

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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Attachment E – Monitoring and Reporting Program (MRP)

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

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I. GENERAL MONITORING PROVISIONS

A. Principles, Framework, and Design of Monitoring Program

1. NPDES compliance monitoring focuses on the effects of a specific point source discharge. Generally, it is not designed to assess impacts from other sources of pollution (e.g., nonpoint source runoff, aerial fallout) or to evaluate the current status of important ecological resources in the water body. The scale of existing compliance monitoring programs does not match the spatial and, to some extent, temporal boundaries of the important physical and biological processes in the ocean. In addition, the spatial coverage provided by compliance monitoring programs is less than ten percent of the nearshore ocean environment. Better technical information is needed about status and trends in ocean waters to guide management and regulatory decisions, to verify the effectiveness of existing programs, and to shape policy on marine environmental protection.
2. The Regional Water Board and the United States Environmental Protection Agency (USEPA), working with other groups, have developed a comprehensive basis for effluent and receiving water monitoring appropriate to large publicly-owned treatment works (POTWs) and federally-owned treatment works (FOTWs) discharging to waters of the Southern California Bight. This effort has culminated in the publication by the Southern California Coastal Water Research Project (SCCWRP) of the Model Monitoring Program guidance document (Schiff, K.C., J.S. Brown and S.B. Weisberg. 2001. *Model Monitoring Program for Large Ocean Dischargers in Southern California*. SCCWRP Tech. Rep #357. Southern California Coastal Water Research Project, Westminster, CA. 101 pp.). This guidance provides the principles, framework and recommended design for effluent and receiving water monitoring elements that have guided development of the monitoring program described below.

The conceptual framework for the Model Monitoring Program has three components that comprise a range of spatial and temporal scales: (a) core monitoring; (b) regional monitoring; and (c) special studies.

- a. Core monitoring is local in nature and focused on monitoring trends in quality and effects of the point source discharge. This includes effluent monitoring as well as some aspects of receiving water monitoring. In the monitoring program described below these core components are typically referred to as local monitoring. Core monitoring is also supported by the State Water Board (Memo dated March 8, 2013).
- b. Regional Monitoring is focused on questions that are best answered by a region-wide approach that incorporates coordinated survey design and sampling techniques. The major objective of regional monitoring is to collect information required to assess how safe it is to swim in the ocean, how safe it is to eat seafood from the ocean, and whether the marine ecosystem is being protected. Key components of regional monitoring include elements to address pollutant mass

emission estimations, public health concerns, monitoring of trends in natural resources, assessment of regional impacts from all contaminant sources, and protection of beneficial uses. The final design of regional monitoring programs is developed by means of steering committees and technical committees comprised of participating agencies and organizations, and is not specified in this Order.

- c. Special studies are focused on refined questions regarding specific effects or development of monitoring techniques and are anticipated to be of short duration and/or small scale, although multiyear studies may also be needed. Questions regarding effluent or receiving water quality, discharge impacts, ocean processes in the area of the discharge, or development of techniques for monitoring the same, arising out of the results of core or regional monitoring, may be pursued through special studies. These studies are by nature ad hoc and cannot be typically anticipated in advance of the five-year permit cycle.
3. Pollutants shall be analyzed using the analytical methods described in 40 CFR parts 136.3, 136.4, and 136.5 (revised May 18, 2012); or where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board. Laboratories analyzing effluent samples and receiving water samples shall be certified by the California Department of Public Health (CDPH) Environmental Laboratory Accreditation Program (ELAP) or approved by the Executive Officer and must include quality assurance/quality control (QA/QC) data in their reports and be in compliance with the provision of CWC section 13176. A copy of the laboratory certification shall be provided each time a new certification and/or renewal of the certification is obtained from ELAP.
4. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR part 136.3 (revised May 18, 2012). All QA/QC analyses must be run on the same dates that samples are actually analyzed. The Discharger shall retain the QA/QC documentation in its files and make available for inspection and/or submit them when requested by the Regional Water Board. Proper chain of custody procedures must be followed and a copy of that documentation shall be submitted with the quarterly report.
5. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments and to ensure accuracy of measurements, or shall ensure that both equipment activities will be conducted.
6. For any analyses performed for which no procedure is specified in the USEPA guidelines, or in the MRP, the constituent or parameter analyzed and the method or procedure used must be specified in the monitoring report.
7. Each monitoring report must affirm in writing that "all analyses were conducted at a laboratory certified for such analyses by the California Department of Public Health or approved by the Executive Officer and in accordance with current USEPA guideline procedures or as specified in this Monitoring and Reporting Program."
8. The monitoring report shall specify the USEPA analytical method used, the Method Detection Limit (MDL), and the Reporting Level (RL) [the applicable minimum level (ML) or Reported Minimum Level (RML)] for each pollutant. The MLs are those published by the State Water Board in the 2009 Ocean Plan, Appendix II. The ML represents the lowest quantifiable concentration in a sample, based on the proper application of all method-based analytical procedures and the absence of any matrix interference. When

all specific analytical steps are followed and after appropriate application of method specific factors, the ML also represents the lowest standard in the calibration curve for that specific analytical technique. When there is deviation from the method analytical procedures, such as dilution or concentration of samples, other factors may be applied to the ML depending on the sample preparation. The resulting value is the reported ML.

9. In accordance with section II.C.5.b of the 2009 Ocean Plan, the Regional Water Board Executive Officer, in consultation with the State Water Board's Quality Assurance Program Manager, may establish an ML that is not contained in Appendix II of the 2009 Ocean Plan to be included in the discharger's permit in any of the following situations:
 - a. When a pollutant is not listed in Appendix II;
 - b. When the discharger and the Regional Water Board agree to include in the permit a test method that is more sensitive than those specified in 40 CFR part 136 (revised as of May 18, 2012);
 - c. When the discharger agrees to use an ML that is lower than those listed in Appendix II;
 - d. When the discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Appendix II and proposes an appropriate ML for the matrix; or,
 - e. When the discharger uses a method, which quantification practices are not consistent with the definition of the ML. Examples of such methods are USEPA-approved method 1613 for dioxins, and furans, method 1624 for volatile organic substances, and method 1625 for semi-volatile organic substances. In such cases, the discharger, the Regional Water Board, and the State Water Board shall agree on a lowest quantifiable limit and that limit will substitute for the ML for reporting and compliance determination purposes.
10. If the Discharger samples and performs analyses (other than for process/operational control, startup, research, or equipment testing) on any influent, effluent, or receiving water constituent more frequently than required by this program using approved analytical methods, the results of those analyses shall be included in the report. These results shall be reflected in the calculation of the average used in demonstrating compliance with average effluent, receiving water, etc., limitations.
11. The Discharger shall develop and maintain a record of all spills and bypasses of raw or partially treated sewage from its collection system or treatment plant according to the requirements in the WDR section of this Order. This record shall be made available to the Regional Water Board upon request and a spill summary shall be included in the Annual Summary Report.
12. For all bacteriological analyses, sample dilutions should be performed so the expected range of values is bracketed (for example, with multiple tube fermentation method or membrane filtration method, 2 to 16,000 per 100 ml for total and fecal coliform, at a minimum, and 1 to 1000 per 100 ml for enterococcus). The detection methods used for each analysis shall be reported with the results of the analyses.
 - a. Detection methods used for coliforms (total and fecal) shall be those presented in Table 1A of 40 CFR part 136 (revised May 18, 2012), unless alternate methods have been approved by USEPA pursuant to 40 CFR part 136.
 - b. Detection methods used for enterococcus shall be those presented in Table 1A of 40 CFR part 136 (revised May 18, 2012) or in the USEPA publication EPA 600/4-

85/076, *Test Methods for Escherichia coli and Enterococci in Water By Membrane Filter Procedure*, or any improved method determined by the Regional Water Board to be appropriate.

13. Laboratories analyzing monitoring samples shall be certified by CDPH, in accordance with the provisions of CWC section 13176, and must include QA/QC data with their reports.

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
Influent Monitoring Station		
--	INF-001	Sampling stations shall be established at each point of inflow to the sewage treatment plant and shall be located upstream of any in-plant return flows and/or where representative samples of the influent can be obtained. Influent samples shall be obtained on the same day effluent samples are obtained.
Effluent Monitoring Station		
002	EFF-001	The effluent sampling station shall be located downstream of any in-plant return flows and effluent streams from both the tertiary and secondary treatment systems, where representative samples of the mixed effluent can be obtained.
Shoreline Bacteria Monitoring Stations		
--	SBM-001 SBM-002	See Figure 1 for a generalized schematic location. As part of Ocean Plan core monitoring, weekly bacteria monitoring shall occur at the shoreline nearest the outfall. Samples may be collected along the shoreline at a point as near to the shoreline as can be negotiated safely by boat. The report shall contain actual latitude and longitude of sample location.
Offshore Receiving Water Monitoring Stations		

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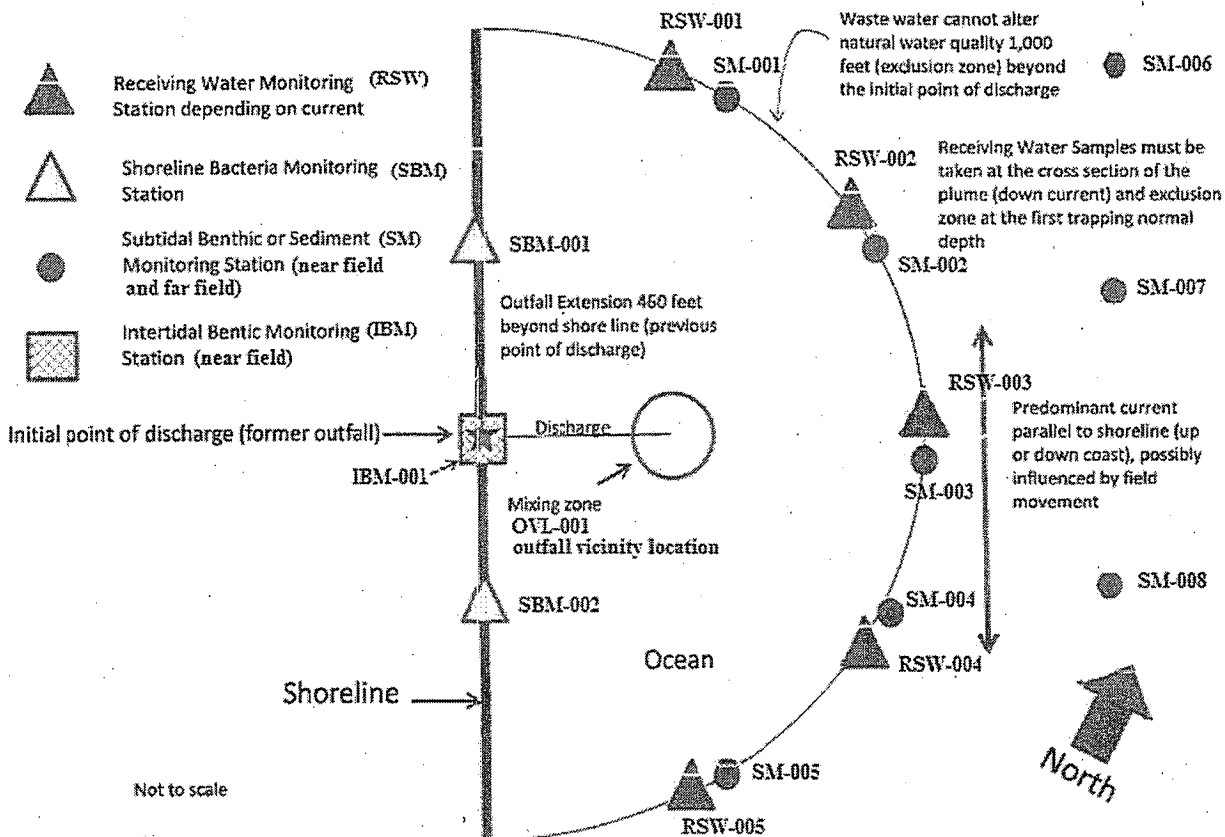
Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	RSW-001 RSW-002 RSW-003 RSW-004 RSW-005	<p>See Figure 1 for a generalized schematic location.</p> <p>In order to determine area of special biological significance (ASBS) compliance, the Discharger shall monitor at a single down-current location, at the first trapping normal depth, to demonstrate that natural water quality is not altered in the ASBS outside of the exclusion zone in comparison to an unaffected reference site. Only one of the five RSW locations shall be sampled in order to determine ASBS compliance, depending on current flow. The RSW that is selected must be located downstream of the current flow. Dissolved oxygen and pH should be sampled separately at a single up-current location from the RSW.</p> <p>The report shall contain actual depth, latitude, and longitude of sample upstream and downstream location.</p>
Sediment Monitoring (Subtidal Benthic) Stations		
--	SM-001 near field SM-002 near field SM-003 near field SM-004 near field SM-005 near field SM-006 far field SM-007 far field SM-008 far field	<p>See Figure 1 for a generalized schematic location.</p> <p>Discharger shall perform a benthic biota survey (intertidal and subtidal) once per permit cycle, at multiple stations both near field and far field. This shall be conducted at each SM-00X location and at IBM-001 (see below). This activity also satisfies ASBS compliance for determining the status of marine aquatic life.</p> <p>The report shall include the actual latitude and longitude of the location sampled.</p>
Intertidal Benthic Monitoring		
--	IBM-001 near field	<p>See Figure 1 for a generalized schematic location for IBM-001.</p> <p>The initial point of discharge and intertidal benthic monitoring station (IBM-001) is located at Discharge Point 001 (no longer in service). The outfall was historically located at Discharge Point 001 at a latitude of 32 ° 59' 50" N, and a longitude of 118 ° 32' 45" W.</p> <p>Discharger shall perform a benthic biota survey (intertidal and subtidal) once per permit cycle, at multiple stations both near field and far field. This shall be conducted at IBM-001 and at each SM-00X location (see above). This activity also satisfies ASBS compliance for determining the status of marine aquatic life.</p> <p>The report shall include the actual latitude and longitude of the location sampled.</p>
Outfall Vicinity Location		

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	OVL-001	<p>See Figure 1 for a generalized schematic location for OVL-001.</p> <p>As part of State Water Board required monitoring (Memo dated March 8, 2013) Discharger shall collect temperature and salinity data in the vicinity of the outfall on a monthly basis during the summer for two years to enable more relevant plume model mixing zone predictions. The data should be collected from area of similar depth as the outfall for a period of two years.</p> <p>The report shall include the actual depth versus outfall depth and the latitude and longitude of the location sampled.</p>

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Figure 1

SCI Monitoring Sites Plan view schematic



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III. INFLUENT MONITORING REQUIREMENTS

Influent monitoring is required to determine compliance with NPDES permit conditions and assess treatment plant performance. The Discharger shall monitor influent to the facility at INF-001 as follows:

Table 2. Influent Monitoring - INF-001

Parameter	Units	Sample Type ¹	Minimum Sampling Frequency	Required Analytical Test Method
Flow	mgd	recorder/totalizer	continuous ²	--
BOD ₅ 20°C	mg/L	24-hr composite	monthly	3
TSS	mg/L	24-hr composite	monthly	3
pH	pH units	grab	monthly	3
Oil and grease	mg/L	grab ⁴	monthly	3
Pesticides	µg/L	24-hr composite	semi-annually	3
Remaining pollutants in Table B of the 2009 Ocean Plan (excluding residual chlorine, acute and chronic toxicity, and ammonia)	µg/L	24-hr composite	semi-annually	3

¹ For 24-hour composite samples, if the duration of the discharge is less than 24 hours but greater than 8 hours, at least eight flow-weighted samples shall be obtained during the discharge period and composited. For discharge durations of less than eight hours, individual "grab samples" may be substituted. A grab sample is an individual sample collected in less than 15 minutes.

² When continuous monitoring of flow is required, total daily flow and peak daily flow (24-hr basis) shall be reported.

³ Pollutants shall be analyzed using the analytical methods described in 40 CFR part 136; where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or State Water Board. For any pollutant whose effluent limitation is lower than all MLs specified in Appendix II of the 2009 Ocean Plan, the analytical method with the lowest ML must be selected.

⁴ Oil and grease monitoring in the influent and effluent shall consist of a single grab sample at peak flow over a 24-hour period.

IV. EFFLUENT MONITORING REQUIREMENTS

Effluent monitoring is required to determine compliance with NPDES permit conditions and water quality standards, assess plant performance, identify operational problems, improve plant performance, and provide information on wastewater characteristics and flows for use in interpreting water quality and biological data.

The Discharger shall monitor secondary effluent at EFF-001 as follows in Table 3. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding MLs:

Table 3. Effluent Monitoring – EFF-001

Parameter	Units	Sample Type ⁵	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Flow	mgd	recorder	continuous ⁶	--
BOD ₅ 20°C	mg/L	24-hr composite	monthly	7
TSS	mg/L	24-hr composite	monthly	7
Total chlorine residual	mg/L	grab	monthly	7
pH	pH units	grab	monthly	7
Oil and grease	mg/L	grab ⁴	monthly	7
Temperature	°C	grab	monthly	7
Settleable solids	mL/L	grab	monthly	7
Turbidity	NTU	24-hr composite	monthly	7
Total coliform	CFU/100 mL or MPN/100 mL	grab	monthly	7
Enterococcus	CFU/100 mL or MPN/100 mL	grab	monthly	7
Fecal coliform	CFU/100 mL or MPN/100 mL	grab	monthly	7
Ammonia nitrogen	mg/L	24-hr composite	semi-annually	7
Nitrate nitrogen	mg/L	24-hr composite	semi-annually	7
Nitrite nitrogen	mg/L	24-hr composite	semi-annually	7
Organic nitrogen	mg/L	24-hr composite	semi-annually	7
Arsenic	µg/L	24-hr composite	semi-annually	7

⁵ For 24-hour composite samples, if the duration of the discharge is less than 24 hours but greater than 8 hours, at least eight flow-weighted samples shall be obtained during the discharge period and composited. For discharger durations of less than eight hours, individual "grab samples" may be substituted. A grab sample is an individual sample collected in less than 15 minutes.

⁶ When continuous monitoring of flow is required, total daily flow and peak daily flow (24-hr basis) should be reported.

⁷ Pollutants shall be analyzed using the analytical methods described in 40 CFR part 136; where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or State Water Board. For any pollutant whose effluent is lower than all the MLs specified in Appendix II of the 2009 Ocean Plan, the analytical method with the lowest ML must be selected.

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Parameter	Units	Sample Type ⁵	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
Copper	µg/L	24-hr composite	quarterly	7
Nickel	µg/L	24-hr composite	semi-annually	7
Zinc	µg/L	24-hr composite	quarterly	7
Halomethanes	µg/L	24-hr composite	semi-annually	7
Antimony	µg/L	24-hr composite	semi-annually	7
Chlorodibromomethane	µg/L	24-hr composite	semi-annually	7
Chloroform	µg/L	24-hr composite	semi-annually	7
Dichlorobromomethane	µg/L	24-hr composite	semi-annually	7
Chromium (VI)	µg/L	24-hr composite	semi-annually	7
Lead	µg/L	24-hr composite	semi-annually	7
Selenium	µg/L	24-hr composite	semi-annually	7
Cyanide	µg/L	24-hr composite	semi-annually	7
HCH	µg/L	24-hr composite	semi-annually	7
Chromium (III)	µg/L	24-hr composite	semi-annually	7
Bis(2-ethylhexyl) phthalate	µg/L	24-hr composite	semi-annually	7
Toxicity, acute	TUa	24-hr composite	quarterly	7
Toxicity, chronic ⁸	TUc	24-hr composite	quarterly	7
DDT ⁹	µg/L	24-hr composite	quarterly	7
TCDD equivalents	pg/L	24-hr composite	quarterly	7
Tributyltin ¹⁰	µg/L	24-hr composite	semi-annually	7
Aldrin ¹⁰	µg/L	24-hr	semi-annually	7

⁸ California Ocean Plan requires a numeric WQBEL for chronic toxicity.

⁹ 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.

¹⁰ Frequency shall increase to quarterly if the ML stipulated in the Ocean Plan decreases to below the calculated Ce and/or if the laboratory result is not ND.

Parameter	Units	Sample Type ⁵	Minimum Sampling Frequency	Required Analytical Test Method and (Minimum Level, units), respectively
		composite		
Benzidine ¹⁰	µg/L	24-hr composite	semi-annually	7
Chlordane ¹⁰	µg/L	24-hr composite	semi-annually	7
3,3-dichlorobenzidine ¹⁰	µg/L	24-hr composite	semi-annually	7
Dieldrin ¹⁰	µg/L	24-hr composite	semi-annually	7
Heptachlor ¹⁰	µg/L	24-hr composite	semi-annually	7
Heptachlor epoxide ¹⁰	µg/L	24-hr composite	semi-annually	7
Hexachlorobenzene ¹⁰	µg/L	24-hr composite	semi-annually	7
PAHs ¹⁰	µg/L	24-hr composite	semi-annually	7
PCBs ¹⁰	µg/L	24-hr composite	semi-annually	7
Toxaphene ¹⁰	µg/L	24-hr composite	semi-annually	7
Remaining pollutants in Table B of the 2009 Ocean Plan (excluding residual chlorine, acute and chronic toxicity, and ammonia)	µg/L	24-hr composite	semi-annually	3
Radioactivity ¹¹ (Including gross alpha, gross beta, combined radium-226 and radium-228, tritium, strontium-90 and uranium)	pCi/L	24-hr composite	semi-annually	12
Pesticides	µg/L	24-hr composite	semi-annually	7

¹¹ Analysis for combined Radium-226 & 228 shall be conducted only if Gross alpha results for the same sample exceed 15 pCi/L or beta greater than 50 pCi/L. If Radium-226 & 228 exceeds the stipulated criteria, analyze for Tritium, Strontium-90 and Uranium.

¹² Analyze these radiochemicals 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, method 906.0 for tritium, method 905.0 for strontium-90, and method 908.0 for uranium.

V. WHOLE EFFLUENT TOXICITY (WET) TESTING REQUIREMENTS

A. Acute Toxicity Testing

a. Methods and test species

The Discharger shall conduct 96-hour static renewal acute toxicity tests on flow-weighted 24-hour composite effluent samples. When conducting toxicity tests in accordance with the specified chronic test methods manual, if daily observations of mortality make it possible to also calculate acute toxicity for the desired exposure period and the dilution series for the toxicity test includes the acute in stream waste concentration (IWC), such method may be used to estimate the 96-hour LC50.

The presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA 821-R-02-012, 2002), with preference for West Coast vertebrate and invertebrate species.

b. Frequency

- i. Screening - The Discharger shall conduct the first acute toxicity test screening for three consecutive months in 2012. Re-screening is required every 24 months. The Discharger shall re-screen with a marine vertebrate species and a marine invertebrate species and continue to monitor with the most sensitive species. If the first suite of re-screening tests demonstrates that the same species is the most sensitive, then the re-screening 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 shall proceed with suites of screening tests for a minimum of three, but not to exceed five, suites
- ii. Regular toxicity tests - After the screening period, monitoring shall be conducted monthly using the most sensitive marine species.

c. Toxicity Units

The acute toxicity of the effluent shall be expressed and reported in Acute Toxic Units, TUa, where,

$$TUa = \frac{100}{96\text{-hr LC } 50\%}$$

The Lethal Concentration, 50 Percent (LC50) is expressed as the estimate of the percent effluent concentration that causes death in 50% of the test population in the time period prescribed by the toxicity test.

B. Chronic Toxicity Testing

1. Chronic Whole Effluent Toxicity

For compliance with the Basin Plan's narrative toxicity objective, this Order requires the Discharger to conduct chronic WET testing. Furthermore, this Provision requires the Discharger to investigate the causes of, and identify corrective actions to reduce or eliminate, effluent toxicity. If the discharge exceeds the numeric toxicity monitoring trigger during accelerated monitoring established in this Provision, the Discharger is required to initiate a Toxicity Reduction Evaluation (TRE) in accordance with an approved TRE Work Plan, and take actions to mitigate the impact of the discharge and

prevent recurrence of toxicity. A TRE is a site-specific study conducted in a stepwise process to identify the source(s) of toxicity and the effective control measures for effluent toxicity. TREs are designed to identify the causative agents and sources of whole effluent toxicity, evaluate the effectiveness of the toxicity control options, and confirm the reduction in effluent toxicity. This provision includes requirements for the Discharger to develop and submit a TRE work plan and includes procedures for accelerated chronic toxicity monitoring and TRE initiation.

2. Numeric Toxicity Monitoring Trigger

The numeric toxicity monitoring trigger to initiate a TRE is $> 1 \text{ TUc}$ (where $\text{TUc} = 100/\text{NOEL}$). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring and initiate a TRE:

- a. If the results of four (4) consecutive accelerated monitoring tests do not exceed the monitoring trigger, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, notwithstanding the accelerated monitoring results, if there is adequate evidence of a pattern of effluent toxicity, the Executive Officer may require that the Discharger initiate a TRE.
- b. If the source(s) of the toxicity is easily identified (e.g., temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring trigger. Upon confirmation that the effluent toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.
- c. If the result of any accelerated toxicity test exceeds the monitoring trigger, the Discharger shall cease accelerated monitoring and begin a TRE to investigate the cause(s) of, and identify corrective actions to reduce or eliminate effluent toxicity. Within thirty (30) days of notification by the laboratory of any test result exceeding the monitoring trigger during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:
 - i. Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
 - ii. Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
 - iii. A schedule for these actions.

3. Methods and test species

The Discharger shall conduct critical life stage chronic toxicity tests on 24-hour composite, 100 percent effluent samples in accordance with USEPA's *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, 1995, (EPA/600/R-95/136). Pursuant to the 2009 Ocean Plan, upon the approval of the Executive Officer of the Regional Water Board, the Discharger may use a second tier organism (e.g., silverside) if first tier organisms (e.g., topmelt) are not available. However, the Discharger is required to immediately resume the chronic toxicity test using the original testing organism as soon as this organism becomes available.

4. Frequency

- a. Screening – The Discharger shall conduct the first chronic toxicity test screening for three consecutive months in 2013. Re-screening is required every 24 months. The Discharger shall re-screen with a marine vertebrate species, a marine invertebrate species, and a marine alga species 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 re-screening 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 shall proceed with suites of screening tests for a minimum of three, but not to exceed five, suites.
- b. Regular toxicity tests – After the screening period, monitoring shall be conducted quarterly using the most sensitive species

5. Toxicity Units

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

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 the 2009 Ocean Plan Appendix III, table III-1

C. Quality Assurance

1. Concurrent testing with a reference toxicant shall be conducted. Reference toxicant tests shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc.).
2. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the test methods manual (EPA-821-R-02-012 and/or EPA/600/R-95/136), then the Discharger must re-sample and re-test within 14 days.
3. Control and dilution water should be laboratory water, as described in the manual. If the dilution water used is different from the culture water, a second control using culture water shall be used.
4. A series of at least five (5) dilutions and a control shall be tested. The dilution series shall include the IWC, and two dilutions above and two below the IWC. The chronic IWC for Discharge Point 002 is 0.73% effluent where the chronic IWC = $1/(\text{dilution credit} + 1) \times 100$.
5. Following paragraph 10.2.6.2 of USEPA's chronic freshwater test methods manual (EPA/821/R-02/013, 2002, as specified in CFR part 136), the Discharger shall review the concentration-response relationship for each multi-concentration test to ensure that calculated test results are interpreted appropriately. All WET test results should be reviewed and reported following *Method Guidance and Recommendations for WET Testing* (EPA/821/B-00-004, 2000).
6. Because this Order requires sublethal hypothesis testing endpoints from the 1995 West Coast marine and estuarine WET test methods manual and the 2002 East Coast marine and estuarine WET test methods manual, within test variability must be reviewed and variability criteria [e.g., Minimum Significance Difference (MSD) bound, Percent Minimum Significance Difference (PMSD) bounds] must be applied, as specified in the test methods manuals. The calculated MSD (or PMSDs) for both reference toxicant test and

effluent toxicity test results must meet the MDS bound (or PMSD bounds) variability criteria specified in the test methods manuals.

7. pH drift during the toxicity test may contribute to artifactual toxicity when pH-dependent toxicants (e.g., ammonia, metals) are present in an effluent. To determine whether or not pH drift during the toxicity test is contributing to artifactual toxicity, the Discharger shall conduct three sets of parallel toxicity tests, in which the pH of one treatment is controlled at the pH of the effluent and the pH of the other treatment is not controlled, as described in section 11.3.6.1 of the test methods manual, *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms* (EPA/821/R-02/013, 2002). Toxicity is confirmed to be artifactual and due to pH drift when no toxicity above the chronic WET permit limit or trigger is observed in the treatments controlled at the pH of the effluent. If toxicity is confirmed to be artifactual and due to pH drift, then following written approval by the permitting authority, the Discharger may use the procedures outlined in section 11.3.6.2 of the test methods manual to control sample pH during the toxicity test.

D. Accelerated Monitoring

When the numeric toxicity monitoring trigger is exceeded during regular chronic toxicity monitoring, and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring. The Discharger shall initiate a TRE to address effluent toxicity if any WET testing results exceed the numeric toxicity monitoring trigger during accelerated monitoring.

If the effluent toxicity test result exceeds the limitation, then the Discharger shall immediately implement accelerated toxicity testing that consists of six additional tests, approximately every two weeks, over a 12-week period. Effluent sampling for the first test of the six additional tests shall commence within five working days of receipt of the test results exceeding the toxicity limitation.

1. If all the results of the six additional tests are in compliance with the toxicity limitation, the Discharger may resume regular monthly testing.
2. If the result of any of the six additional tests exceeds the limitation, then the Discharger shall continue to monitor once every two weeks until six consecutive biweekly tests are in compliance. At that time, the Discharger may resume regular monthly testing.
3. If the results of any two of the six tests (any two tests in a 12-week period) exceed the limitation, the Discharger shall initiate a TIE and implement the initial investigation TRE work plan.
4. If implementation of the initial investigation TRE work plan (see item D below) indicates the source of toxicity (e.g., a temporary plant upset, etc.), then the Discharger shall return to the regular testing frequency.

E. Preparation of an Initial Investigation TRE Work Plan

If the discharge consistently exceeds an effluent limitation for toxicity or an effluent limitation for an Ocean Plan Table B water quality objective, the Discharger shall conduct a TRE, as defined in Attachment A. The TRE shall include all reasonable steps to identify the source of toxicity. The Discharger shall take all reasonable steps to reduce toxicity to the required level once the source of the toxicity is defined.

The Discharger shall prepare and submit a copy of the Discharger's initial investigation TRE work plan to the Executive Officer of the Regional Water Board for approval within 90 days of the effective date of this Order. If the Executive Officer 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) as guidance, or most current version. At a minimum, the TRE work plan must contain the provisions in Attachment G. This work plan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include the following, at a minimum:

1. 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.
2. A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of the facility; and,
3. 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). See MRP section V.E.3 for guidance manuals.

If the effluent toxicity test result exceeds the limitation, then the discharger shall immediately implement accelerated toxicity testing that consists of six additional tests, approximately every two weeks, over a 12-week period. Effluent sampling for the first test of the six additional tests shall commence within five days of receipt of the test results exceeding the toxicity limitation.

If the results of any two of the six tests (any two tests in a 12-week period) exceed the limitation, the Discharger shall initiate a TRE.

F. TRE and TIE steps

1. If results of the implementation of the facility's initial investigation TRE work plan indicate the need to continue the TRE/TIE, the Discharger shall expeditiously develop a more detailed TRE work plan for submittal to the Executive Officer within 15 days of completion of the initial investigation TRE. The detailed work plan shall include, but not be limited to the following:
 - a. Further actions to investigate and identify the cause of toxicity;
 - b. Actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
 - c. A schedule for these actions.
2. The following section summarizes the stepwise approach used in conducting the TRE:
 - a. Step 1 includes basic data collection.
 - b. Step 2 evaluates optimization of the treatment system operation, facility housekeeping, and selection and use of in-plant process chemicals.
 - c. If Steps 1 and 2 are unsuccessful, Step 3 implements a TIE and employment of all reasonable efforts using currently available TIE methodologies. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity.
 - d. Assuming successful identification or characterization of the toxicant(s), Step 4 evaluates final effluent treatment options.
 - e. Step 5 evaluates in-plant treatment options.
 - f. Step 6 consists of confirmation once a toxicity control method has been implemented.

Many recommended TRE elements parallel source control, pollution prevention, and storm water control program best management practices (BMPs). To prevent duplication of efforts, evidence of compliance with those requirements may be sufficient to comply with TRE requirements. By requiring the first steps of a TRE to be accelerated testing and review of the facility's TRE work plan, a TRE may be ended in its early stages. All reasonable steps shall be taken to reduce toxicity to the required level. The TRE may be ended at any stage if monitoring indicates there are no longer toxicity violations.

The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The Discharger shall use the USEPA acute manual, chronic manual, EPA/600/R-96-054 (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III), as guidance.

If a TRE/TIE is initiated prior to completion of the accelerated testing required in section V.C. of this program, then the accelerated testing schedule may be terminated, or used as necessary in performing the TRE/TIE, as determined by the Executive Officer.

The Regional Water Board recognizes that toxicity may be episodic and identification of causes of and reduction of sources of toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based, in part, on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

G. Ammonia Removal

Except with prior approval from the Executive Officer of the Regional Water Board, ammonia shall not be removed from bioassay samples. The Discharger must demonstrate the effluent toxicity is caused by ammonia because of increasing test pH when conducting the toxicity test. It is important to distinguish the potential toxic effects of ammonia from other pH sensitive chemicals, such as certain heavy metals, sulfide, and cyanide. The following may be steps to demonstrate that the toxicity is caused by ammonia and not other toxicants before the Executive Officer would allow for control of pH in the test.

- a. There is consistent toxicity in the effluent and the maximum pH in the toxicity test is in the range to cause toxicity due to increased pH.
- b. Chronic ammonia concentrations in the effluent are greater than 4 mg/L total ammonia.
- c. Conduct graduated pH tests as specified in the TIE methods. For example, mortality should be higher at pH 8 and lower at pH 6.
- d. Treat the effluent with a zeolite column to remove ammonia. Mortality in the zeolite treated effluent should be lower than the non-zeolite treated effluent. Then add ammonia back to the zeolite-treated samples to confirm toxicity due to ammonia.

When it has been demonstrated that toxicity is due to ammonia because of increasing test pH, pH may be controlled using appropriate procedures which do not significantly alter the nature of the effluent, after submitting a written request to the Regional Water Board, and receiving written permission expressing approval from the Executive Officer of the Regional Water Board.

H. Reporting

The Discharger shall submit a full report of the toxicity test results, including any accelerated testing conducted during the month, as required by this Order. Test results shall be reported

in Acute Toxicity Units (TUa) or Chronic Toxicity Units (TUc), as required, with the self-monitoring report (SMR) for the month in which the test is conducted.

If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, pursuant to section V.D.4, then those results also shall be submitted with the SMR for the period in which the investigation occurred.

1. The full report shall be received by the Regional Water Board by the 15th day of the second month following sampling.
2. The full report shall consist of (1) the results; (2) the dates of sample collection and initiation of each toxicity test; (3) the toxicity limit.
3. Test results for toxicity tests also shall be reported according to the appropriate manual chapter on Report Preparation and shall be attached to the SMR. Routine reporting shall include the following, at a minimum, as applicable, for each test, as appropriate:
 - a. sample collection date(s)
 - b. test initiation date
 - c. test species
 - d. end point values for each dilution (e.g. number of young, growth rate, percent survival)
 - e. LC₅₀ value(s) in percent effluent
 - f. TUa value(s)

$$TUa = \frac{100}{96\text{-hr LC } 50\%}$$

- g. 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 III, Table III-1.

- h. TUc values

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

- i. Mean percent mortality (+standard deviation) after 96 hours in 100% effluent (if applicable)
 - j. IC/EC₂₅ value(s) in percent effluent

Inhibition Concentration (IC_p) is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological endpoint (e.g., reproduction, growth) calculated from a continuous model (e.g., EPA Interpolation Model).

Effective Concentration (EC_p) is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a quantal biological measurement (e.g., development, survival) calculated from a continuous model (e.g., Probit).

- k. NOEL and LOEC (Lowest Observable Effect Concentration) values for reference toxicant test(s)

- l. Available water quality measurements for each test (e.g., pH, D.O., temperature, conductivity, hardness, salinity, ammonia).
- m. The Discharger shall provide a compliance summary that includes a summary table of toxicity data from at least eleven of the most recent samples.
- n. The Discharger shall notify this Regional Water Board immediately of any toxicity exceedance and in writing 14 days after the receipt of the results of an effluent limit. The notification will describe actions the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by the Order, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

VI. LAND DISCHARGE MONITORING REQUIREMENTS (NOT APPLICABLE)

VII. RECLAMATION MONITORING REQUIREMENTS (NOT APPLICABLE)

The reuse of reclaimed water is regulated under separate WDRs and water recycling requirements (WRRs) for the San Clemente Island Wastewater Treatment Plant (SCI WWTP), Order No. R4-2004-0057, File No. 04-035, and CI No. 8734.

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VIII. RECEIVING WATER MONITORING REQUIREMENTS

A. Receiving Water Quality Monitoring

This monitoring addresses the question: Are Ocean Plan, ASBS, and Basin Plan objectives being met? Data collected provide the information necessary to demonstrate compliance with the standards.

1. The Discharger shall conduct offshore water quality monitoring at RSW-001, RSW-002, RSW-003, RSW-004, and RSW-005 (see Figure 1 and Table 1) as follows in Table 4:

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Table 4 Offshore Receiving Water Quality Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved Oxygen	mg/L	continuous profile from surface to bottom (or maximum depth of 100 meters)	annually	¹³
Water Temperature	°C	continuous profile from surface to bottom (or maximum depth of 100 meters)	monthly during summer for first 2 years	¹³
Salinity	ppt	continuous profile from surface to bottom (or maximum depth of 100 meters)	monthly during summer for first 2 years	¹³
pH	pH units	continuous profile from surface to bottom (or maximum depth of 100 meters)	annually	¹⁴
Total residual chlorine	mg/L	Grabs at 0.5 meters below the surface at RSW-002 only	annually	¹⁵
Transmissivity	% transmission	continuous profile from surface to bottom (or maximum depth of 100 meters)	annually	¹⁶
Chlorophyll	µg/L	continuous profile from surface to bottom (or maximum depth of 100 meters)	annually	¹³
Visual observations ¹⁷	--	--	annually	--

¹³ Pollutants shall be analyzed using the analytical methods described in 40 CFR part 136; where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or State Water Board. For any pollutant whose effluent is lower than all the MLs specified in Appendix II of the 2009 Ocean Plan, the analytical method with the lowest ML must be selected.

¹⁴ Water quality methods and protocols shall follow those described in the most current edition of the *Field Operations Manual for Marine Water Column, Benthic and Trawl Monitoring in Southern California*.

¹⁵ Pollutants shall be analyzed using the analytical methods described in 40 CFR part 136; where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or State Water Board.

¹⁶ Light transmittance (transmissivity) shall be measured with a transmissometer, using equipment and procedure similar to that described by L.V. Whitney ["Transmission of Solar Energy and the Scattering Produced by Suspensoids in Lake Waters," Transactions of the Wisconsin Academy of Sciences, Arts, and Letters, Vol. 31 (1938)]. Results shall be expressed as the percent of light transmittance. Path length of transmissometer should be noted.

¹⁷ Observations of wind (direction and speed), weather (cloudy, sunny, rainy), current (directions), and tidal condition (high, low) shall be made and recorded at the time that samples of the ocean (shore, nearshore and offshore) are collected. Receiving water observations of water color, turbidity, odor and unusual or abnormal amounts of floating or suspended matter in the water or on the beach, rocks and jetties or beach structures, shall be made and recorded at each receiving water station. The character and extent of such matter shall be

Sampling techniques shall follow protocols described in the most current edition of the *Field Operations Manual for Marine Water-column, Benthic, and Trawl Monitoring in Southern California*, SCCWRP. Data shall be analyzed to approximate the typical wastewater plume movement and data under different seasonal and weather conditions. The Discharger shall monitor at a single down-current location, at the first trapping normal depth, to demonstrate that natural water quality is not altered in the ASBS outside of the exclusion zone in comparison to an unaffected reference site. Only one of the five RSW locations shall be sampled in order to determine ASBS compliance, depending on current flow. The RSW that is selected must be located downstream of the current flow. Dissolved oxygen and pH should be sampled separately at a single up-current location from the RSW. Monitoring results for total residual chlorine and visual observations at the selected downstream RSW location shall be reported in the quarterly self-monitoring report.

2. The Discharger shall monitor bacteria and ammonia at 5 offshore receiving water monitoring stations including RSW-001, RSW-002, RSW-003, RSW-004, and RSW-005 and 2 shoreline bacteria monitoring stations including SBM-001 and SBM-002 (see Figure 1 and Table 1) as follows in Table 5:

Table 5 Shoreline and Offshore Receiving Water Quality Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total coliform	MPN or CFU/100 mL	grab, surface and mid-depth and near bottom ¹⁸	monthly	¹⁹
Fecal coliform	MPN or CFU/100 mL	grab, surface and mid-depth and near bottom ¹⁸	monthly	¹⁹
Enterococcus	MPN or CFU/100 mL	grab, surface and mid-depth and near bottom ¹⁸	monthly	¹⁹
Ammonia nitrogen	mg/L	grab, surface and mid-depth and near bottom ¹⁸	annually	¹⁹

3. In order to monitor ASBS compliance, the Discharger shall monitor water quality, at the boundary of the exclusion zone, at a single down-current location. Discharger shall choose one downstream RSW location depending upon current flow during monitoring activities, see from RSW-001, RSW-002, RSW-003, RSW-004, and RSW-005 (see Figure 1 and Table 1), at the first trapping normal depth, to demonstrate that natural

described. The dates, times and depths of sampling and observations also shall be reported. Visual observations shall be recorded at each station.

¹⁸ Bottom sampling shall be done 2.0 m (6.6 ft) above the seabed.

¹⁹ Pollutants shall be analyzed using the analytical methods described in 40 CFR part 136; where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or State Water Board. For any pollutant whose effluent is lower than all the MLs specified in Appendix II of the 2009 Ocean Plan, the analytical method with the lowest ML must be selected.

water quality is not altered in the ASBS outside of the exclusion zone in comparison to an unaffected reference site.

Constituents to be measured include Ocean Plan (2009) Table B objectives for marine aquatic life beneficial use (except that only chronic toxicity for three species should be measured, not acute toxicity), Ocean Plan (2009) Table A constituents, dissolved oxygen, nitrates, and phosphates.

Additionally, dissolved oxygen and pH shall be sampled separately at a single up-current location that is up-current from the selected downstream RSW that is sampled.

The frequency shall be twice per permit cycle, and shall be done at the same time as effluent sampling is performed.

B. Benthic Sediments Monitoring

1. Local Benthic Trends Survey

This survey addresses the questions: Are benthic conditions under the influence of the discharge changing over time? The resulting physical and chemical data will be used for assessment of trends in sediment contamination and to draw inferences concerning the relationship between effluent-derived alteration of the benthic habitat and patterns in infaunal community structure. This data also satisfies ASBS compliance for determining the status of marine aquatic life.

a. Intertidal and Subtidal Benthic Biota Survey

The Discharger shall monitor the 8 subtidal and 1 intertidal benthic monitoring stations at SM-001, SM-002, SM-003, SM-004, SM-005, SM-006, SM-007, SM-008, and IBM-001 (see Figure 1 and Table 1) as follows in Table 6:

Table 6. Infauna Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Benthic infauna community ²⁰	--	0.1 square meter Van Veen grab	once per permit cycle	--
Total organic carbon	mg/L	0.1 square meter Van Veen grab (upper 2 centimeters)	once per permit cycle	²¹
Organic nitrogen	mg/L	0.1 square meter Van Veen grab (upper 2 centimeters)	once per permit cycle	²¹
Grain size	phi size	0.1 square meter Van Veen grab (upper 2	once per permit cycle	²¹

²⁰ Community analysis of benthic infauna shall include number of species, number of individuals per species, total numerical abundance per station, benthic response index (BRI) and biological indices, plus utilize appropriate regression analyses, parametric and nonparametric statistics, and multivariate techniques or other appropriate analytical techniques.

²¹ Analytical methods should be USEPA approved method or any method approved in advance by the State Water Board or the Regional Water Board.

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Intertidal survey methods shall be those used by the Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO) for their biodiversity surveys. A single intertidal site at IBM-001 (see Figure 1 and Table 1) should be surveyed as close to the discharge as possible and compared to a reference location at San Clemente Island approved through the regional monitoring program.

Subtidal surveys and sampling at SM-001 through SM-008 (see Figure 1 and Table 1) may include rocky reef and/or soft bottom habitats as appropriate to the actual benthic conditions at the edge of the exclusion zone. The far field samples at SM-006 through SM-008 shall be of a comparable habitat to the near field samples at SM-001 through SM-005. Subtidal soft bottom sampling should conform to methods used in the SCCWRP Southern California Bight regional surveys. Subtidal rocky reef surveys should be non-destructive and conform to the methods used in the SCCWRP Southern California Bight regional surveys.

Benthic infauna monitoring shall be conducted annually during the month of **July**. One sample shall be taken at each station for benthic infaunal community analysis. The entire contents of each sample shall be passed through a 1.0 millimeter screen to retrieve the benthic organisms. Sampling methods and protocols shall follow those described in the most current edition of the *Field Operations Manual for Marine Water Column, Benthic and Trawl Monitoring in Southern California*. All organisms contained within the sample shall be identified to the lowest possible taxon and counted. The resulting data shall be used to describe community structure at each station.

2. Regional Benthic Survey

This regional survey addresses the questions: 1) What is the extent, distribution, magnitude and trend of ecological change in soft-bottom benthic habitats within the Southern California Bight? And 2) What is the relationship between biological response and contaminant exposure? The data collected will be used to assess the condition of the sea-floor environment and the health of the biological resources in the Bight.

A regional survey of benthic conditions within the Southern California Bight occurred in 2008 (Bight '08) and is planned subsequently every five years. The final survey design will be determined cooperatively by the participants as represented at the Regional Steering Committee. The Discharger is encouraged to support the Bight '13 benthic survey and subsequent surveys by participating in or performing the following activities:

- Participation on the Steering Committee
- Participation on the relevant Technical Committees (e.g. Information Management, Field Methods and Logistics, Benthos and Chemistry)
- Field sampling at sea
- Infaunal sample analysis
- Sediment chemistry analysis
- Data management

IX. OTHER MONITORING REQUIREMENTS

A. Special Study – Data for Plume Model Mixing Predictions

This survey answers the question: Does data from actual site receiving water conditions result in water quality modeling results that confirm the State Water Board determined minimum initial dilution value of 136?

Ocean Unit staff applied data from California Cooperative Oceanic Fisheries Investigations nearshore stations surveyed in the summers of 2010 and 2011 to evaluate the minimum initial dilution for Discharge Point 002. Based on the results, State Water Board staff determined that 136 is the value for the Minimum Initial Dilution, as defined in the 2009 Ocean Plan for use in this permit. However, neither the ambient data used by staff to model near field mixing nor the ambient data used by the US Navy's consultant represent actual site receiving water conditions. As a result, the Navy is required to collect salinity and temperature data from near the outfall as described below.

The Discharger shall collect temperature and salinity data from throughout the water column in the vicinity of the Discharge Point 002 at OVL-001 (see Figure 1 and Table 1) in areas unaffected by the plume on a monthly basis during the summer for a period of two years to enable more relevant plume model mixing predictions. The data shall be collected from areas of similar depth as the outfall for two years.

B. Special Study – Constituents of Emerging Concern (CEC) in Effluent

This survey answers the question: Are CECs present in the effluent discharge at SCI WWTP?

In recent years, this Regional Water Board has incorporated monitoring of a select group of man-made chemicals, particularly pesticides, pharmaceuticals and personal care products, known collectively as constituents of emerging concern (CECs), into permits issued to wastewater treatment plants to better understand the propensity, persistence and effects of CECs in our environment. Recently adopted permits in this region contain requirements for CEC monitoring and submittal of a work plan identifying the CECs to be monitored in effluent, sample type, frequency and methodology. Based on feedback we have received from permittees and our review of the results of a recent CEC-related study by SCCWRP and the State Water Board, we have modified our CEC monitoring program to respond to feedback while proceeding to fill identified data gaps without overly burdening any one permittee.

1. The Discharger shall conduct a special study to investigate CECs in the effluent. Specifically, within 6 months of the effective date of this Order, the Discharger shall develop a CEC special study work plan and submit it for Regional Water Board Executive Officer approval. Immediately upon approval of the work plan, the Discharger shall fully implement the work plan.
2. Consistent with CWC section 13267 and 13383, the CECs listed in Table 7 shall be monitored once per permit cycle. Unless required by another condition of this Order, there is no need to collect additional data for constituents for which at least 2 years of data have already been collected. The Regional Water Board has determined that 2 years is an appropriate time period to determine those CECs that are present in wastewater effluent. Monitoring results shall be reported as part of the annual summary report. Existing data shall be summarized and reported in the 2013 annual summary report.

Table 7 CEC Monitoring Requirements

Parameter	Unit	Sample Type	Minimum Sampling Frequency	Analytical Test Method and (Minimum Level, units)
17 α -Ethinyl Estradiol	ng/L	To be proposed	Once per permit cycle	To be proposed
17 β -Estradiol	ng/L	To be proposed	Once per permit cycle	To be proposed
Estrone	ng/L	To be proposed	Once per permit cycle	To be proposed
Bisphenol A	ng/L	To be proposed	Once per permit cycle	To be proposed
Nonylphenol & Nonylphenol polyethoxylates	ng/L	To be proposed	Once per permit cycle	To be proposed
Octylphenol & octylphenol polyethoxylates	ng/L	To be proposed	Once per permit cycle	To be proposed
Polybrominated diphenyl ethers	ng/L	To be proposed	Once per permit cycle	To be proposed
Acetaminophen	ng/L	To be proposed	Once per permit cycle	To be proposed
Amoxicillin	ng/L	To be proposed	Once per permit cycle	To be proposed
Azithromycin	ng/L	To be proposed	Once per permit cycle	To be proposed
Carbamazepine	ng/L	To be proposed	Once per permit cycle	To be proposed
Caffeine	ng/L	To be proposed	Once per permit cycle	To be proposed
Ciprofloxacin	ng/L	To be proposed	Once per permit cycle	To be proposed
N,N-Diethyl-m-toluamide (DEET)	ng/L	To be proposed	Once per permit cycle	To be proposed
Dilantin	ng/L	To be proposed	Once per permit cycle	To be proposed
Gemfibrozil	ng/L	To be proposed	Once per permit cycle	To be proposed
Ibuprofen	ng/L	To be proposed	Once per permit cycle	To be proposed
Lipitor (Atorvastatin)	ng/L	To be proposed	Once per permit cycle	To be proposed
Iodinated contrast media (iopromide)	ng/L	To be proposed	Once per permit cycle	To be proposed
Sulfamethoxazole	ng/L	To be proposed	Once per permit cycle	To be proposed
Trimethoprim	ng/L	To be proposed	Once per permit cycle	To be proposed

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Parameter	Unit	Sample Type	Minimum Sampling Frequency	Analytical Test Method and (Minimum Level, units)
Salicylic acid	ng/L	To be proposed	Once per permit cycle	To be proposed
TCEP, TCPP and TDCPP	ng/L	To be proposed	Once per permit cycle	To be proposed
Triclosan	ng/L	To be proposed	Once per permit cycle	To be proposed
Bifenthrin	ng/L	To be proposed	Once per permit cycle	To be proposed
Permethrin	ng/L	To be proposed	Once per permit cycle	To be proposed
Chlorpyrifos	ng/L	To be proposed	Once per permit cycle	To be proposed
Galaxolide	ng/L	To be proposed	Once per permit cycle	To be proposed
Diclofenac	ng/L	To be proposed	Once per permit cycle	To be proposed
Butylbenzyl Phthalate	ng/L	To be proposed	Once per permit cycle	To be proposed
Perfluorooctane Sulfonate (PFOS)	ng/L	To be proposed	Once per permit cycle	To be proposed
Fipronil	ng/L	To be proposed	Once per permit cycle	To be proposed
Meprobamate	ng/L	To be proposed	Once per permit cycle	To be proposed

C. Outfall Inspection

This survey answers the question: Are the outfall structures in serviceable condition ensuring their continued safe operation? The data collected will be used for a periodic assessment of the integrity of the outfall pipes and ballast system.

The entire ocean outfall for Discharge Point 002 shall be inspected externally a minimum of once a year during the month of July or August. This shall consist of:

1. An examination of the outfall for plugs, leaks, and flow distribution. A detailed structural analysis of the pipes every five years submitted with the ROWD shall be conducted using underwater television/videotape and submarine visual inspection, where appropriate, to provide a comprehensive report on the discharge pipe systems from shallow water to the respective termini. The annual visual inspection shall be conducted on the external condition of the outfall and ballast systems. A written report documenting conditions shall be prepared and submitted with the Annual Summary Report to this Regional Water Board.
2. A visual inspection at and in the vicinity of the outfall system to determine thickness of any "cloud" of unsettled solids, bottom flora and fauna, and any other biological and physical conditions. Inspections shall include general observations and photographic

records of the outfall pipe and the surrounding ocean bottom. A report (including photographs) discussing the above information shall be submitted with the Annual Summary Report to this Regional Water Board.

D. Sludge Monitoring and Reporting

1. The Discharger must comply with all requirements of 40 CFR parts 257, 258, 501, and 503, including all applicable monitoring, recordkeeping, and reporting requirements.
2. The Discharger must comply with the monitoring and reporting requirements outlined in Attachment I of this Order (Biosolids/Sludge Management).
3. A monthly report shall be provided, noting the moisture content, weight, and volume of screenings, sludges, grit, and other solids removed from the wastewater. The point(s) from which these wastes were obtained and the disposal sites to which waste solids are transported shall be specified in monthly reports.

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all General Monitoring Provisions in Section I. of this MRP and Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.
2. All samples shall be representative of the waste discharge under conditions of peak load. Weekly effluent analyses shall be performed on different weekdays during each month. Quarterly influent and effluent analyses shall be performed during the months of January, April, July, and October. Semiannual influent and effluent analyses shall be performed during the months of May and November. Annual influent and effluent analyses shall be performed during the month of August. Should there be instances when monitoring could not be done during these specified months, the Discharger must notify the Regional Water Board, state the reason why the monitoring could not be conducted, and obtain approval from the Executive Officer for an alternate schedule. Results of quarterly, semiannual, and annual analyses shall be reported in the quarterly monitoring report following the analysis, unless otherwise specified.
3. If there is no discharge during any reporting period, the report shall so state.
4. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and the corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance with discharge requirements, as well as all excursions of effluent limitations.
5. The Discharger shall inform the Regional Water Board well in advance of any proposed construction activity that could potentially affect compliance with applicable requirements.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (eSMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program website (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS website will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

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2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly, quarterly, semiannual, annual SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. 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 except monitoring required under sections VIII.B (excluding residual chlorine monitoring and visual observations) through VIII.D, shall be completed according to the following schedule on Table 8:

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Table 8 Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with quarterly SMR
Hourly	Permit effective date	Hourly	Submit with quarterly SMR
Daily	Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	Submit with quarterly SMR
Weekly	Sunday following permit effective date or on permit effective date if on a Sunday	Sunday through Saturday	Submit with quarterly SMR
Monthly	First day of calendar month following permit effective date or on permit effective date if that date is first day of the month	1 st day of calendar month through last day of calendar month	Submit with quarterly SMR
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 15 August 15 November 15 February 15
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 15 February 15
Annually	January 1 following (or on) permit effective date	January 1 through December 31	April 15

4. Reporting Protocols. The Discharger shall report with each sample result the applicable reported ML and the current MDL, as determined by the procedure in 40 CFR part 136.

For each numeric effluent limitation identified in Table B of the 2009 Ocean Plan, the Discharger shall select one or more Minimum Levels (ML) and their associated analytical methods from Appendix II of the 2009 Ocean Plan. The "reported" ML is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from Appendix II.

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

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

- i. 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).
- ii. 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 as well as the words "Estimated Concentration" (may be shortened to "Est. Conc."). 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.

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

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

- i. 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.
- ii. 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.
- iii. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D). Paper SMRs should be converted to a Portable Document Format (PDF). Documents that are less than 10 megabytes (MB) shall be emailed to losangeles@waterboards.ca.gov. Documents that are 10 MB or larger shall be transferred to a disk and mailed to the address listed below:

California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Attention: Information Technology Unit

Reference the reports to Compliance File No. CI-6432 to facilitate routing to the appropriate staff and file.

Dischargers who have been certified to only submit electronic SMRs to CIWQS should continue doing so, as previously required.

C. Discharge Monitoring Reports (DMRs)

1. As described in section X.B.1 above, at any time during the term of this Order, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). 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 Discharger shall submit the original DMR and one copy of the DMR to the address listed below:

STANDARD MAIL	FEDEX/UPS/ OTHER PRIVATE CARRIERS
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15 th Floor Sacramento, CA 95814

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 will not be accepted unless they follow the exact same format of EPA Form 3320-1.

D. Other Reports

1. The Discharger shall report the results of any special studies, acute and chronic toxicity testing, TRE/TIE, PMP, and Pollution Prevention Plan, etc. required by Special Provisions – section VI.C of this Order. The Discharger shall report the progress in satisfaction of compliance schedule dates specified in Special Provisions – section VI.C.7 of this Order. The Discharger shall submit reports in compliance with reporting schedules described in each section.

2. Annual Summary Report

By April 15 of each year, the Discharger shall submit an annual summary report containing a discussion of the previous year's influent/effluent analytical results and receiving water bacterial monitoring data. The annual summary report shall contain tabular summaries of the monitoring analytical data. The annual summary report shall also contain an overview of any plans for upgrades to the treatment plant's collection system, the treatment processes, or the outfall system, and sewer and plant maintenance activities. The Discharger shall submit a hard copy annual summary report to the Regional Water Board in accordance with the requirements described in subsection B.5 above.

California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013
Attention: Information Technology Unit

Reference the reports to Compliance File No. CI-6432 to facilitate routing to the appropriate staff and file.

3. Receiving Water Monitoring Report

An annual summary of the receiving water monitoring data collected during each sampling year (January – December) shall be prepared and submitted so that it is received by the Regional Water Board by April 15 of the following year. The first annual receiving water monitoring summary report is due by April 15, 2014, covering the period from January 1, 2013 through December 31, 2013.

By April 15 of every other year, a biennial receiving water monitoring report instead of the annual summary report shall be prepared and submitted to the Regional Water Board. This report shall include an in-depth discussion of the results from the Receiving Water Monitoring programs conducted during the previous two calendar years. The report may be limited to discussion of those components of the Receiving Water Monitoring Program that are local in nature. Results of regional surveys need not be included. Temporal and spatial trends in the data shall be analyzed, with particular reference to comparisons between stations with respect to distance from the outfall and comparisons to data collected during previous years. Appropriate statistical tests and indices, subject to approval of the Executive Officer, shall be calculated and included in the biennial report. The first biennial report shall be due on April 15, 2015 covering the period from January 1, 2013 through December 31, 2014.

Submission of reports of the results of regional monitoring programs in which the Regional Water Board and Discharger are co-participants will not be the responsibility of the Discharger.

4. Outfall Inspection Report

A summary of the Outfall Inspection findings shall be submitted by April 15 of the year following an outfall inspection survey. This written report, augmented with videographic and/or photographic images, will provide a description of the observed external condition of the discharge pipes from shallow water to their respective termini. The first report is due on April 15, 2014.