

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations (CFR) at 40 CFR 122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Board to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements that implement the federal and California regulations.

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 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 Regional Water Board. Samples shall be collected at times representative of “worst case” conditions with respect to compliance with the requirements of Order No. R9-2006-0055.
- 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 measurements are 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 ± 10 percent from true discharge rates throughout the range of expected discharge volumes.
- C.** Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved at 40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act* as amended, or unless other test procedures are specified in Order No. R9-2006-0055 and/or in this MRP and/or by the Regional Water Board.
- D.** All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or a laboratory approved by the Regional Water Board.
- E.** Records of monitoring information shall include information required under Standard Provision 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 ten percent of the samples or at least one sample per month, whichever is greater. A similar frequency shall be maintained for analyzing spiked samples. When requested by USEPA or the Regional Water Board, the Discharger will participate in the NPDES discharge monitoring report QA performance study. The Discharger should have a success rate equal or greater than 80 percent.
- H. Analysis for toxic pollutants, including acute and chronic toxicity, with effluent limitations and performance goals based on water quality objectives of the Ocean Plan shall be conducted in accordance with procedures described in the Ocean Plan and restated in this MRP.
- I. This permit may be modified in accordance with the requirements set forth at 40 CFR Parts 122 and 124, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any USEPA approved, new, state water quality standards applicable to effluent toxicity.

II. MONITORING LOCATIONS

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

Table 1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
	M-INFA	At the South Orange County Wastewater Authority (SOCWA) Joint Regional Plant (JRP) and at a location where all influent flows to the treatment plant are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected.
	M-INFB	At the SOCWA Coastal Treatment Plant (TP) and at a location where all influent flows to the treatment plant are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected.
	M-INFC	At the Los Alisos Water Reclamation Plant (WRP) and at a location where all influent flows to the treatment plant are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected.
	M-INFD	At the El Toro Water Recycling Plant (WRP) and at a location where all influent flows to the treatment plant are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected.

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
Outfall 001	M-001	Sampling will not physically occur at this monitoring location. This monitoring location represents a combined sample from all contributors to the Ocean Outfall. Samples shall be taken from Monitoring Locations M-001A, M-001B, M-001C, M-001D, M-001E, and M-001F, as described further below.
	M-001A	Final effluent from the SOCWA JRP and downstream of any in-plant return flows and disinfection units where representative samples of effluent treated solely at the treatment plant can be collected.
	M-001B	Final effluent from the SOCWA Coastal TP and downstream of any in-plant return flows and disinfection units where representative samples of effluent treated solely at the treatment plant can be collected.
	M-001C	Final effluent from the Los Alisos WRP and downstream of any in-plant return flows and disinfection units where representative samples of effluent treated solely at the treatment plant can be collected.
	M-001D	Final effluent from the El Toro WRP and downstream of any in-plant return flows and disinfection units where representative samples of effluent treated solely at the treatment plant can be collected.
	M-001E	Brine discharge from the Irvine Desalter Project (IDP) potable water treatment system prior to mixing with any other flows directed to the Ocean Outfall.
	M-001F	Non-potable treated groundwater from the IDP Shallow Groundwater Unit (SGU) prior to mixing with any other flows directed to the Ocean Outfall.
- Receiving Water Monitoring Stations -		
- Surf Zone Monitoring Stations -		
	S1	Surf 20,000 ft south of the outfall
	S2	Surf 15,000 ft south of the outfall
	S3	Surf 10,000 ft south of the outfall
	S4	Surf 5,000 ft south of the outfall
	S5	Surf 4,000 ft south of the outfall
	S6	Surf 3,000 ft south of the outfall
	S7	Surf 2,000 ft south of the outfall
	S8	Surf 1,000 ft south of the outfall
	S9	Surf at outfall
	S10	Surf 1,000 feet north of outfall
	S11	Surf 2,000 feet north of outfall
	S12	Surf 3,000 feet north of outfall
	S13	Surf 4,000 feet north of outfall
	S14	Surf 5,000 feet north of outfall
	S15	Surf 10,000 feet north of outfall
	S16	Surf 15,000 feet north of outfall
- Near Shore Monitoring Stations -		
	N1	1,000 feet offshore, 2,500 feet south of the outfall
	N2	1,000 feet offshore, 1,000 feet south of the outfall
	N3	1,000 feet offshore, 500 feet south of the outfall
	N4	1,000 feet offshore, at the outfall

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
	N5	1,000 feet offshore, 500 feet south of the outfall
	N6	1,000 feet offshore, 1,000 feet south of the outfall
	N7	1,000 feet offshore, 2,500 feet south of the outfall
- Offshore Monitoring Stations -		
	A1 – A4	At the corners of a 1,000 ft x 1,000 ft square having one side parallel to shore and the intersection of its diagonal located at the center of the outfall diffuser section. Station A1 shall be located at the northeastern corner and Stations A2 through A4 at successive corners in a clockwise direction.
	A5	At the intersection of the diagonals of the above square
	B1	One mile down-coast from the outfall, and over the same depth contour as Station A5
	B2	One mile up-coast from the outfall, and over the same depth contour as Station A5

CORE MONITORING

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations M-INFA, M-INFB, M-INFC, and M-INFD

1. The Discharger shall monitor the influent to all treatment plants, which shall be located upstream of any in-plant return flows, and where representative samples of the influent can be obtained. Influent samples shall be collected on the same day as, and shortly before the collection of effluent samples. Sampling shall be monitored as follows:

Table 2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Recorder / Totalizer	Continuous
Carbonaceous Biochemical Oxygen Demand (CBOD ₅) (5-day @ 20° C)	mg/L	24-Hour Composite	Weekly
Biochemical Oxygen Demand (BOD ₅) (5-(5-day @ 20° C)	mg/L	24-Hour Composite	Monthly
Total Suspended Solids (TSS)	mg/L	24 Hour Composite	Weekly

2. The Discharger shall calculate and report the CBOD₅, TSS and BOD₅ mass influent for the days when the influent is sampled for these constituents. Calculation of influent mass shall be in accordance with Provision VII.G of Order No. R9-2006-0055.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Locations M-001A, M-001B, M-001C, and M-001D

1. The Discharger shall monitor secondary effluent after all in-plant return flows, and disinfection units, where representative samples of the effluent discharged through the ocean outfall can be obtained. During periods where no effluent from a particular treatment plant is discharged to the Pacific Ocean through the Ocean Outfall, no effluent monitoring, except for flowrate monitoring, is required at that treatment plant. The following shall constitute the effluent monitoring program:

Table 3. Municipal Wastewater Treatment Plant Effluent Monitoring

Parameter	Units	Sample Type ¹	Minimum Sampling Frequency
Flow ²	MGD	Recorder / Totalizer	Continuous
CBOD ₅	mg/L	24 Hr Composite	Daily
BOD ₅	mg/L	24 Hr Composite	Monthly
TSS	mg/L	24 Hr Composite	Daily
pH	mg/L	Grab	Daily

Parameter	Units	Sample Type ¹	Minimum Sampling Frequency
Oil and Grease	mg/L	Grab	Monthly
Settleable Solids	ml/L	Grab	Daily
Turbidity	NTU	24 Hr Composite	Weekly ³
CBOD ₅ , Percent Removal	%	Calculate	Daily
TSS, Percent Removal	%	Calculate	Daily

- ¹ For samples which are to be physically composited prior to analyses, or for the results of analyses that are to be arithmetically composited, the basis for compositing shall be the rate of discharge to the ocean, not the rate of inflow to the plant.
- ² Report the total daily effluent flow and the monthly average effluent flow.
- ³ Five days per week except seven days per week for at least one week during July or August of each year.

- The Discharger shall calculate and report the CBOD₅, TSS and BOD₅ effluent mass emission rate for the days when the effluent is sampled for these constituents. Calculation of effluent mass emission rate shall be in accordance with Provision VII.G of Order No. R9-2006-0055.
- The Discharger shall calculate the daily percent average removal and report the monthly average percent removal for CBOD₅, BOD₅ and TSS in accordance with Provision VII.H of Order No. R9-2006-0055.

B. Monitoring Location M-001

The Discharger shall monitor the combined effluent through the Ocean Outfall. Monitoring Location M-001 has been established to enable reporting for the combined discharges through the Ocean Outfall. Because a representative sampling point does not exist for the final Ocean Outfall discharge, sampling will not physically occur at Monitoring Location M-001. Monitoring Location M-001 represents a combined sample from all contributors to the Ocean Outfall. Samples shall be taken from Monitoring Locations M-001A, M-001B, M-001C, M-001D, M-001E, and M-001F. The following shall constitute the effluent monitoring program:

Table 4. Combined Effluent from the Aliso Creek Ocean Outfall

Parameter	Units	Sample Type ¹	Minimum Sampling Frequency
Flow ²	MGD	Recorder / Totalizer	Continuous
Dissolved Oxygen	mg/L	Grab	Weekly
Temperature	° F	Grab	Weekly
Total Residual Chlorine ⁵	µg/L	Grab	Daily
Arsenic	µg/L	24 Hr Composite	Quarterly ^{3, 4}
Cadmium	µg/L	24 Hr Composite	Quarterly ^{3, 4}
Chromium (VI)	µg/L	24 Hr Composite	Quarterly ^{3, 4, 6}
Copper	µg/L	24 Hr Composite	Quarterly ^{3, 4}
Lead	µg/L	24 Hr Composite	Quarterly ^{3, 4}
Mercury	µg/L	24 Hr Composite	Quarterly ^{3, 4}

Parameter	Units	Sample Type ¹	Minimum Sampling Frequency
Nickel	µg/L	24 Hr Composite	Quarterly ^{3,4}
Selenium	µg/L	24 Hr Composite	Quarterly ^{3,4}
Silver	µg/L	24 Hr Composite	Quarterly ^{3,4}
Zinc	µg/L	24 Hr Composite	Quarterly ^{3,4}
Cyanide	µg/L	24 Hr Composite	Quarterly ^{3,4}
Ammonia	mg/L	24 Hr Composite	Monthly ³
Non-Chlorinated Phenolic Compounds	µg/L	24 Hr Composite	Quarterly ^{3,4}
Chlorinated Phenolics	µg/L	24 Hr Composite	Quarterly ^{3,4}
Endosulfan	µg/L	24 Hr Composite	Quarterly ^{3,4}
Endrin	µg/L	24 Hr Composite	Quarterly ^{3,4}
HCH	µg/L	24 Hr Composite	Quarterly ^{3,4}
Radioactivity	pCi/L	Grab	Quarterly ^{3,7}
Acrolein	µg/L	Grab	Semiannually ³
Antimony	µg/L	24 Hr Composite	Semiannually ³
Bis (2-Chloroethoxy) Methane	µg/L	Grab	Semiannually ³
Bis (2-Chloroisopropyl) Ether	µg/L	Grab	Semiannually ³
Chlorobenzene	µg/L	Grab	Semiannually ³
Chromium (Trivalent)	µg/L	24 Hr Composite	Semiannually ³
Di-N-Butyl Phthalate	µg/L	Grab	Semiannually ³
Dichlorobenzenes	µg/L	Grab	Semiannually ³
Diethyl Phthalate	µg/L	Grab	Semiannually ³
Dimethyl Phthalate	µg/L	Grab	Semiannually ³
4,6-Dinitro-2-Methylphenol	µg/L	Grab	Semiannually ³
2,4-Dinitrophenol	µg/L	Grab	Semiannually ³
Ethylbenzene	µg/L	Grab	Semiannually ³
Fluoranthene	µg/L	Grab	Semiannually ³
Hexachlorocyclopentadiene	µg/L	Grab	Semiannually ³
Nitrobenzene	µg/L	Grab	Semiannually ³
Thallium	µg/L	24 Hr Composite	Semiannually ³
Toluene	µg/L	Grab	Semiannually ³
1,1,1-Trichloroethane	µg/L	Grab	Semiannually ³
Tributyltin	µg/L	24 Hr Composite	Semiannually ³

Parameter	Units	Sample Type ¹	Minimum Sampling Frequency
Acrylonitrile	µg/L	Grab	Semiannually ³
Aldrin	µg/L	Grab	Semiannually ³
Benzene	µg/L	Grab	Semiannually ³
Benzidine	µg/L	Grab	Semiannually ³
Beryllium	µg/L	24 Hr Composite	Semiannually ³
Bis (2-Chloroethyl) Ether	µg/L	Grab	Semiannually ³
Bis (2-Ethylhexyl) Phthalate	µg/L	Grab	Semiannually ³
Carbon Tetrachloride	µg/L	Grab	Semiannually ³
Chlordane	µg/L	Grab	Semiannually ³
Chlorodibromomethane	µg/L	Grab	Semiannually ³
Chloroform	µg/L	Grab	Semiannually ³
DDT	µg/L	Grab	Semiannually ³
1,4-Dichlorobenzene	µg/L	Grab	Semiannually ³
3,3'-Dichlorobenzidine	µg/L	Grab	Semiannually ³
1,2-Dichloroethane	µg/L	Grab	Semiannually ³
1,1-Dichloroethylene	µg/L	Grab	Semiannually ³
Dichlorobromomethane	µg/L	Grab	Semiannually ³
Dichloromethane	µg/L	Grab	Semiannually ³
1,3-Dichloropropene	µg/L	Grab	Semiannually ³
Dieldrin	µg/L	Grab	Semiannually ³
2,4-Dinitrotoluene	µg/L	Grab	Semiannually ³
1,2-Diphenylhydrazine	µg/L	Grab	Semiannually ³
Halomethanes	µg/L	Grab	Semiannually ³
Heptachlor	µg/L	Grab	Semiannually ³
Heptachlor Epoxide	µg/L	Grab	Semiannually ³
Hexachlorobenzene	µg/L	Grab	Semiannually ³
Hexachlorobutadiene	µg/L	Grab	Semiannually ³
Hexachloroethane	µg/L	Grab	Semiannually ³
Isophorone	µg/L	Grab	Semiannually ³
N-nitrosodimethylamine	µg/L	Grab	Semiannually ³
N-nitrosodi-N-propylamine	µg/L	Grab	Semiannually ³
N-nitrosodiphenylamine	µg/L	Grab	Semiannually ³
PAHs	µg/L	Grab	Semiannually ³
PCBs	µg/L	Grab	Semiannually ³
TCDD Equivalents	µg/L	Grab	Semiannually ³
1,1,2,2-Tetrachloroethane	µg/L	Grab	Semiannually ³
Tetrachloroethylene	µg/L	Grab	Semiannually ³
Toxaphene	µg/L	Grab	Semiannually ³
Trichloroethylene	µg/L	Grab	Semiannually ³
1,1,2-Trichloroethane	µg/L	Grab	Semiannually ³
2,4,6-Trichlorophenol	µg/L	Grab	Semiannually ³
Vinyl Chloride	µg/L	Grab	Semiannually ³

- ¹ For samples which are to be physically composited prior to analyses, or for the results of analyses that are to be arithmetically composited, the basis for compositing shall be the rate of discharge to the ocean, not the rate of inflow to the plant.
- ² Report the total daily effluent flow and the monthly average effluent flow.
- ³ 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 effluent limitation or performance specified in this Order for this constituent. 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 effluent limitations or performance goals specified in Order No. R9-2006-0055 for this constituent.
- ⁴ The minimum frequency of monitoring for this constituent is automatically reduced to annually if the results of 12 consecutive analyses, representing each month of the year, or the results of 24 consecutive analyses, representing each quarter of the year, are below the Ocean Plan 6-month median water quality objective for this constituent, or below the Minimum Level for this constituent in the matrix being analyzed, whichever is higher.
- ⁵ Monitoring of total chlorine residual is not required on days when none of the treatment units that are subject to Order No. R9-2006-0055 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.
- ⁶ The Discharger may, at its option, monitor for total chromium. If the measured total chromium concentration exceeds the hexavalent chromium limitation, it will be assumed that the hexavalent chromium limitation was exceeded unless the results of a hexavalent chromium analysis of a replicate sample indicate otherwise. When analyzing for hexavalent chromium, the appropriate sampling and analytical method must be used (i.e., 24-hour composite, cooled to 4° C and analyzed within 24 hours).
- ⁷ Analyses for radioactivity shall be by the following USEPA methods: Method 900.0 for gross alpha and gross beta, Method 903.0 or 903.1 for radium-226, Method 904.0 for radium-228, and Method 905.0 for strontium-90. Monitoring for radium-226 and radium-228 for an effluent sample is not required unless results for gross alpha for the same effluent sample exceed 60 pCi/L.

C. Monitoring Location M-001E

The Discharger shall monitor brine discharges from the IDP directed to the Ocean Outfall, where representative samples of the discharges prior to mixing with other wastewaters can be obtained. The following shall constitute the effluent monitoring program:

Table 5. IDP Brine Discharge Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ¹	MGD	Recorder / Totalizer	Continuous
TSS	mg/L	24 Hr Composite	Weekly
pH	mg/L	Grab	Weekly
Oil and Grease	mg/L	Grab	Weekly
Settleable Solids	ml/L	Grab	Weekly

¹ Report the total daily effluent flow and the monthly average effluent flow.

D. Monitoring Location M-001F

The Discharger shall collect representative samples from the discharge of treated groundwater from the IDP SGU prior to mixing with flows in the Ocean Outfall. The following shall constitute the effluent monitoring program:

Table 6. Treated Groundwater Discharge Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow ¹	MGD	Recorder / Totalizer	Continuous
TSS	mg/L	24 Hr Composite	Weekly
pH	mg/L	Grab	Weekly
Oil and Grease	mg/L	Grab	Weekly
Settleable Solids	ml/L	Grab	Weekly
Acrolein	µg/L	Grab	Monthly
Acrylonitrile	µg/L	Grab	Monthly
Benzene	µg/L	Grab	Monthly
Carbon Tetrachloride	µg/L	Grab	Monthly
Chlorobenzene	µg/L	Grab	Monthly
Chlorodibromomethane	µg/L	Grab	Monthly
Chloroform	µg/L	Grab	Monthly
Dichlorobromomethane	µg/L	Grab	Monthly
Dichloromethane	µg/L	Grab	Monthly
1,2-Dichloroethane	µg/L	Grab	Monthly
1,1-Dichloroethylene	µg/L	Grab	Monthly
1,3-Dichloropropene	µg/L	Grab	Monthly
Ethylbenzene	µg/L	Grab	Monthly
Halomethanes	µg/L	Grab	Monthly
1,1,2,2-Tetrachloroethane	µg/L	Grab	Monthly
Tetrachloroethylene	µg/L	Grab	Monthly
1,1,1-Trichloroethane	µg/L	Grab	Monthly
1,1,2-Trichloroethane	µg/L	Grab	Monthly
Trichloroethylene	µg/L	Grab	Monthly
Toluene	µg/L	Grab	Monthly
Vinyl Chloride	µg/L	Grab	Monthly

¹ Report the total daily effluent flow and the monthly average effluent flow.

E. Minimum Levels

For each numeric effluent limitation or performance goal for a constituent identified in Table B of the California Ocean Plan (2005), the Discharger shall select one or more Minimum Levels (ML) and their associated analytical methods from Appendix II of the 2005 Ocean Plan. For constituents listed in Appendix II, the Discharger shall submit an appropriate ML (and its associated analytical method) for determining

compliance with the effluent limitation (or conformance with the performance goal) for that constituent. All MLs must be approved by the Regional Water Board and/or the State Water Board. The “reported” ML is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from Appendix II. ML’s chosen by the Discharger must be approved by the Executive Officer.

1 Selection of Minimum Levels from Appendix II

The Discharger must select from all MLs from Appendix II that are below the effluent limitation or performance goal. If the effluent limitation or performance goal is lower than all the MLs in Appendix II, then the Discharger must select the lowest ML.

2. Use of Minimum Levels

- a. MLs, as defined in Appendix II of the 2005 Ocean Plan, represent the lowest quantifiable concentration in a sample based on the proper application of method-specific analytical procedures and the absence of matrix interferences. MLs also represent the lowest standard concentration in the calibration curve for a specific analytical technique after the application of appropriate method-specific factors.

Common analytical practices may require different treatment of the sample relative to the calibration standard. Some examples of these practices are given in Chapter III.C.5.a of the Ocean Plan.

- b. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied when 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 during the computation of the reporting limit. Application of such factors will alter the reported ML.
- c. The Discharger shall instruct its laboratories to establish calibration standards so that the ML (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. In accordance with the Ocean Plan, the Discharger’s laboratory may employ a calibration standard lower than the ML in Appendix II.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall conduct acute and chronic toxicity testing on effluent samples collected at Effluent Monitoring Station M-001 in accordance with the following schedule

and requirements. Monitoring Location M-001 has been established to enable reporting for the combined discharges through the Ocean Outfall. Because a representative sampling point does not exist for the final Ocean Outfall discharge, sampling will not physically occur at Monitoring Location M-001. Monitoring Location M-001 represents a combined sample from all contributors to the Ocean Outfall. Samples shall be taken from Monitoring Locations M-001A, M-001B, M-001C, M-001D, M-001E, and M-001F.

Table 7. Whole Effluent Toxicity Testing

Test	Unit	Sample	Minimum Test Frequency
Acute Toxicity	TU _a	24-Hr. Composite	Monthly
Chronic Toxicity	TU _c	24-Hr. Composite	Monthly

- A. Acute toxicity testing shall be performed using either a marine fish or invertebrate species in accordance with procedures established by the USEPA guidance manual, *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 5th Edition, October 2002 (EPA-821-R-02-012).
- B. Critical life stage toxicity tests shall be performed to measure chronic toxicity (TU_c). Testing shall be performed using methods outlined in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (Chapman, G.A., D.L. Denton, and J.M. Lazorchak, 1995) or *Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project* (SWRCB, 1996).
- C. A screening period for chronic toxicity shall be conducted every other year for 3 months, using a minimum of three test species with approved test protocols, from the following list (from the Ocean Plan). Other tests may be used, if they have been approved for such testing by the State Water Board. The test species shall include a fish, an invertebrate, and an aquatic plant. After the screening period, the most sensitive test species shall be used for the monthly testing. Repeat screening periods may be terminated after the first month if the most sensitive species is the same as found previously to be most sensitive. Dilution and control water should be obtained from an unaffected area of the receiving waters. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay test and reported with test results.
- D. If the toxicity testing result shows an exceedance of the chronic toxicity limitation identified in Section IV.B.3 of this Order, the Discharger shall:
 - 1. Take all reasonable measures necessary to immediately minimize toxicity; and
 - 2. Increase the frequency of the toxicity test(s) that showed a violation to at least two times per month until the results of at least two consecutive toxicity tests do not show violations.

If the Executive Order determines that toxicity testing shows consistent violation or exceedance of any acute or chronic toxicity limitation or performance goal identified in Section IV.B.3 of this Order, the Discharger shall conduct a Toxicity Reduction Evaluation (TRE) that includes all reasonable steps to identify the source of toxicity. Once the source of toxicity is identified, the Discharger shall take all reasonable steps to reduce the toxicity to meet the toxicity limitations identified in the final effluent limitations for Outfall 001 (Section IV.B.3 of this Order).

Table 8. Approved Tests for Chronic Toxicity

Species	Test	Tier ¹	Reference ²
giant kelp, <i>Macrocystis pyrifera</i>	Percent Germination; Germ Tube Length	1	a, c
red abalone, <i>Haliotis rufescens</i>	Abnormal Shell Development	1	a, c
oyster, <i>Crassostrea gigas</i> ; mussels, <i>Mytilus spp.</i>	Abnormal Shell Development; Percent Survival	1	a, c
urchin, <i>Strongylocentrotus purpuratus</i> ; sand dollar, <i>Dendraster excentricus</i>	Percent Normal Development	1	a, c
urchin, <i>Strongylocentrotus purpuratus</i> ; sand dollar, <i>Dendraster excentricus</i>	Percent Fertilization	1	a, c
shrimp, <i>Homesimysis costata</i>	Percent Survival; Growth	1	a, c
shrimp, <i>Mysidopsis bahia</i>	Percent Survival; Fecundity	2	b, d
topsmelt, <i>Atherinops affinis</i>	Larval Growth Rate; Percent Survival	1	a, c
Silversides, <i>Menidia beryllina</i>	Larval Growth Rate; Percent Survival	2	b, d

¹ First tier methods are preferred for compliance monitoring. If first tier organisms are not available, the Discharger can use a second tier test method following approval by the Regional Water Board.

² Protocol References:

- a. Chapman, G.A., D.L. Denton, and J.M. Lazorchak. 1995. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*. USEPA Report No. EPA/600/R-95/136.
- b. Klemm, D.J., G.E. Morrison, T.J. Norberg-King, W.J. Peltier, and M.A. Heber. 1994. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms*. USEPA Report No. EPA-600-4-91-003.
- c. SWRCB 1996. *Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project*. 96-1WQ.
- d. Weber, C.I., W.B. Horning, I.I., D.J. Klemm, T.W. Nieheisel, P.A. Lewis, E.L. Robinson, J. Menkedick and F. Kessler (eds). 1998. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*. EPA/600/4-87/028. National Information Service, Springfield, VA.

VI. RECEIVING WATER MONITORING REQUIREMENTS

Receiving water and sediment monitoring in the vicinity of the Ocean Outfall shall be conducted as specified below. Station location, sampling, sample preservation and analyses, when not specified, shall be by methods approved by the Executive Officer. The monitoring program may be modified by the Executive Officer at any time.

The receiving water and sediment monitoring program for the Ocean Outfall may be conducted jointly with other dischargers to the Ocean Outfall.

During monitoring events, if possible, 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

All surf zone stations shall be monitored as follows:

1. Grab samples shall be collected and analyzed for total and fecal coliform and enterococcus bacteria at a minimum frequency of twice per week.
2. Samples shall be collected in accordance with the Orange County Health Care Agency, Environmental Health.
3. At the same time samples are collected from surf zone stations, the following information shall be recorded: observation of wind direction and speed; weather (cloudy, sunny, or rainy); current direction; tidal conditions; observations of water color, discoloration, oil and grease, turbidity, odor, and materials of sewage origin in the water or on the beach; and water temperature ($^{\circ}$ F). The Discharger shall also record the status of the mouth of Aliso Creek (open, closed, flow, etc.).
4. If a surf zone water quality monitoring station consistently exceeds a coliform objective or exceeds a geometric mean enterococcus density of 24 organisms per 100 mL for a 30 day period or 12 organisms per 100 mL for a 6 month period, the Discharger shall conduct a survey to determine if discharges from the Ocean Outfall are the source of the contamination. If the survey indicates that elevated coliform and/or enterococcus levels are attributable to discharges from the Ocean Outfall, the Discharger shall take action to control the source.

B. Near Shore Water Quality Monitoring

All near shore monitoring stations shall be monitored as described below.

1. Reduced Monitoring

If the Executive Officer determines that the effluent at all times complies with Section IV.B Effluent Limitations and Performance Goals of Order No. R9-2006-0055, only reduced near shore water quality monitoring specified below is required.

Table 9a. Near Shore Water Quality Reduced Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	-	-	Monthly
Total and Fecal Coliform	Number / 100 mL	Grab ¹	Monthly
Enterococcus ²	Number / 100 mL	Grab ¹	Monthly

¹ At the surface

² If the Discharger demonstrates to the satisfaction of the Executive Officer, by means of daily analyses, that the concentrations of total and fecal coliform bacteria in the effluent are consistently less than 1,000 per mL, enterococcus monitoring may be suspended. The Discharger shall conduct the monitoring as specified unless the Executive Officer provides written authorization to suspend it. If this monitoring is suspended, the Discharger shall resume it at the request of the Executive Officer.

2. Intensive Monitoring

The intensive near shore water quality monitoring specified below is required during the 12-month period beginning July 1, 2008 through June 30, 2009, and must be submitted by August 1, 2011. This monitoring data will assist Regional Water Board staff in the evaluation of the Report of Waste Discharge. The intensive near shore water quality monitoring specified below is also required if the Executive Officer determines that the effluent does not at all times comply with Section IV.B Effluent Limitations and Performance Goals of Order No. R9-2006-0055.

Table 9b. Near Shore Water Quality Intensive Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	-	-	Monthly
Total and Fecal Coliform	Number / 100 mL	Grab ¹	Monthly
Enterococcus	Number / 100 mL	Grab ¹	Monthly

¹ At the surface and mid-depth.

C. Off Shore Water Quality Monitoring

All near shore monitoring stations shall be monitored as described below.

2. Reduced Monitoring

If the Executive Officer determines that the effluent at all times complies with Section IV.B Effluent Limitations and Performance Goals of Order No. R9-2006-0055, only reduced off shore water quality monitoring specified below is required.

Table 10a. Off Shore Water Quality Reduced Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	-	-	Monthly
Total and Fecal Coliform	Number / 100 mL	Grab ¹	Monthly
Enterococcus ²	Number / 100 mL	Grab ¹	Monthly

¹ At the surface and mid-depth.

² If the Discharger demonstrates to the satisfaction of the Executive Officer, by means of daily analyses, that the concentrations of total and fecal coliform bacteria in the effluent are consistently less than 1,000 per mL, enterococcus monitoring may be suspended. The Discharger shall conduct the monitoring as specified unless the Executive Officer provides written authorization to suspend it. If this monitoring is suspended, the Discharger shall resume it at the request of the Executive Officer.

3. Intensive Monitoring

The intensive off shore water quality monitoring specified below is required during the 12-month period beginning July 1, 2008 through June 30, 2009, and must be submitted by August 1, 2011. This monitoring data will assist Regional Water Board staff in the evaluation of the Report of Waste Discharge. The intensive off shore water quality monitoring specified below is also required if the Executive Officer determines that the effluent does not at all times comply with Section IV.B Effluent Limitations and Performance Goals of Order No. R9-2006-0055.

Table 10b. Off Shore Water Quality Intensive Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	-	-	Monthly
Total and Fecal Coliform	Number / 100 mL	Grab ¹	Monthly
Enterococcus	Number / 100 mL	Grab ¹	Monthly
Salinity, Temperature and Depth	Practical salinity units, ° C, feet	Instrument ²	Monthly
Dissolved Oxygen	mg/L	Grab ³	Monthly
Light Transmittance	Percent	Instrument ³	Monthly
pH	pH units	Grab ⁴	Monthly

¹ At the surface and mid-depth.

² At 1-meter intervals, surface to bottom.

³ At the surface, mid-depth, and bottom.

⁴ At the surface.

D. Benthic Monitoring

The intensive monitoring specified below is required during the 12-month period beginning July 1, 2008 through June 30, 2009, and must be submitted by August 1, 2011. This monitoring data will assist Regional Water Board staff in the evaluation of the Report of Waste Discharge. The sediment monitoring specified below is also

required if the Executive Officer determines that the effluent does not at all times comply with Section IV.B Effluent Limitations and Performance Goals of Order No. R9-2006-0055. Benthic monitoring shall be conducted at all off shore monitoring stations.

1. Sediment Characteristics. Analyses shall be performed on the upper 2 inches of core.

Table 11. Sediment Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Sulfides	mg/kg	Core	Semiannually
Total Chlorinated Hydrocarbons	mg/kg	Core	Semiannually
BOD ₅	mg/kg	Core	Semiannually
COD	mg/kg	Core	Semiannually
Particle Size Distribution	mg/kg	Core	Semiannually
Arsenic	mg/kg	Core	Annually
Cadmium	mg/kg	Core	Annually
Total Chromium	mg/kg	Core	Annually
Copper	mg/kg	Core	Annually
Lead	mg/kg	Core	Annually
Mercury	mg/kg	Core	Annually
Nickel	mg/kg	Core	Annually
Silver	mg/kg	Core	Annually
Zinc	mg/kg	Core	Annually
Cyanide	mg/kg	Core	Annually
Phenolic Compounds (non-chlorinated)	mg/kg	Core	Annually
Chlorinated Phenolics	mg/kg	Core	Annually
Aldrin and Dieldrin	mg/kg	Core	Annually
Chlordane and Related Compounds	mg/kg	Core	Annually
DDT and Derivatives	mg/kg	Core	Annually
Endrin	mg/kg	Core	Annually
HCH	mg/kg	Core	Annually
PCBs	mg/kg	Core	Annually
Toxaphene	mg/kg	Core	Annually
Radioactivity	pCi/kg	Core	Annually

2. Infauna. Samples shall be collected with a Paterson, Smith-McIntyre, or orange-peel type dredge, having an open sampling area of not less than 124 square inches and a sediment capacity of not less than 210 cubic inches. The sediment shall be sifted through a 1-millimeter mesh screen and all organisms shall be identified to as low a taxon as possible.

Table 12. Infauna Monitoring Requirements

Determination	Units	Minimum Frequency
Benthic Biota	Identification and Enumeration	3 grabs, Semiannually

REGIONAL MONITORING

E. Kelp Bed Monitoring

The Discharger shall participate with other ocean dischargers in the San Diego Region in an annual regional kelp bed photographic survey. Kelp beds shall be monitored annually by means of vertical aerial infrared photography to determine the maximum areal extent of the region’s coastal kelp beds within the calendar year. Surveys shall be conducted as close as possible to the time when kelp bed canopies cover the greatest area. 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 images produced by the surveys shall be presented in the form of a 1:24,000 scale photo-mosaic of the entire San Diego Region coastline. Onshore reference points, locations of all ocean outfalls and diffusers, and the 30-foot (MLLW) and 60 foot (MLLW) depth contours shall be shown

The areal extent of the various kelp beds photographed in each survey shall be compared to that noted in surveys of previous years. Any significant losses, which persist for more than one year, shall be investigated by divers to determine the probable reason for the loss.

F. Intensive Monitoring

The Discharger shall perform the intensive monitoring as described by this MRP in conjunction with the next Southern California Coastal Water Research Project (SCCWRP) Bight Study.

The Discharger shall participate and coordinate with state and local agencies and other Dischargers in the San Diego Region in the development and implementation of a regional monitoring program (Bight Study) for the Pacific Ocean as directed by this Regional Water Board. The intent of the Bight Study is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled resources of the region.

IX. OTHER MONITORING REQUIREMENTS

A. Solids Monitoring

Each POTW contributing treated effluent to the Ocean Outfall shall report, annually, the volume of screenings, sludges, grit, and other solids generated and/or removed during

wastewater treatment and the locations where these waste materials are placed for disposal. Copies of all annual reports required by 40 CFR Part 503 shall be submitted to the Regional Water Board at the same time they are submitted to the USEPA.

B. Special Studies

1. The Discharger shall, within 270 days from the date of adoption of this permit, prepare and submit an analysis of surf zone monitoring alternatives in the vicinity of the Ocean Outfall. This analysis shall address at a minimum, 1) identification of other interested parties that should have responsibilities for participating in surf zone monitoring in the vicinity of the Ocean Outfall; 2) alternative techniques and options to accurately monitor and track the Ocean Outfall discharge plume to verify that the discharge plume does not enter the surf zones; and 3) identification of alternatives for identifying the bacterial source(s) in the vicinity of the mouth of Aliso Creek.
2. The Discharger shall, within 90 days from the date of adoption of this permit, develop and implement procedures for ensuring proper sampling and sample handling techniques are used to composite samples from Monitoring Locations M-001A, M-001B, M-001C, M-001D, M-001E, and M-001F for purposes of determining effluent concentrations of parameters representing Monitoring Location M-001. The procedures shall ensure compliance with all applicable 40 CFR Part 136 sampling and analysis protocol, including use of proper containers and sample preservatives, and compliance with sample holding times. A copy of the sampling and sample handling procedures to be used shall be submitted to the Regional Water Board.

X. 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 under (Attachment E) E.III, E.IV, E.V, and E.VI of Order No. R9-2006-0055 at the time monitoring reports are submitted.
3. Each year the Discharger shall submit an annual report to the Regional Water Board and U.S. EPA Region 9 that contains tabular and graphical summaries of the monitoring data obtained during the previous year. The Discharger shall discuss the compliance record and corrective actions taken, or which may be taken, or which may be needed to bring the discharge into full compliance with the requirements of Order No. R9-2006-0055 and this MRP.
4. Laboratory method detection limits (MDLs), and minimum Levels (MLs) shall be identified for each constituent in the matrix being analyzed with all reported analytical data in accordance with MRP Provision IV.E.3. Acceptance of data shall

be based on demonstrated laboratory performance. Current MLs are those published in Appendix II of the Ocean Plan.

B. Self Monitoring Reports (SMRs)

1. The Discharger shall submit Self-Monitoring Report (SMR) in accordance with subsection B.2 and B.3 below. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs using the State Water Board’s California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs in accordance with the requirements described below.
2. The Discharger shall report in a SMR the results for all monitoring specified in this MRP under Sections III through VIII. Additionally, the Discharger shall report in the SMR the results of any special studies, technical reports, and additional monitoring requirements required by Special Provisions – VI.C. The Discharger shall submit monthly, quarterly, semiannual, and annual SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. Monthly reports shall be due on the 1st day of the second month following the end of each calendar month; Quarterly reports shall be due on May 1, August 1, November 1, and February 1 following each calendar quarter; Semi-annual reports shall be due on August 1 and March 1 following each semi-annual period; Annual reports shall be due on March 1 following each calendar year.
3. SMRs shall be submitted at intervals and in a manner specified in Order No. R9-2006-0055 and in this MRP. Unless otherwise specified, monitoring reports shall be submitted to the Regional Water Board and to the USEPA Region 9 according to the following schedule:

Table 13. Reporting Schedule

Monitoring Frequency	Reporting Period	Report Due
Continuous, Daily, Weekly, or Monthly	All	By the first day of the second month after the month of sampling
Quarterly	Jan – March April – June July – September Oct - Dec	May 1 August 1 Nov 1 February 1
Semiannually	Jan – June July - Dec	August 1 March 1
Annually	Jan – Dec	March 1

4. The Discharger shall submit hard copy SMRs as required by subsection B1 above 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 Facilities are operating in compliance with interim and/or final effluent limitations.
- b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; 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. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

Submit monitoring reports to:
California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340

With a copy sent to:
Regional Administrator
U.S. Environmental Protection
Agency
Region 9, Attn: 65/MR, W-3
75 Hawthorne Street
San Francisco, CA 94105

C. Discharge Monitoring Reports (DMRs)

1. As described in Section VII.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit self-monitoring reports. Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.
2. DMRs must be signed and certified as required by the Standard Provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

State Water Resources Control Board
Discharge Monitoring Report Processing Center
Post Office Box 671
Sacramento, CA 95812

3. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated or modified cannot be accepted.