CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

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TENTATIVE ORDER R9-2018-0002
NPDES NO. CA0107981

WASTE DISCHARGE REQUIREMENTS FOR THE CITY OF ESCONDIDO, HALE AVENUE RESOURCE RECOVERY FACILITY AND MEMBRANE FILTRATION/REVERSE OSMOSIS FACILITY DISCHARGE TO THE PACIFIC OCEAN THROUGH THE SAN ELIJO OCEAN OUTFALL

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

Table 1. Discharger Information

Discharger	City of Escondido	
Name of Facility	Hale Avenue Resource Recovery Facility and Membrane Filtration/Reverse Osmosis Facility	
Facility Address	Hale Avenue Resource Recovery Facility (HARRF)	1521 S. Hale Avenue Escondido, CA 92029
	Membrane Filtration/Reverse Osmosis (MFRO) Facility	1201 E. Washington Avenue Escondido, CA 92025

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude (North)	Discharge Point Longitude (West)	Receiving Water
001	Secondary- and tertiary-treated wastewater, and waste brine	33º 00' 21" N	117º 18' 09" W	Pacific Ocean

Table 3. Administrative Information

This Order was adopted on:	**April 11, 2018**
This Order shall become effective on:	**June 1, 2018**
This Order shall expire on:	**May 31, 2023**
The Discharger shall file a Report of Waste Discharge (ROWD) as an application for reissuance of WDRs in accordance with title 23, California Code of Regulations (CCR), 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 U.S. Environmental Protection Agency (USEPA) and the California Regional Water Quality Control Board, San Diego Region 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 California Regional Water Quality Control Board, San Diego Region, on the date indicated above.

Tentative
David W. Gibson, Executive Officer

CONTENTS

TABLES

ATTACHMENTS

I. FACILITY INFORMATION

Information describing the Hale Avenue Resource Recovery Facility (HARRF) and the Membrane Filtration/Reverse Osmosis (MFRO) Facility is summarized in Table 1 and in sections I and II of the Fact Sheet (Attachment F). Section I of the Fact Sheet also includes information regarding the HARRF and MFRO Facility's permit application.

II. FINDINGS

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

A. 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). This Order shall serve as an NPDES permit authorizing the Discharger to discharge into waters of the U.S. at the discharge location described in Table 2 subject to the WDRs in this Order.

B. 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.

C. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV.B, IV.C, and V.B, VI.A.2.a-e, VI.C.1.b, and VI.C.1.c are included to implement 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.

D. 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.

E. Notification of Interested Parties. The San Diego Water Board has notified the City of Escondido (Discharger) 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. The San Diego Water Board have also provided an opportunity for the Discharger and interested agencies and persons to submit oral comments and recommendations at a public hearing. Details of the notification are provided in the Fact Sheet (Attachment F).

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

THEREFORE, IT IS HEREBY ORDERED, that this Order supersedes Order No. R9-2010-0086 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 CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order. The Discharger is hereby authorized to discharge subject to WDRs in this Order at the discharge location described in Table 2 to the Pacific Ocean off the coast of San Diego County. If any part of this Order is subject to a temporary stay of enforcement, unless otherwise specified in the order granting stay, the Discharger shall comply with the analogous portions of Order No. R9-2010-0086. This action in no way prevents the San Diego Water Board from taking enforcement action for past violations of Order No. R9-2010-0086.

Any discharges not expressly authorized in this Order cannot become authorized or shielded from liability under CWA section 402(k) by disclosure to USEPA, State, or local authorities after issuance of this Order via any means, including during an inspection.

III. DISCHARGE PROHIBITIONS

A. The discharge of waste from HARRF not treated by a secondary treatment process and not in compliance with the effluent limitations specified in section IV.A of this Order, and/or to a location other than Discharge Point No. 001, unless specifically regulated by this Order or separate WDRs, is prohibited.

B. The discharge of waste from the MFRO Facility not in compliance with the effluent limitations specified in section IV.A of this Order, and/or to a location other than Discharge Point No. 001, unless specifically regulated by this Order or separate WDRs, is prohibited.

C. The Discharger must comply with *Water Quality Control Plan, Ocean Waters of California, California Ocean Plan* (Ocean Plan) Discharge Prohibitions, incorporated into this Order as if fully set forth herein and summarized in Attachment G, as a condition of this Order.

D. The Discharger 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.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations and Performance Goals – Discharge Point No. 001

1. Effluent Limitations

a. The Discharger shall maintain compliance with the following effluent limitations for the combined flow from HARRF and the MFRO Facility at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-003, as described in the MRP (Attachment E):

Table 4. Effluent Limitations at Monitoring Location EFF-003[1]

Parameter	Units	Effluent Limitations[2,3]					
		Six-Month Median	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Carbonaceous Biochemical Oxygen Demand 5-day @ 20°C ($CBOD_5$)	milligram per liter (mg/L)	--	25	40	--	--	--
	pounds per day (lbs/day)	--	3,800[3]	6,000[3]	--	--	--
	% Removal	--	85[4]	--	--	--	--
Total Suspended Solids (TSS)	mg/L	--	30	45	--	--	--
	lbs/day	--	4,500[3]	6,800[3]	--	--	--
	% Removal	--	85[4]	--	--	--	--

Parameter	Units	Effluent Limitations[2,3]					
		Six-Month Median	Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	standard units	--	--	--	--	6.0	9.0
Oil and Grease	mg/L	--	25	40	--	--	75
	lbs/day	--	3,800[3]	6,000[3]	--	--	11,000[3]
Settleable Solids	milliliter per liter (ml/L)	--	1.0	1.5	--	--	3.0
Turbidity	nephelometric turbidity unit (NTU)	--	75	100	--	--	225
Total Chlorine Residual	microgram per liter (µg/L)	4.76E+02	--	--	1.90E+03	--	1.43E+04
	lbs/day	7.15E+01[3]	--	--	2.86E+02[3]	--	2.14E+03[3]
Chronic Toxicity (Test of Significant Toxicity)[1,5,6]	"Pass" / "Fail"	--	--	--	"Pass"	--	--

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. 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 10^{2} or 610, and 6.1E+00 represents 6.1 x 10^{0} or 6.1.
3. The mass emission rate (MER) limitation, in lbs/day, is calculated based on the following equation: MER (lbs/day) = 8.34 x Q x C, where Q is the permitted flow (million gallons per day, MGD) and C is the concentration (mg/L). The MERs listed in this table are maximum permitted MERs, *MER(maximum)*, using the maximum permitted flow from the Discharger to the Escondido Land Outfall, *Q(maximum)* or 18 MGD. The actual MERs, *MER(actual)*, is dependent on the flows from Stone Brewing Co. and/or Palomar Energy Center to the Escondido Land Outfall, *Q(Stone)* and *Q(Palomar)*, respectively. The actual MERs, *MER(actual)*, shall be calculated as follows:

   MER(maximum) = value from Table 4
   Q(actual) = *Q(maximum)* - *Q(Stone)* - *Q(Palomar)* = 18 MGD - *Q(Stone)* - *Q(Palomar)*
   MER(actual) = *Q(actual)*/*Q(maximum)***MER(maximum)* = 18/*Q(maximum)***MER(maximum)*
4. The average monthly percent removal of $CBOD_5$ and TSS shall not be less than 85 percent.
5. As specified in section VII.L of this Order and section III.C of the MRP (Attachment E).
6. The Chronic Toxicity effluent limitation is protective of both the numeric acute and chronic toxicity 2015 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), current *USEPA guidance in the National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, June 2010) (https://www3.epa.gov/npdes/pubs/wet_final_tst_implementation2010.pdf), and USEPA Regions 8, 9, and 10, Toxicity Training Tool (January 2010).

b. The Discharger shall maintain compliance with the following effluent limitations for the combined flow from HARRF, the MFRO Facility, Stone Brewing Co.[1], Palomar Energy Center[2], and any other discharges to the Escondido Land Outfall (ELO) at Discharge Point No. 001, with compliance measured at Monitoring Location EFF-004, as described in the MRP (Attachment E):

Table 5. Effluent Limitations at Monitoring Location EFF-004[1]

Parameter	Units	Average Monthly Effluent Limitation
Flow	MGD	18

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

2. Performance Goals

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 8 below. Performance goal parameters shall be monitored at Monitoring Location EFF-003, as described in the MRP (Attachment E). The San Diego Water Board will use the results for informational purposes only, not compliance determinations. The performance goals in Table 8 below are not water quality-based effluent limitations (WQBELs) and are not enforceable, as such.

Table 6. Performance Goals at Monitoring Location EFF-003[1]

Parameter	Unit	Performance Goals[2,3]			
		Six-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE					
Arsenic, Total Recoverable	µg/L	1.19E+03	6.91E+03	1.83E+04	--
	lbs/day	1.79E+02	1.04E+03	2.75E+03	--
Cadmium, Total Recoverable	µg/L	2.38E+02	9.52E+02	2.38E+03	--
	lbs/day	3.57E+01	1.43E+02	3.57E+02	--
Chromium (VI), Total Recoverable[4]	µg/L	4.76E+02	1.90E+03	4.76E+03	--
	lbs/day	7.15E+01	2.86E+02	7.15E+02	--
Copper, Total Recoverable	µg/L	2.40E+02	2.38E+03	6.67E+03	--
	lbs/day	3.60E+01	3.58E+02	1.00E+03	--

[1] Discharges from Stone Brewing Co. are regulated by separate WDRs, Order No. R9-2012-0006 as amended by Order No. R9-2014-0097, NPDES No. CA0109258, *Waste Discharge Requirements for Liquid Stone Holdings, LLC, Koochenvagner's Brewing Company DBA Stone Brewing Co., Discharge to the Pacific Ocean via the San Elijo Ocean Outfall*. Order No. R9-2012-0006 prohibits Liquid Stone Holdings, LLC, Koochenvagner's Brewing Company DBA Stone Brewing Co. from discharging any flow in excess of 0.1 MGD.

[2] Discharges from Palomar Energy Center are regulated by separate WDRs, Order No. R9-2012-0015 as amended by Order No. R9-2017-0012, NPDES No. CA0109215, *Waste Discharge Requirements for San Diego Gas and Electric Company Palomar Energy Center*. Order No. R9-2012-0015 prohibits San Diego Gas and Electric Company from discharging any flow in excess of 1.4 MGD.

Parameter	Unit	Performance Goals[2,3]			
		Six-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
Lead, Total Recoverable	µg/L	4.76E+02	1.90E+03	4.76E+03	--
	lbs/day	7.15E+01	2.86E+02	7.15E+02	--
Mercury, Total Recoverable	µg/L	9.40E+00	3.80E+01	9.51E+01	--
	lbs/day	1.41E+00	5.70E+00	1.43E+01	--
Nickel, Total Recoverable	µg/L	1.19E+03	4.76E+03	1.19E+04	--
	lbs/day	1.79E+02	7.15E+02	1.79E+03	--
Selenium, Total Recoverable	µg/L	3.57E+03	1.43E+04	3.57E+04	--
	lbs/day	5.36E+02	2.14E+03	5.36E+03	--
Silver, Total Recoverable	µg/L	1.29E+02	6.28E+02	1.63E+03	--
	lbs/day	1.93E+01	9.43E+01	2.44E+02	--
Zinc, Total Recoverable	µg/L	2.86E+03	1.71E+04	4.57E+04	--
	lbs/day	4.30E+02	2.57E+03	6.86E+03	--
Cyanide, Total	µg/L	2.38E+02	9.52E+02	2.38E+03	--
	lbs/day	3.57E+01	1.43E+02	3.57E+02	--
Ammonia, Total (as Nitrogen)	µg/L	1.43E+05	5.71E+05	1.43E+06	--
	lbs/day	2.14E+04	8.57E+04	2.14E+05	--
Phenolic Compounds (non-chlorinated)[1]	µg/L	7.14E+03	2.86E+04	7.14E+04	--
	lbs/day	1.07E+03	4.29E+03	1.07E+04	--
Chlorinated Phenolics[1]	µg/L	2.38E+02	9.52E+02	2.38E+03	--
	lbs/day	3.57E+01	1.43E+02	3.57E+02	--
Endosulfan[1]	µg/L	2.14E+00	4.28E+00	6.43E+00	--
	lbs/day	3.22E-01	6.43E-01	9.65E-01	--
Endrin	µg/L	4.76E-01	9.52E-01	1.43E+00	--
	lbs/day	7.15E-02	1.43E-01	2.14E-01	--
HCH (BHC)[1]	µg/L	9.52E-01	1.90E+00	2.86E+00	--
	lbs/day	1.43E-01	2.86E-01	4.29E-01	--
Radioactivity	pCi/L	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.			
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS					
Acrolein	µg/L	--	--	--	5.24E+04
	lbs/day	--	--	--	7.86E+03
Antimony, Total	µg/L	--	--	--	2.86E+05
	lbs/day	--	--	--	4.29E+04
Bis(2-chloroethoxy) Methane	µg/L	--	--	--	1.05E+03
	lbs/day	--	--	--	1.57E+02

Parameter	Unit	Performance Goals[2,3]			
		Six-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
Bis(2-chloroisopropyl) Ether	µg/L	--	--	--	2.86E+05
	lbs/day	--	--	--	4.29E+04
Chlorobenzene	µg/L	--	--	--	1.36E+05
	lbs/day	--	--	--	2.04E+04
Chromium (III), Total Recoverable[4]	µg/L	--	--	--	4.52E+07
	lbs/day	--	--	--	6.79E+06
Di-n-butyl Phthalate	µg/L	--	--	--	8.33E+05
	lbs/day	--	--	--	1.25E+05
Dichlorobenzenes[1]	µg/L	--	--	--	1.21E+06
	lbs/day	--	--	--	1.82E+05
Diethyl Phthalate	µg/L	--	--	--	7.85E+06
	lbs/day	--	--	--	1.18E+06
Dimethyl Phthalate	µg/L	--	--	--	1.95E+08
	lbs/day	--	--	--	2.93E+07
4,6-dinitro-2-methylphenol	µg/L	--	--	--	5.24E+04
	lbs/day	--	--	--	7.86E+03
2,4-dinitrophenol	µg/L	--	--	--	9.52E+02
	lbs/day	--	--	--	1.43E+02
Ethylbenzene	µg/L	--	--	--	9.76E+05
	lbs/day	--	--	--	1.46E+05
Fluoranthene	µg/L	--	--	--	3.57E+03
	lbs/day	--	--	--	5.36E+02
Hexachlorocyclopentadiene	µg/L	--	--	--	1.38E+04
	lbs/day	--	--	--	2.07E+03
Nitrobenzene	µg/L	--	--	--	1.17E+03
	lbs/day	--	--	--	1.75E+02
Thallium, Total Recoverable	µg/L	--	--	--	4.76E+02
	lbs/day	--	--	--	7.15E+01
Toluene	µg/L	--	--	--	2.02E+07
	lbs/day	--	--	--	3.04E+06
Tributyltin	µg/L	--	--	--	3.33E-01
	lbs/day	--	--	--	5.00E-02
1,1,1-trichloroethane	µg/L	--	--	--	1.29E+08
	lbs/day	--	--	--	1.93E+07

Parameter	Unit	Performance Goals[2,3]			
		Six-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS					
Acrylonitrile	µg/L	--	--	--	2.38E+01
	lbs/day	--	--	--	3.57E+00
Aldrin	µg/L	--	--	--	5.24E-03
	lbs/day	--	--	--	7.86E-04
Benzene	µg/L	--	--	--	1.40E+03
	lbs/day	--	--	--	2.11E+02
Benzidine	µg/L	--	--	--	1.64E-02
	lbs/day	--	--	--	2.47E-03
Beryllium, Total Recoverable	µg/L	--	--	--	7.85E+00
	lbs/day	--	--	--	1.18E+00
Bis(2-chloroethyl) Ether	µg/L	--	--	--	1.07E+01
	lbs/day	--	--	--	1.61E+00
Bis(2-ethlyhexyl) Phthalate	µg/L	--	--	--	8.33E+02
	lbs/day	--	--	--	1.25E+02
Carbon Tetrachloride	µg/L	--	--	--	2.14E+02
	lbs/day	--	--	--	3.22E+01
Chlordane[1]	µg/L	--	--	--	5.47E-03
	lbs/day	--	--	--	8.22E-04
Chlorodibromomethane (Dibromochloromethane)	µg/L	--	--	--	2.05E+03
	lbs/day	--	--	--	3.07E+02
Chloroform	µg/L	--	--	--	3.09E+04
	lbs/day	--	--	--	4.64E+03
DDT[1]	µg/L	--	--	--	4.05E-02
	lbs/day	--	--	--	6.07E-03
1,4-dichlorobenzene	µg/L	--	--	--	4.28E+03
	lbs/day	--	--	--	6.43E+02
3,3'-dichlorobenzidine	µg/L	--	--	--	1.93E+00
	lbs/day	--	--	--	2.89E-01
1,2-dichloroethane	µg/L	--	--	--	6.66E+03
	lbs/day	--	--	--	1.00E+03
1,1-dichloroethylene	µg/L	--	--	--	2.14E+02
	lbs/day	--	--	--	3.22E+01
Dichlorobromomethane	µg/L	--	--	--	1.48E+03
	lbs/day	--	--	--	2.22E+02
Dichloromethane (Methylene Chloride)	µg/L	--	--	--	1.07E+05
	lbs/day	--	--	--	1.61E+04

Parameter	Unit	Performance Goals[2,3]			
		Six-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
1,3-dichloropropene (1,3-Dichloropropylenes)	µg/L	--	--	--	2.12E+03
	lbs/day	--	--	--	3.18E+02
Dieldrin	µg/L	--	--	--	9.52E-03
	lbs/day	--	--	--	1.43E-03
2,4-dinitrotoluene	µg/L	--	--	--	6.19E+02
	lbs/day	--	--	--	9.29E+01
1,2-diphenylhydrazine	µg/L	--	--	--	3.81E+01
	lbs/day	--	--	--	5.72E+00
Halomethanes[1]	µg/L	--	--	--	3.09E+04
	lbs/day	--	--	--	4.64E+03
Heptachlor	µg/L	--	--	--	1.19E-02
	lbs/day	--	--	--	1.79E-03
Heptachlor Epoxide	µg/L	--	--	--	4.76E-03
	lbs/day	--	--	--	7.15E-04
Hexachlorobenzene	µg/L	--	--	--	5.00E-02
	lbs/day	--	--	--	7.50E-03
Hexachlorobutadiene	µg/L	--	--	--	3.33E+03
	lbs/day	--	--	--	5.00E+02
Hexachloroethane	µg/L	--	--	--	5.95E+02
	lbs/day	--	--	--	8.93E+01
Isophorone	µg/L	--	--	--	1.74E+05
	lbs/day	--	--	--	2.61E+04
N-nitrosodimethylamine	µg/L	--	--	--	1.74E+03
	lbs/day	--	--	--	2.61E+02
N-nitrosodi-N-propylamine	µg/L	--	--	--	9.04E+01
	lbs/day	--	--	--	1.36E+01
N-nitrosodiphenylamine	µg/L	--	--	--	5.95E+02
	lbs/day	--	--	--	8.93E+01
Polynuclear Aromatic Hydrocarbons (PAHs)[1]	µg/L	--	--	--	2.09E+00
	lbs/day	--	--	--	3.14E-01
Polychlorinated Biphenyls (PCBs)[1]	µg/L	--	--	--	4.52E-03
	lbs/day	--	--	--	6.79E-04
TCDD Eqivalents[1]	µg/L	--	--	--	9.28E-07
	lbs/day	--	--	--	1.39E-07
1,1,2,2-tetrachloroethane	µg/L	--	--	--	5.47E+02
	lbs/day	--	--	--	8.22E+01

Parameter	Unit	Performance Goals[2,3]			
		Six-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
Tetrachloroethylene (Tetrachloroethene)	µg/L	--	--	--	4.76E+02
	lbs/day	--	--	--	7.15E+01
Toxaphene	µg/L	--	--	--	5.00E-02
	lbs/day	--	--	--	7.50E-03
Trichloroethylene (Trichloroethene)	µg/L	--	--	--	6.43E+03
	lbs/day	--	--	--	9.65E+02
1,1,2-trichloroethane	µg/L	--	--	--	2.24E+03
	lbs/day	--	--	--	3.36E+02
2,4,6-trichlorophenol	µg/L	--	--	--	6.90E+01
	lbs/day	--	--	--	1.04E+01
Vinyl Chloride	µg/L	--	--	--	8.57E+03
	lbs/day	--	--	--	1.29E+03

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. 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.
3. 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 (MGD) and C is the concentration (mg/L).
4. The Discharger may, at their option, apply this performance goal as a total chromium performance goal.

B. Land Discharge Specifications – Not Applicable

C. Recycling Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

A. 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).

1. Bacterial Characteristics

a. 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.

i. 30-day Geometric Mean – The following standards are based on the geometric mean of the five most recent samples from each site:

(a) Total coliform density (colony forming units, CFU) shall not exceed 1,000 per 100 milliliter (ml);

(b) Fecal coliform density (CFU) shall not exceed 200 per 100 ml; and

(c) Enterococcus density (CFU) shall not exceed 35 per 100 ml.

ii. Single Sample Maximum:

(a) Total coliform density (CFU) shall not exceed 10,000 per 100 ml;

(b) Fecal coliform density (CFU) shall not exceed 400 per 100 ml;

(c) Enterococcus density (CFU) shall not exceed 104 per 100 ml; and

(d) Total coliform density (CFU) shall not exceed 1,000 per 100 ml when the fecal coliform/total coliform ratio exceeds 0.1.

b. 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.

c. 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.

2. Physical Characteristics

a. Floating particulates and grease and oils shall not be visible.

b. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.

c. Natural light shall not be significantly reduced at any point outside the ZID as a result of the discharge of waste.

d. 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.

e. Trash shall not be present in ocean waters, along shorelines or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance.

3. Chemical Characteristics

a. 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.

b. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.

c. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.

d. The concentration of substances set forth in Chapter II, Table 1 of the Ocean Plan shall not be increased in marine sediments to levels that would degrade indigenous biota.

e. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.

f. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.

g. Numerical water quality objectives established in Chapter II, Table 1 of the Ocean Plan apply to all discharges within the jurisdiction of the Ocean Plan. Unless otherwise specified, all metal concentrations are expressed as total recoverable concentrations.

4. Biological Characteristics

a. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.

b. The natural taste, odor, color of fish, shellfish, or other marine resources used for human consumption shall not be altered.

c. 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. Radioactivity

Discharge of radioactive waste shall not degrade marine life.

B. Groundwater Limitations – Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.

2. **San Diego Water Board Standard Provisions.** The Discharger 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.

a. HARRF and the MFRO Facility shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to title 23, division 3, chapter 26 of the CCR. HARRF and the MFRO Facility shall be provided with a sufficient number of qualified personnel to operate the Facility effectively so as to achieve the required level of treatment at all times.

b. All proposed new treatment facilities (including the MFRO Facility) 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 Discharger shall submit a certification report for each new treatment facility (including the MFRO 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.

i. The certification report shall:

(a) Identify the design capacity of the treatment facility, including the daily and 30-day design capacity;

(b) Certify the adequacy of each component of the treatment facility; and

(c) 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.

ii. The Discharger shall not initiate a discharge from an existing treatment facility at a daily flow rate in excess of its previously approved design capacity until:

(a) The certification report is received by the San Diego Water Board,

(b) The San Diego Water Board has received written notification of completion of construction (new or expanded treatment facilities only),

(c) 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

(d) The San Diego Water Board has provided the Discharger 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.

c. HARRF and the MFRO Facility shall be protected against 100-year storm event as defined by the San Diego County Flood Control District (FCD).

d. HARRF and the MFRO Facility shall be protected against erosion, overland runoff, and other impacts resulting from a 100-year, 24-hour storm event as defined by the San Diego FCD.

e. HARRF and the MFRO Facility shall be protected against regional impacts due to climate change (e.g., sea level rise and floods).

f. The expiration date of this Order is contained in Table 3 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.

g. A copy of this Order shall be posted at a prominent location and shall be available to site personnel, San Diego Water Board, State Water Resources Control Board (State Water Board), and USEPA or their authorized representative at all times.

B. Monitoring and Reporting Program (MRP) Requirements

1. The Discharger shall comply with the MRP, and future revisions thereto, in Attachment E.

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.

C. Special Provisions

1. Reopener Provisions

a. 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 IV.A.2, Table 8, of this Order or as otherwise described in Table 1 of the Ocean Plan. (40 CFR section 122.44(d)(1))

b. 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 Discharger to evaluate and provide information on cost and values of the MRP (Attachment E).

c. 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:

   i. Violation of any terms or conditions of this Order (Water Code section 13381(a));

   ii. Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts (Water Code section 13381(b)); and

   iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge (Water Code section 13381(c)).

d. The filing of a request by the Discharger for modifications, revocation and reissuance, or termination of this Order does not stay any condition of this Order. Notification by the Discharger 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))

e. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under 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))

f. This Order may be reopened and modified for consistency with any new water quality control plan, policy, law, or regulation.

g. 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))

h. This Order may be reopened upon submission by the Discharger 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))

i. 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.

j. The mass emission performance goals, contained in section IV.A.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.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. **Spill Prevention and Response Plans**

i. For purposes of this section of the Order, a spill is a discharge that occurs at or downstream of the HARRF headworks, including the ELO, the San Elijo Ocean Outfall (SEOO), and the MFRO Facility, in violation of Discharge Prohibition III.A of this Order. A spill may include a discharge of treated or untreated wastewater, or material other than treated or untreated wastewater that causes, may cause, or is caused by significant operational failure, and/or endangers or may endanger human health or the environment. 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 VI.C.5.e of this Order for more information.)

ii. The Discharger shall maintain a Spill Prevention Plan (SPP) and a Spill Response Plan (SRP) for HARRF including the ELO, the SEOO, and the MFRO Facility, 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 Discharger shall review and amend the SPP/SRP as appropriate after each spill from HARRF, the ELO, the SEOO, and/or the MFRO Facility. 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 Discharger shall submit the SPP/SRP and any amendments thereto to the San Diego Water Board upon request of the San Diego Water Board. The Discharger shall ensure that the up-to-date SPP/SRP is readily available to the sewerage system personnel at all times and that the sewerage system personnel are familiar with it.

b. **Spill Reporting Requirements**

The Discharger shall report spills, as defined in section VI.C.2.a.i above, in accordance with the following procedures:

i. 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 waters, or results in a discharge to a storm drain that

was not fully captured and returned to the sanitary sewer system, the Discharger shall:

(a) Report the spill to the San Diego Water Board by email at SanDiego@waterboards.ca.gov within 24 hours from the time the Discharger becomes 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 Discharger becomes 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.

(b) 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 Discharger becomes aware of the spill. The written report must be signed and certified as required by section V of the Standards Provisions (Attachment D).

(c) The San Diego Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours.

ii. 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 HARRF, the Discharger is not required to notify the San Diego Water Board within 24 hours, or provide a 5-day written report.

iii. For spills of material other than treated or untreated wastewater that cause, may cause, or are caused by significant operational failure, and/or endangers or may endanger human health or the environment, the Discharger shall:

(a) Notify the San Diego Water Board by email at SanDiego@waterboards.ca.gov within 24 hours from the time the Discharger becomes 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 Discharger becomes 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.

(b) 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 Discharger becomes aware of the spill. The written report must be signed and certified as required by section V of the Standards Provisions (Attachment D).

(c) 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.

iv. 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. If no spills occurred during the calendar month, the Discharger shall report no spills in the monthly SMR for that calendar month.

v. The spill reporting requirements contained in this Order do not relieve the Discharger of responsibilities to report spills to other agencies, such as the California Office of Emergency Services and the County of San Diego Department of Environmental Health Services.

3. Best Management Practices and Pollution Prevention

Pollutant Minimization Program (PMP) - 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 Abbreviation and Definitions (Attachment A). These reporting protocols and definitions are used in determining the need to conduct a PMP, as follows:

a. The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity (WET), health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a pollutant is present in the effluent above an effluent limitation and either:

i. The concentration of the pollutant is reported as DNQ and the effluent limitation is less than the reported ML; or

ii. The concentration of the pollutant is reported as ND and the effluent limitation is less than the MDL.

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.

b. The PMP shall include, but not be limited to, the following actions and submittals acceptable to the San Diego Water Board:

i. 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;

ii. Quarterly monitoring for the reportable pollutant(s) in the influent to the wastewater treatment system;

iii. 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;

iv. Implementation of appropriate cost-effective control measures for the reportable pollutant(s), consistent with the control strategy; and

v. An annual status report that shall be sent to the San Diego Water Board including:

(a) All PMP monitoring results for the previous year;

(b) A list of potential sources of the reportable pollutant(s);

(c) A summary of all actions undertaken pursuant to the control strategy; and

(d) A description of actions to be taken in the following year.

4. Construction, Operation and Maintenance Specifications

a. The Discharger shall maintain in good working order a sufficient alternate power source for operating HARRF and the MFRO Facility. All equipment shall be located to minimize failure due to moisture, liquid spray, flooding, sea level rise, and other physical phenomena. The alternate power source shall be designed to permit inspection and maintenance and shall provide for periodic testing. If such alternate power source is not in existence, the Discharger shall halt, reduce, or otherwise control all discharges upon the reduction, loss, or failure of the primary source of power.

b. **Emergency Power Facilities** - The Discharger shall provide standby or emergency power facilities and/or storage capacity or other means so that in the event of plant upset or outage due to power failure or other cause, discharge of raw or inadequately treated sewage does not occur.

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

a. **Treatment Plant Capacity Report**

Four years prior to reaching POTW design capacity, the Discharger 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 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.

b. **Pretreatment Program**

i. The Discharger 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 Discharger but do not specify a timetable for completion, the Discharger 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 Discharger 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 CWA and/or the Water Code.

ii. The Discharger shall implement and enforce its approved pretreatment program, and all subsequent revisions, which are hereby made enforceable conditions of this Order. The Discharger shall enforce the requirements promulgated pursuant to Sections 307(b), 307 (c), 307 (d), and 402 (b) of the CWA with timely, appropriate, and effective enforcement actions. The Discharger 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.

iii. The Discharger shall perform the pretreatment functions required by 40 CFR part 403, including, but not limited to:

(a) Implement the necessary legal authorities as required by 40 CFR section 403.8(f)(1);

(b) Enforce the pretreatment requirements under 40 CFR sections 403.5 and 403.6;

(c) Implement the programmatic functions as required by 40 CFR section 403.8 (f)(2); and

(d) Provide the requisite funding and personnel to implement the pretreatment program, as required by 40 CFR section 403.8 (f) (3).

iv. By March 1 of each year, the Discharger 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 (http://www.waterboards.ca.gov/water_issues/programs/ciwqs/), and the San Diego County Department of Environmental Health Services, Hazardous Materials Division, describing its pretreatment activities over the previous calendar year. In the event the Discharger is not in compliance with any condition or requirement of this Order, or any pretreatment compliance inspection/audit requirements, the Discharger 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:

(a) A summary of analytical results from representative flow-proportioned 24-hour composite sampling of the Discharger's influent and effluent for those pollutants known or suspected to be discharged by industrial users that the USEPA has identified under Section 307 (d) of the 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 of this Order (Attachment E). The Discharger shall also provide influent and effluent monitoring data for non-priority pollutants, which the Discharger believes may be causing or contributing to interference or pass through. The Discharger is not required to sample and analyze for asbestos. Sludge sampling and analysis is addressed in the MRP of this Order (Attachment E).

Wastewater sampling and analysis shall be performed in accordance with 40 CFR part 136.

(b) A discussion of upset, interference, or pass through, if any, at HARRF, which the Discharger knows or suspects 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.

(c) The Discharger shall characterize the compliance status of each Significant Industrial User (SIU) by providing a list or table for the following:

(1) Name of SIU and category, if subject to categorical standards;

(2) Type of wastewater treatment or control processes in place;

(3) Number of samples taken by SIU during the year;

(4) Number of samples and inspections by Discharger during the year;

(5) For an SIU subject to discharge requirements for total toxic organics, whether all required certifications were provided;

(6) A list of pretreatment standards (categorical or local) violated during the year, or any other violations;

(7) Industries in significant noncompliance (SNC) as defined at 40 CFR section 403.8(f)(2)(viii), at any time during the year;

(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;

(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.

(d) A brief description of any programs the Discharger implements to reduce pollutants from nondomestic users not classified as SIUs.

(e) 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;

(f) A summary of the annual pretreatment program budget, including the cost of pretreatment program functions and equipment purchases;

(g) 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)(viii);

(h) A description of any changes in sludge disposal methods; and

(i) A discussion of any concerns not described elsewhere in the annual pretreatment report.

v. The Discharger 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)).

vi. The Discharger shall continue with its implementation of a Non-Industrial Source Control Program, consisting of a public education program designed to minimize the entrance of non-industrial toxic pollutants and pesticides into the sanitary sewer system. The Program shall be reviewed periodically and addressed in the annual report required under Section VI.C.5.c.iv.

~~vii. The Discharger shall provide a written technical evaluation of the need to revise local limits under 40 CFR 403.5(c)(1) following permit reissuance (40 CFR 122.44(j)(2)(ii)).~~

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

i. General Requirements

(a) All biosolids generated by the Discharger 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.

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 Discharger shall take all reasonable steps to ensure that all biosolids produced at HARRF are used or disposed of in accordance with these rules, whether the Discharger uses or disposes of the biosolids itself, or transfers their biosolids to another party for further treatment, use, or disposal. The Discharger is responsible for informing subsequent preparers, appliers, and disposers of requirements they must meet under these rules.

(b) The Discharger 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.

(c) No biosolids shall be allowed to enter wetlands or other waters of the U.S.

(d) Biosolids treatment, storage, use, or disposal shall not contaminate groundwater.

(e) Biosolids treatment, storage, use, or disposal shall not create a nuisance condition such as objectionable odors or flies.

(f) The Discharger shall take all reasonable steps to ensure that haulers transporting biosolids off-site 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 Discharger submits a hauling description, to be approved by USEPA, describing how trucks will be thoroughly cleaned prior to adding food or feed.

(g) If biosolids are stored for over two years from the time they are generated, the Discharger 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 HARRF site or off-site, adequate procedures must be taken to restrict access by the public and domestic animals.

(h) 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 and the highest tidal stage which may occur.

(i) There shall be adequate screening at the HARRF headworks and/or at the biosolids treatment units to ensure that all pieces of metal, plastic, glass, and other inert objects with a diameter greater than 3/4 inches are removed.

ii. 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 Discharger directly, or through contractual arrangements with their biosolids management contractors, to:

(a) Enter upon all premises where biosolids produced by the Discharger are treated, stored, used, or disposed of, by either the Discharger or another party to whom the Discharger transfers biosolids for further treatment, storage, use, or disposal;

(b) Have access to and copy any records that must be kept by either the Discharger or another party to whom the Discharger transfers biosolids for further treatment, storage, use, or disposal, under the conditions of this Order or 40 CFR part 503; and

(c) Inspect any facilities, equipment (including monitoring and control equipment), practices, or operations used in biosolids treatment, storage, use, or disposal by either the Discharger or another party to whom the Discharger transfers biosolids for further treatment, storage, use, or disposal.

iii. 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.

iv. Pathogen and Vector Control

(a) 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.

(b) Prior to disposal on a surface disposal site, the Discharger 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 Discharger 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 four °C.

(c) For biosolids that are land applied or placed on a surface disposal site, the Discharger shall track and keep records of the operational parameters used to achieve the Vector Attraction Reduction requirements under 40 CFR section 503.33(b).

v. 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.

vi. 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.

vii. Notifications

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

(a) Notification of Noncompliance

The Discharger shall notify USEPA, State Water Board, and San Diego Water Board (for both Discharger 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 Discharger shall notify USEPA, State Water Board, and San Diego Water Board of the noncompliance in writing within five working days of becoming aware of the noncompliance. The Discharger shall require their biosolids management contractors to notify USEPA, State Water Board, and San Diego Water Board of any noncompliance within these same time-frames.

(b) Interstate Notification

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

(c) Land Application Notification

Prior to using any biosolids from HARRF (other than composted biosolids) at a new or previously unreported site, the Discharger shall notify USEPA, State Water Board, and San Diego Water Board. This notification shall include a description and topographic map of the proposed site(s), names and addresses of the applier 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 Discharger (or its contractor) must pre-notify USEPA, State Water Board, and San Diego Water Board, and determine the cumulative metals loading at that site to date, as required by 40 CFR section 503.12.

The Discharger 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 Discharger 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.

(d) Surface Disposal Notification

Prior to disposal at a new or previously unreported site, the Discharger shall notify USEPA, State Water Board, and 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.

viii. Reporting

The Discharger shall submit an annual biosolids report to the State Water Board's California Integrated Water Quality System (CIWQS) program website (http://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:

(a) The amount of biosolids generated that year, in dry metric tons, and the amount accumulated from previous years.

(b) Results of all pollutant monitoring required under section VI.C.5.d.iii of this Order. Results must be reported on a 100% dry weight basis.

(c) Demonstrations of pathogen and vector attraction reduction methods, as required under 40 CFR sections 503.17 and 503.27, and certifications.

(d) 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.

(e) The following information must be submitted by the Discharger, unless the Discharger requires its biosolids management contractors to report this information directly to the USEPA Biosolids Coordinator:

(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, applier, 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).

(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.

ix. All reports shall be submitted to:

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

Regional Biosolids Coordinator
U.S. 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

d. **Sewage Collection System**

The Discharger is 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 WQ 2013-0058-EXEC and any subsequent amendment/reissuance order. The Discharger is 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, the Discharger's collection system is part of the treatment system that is subject to this Order. As such, pursuant to federal regulations, the Discharger 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)].

e. **Requirements for Receipt of Anaerobically Digestible Material**

If the Discharger plans to receive hauled-in anaerobically digestible material for injection into an anaerobic digester, the Discharger 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 Discharger shall train its staff on the SOPs and shall maintain records for a minimum of five years for each load received, describing the hauler, waste type, and quantity received. In addition, the Discharger shall maintain records for a minimum of five years for the disposition, location, and quantity of cumulative pre-digestion-segregated solid waste hauled off-site.

6. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VII. COMPLIANCE DETERMINATION

Compliance with the effluent limitations contained in section IV.A of this Order shall be determined as specified below:

A. 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 Discharger 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 the month only. If only a single sample is taken during the calendar month and the analytical result for that sample exceeds the AMEL, the Discharger will be considered out of compliance for that calendar month. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

B. 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 Discharger 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 Discharger 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.

C. 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 Discharger 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.

D. 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, a violation will be flagged and the Discharger 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).

E. 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, a violation will be flagged and the Discharger 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).

F. Compliance with 6-Month Median Effluent Limitation

If the median of daily discharges over any 180-day period exceeds the 6-month median effluent limitation for a given parameter, an alleged violation will be flagged and the Discharger 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 6-month median, the Discharger 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 6-month median limitation.

G. 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."

H. Percent Removal

Compliance with percent removal requirements for average monthly percent removal of $CBOD_5$ 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 is the average of the calculated daily discharge percent removals only for days on which the constituent concentration is monitored in both the influent and effluent of the wastewater treatment facility at the locations specified in the MRP (Attachment E) within a calendar month.

The percent removal for each day shall be calculated according to the following equation:

Daily discharge percent removal = $\frac{Influent\ \ concentration - Effluent\ concentration}{Influent\ concentration} \times 100\%$

I. Ocean Plan Provisions for Table 1 Constituents

Sufficient sampling and analysis shall be required to determine compliance with the effluent limitations.

1. **Compliance with Single-constituent Effluent Limitations**

   The Discharger 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.

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

   The Discharger is 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.

3. **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.

4. **Mass Emission Rate (MER)**

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

   MER (lbs/day) = 8.34 x Q x C

In which Q and C are the flow rate in million gallons per day 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.

J. Bacterial Standards and Analysis

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

   Geometric Mean = (C1 x C2 x … x Cn)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.

2. For all bacterial analyses, sample dilutions should be performed so the range of values extends from 2 to 16,000 CFU/100 mL. The detection methods used for each analysis shall be reported with the results of the analysis. Detection methods used for coliforms (total and fecal) 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 enterococcus 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.

K. Single Operational Upset (SOU)

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

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.
2. A Discharger may assert SOU to limit liability only for those violations which the Discharger submitted notice of the upset as required in section I.H of the Standards Provisions (Attachment D).
3. For purposes outside of Water Code section 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).
4. For purposes of Water Code section 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).

L. Chronic Toxicity

The discharge is subject to determination of "Pass" or "Fail" from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA

833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1. The null hypothesis (Ho) for the TST statistical approach is:

Mean discharge "in-stream" waste concentration (IWC) response ≤0.75 × Mean control response.

A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail." This is a t-test (formally Student's t-test), a statistical analysis comparing two sets of replicate observations—in the case of WET test, only two test concentrations (i.e., a control and IWC). The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC or receiving water concentration differs from the control (the test result is "Pass" or "Fail")). The Welch's t-test employed by the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances.

The MDEL for chronic toxicity is exceeded and a violation will be flagged when a chronic toxicity test, analyzed using the TST statistical approach, results in "Fail."

The MDEL for chronic toxicity is set at the IWC for the discharge (0.42% effluent[3]) and expressed in units of the TST statistical approach ("Pass" or "Fail"). All monitoring for the MDEL for chronic toxicity shall be reported using the IWC effluent concentration and negative control, expressed in units of the TST. The TST hypothesis (Ho) (see above) is statistically analyzed using the IWC and a negative control. Effluent toxicity tests shall be run using *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). The San Diego Water Board's review of reported toxicity test results will include review of concentration-response patterns as appropriate (see section IV.C.5 of the Fact Sheet (Attachment F)). As described in the laboratory audit directives to the San Jose Creek Water Quality Laboratory from the State Water Board dated August 07, 2014, and from USEPA dated December 24, 2013, the Percent Minimum Significant Difference (PMSD) criteria only apply to compliance reporting for the no-observed-effect-concentration (NOEC) and the sublethal statistical endpoints of the NOEC, and therefore are not used to interpret TST results. SOPs used by the toxicity testing laboratory to identify and report valid, invalid, anomalous, or inconclusive effluent (and receiving water) toxicity test measurement results from the TST statistical approach, including those that incorporate a consideration of concentration-response patterns, must be submitted to the San Diego Water Board (40 CFR section 122.41(h)). The San Diego Water Board will make a final determination as to whether a toxicity test result is valid, and may consult with the Discharger, USEPA, the State Water Board's Quality Assurance (QA) Officer, or the State Water Board, Division of Drinking Water (DDW) Environmental Laboratory Accreditation Program (ELAP) as needed.

[3] IWC = 1/minimum initial dilution factor (Dm) = 1/237 = 0.0042 = 0.42%

ATTACHMENT A – DEFINITIONS

Part 1. – Abbreviations

Abbreviation	Definition
40 CFR	Title 40 of the Code of Federal Regulations
AMEL[1]	Average Monthly Effluent Limitation
AQUA	Aquaculture
ASBS[1]	Areas of Special Biological Significance
AUV	Autonomous Underwater Vehicle
AWEL[1]	Average Weekly Effluent Limitation
Basin Plan	*Water Quality Control Plan for the San Diego Basin*
BIOL	Preservation of Biological Habitats of Special Significance
BOD_5	Biochemical Oxygen Demand (5-Day @ 20°C)
°C	Degrees Celsius
$CBOD_5$	Carbonaceous Biochemical Oxygen Demand (5-Day @ 20°C)
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
COMM	Commercial and Sport Fishing
CWA	Clean Water Act
CY	Cubic Yards
DDT[1]	Dichlorodiphenyltrichloroethane
DDW	State Water Board, Division of Drinking Water
Discharger	City of Escondido
DMR	Discharge Monitoring Report
DNQ[1]	Detected, But Not Quantified
EC25	Effects Concentration at 25 Percent
ELAP	Environmental Laboratory Accreditation Program
ELO	Escondido Land Outfall
eSMR	Electronic Self-Monitoring Reports
FCD	Flood Control District
GPS	Global Positioning System
HARRF	Hale Avenue Resource Recovery Facility
HCH[1]	Hexachlorocyclohexane
Ho	Hypothesis
IND	Industrial Service Supply
IU	Industrial User
IWC[1]	“In-Stream” Waste Concentration
JPA	Joint Powers Authority
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[1]	Maximum Daily Effluent Limitation

Abbreviation	Definition
MDL[1]	Method Detection Limit
MEC	Maximum Effluent Concentration
MER	Mass Emission Rate
MFRO Facility	Membrane Filtration/Reverse Osmosis Facility
MF/UF	Microfiltration/ultrafiltration
mg/kg	Milligram per Kilogram
mg/L	Milligram per Liter
MGD	Million Gallons per Day
MIGR	Migration of Aquatic Organisms
ML[1]	Minimum Level
ml	Milliliter
ml/L	Milliliter per Liter
MRP	Monitoring and Reporting Program
NAV	Navigation
ND	Not Detected
NOAA's	National Oceanic and Atmospheric Administration's
NOEC	No-Observed-Effect-Concentration
NOEL	No Observed Effect Level
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Unit
Ocean Plan	*California Ocean Plan, Water Quality Control Plan Ocean Waters of California*
PAHs[1]	Polynuclear Aromatic Hydrocarbons
PCBs[1]	Polychlorinated Biphenyls
pCi/L	Picocuries per Liter
PMP[1]	Pollutant Minimization Program
PMSD	Percent Minimum Significant Difference
POTWs	Publicly-Owned Treatment Works
PPP	Pollution Prevention Plan
ppt	Parts per Thousand
QA	Quality Assurance
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, *Waste Discharge Requirements for Sewage Collection Agencies in the San Diego Region*
RL	Reporting Level
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 Waters Research Project
SEOO	San Elijo Ocean Outfall
SHELL	Shellfish Harvesting
SIUs	Significant Industrial Users

Abbreviation	Definition
SMR	Self-Monitoring Report
SNC	Significant Noncompliance
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[1]	Sanitary Sewer Overflow
State Water Board	State Water Resources Control Board
Statewide General SSO Order	State Water Board Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*
TAC	Test Acceptability Criteria
TBELs	Technology-Based Effluent Limitations
TCDD[1]	Tetrachlorodibenzodioxin
TIE[1]	Toxicity Identification Evaluation
TMDL	Total Maximum Daily Load
TRE[1]	Toxicity Reduction Evaluation
TSD	Technical Support Document
TSS	Total Suspended Solids
TST	Test Of Significant Toxicity
TUc[1]	Toxic Units Chronic
U.S.C.	United States Code
µg	Microgram
µg/kg	Microgram per Kilogram
µg/L	Microgram per Liter
UM3	USEPA Modeling Application Visual Plumes
USEPA	United ~~Stated~~ States Environmental Protection Agency
U.S.	United States
Water Code	California Water Code
WDRs	Waste Discharge Requirements
WET	Whole Effluent Toxicity
WILD	Wildlife Habitat
WQBELs	Water Quality-Based Effluent Limitations
ZID	Zone of Initial Dilution

1 See Part 2 of Attachment A (Glossary of Common Terms) for further definition.

Part 2. – Glossary of Common Terms

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

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 CCR.

Areas of Special Biological Significance (ASBS)
Those areas designated by the 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 well being 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 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 *Water Quality Control Plan for the San Diego Basin* (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. [California 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.

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.

Chronic Toxicity
This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Chronic Toxicity (TUc)
Expressed as Toxic Units Chronic (TUc)

$$TUc = \frac{100}{NOEL}$$

b. No Observed Effect Level (NOEL)

The NOEL is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Ocean Plan Appendix II.

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

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.

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.

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
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 channelled 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 Monitoring Reports (DMRs)
The DMRs means the Environmental Protection Agency (EPA) 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 EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Downstream Ocean Waters
Waters downstream with respect to ocean currents.

Dredged Material
Any material excavated or dredged from the navigable waters of the U.S., including material otherwise referred to as "spoil."

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 California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

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

HARRF
Hale Avenue Resource Recovery Facility

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 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 U.S. 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.

MFRO Facility
Membrane Filtration/Reverse Osmosis Facility

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 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 U.S. 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 average values of the raw wastewater influent pollutant concentrations to the facility and the average values of the effluent pollutant concentrations for a given time period.

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-nitropheneol, 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)
PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of Ocean Plan Table 1 pollutants through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitations. 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 to fulfill the PMP requirements.

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
The reported ML (also known as the Reporting Level or RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order, including an additional factor if applicable as discussed herein. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the San Diego Water Board either from Appendix II of the Ocean Plan in accordance with section III.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.

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.

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

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.

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.

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 Equivalence 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 step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A 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.

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

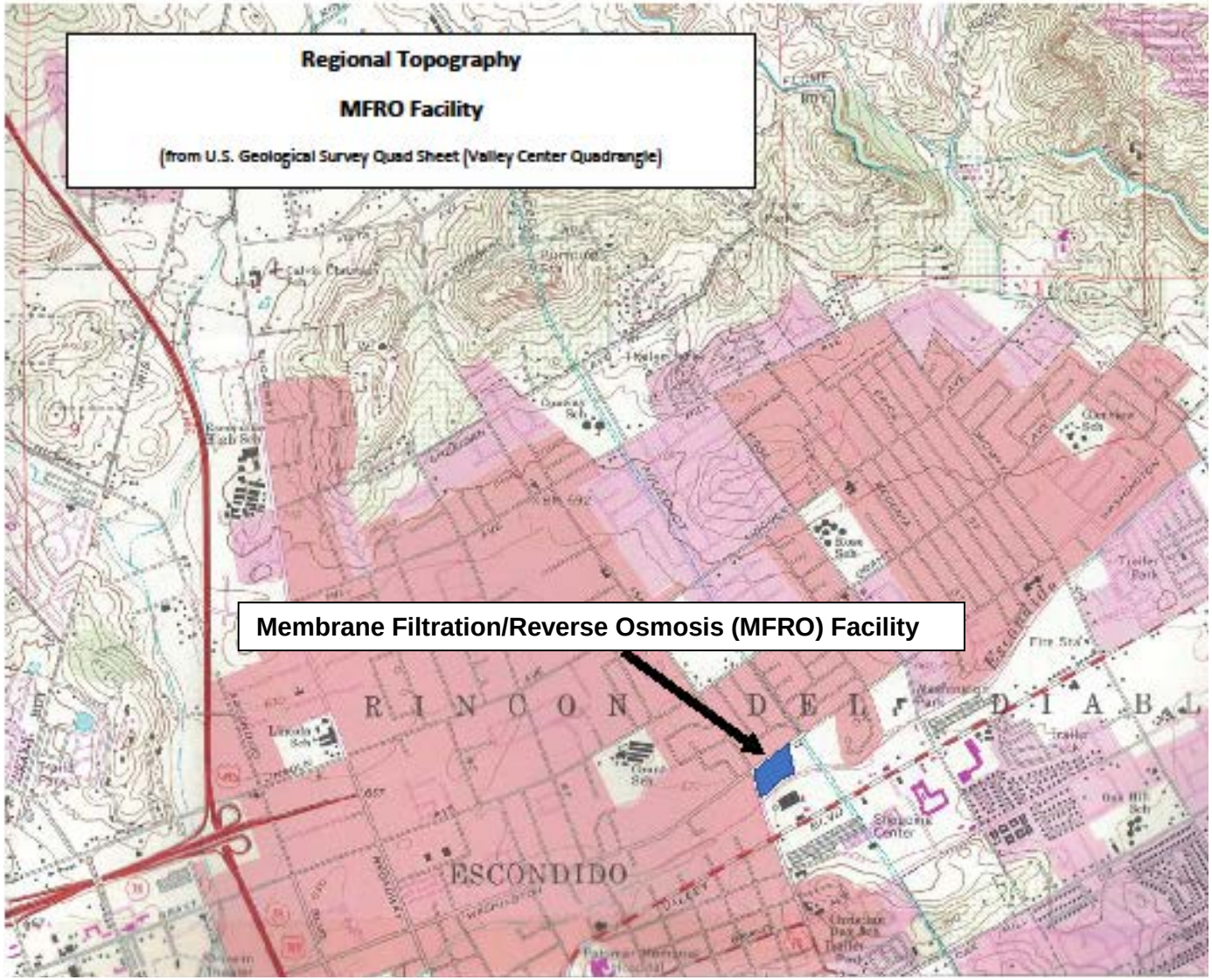
Water Quality Control Plans
There are two types of water quality control plans - Basin Plans and Statewide Plans. Regional Boards adopt Basin Plans for each region based upon surface water hydrologic basin boundaries. The Regional Basin Plans designates or describes (1) existing and potential beneficial 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 [California 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. [California 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

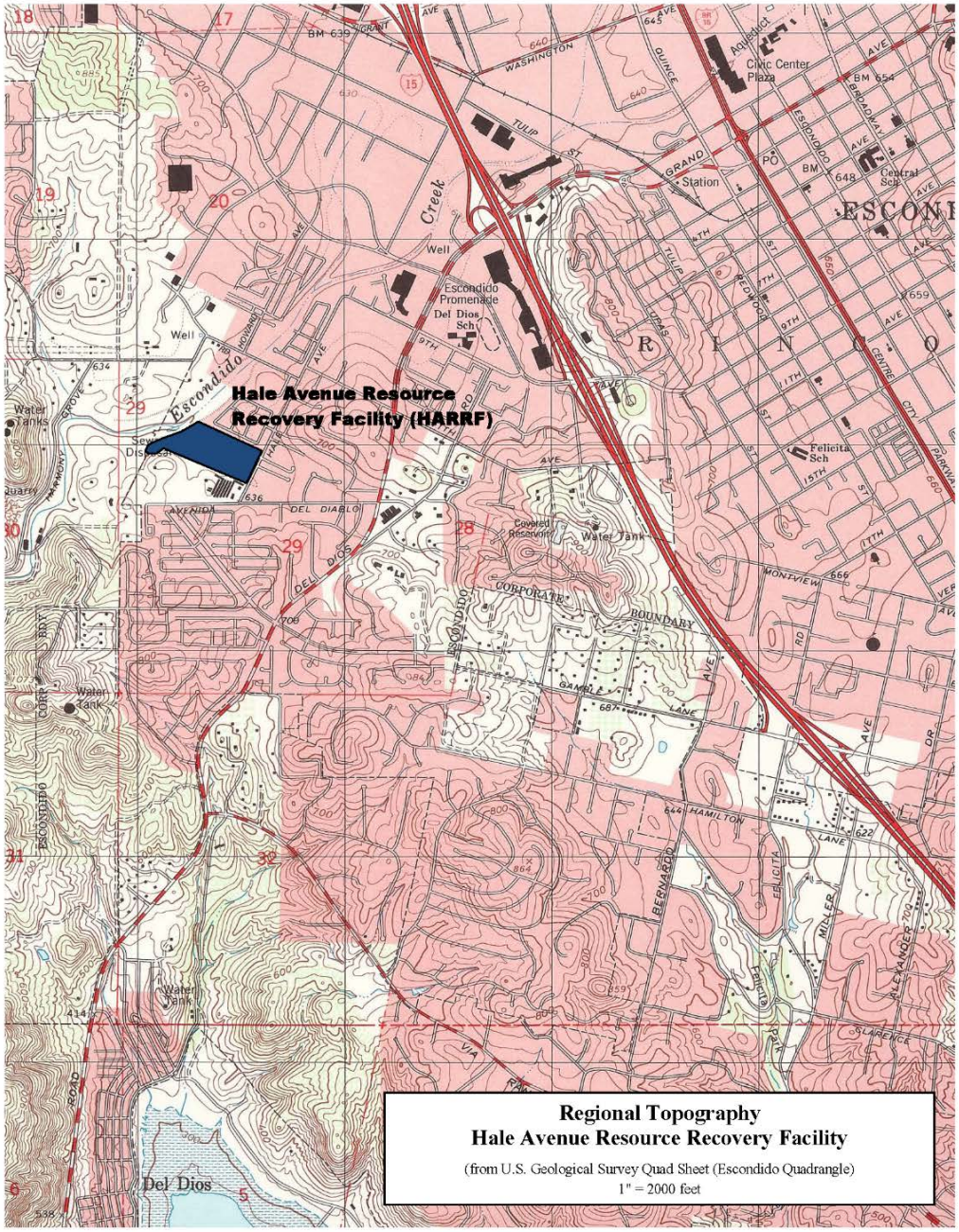
Provisions of State or federal law which consist of a designated use or uses for waters of the United States and water quality criteria for such waters based upon such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the Act [40 CFR section 131.3(i)]. A water quality standard under the federal Clean Water Act is equivalent to a beneficial use designation plus a water quality objective. In California, water quality standards are promulgated by the State and Regional Water Boards in Water Quality Control Plans. Water quality standards are enforceable limits for the bodies of surface or ground waters for which they are established.

ATTACHMENT B – MAP



CITY OF ESCONDIDO
HALE AVENUE RESOURCE RECOVERY FACILITY
MEMBRANE FILTRATION/REVERSE OSMOSIS FACILITY

TENTATIVE ORDER R9-2018-0002
NPDES NO. CA0107981



Regional Topography
Hale Avenue Resource Recovery Facility
(from U.S. Geological Survey Quad Sheet (Escondido Quadrangle)
1" = 2000 feet

CITY OF ESCONDIDO
HALE AVENUE RESOURCE RECOVERY FACILITY
MEMBRANE FILTRATION/REVERSE OSMOSIS FACILITY

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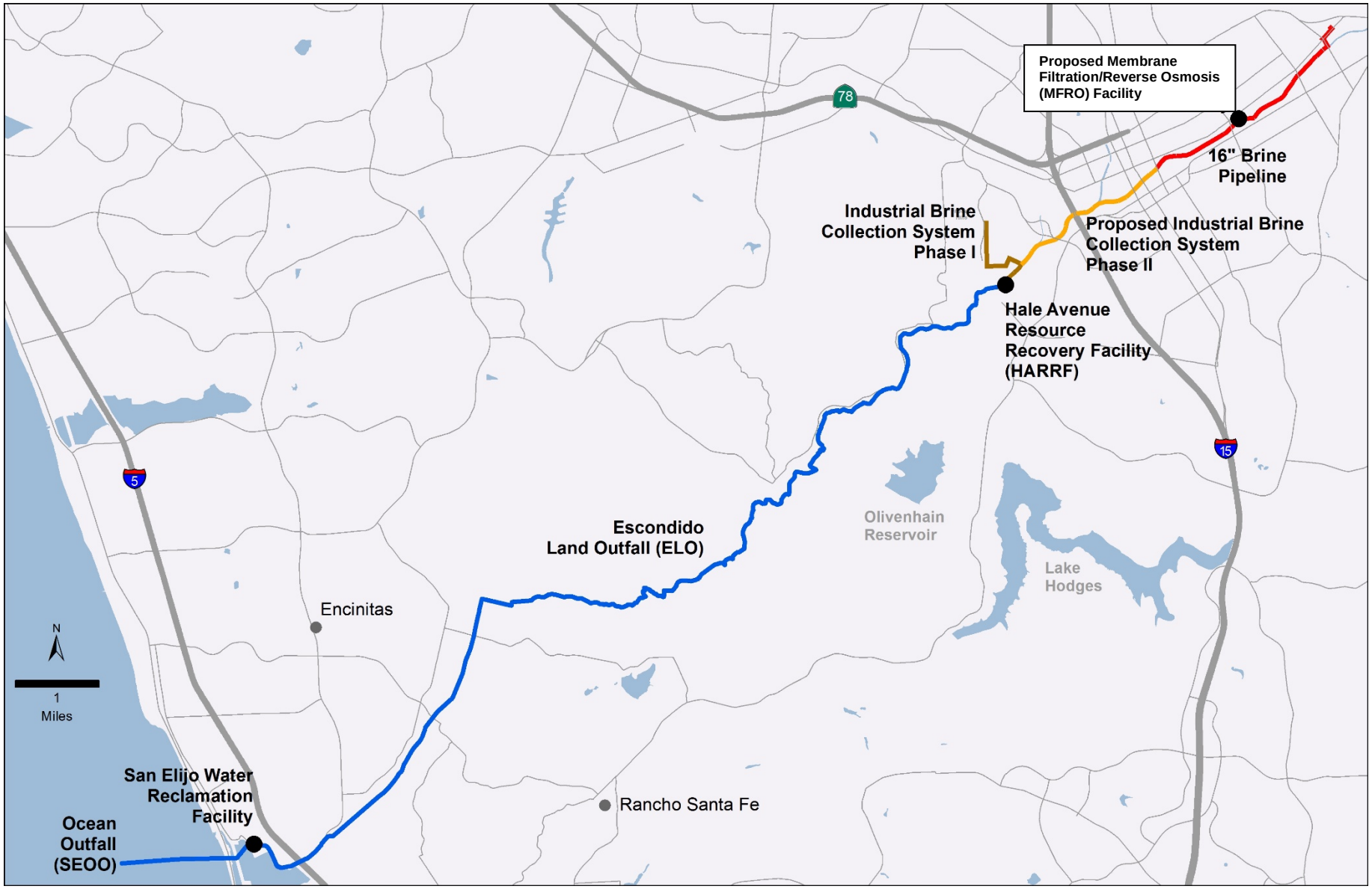
NPDES NO. CA0107981



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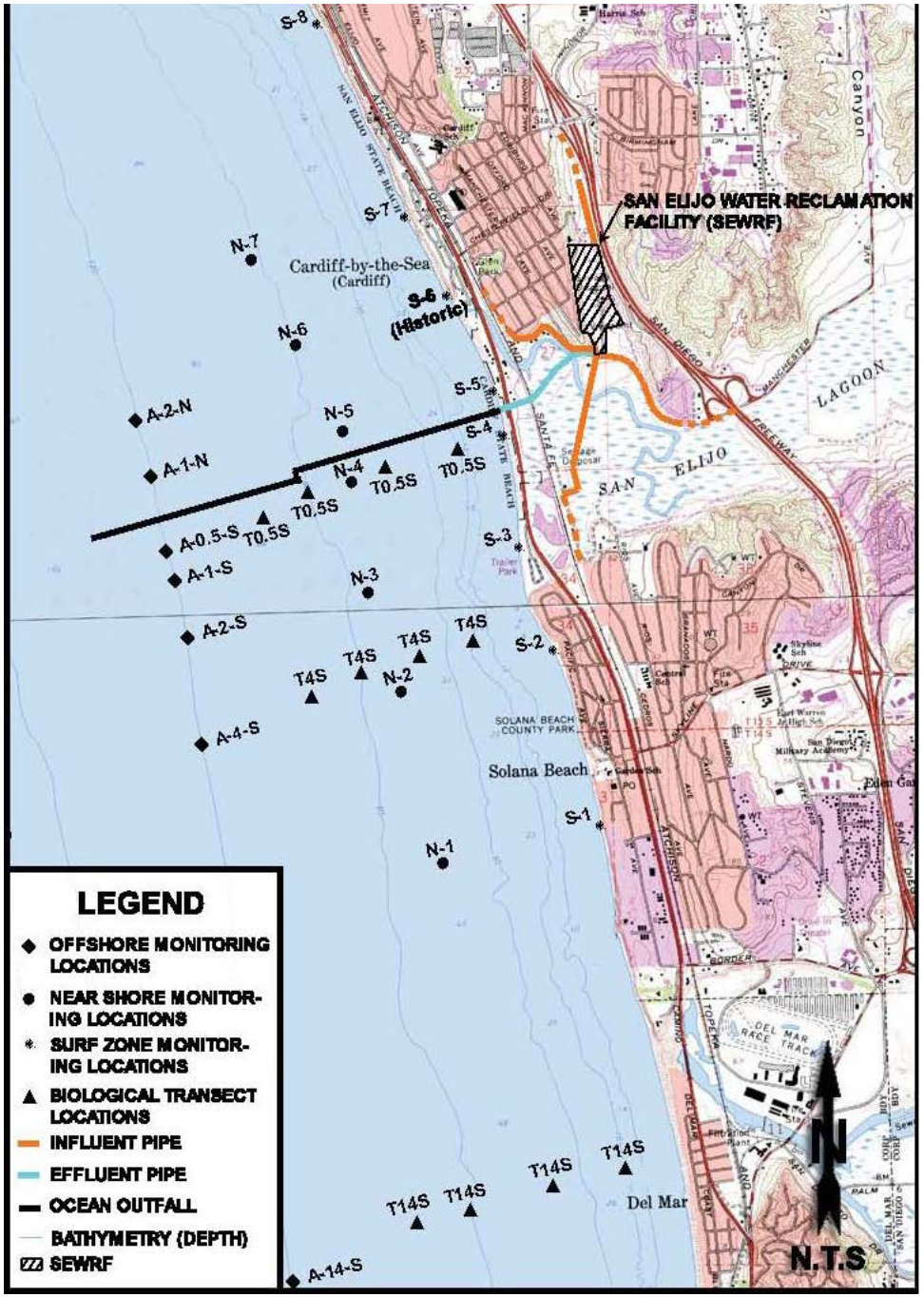

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HALE AVENUE RESOURCE RECOVERY FACILITY
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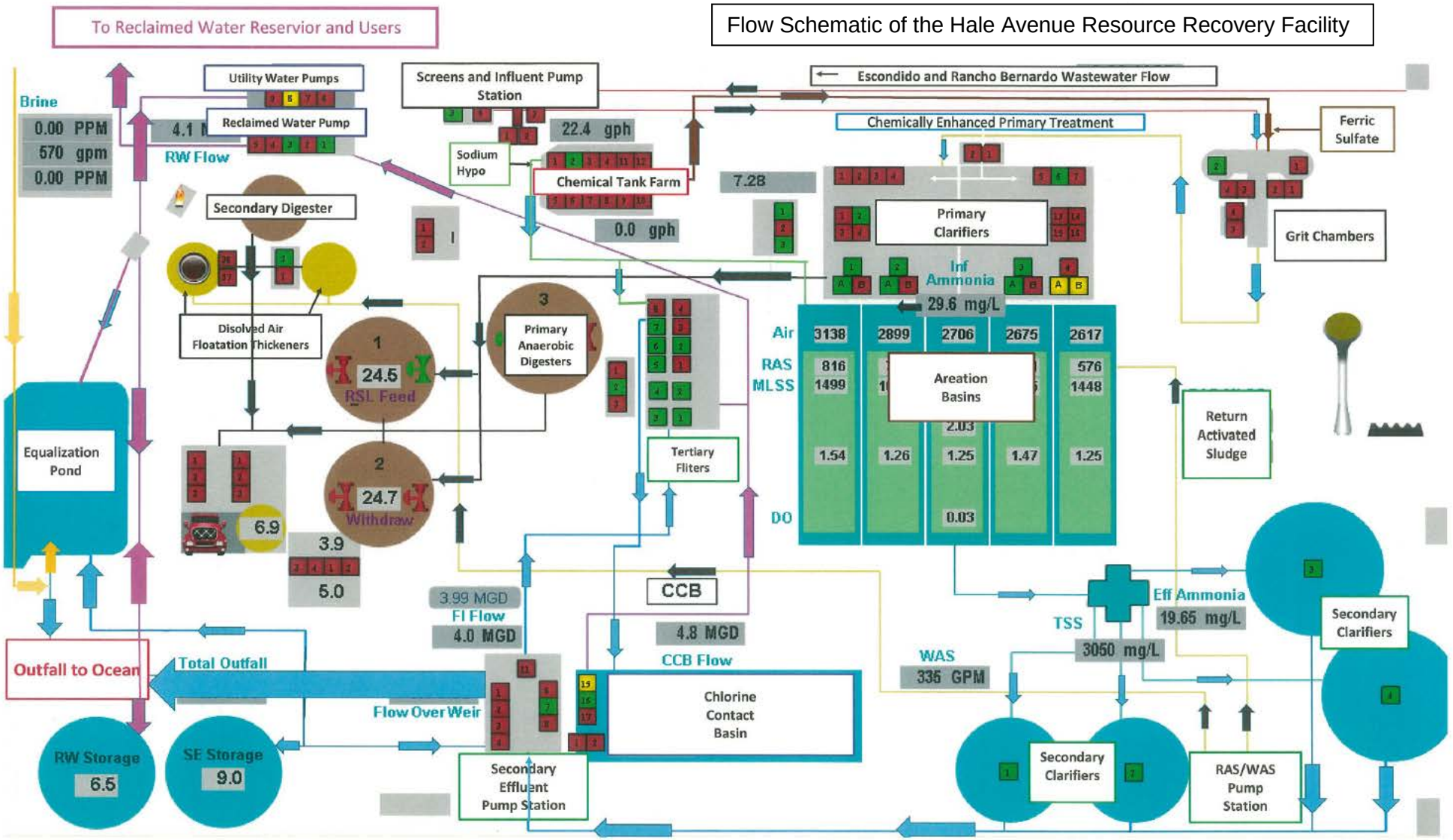
CITY OF ESCONDIDO
HALE AVENUE RESOURCE RECOVERY FACILITY
MEMBRANE FILTRATION/REVERSE OSMOSIS FACILITY

TENTATIVE ORDER R9-2018-0002
NPDES NO. CA0107981

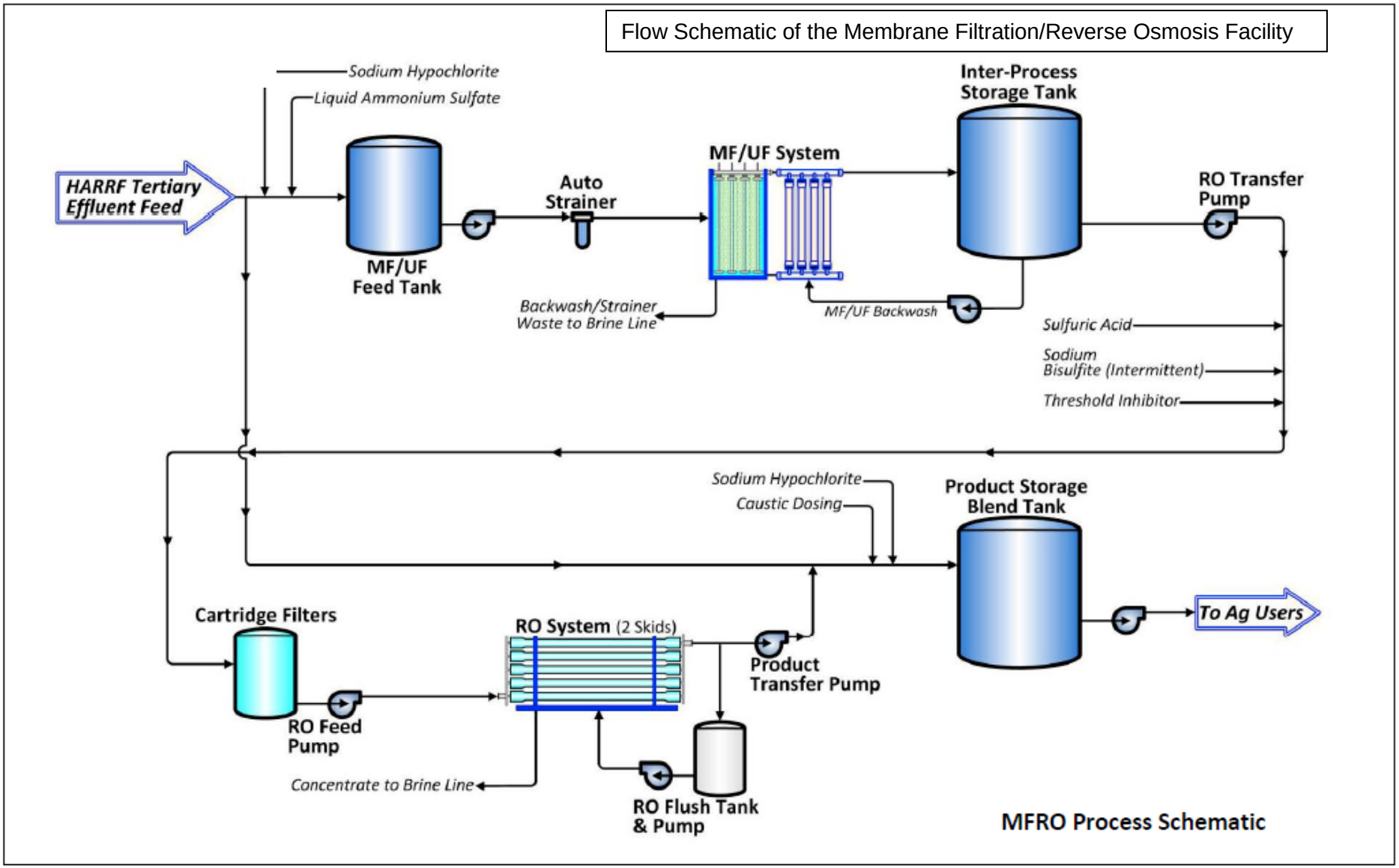
ATTACHMENT C – FLOW SCHEMATIC



CITY OF ESCONDIDO
HALE AVENUE RESOURCE RECOVERY FACILITY
MEMBRANE FILTRATION/REVERSE OSMOSIS FACILITY

TENTATIVE ORDER R9-2018-0002
NPDES NO. CA0107981

Flow Schematic of the Membrane Filtration/Reverse Osmosis Facility



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

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

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the 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).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 CFR section 122.41(g).)

2. The issuance of this Order does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations. (40 CFR section 122.5(c).)

F. Inspection and Entry

The Discharger shall allow the San Diego Water 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. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (33 U.S.C. section 1318(a)(4)(b)(i); 40 CFR section 122.41(i)(1); Water Code, sections 13267, 13383);

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

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

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

G. Bypass

1. Definitions

   a. “Bypass” means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR section 122.41(m)(1)(i).)

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

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

3. Prohibition of bypass. Bypass is prohibited, and the San Diego Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR section 122.41(m)(4)(i)):

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

   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR section 122.41(m)(4)(i)(B)); and

c. The Discharger submitted notice to the San Diego Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR section 122.41(m)(4)(i)(C).)

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 I.G.3 above. (40 CFR section 122.41(m)(4)(ii).)

5. Notice

   a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit prior notice, if possible at least 10 days before the date of the bypass. The notice shall be sent to the San Diego Water Board. (40 CFR section 122.41(m)(3)(i).)

   b. Unanticipated bypass. The Discharger shall submit a notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). The notice shall be sent to the San Diego Water Board. (40 CFR section 122.41(m)(3)(ii).)

H. Upset

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

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

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

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

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

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

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR section 122.41(n)(3)(iv).)

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

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. 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 Discharger and incorporate such other requirements as may be necessary under the CWA and the Water Code. (40 CFR sections 122.41(l)(3), 122.61.)

III. STANDARD PROVISIONS – MONITORING

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

B. 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, subchapters N or O. 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 or O. For the purposes of this paragraph, a method is sufficiently sensitive when:

1. The method minimum level (ML) is at or below the level of the 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

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 or O 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, subchapters N or O, 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).)

IV. STANDARD PROVISIONS – RECORDS

A. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the San Diego Water Board Executive Officer at any time. (40 CFR section 122.41(j)(2).)

B. Records of monitoring information shall include:

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger 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 Discharger 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.)

B. Signatory and Certification Requirements

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 V.B.2, V.B.3, V.B.4, V.B.5, and V.B.6 below. (40 CFR section 122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR section 122.22(a)(3).).
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 V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR section 122.22(b)(1));

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR section 122.22(b)(2)); and

c. The written authorization is submitted to the San Diego Water Board and State Water Board. (40 CFR section 122.22(b)(3).)

4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard Provisions – Reporting V.B.3 above must be submitted to the 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. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

   "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." (40 CFR section 122.22(d).)

6. Any person providing the electronic signature for documents described in Standard Provisions – V.B.1, V.B.2, or V.B.3 that are submitted electronically shall meet all relevant requirements of Standard Provisions – Reporting V.B, and shall ensure that all relevant requirements of 40 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).)

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR section 122.41(l)(4).)

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 for reporting the results of monitoring, sludge use, or disposal practices. As of December 21, 2016, all reports and forms must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J and comply with 40 CFR part 3, 40 CFR section 122.22, and 40 CFR part 127. (40 CFR section 122.41(l)(4)(i).)

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR part 136, or another method required for an industry-specific waste stream under 40 CFR chapter 1, subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the San Diego Water Board. (40 CFR section 122.41(l)(4)(ii).)

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

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

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

   For noncompliance 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 21, 2020, all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events must be submitted electronically to the initial recipient defined in Standard Provisions – Reporting V.J. 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 Discharger 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).)

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

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR section 122.41(l)(6)(ii)(A).)

   b. Any upset that exceeds any effluent limitation in this Order. (40 CFR section 122.41(l)(6)(ii)(B).)

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).)

F. Planned Changes

The Discharger 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)):

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 section 122.29(b) (40 CFR section 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 CFR section 122.41(l)(1)(ii).

   The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.
   (40 CFR section 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger 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).)

H. Other Noncompliance

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

I. Other Information

When the Discharger becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the San Diego Water Board, State Water Board, or USEPA, the Discharger shall promptly submit such facts or information. (40 CFR section 122.41(l)(8).)

J. 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).)

VI. 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.

VII. 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)):

A. Any new introduction of pollutants into the POTW from an indirect discharger that would be subject to sections 301 or 306 of the CWA if it were directly discharging those pollutants (40 CFR section 122.42(b)(1)); and

B. 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).)

C. 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).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

CONTENTS

TABLES

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) sections 13267 and 13383 also authorize 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 City of Escondido (Discharger) to conduct routine or episodic self-monitoring of the discharges regulated under this Order at specified influent, internal operations, effluent, and receiving water monitoring locations. This MRP requires the Discharger to report the results to the San Diego Water Board with information necessary to evaluate discharge characteristics and compliance status.

The purpose of this 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. This 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 this 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 V 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.

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in section II, Table E-1 below 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.

B. 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 devices shall be installed, calibrated, and maintained to ensure that the accuracy of the measurement is consistent with the accepted capability of that type of device. 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.

C. Monitoring must be conducted according to U.S. 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 unless other test procedures are specified in this Order and attachments thereof or otherwise specified by the San Diego Water Board.

D. All analyses shall be performed in a laboratory certified to perform such analyses by the State Water Resource Control Board's (State Water Board's) Division of Drinking Water (DDW) or a laboratory approved by the San Diego Water Board. The laboratory must be accredited under the DDW Environmental Laboratory Accreditation Program (ELAP) to ensure the quality of analytical data used for regulatory purposes to meet the requirements of this Order. Additional information on ELAP can be accessed at http://www.waterboards.ca.gov/drinking_water/certlic/labs/index.shtml.

E. Records of monitoring information shall include information required under Standard Provision, Attachment D, section IV.

F. All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices.

G. The Discharger 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 Discharger shall have a success rate equal to or greater than 80 percent.

H. When requested by USEPA or the San Diego Water Board, the Discharger will participate in the NPDES Discharge Monitoring Report QA (DMR-QA) performance study. If the DMR-QA is not requested, the Discharger shall submit the most recent Water Pollution Performance Evaluation Study. The Discharger shall ensure that the results of the DMR-QA Study or the most recent Water Pollution Performance Evaluation Study are submitted annually by December 31 to the State Water Resources Control 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

I. 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 Region* (Basin Plan) and the *Water Quality Control Plan, 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.

II. MONITORING LOCATION

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

Table E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	INF-001	At a location where all influent flows to HARRF are accounted for in monitoring events, upstream of any in-plant return flows, where a representative sample of the influent can be obtained.
--	EFF-001	At a location downstream of any in-plant return flows at HARRF, where representative samples of effluent treated solely at HARRF can be collected, before combining with wastewaters from the City of Escondido Industrial Brine Collection System, other wastewaters in the Escondido Land Outfall (ELO) line, and/or other wastewater in the San Elijo Ocean Outfall (SEOO). Alternatively, the monitoring requirements at EFF-001 may be achieved by combining samples from all flows from HARRF.
--	EFF-002	At a location where representative samples of all wastewater (e.g. brine/backwash water) solely from the Membrane Filtration/Reverse Osmosis (MFRO) Facility to the ELO line can be collected, before combining with other brine flows in the City of Escondido Industrial Brine Collection System, other wastewaters in the ELO line, and/or other wastewater in the SEOO.
001	EFF-003	This monitoring location represents a flow-weighted combined sample from HARRF (Monitoring Location EFF-001, described above) and the MFRO Facility (Monitoring Location EFF-002, described above).
001	EFF-004	At a location downstream of all wastewater (i.e., secondary- and tertiary-treated effluent and brine) discharged to the ELO, where a representative sample can be accounted for, before combining with wastewaters from the San Elijo Water Reclamation Facility and other wastewaters in the SEOO line. Alternatively, the monitoring requirements at EFF-004 may be achieved using the sum of flow monitoring devices that account for all contributing flows to the ELO.
SURF ZONE STATIONS		
--	S1	Surf zone, 8,000 feet south of the outfall (approximately: 32°58'59"N 117°16'32"W).
--	S2	Surf zone, 4,500 feet south of the outfall (approximately: 32°59'34"N 117°16'38"W).
--	S3	Surf zone, 2,500 feet south of the outfall (approximately: 32°59'55"N 117°16'46"W).
--	S4	Surf zone, 500 feet south of the outfall (approximately: 33°00'15"N 117°16'49"W).
--	S5	Surf zone, 500 feet north of the outfall (approximately: 33°00'26"N 117°16'50"W).
--	S6	Surf zone, 2,200 feet north of the outfall (historical, approximately: 33°00'41"N 117°16'55"W).
--	S7	Surf zone, 4,000 feet north of the outfall (approximately: 33°00'58"N 117°17'05"W).
--	S8	Surf zone, 8,000 feet north of the outfall (approximately: 33°01'37"N 117°17'25"W).

NEAR SHORE STATIONS		
--	N1	Opposite S1, 3,000 feet seaward, MLLW (approximately: 32°59'00"N 117°17'09"W.)
--	N2	Opposite S2, 3,000 feet seaward, MLLW (approximately: 32°59'34"N 117°17'12"W).
--	N3	Opposite S3, 3,000 feet seaward, MLLW (approximately: 32°59'54"N 117°17'22"W).
--	N4	Opposite S4, 3,000 feet seaward, MLLW (approximately: 33°00'14"N 117°17'24"W).
--	N5	Opposite S5, 3,000 feet seaward, MLLW (approximately: 33°00'25"N 117°17'25"W).
--	N6	Opposite S6, 3,000 feet seaward, MLLW (approximately: 33°00'40"N 117°17'30"W).
--	N7	Opposite S7, 3,000 feet seaward, MLLW (approximately: 33°00'58"N 117°17'40"W).
OFFSHORE STATIONS		
--	A14S	At the 120 foot depth contour, 14,000 feet south of the outfall.
--	A4S	At the 120 foot depth contour, 4,000 feet south of the outfall.
--	A2S	At the 120 foot depth contour, 2,000 feet south of the outfall.
--	A1S	At the 120 foot depth contour, 1,000 feet south of the outfall.
--	A0.5S	At the 120 foot depth contour, 500 feet south of the outfall.
--	A1N	At the 120 foot depth contour, 1,000 feet north of the outfall.
--	A2N	At the 120 foot depth contour, 2,000 feet north of the outfall.
BIOLOGICAL TRANSECTS		
--	T0.5S	At the 20, 40, 60, and 80 foot depth contours along the transect located 500 feet downcoast of and parallel to the outfall.
--	T4S	At the 20, 40, 60, and 80 foot depth contours along the transect located 4,000 feet downcoast of and parallel to the outfall.
--	T14S	At the 20, 40, 60, and 80 foot depth contours along the transect located 14,000 feet downcoast of and parallel to the outfall.
RIG FISHING STATIONS		
--	RF8S	8,000 feet south of the outfall (approximately: 32°59'00"N 117°18'05"W)
--	RF	At the outfall diffuser (approximately: 33º00'21"N 117º18'09"W)
--	RF8N	8,000 feet north of the outfall (approximately: 33°01'35"N 117°18'32"W)

III. CORE MONITORING REQUIREMENTS

A. 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 Discharger complying with permit conditions including, but not limited to, carbonaceous biochemical oxygen demand (5-day @ 20 degrees Celsius (°C)) ($CBOD_5$) and total suspended solids (TSS) percent removal limitations?

The Discharger shall monitor the HARRF influent at Monitoring Location INF-001. Influent samples shall be monitored as follows.

Table E-2. Influent Monitoring at Monitoring Location INF-001[1]

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	[2]
TSS	mg/L	24-hr Composite	1/Week	[2]

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. As required under 40 CFR part 136.

B. 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 HARRF and the MFRO Facility being properly operated and maintained to ensure compliance with the conditions of this Order?

1. The Discharger shall monitor the HARRF effluent at Monitoring Location EFF-001 as follows:

Table E-3. Effluent Monitoring at Monitoring Location EFF-001[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/Totalizer	Continuous	--
pH	standard units	Grab[2]	1/Day[3]	[4]
Temperature	°C	Grab[2]	1/Week	[4]
Dissolved Oxygen	mg/L	Grab[5]	1/Week	[4]
Chlorine, Total Residual	µg/L	Grab[5]	1/Day[2,6,7]	[4]

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. The Discharger shall monitor and report pH and temperature at Monitoring Location EFF-001 and at Monitoring Location EFF-002. The Discharger shall report the minimum and maximum pH result for each day sampled as the value at Monitoring Location EFF-003. The Discharger shall report the maximum temperature result for each day sampled as the value at Monitoring Location EFF-003.
3. Applies 5 days per week, except 7 days per week for at least 1 week in July or August of each year.
4. As required under 40 CFR part 136.
5. The Discharger shall monitor and report dissolved oxygen and total residual chlorine at Monitoring Location EFF-001 and at Monitoring Location EFF-002. The Discharge shall report the flow-weighted average for dissolved oxygen and total residual chlorine for each day sampled as the value at Monitoring Location EFF-003.
6. The Discharger 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 VII.I.4 of this Order.
7. 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.

2. The Discharger shall monitor the MFRO Facility effluent at Monitoring Location EFF-002 as follows:

Table E-4. Effluent Monitoring at Monitoring Location EFF-002[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/Totalizer	Continuous	--
pH	standard units	Grab[2]	1/Day[3]	[4]
Temperature	°C	Grab[2]	1/Week	[4]
Dissolved Oxygen	mg/L	Grab[5]	1/Week	[4]
Chlorine, Total Residual	µg/L	Grab[5]	1/Day[2,6,7]	[4]

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. The Discharger shall monitor and report pH and temperature at Monitoring Location EFF-001 and at Monitoring Location EFF-002. The Discharger shall report the minimum and maximum pH result for each day sampled as the value at Monitoring Location EFF-003. The Discharger shall report the maximum temperature result for each day sampled as the value at Monitoring Location EFF-003.
3. Applies 5 days per week, except 7 days per week for at least 1 week in July or August of each year.
4. As required under 40 CFR part 136.
5. The Discharger shall monitor and report dissolved oxygen and total residual chlorine at Monitoring Location EFF-001 and at Monitoring Location EFF-002. The Discharge shall report the flow-weighted average for dissolved oxygen and total residual chlorine for each day sampled as the value at Monitoring Location EFF-003.
6. The Discharger 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 VII.I.4 of this Order.
7. 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.

3. The Discharger shall monitor HARRF and the MFRO Facility effluent at Monitoring Location EFF-003 as follows:

Table E-5. Effluent Monitoring at Monitoring Location EFF-003[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Calculated	Calculated	--
Biochemical Oxygen Demand (5-day @ 20 degrees °C) (BOD_5)	mg/L	24-hr Composite	1/Month	[2]
$CBOD_5$	mg/L	24-hr Composite	1/Day[3,4]	[2]
	% Removal	Calculate	1/Month	[2]
TSS	mg/L	24-hr Composite	1/Day[3,4]	[2]
	% Removal	Calculate	1/Month	[2]
Oil and Grease	mg/L	Grab	1/Month[4]	[2]
Settleable Solids	ml/L	Grab	1/Day[3]	[2]
Turbidity	NTU	24-hr Composite	1/Week	[2]
Salinity	parts per thousand (ppt)	24-hr Composite	1/Month	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
TABLE 1 PARAMETERS FOR PROTECTION OF MARINE AQUATIC LIFE				
Arsenic, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Cadmium, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Chromium (VI), Total Recoverable[6]	µg/L	24-hr Composite	2/Year[4,5]	[2]
Copper, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Lead, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Mercury, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Nickel, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Selenium, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Silver, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Zinc, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Cyanide, Total	µg/L	24-hr Composite	2/Year[4,5]	[2,7]
Ammonia, Total (as Nitrogen)	µg/L	24-hr Composite	1/Month[4,5]	[2]
Chronic Toxicity	"Pass"/"Fail" (Test of Significant Toxicity)[8]	24-hr Composite	1/Month	[9]
Phenolic Compounds (non-chlorinated)[1]	µg/L	24-hr Composite	2/Year[4,5]	[2]
Chlorinated Phenolics[1]	µg/L	24-hr Composite	2/Year[4,5]	[2]
Endosulfan[1]	µg/L	24-hr Composite	2/Year[4,5]	[2]
Endrin	µg/L	24-hr Composite	2/Year[4,5]	[2]
HCH (BHC)[1]	µg/L	24-hr Composite	2/Year[4,5]	[2]
Radioactivity	pCi/L	24-hr Composite	2/Year	[2]
TABLE 1 PARAMETERS FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS				
Acrolein	µg/L	Grab	2/Year[4,5]	[2]
Antimony, Total	µg/L	24-hr Composite	2/Year[4,5]	[2]
Bis (2-chloroethoxy) Methane	µg/L	24-hr Composite	2/Year[4,5]	[2]
Bis (2-chloroisopropyl) Ether	µg/L	24-hr Composite	2/Year[4,5]	[2]
Chlorobenzene	µg/L	Grab	2/Year[4,5]	[2]
Chromium (III), Total Recoverable[6]	µg/L	24-hr Composite	2/Year[4,5]	[2]
Di-n-butyl Phthalate	µg/L	24-hr Composite	2/Year[4,5]	[2]
Dichlorobenzenes[1]	µg/L	Grab	2/Year[4,5]	[2]
Diethyl Phthalate	µg/L	24-hr Composite	2/Year[4,5]	[2]
Dimethyl Phthalate	µg/L	24-hr Composite	2/Year[4,5]	[2]
4,6-dinitro-2-methylphenol	µg/L	24-hr Composite	2/Year[4,5]	[2]
2,4-dinitrophenol	µg/L	24-hr Composite	2/Year[4,5]	[2]
Ethylbenzene	µg/L	Grab	2/Year[4,5]	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Fluoranthene	µg/L	24-hr Composite	2/Year[4,5]	[2]
Hexachlorocyclopentadiene	µg/L	24-hr Composite	2/Year[4,5]	[2]
Nitrobenzene	µg/L	24-hr Composite	2/Year[4,5]	[2]
Thallium, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Toluene	µg/L	Grab	2/Year[4,5]	[2]
Tributyltin	µg/L	24-hr Composite	2/Year[4,5]	[2]
1,1,1-trichloroethane	µg/L	Grab	2/Year[4,5]	[2]
TABLE 1 PARAMETERS FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS				
Acrylonitrile	µg/L	Grab	2/Year[4,5]	[2]
Aldrin	µg/L	24-hr Composite	2/Year[4,5]	[2]
Benzene	µg/L	Grab	2/Year[4,5]	[2]
Benzidine	µg/L	24-hr Composite	2/Year[4,5]	[2]
Beryllium, Total Recoverable	µg/L	24-hr Composite	2/Year[4,5]	[2]
Bis (2-chloroethyl) Ether	µg/L	24-hr Composite	2/Year[4,5]	[2]
Bis (2-ethlyhexyl) Phthalate	µg/L	24-hr Composite	2/Year[4,5]	[2]
Carbon Tetrachloride	µg/L	Grab	2/Year[4,5]	[2]
Chlordane[1]	µg/L	24-hr Composite	2/Year[4,5]	[2]
Chlorodibromomethane (Dibromochloromethane)	µg/L	Grab	2/Year[4,5]	[2]
Chloroform	µg/L	Grab	2/Year[4,5]	[2]
DDT[1]	µg/L	24-hr Composite	2/Year[4,5]	[2]
1,4-dichlorobenzene	µg/L	Grab	2/Year[4,5]	[2]
3,3'-dichlorobenzidine	µg/L	24-hr Composite	2/Year[4,5]	[2]
1,2-dichloroethane	µg/L	Grab	2/Year[4,5]	[2]
1,1-dichloroethylene	µg/L	Grab	2/Year[4,5]	[2]
Dichlorobromomethane	µg/L	Grab~~24-hr Composite~~	2/Year[4,5]	[2]
Dichloromethane (Methylene Chloride)	µg/L	Grab	2/Year[4,5]	[2]
1,3-dichloropropene (1,3-Dichloropropylenes)	µg/L	Grab	2/Year[4,5]	[2]
Dieldrin	µg/L	24-hr Composite	2/Year[4,5]	[2]
2,4-dinitrotoluene	µg/L	24-hr Composite	2/Year[4,5]	[2]
1,2-diphenylhydrazine	µg/L	24-hr Composite	2/Year[4,5]	[2]
Halomethanes[1]	µg/L	Grab	2/Year[4,5]	[2]
Heptachlor	µg/L	24-hr Composite	2/Year[4,5]	[2]
Heptachlor Epoxide	µg/L	24-hr Composite	2/Year[4,5]	[2]
Hexachlorobenzene	µg/L	24-hr Composite	2/Year[4,5]	[2]
Hexachlorobutadiene	µg/L	24-hr Composite	2/Year[4,5]	[2]
Hexachloroethane	µg/L	24-hr Composite	2/Year[4,5]	[2]
Isophorone	µg/L	24-hr Composite	2/Year[4,5]	[2]
N-nitrosodimethylamine	µg/L	24-hr Composite	2/Year[4,5]	[2]
N-nitrosodi-N-propylamine	µg/L	24-hr Composite	2/Year[4,5]	[2]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
N-nitrosodiphenylamine	µg/L	24-hr Composite	2/Year[4,5]	[2]
Polynuclear Aromatic Hydrocarbons (PAHs)[1]	µg/L	24-hr Composite	2/Year[4,5]	[2]
Polychlorinated Biphenyls (PCBs)[1]	µg/L	24-hr Composite	2/Year[4,5]	[2]
TCDD equivalents[1]	µg/L	24-hr Composite	2/Year[4,5]	[2]
1,1,2,2-tetrachloroethane	µg/L	Grab	2/Year[4,5]	[2]
Tetrachloroethylene (Tetrachloroethene)	µg/L	Grab	2/Year[4,5]	[2]
Toxaphene	µg/L	24-hr Composite	2/Year[4,5]	[2]
Trichloroethylene (Trichloroethene)	µg/L	Grab	2/Year[4,5]	[2]
1,1,2-trichloroethane	µg/L	Grab	2/Year[4,5]	[2]
2,4,6-trichlorophenol	µg/L	24-hr Composite	2/Year[4,5]	[2]
Vinyl Chloride	µg/L	Grab	2/Year[4,5]	[2]

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. As required under 40 CFR part 136.
3. Applies five days per week, except seven days per week for at least one week in July or August of each year.
4. The Discharger 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 VII.I.4 of this Order.
5. The minimum frequency of monitoring for this constituent is automatically increased 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 Discharger may, at their option, apply 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 a Discharger can demonstrate to the satisfaction of the San Diego Water Board (subject to USEPA approval) 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. For compliance determination, chronic toxicity results shall be reported as “Pass” or “Fail.” For monitoring purpose only, chronic toxicity results shall also include “Percent Effect.”
9. As specified in section VII.L of this Order and section III.C of this MRP (Attachment E).

4. The Discharger shall monitor the ELO effluent at Monitoring Location EFF-004 as follows:

Table E-6. Effluent Monitoring at Monitoring Location EFF-004[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Recorder/Totalizer or Calculated	Continuous or Calculated	--

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

C. Whole Effluent Toxicity (WET) 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 1) the 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) the 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 meet effluent limitations for toxicity thereby ensuring that water quality standards are achieved in the receiving water?

(2) If the effluent does not meet effluent limitations for toxicity, are unmeasured pollutants causing risk to aquatic life?

(3) If the effluent does not meet effluent limitations for toxicity, are pollutants in combinations causing risk to aquatic life?

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.

2. Sample Volume and Holding Time

The total sample volume shall be determined by the specific toxicity test method used. Sufficient sample volume shall be collected to perform the required toxicity test. For the receiving water, 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. Chronic Marine Species and Test Methods

If effluent samples are collected from outfalls discharging to receiving waters with salinity >one ppt, the Discharger shall conduct the following chronic toxicity tests on effluent samples, at the Discharge IWC (0.42 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.

a. A static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01).

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

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

4. Species Sensitivity Screening

Species sensitivity screening shall be conducted during this Order's first required sample collection, or within 24 months of most recent screening, whichever is later. The Discharger 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. If the result of all three species is "Pass," then the species that exhibits the highest "Percent Effect" at the discharge IWC during species sensitivity screening shall be used for routine monitoring during this Order cycle. If only one species fails, then that species shall be used for routine monitoring during this Order cycle. Likewise, if two or more species result in "Fail," then the species that exhibits the highest "Percent Effect" at the discharge IWC during the suite of species sensitivity screening shall be used for routine monitoring during this Order cycle, until such time as a rescreening is required.

Species sensitivity rescreening is required every 24 months. ~~if there has been discharge during dry weather conditions. If the discharge is intermittent and occurs only during wet weather, rescreening is not required. If rescreening is necessary, t~~The Discharger 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. 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 Discharger may proceed with suites of screening tests for a minimum of three, but not to exceed five suites.

The species used to conduct the receiving water 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).

5. Quality Assurance (QA) and Additional Requirements

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

a. The discharge is subject to determination of "Pass" or "Fail" from a chronic toxicity test using the Test of Significant Toxicity (TST) statistical t-test approach described

in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833- R-10-003, 2010), Appendix A, Figure A-1 and Table A-1 and Appendix B, Table B-1. The null hypothesis (Ho) for the TST statistical approach is: Mean discharge IWC response ≤0.75 × Mean control response. A test result that rejects this null hypothesis is reported as "Pass." A test result that does not reject this null hypothesis is reported as "Fail." This is a t-test (formally Student's t-test), a statistical analysis comparing two sets of replicate observations—in the case of WET, only two test concentrations (i.e., a control and IWC). The purpose of this statistical test is to determine if the means of the two sets of observations are different (i.e., if the IWC or receiving water concentration differs from the control (the test result is "Pass" or "Fail"). The Welch's t-test employed by the TST statistical approach is an adaptation of Student's t-test and is used with two samples having unequal variances. The relative "Percent Effect" at the discharge IWC is defined and reported as: ((Mean control response - Mean discharge IWC response) ÷ Mean control response) × 100.

b. 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 Discharger must resample and re-test within 14 days of test termination.

c. Dilution water and control water, including brine controls, shall be 1-µm-filtered uncontaminated natural seawater, hypersaline brine prepared using uncontaminated natural seawater, or laboratory water prepared and used 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.

d. Monthly reference toxicant testing is sufficient. All reference toxicant test results should be reviewed and reported using the effects concentration at 25 percent (EC25).

e. The Discharger 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).

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

The Discharger shall prepare and submit a copy of the Discharger's 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 Discharger shall use USEPA manual EPA/833B-99/002 (municipal), or most current version, as guidance. At a minimum, the work plan must contain the provisions in Attachment I, *Generic Toxicity Reduction Evaluation (TRE) Work Plan*. The TRE Work Plan shall describe the steps that the Discharger intends to follow if toxicity is detected, and shall include, at a minimum:

a. 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;

b. A description of HARRF and the MFRO Facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of HARRF and the MFRO Facility; and,

c. 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).

7. Accelerated Monitoring Schedule for Maximum Daily Single Result: "Fail"

The Maximum Daily single result shall be used to determine if accelerated testing needs to be conducted.

Once the Discharger becomes aware of this result, the Discharger 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 Discharger shall ensure that the San Diego Water Board is notified and the first of four accelerated monitoring tests is initiated within seven calendar days of the Discharger becoming aware of the result. The accelerated monitoring schedule shall consist of four toxicity tests (including the discharge IWC), conducted at approximately two week intervals, over an eight 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 "Pass," the Discharger shall return to routine monitoring for the next monitoring period. If one of the accelerated toxicity tests results in "Fail," the Discharger shall immediately implement the TRE Process conditions set forth below. During accelerated monitoring schedules, only TST results ("Pass" or "Fail") for chronic toxicity tests shall be reported as effluent compliance monitoring results for the chronic toxicity MDEL.

8. TRE Process

During the TRE Process, minimum effluent monitoring shall resume and TST results ("Pass" or "Fail" and "Percent Effect") for chronic toxicity tests shall be reported as effluent monitoring results for the chronic toxicity MDEL.

a. Preparation and Implementation of Detailed TRE Work Plan. The Discharger 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. It shall include the following information, and comply with additional conditions set by the San Diego Water Board:

   i. Further actions by the Discharger to investigate, identify, and correct the causes of toxicity;

   ii. Actions the Discharger will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and

   iii. A schedule for these actions, progress reports, and the final report.

b. TIE Implementation. The Discharger 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); 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.

c. 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 Discharger 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.

d. The Discharger 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.

e. 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. The TRE may be ended at any stage if routine monitoring finds there is no longer toxicity.

f. The San Diego Water Board may consider the results of any TRE/TIE studies in an enforcement action.

9. 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 Preparation, and shall include:

a. The valid toxicity test results for the TST statistical approach, reported as “Pass” or “Fail” and “Percent Effect” at the chronic toxicity IWC for the discharge. All toxicity test results (whether identified as valid or otherwise) conducted during the monitoring period shall be reported on the SMR due date specified in Table E-12.

b. Summary water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, chlorine, ammonia).

c. The statistical analysis used in *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010) Appendix A, Figure A-1 and Table A-1, and Appendix B, Table B-1.

d. 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 Discharger shall provide status updates in the monthly monitoring reports, indicating which TRE/TIE steps are underway and which steps have been completed.

e. Statistical program (e.g., TST calculator, CETIS, etc.) output results, including graphical plots, for each toxicity test.

f. 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.

g. 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.

D. Land Discharge Monitoring Requirements – Not Applicable

E. Recycling Monitoring Requirements – Not Applicable

IV. RECEIVING WATER MONITORING REQUIREMENTS

The receiving water monitoring requirements set forth below are designed to measure the effects of the SEOO discharge on the receiving ocean waters, including effects on coastal water quality, seafloor sediments and marine life. Receiving water monitoring may be conducted solely by the Discharger or jointly with other entities that discharge to the SEOO. 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 are the relative contributions of HARRF and the MFRO Facility 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 SEOO 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 Discharger may also submit a list of proposed changes with supporting rational 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. 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). If an alternate navigation system is proposed, its accuracy should be compared to that of microwave and satellite based systems, and any compromises in accuracy shall be justified.

A. Surf Zone Water Quality Monitoring Requirements

As ocean surface waves come closer to shore they break, forming the foamy, bubbly surface called surf. The region of breaking waves defines the surf zone.

Monitoring of the surf zone is intended to answer the following questions:

(1) Does the effluent cause or contribute to an exceedance of the water quality standards in the receiving water?

(2) Does the effluent reach water contact zones or commercial shellfish beds?

(3) Are densities of bacteria in water contact areas below levels protective of public health?

1. All surf zone stations listed in Table E-1 (S-1 through S-5, S-7, and S-8) shall be monitored as follows:

Table E-7. Surf Zone Water Quality Monitoring[1]

Parameter	Units	Sample Type	Minimum Sampling Frequency
Visual Observations	--	Visual	[2]
Temperature	°C	Grab	1/Week
Total and Fecal Coliforms; Enterococcus	Number /100 ml	Grab	1/Week[3]

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. 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, discoloration, oil and grease, turbidity, odor, and status of the mouth of the San Elijo Lagoon (open, closed, flow, etc.) shall be recorded. These observations shall be taken whenever a sample is collected. Visual observations shall also be conducted for repeat sampling.
3. If a single sample exceeds any of the single sample maximum bacterial standards contained in section V.A.1.a.ii of this Order, repeat sampling at that location shall be conducted to determine the extent and persistence of the exceedance. Repeat sampling shall be conducted within 24 hours of receiving analytical results and continued until the sample result is less than the single sample maximum standard or until a sanitary survey is conducted to determine the source of the high bacterial densities. When repeat sampling is required because of an exceedance of any one single sample density, results from all samples collected during that 30-day period will be used to calculate the 30-day geometric mean. If the source of the bacterial exceedance is due to a rain event, the Discharger may cite this source in the "sanitary survey" and in such cases not conduct the repeat sampling.

2. Sample Station Omission Due to Storm Condition (including required repeat sampling). In the event of stormy weather which makes sampling hazardous at certain shoreline stations, collection of samples at such stations may be omitted, provided that such omissions do not occur more than five days in any calendar year or occur at consecutive sampling times, or provided that a written request from the Discharger is approved by the San Diego Water Board in writing. The visual observations listed in footnote no. 2 to Table E-7 above 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 calmer conditions within the same reporting period.

B. Near Shore and Offshore Water Quality Monitoring Requirements

Near shore is generally defined as the zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline. Offshore is generally defined as the area beyond the near shore zone. Near shore 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) Do nutrients cause objectionable aquatic growth or degrade indigenous biota?

(7) Is the wastewater plume encroaching upon receiving water areas used for swimming, surfing, diving, and shellfish harvesting?

(8) What is the fate of the discharge plume?

All near shore and offshore stations listed in Table E-1 (N1 through N7, A14S, A4S, A2S, A1S, A0.5S, A1N and A2N) shall be monitored as follows:

Table E-8. Near Shore and Offshore Water Quality Monitoring Requirements[1]

Parameter	Units	Sample Type	Sampling Frequency
Visual Observations	--	Visual[2]	1/Quarter
Total Coliform Organisms	Number/100 ml	Grab[3]	1/Quarter
Fecal Coliform Organisms	Number/100 ml	Grab[3]	1/Quarter
Enterococcus	Number/100 ml	Grab[3]	1/Quarter
Temperature and Depth	˚C, meters	Continuous Profile[4]	1/Quarter
Dissolved Oxygen	mg/L	Continuous Profile[4]	1/Quarter
Light Transmittance	percent	Continuous Profile[4]	1/Quarter
pH	standard units	Continuous Profile[4]	1/Quarter
Salinity	ppt	Continuous Profile[4]	1/Quarter

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. 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. These observations shall be taken whenever a sample is collected.
3. At the surface and mid-depth.
4. Temperature, depth, salinity, dissolved oxygen, light transmittance, and pH~~, and chlorophyll a~~ profile data shall be measured throughout the entire water column using a 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).

C. Benthic Monitoring Requirements

Seafloor sediments integrate constituents that are discharged to the ocean. Most particles that come from the SEOO 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 1 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?

The assessment of sediment quality to evaluate potential effects of the SEOO 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.

1. Sediment Assessment for Physical and Chemical Properties

a. **Sediment Sampling Stations and Monitoring Frequency.** The sediment monitoring program is designed to assess spatial and temporal trends at the offshore stations listed in Table E-1 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 once during the permit term at each of the offshore stations listed in Table E-1. Results from sediment monitoring are due no later than 180 days prior to the permit expiration date.

b. **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-9 below.

c. **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 (NOAA'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 (A14S, A4S, A2S, A1S, A0.5S, A1N, and A2N) as follows:

Table E-9. Sediment Chemical Analytes Monitoring Requirements[1]

Determination	Units	Type of Sample	Minimum Frequency
Sediment Grain Size	micrometer (µm)	Grab	[2]
Acid Volatile Sulfides	milligram/kilogram (mg/kg)	Grab	[2]
Biochemical Oxygen Demand (5-day @ 20°C)	mg/kg	Grab	[2]
Chemical Oxygen Demand	mg/kg	Grab	[2]
Ammonia (expressed as Nitrogen)	mg/kg	Grab	[2]
Arsenic	mg/kg	Grab	[2]
Cadmium	mg/kg	Grab	[2]
Total Chromium	mg/kg	Grab	[2]
Copper	mg/kg	Grab	[2]
Lead	mg/kg	Grab	[2]
Mercury	mg/kg	Grab	[2]
Nickel	mg/kg	Grab	[2]
Selenium	mg/kg	Grab	[2]
Silver	mg/kg	Grab	[2]
Zinc	mg/kg	Grab	[2]
Cyanide	mg/kg	Grab	[2]
Phenolic Compounds	mg/kg	Grab	[2]
Radioactivity	pCi/kg	Grab	[2]
PCBs	nanograms/kilogram (ng/kg)	Grab	[2]
2,4-DDD	ng/kg	Grab	[2]
4,4-DDD	ng/kg	Grab	[2]
2,4-DDE	ng/kg	Grab	[2]
4,4-DDE	ng/kg	Grab	[2]
2,4-DDT	ng/kg	Grab	[2]
4,4-DDT	ng/kg	Grab	[2]
Aldrin	ng/kg	Grab	[2]
Alpha-Chlordane	ng/kg	Grab	[2]
Dieldrin	ng/kg	Grab	[2]
Endosulfan	ng/kg	Grab	[2]
Endrin	ng/kg	Grab	[2]
Heptachlor	ng/kg	Grab	[2]
Heptachlor Epoxide	ng/kg	Grab	[2]
Hexachlorobenzene	ng/kg	Grab	[2]
Trans-Nonachlor	ng/kg	Grab	[2]
Acenaphthene	microgram/ kilogram (µg/kg)	Grab	[2]
Anthracene	µg/kg	Grab	[2]
Benzo(a)anthracene	µg/kg	Grab	[2]
Benzo(a)pyrene	µg/kg	Grab	[2]
Benzo(e)pyrene	µg/kg	Grab	[2]
Biphenyl	µg/kg	Grab	[2]
Chrysene	µg/kg	Grab	[2]
Dibenzo(ah)anthracene	µg/kg	Grab	[2]
Fluoranthene	µg/kg	Grab	[2]
Fluorene	µg/kg	Grab	[2]
Naphthalene	µg/kg	Grab	[2]

Determination	Units	Type of Sample	Minimum Frequency
1-Methylnaphthalene	µg/kg	Grab	2
2-Methylnaphthalene	µg/kg	Grab	2
2,6-Dimethylnaphthalene	µg/kg	Grab	2
Perylene	µg/kg	Grab	2
Phenanthrene	µg/kg	Grab	2
1-Methylphenanthene	µg/kg	Grab	2
Pyrene	µg/kg	Grab	2

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. Once during the permit term.

2. Sediment Toxicity

a. **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 once during the permit term at each of the offshore stations listed in Table E-1 (A14S, A4S, A2S, A1S, A0.5S, A1N, and A2N). Results from sediment toxicity sampling are due no later than 180 days prior to the permit expiration date.

b. **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.

c. **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 Southern California Bight Project sediment toxicity testing guidelines (Bight'13 Toxicology Committee, 2013). 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. Results shall be reported as "pass"/"fail" and percent response.

d. **Data Analysis.** Analysis of sediment toxicity shall include a calculation of the mean control normalized response.

3. Benthic Community Condition

a. **Benthic Community Sampling Stations and Frequency.** Sediment samples for assessment of benthic community structure shall be collected once during the permit term at each of the offshore stations listed in Table E-1 (A14S, A4S, A2S, A1S, A0.5S, A1N and A2N). 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 permit expiration date.

b. **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. The benthic samples shall be collected using a 0.1-square meter modified Van Veen grab sampler. These grab samples shall be separate from (but adjacent to as much as possible) samples collected for sediment physical and chemical properties, and sediment 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, enumerated (counted), measured, and, where feasible, assessed for reproductive condition.

c. **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:

i. Number of species;

ii. Total numerical abundance;

iii. Benthic Response Index (BRI);

iv. Swartz's 75 percent dominance index;

v. Shannon-Weiner's diversity index (H); and

vi. Pielou evenness index (J).

4. Sediment Monitoring Work Plan

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

i. An ELAP approved Quality Assurance Project Plan (QAPP) describing the project objectives and organization, functional activities, and quality assurance/quality control protocols;

ii. Protocols for sediment sample collection and processing;

iii. 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

iv. Schedule for completion sample collection and submission of the results.

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

D. 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 invertebrates 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?

1. Demersal Fish and Macroinvertebrate Diver Surveys

a. **Demersal Fish and Macroinvertebrate Diver Survey Frequency.** Diver surveys shall be conducted once during the permit term to assess the structure of fish and macroinvertebrates communities. The Discharger shall notify the San Diego Water Board of the intent to initiate the diver surveys, no later than 30 days before the survey. Results from the diver surveys are due no later than 180 days prior to the permit expiration date.

b. **Fish and Macroinvertebrate Diver Survey Method and Location.** Diver surveys shall be conducted at the 20, 40, 60, and 80 foot depth contours at stations listed in Table E-1 (T0.5S, T4S, and T14S). Sampling techniques shall follow those employed by biological divers of the California State Department of Fish and Wildlife.

i. In rocky or cobble areas, a 30-meter band transect, 2 meter wide, shall be established on the ocean bottom. Operations at each underwater station shall include: (1) recording of water temperature (may be measured from a boat) and estimated visibility and pelagic macrobiota at each 10-foot depth increment throughout the water column and at the bottom; (2) recording of general bottom description; (3) enumeration and size estimation of the larger plants and animals in the band transect area; (4) development of a representative photographic record of the sample area; and (5) within each band, three ¼-meter square areas shall be randomly selected, and all macroscopic plant and animal life shall be identified within each square to as low a taxon as possible, and measured.

ii. In sandy areas, a 30-meter band transect, 2 meter wide, shall be established on the ocean bottom. Operations at each underwater station shall include: (1) recording of water temperature (may be measured from a boat), and estimated visibility and pelagic macrobiota at each 10-foot depth increment throughout

the water column and at the bottom; (2) recording of general bottom description; (3) enumeration by estimate of the larger plants and animals in the band transect area; (4) recording of height, period, and crest direction of ripple marks; (5) recording of amount, description, and location of detritus on bottom; and (6) creation of a representative photographic record of the area sampled; (7) within each band, three cores of at least 42.5 centimeter squared in area shall be randomly taken to a depth of 15 centimeter where possible, (the three cores may be taken from a boat) and the material removed sifted through at least a 1-millimeter mesh screen, and all organisms identified to as low a taxon as possible, enumerated, measured, and reproductive conditions assessed where feasible.

c. **Demersal Fish and Macroinvertebrate Community Structure Analysis.** All fish and macroinvertebrates shall be identified to species if possible. For fish, community structure analysis shall consist of determining the 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). 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').

Demersal Fish and Macroinvertebrate Diver Surveys shall be conducted at the Biological Transect stations (listed in Table E-1) as follows:

Table E-10. Demersal Fish and Macroinvertebrates Monitoring Requirements

Parameter	Units	Sample Type	Sampling Frequency
Biological Transects	Identification and enumeration	4 ~~Grabs~~ Transects / Station	Once During The Permit Term

2. Rig Fishing

a. **Rig Fishing Frequency.** Fish muscle tissues shall be analyzed once during the permit term from fishes collected in each of the three rig fishing zones described below in order to monitor the uptake of pollutants in selected species. The Discharger 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 permit expiration date.

b. **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 RF8S, RF, and RF8N listed in Table E-1. Rig Fishing Zone 2 is the nearfield area centered within a 1-km radius of station RF; Rig Fishing Zone 1 represents the southern farfield area centered within 1-km radium of station RF8S; and Rig Fishing Zone 3 represents the northern farfield area centered within a 1-km radius of station RF8N. 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. Physical abnormalities and disease symptoms shall be recorded and itemized (e.g., fin rot, lesions, and tumors).

c. **Rig Fishing Targeted Species.** The species of fish targeted for tissue analysis from the rig fishing stations shall be:

i. 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 candidate species such as the California scorpionfish (*Scorpaena guttata*) and halfbanded rockfish (*Sebastes semicinctus*) may be collected as necessary.

ii. Rockfish (*Sebastes spp.*), excluding species restricted by the California Department of Fish and Wildlife ~~including but are not limited to the vermilion rockfish (*Sebastes miniatus*) and the copper rockfish (*Sebastes caurinus*)~~. If sufficient numbers of ~~these primary species~~rockfish are not present or cannot be caught in a particular zone, secondary target species (e.g., ~~other rockfish,~~ scorpionfish) may be collected and analyzed as necessary.

d. **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-11 below.

Table E-11.Fish Tissue Monitoring Requirements[1]

Determination	Units	Type of Sample	Minimum Frequency
Total Lipids	mg/kg	Composite	[2]
Arsenic	mg/kg	Composite	[2]
Cadmium	mg/kg	Composite	[2]
Chromium	mg/kg	Composite	[2]
Copper	mg/kg	Composite	[2]
Lead	mg/kg	Composite	[2]
Mercury	mg/kg	Composite	[2]
Nickel	mg/kg	Composite	[2]
Selenium	mg/kg	Composite	[2]
Silver	mg/kg	Composite	[2]
Zinc	mg/kg	Composite	[2]
PCBs	ng/kg	Composite	[2]
2,4-DDD	ng/kg	Composite	[2]
4,4-DDD	ng/kg	Composite	[2]
2,4-DDE	ng/kg	Composite	[2]
4,4-DDE	ng/kg	Composite	[2]
2,4-DDT	ng/kg	Composite	[2]
4,4-DDT	ng/kg	Composite	[2]
Aldrin	ng/kg	Composite	[2]
Alpha-Chlordane	ng/kg	Composite	[2]
Dieldrin	ng/kg	Composite	[2]
Endosulfan	ng/kg	Composite	[2]
Endrin	ng/kg	Composite	[2]
Gamma-BHC	ng/kg	Composite	[2]
Heptachlor	ng/kg	Composite	[2]
Heptachlor Epoxide	ng/kg	Composite	[2]
Hexachlorobenzene	ng/kg	Composite	[2]
Mirex	ng/kg	Composite	[2]
Trans-Nonachlor	ng/kg	Composite	[2]
Acenaphthene	µg/kg	Composite	[2]
Acenaphthylene	µg/kg	Composite	[2]
Anthracene	µg/kg	Composite	[2]

Determination	Units	Type of Sample	Minimum Frequency
Benzo(a)anthracene	µg/kg	Composite	2
Benzo(o)fluoranthene	µg/kg	Composite	2
Benzo(k)fluoranthene	µg/kg	Composite	2
Benzo(ghi)pyrelene	µg/kg	Composite	2
Benzo(a)pyrene	µg/kg	Composite	2
Benzo(e)pyrene	µg/kg	Composite	2
Biphenyl	µg/kg	Composite	2
Chrysene	µg/kg	Composite	2
Dibenzo(ah)anthracene	µg/kg	Composite	2
Fluoranthene	µg/kg	Composite	2
Fluorene	µg/kg	Composite	2
Ideno(123cd)pyrene	µg/kg	Composite	2
Naphthalene	µg/kg	Composite	2
1-Methylnaphthalene	µg/kg	Composite	2
2-Methylnaphthalene	µg/kg	Composite	2
2,6-Dimethylnaphthalene	µg/kg	Composite	2
2,3,5-Trimethylnaphthale	µg/kg	Composite	2
Perylene	µg/kg	Composite	2
Phenanthrene	µg/kg	Composite	2
1-Methylphenanthene	µg/kg	Composite	2
Pyrene	µg/kg	Composite	2

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. Once during the permit term.

E. Receiving Water Status and Trends

1. **Receiving Water Monitoring Report.** The Discharger shall submit a receiving water monitoring report once no later than 180 days prior to the permit expiration date. The receiving water monitoring report shall cover the following requirements:

   a. Shoreline, near shore, and offshore water quality (sections IV.A and IV.B of this MRP);

   b. Sediment assessment for physical and chemistry properties (section IV.C.1 of this MRP);

   c. Sediment toxicity (section IV.C.2 of this MRP);

   d. Benthic community condition (section IV.C.3 of this MRP);

   e. Demersal fish and macroinvertebrate diver surveys (section IV.D.1 of this MRP);

   f. Rig fishing (section IV.D.2 of this MRP); and

   g. Plume tracking (section VI.C of this MRP).

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

   a. 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.);

   b. 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 liter, calcareous worm tubes, etc.);

   c. A description of the sample collection and preservation procedures used in the survey;

   d. A description of the specific method used for laboratory analysis;

   e. 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; and

   f. An in-depth discussion addressing the questions proposed in each section of the Receiving Water Monitoring Requirements of this MRP.

3. **State of the Ocean Report.** The Discharger shall coordinate with the San Elijo Joint Powers Authority to 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 permit expiration date. 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:

   a. Description of the monitoring effort completed;

   b. The status and trends of receiving water quality conditions; and

   c. Plans for future monitoring efforts.

V. 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 Discharger 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:

a. Are fish and shellfish safe to eat?

b. Is water quality safe for swimming?

c. 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:

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

A. 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 Discharger 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 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.

The maximum areal extent of kelp bed canopies each year shall be compared to that observed in previous years. Any significant losses that persist for more than one year shall be investigated by divers to document benthic and understory conditions.

Annually by October 1, the Discharger 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-feet 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:

1. More sophisticated analysis of patterns, correlations, and cycles that may be related to the extent of kelp bed canopies; or
2. 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.

B. Southern California Bight Monitoring Program Participation Requirements

The Discharger is required to 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 sections 13267 and 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 Discharger's receiving water sampling and analytical effort, as defined in section IV of this MRP, may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. In that event, the San Diego Water Board shall notify the Discharger in writing that a portion of the requirements to perform the receiving water sampling and analytical effort defined in section IV 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 IV 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 Discharger 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 Discharger.

VI. SPECIAL STUDIES REQUIREMENTS

A. Climate Change Action Plan.

The Discharger shall prepare and submit a Climate Change Action Plan (CCAP) within three years of the effective date of this Order. The Discharger may make use of existing climate-

change-related plans to comply with this requirement. Changing climate conditions may fundamentally alter the way publicly-owned treatment works are designed and operated. Climate change research indicates the overarching driver of change is increased atmospheric carbon dioxide (CO_2) from human activity. The increased CO_2 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 CCAP shall identify projected regional impacts on the Discharger's facilities and operations 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 and sea level rise 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 BOD_5, ammonia (as N), and TSS influent concentrations; impacts on wastewater treatment operations and quality; the potential need to adjust NPDES permit conditions and the Discharger's 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.

B. Minimum Initial Dilution Factor (Dm) Re-Evaluation Study.

The Discharger shall conduct a special study to re-evaluate the minimum initial dilution factor (Dm) and zone of initial dilution for the SEOO. The results of this study shall be submitted no later than 180 days prior to the expiration of this Order. A Dm of 237 parts seawater to 1 part wastewater (237:1) was established for SEOO in Order No. R9-2005-0101 and reinstated in this Order. However, the addition of the brine discharge from the Membrane Filtration/Reverse Osmosis (MFRO) Facility and San Elijo Water Reclamation Facility has the potential to change the salinity of the SEOO effluent, which may affect the Dm. The implementation provisions for Table 1 in section III.C of the Ocean Plan specify that the Dm is the lowest average initial dilution within any single month of the year. Initial dilution is the process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge. The Discharger shall estimate the Dm 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. The Minimum Initial Dilution Factor Re-Evaluation Study shall include a discussion on how the discharge from the MFRO facility affects SEOO effluent quality, methods for determining the Dm, and the recommended Dm for SEOO.

C. Plume Tracking Study.

Plume tracking is an ongoing program designed to assess ~~map~~ dispersion and fate of the wastewater plume discharged from the San Elijo Ocean Outfall (SEOO). The plume tracking program shall be designed to ~~answer~~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 ~~contact~~ recreational ~~zones~~ 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) Is the removal of the Surf Zone monitoring location S-6 (historical) still appropriate?

(3) How does the brine discharge from the MFRO Facility and San Elijo Water Reclamation Facility 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~~change the effluent quality and the dynamics of the wastewater plume~~?

(4) 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 and outflows from the San Elijo Lagoon?

(5) 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?

(6) What parameters are most useful for assessing the presence of a wastewater plume?

~~(5)~~(7) What is the variability in the degree of initial dilution that occurs under typical and atypical oceanographic conditions?

The Discharger shall, in collaboration with San Elijo Joint Powers Authority, develop the following:

1. **Conceptual Site Model.** The Discharger shall construct a conceptual site model (CSM) based on available site-specific data such as the effluent quality at SEOO, 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, animals, and plants).

   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 all future technical and monitoring reports submitted. The initial CSM shall be submitted to the San Diego Water Board with the work plan described in section VI.C.2.

2. **Plume Tracking Monitoring Plan (PTMP) Work Plan.** The Discharger shall develop and submit to the San Diego Water Board within 180 days of the effective date of this Order, a work plan designed to guide the collection of information to produce the Plume Tracking Monitoring Plan (PTMP) described in section V.C.3. The PTMP Work Plan shall include, but is not limited to, the following:

   a. Conceptual Site Model;

   b. Evaluation of available technology that may assist with plume tracking study;

   c. Specific questions that will be answered with the plume tracking study;

   d. How the work on the plume tracking study will be divided amongst the participating agencies; and

   e. Schedule for completion of all activities and submission of a final plume tracking monitoring plan report as described in section VI.C.3 below.

   The Discharger shall implement the PTMP Work Plan sixty (60) days after the PTMP Work Plan has been submitted, unless otherwise directed in writing by the San Diego Water Board. The Discharger 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.

3. **Plume Tracking Monitoring Plan (PTMP)**. The Discharger shall, in consultation with the San Diego Water Board, prepare and submit a PTMP to implement an ongoing program designed to ~~map~~ evaluate dispersion and fate of the wastewater plume discharged from the SEOO. The PTMP shall include, but is not limited to, the following elements:

   a. A feasibility analysis, including an assessment of advantages, disadvantages, cost, usefulness, and effectiveness for the installation and operation by the Discharger of a permanent, real-time oceanographic mooring system located near the terminal diffuser structure of the SEOO. The mooring system shall be designed to measure, at minimum, direction and velocity of subsurface currents, and ocean stratification. If the San Diego Water Board determines that the real-time oceanographic mooring system is cost-effective and feasible for addressing the plume tracking study goals, t~~T~~his element shall also include:

      i. Development of a work plan or pilot study (special study) for implementation of the SEOO real-time mooring system, including data acquisition and processing.

      ii. Networking the SEOO system to be compatible with a similar system being deployed by other Dischargers in the San Diego Region, as well as a third system operated by the University of California San Diego, Scripps Institution of Oceanography in the coastal waters off the City of Del Mar.

   b. A feasibility analysis, including an assessment of advantages, disadvantages, cost, usefulness, and effectiveness for the development of a work plan or pilot study (special study) for utilizing advanced oceanographic sampling technologies such as an autonomous underwater vehicle (AUV) or remotely operated towed vehicle (ROTV) in conjunction with the SEOO real-time mooring system to enhance collection of water quality data in real-time and provide higher resolution maps of plume location and movement. The Discharger may collaborate with other agencies (e.g., the City of San Diego) in the development of a work plan or pilot study.

   c. Any other element or alternative approach proposed by the Discharger to answer the questions posed above for the plume tracking.

   d. The recommended actions for implementation of an ongoing plume tracking program.

   The PTMP shall be submitted in accordance with the timeframe outlined in the PTMP Work Plan. The PTMP shall include 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 plume tracking report.

4. **Plume Tracking Implementation.** The Discharger shall initiate implementation of the PTMP within sixty (60) days after submission in accordance with the scheduled contained in the PTMP, unless otherwise directed by the San Diego Water Board. The Discharger 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 Discharger shall submit semiannual progress reports to the San Diego Water Board on implementation of the PTMP.

5. **Results of Plume Tracking.** The results of Plume Tracking Study shall be submitted with the receiving water monitoring report and state of the ocean report required in section IV.E of this MRP. This 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 SEOO and the estimated location of the SEOO plume throughout the reporting period.

VII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. The Discharger shall report all instances of noncompliance not reported under sections V.E, V.G, and V.H of the Standard Provisions (Attachment D) at the time monitoring reports are submitted.

B. Self-Monitoring Reports (SMRs)

1. The Discharger shall electronically submit SMRs using the State Water Board's California Integrated Water Quality System (CIWQS) Program website at <http://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 V of the Standards Provisions (Attachment D). The Discharger 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.
2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IV. The Discharger 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 Discharger monitors 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.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-12. 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	1st 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	At least 180 days prior to the permit expiration date

4. **Reporting Protocols.** The Discharger 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 Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

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

   b. Sample results less than the reported ML, but greater than or equal to the laboratory's 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 (± a percentage of the reported value), numerical ranges (low to high), or any other means considered appropriate by the laboratory.

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

   d. 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 is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.

5. **Compliance Determination.** Compliance with effluent limitations for 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 Discharger 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.

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 Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

   a. 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.

   b. 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. The Discharger shall submit SMRs in accordance with the following requirements:

   a. The Discharger 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 Discharger is 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 Discharger shall electronically submit the data in a tabular format as an attachment.

   b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the waste discharge requirements; 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.

C. Discharge Monitoring Reports (DMRs)

The DMRs are USEPA reporting requirements. The Discharger 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 electronic SMR submittal. Information about electronic DMRs submittal is available at the DMR website at:
http://www.waterboards.ca.gov/water_issues/programs/discharge_monitoring.

D. Other Reports

The following reports are required under Special Provisions (section VI.C of this Order), sections I, III, V, and VI 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. The reports must be signed and certified as required by section V 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-13. Other Reports

Report	Location of requirement	Due Date
~~SEOO Capacity Report~~	~~Section VI.C.5.a~~	~~180 days before the Order expiration date~~
Treatment Plant Capacity Report	Section VI.C.5.~~b~~a	Four years prior to reaching plant design capacity[1]
Annual Pretreatment Report	Section VI.C.5.~~c~~b.iv	Annually on March 1
Annual Biosolids Report	Section VI.C.5.~~d~~c.viii	Annually on February 19
DMR-QA Study	Section I.H of this MRP	Annually on December 31[2]
Initial Investigation TRE Work Plan	Section III.C.6 of this MRP	Within 90 days after adoption of this Order
Sediment Monitoring Work Plan	Section IV.4 of this MRP	Within 180 days of the effective date of this Order
Receiving Water Monitoring Report	Section IV.E.1 of this MRP	180 days before the Order expiration date
State of the Ocean Report	Section IV.E.3 of this MRP	180 days before the Order expiration date
Kelp Bed Canopy Report	Section V.A of this MRP	Annually on October 1
CCAP	Section VI.A of this MRP	Within three years of the effective date of this Order
Minimum Initial Dilution Factor Re-Evaluation Study	Section VI.B of this MRP	180 days before the Order expiration date
Plume Tracking Monitoring Plan Work Plan	Section VI.C.2 of this MRP	Within 180 days of the effective date of this Order
Plume Tracking Monitoring Plan	Section VI.C.3 of this MRP	As specified in the Plume Tracking Monitoring Plan Work Plan
ROWD (for reissuance)	Section VI.A.2.f	180 days before the Order expiration date[1]

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 I.H. of this MRP for instructions on how to submit the study.

ATTACHMENT F – FACT SHEET

CONTENTS

TABLES

ATTACHMENT F – FACT SHEET

As described in section II.B 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 California. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	9 000000031	
Discharger	City of Escondido	
Name of Facility	Hale Avenue Resource Recovery Facility and Membrane Filtration/Reverse Osmosis Facility	
Facility Address	Hale Avenue Resource Recovery Facility	1521 S. Hale Avenue Escondido, CA 92029
	Membrane Filtration/Reverse Osmosis Facility	1201 E. Washington Avenue Escondido, CA 92025
Facility Contact, Title and Phone	Christopher W. McKinney, Director of Utilities, (760) 839-4090	
Authorized Person to Sign and Submit Reports	Same as facility contact	
Mailing Address	201 N. Broadway, Escondido, CA 92025	
Billing Address	Same as mailing address	
Type of Facility	Publicly-Owned Treatment Work (POTW)	
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	18 million gallons per day (MGD)	
Facility Design Flow	18 MGD	
Watershed	Pacific Ocean	
Receiving Water	Pacific Ocean	
Receiving Water Type	Ocean waters	

A. The City of Escondido (Discharger) is the owner and operator of the Hale Avenue Resource Recovery Facility (HARRF). The Discharger has proposed to construct a new advanced treatment facility, the Membrane Filtration/Reverse Osmosis (MFRO) Facility, which will also be owned and operated by the Discharger and will treat effluent from HARRF.

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

C. HARRF discharges wastewater to the Pacific Ocean, a water of the U.S. The Discharger was previously regulated by Order No. R9-2010-0086, as amended by Addendum No. 1, and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0107981 adopted on September 8, 2010 and expired on October 27, 2015. In accordance with title 40 of the Code of Federal Regulations (40 CFR) section 122.6 and title 23, division 3, chapter 9, article 3, section 2235.4 of the California Code of Regulations (CCR), the terms of Order No. R9-2010-0086 were administratively extended and continued in effect after the permit expiration date until the adoption of this Order. As requested by the Discharger in its Report of Waste Discharge (ROWD), this Order incorporates an additional discharge from the proposed MFRO Facility. Attachment B provides maps of the area around HARRF and the proposed MFRO Facility. Attachment C provides flow schematics of HARRF and the proposed MFRO Facility.

D. The Discharger filed an ROWD and submitted an application for reissuance of its WDRs and NPDES permit on April 24, 2015.The application was deemed complete on May 21, 2015. A site visit to HARRF was conducted on November 30, 2017, to observe operations and collect additional data to develop permit limitations and requirements for waste discharge. The final design and construction of the MFRO Facility has not been completed; thus, a site visit to the MFRO Facility could not be performed.

E. Regulations at 40 CFR section 122.46 limit the duration of NPDES permits to a fixed term not to exceed five years. Accordingly, Table 3 of this Order limits the duration of the discharge authorization. However, pursuant to title 23, section 2235.4 of the CCR, the terms and conditions of an expired permit are automatically continued pending reissuance of the permit if the Discharger complies with all federal NPDES requirements for continuation of expired permits.

II. FACILITY DESCRIPTION

The Discharger provides sewerage service for the City of Escondido and the Rancho Bernardo community of the City of San Diego and serves a population of approximately 200,000, including residential, commercial, and industrial users (IUs). The design flow capacity of HARRF is 18 MGD and the capacity to handle instantaneous flows is up to 36 MGD. The City of Escondido and the City of San Diego own 12.7 MGD and 5.3 MGD of HARRF's 18 MGD capacity, respectively. The Discharger has implemented a program for more effective management of flows. This program includes reducing influent flows through enhanced conservation efforts, identification and reduction/elimination of sources of inflow and infiltration, year-round recycled water use, and installation of additional flow equalization. The average annual influent flows to HARRF was 11.9 MGD in 2016.

The increased recycled water use includes the addition of the proposed MFRO Facility. HARRF tertiary-treated recycled water will serve as the source of supply to the City's proposed MFRO Facility, which will be located at a 4.5-acre site at 1201 E. Washington Avenue in central Escondido. The proposed MFRO Facility would be sized to produce 2 MGD of MFRO product water, which depending on agricultural demands, would be blended with a quantity of HARRF disinfected tertiary-treated recycled water to produce a final agricultural reuse supply that will typically meet an agricultural supply ~~total dissolved solids~~chloride target criterion of ~~600~~ 80 milligram per liter or less, when practical.

A. Description of Wastewater and Biosolids Treatment and Controls

Secondary treatment at HARRF is accomplished by mechanically cleaned bar screens and aerated grit removal (cyclonic grit chambers), chemically-enhanced primary treatment (CEPT), aeration basins equipped with membrane fine-bubble diffusers, and secondary clarifiers. Up to 4 million gallons of flow equalization is available at HARRF using one 2-million gallon concrete storage reservoir for secondary effluent equalization storage and one 2-million gallon storage pond for secondary effluent and/or brine equalization storage. An additional 1 million gallons of recycled water storage is available onsite and 2 million gallons of storage is available off-site as part of the Discharger's recycled water distribution system. Secondary-treated wastewater is either discharged to the Pacific Ocean through the San Elijo Ocean Outfall (SEOO), or receives tertiary treatment for reuse applications in the HARRF's service area.

Screenings from the headworks and solids from grit removal are collected on-site and trucked to a local landfill. Sludge from primary sedimentation is anaerobically digested and dewatered by centrifuge. Digested sludge from the primary digesters is directed to a secondary digester for further stabilization. Waste activated sludge from the secondary clarifiers is thickened by dissolved air flotation, anaerobically digested, and dewatered by centrifuge. Centrifuge concentrate is directed back to the plant headworks and dewatered sludge is trucked to Yuma, Arizona and land applied.

The 9 MGD tertiary treatment portion of HARRF is designed to comply with State Water Resources Control Board (State Water Board) Division of Drinking Water (DDW) criteria for "disinfected tertiary recycled water." The tertiary treatment facility receives inflow from the HARRF secondary effluent and/or from the secondary equalization basins. Tertiary treatment at HARRF consists of chemical coagulation and flocculation, DynaSand® monomedia continuous backwash upflow filtration, and disinfection using ultraviolet light and/or chlorination.

Tertiary-treated wastewater is typically discharged to the Discharger's recycled water distribution system, which is covered under the San Diego Water Board Order No. R9-2010-0032. Excess tertiary-treated wastewater may be dechlorinated and discharged to an onsite pond. The onsite pond is tested for total chlorine residual prior to batch discharge to the Pacific Ocean, along with secondary-treated wastewater. Under certain conditions, the excess tertiary-treated wastewater may be dechlorinated and discharged to Escondido Creek. The discharge of tertiary-treated wastewater to Escondido Creek is covered under a separate NPDES permit (Order No. R9-2015-0026, NPDES Permit No. CA0108944).

As shown in the flow schematic in Attachment C, flow from HARRF to the SEOO is monitored from the effluent pump station (continuous discharge) and from the onsite pond (batch discharge). The two flow measurements are added together to obtain the total flow from HARRF to the SEOO.

A portion of the tertiary-treated wastewater will supply the proposed MFRO Facility. HARRF tertiary-treated wastewater will be conveyed to the MFRO Facility via an approximate 3-mile-long, 24-inch-diameter MFRO feed pipeline that will extend from the existing City of Escondido non-potable recycled water conveyance system to the MFRO Facility. Key components of the MFRO Facility will include:

- A membrane filtration influent tank;
- A surge tank and supporting compressed air system to control pressure surges;

- A feed pump system to convey influent from the influent tank to the microfiltration/ultrafiltration (MF/UF) system;
- A MF/UF membrane filtration system with associated chemical addition, backwash, and chemical cleaning and membrane conditioning processes;
- An inter-process storage tank to equalize flows between the MF/UF and reverse osmosis (RO) systems;
- RO transfer pumps and cartridge filters to convey MF/UF filtrate from the inter-process storage tank to the RO feed pumps;
- A RO feed pump station;
- RO treatment trains with associated chemical addition, backwash, chemical cleaning, and membrane conditioning processes;
- An RO flush system;
- A product water blending and storage tank; and
- A pump system to convey blended MFRO product water to agricultural reuse sites via Hogback Reservoir.

The following low-flow MFRO waste or residuals streams will be discharged to an on-site waste equalization wet well prior to discharge to the sanitary sewer for treatment at HARRF:

- Strainer backwash flows,
- Periodic MF/UF neutralized “clean in place” membrane cleaning and conditioning flows,
- RO flush flows, and
- On-site sanitary sewer waste flows.

The ROWD included an average monthly flow of 0.7 MGD from the MFRO to the Escondido Land Outfall (ELO).The following MFRO waste or residuals streams will be discharged to a 15-inch-diameter brine pipeline for conveyance to the ELO and SEOO:

- MF/UF backwash flows,
- RO concentrate (brine), and
- Periodic RO “clean in place” membrane cleaning and conditioning flows.

B. Discharge Points and Receiving Waters

Flow from Stone Brewing Co.[1], Palomar Energy Center[2], and the proposed MFRO Facility commingle in the Discharger’s Industrial Brine Collection System. All the flows in the Industrial Brine Collection System is metered prior to combining with flows from HARRF. All the flows in the Industrial Brine Collection System is (1) conveyed directly into the ELO, or (2)

[1] Discharges from Stone Brewing Co. are regulated by separate WDRs, Order No. R9-2012-0006 as amended by Order No. R9-2014-0097, NPDES No. CA0109258, *Waste Discharge Requirements for Liquid Stone Holdings, LLC, Koochenvagner’s Brewing Company DBA Stone Brewing Co., Discharge to the Pacific Ocean via the San Elijo Ocean Outfall*.

[2] Discharges from Palomar Energy Center are regulated by separate WDRs, Order No. R9-2012-0015 as amended by Order No. R9-2017-0012, NPDES No. CA0109215, *Waste Discharge Requirements for San Diego Gas and Electric Company Palomar Energy Center*.

directed to a 2-million gallon storage pond at HARRF for controlled release into the ELO at a later time.

Secondary-treated wastewater from HARRF is (1) sent to the tertiary filters and chlorine contact basin for further treatment, (2) metered and discharged to the ELO, (3) directed to a 2-million gallon concrete storage reservoir at HARRF and/or a 2-million gallon storage pond at HARRF for controlled release into the ELO at a later time.

Tertiary-treated wastewater from HARRF is (1) metered and discharged to the ELO, or (2) directed to a 2-million gallon storage pond at HARRF for controlled release into the ELO at a later time.

The treated wastewater and brine flows through the ELO approximately 14 miles in a southwesterly direction, generally following Escondido Creek, until it enters the San Elijo Ocean Outfall (SEOO). According to the December 2006 Wastewater Treatment and Disposal Facilities Capacity Study for the City of Escondido:

- The calculated peak capacity of the gravity section of the ELO is 23.7 MGD at which the water surface in this section of the pipe exceeds the manhole rim elevation, causing a spill.
- The calculated peak capacity of the pressurized section of the ELO is 21.4 MGD at which the water surface in this section of the pipe reaches the rim elevation of Manhole No. 74, causing a spill.
- The peak flow currently received at the SEOO is hydraulically limited by the upstream ELO capacity (21.4 MGD) and dependent on the operation of the San Elijo Joint Powers Authority (SEJPA) regulator structure.

The *2015 San Elijo Ocean Outfall Capacity Study for the San Elijo Joint Powers Authority & City of Escondido* (dated April 2015 and included with the ROWD) concluded that the hydraulic capacity of the SEOO is between 25.5 and 25.8 MGD, and recommended the more conservative values of 25.5 MGD as the hydraulic capacity. The SEOO is co-owned by the San Elijo JPA and the Discharger, which own 21 percent (5.35 MGD) and 79 percent (20.15 MGD) of the SEOO capacity. The SEOO begins at a point approximately 2,200 feet south of the mouth of the San Elijo Lagoon, where the treated wastewater and brine from the ELO merges with treated wastewater and RO reject (brine) from the San Elijo JPA's San Elijo Water Reclamation Facility (regulated by NPDES No. CA0107999). The SEOO extends into the Pacific Ocean, where the inshore end of a diffuser is located approximately 6,800 feet offshore at a depth of approximately 110 feet. The diffuser, which is collinear with the outfall, is approximately 1,200 feet in length and extends to a depth of approximately 148 feet. The terminus of the diffuser (i.e., Discharge Point No. 001) is located at Latitude 33° 00' 21" North and Longitude 117° 18' 09" West.

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

Effluent limitations contained in Order No. R9-2010-0086 for discharges from Discharge Point No. 001 (Monitoring Location EFF-001) and representative monitoring data from the term of Order No. R9-2010-0086 are as follows:

Table F-2. Historic Effluent Limitations and Monitoring Data[1]

Parameter	Units	Effluent Limitation			Monitoring Data (From December 2011 – To July 2017)		
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge	Highest Average Weekly Discharge	Highest Daily Discharge
Carbonaceous Biochemical Oxygen Demand (5-day @ 20°C) ($CBOD_5$)	mg/L	25	40	--	12.6	22.3	--
	lbs/day	3,800	6,000	--	1,064	1,933	--
	% Removal	85[2]	--	--	94.4[2]	--	--
Total Suspended Solids (TSS)	mg/L	30	45	--	11.7	23.2	--
	lbs/day	4,500	6,800	--	839	1,697	--
	% Removal	85[2]	--	--	95.5[2]	--	--
pH	standard units	--	--	6.0 – 9.0[3]	--	--	6.9 – 7.9[3]
Oil and Grease	mg/L	25	40	75[4]	5.8	5.8	5.8
	lbs/day	3,800	6,000	11,000	372.5	372.5	372.46
Settleable Solids	ml/L	1.0	1.5	3.0[4]	0.2	0.7	3.5
Turbidity	NTU	75	100	225[4]	6.3	11.8	22.7

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. Minimum average monthly percent removal.
3. Minimum and maximum value.
4. Applied as an instantaneous maximum effluent limitation.

D. Compliance Summary

As of November 2017, the Discharger has reported the following violations of Order No. R9-2010-0086.

1. Order No. R9-2010-0086, Attachment E, section IV, table E-3 states that $CBOD_5$ shall be sampled 5 days per week. The January 2011 monthly monitoring report only included four monitoring results for $CBOD_5$ for the week of January 2, 2011.
2. Order No. R9-2010-0086, Attachment E, section IV, table E-3, states that 24-hour composite samples shall be collected and analyzed for $CBOD_5$, TSS, and turbidity. Due to a malfunction of the 24-hour composite sampler, grab samples were taken on February 27, 2011 for $CBOD_5$, TSS, and turbidity.
3. On April 12, 2016, the settleable solids instantaneous maximum limitation of 3.0 ml/L was exceeded with a reported value of 3.5 ml/L.

E. Planned Changes

As a part of Time Schedule Order No. R9-2015-0027, *Requiring the City of Escondido Hale Avenue Resource Recovery Facility to Comply with Requirements Prescribed in Order*

Number R9-2015-0026[3] NPDES Permit No. CA0108944 (TSO), the Discharger has embarked on a comprehensive Agricultural Reuse Program (Program) to increase recycled water use, reduce HARRF discharge flows and mass emission to the SEOO, and ensure that wet weather HARRF discharges to the ELO and SEOO remain below the rated hydraulic capacities of the outfalls. Major facilities improvements being implemented as part of the Program, which the Discharger has indicated will be operational by year 2021, include:

- Constructing the MFRO Facility described in section II.A of this Fact Sheet (Phase V of the TSO);
- Constructing recycled water pipeline (approximate 3-mile long, 24-inch diameter) from the Discharger's existing non-potable recycled water conveyance system to the proposed MFRO Facility (Phases I and II of the TSO);
- Installing approximately 11 miles of non-potable pressure mains to convey blended product water (MFRO Facility product water blended with non-demineralized recycled water) to agricultural reuse sites with salt-sensitive crops (not in the TSO);
- Converting an existing potable water storage tank to recycled water storage (Phase IIIa of the TSO), and constructing a new potable water storage tank to replace the converted tank (not in the TSO);
- Constructing MFRO Facility product water seasonal storage capacity to allow the MFRO Facility to operate on a year-round basis, even during wet weather periods, and to meet peak agricultural water demands that exceed the production capacity of the MFRO Facility (Phase III of the TSO); and
- Constructing a ~~16~~15-inch-diameter brine line to convey RO reject (waste brine) from the proposed MFRO Facility (and from existing or future industrial customers) to the Discharger's Industrial Brine Collection System (IBCS) and then to the SEOO (Phase IV of the TSO).

In concert with the Program, the Discharger is moving forward with plans to evaluate further expansion of recycled water use through indirect or direct potable reuse (IPR/DPR). The Discharger identified future long-term upgrades to HARRF tertiary treatment, solids processing, and electrical facilities that are planned in support of both the Program and the indirect or direct potable reuse effort. Long-term upgrades to HARRF include:

- Demolishing the existing Digester No. 1 and constructing a new 2-million-gallon replacement anaerobic digester;
- Demolishing the existing dissolved air floatation (DAF) units and constructing a new sludge thickening system;
- Demolishing the existing 9-MGD tertiary treatment facility at HARRF (including the DynaSand filters, ultraviolet light disinfection facilities, and chlorine contact facilities) and constructing a new 12-MGD tertiary treatment facility that features a deep bed sand filter system, chlorine contact basins, and a dechlorination system;

[3] Order No. R9-2015-0026, NPDES No. CA0108944, *Waste Discharge Requirements for the City of Escondido, Hale Avenue Resource Recovery Facility, Intermittent Wet Weather Discharge to Escondido Creek, San Diego County*.

- Demolishing the existing emergency storage pond (which will be replaced by off-site storage) and energy recovery building to provide room for siting the new digester and chlorine contact facilities;
- Expanding the filter influent pump station and recycled water pump station to 12 MGD
- Installing additional standby power capacity; and
- Implementing site drainage improvements.

To support the City of Escondido's long-term goal of assessing IPR/DPR opportunities, an Advanced Water Purification Facility (AWPF) demonstration project is to be co-located at the MFRO Facility site. The AWPF demonstration project will be used to evaluate the effectiveness of alternative treatment processes and for demonstrating compliance with IPR/DPR public health protection standards currently being evaluated by the DDW. The Discharger will coordinate with DDW to identify AWPF demonstration facility treatment process specifications and testing protocols.

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order serves as WDRs pursuant to article 4, chapter 4, division 7 of the California 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 Discharger to discharge into waters of the U.S. at the discharge location described in Table 2 subject to the WDRs in this Order.

B. California Environmental Quality Act (CEQA)

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.

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

1. **Water Quality Control Plan.** The San Diego Water Board adopted a *Water Quality Control Plan for the San Diego Region* (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 Board. Beneficial uses applicable to the Pacific Ocean specified in the Basin Plan are as follows:

Table F-3. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	Pacific Ocean	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); 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).

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.

2. **California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California, California Ocean Plan* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, 2005, 2009, 2012, and 2015. The State Water Board adopted the latest amendment on May 6, 2015, and it became effective on January 28, 2016. 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 below:

Table F-4. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
Discharge Point No. 001	Pacific Ocean	Industrial water supply (IND); water contact recreation (REC-1); non-contact recreation (REC-2), including aesthetic enjoyment; navigation (NAV); commercial and sport fishing (COMM); mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat (MAR); fish migration; fish spawning and shellfish harvesting.

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. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and tribal water quality standards (WQS) become effective for CWA purposes (40 CFR section 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.

4. **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.

5. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the 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.

6. **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 Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

7. **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 Discharger is responsible for meeting all applicable requirements of 40 CFR part 503 that are under USEPA's enforcement authority.

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

In July 2015, USEPA approved the list of impaired water bodies, prepared by the State Water Board pursuant to 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 includes 0.49 miles of the Pacific Ocean shoreline within the San Elijo Hydrologic Subarea (HAS), at Cardiff State Beach and San Elijo State Beach, and San Elijo Lagoon as impaired for indicator bacteria. The 303(d) list also includes the Pacific Ocean Shoreline, San Elijo HSA, at Cardiff State Beach at the parking lot entrance as impaired for trash. The 303(d) list also includes the San Elijo Lagoon as impaired for eutrophic conditions and sedimentation/siltation.

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 SEOO. Nonetheless, this Order implements receiving water objectives for bacterial indicators.

E. Other Plans, Polices and Regulations

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.

2. **Storm Water.** Sewage treatment works with a design flow of 1.0 MGD or greater are required to comply with Order No. 2014-0057-DWQ (NPDES No. CAS000001), *General Permit for Storm Water Discharges Associated with Industrial Activities*. The Discharger is currently regulated under Order No. 2014-0057-DWQ.

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 IUs of the POTWs.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the U.S. 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.

A. Discharge Prohibitions

This Order retains the discharge prohibitions from Order No. R9-2010-0086, as described below. Discharges from HARRF and the MFRO Facility to surface waters in violation of prohibitions contained in this Order are violations of the CWA and therefore are subject to third party lawsuits. Discharges from HARRF and the MFRO Facility to land in violation of prohibitions contained in this Order are violations of the California Water Code (CWC) and are not subject to third party lawsuits under the CWA because the CWC does not contain provisions allowing third party lawsuits.

1. Prohibitions III.A and III.B of this Order are retained from Order No. R9-2010-0086 to clearly define what types of discharges are prohibited.

2. Prohibition III.C of this Order is retained from Order No. R9-2010-0086 to include discharge prohibitions of the Ocean Plan.

3. Prohibition III.D of this Order has been added to include discharge prohibitions of the Basin Plan. The discharge prohibitions of the Basin Plan were included in Order No. R9-2010-0086 in section VI.A.2.b, San Diego Water Board Standard Provisions.

4. Prohibition III.C of Order No. R9-2010-0086 has been included as a flow effluent limitation (18 MGD) in Table 7.

B. Technology-Based Effluent Limitations (TBELs)

1. Scope and Authority

Section 301(b) of the 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 authorized by this Order must meet minimum federal technology-based requirements based on Secondary Treatment Standards at 40 CFR part 133.

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 Water Pollution Control Act Amendments of 1972 (PL 92-500) established the minimum performance requirements for POTWs [defined in section 304(d)(1)]. Section 301(b)(1)(B) of that Act 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 biochemical oxygen demand (BOD_5), TSS, and pH.

2. Applicable Technology-Based Effluent Limitations

a. **Federal Regulations.** 40 CFR part 133 establishes the minimum weekly and monthly average level of effluent quality attainable by secondary treatment for BOD_5 and TSS. Section 133.102(a)(4) of 40 CFR allows for effluent limitations for $CBOD_5$ to be applied in lieu of effluent limitations for BOD_5 where BOD_5 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 for $CBOD_5$ are effectively equivalent to the secondary treatment standards for BOD_5. The Discharger requested that effluent limitations for $CBOD_5$ be applied in lieu of effluent limitations for BOD_5 on June 4, 1993. Consistent with Order No. R9-2010-0086, this Order includes effluent limitations for $CBOD_5$.

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 BOD_5 and TSS shall not be less than 85 percent. Consistent with Order No. R9-2010-0086, this Order contains a limitation requiring an average of 85 percent removal of $CBOD_5$ 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.

TBELs based on secondary treatment standards for $CBOD_5$, TSS, and pH are summarized in the following table, applying average monthly effluent limitations (AMELs) in lieu of 30-day average and average weekly effluent limitations (AWELs) in lieu of 7-day average.

Table F-5. Summary of TBELs Based on Secondary Treatment Standards[1]

Parameter	Units	Effluent Limitations			
		Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
$CBOD_5$	mg/L	25	40	--	--
	% Removal	85[2]	--	--	--
TSS	mg/L	30	45	--	--
	% Removal	85[2]	--	--	--
pH	standard units	--	--	6.0	9.0

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. The average monthly percent removal of $CBOD_5$ and TSS shall not be less than 85 percent.

b. **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 2 of the Ocean Plan establishes TBELs for POTWs. Consistent with Order No. R9-2010-0086, numeric effluent limitations based on Table 2 of the Ocean Plan are being established in this Order for the combined flow from HARRF and the MFRO, as described in the MRP (Attachment E) Table E-1.

Because secondary treatment standards contain effluent limitations for TSS that are more stringent than Table 2 of the Ocean Plan, the more stringent effluent limitations for TSS will be applied to discharges from Monitoring Location EFF-003.

The TBELs from the Ocean Plan are summarized below:

Table F-6. Summary of TBELs Based on Table 2 of the Ocean Plan[1]

Parameter		Units	Effluent Limitations			
			Average Monthly	Average Weekly	Instantaneous Minimum	Instantaneous Maximum
Oil and Grease		mg/L	25	40	--	75
TSS		mg/L	60[2]	--	--	--
		% Removal	75[2]	--	--	--
Settleable Solids		ml/L	1.0	1.5	--	3.0
Turbidity		NTU	75	100	--	225
pH		standard units	--	--	6.0	9.0

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. Table 2 of the Ocean Plan requires that the Discharger 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. The Table 2 TSS effluent limitation is only applicable to the MFRO Facility. Secondary treatment standards are more stringent than this limitation and have been applied to HARRF.

c. **Effluent Flow.** Order No. R9-2010-0086 prohibited the average monthly flow rate of the effluent from HARRF plus the average monthly flow rate of the effluent from the Industrial Brine Collection System (brine from the Stone Brewing Co.[4] and Palomar Energy Center[5]) to exceed 18 MGD. This prohibition is being carried over as an effluent limitation. To ensure this effluent limitation is met, this Order adds Monitoring Location EFF-004, a location downstream of all wastewater discharged

[4] Discharges from Stone Brewing Co. are regulated by separate WDRs, Order No. R9-2012-0006 as amended by Order No. R9-2014-0097, NPDES No. CA0109258, *Waste Discharge Requirements for Liquid Stone Holdings, LLC, Koochenvagner's Brewing Company DBA Stone Brewing Co., Discharge to the Pacific Ocean via the San Elijo Ocean Outfall*.

[5] Discharges from Palomar Energy Center are regulated by separate WDRs, Order No. R9-2012-0015 as amended by Order No. R9-2017-0012, NPDES No. CA0109215, *Waste Discharge Requirements for San Diego Gas and Electric Company Palomar Energy Center*.

to the ELO (e.g., secondary- and tertiary-treated effluent from HARRF and brine from the Stone Brewing Co.[4], Palomar Energy Center[5], and the proposed MFRO Facility) could be obtained or accounted for, before combining with wastewaters from the San Elijo Water Reclamation Facility and other wastewaters in the SEOO line. As shown in the flow schematic in Attachment C, total flow to the ELO is monitored from the effluent pump station (continuous discharge), from the onsite pond (batch discharge), and from the Industrial Brine Collection System. The three flow measurements can be added together to obtain the total flow to the ELO.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

Section 301(b) of the CWA 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 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 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.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

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

a. **Basin Plan.** The beneficial uses specified in the Basin Plan applicable to the Pacific Ocean are summarized in section III.C.1 of this Fact Sheet.

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."

b. **Ocean Plan.** The beneficial uses specified in the Ocean Plan for the Pacific Ocean are summarized in section III.C.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 1 of the Ocean Plan includes the following water quality objectives for toxic pollutants and whole effluent toxicity:

i. 6-month median, daily maximum, and instantaneous maximum objectives for 21 chemicals and chemical characteristics, including total residual chlorine and chronic toxicity, for the protection of marine aquatic life.

ii. 30-day average objectives for 20 non-carcinogenic chemicals for the protection of human health. These are being applied as AMELs.

iii. 30-day average objectives for 42 carcinogenic chemicals for the protection of human health. These are being applied as AMELs.

iv. Daily maximum objectives for acute and chronic toxicity.

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 1 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 probably initial dilution) can then be compared to the appropriate objective to determine potential for an exceedance of that objective and 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 for an analytical procedure).

The implementation provisions for Table 1 in section III.C of the Ocean Plan specify that the minimum 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. For Order No. R9-2005-0101, the San Diego Water Board, with assistance from the State Water Board, had determined the minimum initial dilution factor (Dm), for the SEOO to be 237 parts seawater to 1 part wastewater (237:1), using the USEPA approved computer modeling

application Visual Plumes with the UM3 model. This Order contains special study requirements for plume tracking. (See section VII.D.2 of this Fact Sheet for more information.) This information will be useful for evaluating whether the dilution credit established in Order No. R9-2005-0101 is still applicable and appropriate. The San Diego Water Board may re-assess the dilution credit if the brine discharges from the MFRO Facility and/or San Elijo JPA's San Elijo Water Reclamation Facility (regulated by NPDES No. CA0107999) changes effluent quality discharged at Discharge Point No. 001. Until this information is available and evaluated, the San Diego Water Board is retaining the Dm of 237:1, which has been applied to WQBELs established herein.

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

Using the RPcalc 2.0 software tool developed by the State Water Board for conducting reasonable potential analyses, the San Diego Water Board has conducted the RPA for the constituents listed in Table F-7. For constituents that do not display reasonable potential, this Order includes desirable maximum effluent concentrations 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 Discharger is required to monitor for these constituents as stated in the MRP (Attachment E) in order to gather data for use in RPA for future permit reissuances.

Effluent data provided in the Discharger's monitoring reports for HARRF from August 2011 through July 2017 were used in the RPA (Monitoring Location EFF-001). Thus, the RPA in this Order only used the data from the HARRF, but is being applied to the flow-weighted combined discharge from HARRF and the MFRO Facility (Monitoring Location EFF-003). A minimum probable initial dilution of 237:1 was considered in this evaluation.

A summary of the RPA results is provided below:

Table F-7. RPA Results Summary[1]

Parameter	Units	N[2]	MEC[3,4]	Most Stringent Criteria	Background	RPA Endpoint[5]
Arsenic, Total Recoverable	µg/L	23	11	8[6]	3[7]	2
Cadmium, Total Recoverable	µg/L	23	<.0002	1[6]	0	2
Chromium (VI), Total Recoverable	µg/L	23	0.74	2[6]	0	2
Copper, Total Recoverable	µg/L	23	66.55	3[6]	2[7]	2
Lead, Total Recoverable	µg/L	23	<1.548	2[6]	0	2
Mercury, Total Recoverable	µg/L	23	<0.033	0.04[6]	0.0005[7]	2
Nickel, Total Recoverable	µg/L	23	15.43	5[6]	0	2
Selenium, Total Recoverable	µg/L	23	25	15[6]	0	2
Silver, Total Recoverable	µg/L	23	3.05	0.7[6]	0.16[7]	2
Zinc, Total Recoverable	µg/L	23	46	20[6]	8[7]	2
Cyanide, Total	µg/L	23	<2.2	1[6]	0	2
Total Residual Chlorine	µg/L	2069	530	2[6]	0	1
Ammonia, Total (as Nitrogen)	µg/L	68	39,600	600[6]	0	2
Acute Toxicity	TUa	0[8]	--	0.3[9]	0	3
Chronic Toxicity[1]	TUc	99	238	1[9]	0	2

Parameter	Units	N[2]	MEC[3,4]	Most Stringent Criteria	Background	RPA Endpoint[5]
Phenolic Compounds (non-chlorinated)[1]	µg/L	23	11	30[6]	0	2
Chlorinated Phenolics[1]	µg/L	23	<0.19	1[6]	0	2
Endosulfan[1]	µg/L	23	0.079	0.009[6]	0	2
Endrin	µg/L	23	<0.0019	0.002[6]	0	2
HCH (BHC)[1]	µg/L	23	0.026	0.004[6]	0	2
Radioactivity	pCi/L	12	24	[10]	0	[10]
Acrolein	µg/L	24	<1.1	220[11]	0	2
Antimony, Total	µg/L	24	<3.875	1,200[11]	0	2
Bis(2-chloroethoxyl)methane	µg/L	24	<0.095	4.4[11]	0	2
Bis(2-chloroisopropyl)ether	µg/L	24	<0.095	1,200[11]	0	2
Chlorobenzene	µg/L	24	<0.23	570[11]	0	2
Chromium (III), Total Recoverable	µg/L	24	<0.71	190,000 [11]	0	2
Di-n-butyl phthalate	µg/L	24	<0.19	3,500[11]	0	2
Dichlorobenzenes[1]	µg/L	24	<0.17	5,100[11]	0	2
Diethyl phthalate	µg/L	24	<0.095	33,000[11]	0	2
Dimethyl phthalate	µg/L	24	<0.095	820,000[11]	0	2
4,6-Dinitro-2-methylphenol	µg/L	24	<0.19	220[11]	0	2
2,4-Dinitrophenol	µg/L	24	<0.85	4.0[11]	0	2
Ethylbenzene	µg/L	24	3.2	4,100[11]	0	2
Fluoranthene	µg/L	24	<0.05	15[11]	0	2
Hexachlorocyclopentadiene	µg/L	24	<0.095	58[11]	0	2
Nitrobenzene	µg/L	24	<0.095	4.9[11]	0	2
Thallium, Total Recoverable	µg/L	24	<3.29	2[11]	0	2
Toluene	µg/L	24	<0.22	85,000[11]	0	2
Tributyltin	µg/L	12	<0.00076	0.0014[11]	0	3
1,1,1-Trichloroethane	µg/L	24	<0.088	540,000[11]	0	2
Acrylonitrile	µg/L	24	<0.59	0.10[11]	0	2
Aldrin	µg/L	24	<0.0014	0.000022[11]	0	2
Benzene	µg/L	24	<0.067	5.9[11]	0	2
Benzidine	µg/L	24	<0.95	0.000069[11]	0	3
Beryllium, Total Recoverable	µg/L	24	<0.017	0.033[11]	0	2
Bis(2-chloroethyl) ether	µg/L	24	<0.095	0.045[11]	0	2
Bis(2-ethylhexyl) phthalate	µg/L	24	<1.6	3.5[11]	0	2
Carbon tetrachloride	µg/L	24	<0.15	0.90[11]	0	2
Chlordane[1]	µg/L	24	<0.0076	0.000023[11]	0	3
Chlorodibromomethane (Dibromochloromethane)	µg/L	24	0.59	8.6[11]	0	2
Chloroform	µg/L	24	1.4	130[11]	0	2
DDT[1]	µg/L	24	<0.0034	0.00017[11]	0	2
1,4-Dichlorobenzene	µg/L	24	<0.072	18[11]	0	2
3,3-Dichlorobenzidine	µg/L	24	<0.48	0.0081[11]	0	3
1,2-Dichloroethane	µg/L	24	<0.12	28[11]	0	2
1,1-Dichloroethylene	µg/L	24	<0.12	0.9[11]	0	2
Dichlorobromomethane	µg/L	24	<0.17	6.2[11]	0	2
Dichloromethane (Methylene Chloride)	µg/L	24	<0.15	450[11]	0	2

Parameter	Units	N[2]	MEC[3,4]	Most Stringent Criteria	Background	RPA Endpoint[5]
1,3-Dichloropropene (1,3-Dichloropropylenes)	µg/L	24	<0.072	8.9[11]	0	2
Dieldrin	µg/L	24	<0.0019	0.00004[11]	0	3
2,4-Dinitrotoluene	µg/L	24	<0.19	2.6[11]	0	2
1,2-Diphenylhydrazine	µg/L	24	<0.095	0.16[11]	0	2
Halomethanes[1]	µg/L	24	0.86	130[11]	0	2
Heptachlor	µg/L	24	<0.0028	0.00005[11]	0	2
Heptachlor Epoxide	µg/L	24	<0.0024	0.00002[11]	0	3
Hexachlorobenzene	µg/L	24	<0.095	0.00021[11]	0	3
Hexachlorobutadiene	µg/L	24	<0.25	14[11]	0	2
Hexachloroethane	µg/L	24	<0.19	2.5[11]	0	2
Isophorone	µg/L	24	<0.095	730[11]	0	2
N-nitrosodimethylamine	µg/L	24	0.04	7.3[11]	0	2
N-nitrosodi-N-propylamine	µg/L	24	<0.095	0.38[11]	0	2
N-nitrosodiphenylamine	µg/L	24	0.04	2.5[11]	0	2
Polynuclear Aromatic Hydrocarbons (PAHs)[1]	µg/L	24	<0.05	0.0088[11]	0	2
Polychlorinated Biphenyls (PCBs)[1]	µg/L	24	<0.24	0.000019[11]	0	3
TCDD equivalents[1]	µg/L	12	<0.0000002	0.0000000039[11]	0	3
1,1,2,2-Tetrachoroethane	µg/L	24	<0.16	2.3[11]	0	2
Tetrachloroethylene (Tetrachloroethene)	µg/L	24	<0.12	2.0[11]	0	2
Toxaphene	µg/L	24	<0.24	0.00021[11]	0	3
Trichloroethylene (Trichloroethene)	µg/L	24	<0.18	27[11]	0	2
1,1,2-Trichloroethane	µg/L	24	<0.14	9.4[11]	0	2
2,4,6-Trichlorophenol	µg/L	24	<0.095	0.29[11]	0	2
Vinyl Chloride	µg/L	24	<0.081	36[11]	0	2

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. Number of data points available for the RPA.
3. 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.
4. Note that the reported maximum effluent concentration (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 RP (i.e. Endpoint 2).
5. End Point 1 – RP determined, limitation required, monitoring required.
   End Point 2 – Discharger determined not to have RP, monitoring may be established.
   End Point 3 – RPA was inconclusive, carry over previous limitations if applicable, and establish monitoring.
6. Based on the 6-Month Median in the Table 1 of the Ocean Plan.
7. Background concentrations contained in Table 3 of the Ocean Plan.
8. Order No. R9-2010-0086 discontinued effluent limitations and monitoring for acute toxicity based on monitoring performed between July 2005 and October 2009 that demonstrated compliance with the water quality objectives of the Ocean Plan. Consistent with Order No. R9-2010-0086, this Order does not require monitoring for acute toxicity.
9. Based on the Daily Maximum in Table 1 of the Ocean Plan.
10. 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.
11. Based on the 30-day average in the Table 1 of the Ocean Plan

Consistent with 40 CFR section 122.44(l)(2)(i)(B), effluent limitations from Order No. R9-2010-0086 will not be retained for constituents for which the RPA results indicated Endpoint 2. 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 it is inappropriate to establish effluent limitations for these parameters.

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, performance goals have been retained. For parameters for which new data is available and reasonable potential cannot be determined, effluent limitations have been retained.

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 total residual chlorine, thus effluent limitations for total residual chlorine have been established in this Order based on the initial dilution of 237:1, as discussed below.

Reasonable potential has been concluded for chronic toxicity based on best professional judgement given the possibility of synergistic effects.

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

4. WQBEL Calculations

a. From the Table 1 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

b. As discussed in section IV.C.3 above, the Dm has been determined to be 237:1 by the San Diego Water Board.

c. Table 3 of the Ocean Plan establishes background concentrations for some pollutants to be used when determining reasonable potential (represented as “Cs”). In accordance with Table 1 implementing procedures, Cs equals zero for all pollutants not established in Table 3. The background concentrations provided in Table 3 are summarized below:

Table F-8. Pollutants Having Background Concentrations[1]

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

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

d. As an example of how effluent limitations and performance goals have been calculated, performance goals for cyanide are determined as follows:

Water quality objectives from the Ocean Plan for cyanide are:

Table F-9. Example Parameter Water Quality Objectives[1]

Parameter	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Cyanide, Total	µg/L	1	4	10

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.

Using the equation, Ce = Co + Dm (Co – Cs), effluent limitations/performance goals are calculated as follows.

Cyanide:
Ce = 1 + 237 (1 – 0) = 238 (6-Month Median)
Ce = 4 + 237 (4 – 0) = 952 (Daily Maximum)
Ce = 10 + 237 (10 – 0) = 2,380 (Instantaneous Maximum)

Based on the implementing procedures described above, effluent limitations and performance goals have been calculated for all Table 1 pollutants from the Ocean Plan and incorporated into this Order.

e. 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 Table 1 parameters. 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., CTR criteria and MCLs) 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

f. Based on the results of the RPA and BPJ, a summary of the WQBELs established in this Order are provided below:

Table F-10. Summary of WQBELs - Discharge Point No. 001 at Monitoring Location EFF-003[1]

Parameter	Unit	Effluent Limitations[2,3]		
		6-Month Median	Maximum Daily	Instantaneous Maximum
OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE				
Total Chlorine Residual	µg/L	4.76E+02	1.90E+03	1.43E+04
	lbs/day[2]	7.15E+01	2.86E+02	2.14E+03
Chronic Toxicity (Test of Significant Toxicity)[4,5]	"Pass" / "Fail"	--	"Pass"	--

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. 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.
3. The mass emission rate (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 (MGD) and C is the concentration (mg/L).
4. As specified in section VII.L of this Order and section III.C of the MRP (Attachment E).
5. The Chronic Toxicity effluent limitation is protective of both the numeric acute and chronic toxicity 2015 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), current USEPA guidance in the *National Pollutant Discharge Elimination System Test of Significant Toxicity implementation Document* (EPA 833-R-10-003, June 2010) (https://www3.epa.gov/npdes/pubs/wet_final_tst_implementation2010.pdf) and USEPA Regions 8, 9, and 10, Toxicity Training Tool (January 2010).

g. A summary of the performance goals is provided below. Calculations are described in section IV.C.4.a of this Fact Sheet.

Table F-11. Summary of Performance Goals[1]

Parameter	Unit	Performance Goals[2,3]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE					
Arsenic, Total Recoverable	µg/L	1.19E+03	6.91E+03	1.83E+04	--
	lbs/day	1.79E+02	1.04E+03	2.75E+03	--
Cadmium, Total Recoverable	µg/L	2.38E+02	9.52E+02	2.38E+03	--
	lbs/day	3.57E+01	1.43E+02	3.57E+02	--
Chromium (VI) , Total Recoverable[4]	µg/L	4.76E+02	1.90E+03	4.76E+03	--
	lbs/day	7.15E+01	2.86E+02	7.15E+02	--
Copper, Total Recoverable	µg/L	2.40E+02	2.38E+03	6.67E+03	--
	lbs/day	3.60E+01	3.58E+02	1.00E+03	--
Lead, Total Recoverable	µg/L	4.76E+02	1.90E+03	4.76E+03	--
	lbs/day	7.15E+01	2.86E+02	7.15E+02	--
Mercury, Total Recoverable	µg/L	9.40E+00	3.80E+01	9.51E+01	--
	lbs/day	1.41E+00	5.70E+00	1.43E+01	--
Nickel, Total Recoverable	µg/L	1.19E+03	4.76E+03	1.19E+04	--
	lbs/day	1.79E+02	7.15E+02	1.79E+03	--

Parameter	Unit	Performance Goals[2,3]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
Selenium, Total Recoverable	µg/L	3.57E+03	1.43E+04	3.57E+04	--
	lbs/day	5.36E+02	2.14E+03	5.36E+03	--
Silver, Total Recoverable	µg/L	1.29E+02	6.28E+02	1.63E+03	--
	lbs/day	1.93E+01	9.43E+01	2.44E+02	--
Zinc, Total Recoverable	µg/L	2.86E+03	1.71E+04	4.57E+04	--
	lbs/day	4.30E+02	2.57E+03	6.86E+03	--
Cyanide, Total[5]	µg/L	2.38E+02	9.52E+02	2.38E+03	--
	lbs/day	3.57E+01	1.43E+02	3.57E+02	--
	lbs/day	2.14E+04	8.57E+04	2.14E+05	--
Ammonia, Total (as Nitrogen)	µg/L	1.43E+05	5.71E+05	1.43E+06	--
	lbs/day	2.14E+04	8.57E+04	2.14E+05	--
Phenolic Compounds (non-chlorinated)[1]	µg/L	7.14E+03	2.86E+04	7.14E+04	--
	lbs/day	1.07E+03	4.29E+03	1.07E+04	--
Chlorinated Phenolics[1]	µg/L	2.38E+02	9.52E+02	2.38E+03	--
	lbs/day	3.57E+01	1.43E+02	3.57E+02	--
Endosulfan[1]	µg/L	2.14E+00	4.28E+00	6.43E+00	--
	lbs/day	3.22E-01	6.43E-01	9.65E-01	--
Endrin	µg/L	4.76E-01	9.52E-01	1.43E+00	--
	lbs/day	7.15E-02	1.43E-01	2.14E-01	--
HCH (BHC)[1]	µg/L	9.52E-01	1.90E+00	2.86E+00	--
	lbs/day	1.43E-01	2.86E-01	4.29E-01	--
Radioactivity	pCi/L	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.			
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS					
Acrolein	µg/L	--	--	--	5.24E+04
	lbs/day	--	--	--	7.86E+03
Antimony, Total	µg/L	--	--	--	2.86E+05
	lbs/day	--	--	--	4.29E+04
Bis(2-chloroethoxy) Methane	µg/L	--	--	--	1.05E+03
	lbs/day	--	--	--	1.57E+02
Bis(2-chloroisopropyl) Ether	µg/L	--	--	--	2.86E+05
	lbs/day	--	--	--	4.29E+04
Chlorobenzene	µg/L	--	--	--	1.36E+05
	lbs/day	--	--	--	2.04E+04

Parameter	Unit	Performance Goals[2,3]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
Chromium (III), Total Recoverable[4]	µg/L	--	--	--	4.52E+07
	lbs/day	--	--	--	6.79E+06
Di-n-butyl Phthalate	µg/L	--	--	--	8.33E+05
	lbs/day	--	--	--	1.25E+05
Dichlorobenzenes[1]	µg/L	--	--	--	1.21E+06
	lbs/day	--	--	--	1.82E+05
Diethyl Phthalate	µg/L	--	--	--	7.85E+06
	lbs/day	--	--	--	1.18E+06
Dimethyl Phthalate	µg/L	--	--	--	1.95E+08
	lbs/day	--	--	--	2.93E+07
4,6-dinitro-2-methylphenol	µg/L	--	--	--	5.24E+04
	lbs/day	--	--	--	7.86E+03
2,4-dinitrophenol	µg/L	--	--	--	9.52E+02
	lbs/day	--	--	--	1.43E+02
Ethylbenzene	µg/L	--	--	--	9.76E+05
	lbs/day	--	--	--	1.46E+05
Fluoranthene	µg/L	--	--	--	3.57E+03
	lbs/day	--	--	--	5.36E+02
Hexachlorocyclopentadiene	µg/L	--	--	--	1.38E+04
	lbs/day	--	--	--	2.07E+03
Nitrobenzene	µg/L	--	--	--	1.17E+03
	lbs/day	--	--	--	1.75E+02
Thallium, Total Recoverable	µg/L	--	--	--	4.76E+02
	lbs/day	--	--	--	7.15E+01
Toluene	µg/L	--	--	--	2.02E+07
	lbs/day	--	--	--	3.04E+06
Tributyltin	µg/L	--	--	--	3.33E-01
	lbs/day	--	--	--	5.00E-02
1,1,1-trichloroethane	µg/L	--	--	--	1.29E+08
	lbs/day	--	--	--	1.93E+07
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS					
Acrylonitrile	µg/L	--	--	--	2.38E+01
	lbs/day	--	--	--	3.57E+00
Aldrin	µg/L	--	--	--	5.24E-03
	lbs/day	--	--	--	7.86E-04
Benzene	µg/L	--	--	--	1.40E+03
	lbs/day	--	--	--	2.11E+02

Parameter	Unit	Performance Goals[2,3]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
Benzidine	µg/L	--	--	--	1.64E-02
	lbs/day	--	--	--	2.47E-03
Beryllium, Total Recoverable	µg/L	--	--	--	7.85E+00
	lbs/day	--	--	--	1.18E+00
Bis(2-chloroethyl) Ether	µg/L	--	--	--	1.07E+01
	lbs/day	--	--	--	1.61E+00
Bis(2-ethlyhexyl) Phthalate	µg/L	--	--	--	8.33E+02
	lbs/day	--	--	--	1.25E+02
Carbon Tetrachloride	µg/L	--	--	--	2.14E+02
	lbs/day	--	--	--	3.22E+01
Chlordane[1]	µg/L	--	--	--	5.47E-03
	lbs/day	--	--	--	8.22E-04
Chlorodibromomethane (Dibromochloromethane)	µg/L	--	--	--	2.05E+03
	lbs/day	--	--	--	3.07E+02
Chloroform	µg/L	--	--	--	3.09E+04
	lbs/day	--	--	--	4.64E+03
DDT[1]	µg/L	--	--	--	4.05E-02
	lbs/day	--	--	--	6.07E-03
1,4-dichlorobenzene	µg/L	--	--	--	4.28E+03
	lbs/day	--	--	--	6.43E+02
3,3'-dichlorobenzidine	µg/L	--	--	--	1.93E+00
	lbs/day	--	--	--	2.89E-01
1,2-dichloroethane	µg/L	--	--	--	6.66E+03
	lbs/day	--	--	--	1.00E+03
1,1-dichloroethylene	µg/L	--	--	--	2.14E+02
	lbs/day	--	--	--	3.22E+01
Dichlorobromomethane	µg/L	--	--	--	1.48E+03
	lbs/day	--	--	--	2.22E+02
Dichloromethane (Methylene Chloride)	µg/L	--	--	--	1.07E+05
	lbs/day	--	--	--	1.61E+04
1,3-dichloropropene (1,3-Dichloropropylenes)	µg/L	--	--	--	2.12E+03
	lbs/day	--	--	--	3.18E+02
Dieldrin	µg/L	--	--	--	9.52E-03
	lbs/day	--	--	--	1.43E-03
2,4-dinitrotoluene	µg/L	--	--	--	6.19E+02
	lbs/day	--	--	--	9.29E+01

Parameter	Unit	Performance Goals[2,3]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
1,2-diphenylhydrazine	µg/L	--	--	--	3.81E+01
	lbs/day	--	--	--	5.72E+00
Halomethanes[1]	µg/L	--	--	--	3.09E+04
	lbs/day	--	--	--	4.64E+03
Heptachlor	µg/L	--	--	--	1.19E-02
	lbs/day	--	--	--	1.79E-03
Heptachlor Epoxide	µg/L	--	--	--	4.76E-03
	lbs/day	--	--	--	7.15E-04
Hexachlorobenzene	µg/L	--	--	--	5.00E-02
	lbs/day	--	--	--	7.50E-03
Hexachlorobutadiene	µg/L	--	--	--	3.33E+03
	lbs/day	--	--	--	5.00E+02
Hexachloroethane	µg/L	--	--	--	5.95E+02
	lbs/day	--	--	--	8.93E+01
Isophorone	µg/L	--	--	--	1.74E+05
	lbs/day	--	--	--	2.61E+04
N-nitrosodimethylamine	µg/L	--	--	--	1.74E+03
	lbs/day	--	--	--	2.61E+02
N-nitrosodi-N-propylamine	µg/L	--	--	--	9.04E+01
	lbs/day	--	--	--	1.36E+01
N-nitrosodiphenylamine	µg/L	--	--	--	5.95E+02
	lbs/day	--	--	--	8.93E+01
PAHs[1]	µg/L	--	--	--	2.09E+00
	lbs/day	--	--	--	3.14E-01
PCBs[1]	µg/L	--	--	--	4.52E-03
	lbs/day	--	--	--	6.79E-04
TCDD Equivalents[1]	µg/L	--	--	--	9.28E-07
	lbs/day	--	--	--	1.39E-07
1,1,2,2-tetrachloroethane	µg/L	--	--	--	5.47E+02
	lbs/day	--	--	--	8.22E+01
Tetrachloroethylene (Tetrachloroethene)	µg/L	--	--	--	4.76E+02
	lbs/day	--	--	--	7.15E+01
Toxaphene	µg/L	--	--	--	5.00E-02
	lbs/day	--	--	--	7.50E-03
Trichloroethylene (Trichloroethene)	µg/L	--	--	--	6.43E+03
	lbs/day	--	--	--	9.65E+02

Parameter	Unit	Performance Goals[2,3]			
		6-Month Median	Maximum Daily	Instantaneous Maximum	Average Monthly
1,1,2-trichloroethane	µg/L	--	--	--	2.24E+03
	lbs/day	--	--	--	3.36E+02
2,4,6-trichlorophenol	µg/L	--	--	--	6.90E+01
	lbs/day	--	--	--	1.04E+01
Vinyl Chloride	µg/L	--	--	--	8.57E+03
	lbs/day	--	--	--	1.29E+03

1. See Attachment A for definitions of abbreviations and a glossary of common terms used in this Order.
2. 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.
3. 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 (MGD) and C is the concentration (mg/L).
4. The Discharger may, at their option, apply this performance goal as a total chromium performance goal.
5. If the Discharger can demonstrate to the satisfaction of USEPA and the State Water Board that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations 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 Code of Federal Regulations, title 40 (40 CFR) part 136.

5. Whole Effluent Toxicity (WET)

a. The WET testing protects receiving waters from the aggregate toxic effect of a mixture of pollutants in the effluent. Because of the nature of industrial discharges into the POTW sewershed, it is possible that toxic constituents could be present in the HARRF and the MFRO Facility effluent, or could have synergistic or additive effects.

b. For chronic toxicity, Order No. R9-2010-0086 established a performance goal of 238 TUc and monthly monitoring for chronic toxicity. During the term of the permit, the maximum reported effluent chronic toxicity value was 238 TUc (July 2015 and August 2015). Using the RPA procedures from the Ocean Plan, the effluent does not have reasonable potential to cause an exceedance of the narrative water quality objective for chronic toxicity (i.e., Endpoint 2). However, as stated in section IV.C.3 of this Fact Sheet, the effluent limitation for chronic toxicity is being added in this Order based on best professional judgement. This Order retains monthly monitoring to determine compliance with the effluent limitation.

For this Order, chronic toxicity in the discharge is evaluated using USEPA's 2010 Test of Significant Toxicity (TST) hypothesis testing approach at the discharge "in-stream" waste concentration (IWC), as described in section VII.L of this Order and section III.C of the MRP (Attachment E). The TST statistical approach is described in the *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, 2010), Appendix A, Figure A-1 and Table A-1. The TST null hypothesis shall be "mean discharge IWC response ≤ 0.75 × mean control response." A test that rejects this null hypothesis shall be reported as "Pass." A test that does not reject this null hypothesis shall be reported as "Fail."

The chronic toxicity effluent limitation is expressed as “Pass” for each maximum daily individual result. The Discharger shall also report the “Percent Effect” as part of chronic toxicity result.

This Order contains a reopener to require the San Diego Water Board to modify the effluent limitation for toxicity, if necessary, to make it consistent with any new policy, law, or regulation.

c. For acute toxicity, Order No. R9-2010-0086 did not establish any performance goals or monitoring. 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, 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 Discharger’s effluent does not result in the presence of toxicity within the receiving water, this Order adds an effluent limitation for chronic toxicity. Removal of numeric acute toxicity performance goals does not constitute backsliding because chronic toxicity is a more stringent requirement than acute toxicity.

d. Section III.F of the 2015 Ocean Plan provides for more stringent requirements if necessary to protect the designated beneficial uses of ocean waters. Diamond et al. (2013) examined the side-by-side comparison of No-Observed-Effect-Concentration (NOEC) and TST results using California chronic toxicity test data (including data from POTWs) for the West Coast marine methods and test species required under this Order. See Table 1 (method types 1 through 5) on page 1103 in Diamond D., Denton D., Roberts J., Zheng L. 2013. *Evaluation of the Test of Significant Toxicity for Determining the Toxicity of Effluents and Ambient Water Samples*. Environ Toxicol Chem 32:1101-1108. This comparison shows that while the TST and NOEC statistical approaches perform similarly most of the time, the TST performs better in identifying toxic and nontoxic samples, a desirable characteristic for chronic toxicity testing conducted under this Order. This examination also signals that the test methods’ false positive rate (β no higher than 0.05 at a mean effect of 10%) and false negative rate (α no higher than 0.05 (0.25 for topsmelt) at a mean effect of 25%) are indeed low. This highlights that using the TST in this Order - in conjunction with other Ocean Plan requirements (West Coast WET method/test species for monitoring and limiting chronic toxicity, the IWC representing the critical condition for water quality protection, the initial dilution procedure, and a single test for compliance)—provides increased assurance that statistical error rates are more directly addressed and accounted for in decisions regarding chronic toxicity in the discharge. As a result and in accordance with Ocean Plan section III.F, the San Diego Water Board is exercising its discretion to use the TST statistical approach for this discharge.

In January 2010, USEPA published a guidance document entitled; US*EPA Regions 8, 9 and 10 Toxicity Training Tool*, which among other things discusses permit limitation expression for chronic toxicity. The document acknowledges that NPDES regulations at 40 CFR section 122.45(d) require that all permit limits be expressed, unless impracticable, as an AWEL and AMEL for POTWs. Following section 5.2.3 of the Technical Support Document (TSD), the use of an AWEL is not appropriate for WET. In lieu of an AMEL and AWEL for POTWs, USEPA recommends establishing

a MDEL for toxic pollutants and pollutants in water quality permitting, including WET. This is appropriate for two reasons. The basis for the average weekly requirement for POTWs derives from secondary treatment regulations and is not related to the requirement to ensure achievement of water quality standard. Moreover, an average weekly requirement comprising up to seven daily samples could average out daily peak toxic concentrations for WET and therefore, the discharge's potential for causing acute and chronic effects would be missed. It is impracticable to use an AWEL, because short-term spikes of toxicity levels that would be permissible under the 7-day average scheme would not be adequately protective of all beneficial uses. The MDEL is the highest allowable value for the discharge measured during a calendar day or 24-hour period representing a calendar day.

Later in June 2010, USEPA published another guidance document titled, *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003, June 2010), in which they recommend the following: "Permitting authorities should consider adding the TST approach to their implementation procedures for analyzing valid WET data for their current NPDES WET Program." The TST approach is another statistical option for analyzing valid WET test data. Use of the TST approach does not result in any changes to USEPA's WET test methods. Section 9.4.1.2 of USEPA's *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), recognizes that, "the statistical methods in this manual are not the only possible methods of statistical analysis." The TST approach can be applied to acute (survival) and chronic (sublethal) endpoints and is appropriate to use for both freshwater and marine USEPA WET test methods.

The USEPA's WET testing program and acute and chronic WET methods rely on the measurement result for a specific test endpoint, not upon achievement of specified concentration-response patterns to determine toxicity. USEPA's WET methods do not require achievement of specified effluent or ambient concentration-response patterns prior to determining that toxicity is present.[6] Nevertheless, USEPA's acute and chronic WET methods require that effluent and ambient concentration-response patterns generated for multi-concentration acute and chronic toxicity tests be reviewed—as a component of test review following statistical analysis—to ensure that the calculated measurement result for the toxicity test is interpreted appropriately. (EPA-821-R-02-012, section 12.2.6.2; EPA-821-R-02-013, section 10.2.6.2). In 2000, USEPA provided guidance for such reviews to ensure that test endpoints for determining toxicity based on the statistical approaches utilized at the time the guidance was written (NOEC), percent waste giving 50 percent survival of test organisms (lethal concentration 50, LC 50), effects concentration at 25 percent (EC25) were calculated appropriately (EPA 821-B-00-004)).

USEPA designed its 2000 guidance as a standardized step-by step review process that investigates the causes for ten commonly observed concentration-response patterns and provides for the proper interpretation of the test endpoints derived from these patterns for NOECs, LC 50, and EC25, thereby reducing the number of

[6] See, Supplementary Information in support of the Final Rule establishing WET test methods at 67 Fed. Reg. 69952, 69963, Nov. 19, 2002.

misclassified test results. The guidance provides one of three determinations based on the review steps: that calculated effect concentrations are reliable and should be reported, that calculated effect concentrations are anomalous and should be explained, or that the test was inconclusive and should be repeated with a newly collected sample. The standardized review of the effluent and receiving water concentration-response patterns provided by USEPA's 2000 guidance decreased discrepancies in data interpretation for NOEC, LC 50, and EC25 test results, thereby lowering the chance that a truly nontoxic sample would be misclassified and reported as toxic.

Appropriate interpretation of the measurement result from USEPA's TST statistical approach ("Pass"/"Fail") for effluent and receiving water samples is, by design, independent from the concentration-response patterns of the toxicity tests for those samples. Therefore, when using the TST statistical approach, application of USEPA's 2000 guidance on effluent and receiving waters concentration-response patterns will not improve the appropriate interpretation of TST results as long as all Test Acceptability Criteria (TAC) and other test review procedures—including those related to quality assurance for effluent and receiving water toxicity tests, reference toxicity tests, and control performance (mean, standard deviation, and coefficient of variation)—described by the WET test methods manual and TST guidance, are followed. The 2000 guidance may be used to identify reliable, anomalous, or inconclusive concentration-response patterns and associated statistical results to the extent that the guidance recommends review of test procedures and laboratory performance already recommended in the WET test methods manual. The guidance does not apply to single-concentration (IWC) and control statistical t-tests and does not apply to the statistical assumptions on which the TST is based. The San Diego Water Board will not consider a concentration-response pattern as sufficient basis to determine that a TST t- test result for a toxicity test is anything other than valid, absent other evidence. In a toxicity laboratory, unexpected concentration-response patterns should not occur with any regular frequency and consistent reports of anomalous or inconclusive concentration-response patterns or test results that are not valid will require an investigation of laboratory practices.

Any Data Quality Objectives or Standard Operating Procedure used by the toxicity testing laboratory to identify and report valid, invalid, anomalous, or inconclusive effluent or receiving water toxicity test measurement results from the TST statistical approach which include a consideration of concentration-response patterns and/or Percent Minimum Significant Differences (PMSDs) must be submitted for review by the San Diego Water Board, in consultation with USEPA and the State Water Board's Quality Assurance Officer and Environmental Laboratory Accreditation Program (ELAP) (40 CFR section 122.44(h)). As described in the bioassay laboratory audit directives to the San Jose Creek Water Quality Laboratory from the State Water Board dated August 7, 2014, and from the USEPA dated December 24, 2013, the PMSD criteria only apply to compliance for NOEC and the sublethal endpoints of the NOEC, and therefore are not used to interpret TST results.

D. Final Effluent Limitations Considerations

1. Satisfaction of Anti-Backsliding Requirements

NPDES permits must conform with Anti-backsliding requirements discussed in section III.C.5 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 effluent limitations in this Order are at least as stringent as the effluent limitations in Order No. R9-2010-0086. This permit complies with all applicable federal and State Anti-backsliding regulations.

2. Satisfaction of Antidegradation Policies

The WDRs for the Discharger must conform with antidegradation requirements discussed in section III.C.4 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 TBELs are at least as stringent as the TBELs in Order No. R9-2010-0086, and no degradation of the receiving water is expected.

Order No. R9-2010-0086 did not contain WQBELs. This Order adds WQBELs for total chlorine residual and chronic toxicity.

This Order complies with the antidegradation provision of 40 CFR section 131.12 and State Water Board Resolution No. 68-16.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and WQBELs for individual pollutants. The TBELs consist of restrictions on $CBOD_5$, TSS, oil and grease, settleable solids, turbidity and pH. Restrictions on these pollutants are discussed in section IV.B 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 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 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 CWA.

E. Interim Effluent Limitations – Not Applicable

F. Land Discharge Specifications – Not Applicable

G. Recycling Specifications – Not Applicable

V. 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.

Prior to 2009, the San Diego Water Board interpreted the Bacterial Characteristics 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 Bacterial Standards apply throughout State of California 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.

VI. RATIONALE FOR PROVISIONS

A. 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) 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).

B. Special Provisions

1. Reopener Provisions

This Order may be reopened and modified, revoked and reissued, or terminated in accordance with the provisions of 40 CFR parts 122, 123, 124, and 125. The San Diego Water Board may reopen this Order to modify permit conditions and requirements. Causes for modifications include, but are not limited to, increased/modified receiving water requirements and participation in the Southern California Coastal Water Research Project (SCCWRP) model monitoring program; the promulgation of new regulations; modification in sludge use or disposal practices; or adoption of new regulations by the State Water Board or the San Diego Water Board, including revisions to the Basin Plan or Ocean Plan.

2. Special Studies and Additional Monitoring Requirements

a. Spill Prevention and Response Plans

The CWA largely prohibits any discharge of pollutants from point sources to waters of the U.S. except as authorized under an NPDES permit. In general, any point source discharge of sewage effluent to waters of the U.S. 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 U.S. is illegal under the 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 Prohibition III.A of the Order prohibits the discharge of waste from HARRF and the MFRO Facility 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 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 Discharger to maintain and implement Spill Prevention and Response Plans.

b. **Spill Reporting Requirements**

To determine compliance with Discharge Prohibition III.A and provide appropriate notification to the general public for the protection of public health, spill reporting requirements have been established in section VI.C.2.b of this Order.

3. Best Management Practices and Pollution Prevention

The Pollutant Minimization Program is based on the requirements of the section III.C.9 of the Ocean Plan.

4. Construction, Operation, and Maintenance Specifications

This provision is based on the requirements of 40 CFR section 122.41(e).

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

a. **Treatment Plant Capacity**

Order No. R9-2010-0086 required the Discharger to submit a written report to the Executive Officer within 90 days after the monthly average influent flow rate equals or exceeds 75 percent of the secondary treatment design capacity of HARRF. In lieu of a written report for each time the monthly average influent flow rate equals or exceeds 75 percent of the secondary treatment design capacity, the requirement has been changed to require the report be submitted four years prior to the time wastewater flow are projected to reach plant capacity, as stated in title 23, section 2232 of the CCR. The revised requirement states:

Four years prior to reaching POTW design capacity, the Discharger 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 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.

b. **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 Discharger's implementation and enforcement of its approved pretreatment program is an enforceable condition of this Order. If the Discharger fails to perform the pretreatment functions, the San Diego Water Board, the State Water Board, or USEPA may take enforcement actions against the Discharger as authorized by the CWA and the Water Code.

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

The use and disposal of biosolids within the U.S. is regulated under State and federal laws and regulations, including permitting requirements and technical standards included in 40 CFR part 503. The Discharger is required to comply with the standards and time schedules contained in 40 CFR part 503 for biosolids used or disposed of within the U.S.

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 Discharger disposes of solids in compliance with State and federal regulations have been included in this Order.

d. **Collection System**

The State Water Board issued Order 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 publicly owned treatment facility 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 Discharger and public

agencies that are discharging wastewater into the facility's collection system were required to obtain enrollment for regulation under the Statewide General SSO Order by December 1, 2006.

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).* Order No. R9-2007-0005 is more stringent and prescriptive than the Statewide General SSO Order. Agencies that are enrolled under the Statewide General SSO Order are also required to also comply with the Regional General SSO Order.

e. **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. Other Special Provisions – Not Applicable

7. Compliance Schedules – Not Applicable

VII. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

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 sections 13267 and 13383 also authorize 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 State and federal requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP (Attachment E).

A. Core Monitoring Requirements

1. Influent Monitoring

Influent monitoring is required to determine the effectiveness of the pretreatment and non-industrial source control programs, to assess the performance of treatment facilities,

and to evaluate compliance with effluent limitations. Influent monitoring requirements have been carried over from Order No. R9-2010-0086.

Refer to section III.A of the MRP (Attachment E).

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 Order No. R9-2010-0086, with the following exceptions.

This Order adds Monitoring location EFF-002, to account for the addition of the proposed MFRO Facility. This Order add Monitoring Location EFF-003 as a flow-weighted combined sample from HARRF (Monitoring Location EFF-001) and the MFRO Facility (Monitoring Location EFF-002). Monitoring Location EFF-003 is not a physical location since the discharge from the MFRO Facility comingles with discharges from Stone Brewing Co. and Palomar Energy Center before commingling with the discharges from HARRF. Monitoring for a majority of the parameters is required at Monitoring Location EFF-003, except for flow, pH, temperature, dissolved oxygen and total residual chlorine. The holding times are short for pH, temperature, dissolved oxygen and total residual chlorine. Thus, the analysis needs to take place immediately at each facility (HARRF and the MFRO Facility).

To ensure the flow effluent limitation is met, this Order adds Monitoring Location EFF-004.

This Order decreases the monitoring frequency for metals, cyanide, phenols, endosulfan, endrin, and HCH from quarterly to semiannually, since the RPA resulted in Endpoint 2 for these parameters, for both this Order and for Order No. R9-2010-0086 and a minimum of 10 data point is needed to conduct the RPA over the course of the five-year permit.

To evaluate whether the dilution credit established in Order No. R9-2005-0101 is still applicable and appropriate and to re-assess the dilution credit if the brine discharges from the MFRO Facility and/or San Elijo JPA's San Elijo Water Reclamation Facility (regulated by NPDES No. CA0107999) changes effluent quality discharged at Discharge Point No. 001, this Order adds monthly salinity monitoring.

To ensure the effluent flow limitation is meet, this Order adds Monitoring Location EFF-004004, a location downstream of all wastewater discharged to the ELO (e.g., secondary-treated effluent and brine) that could be obtained or accounted for, before combining with wastewaters from the San Elijo Water Reclamation Facility and other wastewaters in the SEOO line.

For this Order, the Discharger 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 1 of the Ocean Plan). Total chromium includes both chromium (VI) and chromium (III) and the federal CWA has no analytical method for chromium (III)[7].

[7] 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.

Thus, this Order allows the Discharger to also meet the objective for chromium (III) as a total chromium objective. If the Discharger 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.

Refer to section III.B of the MRP (Attachment E).

3. Whole Effluent Toxicity Testing Requirements

This Order contains a chronic toxicity effluent limitation as described in section IV.C.5 of this Fact Sheet.

Consistent with the requirements of the Ocean Plan, section III.C.5 of the MRP (Attachment E) requires the Discharger 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 Discharger intends 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 1 of the Ocean Plan. To determine if the discharge consistently exceeds the toxicity effluent limitation, this Order requires the Discharger 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 Discharger is required to submit a Detailed TRE Work Plan in accordance with the its submitted Initial Investigation TRE Work Plan and USEPA guidance[8] which shall include: further steps taken by the Discharger to investigate, identify, and correct the causes of toxicity; actions the Discharger will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and a schedule for these actions. The Discharger must 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 Discharger must take all reasonable steps to reduce the toxicity to meet the chronic toxicity effluent limitation identified in section IV.A of this Order.

The above accelerated monitoring (a minimum of four 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 Discharger 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 those effluent limitation, and a time schedule for implementation of any planned corrective actions. The Discharger must implement any planned corrective actions in the TRE Final Report in accordance with the

[8] 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 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).

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 III.C of the MRP (Attachment E).

4. Land Discharge Monitoring Requirements – Not Applicable

5. Recycling Monitoring Requirements – Not Applicable

B. Receiving Water Monitoring Requirements

The receiving water and sediment monitoring requirements set forth below are designed to measure the effects of the SEOO 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 IV of the MRP (Attachment E).

1. Surf Zone Water Quality Monitoring Requirements

Surf zone water quality monitoring is required to determine if the effluent is causing or contributing to exceedances in the water quality standards in the surf zone, the area where the ocean surface waves come closer to shore and break. For surf zone stations S-1 through S-5, S-7, and S-8, weekly monitoring for total and fecal coliform and enterococcus bacteria has been carried over from Order No. R9-2010-0086. The Ocean Plan requires repeat sampling if a single sample exceeds any of the bacterial single sample maximum standards. This requirement has been added to this Order for the surf zone water quality monitoring requirements.

In the previous order, Order No. R9-2005-0101, surf zone station S-6 (mouth of the San Elijo Lagoon) was made historical. Surf zone station S-6 consistently had measurable levels of total and fecal coliform and enterococcus bacteria, while the other surf zone stations were in compliance with the bacterial water quality objectives of the Ocean Plan. Order No. R9-2005-0101 created surf zone station S-8, 4000 feet north of the outfall.

Refer to section IV.A of the MRP (Attachment E).

2. Near Shore and Offshore Monitoring Requirements

Near shore and offshore water quality monitoring is required to determine if the effluent is causing or contributing to exceedances in the water quality standards outside of the ZID, to determine the fate of the effluent plume, and to gather data for future permit reissuances. Near shore and offshore monitoring requirements have been carried over from Order No. R9-2010-0086 with the following exceptions:

a. For near shore monitoring requirements, this Order adds monitoring requirements for temperature, depth, dissolved oxygen, light transmittance, pH, and salinity to better understand the characteristics of the wastewater plume.

b. For offshore monitoring requirements, this Order changes the pH monitoring from a grab sample at the surface to profile monitoring; and the temperature, dissolved oxygen, and light transmittance monitoring from surface, mid-depth, and bottom to profile monitoring. Additionally, measurements of salinity were added to the offshore monitoring requirements. These changes are also made to better understand the characteristics of the wastewater plume.

c. Monitoring frequency at near shore 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 Monitoring Program and Dilution Study.

Refer to sections IV.B of the MRP (Attachment E).

3. Benthic Monitoring Requirements

Sediments integrate constituents that are discharged to the ocean. Most particles that come from the SEOO 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 has degraded and beneficial uses are impaired.

The MRP (Attachment E) requires periodic assessment of sediment quality to evaluate potential effects of the SEOO 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 Order No. R9-2010-0086 to provide more detail on monitoring frequency, methods, and analyses. Consistent with Appendix III of the Ocean Plan, this Order adds monitoring requirements for ammonia (expressed as nitrogen), selenium, pesticides, chlorinated hydrocarbons, DDT, PCBs, and PAHs to help determine if concentrations of pollutants in marine sediments are at levels that would degrade the benthic community.

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.

Several projects that require dredging, such as the San Elijo Lagoon Restoration Project (Project)[9], are planned to take place during the first three years of the five-year permit term. The Project has the potential to generate approximately 750,000 cubic yards (CY) of excess sediment through dredging operations in the San Elijo Lagoon. Dredged material from the Project will be used for onshore beach replenishment at Solana Beach and Cardiff Beach (approximately 450,000 CY) and offshore stockpiling at SO-6 (approximately 300,000 CY). The SO-6 offshore stockpile site is approximately 500 feet south of SEOO at a maximum depth of 65 feet. Due to the large volume of sediment and close proximity of the SO-6 offshore stockpile site, sediment deposition from the Project has the potential to impact benthic communities and alter chemical and physical

[9] On June 14, 2017, the San Diego Water Board issued *Clean Water Act Section 401 Water Quality Certification and Waste Discharge Requirements for Discharge of Dredged and/or Fill Materials, San Elijo Lagoon Restoration Certification Number R9-2016-0111 WDID: 9000003036.*

properties of seafloor sediments around the SEOO. However, the sediment deposition from the Project will likely have limited or no impact on the benthic monitoring locations, as these sediment monitoring locations are at a depth of approximately 120 feet as compared to the SO-6 site with a maximum depth of 65 feet. Benthic monitoring requirements in this Order may be used to establish a new baseline for sediment quality around the SEOO to determine if benthic communities are being degraded as a result of the SEOO discharge.~~The sediment from these projects will be used for beach replenishment and/or disposed of at the LA-5 offshore disposal site. The LA-5 disposal site is approximately miles northwest of the San Elijo Ocean Outfall at a depth of 460-660 feet.~~ To further reduce the potential for physical stressors to the benthic community from~~interference with the~~ dredging operations, receiving water sediment monitoring may be conducted anytime within the permit term, with the results due at least 180 days before the permit expires. This Order requires the development of a Sediment 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.

Refer to section IV.C of the MRP (Attachment E).

4. Fish and Invertebrate Monitoring Requirements

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.

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.

Fish and Invertebrate monitoring requirements have been updated from Order No. R9-2010-0086 to provide more detail on methods and data analyses. This Order increases the width of band transects from 1 meter to 2 meters, consistent with sampling methods employed by biological divers of the California State Department of Fish and Wildlife. This Order also changes the monitoring period from once during the permit term to once in the permit term, with the results due at least 180 days before the permit expires.

Trawling, a standard method for fish and invertebrate monitoring used in other NPDES permits and regional monitoring programs (e.g., Southern California Bight Regional Monitoring Program), was considered to replace diver surveys in this Order to better characterize the fish and invertebrate communities near the outfall and to collect fish for fish tissue analyses. However, SEOO is within Swami's State Marine Conservation Area (SMCA), an area set aside to protect groundfish species and deep-water habitats. While the California State Department of Fish and Wildlife stated trawling may be approved under a Scientific Collectors Permit (SCP) for NPDES permit compliance, this method was not added to this Order to preserve the goal of the SMCA (R. Win, California Department of Fish and Wildlife, personal communication, November 21, 2017).

Order No. R9-2010-0086 did not require the collection of fish tissue samples to determine if concentrations of pollutants are bioaccumulating to levels that are harmful to

human health or degrade marine communities. Consistent with requirements in Appendix III of the Ocean Plan, this Order creates three additional monitoring stations, designated for Rig Fishing, where hook and line fishing must be used to collect muscle tissue from selected fish species. The fish targeted for tissue analysis are: 1) rockfish, which are commonly targeted by commercial and recreational fishers; and 2) flatfish, which have greater exposure to pollutants sources such as sediment and sediment-dwelling prey. The Rig Fishing stations represent one nearfield (RF), one southern farfield (RF8S), and one northern farfield (RF8N) areas. While SEOO is within Swami's SMCA, the California State Department of Fish and Wildlife stated that hook and line fishing to collect fish tissue samples will likely be approved under a SCP, with restrictions on overfished species such as canary and cowcod rockfish (R. Win, California Department of Fish and Wildlife, personal communication, November 21, 2017).

Refer to section IV.D of the MRP (Attachment E).

5. Groundwater Monitoring Requirements – Not Applicable

C. 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 Discharger 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.

Refer to section V of the MRP (Attachment E).

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 V.A of the MRP (Attachment E).

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 U.S. 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.

The Discharger is 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 sections 13267 and 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, the Discharger's receiving water sampling and analytical effort, as defined in section IV of the MRP (Attachment E), may be reallocated to provide a regional assessment of the impact of the discharge of municipal wastewater to the Southern California Bight. In that event, the San Diego Water Board shall notify the Discharger in writing that the requirement to perform the receiving water sampling and analytical effort defined in section IV 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 IV 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 Discharger agree otherwise. The specific scope and duration of the receiving water monitoring program reallocation and redirection shall be determined and set by the San Diego Water Board, in consultation with the Discharger.

Refer to section V.B of the MRP (Attachment E).

D. Special Studies Requirements

1. **Climate Change Action Plan**. Changing climate conditions may fundamentally alter the way publicly-owned treatment works are designed and operated. Climate change research indicates the overarching driver of change is increased atmospheric carbon dioxide (CO_2) from human activity. The increased CO_2 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 Dischargers facilities (e.g. flooding, increased influent flows during wet weather, and heat waves). The changes to the water

temperature and pH may affect how the receiving waters reacts to the discharges. This Order requires the Discharger to prepare and submit a Climate Change Action Plan (CCAP) within three years of the effective date of this Order.

2. **Minimum Initial Dilution Factor Re-Evaluation Study.** This Order includes a requirement to conduct a study to re-evaluate the minimum initial dilution factor (Dm) for SEOO established in Order No. R9 2005-0101 and reinstated in this Order. The addition of the brine discharge from the Membrane Filtration/Reverse Osmosis (MFRO) Facility has the potential to change the salinity of the SEOO effluent, which may affect the Dm. The implementation provisions for Table 1 in section III.C of the Ocean Plan specify that the minimum 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. For Order No. R9 2005-0101, the San Diego Water Board, with assistance from the State Water Board, had determined the Dm, for the SEOO to be 237 parts seawater to 1 part wastewater (237:1), using the USEPA approved computer modeling application Visual Plumes with the UM3 model.

3. **Plume Tracking Study.** This Order includes a requirement to conduct a Plume Tracking Study. Plume tracking is necessary to determine if the plume is moving towards the shore or surface where it may encroach upon water ~~contact~~ recreation ~~zones~~areas. Additionally, plume direction and mixing has a direct effect on sediment loading as the direction of the plume determines where the discharged particles will eventually settle. While near shore and offshore monitoring can identify if the plume is encroaching upon the water ~~contact~~ recreation area~~zone~~ during typical oceanographic conditions, infrequent sampling at preset intervals is unable to capture atypical oceanographic conditions that may lead to abnormal plume behavior. Additionally, the brine discharge from the Membrane Filtration/Reverse Osmosis (MFRO) facility has the potential to change effluent quality and plume dynamics, as the increased salinity may affect the buoyancy of the plume. The Plume Tracking Study will be used to evaluate whether the monitoring methods and locations established in Order No. R9-2005-0101 and reinstated in this Order are still appropriate and applicable.

E. Other Monitoring Requirements

Discharge Monitoring Report-Quality Assurance (DMR-QA) Study Program. Under the authority of section 308 of the 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 Discharger 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 Discharger 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 Discharger shall 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 I.H of the MRP (Attachment E)

VIII. PUBLIC PARTICIPATION

The San Diego Water Board has considered the issuance of WDRs that will serve as an NPDES permit for HARFF and the MFRO Facility. As a step in the WDR adoption process, the San Diego Water Board staff has developed tentative WDRs and has 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.

A. Notification of Interested Parties

The San Diego Water Board notified the Discharger and interested agencies and persons of its intent to prescribe WDRs for the discharge and provided an opportunity to submit written comments and recommendations. Notification was provided through in the North County Union Tribune on January 27, 2018. The Tentative Order was also posted on the San Diego Water Board website and emailed to the Discharger and all known interested parties on January 26, 2018.

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: http://www.waterboards.ca.gov/sandiego/.

B. 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 26, 2018.

C. 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: April 11, 2018
Time: 9:00 AM
Location: ~~City of Mission Viejo~~San Diego Water Board
~~Council Chambers~~Board Meeting Room
~~200 Civic Center~~2375 Northside Drive, Suite 108
~~Mission Viejo, California 92691~~San Diego, California 92108

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.

D. 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 California Code of Regulations, 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:

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

Or by email at waterqualitypetitions@waterboards.ca.gov

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

E. Information and Copying

The 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.

F. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding the WDRs and NPDES permit should contact the San Diego Water Board, reference this facility, and provide a name, address, and phone number.

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to 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

A. Ocean Plan Discharge Prohibitions

1. The Discharge of any radiological chemical, or biological warfare agent or high-level radioactive waste into the ocean is prohibited.
2. Waste shall not be discharged to designated Areas of Special Biological Significance except as provided in Chapter III.E. of the Ocean Plan.
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.
4. It is the policy of the State Water Board that the treatment, use and disposal of sewage sludge shall be carried out in the manner found to have the least adverse impact on the total natural and human environment. Therefore, if federal law is amended to permit such discharge, which could affect California waters, the State Water Board may consider requests for exceptions to this section under Chapter III. J of this Plan, provided further that an Environmental Impact Report on the proposed project shows clearly that any available alternative disposal method will have a greater adverse environmental impact than the proposed project.
5. The by-passing of untreated wastes containing concentrations of pollutants in excess of those of Table 1 or Table 2 [of the Ocean Plan] is prohibited.
6. 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. Compliance with this prohibition of discharge shall be achieved as follows:
    a. Dischargers with NPDES permits that contain specific requirements for the control of Trash that are consistent with these Trash Provisions shall be determined to be in compliance with this prohibition if the dischargers are in full compliance with such requirements.
    b. Dischargers with non-NPDES waste discharge requirements (WDRs) or waivers of WDRs that contain specific requirements for the control of Trash shall be determined to be in compliance with this prohibition if the dischargers are in full compliance with such requirements.
    c. Dischargers with NPDES permits, WDRs, or waivers of WDRs that do not contain specific requirements for the control of Trash are exempt from these Trash Provisions.
    d. Dischargers without NPDES permits, WDRs, or waivers of WDRs must comply with this prohibition of discharge.
    e. Chapter III.I.6.b and Chapter III.L.3 notwithstanding, this prohibition of discharge applies to the discharge of preproduction plastic by manufacturers of preproduction plastics, transporters of preproduction plastics, and manufacturers that use preproduction plastics in the manufacture of other products to surface waters of the State, or the deposition of preproduction plastic where it may be discharged into

surface waters of the State, unless the discharger is subject to a NPDES permit for discharges of storm water associated with industrial activity.

B. Basin Plan Discharge Prohibitions

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. The discharge of waste to land, except as authorized by waste discharge requirements (WDRs) of the terms described in Water Code section 13264 is prohibited.
3. The discharge of pollutants or dredged or fill material to waters of the U.S. 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.
4. Discharges of recycled water to lakes or reservoirs used for municipal water supply or to inland surface water tributaries thereto are prohibited, unless this San Diego Water Board issues an NPDES permit authorizing such a discharge; the proposed discharge has been approved by the State Water Board Division of Drinking Water (DDW) and the operating agency of the impacted reservoir; and the discharger has an approved fail-safe long-term disposal alternative.
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.
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.
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 its being transported into the waters, is prohibited unless authorized by the San Diego Water Board.
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 fire fighting activities.] [Section 122.26 amended at 56 FR 56553, November 5, 1991; 57 FR 11412, April 2, 1992].
9. The unauthorized discharge of treated or untreated sewage to waters of the State or to a storm water conveyance system is prohibited.
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.

11. The discharge of radioactive wastes amenable to alternative methods of disposal into the waters of the State is prohibited.
12. The discharge of any radiological, chemical, or biological warfare agent into waters of the State is prohibited.
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.
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.
15. The discharge of treated or untreated sewage from vessels to Mission Bay, Oceanside Harbor, Dana Point Harbor, or other small boat harbors is prohibited.
16. The discharge of untreated sewage from vessels to San Diego Bay is prohibited.
17. The discharge of treated sewage from vessels to portions of San Diego Bay that are less than 30 feet deep at MLLW is prohibited.
18. The discharge of treated sewage from vessels, which do not have a properly functioning USCG certified Type 1 or Type II marine sanitation device, to portions of San Diego Bay that are greater than 30 feet deep at MLLW is prohibited.