor and will thereby eliminate the effects of impingement and entrainment on marine life.
34	2.d.(2)	Considerations for Brine* Discharge Technology:	See findings below for subsections under III.M.2.d.(2)
35	2.d.(2)(a)	The preferred technology for minimizing intake and mortality of all forms of marine life resulting from brine discharge disposal is to commingle brine with wastewater (e.g., agricultural, municipal, industrial, power plant cooling water, etc.) that would otherwise be discharged to the ocean. The wastewater must provide adequate dilution to ensure salinity of the commingled discharge meets the receiving water limitation for salinity in chapter III.M.3. Nothing in this section shall preclude future recycling of the wastewater.	<p>The Doheny Desalination Project proposes to commingle the waste brine with wastewater²⁹ that would otherwise be discharged to the ocean and discharge the combined flow through the SJCOO. The wastewater will provide adequate dilution to ensure the salinity of the commingled discharge meets the receiving water limitation for salinity in chapter III.M.3. of the Ocean Plan. SCWD expects a positively buoyant plume most the time with a dense, negatively buoyant plume only temporarily during rare occasions of very low wastewater flow. See Findings 16, 22.</p> <p>Section 8.6 of the Desalination Amendment Final Staff Report states “[Commingling brine with wastewater] is the most environmentally protective brine disposal method and should be used if feasible.”</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
36	2.d(2)(b)	<p>Multiport diffusers are the next best method for disposing of brine when the brine cannot be diluted by wastewater and when there are no live organisms in the discharge. Multiport diffusers shall be engineered to maximize dilution, minimize the size of the BMZ, minimize the suspension of benthic sediments, and minimize mortality of all forms of marine life.</p>	<p>N/A. See Finding 35. The Dischargers propose to dilute the waste brine by commingling it with wastewater.²⁹ The commingled discharge will be disposed of through the SJCOO via a 125-port diffuser.</p> <p>Section 8.6 of the Desalination Amendment Final Staff Report states “Multiport diffusers are the next best brine discharge method [to commingling brine with wastewater] because [the multiport diffusers] rapidly dilute and disperse brine within a small area and result in minimal marine life mortality.”</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
37	2.d(2)(c)	<p>Brine discharge disposal technologies other than wastewater dilution and multiport diffusers, may be used if an owner or operator can demonstrate to the regional water board that the technology provides a comparable level of intake and mortality of all forms of marine life as wastewater dilution if wastewater is available, or multiport diffusers if wastewater is unavailable. The owner or operator must evaluate all of the individual and cumulative effects of the proposed alternative discharge method on the intake and mortality of all forms of marine life, including (where applicable); intake-related entrainment, osmotic stress, turbulence that occurs during water conveyance and mixing, and shearing stress at the point of discharge. When determining the intake and mortality associated with a brine discharge disposal technology or combination of technologies, the regional water board shall require the owner or operator to use empirical studies or modeling to:</p>	<p>N/A. See Finding 35 above. The Dischargers propose to dilute the waste brine by commingling it with wastewater.²⁹ The commingled discharge will be disposed of through the SJCOO via a 125-port diffuser.</p>
38	2.d(2)(c)i	<p>Estimate intake entrainment impacts using an ETM/APF approach.</p>	<p>N/A. The Doheny Desalination Project will use subsurface intakes to withdraw seawater from underneath the ocean floor and will thereby eliminate the effects of impingement and entrainment on marine life.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
39	2.d(2)(c)ii	Estimate degradation of all forms of marine life from elevated salinity within the BMZ, including osmotic stresses, the size of impacted area, and the duration that all forms of marine life are exposed to the toxic conditions. Considerations shall be given to the most sensitive species, and community structure and function.	N/A. See Finding 22. The Dischargers expect a positively buoyant plume most of the time with a dense, negatively buoyant plume only temporarily during rare occasions of very low wastewater flow. The occurrence of a brief negatively buoyant plume is not expected to cause adverse effects or hypoxic conditions. This Order also requires sufficient wastewater to dilute the brine from the Doheny Desalination Project to ensure the salinity of the commingled discharge is below natural background salinity (i.e., produces a positively buoyant plume). If the Dischargers reduce the volume of wastewater discharged through the SJCOO below the flow rate required for a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination. Therefore, there will be no degradation of marine life due to elevated salinity within the BMZ.
40	2.d(2)(c)iii	Estimate the intake and mortality of all forms of marine life that occurs as a result of water conveyance, in-plant turbulence or mixing, and waste discharge.	The Doheny Desalination Project will use slant wells, eliminating intake mortality. See Finding 11. See Finding 46 for information on the turbulence/shearing mortality due to the discharge.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
41	2.d(2)(c)iv	<p>Within 18 months of beginning operation, submit to the regional water board an empirical study that evaluates intake and mortality of all forms of marine life associated with the alternative brine discharge technology. The study must evaluate impacts caused by any augmented intake volume, intake and pump technology, water conveyance, waste brine mixing, and effluent discharge. Unless demonstrated otherwise, organisms entrained by the alternative brine discharge technology are assumed to have a mortality rate of 100 percent. The study period shall be at least 12 consecutive months. If the regional water board requires a study period longer than 12 months, the final report must be submitted to the regional water board within 6 months of the completion of the empirical study.</p>	<p>N/A. See Finding 35. The Dischargers propose to dilute the waste brine by commingling it with wastewater.²⁹ The commingled discharge will be disposed of through the SJCOO via a 125-port diffuser.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
42	2.d(2)(c)v	<p>If the empirical study shows that flow augmentation, the alternative brine discharge disposal technology, results in more intake and mortality of all forms of marine life than a facility using wastewater dilution or multiport diffusers, then the facility must either (1) cease using flow augmentation the alternative brine discharge technology and install and use wastewater dilution or multiport diffusers to discharge brine waste, or (2) re-design the flow augmentation the alternative brine discharge technology system to minimize intake and mortality of all forms of marine life to a level that is comparable with wastewater dilution if wastewater is available, or multiport diffusers if wastewater is unavailable, subject to regional water board approval.</p>	<p>N/A. See Finding 35. The Dischargers propose to dilute the waste brine by commingling it with wastewater.²⁹ The commingled discharge will be disposed of through the SJCOO via a 125-port diffuser.</p>
43	2.d(2)(d)(i)	<p>[Flow Augmentation as an alternative brine discharge technology is prohibited with the following exceptions:]</p> <p>At facilities that use subsurface intakes* to supply augmented flow water for dilution. Facilities that use subsurface intakes* to supply augmented flow water for dilution are exempt from the requirements of chapter III.M.2.d.(2)(c) if the facility meets the receiving water limitation for salinity* in chapter III.M.3.</p>	<p>N/A. See Finding 35. The Dischargers propose to dilute the waste brine by commingling it with wastewater.²⁹ The commingled discharge will be disposed of through the SJCOO via a 125-port diffuser.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
44	2.d(2)(d)(ii)	<p>[Flow Augmentation as an alternative brine discharge technology is prohibited with the following exceptions:]</p> <p>At a facility that has received a conditional Water Code section 13142.5(b) determination and is over 80 percent constructed by January 28, 2016. If the owner or operator of the facility proposes to use flow augmentation as an alternative brine discharge technology, the facility must: use low turbulence intakes (e.g., screw centrifugal pumps or axial flow pumps) and conveyance pipes; convey and mix dilution water in a manner that limits thermal stress, osmotic stress, turbulent shear stress, and other factors that could cause intake and mortality of all forms of marine life; comply with chapter III.M.2.d(1); and not discharge through multipoint diffusers.</p>	<p>N/A. See Finding 35. The Dischargers propose to dilute the waste brine by commingling it with wastewater.²⁹ The commingled discharge will be disposed of through the SJCOO via a 125-port diffuser.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
45	2.e	Mitigation: for the purposes of this section mitigation is the replacement of all forms of marine life or habitat that is lost due to the construction and operation of a desalination facility after minimizing intake and mortality of all forms of marine life through best available site, design, and technology. The regional water board shall ensure an owner or operator fully mitigates for the operational lifetime of the facility and uses the best available mitigation measures feasible to minimize intake and mortality of all forms of marine life. The owner or operator may choose whether to satisfy a facility’s mitigation measures pursuant to chapter III.M.2.e.(3), or if available, M.2.e.(4), or a combination of the two.	In conformance with the Ocean Plan, this Order requires the Dischargers to implement a mitigation project that fully compensates for the mortality of all forms of marine life due to the construction and operation of the Doheny Desalination Project. See Finding 51.

46	2.e(1)	<p>Marine Life Mortality Report. The owner or operator of a facility shall submit a report to the regional water board estimating the marine life mortality resulting from construction and operation of the facility after implementation of the facility's required site, design, and technology measures.</p>	<p>The Dischargers included a Marine Life Mortality Report in the ROWD. The Marine Life Mortality Report estimates the mortality associated with the construction and operation of the Doheny Desalination Project.</p> <p>Intake: The Doheny Desalination Project, as planned, will implement the Ocean Plan Desalination Amendment's preferred alternative of subsurface intake technology underneath the ocean floor to avoid impacts to sensitive habitats and sensitive species from the intake of seawater. Subsurface intakes act as a natural barrier to organisms and thus eliminate impingement and entrainment effects on marine life. The Marine Life Mortality Report did not consider intake related mortality as there is not expected to be mortality associated with the intake for the Doheny Desalination Project.</p> <p>Construction: The construction of the subsurface intake slant wells will take place from the Doheny State Beach Park (campground, park, and parking lot) to minimize marine life mortality. The Marine Life Mortality Report did not consider construction related mortality as there is not expected to be mortality associated with the construction of the Doheny Desalination Project if sufficient construction mitigation measures are implemented.</p> <p>Discharge: See Finding 35. The Dischargers propose to dilute the waste brine by commingling it with wastewater.²⁹ The commingled discharge will be disposed of through the SJCOO via a 125-port</p>
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			<p>diffuser. This is the preferred brine discharge technology in the Ocean Plan Desalination Amendment.</p> <p>This Order requires sufficient wastewater to dilute the brine to produce a positively buoyant plume. If the Dischargers reduce the volume of wastewater discharged through the SJCOO below the flow rate required for a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination. The occurrence of a brief negatively buoyant plume is not expected to cause adverse effects or hypoxic conditions. Therefore, this Order and Water Code section 13142.5(b) determination do not consider salinity related impacts.</p> <p>The addition of brine from the Doheny Desalination Project to the wastewater discharged through the SJCOO will cause additional turbulence/shearing mortality than what is currently occurring at the SJCOO. The mortality associated with the addition of the brine varies significantly based on assumptions of larval durations of species present in the source waterbody, RO recovery rates, and baseline wastewater flows (i.e., wastewater flows used to dilute the brine from the Doheny Desalination Project).</p> <p>The Dischargers did not conduct a larval study to determine the species present in the source waterbody. Instead, the Dischargers stated that fish eggs</p>
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			<p>are the only marine life that are impacted by the discharge. The San Diego Water Board, in consultation with the State Water Board and the California Coastal Commission, noted that species with longer larval durations, such as marine invertebrates, are likely present in the source waterbody. This Order assumes a larval duration of 10 days to estimate the APF. However, section 6.3.2.4 of this Order requires the Dischargers to conduct a Larval Study to determine the species present in the source waterbody to confirm this assumption.</p> <p>The Dischargers provided APF estimates using RO recovery rates ranging from 35% to 60% recovery. The actual RO recovery rate is unknown until the design plans for the Doheny Desalination Project are finalized. In the absence of information on the actual design RO recovery rates, this Order assumes a RO recovery rate of 50% for estimating the APF and determining mitigation requirements.</p> <p>Because the Doheny Desalination Project brine discharge commingles with treated wastewater effluent prior to being discharged through the SJCOO, the San Diego Water Board determined the incremental impacts of turbulence/shearing mortality caused by addition of the brine. Generally, the incremental impact of turbulence/shearing mortality is determined from the difference between the impact caused by baseline wastewater flows and the impact from the commingled wastewater and brine flows. The Dischargers provided</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>APF estimates using a range of baseline wastewater flows. With a 50% RO recovery, APF estimates increased with increasing baseline wastewater flows. For all modeling scenarios, baseline wastewater flows of 8 MGD resulted in no incremental impact. This Order uses the APF estimate based on a baseline wastewater flow of 13 MGD, which is similar to the average wastewater flow discharged through the SJCOO from 2016 through 2020 (i.e., 11.9 MGD).</p> <p>The APF estimate using a RO recover rate of 50%, a larval duration of 10 days, and a baseline wastewater flow of 13 MGD resulted in 7.45 acres of required mitigation. However, section 6.3.2.3 of this Order requires the Dischargers to conduct a Mitigation APF Re-Evaluation Study to confirm the assumptions made for the APF estimates. If it is determined that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
47	2.e(1)(a)	<p>For operational mortality related to intakes, the report shall include a detailed entrainment study. The entrainment study period shall be at least 12 consecutive months and sampling shall be designed to account for variation in oceanographic or hydrologic conditions and larval abundance and diversity such that abundance estimates are reasonably accurate. At their discretion, the regional water boards may permit the use of existing entrainment data from the facility to meet this requirement. Samples must be collected using a mesh size no larger than 335 microns and individuals collected shall be identified to the lowest taxonomical level practicable. The ETM/APF analysis shall be representative of the entrained species collected using the 335 micron net. The APF shall be calculated using a one-sided, upper 95 percent confidence bound for the 95th percentile of the APF distribution. An owner or operator with subsurface intakes is not required to do an ETM/APF analysis for their intakes and is not required to mitigate for intake-related operational mortality. The regional water board may apply a one percent reduction to the APF acreage calculated in the Marine Life Mortality Report to account for the reduction in entrainment of all forms of marine life when using a 1.0 mm slot size screen.</p>	<p>N/A. See Finding 46. The Doheny Desalination Project will use subsurface intakes underneath the ocean floor. Subsurface intakes act as a natural barrier to organisms and thus eliminates impingement and entrainment effects on marine life. An ETM/APF analysis and mitigation for intake-related operational mortality is not required.</p>

<p>48</p>	<p>2.e(1)(b)</p>	<p>For operational mortality related to discharges, the report shall estimate the area in which salinity exceeds 2.0 parts per thousand above natural background salinity or a facility-specific alternative receiving water limitation (see chapter III.M.3). The area in excess of the receiving water limitation for salinity shall be determined by modeling and confirmed with monitoring. The report shall use any acceptable approach approved by the regional water board for evaluating mortality that occurs due to shearing stress resulting from the facility's discharge, including any incremental increase in mortality resulting from a commingled discharge.</p>	<p>See Finding 46. This Order requires sufficient wastewater for the dilution of the brine from the Doheny Desalination Project to ensure the salinity of the discharge is below natural background salinity and produces a positively buoyant plume. If the Dischargers reduce the volume of wastewater discharged through the SJCOO below the flow rate required for a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination. The occurrence of a brief negatively buoyant plume is not expected to cause adverse effects or hypoxic conditions. Therefore, this Order and Water Code section 13142.5(b) determination do not consider salinity related impacts.</p> <p>This Order requires the 7.45 acres of mitigation for the turbulence/shearing mortality associated with the brine discharge. However, section 6.3.2.3 of this Order requires the Dischargers to conduct a Mitigation APF Re-Evaluation Study that confirms the assumptions made for the APF estimates. If it is determined that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination.</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
49	2.e(1)(c)	For construction-related mortality, the report shall use any acceptable approach approved by the regional water board for evaluating the mortality that occurs within the area disturbed by the facility's construction. The regional water board may determine that the construction-related disturbance does not require mitigation because the disturbance is temporary and the habitat is naturally restored.	See Finding 46. This Order and Water Code section 13142.5(b) determination do not consider construction-related mortality as the construction of the Doheny Desalination Project is not expected to result in mortality of marine life if sufficient construction mitigation measures are implemented. The Final EIR, dated May 17, 2018, page 4.3-34 lists the construction mitigation measures that will take place to minimize construction-related mortality. The Dischargers are required to implement all construction mitigation measures as described in the Final EIR.

50	2.e(1)(d)	<p>Upon approval of the report by the regional water board in consultation with State Water Board staff, the calculated marine life mortality shall form the basis for the mitigation provided pursuant to this section.</p>	<p>See Finding 46. The San Diego Water Board in consultation with the State Water Board used the Marine Life Mortality Report as the basis for determining mitigation requirements.</p> <p>The marine life mortality associated with the Doheny Desalination Project occurs due to turbulence/shearing mortality caused by the discharge through the SJCOO. The Dischargers estimated the APF for a variety of scenarios of RO recovery rates, larval durations, and baseline wastewater flows. The various scenarios resulted in significant differences in the APF. The San Diego Water Board selected the scenario with a RO recovery rate of 50%, a larval duration of 10 days, and a baseline wastewater flow of 13 MGD, resulting in an APF of 7.45 acres. However, due to the assumptions made in the APF calculations, the APF estimate may not accurately reflect the impact to marine life. Therefore, section 6.3.2.3 of this Order requires the Dischargers to conduct a Mitigation APF Re-Evaluation Study to re-evaluate the APF estimates and resulting mitigation requirements. If it is determined that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination.</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
51	2.e(2)	The owner or operator shall mitigate for the mortality of all forms of marine life determined in the report above by choosing to either complete a mitigation project as described in chapter III.M.2.e.(3) or, if an appropriate fee-based mitigation program is available, provide funding for the program as described in chapter III.M.2.e.(4). The mitigation project or the use of a fee-based mitigation program and the amount of the fee that the owner or operator must pay is subject to regional water board approval.	The Dischargers are required to mitigate for the mortality of all forms of marine life associated with the Doheny Desalination Project by completing a mitigation project. This Order requires 7.45 acres of mitigation; however, the mitigation acreage may be revised based on the results of the Mitigation APF Re-Evaluation Study and Larval Study required in sections 6.3.2.3 and 6.3.2.4 of this Order, respectfully. If it is determined that the mitigation requirements of this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination. See Findings 46-50.
52	2.e(3)	Mitigation Option 1: Complete a Mitigation Project. The mitigation project must satisfy the following provisions:	The Dischargers propose to restore a portion of the South Los Cerritos Wetlands (SLCW). The Dischargers' restoration project is part of a broader restoration project in the SLCW led by the Los Cerritos Wetlands Authority.

53	2.e(3)(a)	<p>The owner or operator shall submit a Mitigation Plan. Mitigation Plans shall include: project objectives, site selection, site protection instrument (the legal arrangement or instrument that will be used to ensure the long-term protection of the compensatory mitigation project site), baseline site conditions, a mitigation work plan, a maintenance plan, a long-term management plan, an adaptive management plan, performance standards and success criteria, monitoring requirements, and financial assurances.</p>	<p>The Dischargers submitted a draft Marine Life Mitigation Plan. The draft Marine Life Mitigation Plan provides the project objectives, site selection, site protection instrument, baseline site conditions, a mitigation work plan, a maintenance plan, a long-term management plan, an adaptive management plan, performance standards and success criteria, monitoring requirements, and financial assurances. The draft Marine Life Mitigation Plan establishes the steps and methods necessary to provide 7.45 acres of mitigation to compensate for the marine life mortality impacts associated with the Doheny Desalination Project's construction and operation. However, as noted in Finding 46, the acres of mitigation may be revised based on the results of the Mitigation APF Re-Evaluation Study and the Larval Study required in sections 6.3.2.3 and 6.3.2.4 of this Order, respectfully.</p> <p>Additionally, section 6.3.2.5 of this Order requires the Dischargers submit a Final Marine Life Mitigation Plan after the completion of the Mitigation APF Re-Evaluation Study required in section 6.3.2.3 of this Order. The Final Marine Life Mitigation Plan will account for modifications of the mitigation requirements as determined by the Mitigation APF Re-Evaluation Study and will provide additional details on the project objectives, site selection, site protection instrument, baseline site conditions, a mitigation work plan, a maintenance plan, a long-term management plan, an adaptive management</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>plan, performance standards and success criteria, monitoring requirements, and financial assurances.</p> <p>The Final Marine Life Mitigation Plan required in section 6.3.2.5 of this Order will be subject to approval by the San Diego Water Board in consultation with the State Water Board, the California Coastal Commission, other State agencies involved in the permitting of the Doheny Desalination Project, and must undergo any environmental review required under CEQA prior to the Board’s final approval.</p>

54	2.e(3)(b)i	<p>Mitigation shall be accomplished through expansion, restoration or creation of one or more of the following: kelp beds, estuaries, coastal wetlands, natural reefs, MPAs, or other projects approved by the regional water board that will mitigate for intake and mortality of all forms of marine life associated with the facility.</p>	<p>The Dischargers propose to restore a portion of the SLCW. The SLCW is part of the Los Cerritos Wetlands Complex, which was historically an area of about 2,400 acres of tidal channels, vegetated wetlands, and upland areas. The complex was almost entirely tidal wetland, with a few natural streams and intertidal flat channels. In the late 19th century, the complex began conversion to agricultural use to grow beets and raise cattle. In the late 1920s, oil was discovered, and extraction operations were developed. Significant areas of the complex were dredged and filled as part of this process, as well as during the channelization of the San Gabriel River, which runs through the area.</p> <p>The SLCW site is degraded and contains remnants of oil extraction activities, including sumps, landfill, and areas of contaminated soils, and former wetland and salt marsh habitat has been converted to weedy upland habitat as a result of extensive fill with dredged material. The site includes former access roads throughout the property, an area of active oil extraction with 43 active oil wells and 11 idle wells along with pipelines, roads, and other support infrastructure. Thirty acres of the site have been converted to a retarding basin for flood control purposes with supporting pumping facilities, and the foundation from a former entertainment venue is located at the site. Some areas of muted tidal flow and coastal salt marsh persist.</p> <p>The Dischargers' mitigation project is part of a broader SLCW</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>Restoration Project led by the Los Cerritos Wetlands Authority. The Dischargers' mitigation project would directly restore 7.45 acres of marine wetland habitat using the site-specific restoration tools developed by the Los Cerritos Wetland Authority. Of the 7.45 acres of restoration in SLCW, 5.25 acres will be tidal salt marsh habitat restoration (intertidal flats, cordgrass, and saltmarsh) and 2.2 acres will be subtidal habitat restoration (fully submerged and tidal channels). However, the specific location of mitigation within the broader SLCW Restoration Project will be determined as part of the development of the Final Marine Life Mitigation Plan.</p>
55	2.e(3)(b)ii	<p>The owner or operator shall demonstrate that the project fully mitigates for intake-related marine life mortality by including expansion, restoration, or creation of habitat based on the APF acreage calculated in the Marine Life Mortality Report above. The owner or operator using surface water intakes shall do modeling to evaluate the areal extent of the mitigation project's production area to confirm that it overlaps the facility's source water body. Impacts on the mitigation project due to entrainment by the facility must be offset by adding compensatory acreage to the mitigation project.</p>	<p>N/A. The Doheny Desalination Project will use subsurface intakes underneath the ocean floor. Subsurface intakes act as a natural barrier to organisms and thus eliminates the effects of impingement and entrainment on marine life. The Dischargers are not required to mitigate for intake-related operational mortality. See Finding 46.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
56	2.e(3)(b)iii	The owner or operator shall demonstrate that the project also fully mitigates for the discharge-related marine life mortality projected in the Marine Life Mortality Report above.	The Dischargers have demonstrated that the SLCW Restoration Project fully mitigates for discharge-related marine life mortality projected in the Marine Life Mortality Report. However, section 6.3.2.3 of this Order requires the Dischargers to conduct a Mitigation APF Re-Evaluation Study to confirm the assumptions made for the APF estimates. If it is determined that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination.
57	2.e(3)(b)iv	The owner or operator shall demonstrate that the project also fully mitigates for the construction-related marine life mortality identified in the Marine Life Mortality Report above.	N/A. See Finding 46. This Order does not consider construction-related mortality as the construction of the Doheny Desalination Project is not expected to result in mortality of marine life if sufficient construction mitigation measures are implemented. The Final EIR, dated May 17, 2018, page 4.3-34 lists the construction mitigation measures that will be implemented to minimize construction-related mortality. The Dischargers are required to implement all construction mitigation measures as described in the Final EIR.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
58	2.e(3)(b)v	The regional water board may permit out-of-kind mitigation for mitigation of open water or soft-bottom species. In-kind mitigation shall be done for all other species whenever feasible.	In the absence of a larval study in the source waterbody of the Doheny Desalination Project and to be conservative, the San Diego Water Board assumes that the SLCW mitigation project will provide in-kind mitigation for all species impacted by the Doheny Desalination Project. This Order does not apply, and this Water Code section 13142.5(b) determination does not consider, any mitigation ratios. However, section 6.3.2.4 of this Order requires the Dischargers to conduct a Larval Study that will identify the species impacted by the discharge. If it is determined that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
59	2.e(3)(b)vi	For out-of-kind mitigation, an owner or operator shall evaluate the biological productivity of the impacted open water or soft-bottom habitat calculated in the Marine Life Mortality Report and the proposed mitigation habitat. If the mitigation habitat is a more biologically productive habitat (e.g., wetlands, estuaries, rocky reefs, kelp beds, eelgrass beds, surfgrass beds), the regional water boards may apply a mitigation ratio based on the relative biological productivity of the impacted open water or soft-bottom habitat and the mitigation habitat. The mitigation ratio shall not be less than one acre of mitigation habitat for every ten acres of impacted open water or soft-bottom habitat.	See Finding 58. The Order does not apply, and this Water Code section 13142.5(b) determination does not consider, any mitigation ratios.
60	2.e(3)(b)vii	For in-kind mitigation, the mitigation ratio shall not be less than one acre of mitigation habitat for every one acre of impacted habitat.	See Finding 58. In the absence of a larval study and to be conservative, the San Diego Water Board assumes that the SLCW mitigation project will provide in-kind mitigation for all species impacted by the Doheny Desalination Project. Therefore, the SLCW mitigation project will provide in-kind mitigation and the mitigation ratio is one acre of mitigation to one acre of impacted habitat. However, the species impacted by the Doheny Desalination Project will be confirmed by the Larval Study required in section 6.2.3.4 of this Order.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
61	2.e(3)(b)viii	For both in-kind and out-of-kind mitigation, the regional water boards may increase the required mitigation ratio for any species and impacted natural habitat calculated in the Marine Life Mortality Report when appropriate to account for imprecisions associated with mitigation, including but not limited to, the likelihood of success, temporal delays in productivity, and the difficulty of restoring or establishing the desired productivity functions.	See Finding 58. This Order does not increase the mitigation ratio to account imprecisions associated with mitigation.
62	2.e(3)(b)ix	The rationale for the mitigation ratios must be documented in the administrative record for the permit action.	See Finding 58. This Order does not apply, and this Water Code section 13142.5(b) determination does not consider, any mitigation ratios.
63	2.e(3)(c)	The Mitigation Plan is subject to approval by the regional water board in consultation with State Water Board staff and with other agencies having authority to condition approval of the project and require mitigation.	The Final Marine Life Mitigation Plan required in section 6.3.2.5 of this Order will be subject to approval by the San Diego Water Board in consultation with the State Water Board, the California Coastal Commission, other State agencies involved in the permitting of the Doheny Desalination Project.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
64	2.e(4)	<p>Mitigation Option 2: Fee-based Mitigation Program.</p> <p>If the regional water board determines that an appropriate fee-based mitigation program has been established by a public agency, and that payment of a fee to the mitigation program will result in the creation and ongoing implementation of a mitigation project that meets the requirements of chapter M.2.e.(3), the owner or operator may pay a fee to the mitigation program in lieu of completing a mitigation project.</p>	N/A. The San Diego Water Board is not aware of any fee-based mitigation options at this time.
65	2.e(4)(a)	<p>The agency that manages the fee-based mitigation program must have legal and budgetary authority to accept and spend mitigation funds, a history of successful mitigation projects documented by having set and met performance standards for past projects, and stable financial backing in order to manage mitigation sites for the operational life of the facility.</p>	N/A. See Finding 64.
66	2.e(4)(b)	<p>The amount of the fee shall be based on the cost of the mitigation project, or if the project is designed to mitigate cumulative impacts from multiple desalination facilities or other development projects, the amount of the fee shall be based on the desalination facility's fair share of the cost of the mitigation project.</p>	N/A. See Finding 64.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
67	2.e(4)(c)	The manager of the fee-based mitigation program must consult with the California Department of Fish and Wildlife, Ocean Protection Council, Coastal Commission, State Lands Commission, and State and regional water boards to develop mitigation projects that will best compensate for intake and mortality of all forms of marine life caused by the desalination facility. Mitigation projects that increase or enhance the viability and sustainability of all forms of marine life in Marine Protected Areas are preferred, if feasible.	N/A. See Finding 64.
68	2.e(5)	California Department of Fish and Wildlife, the regional water board, and State Water Board may perform audits or site inspections of any mitigation project.	The Order requires the Final Marine Life Mitigation Plan contain provisions authorizing the California Department of Fish and Wildlife, the California Coastal Commission, the San Diego Water Board, and the State Water Board to perform audits or site inspections of the proposed mitigation project.
69	2.e(6)	An owner or operator, or a manager of a fee-based mitigation program, must submit a mitigation project performance report to the regional water board 180 days prior to the expiration date of their NPDES permit.	N/A. See Finding 64.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
70	2.e(7)(a)	For conditionally permitted facilities or expanded facilities, the regional water boards may: Account for previously-approved mitigation projects associated with a facility when making a new Water Code section 13142.5(b) determination.	N/A. The Dischargers do not have a previously-approved mitigation project.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
71	2.e(7)(b)	<p>For conditionally permitted facilities or expanded facilities, the regional water boards may: Require additional mitigation when making a new Water Code section 13142.5(b) determination for any additional mortality of all forms of marine life resulting from the occurrence of the conditional event or the expansion of the facility. The additional mitigation must be to compensate for any additional construction, discharge, or other increases in intake or impacts or an increase in intake and mortality of all forms of marine life.</p>	<p>See Finding 6. The San Diego Water Board conditioned this Water Code section 13142.5(b) determination based on the completion of the Mitigation APF Re-Evaluation Study, Larval Study, and Final Marine Life Mitigation Plan. If it is determined that the mitigation requirements in this Order are insufficient to fully compensate for the mortality of all forms of marine life associated with the Doheny Desalination Project, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination. The San Diego Water Board also conditioned this Water Code section 13142.5(b) determination based on the availability of wastewater available for dilution of the brine and a RO recovery rate of 50%. If the Dischargers reduce the volume of wastewater discharged through the SJCOO below the flow rate required for a positively buoyant plume more than 5% of the time over a 6-month period based on the average daily salinity at Monitoring Location M-001, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination. If the final design plans for the Doheny Desalination Project result in a RO recovery rate other than 50%, then the Dischargers are required to apply for a new Water Code section 13142.5(b) determination.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
72	3	Receiving Water Limitations for Salinity	See findings below for subsections under III.M.3.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
73	3.b(1)	Discharges shall not exceed a daily maximum of 2.0 ppt above natural background salinity measured no further than 100 meters (328 ft) horizontally from each discharge point. There is no vertical limit to this zone.	<p>The Ocean Plan Desalination Amendment’s receiving water limitation for salinity provides that the discharge shall not exceed 2.0 ppt above natural background salinity measured no further than 100 meters (328 ft.) horizontally from the end of the discharge. The Ocean Plan Desalination Amendment requires that the standard BMZ not exceed 100 meters (328 ft.) laterally from the points of discharge and throughout the water column.</p> <p>As discussed in Finding 17, the worst-case scenario brine only discharge will result in a BMZ less than 1 meter from the SJCOO, based on a 50% RO recovery rate. However, the Dischargers propose to dilute the brine discharge with treated wastewater effluent flows resulting in a combined discharge salinity less than natural background receiving water salinity producing a positively buoyant plume. Therefore, compliance with the salinity receiving water limit will be achieved immediately at the point of discharge.</p> <p>Additionally, section 4.1.1.8 of this Order includes an effluent limitation for salinity at Monitoring Location M-001H based on the formula in chapter III.C.4 of the Ocean Plan that has been modified for brine discharges to ensure the receiving water limitation for salinity is met.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
74	3.b(2)	<p>In determining an effluent limit necessary to meet this receiving water limitation, permit writers shall use the formula in chapter III.C.4 that has been modified for brine discharges as follows: Equation 1: $C_e = C_o + D_m(2.0 \text{ ppt})$ $C_e = (2.0 \text{ ppt} + C_s) + D_m(2.0 \text{ ppt})$ Where: C_e= the effluent concentration limit, ppt C_o= the salinity concentration to be met at the completion of initial dilution= $2.0 \text{ ppt} + C_s$ C_s= the natural background salinity, ppt D_m= minimum probable initial dilution expressed as parts seawater per part brine discharge.</p>	<p>Section 4.1.1.8 of this Order includes an effluent limitation for salinity at Monitoring Location M-001H based on the formula in chapter III.C.4 of the Ocean Plan that has been modified for brine discharges.</p>
75	3.b(2)(a)	<p>The fixed distance referenced in the initial dilution definition shall be no more than 100 meters (328 ft.).</p>	<p>As discussed in Finding 17, the Dischargers expect to meet the daily maximum of 2.0 ppt above natural background salinity within 1 meter for the worst-case scenario of only waste brine discharge (i.e., no wastewater for dilution).</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
76	3.b(2)(b)	<p>In addition, the owner or operator shall develop a dilution factor (Dm) based on the distance of 100 meters (328 ft.) or initial dilution, whichever is smaller. The dilution factor (Dm) shall be developed within the BMZ using applicable water quality models that have been approved by the regional water boards in consultation with State Water Board staff.</p>	<p>In 2000, the Dischargers determined the minimum probable initial dilution factor to be 100 parts seawater per 1 part wastewater (100:1) for the discharge of up to 30 MGD of secondary-treated wastewater and 1.05 MGD of waste brine through the SJCOO, using the computer model UMERGE. In 2012, the San Diego Water Board reevaluated the initial dilution factor and determined the minimum probable initial dilution factor to be 162 for the discharge of up to 38.78 MGD of effluent through the SJCOO using the United States Environmental Protection Act (USEPA)-approved computer modeling package Visual Plumes with the UM3 model. In 2018, the Dischargers determined the minimum probable initial dilution factor to be 162 using October 2013 receiving water data for determining the lowest average initial dilution within any single month of the year. in SOCWA’s April 2021 ROWD, SOCWA states, “In the absence of an antidegradation analysis for this increased initial dilution, SOCWA requests that the 100:1 initial dilution currently assigned within Order No. R9-2012-0012 [previous order] be retained in the updated SJCOO NPDES permit.” At the request of the Dischargers, this Order maintains the smaller initial dilution of 100.</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
77	3.c	An owner or operator may submit a proposal to the regional water board for approval of an alternative (other than 2 ppt) salinity* receiving water limitation to be met no further than 100 meters horizontally from the discharge. There is no vertical limit to this zone.	N/A. See Finding 17. The Dischargers have not requested an alternative salinity receiving water limitation. The Dischargers expect to meet the daily maximum of 2.0 ppt above natural background salinity within 1 meter of the SJCOO assuming the worst-case scenario of only waste brine discharge (i.e., no wastewater for dilution).

78	3.d	<p>The owner or operator of a facility that has received a conditional Water Code section 13142.5(b) determination and is over 80 percent constructed by [the effective date of this plan] that proposes flow augmentation using a surface water intake may submit a proposal to the regional water board in consultation with the State Water Board staff for approval of an alternative BMZ not to exceed 200 meters laterally from the discharge point and throughout the water column. The owner or operator of such a facility must demonstrate, in accordance with chapter III.M.2.d.(2)(c), that the combination of the alternative BMZ and flow augmentation using a surface water intake provide a comparable level of intake and mortality of all forms of marine life as the combination of the standard BMZ and wastewater dilution if wastewater is available, or multiport diffusers if wastewater is unavailable. In addition to the analysis of the effects required by chapter III.M.2.d.(2)(c), the owner or operator must also evaluate the individual and cumulative effects of the alternative BMZ on the intake and mortality of all forms of marine life. In no case may the discharge result in hypoxic conditions outside of the alternative BMZ. If an alternative BMZ is approved, the alternative distance and the areal extent of the alternative BMZ shall be used in lieu of the standard BMZ for all purposes, including establishing an effluent limitation and a</p>	<p>N/A. See Finding 17. The Dischargers have not requested an alternative brine mixing zone. The Doheny Desalination Project proposes to discharge the commingled waste brine and wastewater through the existing discharge infrastructure, the SJCOO, with a 125-port diffuser.</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
		receiving water limitation for salinity, in chapter III.M.	
79	3.e	Existing facilities that do not meet the receiving water limitation at the edge of the BMZ and throughout the water column by January 28, 2016 must either: 1) establish a facility-specific alternative receiving water limitation for salinity as described in chapter III.M.3.c; or, 2) upgrade the facility’s brine discharge method in order to meet the receiving water limitation in chapter III.M.3.b in accordance with the State Water Board’s Compliance Schedule Policy, as set forth in chapter III.M.3.f below. An owner or operator that chooses to upgrade the facility’s method of brine discharge disposal:	N/A. The Doheny Desalination Project is a new facility. The Dischargers expect to meet the daily maximum of 2.0 ppt above natural background salinity within 1 meter from the SJCOO for the worst-case scenario of only waste brine discharge (i.e., no wastewater for dilution). See Finding 17.
80	3.f	The regional water board may grant compliance schedules for the requirements for brine waste discharges for desalination facilities. All compliance schedules shall be in accordance with the State Water Board’s Compliance Schedule Policy, except that the salinity receiving water limitation set forth in chapters III.M.3.b and III.M.3.c. shall be considered to be a “new water quality objective” as used in the Compliance Schedule Policy.	N/A. The Dischargers are not requesting a compliance schedule.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
81	3.g	The regional water board in consultation with the State Water Board staff may require an owner or operator to provide additional studies or information if needed. All studies and models are subject to the approval of the regional water board in consultation with State Water Board staff. The regional water board may require an owner or operator to hire a neutral third-party entity to review studies and models and makes recommendations to the regional water board.	The Dischargers provided all requested additional information needed for the San Diego Water Board to make this Water Code section 13142.5(b) determination. The San Diego Water Board did not require the Dischargers hire a neutral third-party entity to review studies and models and make recommendations.
82	4	Monitoring and Reporting Program	See Findings below for subsections under III.M.4.

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
83	4.a	<p>The owner or operator of a desalination facility must submit a Monitoring and Reporting Plan to the regional water board for approval. The Monitoring and Reporting Plan shall include monitoring of effluent and receiving water characteristics and impacts to all forms of marine life. The Monitoring and Reporting Plan shall, at a minimum, include monitoring for benthic community health, aquatic life toxicity, hypoxia, and receiving water characteristics consistent with Appendix III of this Plan and for compliance with the receiving water limitation in chapter III.M.3. Receiving water monitoring for salinity shall be conducted at times when the monitoring locations are most likely affected by the discharge. For new or expanded facilities the following additional requirements apply:</p>	<p>The Dischargers submitted a Monitoring and Reporting Plan with the ROWD that is similar to the monitoring and reporting requirements included in this Order.</p> <p>The San Diego Water Board has established effluent monitoring requirements in Attachment E, section 3.2 of this Order and receiving water monitoring requirements in Attachment E, section 4 of this Order that are consistent with Appendix III of the Ocean Plan, including effluent monitoring for salinity, conventional pollutants, and priority pollutants, and receiving water monitoring for sediment chemistry and toxicity, benthic community health, bioaccumulation, and receiving water characteristics (e.g., salinity).</p>

84	4.a(1)	<p>An owner or operator must perform facility-specific monitoring to demonstrate compliance with the receiving water limitation for salinity and evaluate the potential effects of the discharge within the water column, bottom sediments, and the benthic communities. Facility specific monitoring is required until the regional water board determines that a regional monitoring program is adequate to ensure compliance with the receiving water limitation. The monitoring and reporting plan shall be reviewed, and revised if necessary, upon NPDES permit renewal.</p>	<p>The San Diego Water Board has included facility-specific monitoring in this Order to demonstrate compliance with the receiving water limitation for salinity in section 5.1.3.8 of this Order and the effluent limitation for salinity in section 4.1.1.8 of this Order. This Order also includes facility-specific receiving water monitoring to evaluate potential effects of the discharge within the water column, bottom sediments, and the benthic communities.</p> <p>The discharge through the SJCOO is expected to be below natural background salinity because the brine waste from the Doheny Desalination Project will be commingled with wastewater.²⁹ To ensure compliance with the receiving water limitation for salinity, the San Diego Water Board included effluent monitoring requirements for salinity and conductivity at Monitoring Location M-001. If the salinity of the effluent at Monitoring Location M-001 is below natural background receiving water salinity, the discharge will be considered to be in compliance with the receiving water limitation for salinity.</p> <p>In addition to measuring salinity at Monitoring Location M-001, this Order includes receiving water monitoring for salinity at locations near the SJCOO and at reference locations. To evaluate potential effects of the discharge within the water column, the San Diego Water Board included water column monitoring requirements for salinity, colored dissolved organic matter</p>
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Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>(CDOM), light transmittance, pH, and dissolved oxygen.</p> <p>To evaluate potential effects of the discharge on bottom sediments and benthic and epibenthic communities, the San Diego Water Board included monitoring requirements for sediment chemistry and toxicity, benthic community condition, fish and invertebrate trawls, and fish tissue analyses.</p> <p>The San Diego Water Board will take into consideration the results of the receiving water monitoring when evaluating the monitoring requirements for reissuance of this NPDES permit.</p>
85	4.a(2)	<p>Baseline biological conditions shall be established at the discharge location and at a reference location prior to commencement of construction. The owner or operator is required to conduct biological surveys (e.g., Before-After Control-Impact study), that will evaluate the differences between biological communities at a reference site and at the discharge location before and after the discharge commences. The regional water board will use the data and results from the surveys and any other applicable data for evaluating and renewing the requirements set forth in a facility's NPDES permit.</p>	<p>The San Diego Water Board has established receiving water monitoring requirements that will be used for the Before-After Control-Impact Study. The Dischargers are required to conduct this monitoring prior to and after the initiation of the Doheny Desalination Project discharge. However, the Doheny Desalination Project is not expected to commence discharging until January 2026 and the intake water quality is not expected to stabilize for an additional ten months to four years. This Order expires in April 2027; therefore, post-discharge monitoring may not occur under this permit term. To account for this, the Dischargers are required to submit a Before-After Control-Impact Study Work Plan that outlines the types of biological monitoring that will be</p>

Finding No.	Ocean Plan chapter III.M Reference	Ocean Plan Requirement	Finding
			<p>evaluated for the study and a schedule for conducting the pre- and post-discharge monitoring and submittal of the Before-After Control-Impact Study Report. In addition to the receiving water monitoring requirements in this Order, the Dischargers have been conducting receiving water monitoring in the vicinity of the SJCOO for decades. The Dischargers are required by this Order to analyze current and historical receiving water monitoring data to evaluate the differences in biological communities at the reference sites and at the discharge location before and after the discharge commences.</p>