



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD



SAN DIEGO REGION

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Edmund G. Brown Jr.
Governor

ORDER NO. R9-2011-0032 AS AMENDED BY ORDER NO. R9-2013-0034
NPDES NO. CA0107336

WASTE DISCHARGE REQUIREMENTS
FOR SEAWORLD PARKS & ENTERTAINMENT, INC. A DELAWARE CORPORATION, SEAWORLD
LLC DBA SEAWORLD SAN DIEGO

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 1. Discharger Information

Table with 2 columns: Discharger, Name of Facility, Facility Address, and a note about discharge classification.

The discharge by SeaWorld San Diego, from the discharge points identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Locations

Table with 5 columns: Discharge Point, Effluent Description, Discharge Point Latitude, Discharge Point Longitude, and Receiving Water.

Table 3. Administrative Information

Table with 2 columns: Administrative information and dates.

I, David W. Gibson, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on June 8, 2011 and amended on April 10, 2013.

A handwritten signature in blue ink, appearing to read "David W. Gibson", written over a horizontal line.

David W. Gibson, Executive Officer

Table of Contents

I.	Facility Information	5
II.	Findings.....	6
III.	Discharge Prohibitions	15
IV.	Effluent Limitations and Discharge Specifications.....	16
	A. Effluent Limitations	16
	B. Interim Effluent Limitations—Not Applicable.....	26
	C. Land Discharge Specifications – Not Applicable	26
	D. Reclamation Specifications – Not Applicable	26
V.	Receiving Water Limitations.....	27
	A. Surface Water Limitation	27
	B. Ground water Limitations– Not Applicable.....	29
VI.	Provisions.....	30
	A. Standard Provisions	30
	B. Monitoring and Reporting Program (MRP) Requirements.....	31
	C. Special Provisions	32
	1. Reopener Provisions	32
	2. Special Studies, Technical Reports and Additional Monitoring Requirements	33
	3. Best Management Practices and Pollution Prevention	34
	4. Construction, Operation and Maintenance Specifications– Not Applicable	35
	5. Other Special Provisions	35
	6. Compliance Schedules– Not Applicable.....	36
	7. Solid Waste Disposal.....	36
VII.	Compliance Determination	37

List of Tables

Table 1.	Discharger Information.....	1
Table 2.	Discharge Locations	1
Table 3.	Administrative Information	1
Table 4.	Facility Information.....	5
Table 5.	Basin Plan Beneficial Uses	9
Table 6.	Effluent Limitations for Discharge Point No. 001 (East Outfall).....	16
Table 7.	Effluent Limitations for Discharge Point No. 002 (West Outfall).....	17
Table 8.	Performance Goals Based on Ocean Plan Table B.....	18

List of Attachments

Attachment A – Definitions	A-1
Attachment B – Map.....	B-1
Attachment C-1 – Flow Schematic for East Outfall	C-1
Attachment C-2 – Flow Schematic for East Outfall	C-2

Attachment C-3 – Flow Schematic for West Outfall..... C-3
Attachment C-4 – Flow Schematic for West Outfall..... C-4
Attachment D – Standard Provisions..... D-1
Attachment E – Monitoring and Reporting Program..... E-1
Attachment F – Fact Sheet..... F-1

I. FACILITY INFORMATION

The following Discharger is subject to waste discharge requirements as set forth in this Order:

Table 4. Facility Information

Discharger	SeaWorld Parks & Entertainment, Inc. a Delaware Corporation, SeaWorld LLC d/b/a/ SeaWorld San Diego
Name of Facility	Sea World San Diego
Facility Address	500 Sea World Drive
	San Diego, CA 92109
	San Diego County
Facility Contact, Title, and Phone	Buddy Burton, Environmental Health and Safety Director, 619-226-3966
Mailing Address	500 Sea World Drive San Diego, CA 92109
Type of Facility	Amusement Park
Facility Design Flow	9.36 million gallons per day (MGD)

II. FINDINGS

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

A. Background. SeaWorld Parks & Entertainment, Inc. a Delaware Corporation, SeaWorld LLC d/b/a/ SeaWorld San Diego (hereinafter Discharger) is currently discharging pursuant to Order No. R9-2005-0091 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0107336. On December 12, 2007 the Regional Water Board adopted Addendum No. 1 to Order No. R9-2005-0091, which established prohibitions and requirements for waste discharges associated with aerial fireworks displays conducted over Mission Bay. The Discharger submitted a Report of Waste Discharge (ROWD) dated October 15, 2009 and applied for a NPDES permit renewal to discharge up to 9.36 MGD of treated wastewater from Sea World San Diego. The Disclosure Statement was received on October 15, 2009. Supplemental information, (USEPA Form 2B, Application for Permit to Discharge Wastewater, Concentrated Animal Feeding Operations and Aquatic Production Facilities) was submitted by the Discharger on January 5, 2010. Priority pollutant analyses for the receiving water and effluent were submitted by the Discharger on March 18, 2010. The NPDES application was deemed complete on April 19, 2010

Discharges associated with aerial fireworks displays were previously regulated by Order No. R9-2005-0091. These discharges will now be covered under the General Permit for Residual Firework Pollutant Waste Discharges to Waters of United States in the San Diego Region (Order No. R9-2011-0022, NPDES No. CAG999002)

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

B. Facility Description. The Discharger owns and operates an aquatic amusement park (Facility) that houses various marine animals in exhibit pools and aquaria with a total capacity of 11,480,600 gallons. The Discharger proposes to discharge up to 9.36 MGD of wastewater from exhibit pools and aquaria, intermittent flows during pool draining and cleaning operations, runoff from landscape irrigation, and facility wash down water. Storm water is discharged from the Facility during rain events. Wastewater from the Facility has the potential to contain a variety of pollutants attributable to feeds, (directly or indirectly through feces), residuals of drugs used for maintenance of animal health, and residuals of chemicals used for cleaning or for maintaining water quality conditions. In addition, storm water discharged from the facility during rain events has the potential to contain pollutants, including pesticides used for landscape maintenance.

The Discharger pumps seawater from Mission Bay through two intake structures (East and West) for use in its mammal pools, aquaria, and other exhibits. Prior to discharge into Mission Bay, the effluent is directed to one of two treatment systems operated by the Discharger. The East and West Effluent Treatment facilities are chlorination/dechlorination treatment systems. The wastewater is screened via one inch screens and diversion chambers transfer the water to chlorine contact chambers. Sodium hypochlorite is injected at three prechlorination points in each collection system prior to the contact chamber. Residual chlorine is neutralized by injection of sodium sulfite. The treated, dechlorinated wastewater is discharged to Mission Bay through two outfalls, Discharge Point No. 001 (East Outfall) and Discharge Point No. 002 (West Outfall). Discharge Point No. 001 has a maximum discharge rate of 3.24 MGD and Discharge Point No. 002 has a maximum discharge rate of 6.12 MGD. Attachment B provides a map of the area around the facility. Attachments C-1 through C-4 provide flow schematics of the facility.

- C. Legal Authorities.** This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the California Water Code (commencing with section 13260).
- D. Background and Rationale for Requirements.** The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E are also incorporated into this Order.
- E. California Environmental Quality Act (CEQA).** Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.
- F. Technology-based Effluent Limitations.** Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations¹, require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. CWA section 402(a)(1) and section 125.3 authorize the use of best professional judgment (BPJ) to derive technology based limitations on a case-by-case basis when Effluent Limitations Guidelines are not available for an industrial category and/or

¹ All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

pollutants of concern. When BPJ is used, permit writers must consider specific factors outlined in section 125.3.

This Order incorporates technology-based requirements from the Effluent Limitations Guidelines and Standards for the Concentrated Aquatic Animal Production Point Source Category in Part 451 and it establishes technology-based requirements using BPJ. In addition, limitations for some parameters in this Order were derived from the Ocean Plan; Table A, technology-based requirements. A detailed discussion of the technology-based effluent limitations development is included in Attachment F.

G. Water Quality-Based Effluent Limitations. Section 301(b) of the CWA and section 122.44(d) require that permits include limitations more stringent than applicable federal technology-based requirements where necessary to achieve applicable water quality standards.

Section 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, water quality-based effluent limitations (WQBELs) must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in section 122.44(d)(1)(vi).

H. Water Quality Control Plans. The Regional Water Board adopted a Water Quality Control Plan for the San Diego Basin (hereinafter Basin Plan) on September 8, 1994, and last amended on April 25, 2007, that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to Mission Bay are listed in Table 5, *Beneficial Uses of Mission Bay*:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001 and 002	Mission Bay	<p><u>Existing:</u> Industrial service supply (IND), contact water recreation (REC1), non-contact water recreation (REC2), commercial and sport fishing (COMM), estuarine habitat (EST), wildlife habitat (WILD), preservation of rare, threatened or endangered species (RARE), marine habitat (MAR), migration of aquatic organisms (MIGR), and shellfish harvesting (SHELL).</p> <p><u>Intermittent:</u> None</p> <p><u>Potential:</u> None</p>

Requirements of this Order implement the Basin Plan.

The State Water Board California 303(d) list classifies Mission Bay as impaired because of bacteria, lead, and eutrophication. Currently there is no proposed date for the total maximum daily load (TMDL) completion for any of these pollutants in the receiving water body. Upon completion of the TMDL for Mission Bay, the Regional Water Board may re-open this Order to include TMDL allocations.

The State Water Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California* (Thermal Plan) on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for surface waters. Requirements of this Order implement the Thermal Plan.

The State Water Board adopted the *Water Quality Control Policy for Enclosed Bays and Estuaries of California (Bays and Estuaries Policy)* on May 16, 1974. The *Bays and Estuaries Policy* establishes principles for management of water quality, quality requirements for waste discharges, discharge prohibitions, and general provisions to prevent water quality degradation and to protect the beneficial uses of waters of enclosed bays and estuaries. These principles, requirements, prohibitions, and provisions have been incorporated into this Order.

The State Water Board adopted the *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality* on September 16, 2008. Effective August 25, 2009 Part 1 Sediment Quality integrates chemical and biological measures to determine if the sediment dependent biota are protected or degraded as a result of exposure to toxic pollutants. Requirements of this Order implement the Part 1 – Sediment Quality Plan.

The State Water Board adopted a *Water Quality Control Plan for Ocean Waters of California (Ocean Plan)* in 1972 and amended it in 1978, 1983, 1990, 1997,

2000, and 2005. Beneficial uses of Mission Bay are similar to those of the ocean waters of the State. In order to protect the beneficial uses of Mission Bay, the discharge specifications for some parameters in this Order were derived from the Ocean Plan.

- I. National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.
- J. State Implementation Policy.** On March 2, 2000, the State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
- K. Compliance Schedules and Interim Requirements.** Section 2.1 of the SIP provides that, based on a Discharger's request and demonstration that it is infeasible for an existing Discharger to achieve immediate compliance with an effluent limitation derived from a CTR criterion, compliance schedules may be allowed in an NPDES permit. Unless an exception has been granted under section 5.3 of the SIP, a compliance schedule may not exceed 5 years from the date that the permit is issued or reissued, nor may it extend beyond 10 years from the effective date of the SIP (or May 18, 2010) to establish and comply with CTR criterion-based effluent limitations. Where a compliance schedule for a final effluent limitation exceeds 1 year, the Order must include interim numeric limitations for that constituent or parameter. Where allowed by the Basin Plan, compliance schedules and interim effluent limitations or discharge specifications may also be granted to allow time to implement a new or revised water quality objective. This Order does not include compliance schedules and interim numeric limitations.
- L. Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes. (40 CFR 131.21; 65 Fed. Reg. 24641 (April 27, 2000).) Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by

USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000 may be used for CWA purposes, whether or not approved by USEPA.

M. Stringency of Requirements for Individual Pollutants. This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. As discussed in section IV.B.2.a, of the Fact Sheet, the technology-based effluent limitations applied in this Order consist of effluent limitations for settleable solids, oil and grease, and turbidity, based on the requirements of the Ocean Plan, Table A.

Water quality-based effluent limitations (WQBELs) have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the extent that toxic pollutant water quality-based effluent limitations were derived from the CTR, the CTR is the applicable standard pursuant to section 131.38. The scientific procedures for calculating the individual water quality-based effluent limitations for priority pollutants are based on the CTR-SIP, which was approved by USEPA on May 18, 2000. All beneficial uses and water quality objectives contained in the Basin Plan were approved under state law and submitted to and approved by USEPA prior to May 30, 2000. Any water quality objectives and beneficial uses submitted to USEPA prior to May 30, 2000, but not approved by USEPA before that date, are nonetheless “applicable water quality standards for purposes of the CWA” pursuant to section 131.21(c)(1).

Collectively, this Order’s restrictions on individual pollutants are no more stringent than required to implement the requirements of the CWA.

N. Antidegradation Policy. Section 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California’s antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board’s Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. As discussed in detail in the Fact Sheet the permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.

O. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent

limitations in this Order are at least as stringent as the effluent limitations in the previous Order and meet State and federal anti-backsliding requirements.

P. Endangered Species Act. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. sections 1531 to 1544). This Order requires compliance with effluent limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the state. The Discharger is responsible for meeting all requirements of the applicable Endangered Species Act.

Q. Concentrated Aquatic Animal Production Facilities. USEPA regulations require discharges from concentrated aquatic animal production (CAAP) facilities to be authorized by an NPDES permit if the facility is a concentrated animal production facility pursuant to regulations found at 122.24 and the criteria found in Appendix C of section 122, or any similar facility that the Director (Executive Officer) determines may be a significant contributor of pollution to waters of the State [122.24(c)]. The criteria described in Appendix C of section 122 are as follows: A hatchery, fish farm, or other facility is a CAAP facility if it grows, contains, or holds, aquatic animals in any of the following categories:

1. Cold water fish species or other cold water aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year, but does not include facilities that produce or hold less than approximately 9,090 kg (approximately 20,000 lbs) or aquatic animals per year. It also does not include facilities that feed less than 2,272 kg (approximately 5,000 lbs) of food during the calendar month of maximum feeding.
2. Warm water fish species or other warm water aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year, but does not include closed ponds which discharge only during periods of excess runoff, or facilities that produce or hold less than 45,454 kg (approximately 100,000 lbs) of aquatic animals per year.
3. Any similar facility that the Executive Officer determines may be a significant contributor of pollution to waters of the United States.

On 23 August 2004 USEPA published the *Effluent Limitations Guidelines for the Concentrated Aquatic Animal Production Point Source Category* established by USEPA at 40 CFR Part 451 (ELG). The ELG became effective on 22 September 2004. The ELGs apply to facilities that produce at least 100,000 lbs per year. The ornamental and aquarium fish at the Facility are produced and maintained solely for exhibit purposes, however, operations at the Facility are similar to aquaculture production facilities and some best management practices in this

Order are derived from the CAAP ELGs.

Chemicals used in aquaculture are strictly regulated by the U.S. Food and Drug Administration (FDA) through the Federal Food, Drug, and Cosmetic Act (FFDCA; 21 U.S.C 301-392). FDA's Center for Veterinary Medicine (CVM) regulates the manufacture, distribution, and use of animal drugs. CVM approves the use of new animal drugs based on data provided by a sponsor (usually a drug company). To be approved by CVM, an animal drug must be effective for the claim on the label and safe when used as directed for (1) treated animals; (2) persons administering the treatment; (3) the environment, including non-target organisms; and (4) consumers. A licensed veterinarian may also prescribe drugs under the FDA-CVM's extra label drug use policy. The veterinarian assumes the responsibility for drug safety and efficacy, and for potential residues. The Discharger is responsible for complying with all regulations for use of drugs and chemicals.

- R. Monitoring and Reporting.** Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.
- S. Standard and Special Provisions.** Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42. The Regional Water Board has also included in this Order special provisions applicable to the Discharger. A rationale for the special provisions contained in this Order is provided in the attached Fact Sheet (Attachment F). Section 13263.3 of the California Water Code states that pollution prevention should be the first step in the hierarchy for reducing pollution and managing wastes. Further, section 13300.3 (d)(1) states that a Regional Water Board may require a Discharger to complete and implement a pollution prevention plan if the Board determines pollution prevention is necessary to achieve a water quality objective. The results of a reasonable potential analysis and other evaluations of effluent data detailed in section IV.C.3 of Attachment F to this Order (Fact Sheet) indicate the Discharger has potential to contribute to exceedances of water quality objectives for copper and silver. This Order does not require the Discharger to develop and implement a pollution prevention plan.
- T. Provisions and Requirements Implementing State Law.** The provisions/requirements in subsections VI.C. of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these

provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations.

U. Notification of Interested Parties. The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

V. Consideration of Public Comment. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge. Details of the Public Hearing are provided in the Fact Sheet of this Order.

THEREFORE, IT IS HEREBY ORDERED, that Order No. R9-2005-0091 and Addendum No. 1 to Order No. R9-2005-0091 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

- A.** Compliance with the waste discharge prohibitions contained in the Basin Plan (herein incorporated by reference) is required as a condition of this Order.
- B.** Discharges of wastes in a manner or to a location which have not been specifically authorized by this Order and for which valid waste discharge requirements are not in force are prohibited.
- C.** Aquaria and pool draining operations are prohibited during a storm water by-pass discharge event. The discharger must minimize the use of storm water by-passes at Discharge Point Nos. 001 and 002.
- D.** The discharge of wastewater and storm water in excess of the effluent limitations in section IV.A.1 of this Order are prohibited unless the Discharger obtains revised waste discharge requirements authorizing an increased discharge.
- E.** The Discharge shall not cause pollution, contamination, or nuisance, as those terms are defined in California Water Code (CWC) Section 13050, as a result of the treatment or discharge of wastes.
- F.** Practices that allow accumulated sludge, grit, and solid residues to be discharged to surface waters are prohibited.
- G.** Odors, vectors, and other nuisances of waste origin beyond the limits of the property controlled by Discharger are prohibited.
- H.** The discharge of wastes that cause or contribute to the violation of water quality standards (designated beneficial uses and water quality objectives developed to protect beneficial uses) is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations

1. Final Effluent Limitations – Discharge Point Nos. 001 and 002.

- a. Discharge Point No. 001 (East Outfall) - The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 001, with compliance measured at EFF-001, as described in the attached MRP.

Table 6. Effluent Limitations for Discharge Point No. 001 (East Outfall)

Parameter	Units	Effluent Limitations				
		6 Month Median	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	MGD	--	--	3.24	--	--
pH	standard units	--	--	--	7.0	9.0
Oil and Grease	mg/L	--	25	--	--	75
	lbs/day ¹	--	676	--	--	2,026
Turbidity	NTU	--	75	--	--	225
Settleable Solids	ml/L	--	1.0	--	--	3.0
Suspended Solids	mg/L	Narrative ²				
Ammonia	mg/L	--	--	--	--	0.55
	lbs/day ¹	--	--	--	--	15
Chlorine Residual	mg/L	--	0.21	--	--	0.42
	lbs/day ¹	--	5.7	--	--	11.3
Copper, Total Recoverable	µg/L	24	38.13	76.5	--	--
	lbs/day ¹	0.65	1.0	2.1	--	--
Silver, Total Recoverable	µg/L	6.5	23.16	36	--	--
	lbs/day ¹	0.2	0.6	1.0	--	--
Enterococcus	CFU/100 mL	--	35	--	--	104
Fecal Coliform	MPN/100 mL	Narrative ³				
Total Coliform	MPN/100 mL	Narrative ⁴				
Chronic Toxicity	--	Narrative ⁵				

¹ Mass-based effluent limitations calculated based on a maximum flow rate of 3.24 MGD.

² The concentration of suspended solids in the discharge of aquaria wastewater through Outfall No. 001 shall not be increased in excess of 10 mg/L as a monthly average or 15 mg/L as a daily maximum when compared to the suspended solids concentration in the intake water.

³ The fecal coliform concentration based on a minimum of not less than five samples over a calendar month, shall not exceed a log mean of 200/100mL, nor shall more than 10 percent of total samples during any calendar month exceed 400/100mL.

⁴ The median total coliform concentration throughout the water column for any calendar month shall not exceed 70/100mL nor shall more than 10 percent of the samples collected during any calendar month exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three tube dilution test is used.

⁵ There shall be no chronic toxicity in the effluent discharge.

- b. Discharge Point No. 002 (West Outfall) - The Discharger shall maintain compliance with the following effluent limitations at Discharge Point No. 002, with compliance measured at EFF-002, as described in the attached MRP.

Table 7. Effluent Limitations for Discharge Point No. 002 (West Outfall)

Parameter	Units	Effluent Limitations				
		6 Month Median	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Flow	mgd	--	--	6.12	--	--
pH	standard units	--	--	--	7.0	9.0
Oil and Grease	mg/L	--	25	--	--	75
	lbs/day ¹	--	1,276	--	--	3,828
Turbidity	NTU	--	75	--	--	225
Settleable Solids	ml/L	--	1.0	--	--	3.0
Suspended Solids	mg/L	Narrative ²				
Ammonia	mg/L	--	--	--	--	0.55
	lbs/day ¹	--	--	--	--	28.1
Chlorine Residual	mg/L	--	0.21	--	--	0.42
	lbs/day ¹	--	10.7	--	--	21.4
Copper, Total Recoverable	µg/L	24	38.13	76.5	--	--
	lbs/day ¹	1.2	1.9	3.9	--	--
Silver, Total Recoverable	µg/L	6.5	23.16	36	--	--
	lbs/day ¹	0.33	1.2	1.8	--	--
Enterococcus	CFU/100 mL	--	35	--	--	104
Fecal Coliform	MPN/100 mL	Narrative ³				
Total Coliform	MPN/100 mL	Narrative ⁴				
Chronic Toxicity	--	Narrative ⁵				

¹ Mass-based effluent limitations calculated based on a maximum flow rate of 6.12 MGD.

² The concentration of suspended solids in the discharge of aquaria wastewater through Outfall No. 001 shall not be increased in excess of 10 mg/L as a monthly average or 15 mg/L as a daily maximum when compared to the suspended solids concentration in the intake water.

³ The fecal coliform concentration based on a minimum of not less than five samples over a calendar month, shall not exceed a log mean of 200/100mL, nor shall more than 10 percent of total samples during any calendar month exceed 400/100mL.

⁴ The median total coliform concentration throughout the water column for any calendar month shall not exceed 70/100mL nor shall more than 10 percent of the samples collected during any calendar month exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three tube dilution test is used.

⁵ There shall be no chronic toxicity in the effluent discharge.

2. Discharge Specifications

- a. The Discharger shall not cause pollution, contamination, or nuisance, as those terms are defined in CWC 13050, as a result of the treatment or discharge of wastes.
- b. All waste treatment, containment and disposal facilities shall be protected against 100-year peak stream flows as defined by the San Diego County flood control agency.
- c. All waste treatment, containment and disposal facilities shall be protected against erosion, overland runoff and other impacts resulting from a 100-year frequency 24-hour storm.
- d. Collected screenings, sludges, and other solids removed from intake water or liquid wastes, shall be disposed of in compliance with appropriate local, regional, and state regulations or statutes.
- e. The discharge shall not result in the release of exotic species or species not native to Mission Bay, including exotic or non-native pathogens.
- f. The discharge of substances for which effluent limitations are not established in this Order shall be prevented, or, if the discharge cannot be prevented, minimized.

3. Performance Goals at Discharge Point Nos. 001 and 002

Constituents that do not have reasonable potential or had inconclusive reasonable potential analysis results are referred to as performance goal constituents and are assigned the performance goals listed in the following table. Performance goal constituents shall be monitored at EFF-001 and EFF-002, but the results will be used for informational purposes only, not compliance determination. Performance goals for Ocean Plan Table B constituents were calculated using the dilution factor of 21 to 1 for Discharge Point Nos. 001 and 002.

Table 8. Performance Goals Based on Ocean Plan Table B.

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
BASED ON OBJECTIVES FOR THE PROTECTION OF MARINE AQUATIC LIFE					
Arsenic, Total Recoverable	µg/L	1.1E+02	--	6.4E+02	1.7E+03
	lbs/day ²	3.1E+00	--	1.7E+01	4.6E+01
	lbs/day ³	5.8E+00	--	3.3E+01	8.7E+01

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
Cadmium, Total Recoverable	µg/L	2.2E+01	--	8.8E+01	2.2E+02
	lbs/day ²	5.9E-01	--	2.4E+00	5.9E+00
	lbs/day ³	1.1E+00	--	4.5E+00	1.1E+01
Chromium VI, Total Recoverable	µg/L	4.4E+01	--	1.8E+02	4.4E+02
	lbs/day ²	1.2E+00	--	4.8E+00	1.2E+01
	lbs/day ³	2.2E+00	--	9.0E+00	2.2E+01
Lead, Total Recoverable	µg/L	4.4E+01	--	1.8E+02	4.4E+02
	lbs/day ²	1.2E+00	--	4.8E+00	1.2E+01
	lbs/day ³	2.2E+00	--	9.0E+00	2.2E+01
Mercury, Total Recoverable	µg/L	8.7E-01	--	3.5E+00	8.8E+00
	lbs/day ²	2.3E-02	--	9.5E-02	2.4E-01
	lbs/day ³	4.4E-02	--	1.8E-01	4.5E-01
Nickel, Total Recoverable	µg/L	1.1E+02	--	4.4E+02	1.1E+03
	lbs/day ²	3.0E+00	--	1.2E+01	3.0E+01
	lbs/day ³	5.6E+00	--	2.2E+01	5.6E+01
Selenium, Total Recoverable	µg/L	3.3E+02	--	1.3E+03	3.3E+03
	lbs/day ²	8.9E+00	--	3.6E+01	8.9E+01
	lbs/day ³	1.7E+01	--	6.7E+01	1.7E+02
Zinc, Total Recoverable	µg/L	2.7E+02	--	1.6E+03	4.2E+03
	lbs/day ²	7.3E+00	--	4.3E+01	1.1E+02
	lbs/day ³	1.4E+01	--	8.1E+01	2.2E+02
Cyanide, Total Recoverable ⁴	µg/L	2.2E+01	--	8.8E+01	2.2E+02
	lbs/day ²	5.9E-01	--	2.4E+00	5.9E+00
	lbs/day ³	1.1E+00	--	4.5E+00	1.1E+01
Ammonia, as Nitrogen	µg/L	1.3E+04	--	5.3E+04	1.3E+05
	lbs/day ²	3.6E+02	--	1.4E+03	3.6E+03
	lbs/day ³	6.7E+02	--	2.7E+03	6.7E+03
Phenolic Compounds (non-chlorinated)	µg/L	6.6E+02	--	2.6E+03	6.6E+03
	lbs/day ²	1.8E+01	--	7.1E+01	1.8E+02
	lbs/day ³	3.4E+01	--	1.3E+02	3.4E+02
Chlorinated Phenolics	µg/L	2.2E+01	--	8.8E+01	2.2E+02
	lbs/day ²	5.9E-01	--	2.4E+00	5.9E+00
	lbs/day ³	1.1E+00	--	4.5E+00	1.1E+01
Endosulfan	µg/L	2.0E-01	--	4.0E-01	5.9E-01
	lbs/day ²	5.4E-03	--	1.1E-02	1.6E-02
	lbs/day ³	1.0E-02	--	2.0E-02	3.0E-02

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
Endrin	µg/L	4.4E-02	--	8.8E-02	1.3E-01
	lbs/day ²	1.2E-03	--	2.4E-03	3.6E-03
	lbs/day ³	2.2E-03	--	4.5E-03	6.7E-03
HCH ⁵	µg/L	8.8E-02	--	1.8E-01	2.6E-01
	lbs/day ²	2.4E-03	--	4.8E-03	7.1E-03
	lbs/day ³	4.5E-03	--	9.0E-03	1.3E-02
BASED ON OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – NONCARCINOGENS					
Acrolein	µg/L	--	4.8E+03	--	--
	lbs/day ²	--	1.3E+02	--	--
	lbs/day ³	--	2.5E+02	--	--
Antimony	µg/L	--	2.6E+04	--	--
	lbs/day ²	--	7.1E+02	--	--
	lbs/day ³	--	1.3E+03	--	--
Bis(2-chloroethoxy) Methane	µg/L	--	9.7E+01	--	--
	lbs/day ²	--	2.6E+00	--	--
	lbs/day ³	--	4.9E+00	--	--
Bis(2-chloroisopropyl) ether	µg/L	--	2.6E+04	--	--
	lbs/day ²	--	7.1E+02	--	--
	lbs/day ³	--	1.3E+03	--	--
Chlorobenzene	µg/L	--	1.3E+04	--	--
	lbs/day ²	--	3.4E+02	--	--
	lbs/day ³	--	6.4E+02	--	--
Chromium (III)	µg/L	--	4.2E+06	--	--
	lbs/day ²	--	1.1E+05	--	--
	lbs/day ³	--	2.1E+05	--	--
Di-n-butyl Phthalate	µg/L	--	7.7E+04	--	--
	lbs/day ²	--	2.1E+03	--	--
	lbs/day ³	--	3.9E+03	--	--
Dichlorobenzenes ⁶	µg/L	--	1.1E+05	--	--
	lbs/day ²	--	3.0E+03	--	--
	lbs/day ³	--	5.7E+03	--	--
Diethyl Phthalate	µg/L	--	7.3E+05	--	--
	lbs/day ²	--	2.0E+04	--	--
	lbs/day ³	--	3.7E+04	--	--
Dimethyl Phthalate	µg/L	--	1.8E+07	--	--

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
Dimethyl Phthalate	lbs/day ²	--	4.9E+05	--	--
	lbs/day ³	--	9.2E+05	--	--
4,6-dinitro-2-methylphenol	µg/L	--	4.8E+03	--	--
	lbs/day ²	--	1.3E+02	--	--
	lbs/day ³	--	2.5E+02	--	--
2,4-dinitrophenol	µg/L	--	8.8E+01	--	--
	lbs/day ²	--	2.4E+00	--	--
	lbs/day ³	--	4.5E+00	--	--
Ethylbenzene	µg/L	--	9.0E+04	--	--
	lbs/day ²	--	2.4E+03	--	--
	lbs/day ³	--	4.6E+03	--	--
Floranthene	µg/L	--	3.3E+02	--	--
	lbs/day ²	--	8.9E+00	--	--
	lbs/day ³	--	1.7E+01	--	--
Hexachloro cyclopentadiene	µg/L	--	1.3E+03	--	--
	lbs/day ²	--	3.4E+01	--	--
	lbs/day ³	--	6.5E+01	--	--
Nitrobenzene	µg/L	--	1.1E+02	--	--
	lbs/day ²	--	2.9E+00	--	--
	lbs/day ³	--	5.5E+00	--	--
Thallium	µg/L	--	4.4E+01	--	--
	lbs/day ²	--	1.2E+00	--	--
	lbs/day ³	--	2.2E+00	--	--
Toluene	µg/L	--	1.9E+06	--	--
	lbs/day ²	--	5.1E+04	--	--
	lbs/day ³	--	9.5E+04	--	--
Tributyltin	µg/L	--	3.1E-02	--	--
	lbs/day ²	--	8.3E-04	--	--
	lbs/day ³	--	1.6E-03	--	--
1,1,1-trichloroethane	µg/L	--	1.2E+07	--	--
	lbs/day ²	--	3.2E+05	--	--
	lbs/day ³	--	6.1E+05	--	--
BASED ON OBJECTIVES FOR PROTECTION OF HUMAN HEALTH - CARCINOGENS					
Acrylonitrile	µg/L	--	2.2E+00	--	--
	lbs/day ²	--	5.9E-02	--	--
	lbs/day ³	--	1.1E-01	--	--

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
Aldrin	µg/L	--	4.8E-04	--	--
	lbs/day ²	--	1.3E-05	--	--
	lbs/day ³	--	2.5E-05	--	--
Benzene	µg/L	--	1.3E+02	--	--
	lbs/day ²	--	3.5E+00	--	--
	lbs/day ³	--	6.6E+00	--	--
Benzidine	µg/L	--	1.5E-03	--	--
	lbs/day ²	--	4.1E-05	--	--
	lbs/day ³	--	7.7E-05	--	--
Beryllium	µg/L	--	7.3E-01	--	--
	lbs/day ²	--	2.0E-02	--	--
	lbs/day ³	--	3.7E-02	--	--
Bis(2-chloroethyl) Ether	µg/L	--	9.9E-01	--	--
	lbs/day ²	--	2.7E-02	--	--
	lbs/day ³	--	5.1E-02	--	--
Bis(2-ethylhexyl) Phthalate	µg/L	--	7.7E+01	--	--
	lbs/day ²	--	2.1E+00	--	--
	lbs/day ³	--	3.9E+00	--	--
Carbon Tetrachloride	µg/L	--	2.0E+01	--	--
	lbs/day ²	--	5.4E-01	--	--
	lbs/day ³	--	1.0E+00	--	--
Chlorodane	µg/L	--	5.1E-04	--	--
	lbs/day ²	--	1.4E-05	--	--
	lbs/day ³	--	2.6E-05	--	--
Chlorodibromomethane	µg/L	--	1.9E+02	--	--
	lbs/day ²	--	5.1E+00	--	--
	lbs/day ³	--	9.7E+00	--	--
Chloroform	µg/L	--	2.9E+03	--	--
	lbs/day ²	--	7.7E+01	--	--
	lbs/day ³	--	1.5E+02	--	--
DDT ⁷	µg/L	--	3.7E-03	--	--
	lbs/day ²	--	1.0E-04	--	--
	lbs/day ³	--	1.9E-04	--	--
1,4-dichlorobenzene	µg/L	--	4.0E+02	--	--
	lbs/day ²	--	1.1E+01	--	--
	lbs/day ³	--	2.0E+01	--	--

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
3,3'-dichlorobenzidine	µg/L	--	1.8E-01	--	--
	lbs/day ²	--	4.8E-03	--	--
	lbs/day ³	--	9.1E-03	--	--
1,2-dichloroethane	µg/L	--	6.2E+02	--	--
	lbs/day ²	--	1.7E+01	--	--
	lbs/day ³	--	3.1E+01	--	--
1,1-dichloroethylene	µg/L	--	2.0E+01	--	--
	lbs/day ²	--	5.4E-01	--	--
	lbs/day ³	--	1.0E+00	--	--
Dichlorobromomethane	µg/L	--	1.4E+02	--	--
	lbs/day ²	--	3.7E+00	--	--
	lbs/day ³	--	7.0E+00	--	--
Dichloromethane	µg/L	--	9.9E+03	--	--
	lbs/day ²	--	2.7E+02	--	--
	lbs/day ³	--	5.1E+02	--	--
1,3-dichloropropene	µg/L	--	2.0E+02	--	--
	lbs/day ²	--	5.3E+00	--	--
	lbs/day ³	--	1.0E+01	--	--
Dieldrin	µg/L	--	8.8E-04	--	--
	lbs/day ²	--	2.4E-05	--	--
	lbs/day ³	--	4.5E-05	--	--
2,4-dinitrotoluene	µg/L	--	5.7E+01	--	--
	lbs/day ²	--	1.5E+00	--	--
	lbs/day ³	--	2.9E+00	--	--
1,2-diphenylhydrazine	µg/L	--	3.5E+00	--	--
	lbs/day ²	--	9.5E-02	--	--
	lbs/day ³	--	1.8E-01	--	--
Halomethanes	µg/L	--	2.9E+03	--	--
	lbs/day ²	--	7.7E+01	--	--
	lbs/day ³	--	1.5E+02	--	--
Heptachlor	µg/L	--	1.1E-03	--	--
	lbs/day ²	--	3.0E-05	--	--
	lbs/day ³	--	5.6E-05	--	--
Heptachlor Epoxide	µg/L	--	4.4E-04	--	--
	lbs/day ²	--	1.2E-05	--	--
	lbs/day ³	--	2.2E-05	--	--
Hexachlorobenzene	µg/L	--	4.6E-03	--	--

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
Hexachlorobenzene	lbs/day ²	--	1.2E-04	--	--
	lbs/day ³	--	2.4E-04	--	--
Hexachlorobutadiene	µg/L	--	3.1E+02	--	--
	lbs/day ²	--	8.3E+00	--	--
	lbs/day ³	--	1.6E+01	--	--
Hexachloroethane	µg/L	--	5.5E+01	--	--
	lbs/day ²	--	1.5E+00	--	--
	lbs/day ³	--	2.8E+00	--	--
Isophorone	µg/L	--	1.6E+04	--	--
	lbs/day ²	--	4.3E+02	--	--
	lbs/day ³	--	8.2E+02	--	--
N-nitrosodimethylamine	µg/L	--	1.6E+02	--	--
	lbs/day ²	--	4.3E+00	--	--
	lbs/day ³	--	8.2E+00	--	--
N-nitrosodi-N-propylene	µg/L	--	8.4E+00	--	--
	lbs/day ²	--	2.3E-01	--	--
	lbs/day ³	--	4.3E-01	--	--
N-nitrosodiphenylamine	µg/L	--	5.5E+01	--	--
	lbs/day ²	--	1.5E+00	--	--
	lbs/day ³	--	2.8E+00	--	--
PAHs ⁸	µg/L	--	1.9E-01	--	--
	lbs/day ²	--	5.2E-03	--	--
	lbs/day ³	--	9.9E-03	--	--
PCBs sum ⁹	µg/L	--	4.2E-04	--	--
	lbs/day ²	--	1.1E-05	--	--
	lbs/day ³	--	2.1E-05	--	--
TCDD equivalents ¹⁰	µg/L	--	8.6E-08	--	--
	lbs/day ²	--	2.3E-09	--	--
	lbs/day ³	--	4.4E-09	--	--
1,1,2,2-tetrachloroethane	µg/L	--	5.1E+01	--	--
	lbs/day ²	--	1.4E+00	--	--
	lbs/day ³	--	2.6E+00	--	--
Tetrachloroethylene	µg/L	--	4.4E+01	--	--
	lbs/day ²	--	1.2E+00	--	--
	lbs/day ³	--	2.2E+00	--	--
Toxaphene	µg/L	--	4.6E-03	--	--
	lbs/day ²	--	1.2E-04	--	--

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
Toxaphene	lbs/day ³	--	2.4E-04	--	--
Trichloroethylene	µg/L	--	5.9E+02	--	--
	lbs/day ²	--	1.6E+01	--	--
	lbs/day ³	--	3.0E+01	--	--
1,1,2-trichloroethane	µg/L	--	2.1E+02	--	--
	lbs/day ²	--	5.6E+00	--	--
	lbs/day ³	--	1.1E+01	--	--
2,4,6-trichlorophenol	µg/L	--	6.4E+00	--	--
	lbs/day ²	--	1.7E-01	--	--
	lbs/day ³	--	3.3E-01	--	--
Vinyl Chloride	µg/L	--	7.9E+02	--	--
	lbs/day ²	--	2.1E+01	--	--
	lbs/day ³	--	4.0E+01	--	--

¹ Scientific “E” notation is used to express certain values. In scientific “E” notation, the number following the “E” indicates that position of the decimal point in the value. Negative numbers after the “E” indicate that the value is less than 1, and positive numbers after the “E” indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^2 or 610, and 6.1E+00 represents 6.1×10^0 or 6.1.

² Based on a flow of 3.24 MGD at Discharge Point No. 001.

³ Based on a flow of 6.12 MGD at Discharge Point No. 002.

⁴ If a Discharger can demonstrate to the satisfaction of the Regional Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In Order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR Part 136, as revised May 14, 1999.

⁵ HCH (hexachlorocyclohexane) represents the sum of the alpha, beta, gamma (lindane), and delta isomers of hexachlorocyclohexane.

⁶ Dichlorobenzenes represent the sum of 1,2 and 1,3-dichlorobenzene.

⁷ DDD (dichlorodiphenyldichloroethane), DDE (dichlorodiphenyldichloroethylene), and DDT (dichlorodiphenyltrichloroethane), represent the sum of 4,4’DDT; 2,4’DDT; 4,4’DDE; 2,4’DDE; 4,4’DDD; and 2,4’DDD.

⁸ PAHs (polynuclear aromatic hydrocarbons) represent the sum of acenaphthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[a,h]anthracene; fluorine; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.

⁹ PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Aroclor-1260.

¹⁰ TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 8280 may be used to analyze TCDD equivalents.

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

B. Interim Effluent Limitations—Not Applicable

C. Land Discharge Specifications – Not Applicable

D. Reclamation Specifications – Not Applicable

V. RECEIVING WATER LIMITATIONS

The discharge of waste shall not cause or contribute to an excursion above the following water quality objective in the receiving water.

A. Surface Water Limitation

1. Physical Characteristics

- a. Waters shall not contain oils, greases, waxes, or other materials in concentrations which result in a visible film or coating on the surface of the water or on objects in the water, or which cause nuisance or which otherwise adversely affect beneficial uses.
- b. Waters shall not contain floating material, including solids, liquids, foams, and scum in concentrations which cause nuisance or adversely affect beneficial uses.
- c. The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.
- d. Waters shall not contain suspended and settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses.
- e. Waters shall not contain taste or odor producing substances at concentrations which cause a nuisance or adversely affect beneficial uses.
- f. Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. The transparency of waters in lagoons and estuaries shall not be less than 50% of the depth at locations where measurement is made by means of a standard Secchi disk, except where lesser transparency is caused by rainfall runoff from undisturbed natural areas and dredging projects conducted in conformance with waste discharge requirements of the Regional Water Board. With these two exceptions, increases in turbidity attributable to controllable water quality factors shall not exceed 20 % over natural turbidity levels at locations with a natural turbidity of 0 to 50 NTU; 10 NTU at locations with a natural turbidity of 50 to 100 NTU; and 10 % over the natural turbidity level in locations with a natural turbidity of greater than 100 NTU.

2. Bacteriological Characteristics

- a. In waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean 200/100 mL, nor shall more

than 10 percent of the total samples during any 30-day period exceed 400/100 mL.

- b. Waters designated for contact recreation (REC-1) the enterococci concentration shall not exceed 35/100 mL in all areas, 104/100 mL in designated beach areas, 276/100 mL in moderately or lightly used areas, and 500/100 mL in infrequently used areas.
 - c. In waters designated for shell fish harvesting (SHELL), the median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100 mL nor shall more than 10 percent of the samples collected during any 30-day period exceed 230/100 mL for five-tube decimal dilution test or 330/100 mL when a three-tube decimal dilution test is used.
- 3. Biological Characteristics**
- a. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.
 - b. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.
 - c. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.
- 4. Chemical Characteristics**
- a. The dissolved oxygen concentration shall not at any time be less than 5.0 mg/L. The annual mean dissolved oxygen concentration shall not be less than 7 mg/L more than 10% of the time.
 - b. The pH shall not be changed at any time more than 0.2 units from normal ambient pH. The pH shall not be depressed below 7.0 nor raised above 9.0.
 - c. Waters of Mission Bay shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growths cause nuisance or adversely affect beneficial uses.
 - d. The discharge of wastes shall not cause concentrations of un-ionized ammonia (NH₃) to exceed 0.025 mg/l (as N).
 - e. No individual pesticide or combination of pesticides shall be present in the water column, sediments or biota at concentration(s) that adversely affect beneficial uses. Pesticides shall not be present at levels which will

bioaccumulate in aquatic organisms to levels which are harmful to human health, wildlife or aquatic organisms.

5. Radioactivity

Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life nor that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal or aquatic life.

6. Toxicity

All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Water Board.

7. Thermal Characteristics

Discharges from the Facility shall not exceed the natural temperature of the receiving waters by more than 20°F.

8. Sediment

- a. Pollutants in sediments shall not be present in quantities that, alone or in combination, are toxic to benthic communities in Mission Bay.
- b. Pollutants shall not be present in sediments at levels that will bioaccumulate in aquatic life to levels that are harmful to human health.

B. Ground water Limitations– Not Applicable

VI. PROVISIONS

A. Standard Provisions

1. **Federal Standard Provisions.** The Discharger shall comply with all Standard Provisions included in Attachment D of this Order.
2. **Regional Water Board Standard Provisions.** The Discharger shall comply with the following provisions:
 - a. The Discharger shall comply with all requirements and conditions of this Order. Any permit non-compliance constitutes a violation of the CWA and/or of the CWC and is grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of an application for permit renewal, modification, or reissuance.
 - b. The Discharger shall comply with all applicable federal, state, and local laws and regulations for handling, transport, treatment, or disposal of waste or the discharge of waste to waters of the State in a manner which causes or threatens to cause a condition of pollution, contamination or nuisance as those terms are defined in CWC 13050.
 - c. The Porter-Cologne Water Quality Control Act provides for civil and criminal penalties comparable to, and in some cases greater than, those provided for under the CWA.
 - d. Any noncompliance with this Order is a violation of the CWC and/or the CWA and is grounds for denial of an application for Order renewal or modification.
 - e. No discharge of waste into waters of the State, whether or not the discharge is made pursuant to WDRs, shall create a vested right to continue the discharge. All discharges of wastes into waters of the State are privileges, not rights.
 - f. For purposes of this Order, the term "permittee" used in parts of 40 CFR incorporated into this Order by reference and/or applicable to this Order shall have the same meaning as the term "Discharger" used elsewhere in this Order.
 - g. This Order expires July 27, 2016, after which, the terms and conditions of this permit are automatically continued pending issuance of a new Order, provided that all requirements of USEPA's NPDES regulations at 40 CFR 122.6 and the State's regulations at CCR Title 23, section 2235.4 regarding the continuation of expired Orders and waste discharge requirements are met.

- h. Except as provided for in 40 CFR 122.7, no information or documents submitted in accordance with or in application for this permit will be considered confidential and all such information and documents shall be available for review by the public at the office of the Regional Water Board.
- i. A copy of this Order shall be maintained on-site at the Facility and shall be available to Regional Water Board, State Water Board, and USEPA personnel and/or their authorized representative at all times. The Discharger shall comply with any interim limitations established by addendum, enforcement action, or revised waste discharge requirements that have been or may be adopted by the Regional Water Board.
- j. The Discharger shall comply with any interim limitations established by addendum, enforcement action, or revised waste discharge requirements that have been or may be adopted by the Regional Water Board
- k. Failure to comply with provisions or requirements of this Order, or violation of other applicable laws or regulations governing discharges from this facility, may subject the Discharger to administrative or civil liabilities, criminal penalties, and/or other enforcement remedies to ensure compliance. Additionally, certain violations may subject the Discharger to civil or criminal enforcement from appropriate local, state, or federal law enforcement entities.
- l. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, effluent limitation, discharge specification, or receiving water limitation of this Order, the Discharger shall notify the Regional Water Board by telephone (858) 467-2952 within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Regional Water Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

- a. This Order may be reopened for modification to include an effluent limitation if monitoring establishes that the discharge causes, has the reasonable potential to cause, or contributes to an excursion above WQOs (Basin Plan, Chapter 3).
- b. This Order may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following;
 - i. Violation of any terms or conditions of this Order;
 - ii. Obtaining this Order by misrepresentation or failure to disclose fully all relevant fact; or
 - iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

The filing of a request by the Discharger for modifications, revocation and reissuance, or termination of this Order does not stay any condition of this Order. Notification by the Discharger of planned operational or facility changes or anticipated noncompliance with this Order does not stay any condition of this Order.

- c. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under section 307(a) of the CWA for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in this Order, the Regional Water Board may institute proceedings under these regulations to modify or revoke and reissue the Order to conform to the toxic effluent standard or prohibition.
- d. This Order may be re-opened and modified, to incorporate in accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include requirements for the implementation of the watershed management approach.
- e. This Order may be reopened and modified, in accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include new Minimum Levels (MLs).
- f. This Order may be re-opened and modified to revise effluent limitations as a result of future Basin Plan Amendments, or the adoption of a total maximum daily load allocation (TMDL) for Mission Bay.

- g. This Order may be re-opened upon submission by the Discharger of adequate information, as determined by this Regional Water Board, to provide for dilution credits or a mixing zone, as may be appropriate.
- h. This Order may be re-opened and modified to revise the toxicity language once that language becomes standardized.
- i. This Order may also be re-opened and modified, revoked and, reissued or terminated in accordance with the provisions of 40 CFR sections 122.44, 122.62 to 122.64, 125.62, and 125.64. Causes for taking such actions include, but are not limited to, failure to comply with any condition of this Order and permit, and endangerment to human health or the environment resulting from the permitted activity.
- j. This Order may be reopened for modification, or revocation and reissuance, as a result of the detection of a reportable priority pollutant generated by special conditions included in this Order. These special conditions may be, but are not limited to, fish tissue sampling, whole effluent toxicity, monitoring requirements on internal waste stream(s), and monitoring for surrogate parameters. Additional requirements may be included in this Order as a result of the special condition monitoring data.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

- a. The Discharger shall participate and coordinate with state and local agencies and other dischargers in the San Diego Region in development and implementation of a regional monitoring program for Mission Bay as directed by the Regional Water Board. The intent of a regional monitoring program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled resources of the region. During a coordinated sampling effort, the Discharger's sampling and analytical effort may be reallocated to provide a regional assessment of the impact of discharges to the receiving water.
- b. The Discharger shall conduct monitoring for Ocean Plan Table B constituents once during the term of the permit as established in section IX.A. of the MRP, Attachment E. The results of this monitoring data shall be submitted at least 180 days prior to the expiration date of this Order and shall be submitted with the Report of Waste Discharge.
- c. The Discharger shall conduct monitoring of storm water by-passes from the Facility to evaluate the presence of potential pollutants. The Discharger shall conduct monitoring of storm water by-pass discharge points as established in section IX.B.1 of the MRP, Attachment E.

- d. The Discharger shall submit an annual report describing all aquaculture drugs or chemicals used at the Facility. The report shall include:
 - i. The name(s) and active ingredient(s) of the drug or chemical.
 - ii. The amounts of the drug or chemical.

3. Best Management Practices and Pollution Prevention

- a. **Best Management Practices Plan (Storm Water).** The Discharger shall establish and implement a best management practices (BMP) Plan to reduce pollution to Mission Bay and minimize pollutants contact with storm water. At a minimum, the following BMPs shall be conducted to maximize capture and treatment of any wastewater, and reduce or eliminate any mixing with storm water:
 - i. Aquaria and pool draining activities shall be halted during a storm water by-pass discharge event.
 - ii. All paved areas shall be swept down periodically to minimize storm water pollutant loading into Mission Bay.
 - iii. A periodic wash down following the periodic sweep is authorized. Care shall be taken to direct as much of the wash down as possible into the treatment system.
 - iv. Screens and filters on the storm drains shall be inspected on a routine basis to ensure that they are properly functioning.
- b. **Storm Water Pollution Prevention Plan (SWPPP).** Order No. R9-2005-0091 required the Discharger to develop and implement a SWPPP as specified in Attachment G of this Order. The Discharger shall continue to implement its existing SWPPP and shall implement any necessary revisions to it's SWPPP to comply with the requirements herein no later than 180 days after adoption of this Order.
- c. **Best Management Practice Plan (Confined Aquatic Animals).** The Discharger shall establish and document specific BMPs and operating procedures following the general guidance contained in the Compliance Guide for the Concentrated Aquatic Animal Production Point Source Category. The BMP Plan shall, at a minimum, include the following practices:
 - i. Feed management and feeding strategies must minimize the discharge of unconsumed food to waters of Mission Bay.
 - ii. Cleaning of holding tanks must minimize the discharge of accumulated solids to waters of Mission Bay.

- iii. Aquatic animal mortalities must be removed and disposed of properly on a regular basis to prevent discharge to waters of Mission Bay.
 - iv. Records of any drugs, pesticides, or other chemicals administered at the Facility must be maintained.
 - v. All drugs and chemicals must be used in accordance with applicable label directions, except extra label drug use, as prescribed by a veterinarian.
 - vi. Storage of drugs, chemicals, and feed must be in a manner designed to prevent spills that may result in the discharge of drugs, pesticides, or feed to waters of Mission Bay.
 - vii. Procedures for properly containing, cleaning, and disposing of any spilled material must be implemented.
- d. The Discharger shall amend BMP Plans whenever there is a change in the Facility or in its operation which increases the generation of pollutants or their discharge to Mission Bay. Revision dates and summaries of revisions shall be documented in the BMP Plans.

4. Construction, Operation and Maintenance Specifications– Not Applicable

5. Other Special Provisions

a. Notice Requirements

- i. The Discharger shall notify the Executive Officer of the use of any investigational new animal drug (INAD) or any extra label drug use where such a use may lead to a discharge of the drug to Mission Bay. Reporting is not required for an INAD or extra label drug use that has been previously approved by FDA for a different species or disease if the INAD or extra label use is at or below the approved dosage and involves similar conditions of use. The notification must identify the drug used, reason for treatment, dates, times, and duration of treatment; method of application; and the amount added.
- ii. The Discharger shall notify the Executive Officer regarding spills of drugs, pesticides, or feed that result in a discharge to Mission Bay. In the event of such a spill, dischargers shall provide an oral report within 24 hours of its occurrence and a written report within seven days. The report shall include the identity and quantity of material spilled.

6. Compliance Schedules– Not Applicable

7. Solid Waste Disposal

Collected screenings, sludge, and other solids removed from liquid wastes shall be disposed of in a manner which complies with local, state and federal statutes and regulations.

VII. COMPLIANCE DETERMINATION

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

A. General.

Compliance with effluent limitations for priority pollutants (Table B, Ocean Plan) shall be determined using sample reporting protocols defined in the MRP and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).

B. Compliance with 6-Month Median Effluent Limitation.

If the median of daily discharges over any 180-day period exceeds the six-month median effluent limitation of a given parameter, and alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that 180-day period for that parameter. The next assessment of compliance will occur after the next sample is taken. If only a single sample is taken during a given 180-day period and the analytical result for that sample exceeds the six-month median, the Discharger will be considered out of compliance for the 180-day period.

C. Compliance with Average Monthly Effluent Limitation (AMEL).

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

D. Compliance with Maximum Daily Effluent Limitation (MDEL).

If a daily discharge exceeds the MDEL for a given parameter, the Discharger will be considered out of compliance for that parameter for that 1 day only within the reporting period. For any 1 day during which no sample is taken, no compliance determination can be made for that day.

E. Compliance with Instantaneous Minimum Effluent Limitation.

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

F. Compliance with Instantaneous Maximum Effluent Limitation.

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

G. Mass and Concentration Limitations.

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

H. Compliance with Single-Constituent Effluent Limitations.

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

I. Compliance with Effluent Limitations expressed as a Sum of Several Constituents.

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

J. Multiple Sample Data.

When determining compliance with an AMEL or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the

arithmetic mean unless the data set contains one or more reported determinations of “Detected, but Not Quantified” (DNQ) or “Not Detected” (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

K. Sampling Reporting Protocols

1. Dischargers must report with each sample result the reported ML and the laboratory’s current Method Detection Limit (MDL).
2. Dischargers must also report results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:
 - a. Sample results greater than or equal to the reported ML must be reported “as measured” by the laboratory (i.e., the measured chemical concentration in the sample).
 - b. Sample results less than the reported ML, but greater than or equal to the laboratory’s MDL, must be reported as “Detected, but Not Quantified”, or DNQ. The laboratory must write the estimated chemical concentration of the sample next to DNQ as well as the words “Estimated Concentration” (may be shorted to Est. Conc.”).

Sample results less than the laboratory’s MDL must be reported as “Not Detected”, or ND.

L. Chronic Toxicity

Compliance with this Order’s narrative effluent limitation for chronic toxicity, contained in Section IV.A. Tables 6 and 7 of this Order, shall be determined using:

- 1) the monitoring data generated in accordance with section V of Monitoring and Reporting Program No. R9-2011-0032; and

2) using a statistical method identified by the Discharger in a report submitted pursuant to Attachment E, Monitoring and Reporting Program, Section V.3 of this Order.

ATTACHMENT A – DEFINITIONS

Areas of Special Biological Significance (ASBS)

Those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of STATE WATER QUALITY PROTECTION AREAS.

Arithmetic Mean (μ)

Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \Sigma x / n$ where: Σx is the sum of the measured ambient water concentrations, and n is the number of samples.

Average Monthly Effluent Limitation (AMEL)

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

Average Weekly Effluent Limitation (AWEL)

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

Bioaccumulative

Those substances taken up by an organism from its surrounding medium through gill membranes, epithelial tissue, or from food and subsequently concentrated and retained in the body of the organism.

Carcinogenic

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

Coefficient of Variation (CV)

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

Daily Discharge

Daily Discharge is defined as either: (1) the total mass of the constituent discharged over the calendar day (12:00 am through 11:59 pm) or any 24-hour period that reasonably represents a calendar day for purposes of sampling (as specified in the permit), for a constituent with limitations expressed in units of mass or; (2) the unweighted arithmetic mean measurement of the constituent over the day for a constituent with limitations expressed in other units of measurement (e.g., concentration).

The daily discharge may be determined by the analytical results of a composite sample taken over the course of one day (a calendar day or other 24-hour period defined as a day) or by the arithmetic mean of analytical results from one or more grab samples taken over the course of the day.

For composite sampling, if 1 day is defined as a 24-hour period other than a calendar day, the analytical result for the 24-hour period will be considered as the result for the calendar day in which the 24-hour period ends.

Degrade

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

Detected, but Not Quantified (DNQ)

DNQ are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

Dilution Credit

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

Dredged Material

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

Effluent Concentration Allowance (ECA)

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

Enclosed Bays

Enclosed Bays means indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between the headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. Enclosed bays include, but are not limited to, Humboldt Bay, Bodega Harbor, Tomales Bay, Drake's Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay. Enclosed bays do not include inland surface waters or ocean waters.

Estimated Chemical Concentration

The estimated chemical concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

Estuaries

Estuaries means waters, including coastal lagoons, located at the mouths of streams that serve as areas of mixing for fresh and ocean waters. Coastal lagoons and mouths of streams that are temporarily separated from the ocean by sandbars shall be considered estuaries. Estuarine waters shall be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters included, but are not limited to, the Sacramento-San Joaquin Delta, as defined in Water Code section 12220, Suisun Bay, Carquinez Strait downstream to the Carquinez Bridge, and appropriate areas of the Smith, Mad, Eel, Noyo, Russian, Klamath, San Diego, and Otay rivers. Estuaries do not include inland surface waters or ocean waters.

Initial Dilution

The process that results in the rapid and irreversible turbulent mixing of wastewater with bay water around the point of discharge. Where turbulent mixing results primarily from the momentum of discharge, initial dilution is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

Inland Surface Waters

All surface waters of the State that do not include the ocean, enclosed bays, or estuaries.

Instantaneous Maximum Effluent Limitation

The highest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous maximum limitation).

Instantaneous Minimum Effluent Limitation

The lowest allowable value for any single grab sample or aliquot (i.e., each grab sample or aliquot is independently compared to the instantaneous minimum limitation).

Material

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

Maximum Daily Effluent Limitation (MDEL)

The highest allowable daily discharge of a pollutant, over a calendar day (or 24-hour period). For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the arithmetic mean measurement of the pollutant over the day.

Median

The middle measurement in a set of data. The median of a set of data is found by first arranging the measurements in order of magnitude (either increasing or decreasing order). If the number of measurements (n) is odd, then the median = $X_{(n+1)/2}$. If n is even, then the median = $(X_{n/2} + X_{(n/2)+1})/2$ (i.e., the midpoint between the $n/2$ and $n/2+1$).

Six-Month Median Effluent Limitation

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

Method Detection Limit (MDL)

MDL is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in title 40 of the Code of Federal Regulations, Part 136, Attachment B, revised as of July 3, 1999.

Minimum Level (ML)

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

Mixing Zone

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

Not Detected (ND)

Sample results which are less than the laboratory's MDL.

Ocean Waters

The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. Discharges to ocean waters are regulated in accordance with the State Water Board's California Ocean Plan.

Persistent Pollutants

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

Pollutant Minimization Program (PMP)

PMP means waste minimization and pollution prevention actions that include, but are not limited to, product substitution, waste stream recycling, alternative waste management methods, and education of the public and businesses. The goal of the PMP shall be to reduce all potential sources of a priority pollutant(s) through pollutant minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the water quality-based effluent limitation. Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The Regional Water Board may consider cost effectiveness when establishing the requirements of a PMP. The completion and

implementation of a Pollution Prevention Plan, if required pursuant to Water Code section 13263.3(d), shall be considered to fulfill the PMP requirements.

Pollution Prevention

Pollution Prevention means any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the State or Regional Water Board.

Reported Minimum Level

The ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. The MLs included in this Order correspond to approved analytical methods for reporting a sample result that are selected by the Regional Water Board either from Appendix II of the Ocean Plan in accordance with section III.C.5.a. of the Ocean Plan or established in accordance with section III.C.5.b. of the Ocean Plan. The ML is based on the proper application of method-based analytical procedures for sample preparation and the absence of any matrix interferences. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied in cases where there are matrix-effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied to the ML in the computation of the reported ML.

Satellite Collection System

The portion, if any, of a sanitary sewer system owned or operated by a different public agency than the agency that owns and operates the wastewater treatment facility that a sanitary sewer system is tributary to.

Shellfish

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

Significant Difference

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

Six-Month Median Effluent Limitation

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

Source of Drinking Water

Any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

Standard Deviation (σ)

Standard Deviation is a measure of variability that is calculated as follows:

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

where:

x is the observed value;

μ is the arithmetic mean of the observed values; and

n is the number of samples.

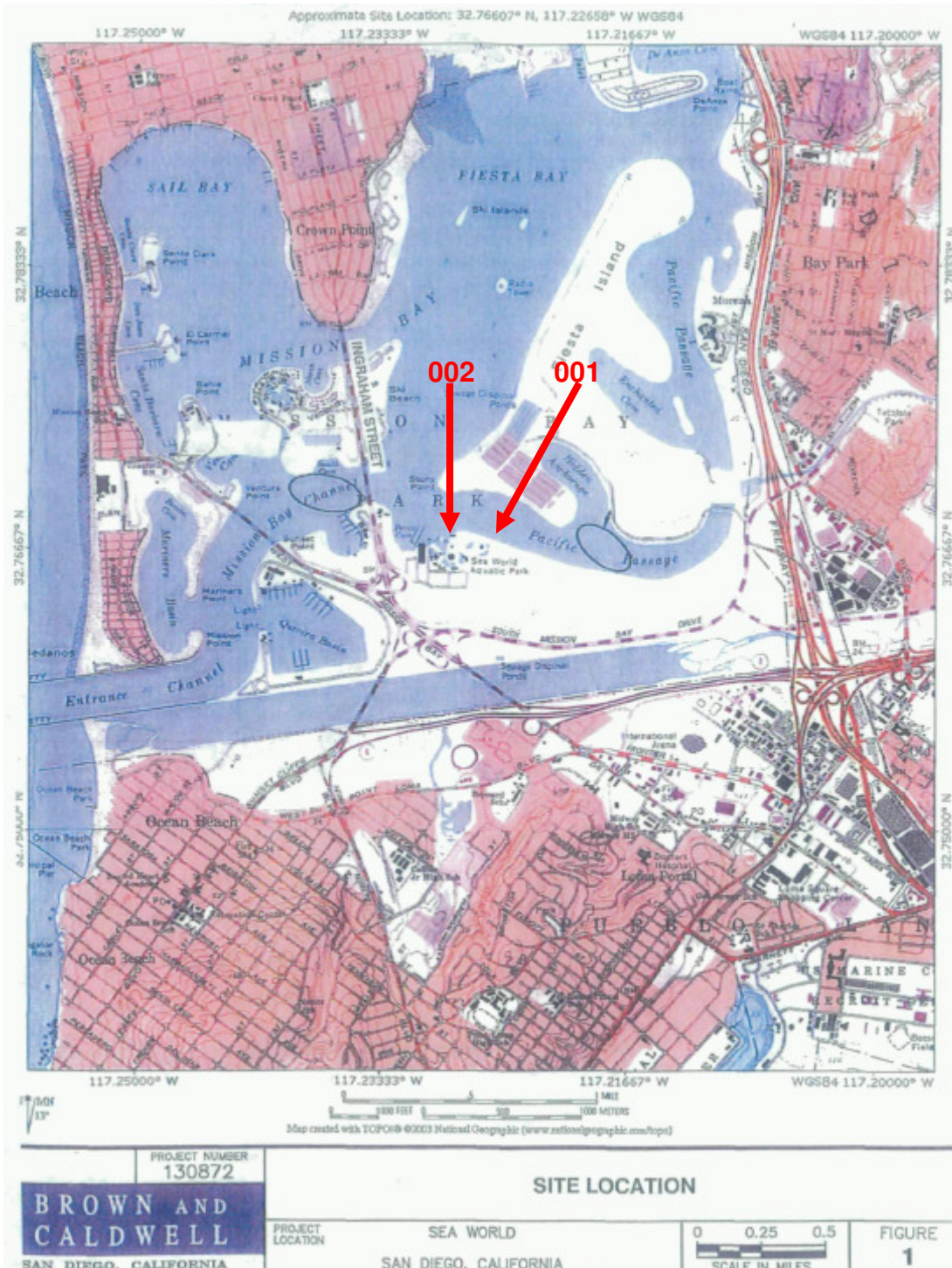
State Water Quality Protection Areas (SWQPAs)

Non-terrestrial marine or estuarine areas designated to protect marine species or biological communities from an undesirable alteration in natural water quality. All AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS) that were previously designated by the State Water Board in Resolution No.'s 74-28, 74-32, and 75-61 are now also classified as a subset of State Water Quality Protection Areas and require special protections afforded by the Ocean Plan.

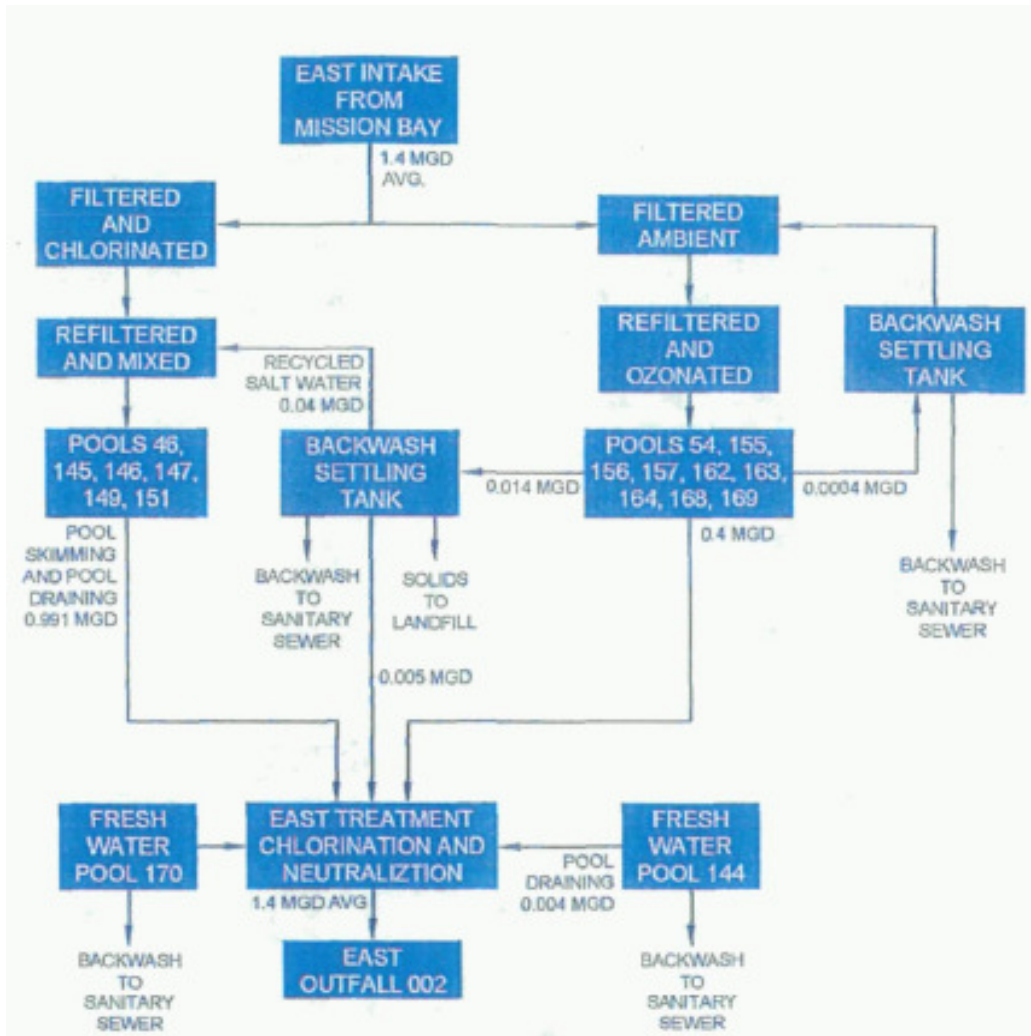
Toxicity Reduction Evaluation (TRE)

TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity, including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.)

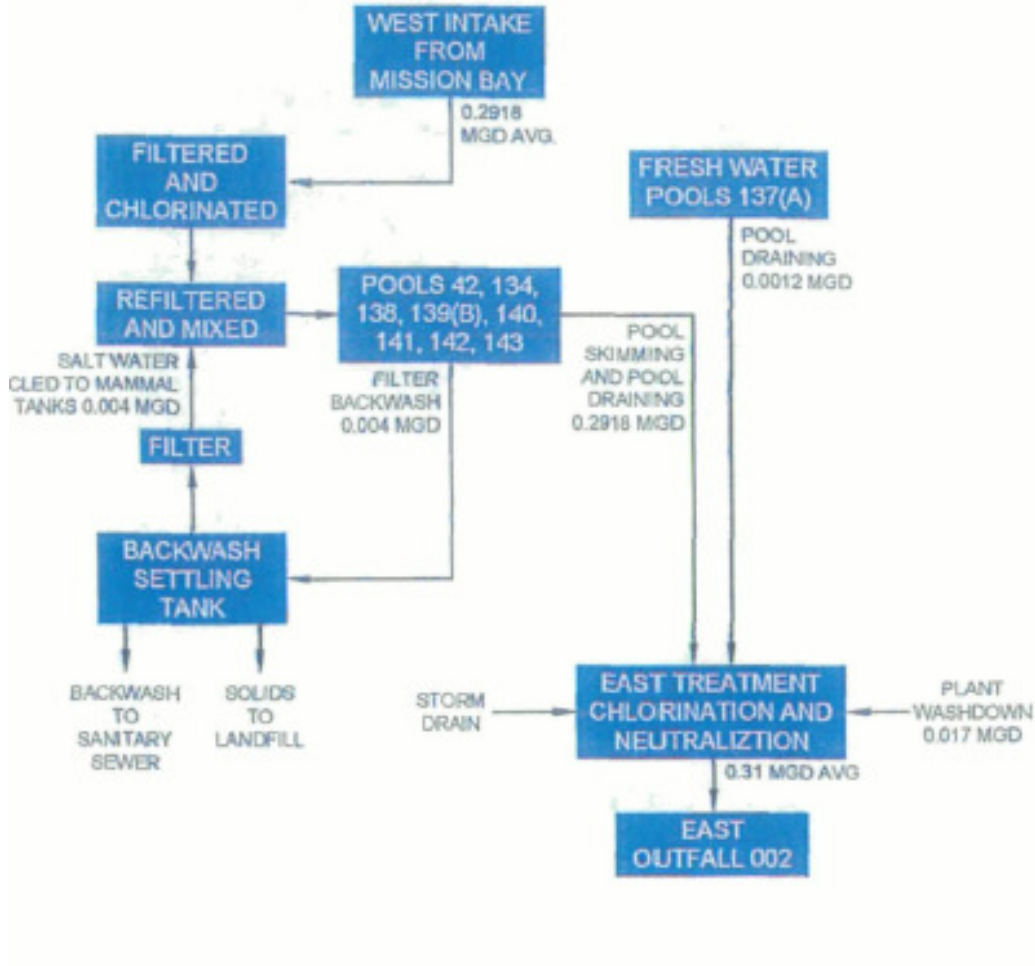
ATTACHMENT B – MAP



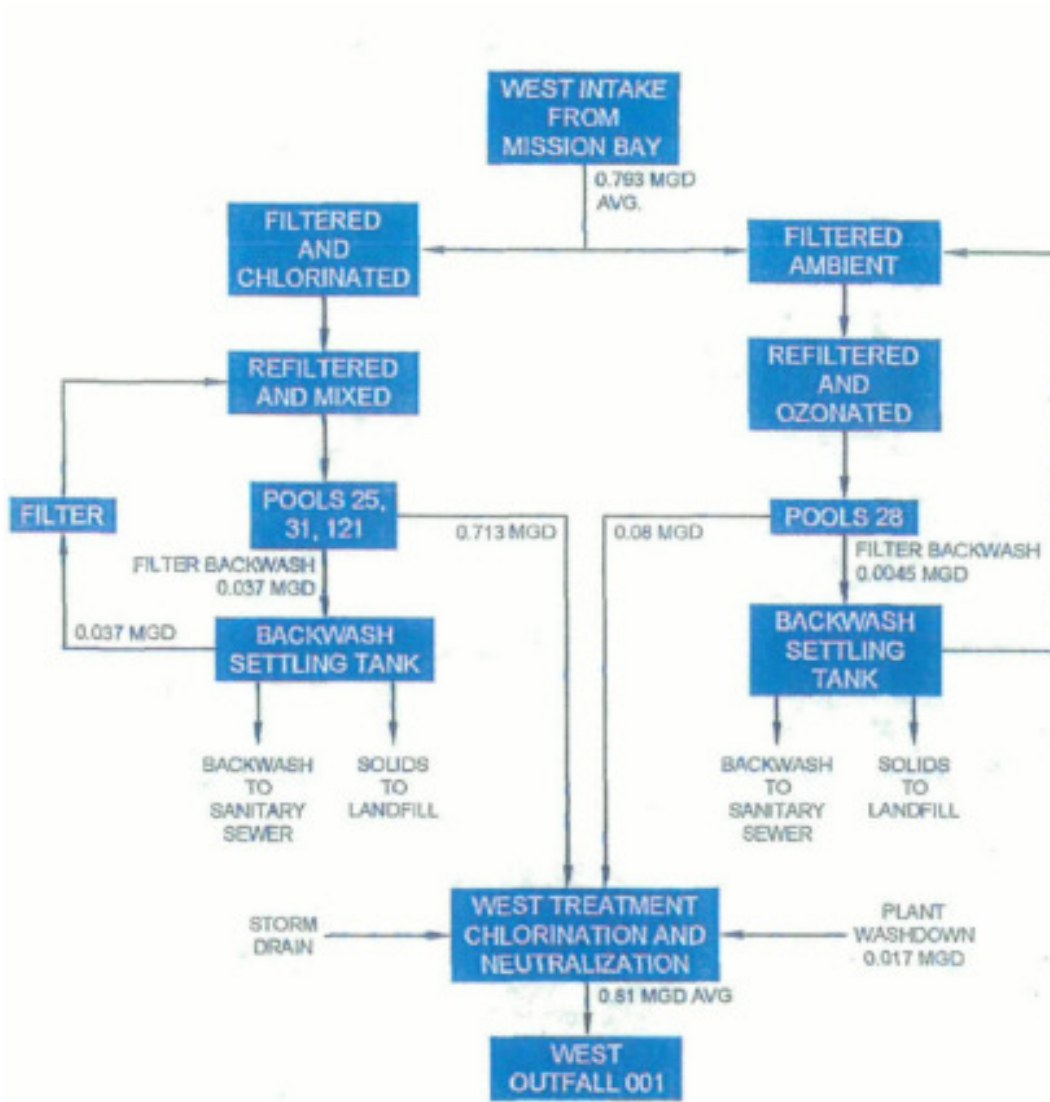
ATTACHMENT C-1 – FLOW SCHEMATIC FOR EAST OUTFALL



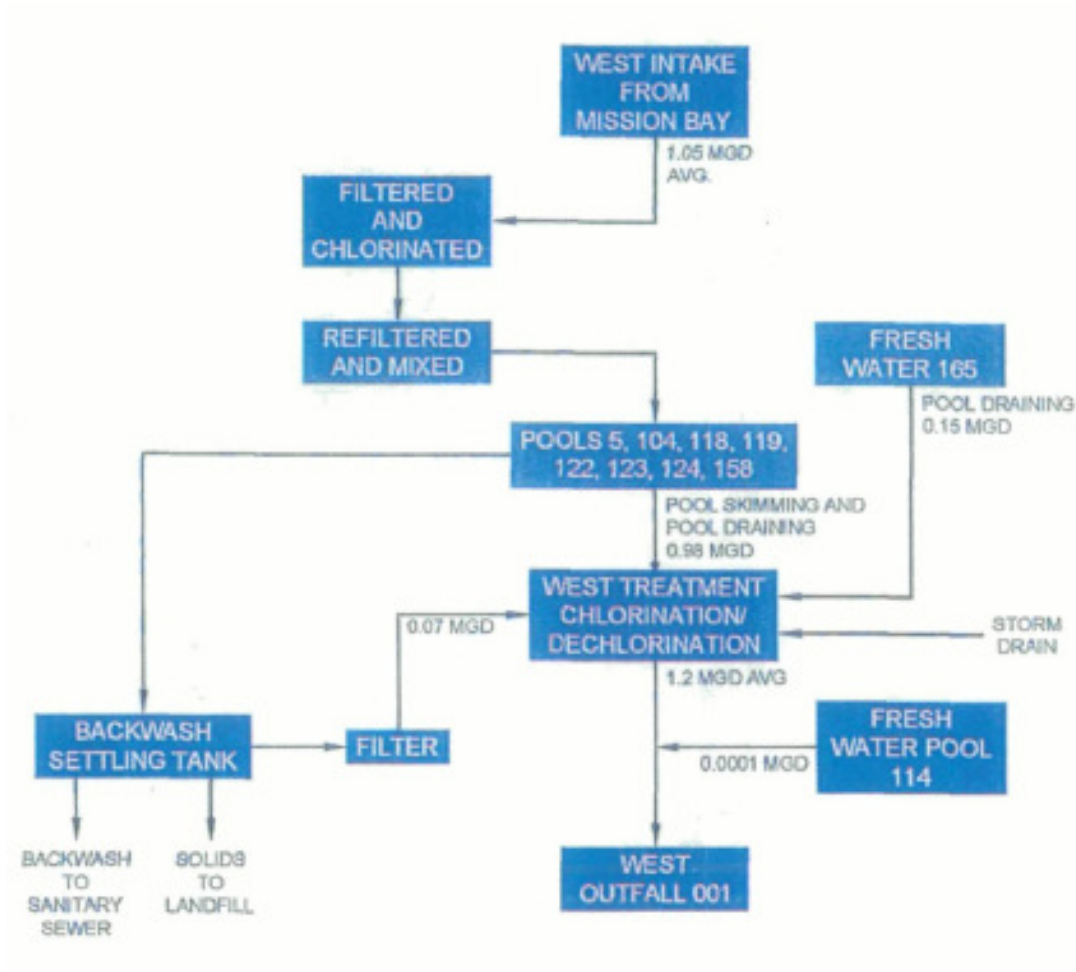
ATTACHMENT C-2 – FLOW SCHEMATIC FOR EAST OUTFALL



ATTACHMENT C-3 – FLOW SCHEMATIC FOR WEST OUTFALL



ATTACHMENT C-4 – FLOW SCHEMATIC FOR WEST OUTFALL



ATTACHMENT D – STANDARD PROVISIONS

I. STANDARD PROVISIONS – PERMIT COMPLIANCE

A. Duty to Comply

1. The Discharger must comply with all of the conditions of this Order. Any noncompliance constitutes a violation of the Clean Water Act (CWA) and the California Water Code and is grounds for enforcement action, for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application. (40 CFR. § 122.41(a).)
2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if this Order has not yet been modified to incorporate the requirement. (40 CFR. § 122.41(a)(1).)

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

The Discharger shall allow the Regional Water Board, State Water Board, United States Environmental Protection Agency (USEPA), and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to (40 CFR. § 122.41(i); Wat. Code, § 13383):

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order (40 CFR. § 122.41(i)(1));
2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order (40 CFR. § 122.41(i)(2));
3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order (40 CFR. § 122.41(i)(3)); and
4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the Water Code, any substances or parameters at any location. (40 CFR. § 122.41(i)(4).)

G. Bypass

1. Definitions
 - a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility. (40 CFR. § 122.41(m)(1)(i).)
 - b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. (40 CFR. § 122.41(m)(1)(ii).)
2. Bypass not exceeding limitations. The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below. (40 CFR. § 122.41(m)(2).)

3. Prohibition of bypass. Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless (40 CFR. § 122.41(m)(4)(i)):
 - a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 CFR. § 122.41(m)(4)(i)(A));
 - b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance (40 CFR. § 122.41(m)(4)(i)(B)); and
 - c. The Discharger submitted notice to the Regional Water Board as required under Standard Provisions – Permit Compliance I.G.5 below. (40 CFR. § 122.41(m)(4)(i)(C).)
4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above. (40 CFR. § 122.41(m)(4)(ii).)
5. Notice
 - a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass. (40 CFR. § 122.41(m)(3)(i).)
 - b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice). (40 CFR. § 122.41(m)(3)(ii).)

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was

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

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that (40 CFR. § 122.41(n)(3)):
 - a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 CFR. § 122.41(n)(3)(i));
 - b. The permitted facility was, at the time, being properly operated (40 CFR. § 122.41(n)(3)(ii));
 - c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) (40 CFR. § 122.41(n)(3)(iii)); and
 - d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 CFR. § 122.41(n)(3)(iv).)
3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof. (40 CFR. § 122.41(n)(4).)

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

- A.** Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. (40 CFR. § 122.41(j)(1).)
- B.** Monitoring results must be conducted according to test procedures under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503 unless other test procedures have been specified in this Order. (40 CFR. § 122.41(j)(4); § 122.44(i)(1)(iv).)

IV. STANDARD PROVISIONS – RECORDS

- A.** Except for records of monitoring information required by this Order related to the Discharger's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time. (40 CFR. § 122.41(j)(2).)

B. Records of monitoring information shall include:

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, State Water Board, or USEPA within a reasonable time, any information which the Regional Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this Order or to determine compliance with this Order. Upon request, the Discharger shall also furnish to the Regional Water Board, State Water Board, or USEPA copies of records required to be kept by this Order. (40 CFR. § 122.41(h); Wat. Code, § 13267.)

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, State Water Board, and/or USEPA shall be signed and certified in accordance with Standard Provisions – Reporting V.B.2, V.B.3, V.B.4, and V.B.5 below. (40 CFR. § 122.41(k).)
2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA). (40 CFR. § 122.22(a)(3).)
3. All reports required by this Order and other information requested by the Regional Water Board, State Water Board, or USEPA shall be signed by a person described in Standard Provisions – Reporting V.B.2 above, or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Standard Provisions – Reporting V.B.2 above (40 CFR. § 122.22(b)(1));
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) (40 CFR. § 122.22(b)(2)); and
 - c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 CFR. § 122.22(b)(3).)
4. If an authorization under Standard Provisions – Reporting V.B.3 above is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of Standard

Provisions – Reporting V.B.3 above must be submitted to the Regional Water Board and State Water Board prior to or together with any reports, information, or applications, to be signed by an authorized representative. (40 CFR. § 122.22(c).)

5. Any person signing a document under Standard Provisions – Reporting V.B.2 or V.B.3 above shall make the following certification:

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program (Attachment E) in this Order. (40 CFR. § 122.22(l)(4).)
2. Monitoring results must be reported on a Discharge Monitoring Report (DMR) form or forms provided or specified by the Regional Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. (40 CFR. § 122.41(l)(4)(i).)
3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under Part 136 or, in the case of sludge use or disposal, approved under Part 136 unless otherwise specified in Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board. (40 CFR. § 122.41(l)(4)(ii).)
4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order. (40 CFR. § 122.41(l)(4)(iii).)

D. Compliance Schedules

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

E. Twenty-four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall

also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. (40 CFR. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 CFR. § 122.41(l)(6)(ii)):
 - a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 CFR. § 122.41(l)(6)(ii)(A).)
 - b. Any upset that exceeds any effluent limitation in this Order. (40 CFR. § 122.41(l)(6)(ii)(B).)
3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours. (40 CFR. § 122.41(l)(6)(iii).)

F. Planned Changes

The Discharger shall give notice to the Regional Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required under this provision only when (40 CFR. § 122.41(l)(1)):

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in section 122.29(b) (40 CFR. § 122.41(l)(1)(i)); or
2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are subject neither to effluent limitations in this Order nor to notification requirements under section 122.42(a)(1) (see Additional Provisions—Notification Levels VII.A.1). (40 CFR. § 122.41(l)(1)(ii).)
3. The alteration or addition results in a significant change in the Discharger's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. (40 CFR. § 122.41(l)(1)(iii).)

G. Anticipated Noncompliance

The Discharger shall give advance notice to the Regional Water Board or State Water Board of any planned changes in the permitted facility or activity that may result in noncompliance with General Order requirements. (40 CFR. § 122.41(l)(2).)

H. Other Noncompliance

The Discharger shall report all instances of noncompliance not reported under Standard Provisions – Reporting V.C, V.D, and V.E above at the time monitoring reports are submitted. The reports shall contain the information listed in Standard Provision – Reporting V.E above. (40 CFR. § 122.41(l)(7).)

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Non-Municipal Facilities

Existing manufacturing, commercial, mining, and silvicultural Dischargers shall notify the Regional Water Board as soon as they know or have reason to believe (40 CFR. § 122.42(a)):

1. That any activity has occurred or will occur that would result in the discharge, on a routine or frequent basis, of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels" (40 CFR. § 122.42(a)(1)):
 - a. 100 micrograms per liter ($\mu\text{g/L}$) (40 CFR. § 122.42(a)(1)(i));
 - b. 200 $\mu\text{g/L}$ for acrolein and acrylonitrile; 500 $\mu\text{g/L}$ for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 CFR. § 122.42(a)(1)(ii));
 - c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR. § 122.42(a)(1)(iii)); or
 - d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 CFR. § 122.42(a)(1)(iv).)
2. That any activity has occurred or will occur that would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant that is not limited in this Order,

if that discharge will exceed the highest of the following "notification levels" (40 CFR. § 122.42(a)(2)):

- a. 500 micrograms per liter ($\mu\text{g/L}$) (40 CFR. § 122.42(a)(2)(i));
- b. 1 milligram per liter (mg/L) for antimony (40 CFR. § 122.42(a)(2)(ii));
- c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 CFR. § 122.42(a)(2)(iii)); or
- d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 CFR. § 122.42(a)(2)(iv).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

Table of Contents

I.	General Monitoring Provisions	E-2
II.	Monitoring Locations	E-4
III.	Intake Monitoring Requirements	E-4
	A. Monitoring Location E-INF and W-INF.....	E-4
IV.	Effluent Monitoring Requirements	E-5
	A. Monitoring Location EFF-001 and EFF-002	E-5
V.	Whole Effluent Toxicity Testing Requirements.....	E-6
	A. Chronic Whole Effluent Toxicity (WET) Requirements	E-6
VI.	Land Discharge Monitoring Requirements—Not Applicable.....	E-10
VII.	Reclamation Monitoring Requirements—Not Applicable.....	E-10
VIII.	Receiving Water Monitoring Requirement.....	E-10
IX.	Other Monitoring Requirements	E-10
	A. Priority Pollutant Monitoring (Table B, Ocean Plan)	E-10
	B. Storm Water Monitoring.....	E-11
	C. Chemical Usage	E-12
	D. Calculation of Concentration	E-12
X.	Reporting Requirements	E-12
	A. General Monitoring and Reporting Requirements	E-12
	B. Self Monitoring Reports (SMRs).....	E-13
	C. Discharge Monitoring Reports (DMRs)—Not Applicable	E-16
	D. Other Reports-None	E-16

List of Tables

Table E-1.	Monitoring Station Locations.....	E-4
Table E-2.	Monitoring of East and West Intakes at E-INF and W-INF.....	E-4
Table E-3.	Effluent Monitoring at EFF-001 and EFF-002	E-5
Table E-4.	Storm water By-pass Monitoring.....	E-11
Table E-5.	Monitoring Periods and Reporting Schedule.....	E-14

ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations section 122.48 requires that all NPDES permits specify monitoring and reporting requirements. Water Code 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.

I. GENERAL MONITORING PROVISIONS

- A.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitoring discharge. All samples shall be taken at the monitoring points specified 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 random intervals that are representative of the typical operating capacity of the facility. Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.
- B.** Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurement is consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ± 5 percent from true discharge rates throughout the range of expected discharge volumes.
- C.** Monitoring must be conducted according to 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 this Order 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 Public Health or a laboratory approved by the Regional Water Board.
- E.** Records of monitoring information shall include information required under Standard Provision, Attachment D, section IV.
- F.** All monitoring instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices

shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices.

- G.** The Discharger shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of 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 chronic toxicity, with performance goals based on WQOs of the Basin Plan and Ocean Plan shall be conducted in accordance with procedures described in the Basin Plan and Ocean Plan and restated in this MRP. Analysis for toxics listed by the CTR shall also adhere to guidance and requirements contained in the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (2005). Analyses for toxics listed in Table B of the Ocean Plan (2005) shall adhere to guidance and requirements contained in that document.
- 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.
- J.** Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with the provision of CWC section 13176, and must include quality assurance/quality control 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 E-1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	E-INF	Representative sample location of the intake water, prior to any treatment, chemical addition, or use within the aquarium, for East intake system
	W-INF	Representative sample location of the intake water, prior to any treatment, chemical addition, or use within the aquarium, for West intake system
001	EFF-001	Representative sample location of the final effluent for the East treatment system. Latitude 32°46'03", Longitude 117°13'33"
002	EFF-002	Representative sample location of the final effluent for the West treatment system. Latitude 32°39'29", Longitude 117°04'41"
--	RSW-001a	At a location where representative samples of intake seawater can be collected outside the influence of Discharge Point No. 001 and prior to coming in contact with the intake pump units
--	RSW-002a	At a location where representative samples of intake seawater can be collected outside the influence of the Discharge Point No. 002 and prior to coming in contact with the intake pump units

III. INTAKE MONITORING REQUIREMENTS

A. Monitoring Location E-INF and W-INF

1. The Discharger shall monitor the East intake (E-INF) and West intake (W-INF) as specified in Table E-2. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level. Influent samples shall be collected on the same day as, and shortly before the collection of effluent samples.

Table E-2. Monitoring of East and West Intakes at E-INF and W-INF

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method and
Fecal Coliform	MPN/100 mL	Grab	Weekly	1
Total Coliform	MPN/100 mL	Grab	Weekly	1
Enterococcus	MPN/100 mL	Grab	Weekly	1
Suspended Solids	mg/L	24-hour composite	Quarterly	1
Copper, Total Recoverable	µg/L	Grab	Quarterly	1,2

- ¹ Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.
- ² Influent samples shall be analyzed for copper according to method 1638 or 1640.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001 and EFF-002

1. The Discharger shall monitor the East effluent discharge at EFF-001 and the West effluent discharge at EFF-002 for the constituents and frequencies in Table E-3 below. Samples shall not be collected within three days following a storm event. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table E-3. Effluent Monitoring at EFF-001 and EFF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flow	MGD	Continuous	Continuous	--
pH	standard units	Grab/Continuous	Weekly	1
Total Coliform	MPN/100 mL	Grab	Weekly	1
Fecal Coliform	MPN/100 mL	Grab	Weekly	1
Enterococcus	CFU/100 mL	Grab	Weekly	1
Residual Chlorine	µg/L	Grab/Continuous	Weekly	1
	lbs/day ²	Calculated ²		
Temperature	°C	Grab/Continuous	Monthly	1
Copper, Total Recoverable ³	µg/L	24 hr. composite	Quarterly	1,3
	lbs/day ²	Calculated ²		
Suspended Solids	mg/L	24 hr. composite	Quarterly	1
Settleable Solids	m/L	Grab	Quarterly	1
Turbidity	NTU	24 hr. composite	Semi-annual	1
Ammonia	mg/L	24 hr. composite	Semi-annual	1
	lbs/day ²	Calculated ²		
Oil and Grease	mg/L	Grab	Semi-annual	1
	lbs/day ²	Calculated ²		
Silver, Total Recoverable	µg/L	24 hr. composite	Semi-annual	1
	lbs/day ²	Calculated ²		
Chronic Toxicity	--	24 hr. composite	Annual	1
Priority Pollutants ⁴	µg/L	24 hr. composite	Once in 5 years ⁴	1

- ¹ Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136; the methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.
- ² lbs/day shall be calculated for each monitoring event using the following formula:
$$\text{lbs/day} = 8.34 \times \text{effluent concentration (mg/L)} \times \text{flow rate (MGD)}$$
- ³ Effluent samples shall be analyzed for copper according to method 1638 or 1640.
- ⁴ Priority pollutant results (Table B Ocean Plan) are due 180 days prior to the expiration date of the permit.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

The Discharger shall conduct annual chronic toxicity testing on effluent samples collected at Effluent Monitoring Station EFF-001 and EFF-002 to determine compliance with the Basin Plan's narrative water quality objective for toxicity. Toxicity monitoring shall be conducted in accordance with the schedule and requirements in Table E-3 above.

A. Chronic Whole Effluent Toxicity (WET) Requirements

1. Monitoring Frequency

The Discharger shall conduct annual chronic toxicity tests on 24-hour composite effluent samples. Once each calendar year, at a different time of year from the previous years, the Discharger must split a 24-hour composite effluent sample and concurrently conduct three toxicity tests using a fish, an invertebrate, and an alga species.

Chronic toxicity test samples must be collected for each point of discharge at the designated NPDES sampling station for the effluent (i.e., downstream from the last treatment process and any in-plant return flows where a representative effluent sample can be obtained). During year three (3) of the permit, a split of each sample must be analyzed for all other monitored parameters at the minimum frequency of analysis specified by the effluent monitoring program.

2. Marine and Estuarine Species and Test Methods

Species and short-term test methods for estimating the chronic toxicity of NPDES

effluents are found in the first edition of *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995) and applicable water quality standards; also see 40 CFR Parts 122.41(j)(4) and 122.44(d)(1)(iv) and 40 CFR Part 122.21(j)(5)(viii) for POTWs. The Discharger shall conduct a static renewal toxicity test with the topsmelt, *Atherinops affinis* (Larval Survival and Growth Test Method 1006.01); a static nonrenewal toxicity test with the giant kelp, *Macrocystis pyrifera* (Germination and Growth Test Method 1009.0); and a toxicity test with one of the following invertebrate species:

- Static renewal toxicity test with the mysid, *Holmesimysis costata* (Survival and Growth Test Method 1007.01);

 - Static non-renewal toxicity test with the Pacific oyster, *Crassostrea gigas*, or the mussel, *Mytilus* spp., (Embryo-larval Shell Development Test Method 1005.0);

 - Static non-renewal toxicity test with the red abalone, *Haliotis rufescens* (Larval Shell Development Test Method);

 - Static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus*, or the sand dollar, *Dendraster excentricus* (Embryo-larval Development Test Method); or

 - Static non-renewal toxicity test with the purple sea urchin, *Strongylocentrotus purpuratus*, or the sand dollar, *Dendraster excentricus* (Fertilization Test Method 1008.0).
- 3. Statistical Method for Chronic Toxicity Analysis**

The Discharger shall submit a technical report to the San Diego Water Board by August 1, 2011 that identifies and evaluates the statistical method that will be used for analyzing whole effluent toxicity data for compliance determinations with the narrative chronic toxicity effluent limitation contained in Section IV.A. Tables 6 and 7 of this Order. The statistical method may include Hypothesis Test Methods or Point Estimate Methods and shall be consistent with one of the following alternative statistical approaches:

- a. The statistical approach described in U.S. Environmental Protection Agency, *National Pollutant Discharge Elimination System Test of Significant Toxicity (TST) Implementation Document*, (EPA 833-R-10-003), June 2010;

- b. The statistical approaches described in U.S. Environmental Protection Agency Technical Support Documents (TSDs) for Water Quality-Based Toxics Control

The selected statistical method for analyzing effluent toxicity data shall be implemented subject to the approval of the San Diego Water Board.

Additional information on the methods described above can be found in Section IV.C.5 of the Fact Sheet.

4. Quality Assurance – EPA WET Test Methods

- a. Quality assurance measures, instructions, and other recommendations and requirements are in the EPA WET test methods manual previously referenced in this permit.
- b. Effluent dilution water and control water should be standard synthetic dilution water as described in the EPA WET 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). If the dilution water is different from test organism culture water, a second control using culture water must also be used.
- c. If organisms are not cultured in-house, concurrent testing with a reference toxicant must be conducted. If organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests and effluent toxicity tests must be conducted using the same test conditions (e.g., same test duration).
- d. If either the reference toxicant or effluent toxicity tests do not meet all test acceptability criteria in the EPA WET test methods manual, the Discharger must resample and retest within 14 days.
- e. Following Paragraph 10.2.6.2 of the freshwater EPA WET test methods manual, all chronic toxicity test results from the multi-concentration tests required by this permit must be reviewed and reported according to EPA guidance on the evaluation of concentration-response relationships in *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR Part 136)* (EPA/821/B-00-004, 2000).
- f. If the discharged effluent is chlorinated, chlorine must not be removed from the effluent sample before toxicity testing without written approval by the San Diego Water Board.

5. Initial Investigation TRE Work Plan

Within 90 days of the permit effective date, the Discharger must prepare and submit to the San Diego Water Board a copy of its Initial Investigation Toxicity Reduction Evaluation (TRE) Work Plan (1–2 pages) for review. That plan must contain steps the permittee intends to follow if toxicity is measured above a chronic WET permit limit or trigger and should include the following, at minimum:

- a. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.

- b. A description of methods for maximizing in-house treatment system efficiency, good housekeeping practices, and a list of all chemicals used in operations at the facility.
 - c. If a Toxicity Identification Evaluation (TIE) is necessary, an indication of who would conduct the TIEs (i.e., an in-house expert or outside contractor).
- 6. Accelerated Toxicity Testing and TRE/TIE Process**
- a. If a chronic WET permit limit or trigger is exceeded and the source of toxicity is known (e.g., a temporary plant upset), the permittee must conduct one additional toxicity test using the same species and EPA WET test method. This WET test must begin within 14 days of receipt of WET test results exceeding a chronic WET permit limit or trigger. If the additional toxicity test does not exceed a chronic WET permit limit or trigger, the permittee may return to their regular testing frequency.
 - b. If a chronic WET permit limit or trigger is exceeded and the source of toxicity is not known, the permittee must conduct six additional toxicity tests using the same species and EPA WET test method, approximately every two weeks, over a 12 week period. This testing must begin within 14 days of receipt of WET test results exceeding a chronic WET permit limit or trigger. If none of the additional toxicity tests exceed a chronic WET permit limit or trigger, the permittee may return to their regular testing frequency.
 - c. If one of the additional toxicity tests (in paragraphs 6.a or 6.b) exceeds a chronic WET permit limit or trigger, within 14 days of receipt of this WET test result, the permittee must initiate a TRE using as guidance, according to the type of treatment facility, the EPA TRE manual, *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants* (EPA/833/B-99/002, 1999) or EPA TRE manual, *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* (EPA/600/2-88/070, 1989). In conjunction, the permittee must develop and implement a Detailed TRE Work Plan that must contain the following: further actions undertaken by the permittee to investigate, identify, and correct the causes of toxicity; actions the permittee will take to mitigate the effects of the discharge and prevent the recurrence of toxicity; and a schedule for such actions.
 - d. The permittee may initiate a TIE as part of a TRE to identify the causes of toxicity using the same species and EPA WET test method and, as guidance, EPA WET TIE/TRE method manuals: *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* (EPA/600/6-91/005F, 1992); *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples*

Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/080, 1993); *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity* (EPA/600/R-92/081, 1993).

7. Reporting of Chronic Toxicity Monitoring Results

- a. The Discharger must submit a full laboratory report as an attachment to the DMR for all toxicity testing for the month in which the toxicity test was conducted; the laboratory report must contain the following: the toxicity test results, the dates of sample collection and initiation of each toxicity test; all results for effluent parameters monitored concurrently with the toxicity test(s); and progress reports on TIE/TRE investigations.
- b. The Discharger must provide the actual test endpoint responses for the control (i.e., control mean) and IWC concentration (i.e., IWC mean) for each WET test conducted to make it easier for permit writers to find the necessary WET test results when determining WET RP.
- c. The Discharger must notify the San Diego Water Board in writing within 14 days of exceedance of a chronic WET permit limit or trigger. The notification must describe actions the Discharger has taken or will take to investigate, identify, and correct the causes of toxicity; the status of actions required by this permit; and schedule for actions not yet completed; or reason(s) that no action has been taken.

VI. LAND DISCHARGE MONITORING REQUIREMENTS—NOT APPLICABLE

VII. RECLAMATION MONITORING REQUIREMENTS—NOT APPLICABLE

VIII. RECEIVING WATER MONITORING REQUIREMENT

The Discharger shall conduct visual observations in the vicinity of Discharge Point No. 001 and Discharge Point No. 002 on a monthly basis and document the presence of any floating and suspended material, visible sheens, discoloration, or odors. Notes on receiving water conditions shall be summarized in the monitoring reports. The influent monitoring program under MRP Section III also constitutes the receiving water monitoring program.

IX. OTHER MONITORING REQUIREMENTS

A. Priority Pollutant Monitoring (Table B, Ocean Plan)

The Discharger shall conduct effluent monitoring at EFF-001 and EFF-002 for priority pollutants listed in the Ocean Plan, Table B for which Performance Goals have been established as listed in Effluent Limitations and Discharge Specifications

section I.V. A. 3. In addition, the Discharger shall conduct receiving water monitoring RSW-001 and RSW-002 for the constituents listed in Table B at the same time effluent samples are collected. Further, the Discharger must analyze for pH of the receiving water concurrent with the effluent analyses. The monitoring shall be conducted once during the fourth year after adoption of this Order and the monitoring data shall be submitted at least 180 days prior to the expiration date of this Order.

B. Storm Water Monitoring

1. The Discharger shall monitor storm water by-passes as specified in Table E-6.

Table E-4. Storm water By-pass Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
pH	units	Grab	One per year	1
Total Coliform	MPN/100 mL	Grab	One per year	1
Fecal Coliform	MPN/100 mL	Grab	One per year	1
Enterococcus	CFU/100 mL	Grab	One per year	1
Suspended Solids	mg/L	Grab	One per year	1
Settleable Solids	ml/L	Grab	One per year	1
Grease and Oil	mg/L	Grab	One per year	1
Turbidity	NTU	Grab	One per year	1
Ammonia, Un-ionized as N	mg/L	Grab	One per year	1
Copper, Total Recoverable	µg/L	Grab	One per year	1
Silver, Total Recoverable	µg/L	Grab	One per year	1
Priority Pollutants (Table B, Ocean Plan)	µg/L	Grab	2	1

¹ Pollutants shall be analyzed using the analytical methods described in 40 CFR Part 136. The methods must meet the lowest minimum levels (MLs) specified in Attachment 4 of the SIP, where no methods are specified for a given pollutant, by methods approved by this Regional Water Board or the State Water Board.

² Priority pollutants shall be sampled once during a storm water by-pass and results submitted with the annual storm water monitoring results for that year.

2. The Discharger shall conduct visual observations of all storm water discharges to Mission Bay from the storm water by-pass discharge locations during storm events occurring during normal business hours. Visual observations shall document the presence of any discoloration, floating and suspended materials, odors, oil and grease, and turbidity. The presence/absence or each of these parameters shall be documented for each

storm water by-pass location. Records shall be maintained of the visual observations dates and locations observed.

3. The Discharger shall conduct a minimum of four quarterly visual inspections of all drainage areas within its Facility for the presence of potential pollutant sources and unauthorized non-storm water discharges. Records shall be maintained of the visual observations dates, locations observed, observations, and response taken to eliminate unauthorized non-storm water discharges or pollutants from contacting storm water discharges. The BMP Plan shall be revised as necessary to eliminate potential sources of discharge to the storm water system. The Discharger shall certify in the annual report that the quarterly visual inspections were completed.

C. Chemical Usage

The Discharger shall submit an annual report regarding the use of drugs, disinfectants, pesticides, and other chemicals that are used in the aquariums and may be present in the discharges to Mission Bay. The report shall include the following information:

1. The name(s), active ingredients, and
2. The amounts of the drug or chemical.

D. Calculation of Concentration

For drugs or chemicals used in an immersion bath, "drip" treatment, or in other direct application to waters at the Facility, use the following formula to calculate concentration (C) at the point of discharge.

C = concentration of chemical or drug at the point of discharge

$C = (\text{treatment concentration}) \times (\text{flow in treatment area}) \div (\text{flow at point of discharge})$

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 not reported under Attachment D, sections III, V, and VI of this Order at the time monitoring reports are submitted.
3. By February 1 of each year, the Discharger shall submit an annual report to the Regional Water Board and USEPA 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 this Order and this MRP.

B. Self Monitoring Reports (SMRs)

1. 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 (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program Web site (<http://www.waterboards.ca.gov/ciwqs/index.html>). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS Web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.
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 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 shall be completed according to the following schedule:

Table E-5. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On...	Monitoring Period	SMR Due Date
Continuous	Permit effective date	All	Submit with monthly SMR
Weekly	Permit effective date	Sunday through Saturday	Submit with monthly 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	First day of second month following month of sampling.
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 1 August 1 November 1 February 1
Semi-Annually	Closest of January 1 or July 1 following (or on) permit effective date	January 1 through June 30 July 1 through December 31	August 1 February 1
Annually	January 1 following (or on) permit effective date	January 1 through December 31	February 1
1/ 5 years	Permit effective date.	4 th year after permit effective date	180 days prior to expiration date of permit.
Storm Water Monitoring (Section IX.B.)	Permit effective date	January 1 through December 31	February 1

4. Reporting Protocols. The Discharger shall report with each sample result the applicable reported Minimum Level (ML) and the current Method Detection Limit (MDL), as determined by the procedure in Part 136.

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

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

- c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.
 - d. Dischargers are to instruct laboratories to establish calibration standards so that the ML value (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve.
5. Compliance Determination. Compliance with effluent limitations for priority pollutants shall be determined using sample reporting protocols defined above and Attachment A of this Order. For purposes of reporting and administrative enforcement by the Regional and State Water Boards, the Discharger shall be deemed out of compliance with effluent limitations if the concentration of the priority pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL).
6. Multiple Sample Data. When determining compliance with an AMEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:
- a. The data set shall be ranked from low to high, ranking the reported ND determinations lowest, DNQ determinations next, followed by quantified values (if any). The order of the individual ND or DNQ determinations is unimportant.
 - b. The median value of the data set shall be determined. If the data set has an odd number of data points, then the median is the middle value. If the data set has an even number of data points, then the median is the average of the two values around the middle unless one or both of the points are ND or DNQ, in which case the median value shall be the lower of the two data points where DNQ is lower than a value and ND is lower than DNQ.
7. The Discharger shall submit SMRs in accordance with the following requirements:

- a. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with interim and/or final effluent limitations. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.
- b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the 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:

**California Regional Water Quality Control Board
San Diego Region
9174 Sky Park Court, Suite 100
San Diego, CA 92123-4340**

C. Discharge Monitoring Reports (DMRs)—Not Applicable

D. Other Reports-None

ATTACHMENT F – FACT SHEET

Table of Contents

I.	Permit Information.....	F-3
II.	Facility Description	F-5
	A. Description of Wastewater and Wastewater Treatment or Controls	F-5
	B. Discharge Points and Receiving Waters	F-7
	C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data.....	F-7
	D. Compliance Summary	F-10
	E. Planned Changes – Not Applicable	F-11
III.	Applicable Plans, Policies, and Regulations.....	F-12
	A. Legal Authorities.....	F-12
	B. California Environmental Quality Act (CEQA).....	F-12
	C. State and Federal Regulations, Policies, and Plans	F-12
	D. Impaired Water Bodies on CWA 303(d) List.....	F-16
IV.	Rationale For Effluent Limitations and Discharge Specifications	F-17
	A. Discharge Prohibitions.....	F-17
	B. Technology-Based Effluent Limitations	F-18
	1. Scope and Authority	F-18
	2. Applicable Technology-Based Effluent Limitations.....	F-19
	C. Water Quality-Based Effluent Limitations (WQBELs)	F-22
	1. Scope and Authority	F-22
	2. Applicable Beneficial Uses and Water Quality Criteria and Objectives....	F-22
	3. Determining the Need for WQBELs.....	F-24
	4. WQBEL Calculations	F-28
	5. Whole Effluent Toxicity (WET).....	F-34
	D. Final Effluent Limitations	F-38
	1. Satisfaction of Anti-Backsliding Requirements	F-38
	2. Satisfaction of Antidegradation Policy	F-39
	3. Stringency of Requirements for Individual Pollutants	F-39
	E. Performance Goals at Discharge Point Nos. 001 and 002	F-40
	F. Land Discharge Specifications—Not Applicable.....	F-48
	G. Reclamation Specifications—Not Applicable	F-48
V.	Rationale for Receiving Water Limitations.....	F-48
	A. Surface Water.....	F-48
	B. Ground water—Not Applicable	F-48
VI.	Rationale for Monitoring and Reporting Requirements	F-48
	A. Intake Monitoring	F-48
	B. Effluent Monitoring.....	F-49
	C. Whole Effluent Toxicity Testing Requirements	F-50
	D. Receiving Water Monitoring	F-50
	E. Other Monitoring Requirements.....	F-50
	F. Ground Water – Not Applicable.....	F-52

VII. Rational for Provisions	F-52
A. Standard Provisions	F-52
B. Monitoring and Reporting Program (MRP) Requirements	F-52
C. Special Provisions	F-52
1. Reopener Provisions	F-52
2. Special Studies and Additional Monitoring Requirements	F-52
3. Best Management Practices and Pollution Prevention	F-53
4. Construction, Operation, and Maintenance Specifications— Not Applicable	F-53
5. Other Special Provisions—Not Applicable.....	F-53
6. Compliance Schedules—Not Applicable	F-53
VIII. Public Participation.....	F-53
A. Notification of Interested Parties.....	F-53
B. Written Comments.....	F-54
C. Public Hearing	F-54
D. Waste Discharge Requirements Petitions	F-54
E. Information and Copying	F-55
F. Register of Interested Persons	F-55
G. Additional Information.....	F-55

List of Tables

Table F-1. Facility Information.....	F-3
Table F-2. Historic Effluent Limitations and Monitoring Data for Discharge Point No. 001	F-7
Table F-3. Historic Effluent Limitations and Monitoring Data for Discharge Point No. 002	F-9
Table F-4. Historic Storm Water By-pass Monitoring Data.....	F-10
Table F-5. Effluent Limitation Exceedances for Discharge Point No. 001	F-11
Table F-6. Effluent Limitation Exceedances for Discharge Point No. 002	F-11
Table F-7. Basin Plan Beneficial Uses	F-13
Table F-8. Summary of Technology-based Effluent Limitations	F-21
Table F-9. Parameters Evaluated for Reasonable Potential at Discharge Point No. 001 ¹	F-26
Table F-10. Parameters Evaluated for Reasonable Potential at Discharge Point No. 002 ¹	F-27
Table F-11. WQBEL Calculations for Copper, Total Recoverable	F-31
Table F-12. WQBEL Calculations for Silver, Total Recoverable	F-32
Table F-13. Summary of WQBEL for Discharge Point Nos. 001 and 002.....	F-34
Table F-15. Summary of Performance Goals for Ocean Plan Table B Constituents.....	F-41
Table F-16. Monitoring of East and West Intakes at INF-001 and INF-002.....	F-49
Table F-17. Effluent Monitoring Requirements for Discharge Nos. 001 and 002.	F-49
Table F-18. Storm Water By-pass Monitoring	F-51

ATTACHMENT F – FACT SHEET

As described in section II of this Order, this Fact Sheet includes the legal requirements and technical rationale that serve as the basis for the requirements of this Order.

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

I. PERMIT INFORMATION

A. The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	9 000000083
Discharger	SeaWorld Parks & Entertainment, Inc. a Delaware Corporation, SeaWorld LLC d/b/a/ SeaWorld San Diego
Name of Facility	Sea World, San Diego
Facility Address	500 Sea World Drive
	San Diego, CA 92109
	San Diego County
Facility Contact, Title and Phone	Buddy Burton, Environmental Health and Safety Director, 619-226-3966
Authorized Person to Sign and Submit Reports	John T. Reilly, President (619) 226-3802
Mailing Address	500 Sea World Drive, San Diego, CA 92109
Billing Address	500 Sea World Drive, San Diego, CA 92109
Type of Facility	Amusement Park, SIC # 7995
Major or Minor Facility	Major
Threat to Water Quality	2
Complexity	A
Pretreatment Program	NA
Reclamation Requirements	NA
Facility Permitted Flow	9.36 million gallons per day (MGD)
Facility Design Flow	9.36 MGD
Watershed	
Receiving Water	Mission Bay
Receiving Water Type	Enclosed Bay

B. SeaWorld Parks & Entertainment, Inc. a Delaware Corporation, SeaWorld LLC d/b/a/ SeaWorld San Diego (hereinafter Discharger) is the owner and operator of Sea World, San Diego (hereinafter Facility), an amusement park.

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

- C.** The Facility discharges wastewater to Mission Bay, a water of the United States, and is currently regulated by Regional Water Quality Control Board (Regional Water Board) Order No. R9-2005-0091 adopted on April 13, 2005 and Addendum No. 1 to Order No. R9-2005-0091 adopted on December 12, 2007. Addendum No. 1 amended Order No. R9-2005-0091 to establish waste discharge requirements and monitoring requirements for the Discharger’s aerial fireworks display over Mission Bay. Order No. R9-2005-0091 expired on April 13, 2010.
- D.** The Discharger submitted a Report of Waste Discharge (ROWD) dated October 15, 2009 and applied for a National Pollutant Discharge Elimination System (NPDES) permit renewal to discharge up to 9.36 MGD of treated wastewater from the Facility. The Disclosure Statement was received on October 15, 2009. Supplemental information, (United States Environmental Protection Agency (USEPA) Form 2B, Application for Permit to Discharge Wastewater, Concentrated Animal Feeding Operations and Aquatic Production Facilities) was submitted by the Discharger on January 5, 2010. Order No. R9-2005-0091 expired on April 13, 2010. Priority pollutant analyses for the receiving water and effluent were submitted by the Discharger on March 18, 2010. The Aerial Fireworks Displays Addendum Summary Report was submitted by the Discharger on June 15, 2010. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements (WDRs) and NPDES permit are adopted pursuant to this Order.
- E.** USEPA regulations require discharges from concentrated aquatic animal production (CAAP) facilities to be authorized by a NPDES permit if the facility is a concentrated animal production facility pursuant to regulations found at Title 40 of the Code of Federal Regulations (40 CFR) Part 122.24 and the criteria found in Appendix C of 40 CFR 122, or any similar facility that the Director (Executive Officer) determines may be a significant contributor of pollution to waters of the State [122.24(c)]. The criteria described in Appendix C of 40 CFR 122 are as follows: A hatchery, fish farm, or other facility is a CAAP facility if it grows, contains, or holds, aquatic animals in any of the following categories:
1. Cold water fish species or other cold water aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year, but does not include facilities that produce or hold less than approximately 9,090 kg (approximately 20,000 lbs) or aquatic animals per year. It also does not include facilities that feed less than 2,272 kg (approximately 5,000 lbs) of food during the calendar month of maximum feeding.

2. Warm water fish species or other warm water aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year, but does not include closed ponds which discharge only during periods of excess runoff, or facilities that produce or hold less than 45,454 kg (approximately 100,000 lbs) of aquatic animals per year.
3. Any similar facility that the Executive Officer determines may be a significant contributor or pollution to waters of the United States.

USEPA published effluent limit guidelines (ELGs) for the CAAP point source category that became effective on September 22, 2004. The ELGs apply to facilities that produce at least 100,000 lbs per year. Systems not covered by the CAAP ELGs include, by definition, aquaria.

The information submitted by the Discharger (USEPA Form 2B) indicates the quantity of cold water species held in aquaria at the Facility are less than 20,000 lbs and the quantity of warm water species (Tropical species) are less than 100,000 lbs. The total amount of food fed during the month of maximum feeding is reported as 4,650 lbs. The exhibits and aquaria at the Facility have a total capacity of 11,480,600 gallons. The ornamental and aquarium fish are produced and maintained solely for exhibit purposes.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Wastewater Treatment or Controls

Sea World is a SeaWorld Parks & Entertainment, Inc. Adventure Park located in Mission Bay in San Diego, California. The Facility is primarily an aquatic amusement park and houses various marine animals. The Facility comprises approximately 189.4 acres. Discharges from the Facility consist of wastewater from mammal tanks, aquariums, and other exhibit pools which contain solids from feces and uneaten feed. Water is constantly re-circulated through filtration systems that continuously remove animal waste products. In addition, intermittent flows during pool drainage and cleaning operations are discharged to Mission Bay. Aquarium species may become vulnerable to disease and parasite infestations requiring periodic use of aquaculture drugs and chemicals to ensure the health of the confined aquatic species. As a result of these therapeutic operations, drugs and chemicals may be present in the discharge to Mission Bay. Landscape irrigation runoff, Facility wash down water and storm water is discharged to Mission Bay.

The Discharger pumps seawater from Mission Bay through two intake structures, an East and West intake, for use in its mammal pools, aquariums, and other exhibits. The West Intake consists of two pumps that pump up to 6.12 MGD of seawater from Mission Bay to either a set of filters for mammal pools or a set of filters for fish exhibits. The East Intake consists of four pumps with a total capacity to pump up to 3.24 MGD of seawater into the Facility. Both intake

streams are separate and each contain its own treatment system and outfall. Seawater pumped from Mission Bay is filtered and disinfected with chlorine to produce a suitable habitat for the exhibit mammals tolerant to chlorine. Seawater used in the fish tanks is filtered and disinfected using ozone and ultraviolet (UV) light. Approximately 88,000 gallons per day of backwash water from the intake filters is discharged into the sanitary sewer system.

The Facility may discharge a variety of pollutants to Mission Bay attributable to (1) feeds (directly or indirectly as feces), (2) residuals of drugs or chemicals used for maintenance of animal health, and (3) residuals of chemicals used for cleaning, maintaining landscape, or enhancing water quality conditions. The Discharger periodically uses copper sulfate mixed in a 1 to 1 ratio with acetic acid to control parasite infestations in seven aquariums. Other drugs and chemicals used in a bath treatment include Cipro (ciprofloxacin) and Dylox (Trichlorfon). Dylox is an organophosphate pesticide that is used a few times a year to control parasites in aquariums. Cipro is an antibacterial drug that is used at the Facility as needed for ill animals. Cipro and Dylox are used under the direction of the Facility veterinarian under the extra label drug use policy. Wastewater from the salt water aquarium chemical treatments is discharged to Mission Bay. Wastewater from the fresh water aquarium chemical treatments is discharged to the sanitary sewer

The Facility contains two effluent treatment systems, one located on the east side of the Facility, and one located on the west side of the Facility as shown in Attachment B. During periods of rain, wastewater streams from each side of the Facility combine with storm water runoff originating from storm drains located throughout the site. The wastewater is filtered through 1-inch stainless steel screens prior to entering the treatment systems. Diversion chambers within the treatment systems transfer the water to chlorine contact chambers. Sodium hypochlorite is injected at three prechlorination points in each collection system prior to the contact chamber. A final chlorine injection point is located just prior to each contact chamber. Residual chlorine is neutralized prior to discharge to Mission Bay by the injection of sodium sulfite. Flow diagrams for the East and West intake and discharge systems are provided in Attachment C.

The treatment systems are designed to accommodate a total combined maximum effluent flow of 9.36 MGD of wastewater from exhibit pools, intermittent flows during pool draining operations, runoff from landscape irrigation, and Facility wash down water. Storm water is discharged during rain events. The East side treatment system and outfall (Discharge Point No. 001) has a maximum design capacity of 3.24 MGD. The West side treatment system and outfall (Discharge Point No. 002) has a maximum design capacity of 6.12 MGD. The ROWD submitted by the Discharger reports an average daily flow of 1.3 MGD for Discharge Point No. 001 and 1.9 MGD for the Discharge Point No. 002.

During large storm events when the capacity of the treatment systems are exceeded, storm water is by-passed directly to Mission Bay. Two storm water

by-pass discharge points are located in the West side collection/treatment system and four storm water by-pass discharge points are located in the East side collection/treatment system. Discharge Prohibition III.C., of the previous Order No. R9-2005-0091 prohibited the discharge of aquaria and pool draining operations during a storm water by-pass event. In addition, the previous Order required the Discharger to establish and implement a Storm Water Pollution Prevention Plan to reduce pollution to Mission Bay and minimize pollutant contact with storm water. The prohibition and BMP plan requirement were carried over in this Order.

Domestic wastewater from the Facility and filter backwash is discharged to the City of San Diego’s sanitary sewer system. Freshwater pools may be drained either to the East treatment system or to the sanitary sewer. When freshwater pools and tanks are treated with chemicals for disease and parasite infestations, treated wastewater is discharged to the sanitary sewer. The fresh water manatee tank is also discharged to the City’s sanitary sewer.

B. Discharge Points and Receiving Waters

The Discharger proposes to discharge up to 9.36 MGD of treated wastewater to Mission Bay from two outfalls. Discharge Point No. 001 (East Outfall) has a maximum discharge rate of 3.24 MGD and is located at 32° 46’ 03” North latitude and 117° 13’ 33” West longitude. Discharge Point No. 002 (West Outfall) has a maximum discharge rate of 6.12 MGD and is located at 32° 46’ 04” North latitude and 117° 13’ 40” West longitude. The two submerged outfall pipes have pipe reducers and the initial zone of dilution for each discharge has been calculated as 21 to 1, receiving water to effluent flow. The initial dilution of 21 to 1 is carried over from Order No. R9-2005-0091. The outfall locations are shown in Attachment B.

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

1. Effluent limitations contained in the previous Order for Discharge Point No. 001 (East Outfall), with compliance measured at EFF-001, and representative monitoring data from the term of the previous Order are shown below in Table F-2.

Table F-2. Historic Effluent Limitations and Monitoring Data for Discharge Point No. 001

Parameter	Units	Effluent Limitation			Monitoring Data April 2005 through December 2009)		
		6 Month Median	Average Monthly	Instantaneous Maximum	Highest 6 Month Median	Highest Average Monthly	Instantaneous Maximum
Flow	MGD	--	--	3.24 ¹	--	--	2.31 ¹
pH	std. units	--	--	7.0-9.0 ²	--	--	7.2-8.3 ²
Oil and Grease	mg/L	--	25	75	--	--	8.3

Parameter	Units	Effluent Limitation			Monitoring Data April 2005 through December 2009)		
		6 Month Median	Average Monthly	Instantaneous Maximum	Highest 6 Month Median	Highest Average Monthly	Instantaneous Maximum
	lbs/day ³		676	2,026			78.5
Turbidity	NTU		75	225			2.5
Settleable Solids	ml/L		1.0	3.0			0.1
Suspended Solids (Net) ⁴	mg/L		10 ⁴	15 ⁴			2.9
Ammonia	mg/L			0.55			0.28
	lbs/day ³			15			3.43
Chlorine Residual	mg/L		0.21	0.42		0.08	0.3
	lbs/day ³		5.7	11.3		0.32	2.57
Copper (Total Recoverable)	µg/L	24	38.13	76.5 ¹	14		14
	lbs/day ³	0.65	1.0	2.1 ¹	0.13		0.13
Silver (Total Recoverable)	µg/L	6.5	23.16	36 ¹	5		5
	lbs/day ³	0.2	0.6	1.0 ¹	0.07		0.07
Enterococcus	CFU/100 mL	--	35	104	--	203.8	800
Fecal Coliform	MPN/100 mL		200 ⁵			5.64 ⁵	
Total Coliform	MPN/100 mL		70 ⁶			80 ⁶	16,000 ⁷
Acute Toxicity	TU _a	--	1.5	2.5	--	--	0.77
Chronic Toxicity	TU _c			22 ¹			No Sample ⁸ Results

¹ Daily Maximum Value.

² pH must be between 7.0 and 9.0 at all times

³ Mass-based effluent limitations calculated based on a maximum flow rate of 3.24 MGD.

⁴ The concentration of suspended solids in the discharge of aquaria wastewater through Discharge Point No. 001 shall not be increased in excess of 10 mg/L as a monthly average or 15 mg/L as a daily maximum when compared to the suspended solids concentration in the intake water.

⁵ The fecal coliform concentration based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100mL, nor shall more than 10 percent of total samples during any 30-day period exceed 400/100mL.

⁶ The median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100mL nor shall more than 10 percent of the samples collected during any 30-day period exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three tube dilution test is used.

⁷ More than 10 percent of the samples collected between June 13 to July 13, 2005 and November 2 to November 30, 2005 exceeded limitation for total coliform.

⁸ Chronic Toxicity testing required once during the 5-year permit cycle was not submitted.

- Effluent limitations contained in the previous Order for Discharge Point No. 002 (West Outfall), with compliance measured at EFF-002, and representative monitoring data from the term of the previous Order are shown below in Table F-3.

Table F-3. Historic Effluent Limitations and Monitoring Data for Discharge Point No. 002

Parameter	Units	Effluent Limitation			Monitoring Data (April 2005 through December 2009)		
		6 Month Median	Average Monthly	Instantaneous Maximum	Highest 6 Month Median	Highest Average Monthly	Instantaneous Maximum
Flow	MGD	--	--	6.12 ¹	--	--	4.36
pH	std. units	--	--	7.0-9.0 ²	--	--	7.1-8.5 ²
Oil and Grease	mg/L	--	25	75	--	--	4.6
	lbs/day ³		1,276	3,828			69.36
Turbidity	NTU		75	225			2.2
Settleable Solids	ml/L		1.0	3.0			0.1
Suspended Solids (Net) ⁴	mg/L		10 ⁴	15 ⁴			5.1
Ammonia	mg/L			0.55			1.7
	lbs/day ³			15			26.14
Chlorine Residual	mg/L		0.21	0.42		0.07	0.2
	lbs/day ³		10.7	21.4		0.47	2.86
Copper (Total Recoverable)	µg/L	24	38.13	76.5 ¹	27.7		27.7
	lbs/day ³	1.2	1.9	3.9 ¹	0.36		0.36
Silver (Total Recoverable)	µg/L	6.5	23.16	36 ¹	5		5
	lbs/day ³	0.33	1.2	1.8 ¹			0.1
Enterococcus	CFU/100 mL	--	35	104	--	21.5	80
Fecal Coliform	MPN/100 mL		200 ⁵			4.3 ⁵	
Total Coliform	MPN/100 mL		70 ⁶			29 ⁶	16,000 ⁷
Acute Toxicity	TU _a	--	1.5	2.5	--	--	0.59
Chronic Toxicity	TU _c			22 ¹			No Sample Results

¹ Daily Maximum Value.

² pH must be between 7.0 and 9.0 at all times

³ Mass-based effluent limitations calculated based on a maximum flow rate of 6.12 MGD.

⁴ The concentration of suspended solids in the discharge of aquaria wastewater through Discharge Point No. 002 shall not be increased in excess of 10 mg/L as a monthly average or 15 mg/L as a daily maximum when compared to the suspended solids concentration in the intake water.

⁵ The fecal coliform concentration based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100mL, nor shall more than 10 percent of total samples during any 30-day period exceed 400/100mL.

⁶ The median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100mL nor shall more than 10 percent of the samples collected during any 30-day period exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three tube dilution test is used.

⁷ More than 10 percent of the samples collected between June 15, 2005 and July 15, 2005 exceeded limitation for total coliform.

⁸ Chronic Toxicity testing required once during the 5-year permit cycle was not submitted.

- Order No. R9-2005-0091 required the Discharger to monitor two storm water by-pass events at a representative storm water by-pass discharge location. The Discharger sampled storm water by-pass events on February 27, 2007 and April 20, 2007. The results of grab samples are shown in Table F-4 as follows:

Table F-4. Historic Storm Water By-pass Monitoring Data

Pollutant	Unit	By-pass results February 27, 2007	By-pass results April 20, 2007
pH	Units	7.12	7.26
Total Coliform	MPN/100mL	9,000	16,000
Fecal Coliform	MPN/100mL	3,000	16,000
Enterococcus	CFU/100mL	5,000	>16,000
Ammonia	mg/L	1.06	0.64
Grease and Oil	mg/L	ND (5.0)	ND (5.0)
Suspended Solids	mg/L	80	ND (20)
Settleable Solids	ml/L	0.5	0.5
Turbidity	NTU	40.5	79.3
Residual Chlorine	µg/L	0.12	ND (0.05)
Copper	µg/L	0.032	ND (0.05)
Silver	µg/L	ND (0.1)	ND (0.1)

¹ ND=Non Detect at the Reporting Limit (RL).

- Addendum No. 1 to Order No. R9-2005-0091 required a monitoring program to determine the level of impact to the receiving water and underlying sediment where discharge impacts from the fireworks displays might reasonably be expected. The monitoring program included water and sediment chemistry, sediment toxicity, and an assessment of benthic infauna community parameters. The monitoring plan was to include, at a minimum, 10 randomly selected stations within the FDZ and 2 reference stations. The 10 FDZ stations were to be reselected before each sampling event. A summary of the monitoring results submitted by the Discharger is available in the Fact Sheet of Order No. R9-2011-0022, General NPDES Permit for the Residual Firework Pollutant Waste Discharges to Waters of the United States in the San Diego Region from the Public Display of Fireworks.

D. Compliance Summary

- During the term of Order No. R9-2005-0091 (April 2005 through December 2009) the following effluent limitation exceedances were observed in self monitoring data for the Discharger for Discharge Point No. 001 (East Outfall) as shown below in Table F-5.

Table F-5. Effluent Limitation Exceedances for Discharge Point No. 001

Parameter	Time Frame	Type of Limit	Effluent Limit	Result
Enterococcus	June 20, 2007- July 20, 2007	30-day Average	35 CFU/100 mL	78 CFU/100 mL
Enterococcus	June 20, 2007	Instantaneous Maximum	104 CFU/100 mL	230 CFU/100 mL
Enterococcus	Nov 28, 2007- Dec 27, 2007	30-day Average	35 CFU/100 mL	130.3 CFU/100 mL
Enterococcus	Nov 28, 2007	Instantaneous Maximum	104 CFU/100 mL	500 CFU/100 mL
Enterococcus	Sep 26, 2008- Oct 26, 2008	30-day Average	35 CFU/100 mL	204 CFU/100 mL
Enterococcus	Sep 28, 2007	Instantaneous Maximum	104 CFU/100 mL	800 CFU/100 mL
Total Coliform	June 13, 2005- July 13, 2005	30-day Median	70 MPN/100 mL	80 MPN/100 mL
Total Coliform	June 13, 2005- June 13, 2005	1	1	3 of 10 samples exceeded 330/100 mL
Total Coliform	Nov 2, 2005- Dec 2, 2005	1	1	2 of 11 samples exceeded 330/100 mL

The median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100mL nor shall more than 10 percent of the samples collected during any 30-day period exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three tube dilution test is used.

- During the term of Order No. R9-2005-0091 (April 2005 through December 2009) the following effluent limitation exceedances were observed in self monitoring data for the Discharger for Discharge Point No. 002 (West Outfall) as shown below in Table F-6.

Table F-6. Effluent Limitation Exceedances for Discharge Point No. 002

Parameter	Time Frame	Type of Limit	Effluent Limit	Result
Ammonia	Nov 18, 2008	Instantaneous Maximum	0.55 mg/L	1.7 mg/L
Ammonia	Nov 18, 2008	lbs/day	15	26.14 lbs/day
Copper	June 2005- Dec 2005	6-month Median	24 µg/L	27.7 µg/L
Total Coliform	June 21, 2005- July 21, 2005	1	1	3 of 11 samples exceeded 330/100 mL

The median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100mL nor shall more than 10 percent of the samples collected during any 30-day period exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three tube dilution test is used.

E. Planned Changes – Not Applicable

III. APPLICABLE PLANS, POLICIES, AND REGULATIONS

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

A. Legal Authorities

This Order is issued pursuant to section 402 of the federal Clean Water Act (CWA) and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as a NPDES permit for point source discharges from this facility to surface waters. This Order also serves as WDRs pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260).

B. California Environmental Quality Act (CEQA)

Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100-21177.

C. State and Federal Regulations, Policies, and Plans

1. Water Quality Control Plans. The Regional Water Quality Control Board (Regional Water Board) adopted a *Water Quality Control Plan for the San Diego Basin* (hereinafter Basin Plan) on September 8, 1994 that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives. The Basin Plan was subsequently approved by the State Water Resources Control Board (State Water Board) on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the Regional Water Board and approved by the State Water Board. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Beneficial uses applicable to Mission Bay are listed in Table F-7.

Table F-7. Basin Plan Beneficial Uses

Discharge Point Nos.	Receiving Water Name	Beneficial Use(s)
001 and 002	Mission Bay	<p><u>Existing:</u> Industrial service supply (IND) Contact water recreation (REC1) Non-contact water recreation (REC2) Commercial and sport fishing (COMM) Estuarine habitat (EST) Wildlife habitat (WILD) Preservation of rare, threatened or endangered species (RARE) Marine habitat (MAR) Migration of aquatic organisms (MIGR) Shellfish harvesting (SHELL)</p> <p><u>Intermittent:</u> None</p> <p><u>Potential:</u> None</p>

Requirements of this Order implement the Basin Plan.

The State Water Board adopted a *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Water and Enclosed Bays and Estuaries of California (Thermal Plan)* on May 18, 1972, and amended this plan on September 18, 1975. This plan contains temperature objectives for surface waters. Requirements of this Order implement the Thermal Plan.

The State Water Board adopted the *Water Quality Control Policy for Enclosed Bays and Estuaries of California (Bays and Estuaries Policy)* on May 16, 1974. The *Bays and Estuaries Policy* establishes principles for management of water quality, quality requirements for waste discharges, discharge prohibitions, and general provisions to prevent water quality degradation and to protect the beneficial uses of waters of enclosed bays and estuaries. These principles, requirements, prohibitions, and provisions have been incorporated into this Order.

- a. The Bays and Estuaries Policy contains the following principle for management of water quality in enclosed bays and estuaries, which includes Mission Bay.
 - i. The discharge of municipal wastewaters and industrial process waters (exclusive of cooling water discharges) to enclosed bays and estuaries shall be phased out at the earliest practicable date. For the purposes of the Bays and Estuaries Policy and this Order, the discharge of seawater used to maintain marine species in exhibits and aquaria will be considered innocuous non-municipal wastewaters and, as such, will not be considered industrial process wastes. Therefore, the

discharges of such wastes may be allowed by this Regional Water Board under waste discharge requirements that provide protection of the beneficial uses of the receiving waters.

- b. The following Principles for the Management of Water Quality in Enclosed Bays and Estuaries, as stated in the Bays and Estuaries Policy, apply to all of California's enclosed bays and estuaries including Mission Bay:
 - i. Persistent or cumulative toxic substances shall be removed from the waste to the maximum extent practicable through source control or adequate treatment prior to discharge.
 - ii. Bay or estuarine outfall and diffuser systems shall be designed to achieve the most rapid initial dilution practicable to minimize concentrations of substances not removed by source control or treatment.
 - iii. Wastes shall not be discharged into or adjacent to areas where the protection of beneficial uses requires spatial separation from waste fields.
 - iv. Waste discharges shall not cause a blockage of zones of passage required for migration of anadromous fish.
 - v. Nonpoint sources of pollutants shall be controlled to the maximum practicable extent.
 - vi. This Regional Water Board has considered the Principles for the Management of Water Quality in Enclosed Bays and Estuaries, in adopting this Order. The terms and conditions of this Order are consistent with the Principles for the Management of Water Quality in Enclosed Bays and Estuaries.

The State Water Board adopted the *Water Quality Control Plan for Enclosed Bays and Estuaries – Part 1 Sediment Quality* on September 16, 2008. Effective August 25, 2009, Part 1 Sediment Quality integrates chemical and biological measures to determine if the sediment dependent biota are protected or degraded as a result of exposure to toxic pollutants. Requirements of this Order implement the Part 1 – Sediment Quality Plan.

The State Water Board adopted a *Water Quality Control Plan for Ocean Waters of California (Ocean Plan)* in 1972 and amended it in 1978, 1983, 1990, 1997, 2000, and 2005. The Ocean Plan establishes water quality objectives for bacterial, physical, chemical, and biological characteristics, and for radioactivity. Further, the Ocean Plan establishes general requirements for management of waste discharge to the ocean quality requirements for waste discharges, discharge prohibitions, and general provisions. Beneficial uses of Mission Bay are similar to those of the ocean waters of the State. In

order to protect the beneficial uses of Mission Bay, the discharge specifications for some parameters in this Order were derived from the Ocean Plan.

- 2. National Toxics Rule (NTR) and California Toxics Rule (CTR).** USEPA adopted the NTR on December 22, 1992, and later amended it on May 4, 1995 and November 9, 1999. About forty criteria in the NTR applied in California. On May 18, 2000, USEPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on February 13, 2001. These rules contain water quality criteria for priority pollutants.
- 3. State Implementation Policy.** On March 2, 2000, the State Water Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (State Implementation Policy or SIP). The SIP became effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through the NTR and to the priority pollutant objectives established by the Regional Water Board in the Basin Plan. The SIP became effective on May 18, 2000 with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Water Board adopted amendments to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements of this Order implement the SIP.
- 4. Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 CFR 131.21, 65 Fed. Reg. 24641 (April 27, 2000)). Under the revised regulation (also known as the Alaska rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.
- 5. Antidegradation Policy.** 40 CFR 131.12 requires that the state water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. The permitted discharge must

be consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

- 6. Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations² 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require that effluent limitations in a reissued permit must be as stringent as those in the previous permit, with some exceptions in which limitations may be relaxed. Effluent limitations contained in this Order are a least as stringent as the effluent limitations in the current Order.
- 7. Regulations for Use of Aquaculture Drugs and Chemicals.** Drugs and chemicals used in aquaculture are strictly regulated by the U.S. Food and Drug Administration (FDA) through the Federal Food, Drug, and Cosmetic Act (FFDCA; 21 USC 301-392). FDA's Center for Veterinary Medicine (CVM) regulates the manufacture, distribution, and use of animal drugs. CVM approves the use of new animal drugs based on data provided by a sponsor (usually a drug company). To be approved by CVM, an animal drug must be effective for the claim on the label and safe when used as directed for (1) treated animals; (2) persons administering the treatment; (3) the environment, including non-target organisms; and (4) consumers. Some drugs and chemicals, such as acetic acid and copper sulfate used at the Facility are classed as Low Regulatory Priority (LRP) where FDA regulatory action is unlikely to be taken as long as an appropriate grade of the chemical is used, good management practices are followed, and local environmental requirements are met (such as NPDES permit requirements contained in this Order). The Discharger is responsible for complying with all regulations for use of drugs and chemicals.

A licensed veterinarian may also prescribe extra label drugs under the FDA-CVM's extra label drug use policy. The veterinarian assumes the responsibility for drug safety and efficacy, and for potential residues.

- 8. Current Order.** In some cases, existing waste discharge requirements and permit conditions (effluent limitations and other special conditions) contained in Order No. R9-2005-0091 and Addendum No. 1 to Order No. R9-2005-0091 have been continued in this Order.

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

Section 303(d) of the CWA requires states to identify water bodies where water quality standards are not expected to be met after technology-based effluent limitations have been implemented for point sources. For all 303(d)-listed water bodies and pollutants the Regional Water Board plans to develop total maximum daily load (TMDL) allocations that will specify waste load allocations (WLA) for point sources and load allocations (LA) for non-point sources. The USEPA has

² All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated.

approved the State's 303(d) list of impaired water bodies. The State's 303(d) list classifies Mission Bay as impaired because of bacteria, lead and eutrophication. Currently there is not a proposed date for the TMDL completion for any of these pollutants in the receiving water body. Upon the completion of the TMDL for Mission Bay, the Regional Water Board may reopen this Order to include TMDL allocations.

The Discharger chlorinates and dechlorinates the effluent prior to discharge to Mission Bay. It is unlikely the Discharger will contribute to the impairment of the water body for bacterial indicators. The Discharger conducted an eutrophication study during 2000-2001 and concluded that the effluent from the Facility is not causing or contributing to eutrophication in Mission Bay. Available effluent to date does not indicate the Discharger will contribute to the impairment of the receiving water for lead.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source dischargers to control the amount of conventional, non-conventional, and toxic pollutants that are discharged into the waters of the United States. The control of pollutants discharged is established through effluent limitations and other requirements in NPDES permits. There are two principal bases for effluent limitations in Title 40 of the Code of Federal Regulations: section 122.44(a) requires that permits include applicable technology-based limitations and standards; and section 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving water.

The Discharger has installed pipe reducers at each of the submerged outfall pipes. The pipe reducers increase the initial zone of dilution to a factor of 21:1 for each of the two outfalls. A dilution factor of 21:1 has been carried over from Order No. R9-2005-0091 for discharges from Discharge Point Nos. 001 and 002 for ammonia, chlorine residual, copper, silver, and calculation of performance goals for Ocean Plan Table B constituents.

A. Discharge Prohibitions

The following Discharge Prohibitions in Section III of this Order are carried over from Order No. R9-2005-0091.

1. Prohibition III.A incorporates by reference the Basin Plan Waste Discharge Prohibitions.
2. Prohibition III.B ensures that the operating and discharge conditions under which this Order addresses are not modified in such a way as to result in exceedances of Basin Plan Objectives and/or impairment of beneficial uses.

3. Prohibitions III.C and III.D ensure that operations during storm water events do not contain treated wastewater to minimize by-passes during storm events.
4. Prohibitions III.E, III.F, and III.G ensure no exceedances with Basin Plan Objectives and/or impairment of beneficial uses.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. The discharge authorized by this Order must meet minimum federal technology-based requirements based on Best Professional Judgment (BPJ) in accordance with 40 CFR 125.3. The CWA requires that technology-based effluent limitations be established based on several levels of controls:

- a. Best practicable treatment control technology (BPT) represents the average of the best performance by plants within an industrial category or subcategory. BPT standards apply to toxic, conventional, and non-conventional pollutants.
- b. Best available technology economically achievable (BAT) represents the best existing performance of treatment technologies that are economically achievable within an industrial point source category. BAT standards apply to toxic and non-conventional pollutants.
- c. Best conventional pollutant control technology (BCT) represents the control from existing industrial point sources of conventional pollutants including BOD, TSS, fecal coliform, pH, and oil and grease. The BCT standard is established after considering the “cost reasonableness” of the relationship between the cost of attaining a reduction in effluent discharge and the benefits that would result, and also the cost effectiveness of additional industrial treatment beyond BPT.
- d. New source performance standards (NSPS) represent the best available demonstrated control technology standards. The intent of NSPS guidelines is to set limitations that represent state-of-the-art treatment technology for new sources.

The CWA requires USEPA to develop ELGs representing the application of BPT, BAT, BCT, and NSPS. Section 402(a)(1) of the CWA and 40 CFR125.3 authorize the use of BPJ to derive technology-based effluent limitations on a case-by-case basis where ELGs are not available for certain industrial

categories and/or pollutants of concern. Where BPJ is used, the permit writer must consider specific factors outlined in 40 CFR 125.3.

There are two sources of technology-based requirements that this Regional Water Board has considered for incorporation in this Order: (1) *Effluent Limitations Guidelines for the Concentrated Aquatic Animal Production Point Source Category* established by USEPA at 40 CFR Part 451; and (2) Table A of the Ocean Plan. Table A of the Ocean Plan establishes technology based requirements for conventional pollutants (suspended and settleable matter, oil and grease, turbidity, and pH) for industrial dischargers for which effluent limitations guidelines have not been established. The numeric limitations from the previous Order based on the numeric limitations of Table A of the Ocean Plan have been continued in this Order.

On August 23, 2004 USEPA published ELGs for the Concentrated Aquatic Animal Production Point Source Category (40 CFR Part 451). The ELG became effective on September 22, 2004. The ELG regulation establishes national technology-based effluent discharge requirements for flow-through and recirculation systems and for net pens based on BPT, BCT, BAT and NSPS. In the process of developing the ELG, USEPA identified an extensive list of pollutants of concern in discharges from the aquaculture industry, including several metals, nutrients, solids, BOD, bacteria, drugs, and residuals of federally registered pesticides. USEPA did not include specific numerical limitations in the ELG for any pollutants on this list, believing that BMPs would provide acceptable control of these pollutants. USEPA also allowed permitting authorities to apply technology-based limitations for other pollutants and water quality-based numeric effluent limitations for pollutants considered in the ELG in order to comply with applicable water quality standards.

2. Applicable Technology-Based Effluent Limitations

- a. Ocean Plan Table A.** The Ocean Plan establishes water quality objectives for bacterial, physical, chemical, and biological characteristics, and for radioactivity. Further, the Ocean Plan establishes general requirements for management of waste discharge to the ocean, quality requirements for waste discharges, discharge prohibitions, and general provisions. Although the Ocean Plan is not directly applicable to enclosed bays, such as Mission Bay, the salinity and beneficial uses of Mission Bay are similar to those of the Ocean. Therefore, in order to protect the beneficial uses of Mission Bay, the previous Order No. R9-2005-0091 used the Ocean Plan as a reference for developing discharge specifications, and to supplement the provisions contained in the Basin Plan, CTR, and the SIP. Table A of the Ocean Plan establishes technology-based effluent limitations for discharges for which ELGs have not been established pursuant to sections 301, 302, 304, or 306 of the CWA. Where effluent limitations in the previous Order are more stringent

than those specified in Table A of the Ocean Plan, the more stringent effluent limitations have been retained in this Order.

- i. Suspended Solids: The Basin Plan specifies that waters shall not contain suspended solids in concentrations of solids that cause nuisance or adversely affect beneficial uses. Table A of the Ocean Plan requires, as a 30-day average, removal of 75% of suspended solids from the influent stream before discharging wastewaters to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L. The Facility pumps intake water from Mission Bay to maintain exhibits and aquaria. The intake concentrations for suspended solids are consistently less than 60 mg/L. The effluent limitations for suspended solids in the previous Order are based on an increase in concentration when compared to the intake concentration. These limits are a monthly average effluent limitation of 10 mg/L and an instantaneous maximum of 15 mg/L in excess of the intake concentration. These effluent limitations based on the intake will be more protective of water quality than the effluent limitations for suspended solids contained within Table A of the Ocean Plan. Thus, the intake-based effluent limitations for suspended solids have been continued in this Order.
- ii. Settleable Solids: The Basin Plan specifies that waters shall not contain settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses. Table A of the Ocean Plan establishes numeric effluent limitations for settleable solids. A monthly average effluent limitation of 1.0 ml/L and an instantaneous maximum effluent limitation of 3.0 ml/L been carried over from the previous Order, based on the effluent limitations contained in the Ocean Plan, Table A.
- iii. Oil and Grease: The Basin Plan establishes narrative water quality objectives for oil and grease. The Basin Plan states that waters shall not contain oils, greases, waxes, or other materials in concentrations which result in a visible film or coating on the surface of the water or on objects in the water, or which cause nuisance or which otherwise adversely affect beneficial uses. Table A of the Ocean Plan establishes numeric effluent limitations for oil and grease. A monthly average effluent limitation of 25 mg/L and an instantaneous maximum effluent limitation of 75 mg/L have been carried over from the previous Order, based on the effluent limitations contained in the Ocean Plan, Table A.
- iv. Turbidity: The Basin Plan establishes narrative water quality objectives for turbidity. The Basin Plan states *Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses*. Table A of the Ocean Plan establishes numeric effluent

limitations for turbidity. A monthly average effluent limitation of 75 NTU and an instantaneous maximum effluent limitation of 225 NTU have been carried over from the previous Order, based on the effluent limitations contained in the Ocean Plan, Table A.

- v. **pH:** Table A of the Ocean Plan establishes numeric limitations for pH of 6.0 to 9.0 at all times. The Basin Plan states that the pH of bays and estuaries shall not be depressed below 7.0 nor raised above 9.0. Further, the Basin Plan prohibits the changes in normal ambient pH levels by 0.2 units in water bodies with designated marine, or estuarine, or saline beneficial uses. The more stringent effluent limitations in Order No. R9-2005-0091 were based on the Basin Plan and were retained in this Order.

Table F-8. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		6 Month Median	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	standard units		--	--	7.0	9.0
Oil and Grease			25			75
Turbidity	NTU		75			225
Settleable Solids	ml/L		1.0			3.0
Suspended Solids	mg/L	Narrative ¹				

¹ The concentration of suspended solids in the discharge of aquaria wastewater through Discharge Point Nos. 001 and 002 shall not be increased in excess of 10 mg/L as a monthly average or 15 mg/L as a daily maximum when compared to the suspended solids concentration in the intake

- b. 40 CFR Part 451 – Effluent Limitations Guidelines for the Concentrated Aquatic Animal Production Point Source Category.** 40 CFR 122.44(k) requires that BMPs be established if the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. USEPA did not include specific numerical limitations in the ELG for any pollutants, believing that BMPs would provide acceptable control. This Regional Water Board has concluded that proper management, operation, and maintenance practices in accordance with BMPs for confined aquatic animals, would provide acceptable control for drugs and chemicals and other constituents, where effluent limitations were not included in this Order.

BMPs must include:

- i. The Discharger must notify the Regional Water Board of the use of any investigational new animal drug (INAD) and any extra-label drug use where the use may lead to a discharge to waters of the United States.

- ii. The Discharger must report a failure in or damage to the structure of an aquatic animal containment system, resulting in an unanticipated material discharge of pollutant to waters of the United States.
- iii. The Discharger must develop, maintain, and implement a BMP Plan for solids control, material storage, structural maintenance, record keeping, and training.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

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

40 CFR 122.44(d)(1)(i) mandates that permits include effluent limitations for all pollutants that are or may be discharged at levels that have the reasonable potential to cause or contribute to an exceedance of a water quality standard, including numeric and narrative objectives within a standard. Where reasonable potential has been established for a pollutant, but there is no numeric criterion or objective for the pollutant, WQBELs must be established using: (1) USEPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

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

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

The Basin Plan establishes water quality objectives (for bacterial, physical, chemical, and biological characteristics, and for radioactivity), and general requirements for management of waste discharged to inland surface waters, enclosed bays and estuaries, coastal lagoons and ground waters, quality requirements for waste discharges (effluent quality requirements), discharge prohibitions, and general provisions, to protect beneficial uses. Beneficial uses of Mission Bay are similar to those of the ocean. The Ocean Plan establishes water quality objectives for bacterial, physical, chemical, and biological characteristics, and for radioactivity. In order to protect the

beneficial uses of Mission Bay, effluent limitations for some parameters in this Order were derived from the Ocean Plan Table B water quality objectives.

- a. The Basin Plan establishes a numeric water quality objective for un-ionized ammonia. The Basin Plan states that the discharge of wastes shall not cause concentrations of unionized ammonia (NH_3) to exceed 0.025 mg/L (as N) in inland surface waters, enclosed bays and estuaries and coastal lagoons. The effluent limitation of 0.55 mg/L (based on the 21 to 1 dilution) has been carried over from the previous Order to assure compliance with the Basin Plan Objective.
- b. The Basin Plan establishes numeric water quality objectives for fecal coliform in waters designated for contact recreation. In waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100 mL, nor shall more than 10 percent of total samples during any 30-day period exceed 400/100mL. The fecal coliform limits have been carried over from the previous Order to assure compliance with the Basin Plan Objective.
- c. The Basin Plan establishes numeric water quality objectives for total coliform in waters where shellfish harvesting for human consumption, commercial, or sport purposes. The Basin Plan states that in waters designated for shellfish harvesting (SHELL), the median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100 mL nor shall more than 10 percent of the samples collected during any 30-day period exceed 230/100 mL for a five tube decimal dilution test or 330/100 mL when a three-tube decimal dilution test is used. The total coliform limits have been carried over from the previous Order to assure compliance with the Basin Plan Objective.
- d. The Basin Plan establishes numeric water quality objectives for enterococcus based on the USEPA Bacteriological Criteria for Water Contact Recreation. The Basin Plan states that in waters designated for contact recreation (REC-1), the enterococci concentration shall not exceed 35/100 mL in all areas, 104/100 mL in designated beach areas, 276/100 mL in moderately or lightly used areas, and 500/100 mL in infrequently used areas. The enterococci limits have been carried over from the previous Order to assure compliance with the Basin Plan Objective.
- e. The Basin Plan establishes a narrative water quality objective for toxicity that all waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological response to human, plant, animal, or aquatic life.

- f. The Basin Plan does not contain water quality objectives for total residual chlorine, however it does contain narrative objectives prohibiting discharges that cause toxicity to aquatic organisms. The Regional Water Board has determined that residual chlorine is toxic to aquatic life. Table B of the Ocean Plan contains numeric water quality objectives for residual chlorine of 8 µg/L as a daily maximum and 60 µg/L as an instantaneous maximum. Effluent limitations based on the Table B objectives were calculated using a 21 to 1 dilution and compared to the effluent limitations contained in the previous Order. The effluent limitations from the previous Order are more stringent and were retained in this Order.

3. Determining the Need for WQBELS

Federal regulations require effluent limitations for all pollutants that are or may be discharged at a level that will cause or have the reasonable potential to cause, or contribute to an in-stream excursion above a narrative or numerical water quality standard. For this Order, the need for effluent limitations based on water quality objectives in the Basin Plan and CTR criteria was re-evaluated in accordance with 40 CFR 122.44(d) and guidance for statistically determining the “reasonable potential” for a discharged pollutant to exceed an objective, as outlined in the SIP. The Regional Water Board analyzes effluent and receiving water data and identifies the maximum observed effluent concentration (MEC) and maximum background concentration (B) in the receiving water for each constituent. To determine reasonable potential, the MEC and the B are then compared with the applicable water quality objectives (C) outlined in the CTR, NTR, as well as the Basin Plan. For all pollutants that have a reasonable potential to cause or contribute to an excursion above a state water quality standard, numeric WQBELS are required. The Reasonable Potential Analysis (RPA) considers water quality criteria from the CTR and NTR, and when applicable, water quality objectives specified in the Basin Plan. To conduct the RPA, the Regional Water Board identifies the MEC and maximum background concentration in the receiving water for each constituent, based on data provided by the Discharger.

Section 1.3 of the SIP provides the procedures for determining reasonable potential to exceed applicable water quality criteria and objectives. The SIP specifies three process analyses to complete an RPA:

- a. Process Analysis 1 – If the MEC is greater than or equal to the CTR water quality criteria or applicable objective, a limit is needed.
- b. Process Analysis 2 – If the $MEC < C$ and background water quality $(B) > C$, a limit is needed.
- c. Process Analysis 3 – If other related information determines the need for WQBEL.

Samples collected by the Discharger between April 1, 2005 and December 31, 2009 as part of the MRP for Order No. R9-2005-0091, and one sample collected on February 1, 2010 were considered representative of current discharges from Discharge Point Nos. 001 and 002. Background receiving water monitoring data was obtained from the receiving water (Mission Bay) approximately 50 feet from each discharge point (Discharge Point Nos. 001 and 002). These data consisted of one sample collected on February 1, 2010.

Section 1.4.2 of the SIP establishes procedures for granting mixing zones and the assimilative capacity of the receiving water. A dilution credit of 21 to 1 has been established as the minimum initial dilution at Discharge Point Nos. 001 and 002 and is continued from Order No. R9-2005-0091. SIP methodology specifies determining the MEC and projecting receiving water values (based on the MEC and minimum probable initial dilution). The projected receiving water concentrations are then compared to the appropriate objective or criteria to determine the potential for an exceedance of that objective and the need for an effluent limitation.

A summary of the RPA results is provided in Table F-9 (Discharge Point No. 001) and Table F-10 (Discharge Point No. 002). Several of the CTR/NTR parameters, were not detected in the effluent or receiving water using appropriate method detection limits (MLs) and concentrations of several parameters were reported as detected, but not quantifiable (DNQ). Parameters not detected or detected and estimated concentrations that were below water quality objectives, were omitted from the table and are considered to not demonstrate reasonable potential.

Table F-9. Parameters Evaluated for Reasonable Potential at Discharge Point No. 001¹

Parameter (µg/L)	Basis for Applying Criteria/Objective ²	Source of Applied Criteria/Objective	n ³	MEC µg/L	Most Stringent Criteria µg/L	Background µg/L	Effluent Limitation µg/L
Arsenic	CTR/NTR	Saltwater Chronic	1	2.68	36	2.04	No
Cadmium	CTR/NTR	Saltwater Chronic	1	0.043	9.36	0.031	No
Chromium III	CTR/NTR	No Criteria	1	0.435	No Criteria	0.215U	No
Copper, Total Recoverable	CTR/NTR	Saltwater Chronic	11 ⁴	14 ⁴	3.73	0.51	Yes ⁵
Lead	CTR/NTR	Saltwater Chronic	1	0.198	8.52	0.069	No
Nickel	CTR/NTR	Saltwater Chronic	1	0.391	8.28	0.209	No
Selenium, Total Recoverable	CTR/NTR	Saltwater Chronic	1	0.02	71.14	0.01	No
Silver, Total Recoverable	CTR/NTR	Saltwater Acute	11 ⁴	5 ⁴	2.24	0.74U	Yes ⁵
Zinc, Total Recoverable	CTR/NTR	Saltwater Chronic	1	16.05	85.62	2.164U	No
Bromoform	CTR	Human Consumption	1	26.8	360	0.3J	No
Dibromochloro methane	CTR	Human Consumption	1	1.2	46	0.5U	No
Bis(2-Ethylhexyl) Phthalate	CTR	Human Consumption	1	1.87	5.9	0.25U	No

¹ Parameters are excluded from this table if no detected concentrations are found in effluent and receiving water, or have been detected but are not quantifiable and estimated below the water quality objectives, and no other information indicates that effluent limitations are necessary.

² CTR/NTR = California Toxics Rule/ National Toxics Rule.

³ Number of data points available for the RPA.

⁴ Copper and silver were monitored more frequently from 2005-2009 as part of MRP R9-2005-0091.

⁵ According to 40 CFR Part 122.45(c), effluent limitations for metals shall be expressed in terms of "total recoverable", thus only total recoverable limitations for copper and silver shall be applied.

"J" Concentration between the reporting limit and MDL so is considered estimated.

"U" Concentration is below the method detection limit or has been qualified as not being detected due to laboratory contamination.

Table F-10. Parameters Evaluated for Reasonable Potential at Discharge Point No. 002¹

Parameter (µg/L)	Basis for Applying Criteria/Objective ²	Source of Applied Criteria/Objective	n ³	MEC µg/L	Most Stringent Criteria µg/L	Background µg/L	Effluent Limitation µg/L
Arsenic	CTR/NTR	Saltwater Chronic	1	2.06	36	2.16	No
Cadmium	CTR/NTR	Saltwater Chronic	1	0.049	9.36	0.029U	No
Chromium III	CTR/NTR	No Criteria	1	0.3	No Criteria	0.208U	No
Copper, Total Recoverable	CTR/NTR	Saltwater Chronic	11 ⁴	27.7 ⁴	3.73	0.75	Yes ⁵
Lead	CTR/NTR	Saltwater Chronic	1	0.053	8.52	0.225	No
Nickel	CTR/NTR	Saltwater Chronic	1	0.339	8.28	0.192	No
Selenium, Total Recoverable	CTR/NTR	Saltwater Chronic	1	0.015U	71.14	0.02	No
Silver, Total Recoverable	CTR/NTR	Saltwater Acute	11 ⁴	5 ⁴	2.24	0.79U	Yes ⁵
Zinc, Total Recoverable	CTR/NTR	Saltwater Chronic	1	23.3	85.62	3.57U	No
Bromoform	CTR	Human Consumption	1	38.4	360	2.9	No
Dibromochloro methane	CTR	Human Consumption	1	1.5	46	0.1J	No
Bis(2-Ethylhexyl) Phthalate	CTR	Human Consumption	1	0.25U	5.9	0.25U	No

¹ Parameters are excluded from this table if no detected concentrations are found in effluent and receiving water, or have been detected but are not quantifiable and estimated below the water quality objectives, and no other information indicates that effluent limitations are necessary.

² CTR/NTR = California Toxics Rule/ National Toxics Rule.

³ Number of data points available for the RPA.

⁴ Copper and silver were monitored more frequently from 2005 to 2009 as part of MRP R9-2005-0091.

⁵ According to 40 CFR Part 122.45(c), effluent limitations for metals shall be expressed in terms of "total recoverable", thus only total recoverable limitations for copper and silver shall be applied.

"J" Concentration between the reporting limit and MDL so is considered estimated.

"U" Concentration is below the method detection limit or has been qualified as not being detected due to laboratory contamination.

Based on the RPA, there is reasonable potential to exceed water quality standards at both outfalls for copper and silver. Effluent limitations for copper and silver were determined in accordance with the SIP using the receiving water (background) concentrations to calculate the effluent concentration allowance. It was determined that the existing effluent limitations contained in Order No. R9-2005-0091, based on a background concentration of 1.69 µg/L

for copper and 1.34 µg/L for silver, were more stringent. There is limited background data available (two samples for each discharge point for two sets of data to determine RPA for copper and silver) and background concentrations can vary seasonally or as a result of other sources. Thus, the effluent limitations for copper and silver were retained from Order No. R9-2005-0091.

4. WQBEL Calculations

Order No. R9-2005-0091 contained effluent limitations in accordance with the SIP for copper and silver at both Discharge Point Nos. 001 and 002. Effluent limitations for the CTR/NTR constituents copper and silver for Discharge Point Nos. 001 and 002 were calculated in accordance with Section 1.4 of the SIP. A dilution factor of 21 to 1 effluent to receiving water was used to calculate the effluent limitations established for copper and silver.

- a. Copper: The following demonstrates how WQBELs for copper were established for Order No. R9-2005-0091 and these effluent limitations were carried over to this Order. The same procedure was followed for silver.

A set of AMEL and MDEL values are calculated separately, one set for the protection of aquatic life and the other for the protection of human health. The AMEL and MDEL limitations for aquatic life and human health are compared, and the most restrictive AMEL and the most restrictive MDEL are selected as the WQBEL.

Calculation of aquatic life AMEL and MDEL:

Step 1: For each constituent requiring an effluent limit, identify the applicable water quality criteria or objective. For each criterion determine the effluent concentration allowance (ECA) using the following steady state equation:

$$\begin{array}{ll} ECA = C + D(C-B) & \text{when } C > B, \text{ and} \\ ECA = C & \text{when } C \leq B \end{array}$$

Where: C = The priority pollutant criterion/objective
D = The dilution credit, and
B = The background concentration

As discussed above, for this Order, a dilution factor of 21:1 and the highest background concentration (1.69 µg/L for copper) was used to calculate the effluent limitations:

$$\begin{array}{l} ECA_{\text{acute}} = 5.78 \mu\text{g/L} + (21) (5.78 \mu\text{g/L} - 1.69 \mu\text{g/L}) \\ ECA_{\text{chronic}} = 3.73 \mu\text{g/L} + (21) (3.73 \mu\text{g/L} - 1.69 \mu\text{g/L}) \end{array}$$

For copper the applicable water quality criteria are:

$$\begin{aligned} ECA_{\text{acute}} &= 91.67 \mu\text{g/L} \\ ECA_{\text{chronic}} &= 46.57 \mu\text{g/L} \\ ECA_{\text{human health}} &= \text{Not applicable} \end{aligned}$$

Step 2: For each ECA based on aquatic life criterion/objective, determine the long-term average discharge condition (LTA) by multiplying the ECA by a factor (multiplier). The multiplier is a statistically based factor that adjusts the ECA to account for effluent variability. The value of the multiplier varies depending on the coefficient of variation (CV) of the data set and whether it is an acute or chronic criterion/objective. Table 1 of the SIP provides pre-calculated values for the multipliers based on the value of the CV. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 3 of the SIP and will not be repeated here.

$$LTA_{\text{acute}} = ECA_{\text{acute}} \times \text{Multiplier}_{\text{acute } 99}$$

$$LTA_{\text{chronic}} = ECA_{\text{chronic}} \times \text{Multiplier}_{\text{chronic } 99}$$

The CV for the data set must be determined before the multipliers can be selected and will vary depending on the number of samples and the standard deviation of a data set. If the data set is less than 10 samples, or at least 80 percent of the samples in the data set are reported as non-detect, the CV shall be set equal to 0.6.

For copper, the following data were used to develop the acute and chronic LTA using equations provided in Section 1.4, Step 3 of the SIP (Table 1 of the SIP also provides this data up to three decimals):

No. of Samples	CV	ECA Multiplier _{acute 99}	ECA Multiplier _{chronic 99}
<4	0.6	0.321	0.527

$$LTA_{\text{acute}} = 91.67 \mu\text{g/L} \times 0.321 = 29.43 \mu\text{g/L}$$

$$LTA_{\text{chronic}} = 46.57 \mu\text{g/L} \times 0.527 = 24.56 \mu\text{g/L}$$

Step 3: Select the most limiting (lowest) of the LTA.

$$LTA = \text{most limiting of } LTA_{\text{acute}} \text{ or } LTA_{\text{chronic}}$$

For copper, the most limiting LTA was the LTA_{chronic}

$$LTA = 24.56 \mu\text{g/L}$$

Step 4: Calculate the WQBELs by multiplying the LTA by a factor (multiplier). WQBELs are expressed as an AMEL and MDEL. The multiplier is a statistically-based factor that adjusts the LTA for the averaging periods and exceedance frequencies of the criteria/objectives and the effluent limitations. The value of the multiplier varies depending on the probability basis, the CV of the data set, the number of samples (for AMEL) and whether it is a monthly or daily limit. Table 2 of the SIP provides pre-calculated values for the multipliers based on the value of the CV and the number of samples. Equations to develop the multipliers in place of using values in the tables are provided in Section 1.4, Step 5 of the SIP and will not be repeated here.

$$AMEL_{\text{aquatic life}} = LTA \times AMEL_{\text{multiplier } 95}$$

$$MDEL_{\text{aquatic life}} = LTA \times MDEL_{\text{multiplier } 99}$$

AMEL multipliers are based on a 95th percentile occurrence probability, and the MDEL multipliers are based on the 99th percentile occurrence probability. If the number of samples is less than four (4), the default number of samples to be used is four (4).

For copper, the following data were used to develop the AMEL and MDEL for aquatic life using equations provided in Section 1.4, Step 5 of the SIP (Table 2 of the SIP also provides this data up to two decimals):

No. of Samples Per Month	CV	Multiplier _{MDEL 99}	Multiplier _{AMEL 95}
4	0.6	3.11	1.55

$$AMEL_{\text{aquatic life}} = 24.56 \mu\text{g/L} \times 1.55 = 38.13 \mu\text{g/L}$$

$$MDEL_{\text{aquatic life}} = 24.56 \times 3.11 = 76.50 \mu\text{g/L}$$

Step 5: For the ECA based on human health, set the AMEL equal to the $ECA_{\text{human health}}$

$$AMEL_{\text{human health}} = ECA_{\text{human health}}$$

For copper in this receiving water, the $ECA_{\text{human health}}$ is not applicable

$$AMEL_{\text{human health}} = \text{Not applicable}$$

Step 6: Calculate the MDEL for human health by multiplying the AMEL by the ratio of the Multiplier_{MDEL} to the Multiplier_{AMEL}. Table 2 of the SIP

provides pre-calculated ratios to be used in this calculation based on the CV and the number of samples.

$$MDEL_{\text{human health}} = AMEL_{\text{human health}} \times (\text{Multiplier}_{MDEL} / \text{Multiplier}_{AMEL})$$

If human health criteria were applicable for copper in the receiving water, the following data were used to develop the $MDEL_{\text{human health}}$:

No. of Samples	CV	Multiplier _{MDEL 99}	Multiplier _{AMEL 95}	Ratio
<4	0.6	3.11	1.55	2.01

$$MDEL_{\text{human health}} = \text{Not applicable}$$

Step 7: Select the lower of the AMEL and MDEL based on aquatic life and human health as the WQBEL for the Order.

AMEL _{aquatic life}	MDEL _{aquatic life}	AMEL _{human health}	MDEL _{human health}
38.13 µg/L	76.50 µg/L	N/A	N/A

The lowest (most restrictive) effluent limits are based on chronic toxicity and were incorporated into this Order for copper. For copper there are no numeric human health criteria; therefore, the AMEL and MDEL based on aquatic life criteria are established as the WQBELs. These limits will be protective of aquatic life.

Table F-11 summarizes the calculations for the WQBEL for copper.

Table F-11. WQBEL Calculations for Copper, Total Recoverable

Parameter	Acute	Chronic
Criteria (µg/L) ¹	5.78	3.73
Dilution Credit	21:1	21:1
ECA	91.67	46.57
ECA Multiplier	0.321	0.527
LTA	29.43	24.56
AMEL Multiplier (95th%)	²	1.55
AMEL (µg/L)	²	38.13
MDEL Multiplier (99th%)	²	3.11
MDEL (µg/L)	²	76.50

¹ USEPA Ambient Water Quality Criteria

² Limitations based on chronic LTA (Chronic LTA < Acute LTA)

- b. Silver: The previous Order No. R9-2005-0091 contained effluent limitations in accordance with the SIP for silver at both Discharge Point Nos. 001 and 002. As discussed above, for this Order, a dilution factor of 21:1 and the highest background concentration reported (1.34 µg/L for silver) was used to calculate the effluent limitations. The lowest (most restrictive) effluent limits are based on acute toxicity and were incorporated into this Order for silver. For silver there are no numeric human health criteria or chronic criteria for silver; therefore, the AMEL and MDEL based on acute aquatic life criteria are established as the WQBELs.

Table F-12 summarizes the calculations for the WQBEL for silver.

Table F-12. WQBEL Calculations for Silver, Total Recoverable

Parameter	Acute	Chronic
Criteria (µg/L) ¹	2.24	NA ¹
Dilution Credit	21:1	
ECA	46.47	
ECA Multiplier	0.321	
LTA	14.92	
AMEL Multiplier (95th%)	1.55	³
AMEL (µg/L)	23.13	³
MDEL Multiplier (99th%)	3.11	³
MDEL (µg/L)	46.46	³

¹ USEPA Ambient Water Quality Criteria

² No chronic criteria for silver

³ Limitations based on acute LTA (No chronic criteria for silver)

Order No. R9-2005-0091 contained a MDEL for silver of 36 µg/L which is more stringent than the MDEL of 46.46 µg/L derived from the above calculation. Thus, the more stringent MDEL limitation of 36 µg/L is carried over in this Order.

- c. Ocean Plan - Beneficial uses of Mission Bay are similar to those of the ocean waters of the State. In order to protect the beneficial uses of Mission Bay, effluent limitations for oil and grease, turbidity, and settleable solids in this Order were derived from the Ocean Plan.

For each constituent requiring an effluent limit, identify the applicable water quality effluent concentration limitation contained in Table B of the Ocean Plan. Effluent limitations for water quality objectives listed in Table B, with the exception of acute toxicity and radioactivity, may be determined through the use of the following equation:

$$C_e = C_o + D_m (C_o - C_s)$$

Summary of Water Quality-based Effluent Limitations

Table F-13. Summary of WQBEL for Discharge Point Nos. 001 and 002

Parameter	Units	Effluent Limitations					Basis ¹
		6 Month Median	Average Monthly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum	
Ammonia	mg/L					0.55	BP
	lbs/day ²					15	
	lbs/day ²						
Chlorine Residual	mg/L		0.21			0.42	CO,OP
	lbs/day ²		5.7			11.3	
	lbs/day ³		10.7				
Copper, Total Recoverable	µg/L	24	38.13	76.5			CO,SIP
	lbs/day ²	0.65	1.0	2.1			
	lbs/day ³	1.2	1.9	3.9			
Silver, Total Recoverable	µg/L	6.5	23.16	36			CO,SIP
	lbs/day ²	0.2	0.6	1.0			
	lbs/day ³	0.33	1.2	1.8			
Enterococcus	CFU/100 mL		35			104	BP
Fecal Coliform	MPN/100 mL	Narrative ⁴					BP
Total Coliform	MPN/100 mL	Narrative ⁵					BP

¹ BP=Basin Plan, CO=Current Order, SIP=State Implementation Policy, OP=Ocean Plan

² Mass-based effluent limitations calculated based on a maximum flow rate of 3.24 MGD for Discharge Point No. 001.

³ Mass-based effluent limitations calculated based on a maximum flow rate of 6.12 MGD for Discharge Point No. 002.

⁴ The fecal coliform concentration based on a minimum of not less than five samples for over a calendar month, shall not exceed a log mean of 200/100mL, nor shall more than 10 percent of total samples during any calendar month exceed 400/100mL.

⁵ The median total coliform concentration throughout the water column for any calendar month shall not exceed 70/100mL nor shall more than 10 percent of the samples collected during any calendar month exceed 230/100 mL for a five-tube decimal dilution test or 330/100 mL when a three tube dilution test is used.

5. Whole Effluent Toxicity (WET)

Whole effluent toxicity (WET) tests measure the aggregate toxic effect of a mixture of pollutants in the effluent. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach allows for protection of the narrative “no toxics in toxic amounts” criterion while implementing numeric criteria for toxicity. There are two types of WET tests: acute and chronic. An acute toxicity test is conducted over a short time period and measures mortality. A chronic toxicity test is conducted

over a longer period of time and may measure mortality, reproduction, and development.

The Basin Plan specifies a narrative objective for toxicity, requiring that all waters be maintained free of toxic substances in concentrations that are lethal to or produce other detrimental responses by aquatic organisms. Detrimental response includes but is not limited to decreased growth rate, decreased reproductive success of resident or indicator species, and/or significant alterations in population, community ecology, or receiving water biota. The Basin Plan further dictates that compliance with the toxicity objective shall at a minimum be evaluated with a 96-hour acute bioassay and effluent limitations based upon acute bioassays of effluents be prescribed where appropriate.

The previous Order established effluent limitations for acute and chronic toxicity. Insufficient data were available to conduct a conclusive RPA for chronic toxicity (no recent chronic toxicity data was available during the permitting process). Without sufficient data to conduct an RPA pursuant to the procedures in Appendix VI of the Ocean Plan, and consistent with State and federal anti-backsliding requirements, an effluent limitation for chronic toxicity of at least the same stringency must be carried over to the renewed Order. Further, aquarium wastewater may contain toxic levels of ammonia if not properly treated and the Discharger has exceeded a previous effluent limitation for ammonia in November 2008; an RPA indicates that the toxic pollutants of copper and silver have been detected at concentrations greater than applicable water quality criteria, and the potential for synergistic effects of the various residual drugs and chemicals used for the maintenance of animal health and chemicals used for cleaning animal enclosures cannot be fully evaluated. Thus, an effluent limitation for chronic toxicity has been established in this Order.

Compliance with the Basin Plan's narrative water quality objective for toxicity shall be determined based on the statistical method identified by the Discharger in a report submitted to the San Diego Water Board. The report shall be submitted to the San Diego Water Board no later than August 1, 2011. Toxicity test compliance is determined by statistical methods that are expressed as biological measurements known as "endpoints." These endpoints are derived from various tests and techniques. The Discharger may consider statistical methods including but not limited to the following:

- a Test of Significant Toxicity Method (TST).** The TST was designed to statistically compare a test species response to the IWC and a control. Data is analyzed using Welch's t-test and quantal data is appropriately transformed prior to doing so. If the calculated t-value is less than the critical t-value (or table t-value), a sample is declared "toxic" and the test result is a "fail." A sample is deemed "not toxic" and the test result is a "pass" if the calculated t-value is greater than that of the critical t-value.

The biological effect levels (b values) incorporated into the TST define unacceptable risks to aquatic organisms and substantially decrease the uncertainties associated with the applicability of results obtained from the NOEC and LOEC endpoints. Furthermore, the TST reduces the need for multiple test concentrations which, in turn, will reduce laboratory costs for dischargers while concurrently improving data interpretation. The most significant improvement the TST offers over that of traditional hypothesis testing, however, is the inclusion of an acceptable false negative rate. While calculating a range of percent minimum significant differences (PMSDs) provides an indirect measure of power for traditional hypothesis tests, setting an appropriate β level (or α level using the TST method) establishes explicit test power and provides motivation to decrease within-test variability which will significantly reduce the risk of unreported toxic events (U.S. EPA 2010a³). In addition to its benefits over traditional hypothesis test methods, the TST is simpler to use than point estimate methods as it is less computationally intensive and not model-fit dependent (Grothe et al. 1995⁴).

Taken together, these refinements simplify toxicity analyses, provide dischargers with the positive incentive to generate high quality data, and afford greater protection to aquatic life.

b Other Hypothesis Test Methods.

i. Pass/Fail

A multi-step pathway is used to identify chronic or acute toxicity in a single-concentration effluent test design. Analysis begins by transforming the raw data (expressed as the proportion unaffected) by the arcsine square root transformation. This calculation is commonly used on proportionality data to stabilize the variance and satisfy the normality requirement, which is typically completed with the Shapiro-Wilk test. If the data set does not meet the normality requirements, the non-parametric Wilcoxon Rank Sum Test can be used to analyze the data. If the data is normal, an F-test is performed to determine the homogeneity of variance. Should the data exhibit homogeneity, a normal t-test will be used for evaluation. If the data is not homogeneous, a modified t-test (where the pooled variance is adjusted for equal variance) is used (U.S. EPA 2002a).

³ U.S. Environmental Protection Agency. 2002a. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (5th Edition). EPA 821-R-02-012. Washington, DC: Office of Water.

⁴ Grothe DR, Dickson KL, Reed-Judkins DK. 1996. Whole Effluent Toxicity Testing: an Evaluation of Methods and Prediction of Receiving System Impacts. SETAC Pellston Workshop on Whole Effluent Toxicity; 1995 Sept 16-25; Pellston, MI. Pensacola FL: SETAC Pr.

ii. No Observable Adverse Effect Concentrations (NOAEC)

This method is used for multi-concentration acute toxicity tests with an equal number of replicates per treatment. The NOAEC endpoint is determined from Dunnett's test if the data is parametric, or Steel's Many-One Rank test if the data is non-parametric. Data is transformed to arcsine and then put through various tests to determine normality and homogeneity (U.S. EPA 2002a). (Note: the statistical procedures are identical to the calculation of the NOEC and LOEC endpoints).

iii. No Observed Effect Concentration (NOEC) and Lowest Observed Effect Concentration (LOEC)

The No Observed Effect Concentration endpoint can be derived for multi-concentration chronic toxicity tests. Similar to the NOAEC, the NOEC is calculated using Dunnett's Procedure or Bonferroni's adjustment for multiple comparisons when an unequal number of replicates are used. If normality assumptions are not met, Steel's Many-one Rank Test is used in place of Dunnett's Procedure, and the Wilcoxon Rank Sum test is paired with Bonferroni's adjustment. The NOEC endpoint is obtained from the highest concentration of an effluent that does not cause an observable, adverse effect on the test organisms. Derived in conjunction with the NOEC, the LOEC denotes the lowest concentration of effluent at which the test species are adversely affected (U.S. EPA 1991; U.S. EPA 2002a; U.S. EPA 2002b⁵). Results are typically reported as chronic or acute "Toxicity Units" (denoted as TUC and TUA respectively) that are calculated by dividing 100 by the NOEC.

c Point Estimate Methods.

i. Effect Concentrations (EC)

The Effect Concentration refers to a quantity of treatment at which a certain percentage of a given number of test species exhibit a negative quantal response (e.g. death or immobilization). This percentage, established in a discharger's permit, is denoted in the acronym, (e.g. 25% is represented as EC25). The EC is useful for a multi-concentration toxicity test and is evaluated using point estimate techniques. This method is akin to a linear regression, but rather than exhibiting a linear fit, the data is incorporated using a log-normal function. Due to the complexity of this method, a Probit software program is typically utilized for data that fits the required parameters.

⁵ U.S. Environmental Protection Agency. 2002b. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (4th Edition). EPA 821-R-02-013. Washington, DC: Office of Water

The Spearman-Karber, Trimmed Spearman-Karber, and Graphical methods may be used in place of Probit for data sets that exhibit specific characteristics (U.S. EPA 2002b).

ii. Lethal Concentrations (LC)

The Lethal Concentration endpoint measures the quantity of an effluent that causes death in a predetermined percentage of test organisms. Similar to the EC, this quantity is identified in the acronym. Probit software is frequently utilized to perform the difficult calculations required for the LC endpoint. Acute toxicity data that neither meets the normality assumption nor contains at least two mortalities, however, cannot be entered into a Probit analysis. For these data sets, the Spearman-Karber, Trimmed Spearman-Karber, and Graphical methods are employed (Denton et al. 2007⁶).

iii. Inhibition Concentration (IC)

Used to measure the chronic, non-quantal effects of a discharge, the Inhibition Concentration is computed from the actual effluent dilutions at which negative impacts were observed. Akin to the EC and LC, the formula for calculating the IC (Linear Interpolation) is dependent upon the characteristics of the available data, and the percentage of test organisms affected by an effluent sample is also designated in the acronym. As with all point estimate techniques, intra-laboratory and inter-laboratory variability can be determined by calculating the coefficient of variation (CV) percentage (U.S. EPA 1991⁷; U.S. EPA 2002b).

The selected statistical method for analyzing effluent toxicity data shall be implemented subject to the approval of the San Diego Water Board.

D. Final Effluent Limitations

Tables F-8, F-13, and F-14 collectively list the effluent limitations established in this Order under section IV.A.

1. Satisfaction of Anti-Backsliding Requirements

Sections 402(o)(2) and 303(d)(4) of the CWA and 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the

⁶ Denton DL, Miller JM, Stuber RA. 2007. EPA Regions 9 and 10 Toxicity Training Tool. Nov 2007. San Francisco, CA: U.S. Environmental Protection Agency

⁷ U.S. Environmental Protection Agency. 1991. *Technical Support Document for Water Quality-based Toxics Control*. EPA/505/2-90-001. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

previous permit. The effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order and meet State and federal anti-backsliding requirements.

The numeric effluent limitation for acute and chronic toxicity have been removed and replaced with a narrative chronic toxicity limitation. Because chronic toxicity is considered to be a more conservative indicator of toxicity, and the monitoring of all wastewater sample locations for both acute and chronic toxicity would be costly and redundant, the monitoring requirements and effluent limitations for acute toxicity have been removed. The removal of the acute toxicity effluent limitation will not impair beneficial uses and its removal is consistent with Section 40 CFR 122.44(l)(1). The narrative limitation for chronic toxicity is at least as stringent as the effluent limitations in the previous Order.

2. Satisfaction of Antidegradation Policy

Waste Discharge Requirements for the Discharger must conform with federal and State antidegradation policies provided at 40 CFR 131.12 and in State Water Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality of Waters in California. The antidegradation policies require that beneficial uses and the water quality necessary to maintain those beneficial uses in the receiving waters of the discharge shall be maintained and protected, and, if existing water quality is better than the quality required to maintain beneficial uses, the existing water quality shall be maintained and protected unless allowing a lowering of water quality is necessary to accommodate important economic and social development or consistent with maximum benefit to the people of California. When a significant lowering of water quality is allowed by the Regional Water Board, an antidegradation analysis is required in accordance with the State Water Board's Administrative Procedures Update (July 2, 1990), Antidegradation Policy Implementation for NPDES Permitting.

The limitations and requirements of this Order are as stringent as those established in the previous Order. No changes due to the issuing of this Order are expected to result in decreased water quality in the receiving water. The permitted discharge is consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. These limitations are not more stringent than that required by the CWA. WQBELs have been scientifically derived to implement water quality objectives that protect beneficial uses. Both the beneficial uses and the water quality objectives have been approved pursuant to federal law and are the applicable federal water quality standards. To the

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

E. Performance Goals at Discharge Point Nos. 001 and 002

Constituents that do not have reasonable potential or had inconclusive reasonable potential analysis results are referred to as performance goal constituents and are assigned the performance goals listed in the following table. Performance goal constituents shall be monitored at EFF-001 and EFF-002, but the results will be used for informational purposes only, not compliance determination. Performance goals for Ocean Plan Table B constituents were calculated using the dilution factor of 21 to 1 for Discharge Point Nos. 001 and 002.

Table F-15. Summary of Performance Goals for Ocean Plan Table B Constituents.

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
BASED ON OBJECTIVES FOR THE PROTECTION OF MARINE AQUATIC LIFE					
Arsenic, Total Recoverable	µg/L	1.1E+02	--	6.4E+02	1.7E+03
	lbs/day ²	3.1E+00	--	1.7E+01	4.6E+01
	lbs/day ³	5.8E+00	--	3.3E+01	8.7E+01
Cadmium, Total Recoverable	µg/L	2.2E+01	--	8.8E+01	2.2E+02
	lbs/day ²	5.9E-01	--	2.4E+00	5.9E+00
	lbs/day ³	1.1E+00	--	4.5E+00	1.1E+01
Chromium VI, Total Recoverable	µg/L	4.4E+01	--	1.8E+02	4.4E+02
	lbs/day ²	1.2E+00	--	4.8E+00	1.2E+01
	lbs/day ³	2.2E+00	--	9.0E+00	2.2E+01
Lead, Total Recoverable	µg/L	4.4E+01	--	1.8E+02	4.4E+02
	lbs/day ²	1.2E+00	--	4.8E+00	1.2E+01
	lbs/day ³	2.2E+00	--	9.0E+00	2.2E+01
Mercury, Total Recoverable	µg/L	8.7E-01	--	3.5E+00	8.8E+00
	lbs/day ²	2.3E-02	--	9.5E-02	2.4E-01
	lbs/day ³	4.4E-02	--	1.8E-01	4.5E-01
Nickel, Total Recoverable	µg/L	1.1E+02	--	4.4E+02	1.1E+03
	lbs/day ²	3.0E+00	--	1.2E+01	3.0E+01
	lbs/day ³	5.6E+00	--	2.2E+01	5.6E+01
Selenium, Total Recoverable	µg/L	3.3E+02	--	1.3E+03	3.3E+03
	lbs/day ²	8.9E+00	--	3.6E+01	8.9E+01
	lbs/day ³	1.7E+01	--	6.7E+01	1.7E+02
Zinc, Total Recoverable	µg/L	2.7E+02	--	1.6E+03	4.2E+03
	lbs/day ²	7.3E+00	--	4.3E+01	1.1E+02
	lbs/day ³	1.4E+01	--	8.1E+01	2.2E+02
Cyanide, Total Recoverable ⁴	µg/L	2.2E+01	--	8.8E+01	2.2E+02
	lbs/day ²	5.9E-01	--	2.4E+00	5.9E+00
	lbs/day ³	1.1E+00	--	4.5E+00	1.1E+01
Ammonia, as Nitrogen	µg/L	1.3E+04	--	5.3E+04	1.3E+05
	lbs/day ²	3.6E+02	--	1.4E+03	3.6E+03
	lbs/day ³	6.7E+02	--	2.7E+03	6.7E+03
Phenolic Compounds (non-chlorinated)	µg/L	6.6E+02	--	2.6E+03	6.6E+03
	lbs/day ²	1.8E+01	--	7.1E+01	1.8E+02
	lbs/day ³	3.4E+01	--	1.3E+02	3.4E+02

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
Chlorinated Phenolics	µg/L	2.2E+01	--	8.8E+01	2.2E+02
	lbs/day ²	5.9E-01	--	2.4E+00	5.9E+00
	lbs/day ³	1.1E+00	--	4.5E+00	1.1E+01
Endosulfan	µg/L	2.0E-01	--	4.0E-01	5.9E-01
	lbs/day ²	5.4E-03	--	1.1E-02	1.6E-02
	lbs/day ³	1.0E-02	--	2.0E-02	3.0E-02
Endrin	µg/L	4.4E-02	--	8.8E-02	1.3E-01
	lbs/day ²	1.2E-03	--	2.4E-03	3.6E-03
	lbs/day ³	2.2E-03	--	4.5E-03	6.7E-03
HCH ⁵	µg/L	8.8E-02	--	1.8E-01	2.6E-01
	lbs/day ²	2.4E-03	--	4.8E-03	7.1E-03
	lbs/day ³	4.5E-03	--	9.0E-03	1.3E-02
BASED ON OBJECTIVES FOR PROTECTION OF HUMAN HEALTH - NONCARCINOGENS					
Acrolein	µg/L	--	4.8E+03	--	--
	lbs/day ²	--	1.3E+02	--	--
	lbs/day ³	--	2.5E+02	--	--
Antimony	µg/L	--	2.6E+04	--	--
	lbs/day ²	--	7.1E+02	--	--
	lbs/day ³	--	1.3E+03	--	--
Bis(2-chloroethoxy) Methane	µg/L	--	9.7E+01	--	--
	lbs/day ²	--	2.6E+00	--	--
	lbs/day ³	--	4.9E+00	--	--
Bis(2-chloroisopropyl) ether	µg/L	--	2.6E+04	--	--
	lbs/day ²	--	7.1E+02	--	--
	lbs/day ³	--	1.3E+03	--	--
Chlorobenzene	µg/L	--	1.3E+04	--	--
	lbs/day ²	--	3.4E+02	--	--
	lbs/day ³	--	6.4E+02	--	--
Chromium (III)	µg/L	--	4.2E+06	--	--
	lbs/day ²	--	1.1E+05	--	--
	lbs/day ³	--	2.1E+05	--	--
Di-n-butyl Phthalate	µg/L	--	7.7E+04	--	--
	lbs/day ²	--	2.1E+03	--	--
	lbs/day ³	--	3.9E+03	--	--
Dichlorobenzenes ⁶	µg/L	--	1.1E+05	--	--

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
	lbs/day ²	--	3.0E+03	--	--
	lbs/day ³	--	5.7E+03	--	--
	µg/L	--	7.3E+05	--	--
Diethyl Phthalate	lbs/day ²	--	2.0E+04	--	--
	lbs/day ³	--	3.7E+04	--	--
	µg/L	--	1.8E+07	--	--
Dimethyl Phthalate	lbs/day ²	--	4.9E+05	--	--
	lbs/day ³	--	9.2E+05	--	--
	µg/L	--	4.8E+03	--	--
4,6-dinitro-2-methylphenol	lbs/day ²	--	1.3E+02	--	--
	lbs/day ³	--	2.5E+02	--	--
	µg/L	--	8.8E+01	--	--
2,4-dinitrophenol	lbs/day ²	--	2.4E+00	--	--
	lbs/day ³	--	4.5E+00	--	--
	µg/L	--	9.0E+04	--	--
Ethylbenzene	lbs/day ²	--	2.4E+03	--	--
	lbs/day ³	--	4.6E+03	--	--
	µg/L	--	3.3E+02	--	--
Floranthene	lbs/day ²	--	8.9E+00	--	--
	lbs/day ³	--	1.7E+01	--	--
	µg/L	--	1.3E+03	--	--
Hexachloro cyclopentadiene	lbs/day ²	--	3.4E+01	--	--
	lbs/day ³	--	6.5E+01	--	--
	µg/L	--	1.1E+02	--	--
Nitrobenzene	lbs/day ²	--	2.9E+00	--	--
	lbs/day ³	--	5.5E+00	--	--
	µg/L	--	4.4E+01	--	--
Thallium	lbs/day ²	--	1.2E+00	--	--
	lbs/day ³	--	2.2E+00	--	--
	µg/L	--	1.9E+06	--	--
Toluene	lbs/day ²	--	5.1E+04	--	--
	lbs/day ³	--	9.5E+04	--	--
	µg/L	--	3.1E-02	--	--
Tributyltin	lbs/day ²	--	8.3E-04	--	--
	lbs/day ³	--	1.6E-03	--	--
	µg/L	--	1.2E+07	--	--
1,1,1-trichloroethane	lbs/day ²	--	3.2E+05	--	--
	lbs/day ³	--	6.1E+05	--	--
	µg/L	--	1.2E+07	--	--

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
BASED ON OBJECTIVES FOR PROTECTION OF HUMAN HEALTH – CARCINOGENS					
Acrylonitrile	µg/L	--	2.2E+00	--	--
	lbs/day ²	--	5.9E-02	--	--
	lbs/day ³	--	1.1E-01	--	--
Aldrin	µg/L	--	4.8E-04	--	--
	lbs/day ²	--	1.3E-05	--	--
	lbs/day ³	--	2.5E-05	--	--
Benzene	µg/L	--	1.3E+02	--	--
	lbs/day ²	--	3.5E+00	--	--
	lbs/day ³	--	6.6E+00	--	--
Benzidine	µg/L	--	1.5E-03	--	--
	lbs/day ²	--	4.1E-05	--	--
	lbs/day ³	--	7.7E-05	--	--
Beryllium	µg/L	--	7.3E-01	--	--
	lbs/day ²	--	2.0E-02	--	--
	lbs/day ³	--	3.7E-02	--	--
Bis(2-chloroethyl) Ether	µg/L	--	9.9E-01	--	--
	lbs/day ²	--	2.7E-02	--	--
	lbs/day ³	--	5.1E-02	--	--
Bis(2-ethylhexyl) Phthalate	µg/L	--	7.7E+01	--	--
	lbs/day ²	--	2.1E+00	--	--
	lbs/day ³	--	3.9E+00	--	--
Carbon Tetrachloride	µg/L	--	2.0E+01	--	--
	lbs/day ²	--	5.4E-01	--	--
	lbs/day ³	--	1.0E+00	--	--
Chlorodane	µg/L	--	5.1E-04	--	--
	lbs/day ²	--	1.4E-05	--	--
	lbs/day ³	--	2.6E-05	--	--
Chlorodibromomethane	µg/L	--	1.9E+02	--	--
	lbs/day ²	--	5.1E+00	--	--
	lbs/day ³	--	9.7E+00	--	--
Chloroform	µg/L	--	2.9E+03	--	--
	lbs/day ²	--	7.7E+01	--	--
	lbs/day ³	--	1.5E+02	--	--
DDT ⁷	µg/L	--	3.7E-03	--	--
	lbs/day ²	--	1.0E-04	--	--
	lbs/day ³	--	1.9E-04	--	--

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
1,4-dichlorobenzene	µg/L	--	4.0E+02	--	--
	lbs/day ²	--	1.1E+01	--	--
	lbs/day ³	--	2.0E+01	--	--
3,3'-dichlorobenzidine	µg/L	--	1.8E-01	--	--
	lbs/day ²	--	4.8E-03	--	--
	lbs/day ³	--	9.1E-03	--	--
1,2-dichloroethane	µg/L	--	6.2E+02	--	--
	lbs/day ²	--	1.7E+01	--	--
	lbs/day ³	--	3.1E+01	--	--
1,1-dichloroethylene	µg/L	--	2.0E+01	--	--
	lbs/day ²	--	5.4E-01	--	--
	lbs/day ³	--	1.0E+00	--	--
Dichlorobromomethane	µg/L	--	1.4E+02	--	--
	lbs/day ²	--	3.7E+00	--	--
	lbs/day ³	--	7.0E+00	--	--
Dichloromethane	µg/L	--	9.9E+03	--	--
	lbs/day ²	--	2.7E+02	--	--
	lbs/day ³	--	5.1E+02	--	--
1,3-dichloropropene	µg/L	--	2.0E+02	--	--
	lbs/day ²	--	5.3E+00	--	--
	lbs/day ³	--	1.0E+01	--	--
Dieldrin	µg/L	--	8.8E-04	--	--
	lbs/day ²	--	2.4E-05	--	--
	lbs/day ³	--	4.5E-05	--	--
2,4-dinitrotoluene	µg/L	--	5.7E+01	--	--
	lbs/day ²	--	1.5E+00	--	--
	lbs/day ³	--	2.9E+00	--	--
1,2-diphenylhydrazine	µg/L	--	3.5E+00	--	--
	lbs/day ²	--	9.5E-02	--	--
	lbs/day ³	--	1.8E-01	--	--
Halomethanes	µg/L	--	2.9E+03	--	--
	lbs/day ²	--	7.7E+01	--	--
	lbs/day ³	--	1.5E+02	--	--
Heptachlor	µg/L	--	1.1E-03	--	--
	lbs/day ²	--	3.0E-05	--	--
	lbs/day ³	--	5.6E-05	--	--
Heptachlor Epoxide	µg/L	--	4.4E-04	--	--
	lbs/day ²	--	1.2E-05	--	--

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
	lbs/day ³	--	2.2E-05	--	--
Hexachlorobenzene	µg/L	--	4.6E-03	--	--
	lbs/day ²	--	1.2E-04	--	--
	lbs/day ³	--	2.4E-04	--	--
Hexachlorobutadiene	µg/L	--	3.1E+02	--	--
	lbs/day ²	--	8.3E+00	--	--
	lbs/day ³	--	1.6E+01	--	--
Hexachloroethane	µg/L	--	5.5E+01	--	--
	lbs/day ²	--	1.5E+00	--	--
	lbs/day ³	--	2.8E+00	--	--
Isophorone	µg/L	--	1.6E+04	--	--
	lbs/day ²	--	4.3E+02	--	--
	lbs/day ³	--	8.2E+02	--	--
N-nitrosodimethylamine	µg/L	--	1.6E+02	--	--
	lbs/day ²	--	4.3E+00	--	--
	lbs/day ³	--	8.2E+00	--	--
N-nitrosodi-N-propylene	µg/L	--	8.4E+00	--	--
	lbs/day ²	--	2.3E-01	--	--
	lbs/day ³	--	4.3E-01	--	--
N-nitrosodiphenylamine	µg/L	--	5.5E+01	--	--
	lbs/day ²	--	1.5E+00	--	--
	lbs/day ³	--	2.8E+00	--	--
PAHs ⁸	µg/L	--	1.9E-01	--	--
	lbs/day ²	--	5.2E-03	--	--
	lbs/day ³	--	9.9E-03	--	--
PCBs sum ⁹	µg/L	--	4.2E-04	--	--
	lbs/day ²	--	1.1E-05	--	--
	lbs/day ³	--	2.1E-05	--	--
TCDD equivalents ¹⁰	µg/L	--	8.6E-08	--	--
	lbs/day ²	--	2.3E-09	--	--
	lbs/day ³	--	4.4E-09	--	--
1,1,2,2-tetrachloroethane	µg/L	--	5.1E+01	--	--
	lbs/day ²	--	1.4E+00	--	--
	lbs/day ³	--	2.6E+00	--	--
Tetrachloroethylene	µg/L	--	4.4E+01	--	--
	lbs/day ²	--	1.2E+00	--	--
	lbs/day ³	--	2.2E+00	--	--
Toxaphene	µg/L	--	4.6E-03	--	--

Parameter	Performance Goals ¹				
	Unit	6- Month Median	30-Day Average	Daily Maximum	Instantaneous Maximum
	lbs/day ²	--	1.2E-04	--	--
	lbs/day ³	--	2.4E-04	--	--
Trichloroethylene	µg/L	--	5.9E+02	--	--
	lbs/day ²	--	1.6E+01	--	--
	lbs/day ³	--	3.0E+01	--	--
1,1,2-trichloroethane	µg/L	--	2.1E+02	--	--
	lbs/day ²	--	5.6E+00	--	--
	lbs/day ³	--	1.1E+01	--	--
2,4,6-trichlorophenol	µg/L	--	6.4E+00	--	--
	lbs/day ²	--	1.7E-01	--	--
	lbs/day ³	--	3.3E-01	--	--
Vinyl Chloride	µg/L	--	7.9E+02	--	--
	lbs/day ²	--	2.1E+01	--	--
	lbs/day ³	--	4.0E+01	--	--

¹ Scientific "E" notation is used to express certain values. In scientific "E" notation, the number following the "E" indicates that position of the decimal point in the value. Negative numbers after the "E" indicate that the value is less than 1, and positive numbers after the "E" indicate that the value is greater than 1. In this notation a value of 6.1E-02 represents 6.1×10^{-2} or 0.061, 6.1E+02 represents 6.1×10^2 or 610, and 6.1E+00 represents 6.1×10^0 or 6.1.

² Based on a flow of 3.24 MGD at Discharge Point No. 001.

³ Based on a flow of 6.12 MGD at Discharge Point No. 002.

⁴ If a Discharger can demonstrate to the satisfaction of the Regional Water Board (subject to USEPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by (or performance goals may be evaluated with) the combined measurement of free cyanide, simple alkali metals cyanides, and weakly complexed organometallic cyanide complexes. In Order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by the approved method in 40 CFR Part 136, as revised May 14, 1999.

⁵ HCH (hexachlorocyclohexane) represents the sum of the alpha, beta, gamma (lindane), and delta isomers of hexachlorocyclohexane.

⁶ Dichlorobenzenes represent the sum of 1,2 and 1,3-dichlorobenzene.

⁷ DDD (dichlorodiphenyldichloroethane), DDE (dichlorodiphenyldichloroethylene), and DDT (dichlorodiphenyltrichloroethane), represent the sum of 4,4' DDT; 2,4' DDT; 4,4' DDE; 2,4' DDE; 4,4' DDD; and 2,4' DDD.

⁸ PAHs (polynuclear aromatic hydrocarbons) represent the sum of acenaphthylene; anthracene; 1,2-benzanthracene; 3,4-benzofluoranthene; benzo[k]fluoranthene; 1,12-benzoperylene; benzo[a]pyrene; chrysene; dibenzo[a,h]anthracene; fluorine; indeno[1,2,3-cd]pyrene; phenanthrene; and pyrene.

⁹ PCBs (polychlorinated biphenyls) represent the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, and Arcolor-1260.

¹⁰ TCDD equivalents represent the sum of concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown by the table below. USEPA Method 8280 may be used to analyze TCDD equivalents.

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

F. Land Discharge Specifications—Not Applicable

G. Reclamation Specifications—Not Applicable

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Receiving water limitations of this Order are derived from the water quality objectives for bays and estuaries established by the Basin Plan (1994), the Ocean Plan (2005), the Bays and Estuaries Policy (1974), the California Toxics Rule (2000), and the State Implementation Plan (2005). Surface water limitations in this Order are carried over from the previous Order.

B. Ground water—Not Applicable

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Water Code sections 13267 and 13383 authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program (MRP), Attachment E of this Order, establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the MRP for this Facility.

A. Intake Monitoring

Intake monitoring is necessary to characterize the qualities of the influent into the Facility and to determine compliance with effluent limitations. The MRP requires weekly monitoring for fecal coliform, total coliform and enterococcus; and quarterly monitoring for suspended solids. Intake sampling stations are established at each intake location where representative samples are obtained. Intake samples are collected on the same day as the collection of effluent

samples to help determine compliance with effluent limitations. Intake monitoring has been carried over from the previous MRP, with the addition of quarterly monitoring for total recoverable copper. The Discharger uses copper sulfate in salt water aquariums to control parasite infestations. This Order establishes effluent limitations and monthly monitoring of the effluents for total recoverable copper. Monitoring for copper in the intake has been added to determine background receiving water concentrations. Intake monitoring requirements are summarized in Table F-16.

Table F-16. Monitoring of East and West Intakes at INF-001 and INF-002

Parameter	Units	Sample Type	Minimum Sampling Frequency
Fecal Coliform	MPN/100 mL	Grab	Weekly
Total Coliform	MPN/100 mL	Grab	Weekly
Enterococcus	CFU/100 mL	Grab	Weekly
Suspended Solids	mg/L	24-hour composite	Quarterly
Copper, Total Recoverable	µg/L	Grab	Quarterly

B. Effluent Monitoring

Pursuant to the requirements of 40 CFR 122.44(i)(2) effluent monitoring is required for all constituents with effluent limitations. Effluent monitoring is necessary to assess compliance with effluent limitations, assess the effectiveness of the treatment process, and to insure the discharge is not the cause of unreasonable impacts on the receiving stream and ground water. The Discharger uses copper sulfate in salt water aquariums to control parasite infestations. This Order establishes effluent limitations and quarterly monitoring of the effluents for total recoverable copper. Effluent monitoring requirements are summarized in the Table F-17.

Table F-17. Effluent Monitoring Requirements for Discharge Nos. 001 and 002.

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	Continuous	Continuous
pH	Units	Grab/Continuous	Weekly
Residual Chlorine	µg/L	Grab/Continuous	Weekly
Fecal Coliform	MPN/100 mL	Grab	Weekly
Total Coliform	MPN/100 mL	Grab	Weekly
Enterococcus	CFU/100 mL	Grab	Weekly
Temperature	°C	Grab/Continuous	Monthly

Parameter	Units	Sample Type	Minimum Sampling Frequency
Copper, Total Recoverable	µg/L	24-hour composite	Quarterly ¹
Suspended Solids	mg/L	24-hour composite	Quarterly
Settleable Solids	ml/L	Grab	Quarterly
Oil and Grease	mg/L	Grab	Semi-annual
Ammonia	mg/L	24-hour composite	Semi-annual
Silver, Total Recoverable	µg/L	24-hour composite	Semi-annual
Turbidity	NTU	24-hour composite	Semi-annual
Chronic Toxicity	--	24-hour composite	Annual
Priority Pollutants ²	µg/L	24-hour composite	Once in 5 years ²

¹ The Discharger shall increase the sampling frequency from quarterly to monthly if the limitations specified in Section IV.A.1 are exceeded. The increased frequency of monitoring shall continue until the Discharger achieves compliance with the limitation for three consecutive months. Monthly is defined as a calendar month.

² Priority pollutant results (Table B Ocean Plan) are due 180-days prior to the expiration date of the permit.

C. Whole Effluent Toxicity Testing Requirements

Whole effluent toxicity (WET) limitations protect receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. This Order contains limitations and monitoring requirements for chronic toxicity for EFF-001 and EFF-002. Whole effluent toxicity testing shall be conducted by the methods specified in section V.A. of this MRP. This Order requires chronic toxicity monitoring annually. No acute toxicity monitoring is required.

D. Receiving Water Monitoring

This Order retains the receiving water monitoring requirements from the previous Order for Discharge Point Nos. 001 and 002. Since the intakes at INF-001 and INF-002 are also from Mission Bay in the vicinity of Discharge Point Nos. 001 and 002, the influent monitoring program constitutes the receiving water monitoring program in addition to monthly visual observations in the vicinity of Discharge Point Nos. 001 and 002. Receiving water monitoring shall be conducted as specified in section VIII of this MRP.

E. Other Monitoring Requirements

1. Priority Pollutant Monitoring (Table B, Ocean Plan)

This Order requires monitoring for Ocean Plan, Table B constituents at EFF-001 and EFF-002, as well as receiving water at RSW-001 and RSW-002 once during the fourth year after permit adoption. Monitoring is required to

determine compliance with Performance Goals as specified in section IX.A. of this MRP. Results are required to be submitted at least 180 days prior to the expiration date of this Order and shall be submitted with the Report of Waste Discharge for renewal.

2. Storm Water Monitoring

Periodic visual inspections of the Facility are necessary to identify any significant changes to the Facility’s operation or storm water BMP implementation procedures. Visual observations shall document the presence of any discoloration, floating and suspended materials, odors, oil and grease, and turbidity. A minimum of four quarterly visual inspections is required of all drainage areas within its Facility for the presence of potential pollutant sources and unauthorized non-storm water discharges. This Order requires monitoring of one storm water by-pass annually as specified in section IX.B. for the constituents specified in Table F-18.

Table F-18. Storm Water By-pass Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
pH	Units	Grab	One per year
Total Coliform	MPN/100 mL	Grab	One per year
Fecal Coliform	MPN/100 mL	Grab	One per year
Enterococcus	CFU/100 mL	Grab	One per year
Suspended Solids	mg/L	Grab	One per year
Settleable Solids	ml/L	Grab	One per year
Oil and Grease	mg/L	Grab	One per year
Turbidity	NTU	Grab	One per year
Ammonia, Un-ionized as N	mg/L	Grab	One per year
Copper, Total Recoverable	µg/L	Grab	One per year
Silver, Total Recoverable	µg/L	Grab	One per year
Priority Pollutants ¹	µg/L	Grab	Once in 5 years ¹

¹ Priority pollutant results (Table B, Ocean Plan) are due 180-days prior to the expiration date of the permit.

3. Chemical Usage

The Discharger shall submit an annual report with the information specified in section IX.D. of this MRP regarding the use of drugs, disinfectants, pesticides, and other chemicals that are used in the aquariums and may be present in the discharges to Mission Bay.

F. Ground Water – Not Applicable

VII. RATIONAL FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which apply to all NPDES permits in accordance with section 122.41, and additional conditions applicable to specified categories of permits in accordance with section 122.42, are provided in Attachment D. The Discharger must comply with all standard provisions and with those additional conditions that are applicable under section 122.42.

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

B. Monitoring and Reporting Program (MRP) Requirements

Monitoring and Reporting Program (MRP) requirements are specified in Attachment E of this Order.

C. Special Provisions

1. Reopener Provisions

Order No. R9-2011- 0032 may be re-opened and modified, revoked, and reissued or terminated in accordance with the provisions of 40 CFR Parts 122, 123, 124, and 125. The Regional Water Board may reopen this permit to modify permit conditions and requirements. Causes for modifications include the promulgation of new regulations, modification in sludge use or disposal practices, or adoption of new regulations by the State Water Board or Regional Water Board, including revisions to the Basin Plan.

2. Special Studies and Additional Monitoring Requirements

In addition to the MRP, Attachment E, the Discharger may be required to conduct additional monitoring. Special studies are intended to be short – term and designed to address specific research or management issues that are not addressed by the routine core monitoring program. The Discharger shall implement special studies as directed by this Regional Water Board.

- a. The Discharger shall participate and coordinate with state and local agencies and other dischargers in the San Diego Region in development and implementation of a regional monitoring program for Mission Bay as directed by this Regional Water Board. The intent of a regional monitoring program is to maximize the efforts of all monitoring partners using a more cost-effective monitoring design and to best utilize the pooled resources of the region. During a coordinated sampling effort, the Discharger's sampling and analytical effort may be reallocated to provide a regional assessment of the impact of discharges to the receiving water.

3. Best Management Practices and Pollution Prevention

This Order requires the Discharger to develop and implement Best Management Practices Plans for Storm Water and Confined Aquatic Animals as specified in section VI.C.3.a and VI.C.3.b of this Order. The Discharger is required to amend BMP Plans whenever there is a change in the Facility or in its operation which increases the generation of pollutants or their discharge to Mission Bay. Revision dates and summaries of revisions shall be documented in the BMP Plans.

- 4. Construction, Operation, and Maintenance Specifications—Not Applicable**
- 5. Other Special Provisions—Not Applicable**
- 6. Compliance Schedules—Not Applicable**

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, San Diego Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for SeaWorld Parks & Entertainment, Inc. a Delaware Corporation, SeaWorld LLC d/b/a/ SeaWorld San Diego,. As a step in the WDR adoption process, the Regional Water Board staff has developed tentative WDRs. The Regional Water Board encourages public participation in the WDR adoption process.

A. Notification of Interested Parties

The Regional Water Board has notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. The draft Tentative Order was electronically mailed to all know interested persons on March 21, 2011 and was posted on the San Diego Water Board website shortly thereafter. Notification was published in the San Diego Union Tribune on March 21, 2011

B. Written Comments

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

To be fully responded to by staff and considered by the Regional Water Board, written comments must be received at the Regional Water Board offices by 5:00 p.m. on April 20, 2011.

C. Public Hearing

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

Date: **June 8, 2011**
Time: **9:00 AM**
Location: **Regional Water Quality Control Board
Regional Board Meeting Room
9174 Sky Park Court, Suite 100
San Diego, CA 92123**

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

Please be aware that dates and venues may change. Our Web address is <<http://www.swrcb.ca.gov/rwqcb9>> where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (858) 467-2952.

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this order should be directed to Michelle Mata at (858) 467-2981.

ATTACHMENT G

STORM WATER POLLUTION PREVENTION PLAN REQUIREMENTS

1. Implementation Schedule

A storm water pollution prevention plan (SWPPP) shall be developed and implemented for storm water discharges from SeaWorld San Diego.

The Discharger shall continue to implement its existing SWPPP. The discharger shall implement any necessary revisions to its SWPPP to comply with the requirements herein no later than.

2. Objectives

- a. The discharger's SWPPP shall be prepared to achieve these objectives:
 - i. To identify and evaluate sources of pollutants associated with activities that may affect the quality of facility's storm water discharges and authorized non-storm water discharges;
 - ii. To identify, describe and implement site-specific Best Management Practices (BMP) to reduce or prevent pollutants associated with activities in storm water discharges and authorized non-storm water discharges;
 - iii. To identify and implement timely revisions and/or updates to the SWPPP.
- b. To achieve the SWPPP objectives, the discharger shall prepare written facility specific SWPPP in accordance with all applicable SWPPP requirements of this Section. The SWPPP shall include all required maps, descriptions, schedules, checklists, and relevant copies or specific references to other documents that satisfy the requirements of this Section.

3. Planning and Organization

a. SWPPP Checklist

Upon completing the facility's SWPPP, the discharger shall prepare the SWPPP Checklist (Item A-1) located at the end of this section. For each requirement listed, the discharger shall identify the page number where the requirement is located in the SWPPP (or the title, page number, and location of any reference documents), the implementation date or last revision date, and any SWPPP requirements that may not be applicable to the facility.

b. Pollution Prevention Team

- i. The SWPPP shall identify specific individuals and their positions within the facility organization as members of a storm water pollution prevention team responsible for developing the SWPPP, assisting the facility manager in SWPPP implementation and revision, and conducting all storm water monitoring program activities required of this Order.
- ii. The SWPPP shall clearly identify the responsibilities, duties, and activities of each team member.
- iii. The SWPPP shall identify, as appropriate, alternate individuals to perform the required SWPPP and monitoring program activities when team members are temporarily unavailable (due to vacation, illness, out of town meetings, etc.)

c. Review Other Requirements and Existing Facility Plans

- i. The SWPPP shall be developed, implemented, and revised as necessary to be consistent with any applicable municipal, State, and Federal requirements that pertain to the requirements of this Order. For example, a municipal storm water management agency may require specific BMP implementation activities.
- ii. The SWPPP may incorporate or reference the elements of the discharger's existing plans, procedures, or regulatory compliance documents that contain storm water pollution control practices or otherwise relate to the requirements of this Order. For example, facilities subject to Federal Spill Prevention Control and Countermeasures' requirements should already have instituted a plan to control spills of certain hazardous materials, or facilities subject to regional air quality emission controls may already have evaluated activities that emit dust or particulate pollutants.

4. Site Map

The SWPPP shall include a site map. The site map shall be provided on an 8-1/2 x 11 inch or larger sheet and include notes, legends, north arrow and other data as appropriate to ensure that the site map is clear and understandable. If necessary, the discharger may provide the required information on multiple site maps. The following information shall be included on the site map:

- a. Outlines of the facility boundary, storm water drainage areas within the facility boundary, and portions of any drainage area impacted by discharges from surrounding areas. Include the flow direction of each drainage area; on-site surface water bodies; areas of soil erosion; and location(s) of near-by water bodies (such as rivers, lakes, wetlands, etc.) or municipal storm drain inlets that may receive the facility's storm water discharges and authorized non-storm water

discharges.

- b. The location of the storm water collection and conveyance system, associated points of discharge, and direction of flow. Include any structural control measures that affect storm water discharges, authorized non-storm water discharges, and run-on. Examples of structural control measures are catch basins, berms, detention ponds, secondary containment, oil/water separators, diversion barriers, etc.
- c. An outline of all impervious areas of the facility, including paved areas, buildings, covered storage areas, or other roofed structures.
- d. Locations where materials are directly exposed to precipitation and the locations where significant spills or leaks identified in Description of Potential Pollutant Sources, Section A.6.a.iv, below, have occurred.
- e. Areas of industrial activity. Identify all storage areas and storage tanks, shipping and receiving areas, fueling areas, vehicle and equipment storage/maintenance areas, material handling and processing areas, waste treatment and disposal areas, dust or particulate generating areas, cleaning and reusing areas, and other of industrial activity which may have potential pollutant sources.

5. List of Significant Materials

The SWPPP shall include a list of significant materials handled and stored at the site. For each material on the list, describe the locations where the material is stored, received, shipped, and handled, as well as the typical quantities and frequency. Materials shall include raw materials, intermediate products, final or finished products, recycled materials, and waste or disposed materials.

6. Description of Potential Pollutant Sources

- a. For each area identified in Section A.4.e., the SWPPP shall include a narrative description of the facility's industrial activities, potential pollutant sources, and potential pollutants that could be exposed to storm water or authorized non-storm water discharges. At a minimum, the following industrial activities shall be described as applicable:

- i. Industrial Processes

Describe each industrial process including the manufacturing, cleaning, maintenance, recycling, disposal or other activities related to the process. Include the type, characteristics, and approximate quantity of significant materials used in corresponding containment capacity shall be identified and described.

ii. Material Handling and Storage Areas

Describe each handling and storage area, including the type, characteristics, and quantity of significant materials handled or stored, description of the shipping, receiving, and loading procedures, and the spill or leak prevention and response procedures. Areas protected by containment structure and the corresponding containment capacity shall be identified and described.

iii. Dust and Particulate Generating Activities

Describe all industrial activities that generate dust or particulate pollutants that may be deposited within the facility's boundaries. Include their discharge locations and the type, characteristics, and quantity of dust and particulate pollutants that may be deposited within the facility's boundaries. Identify the primary areas of the facility where dust and particulate pollutants would settle.

iv. Significant Spills and Leaks

Identify and describe materials that spill or leak in significant quantities in storm water discharges or non-storm water discharges upon adoption of this Order. Include toxic chemicals (listed in 40 CFR, Part 302) that have been discharged to storm water as reported on U.S. Environmental Protection Agency (U.S. EPA) Form R, and oil and hazardous substances in excess of reportable quantities (see 40 Code of Federal Regulations [CFR], Parts 110, 117, and 302). The description shall include the location, characteristics, and approximate quantity of the materials spilled or leaked, the cleanup or remedial actions that have occurred or are planned, the approximate remaining quantity of materials that may be exposed to storm water or non-storm water discharges; and the preventative measures taken to ensure spills or leaks of the material do not reoccur.

v. Non-Storm Water Discharges

(1) Dischargers shall inspect the facility to identify all non-storm water discharges, sources, and drainage areas. All drains (inlets and outlets) shall be evaluated to identify whether they connect to the storm drain system.

(2) All non-storm water discharges shall be described. The description shall include the source, quantity, frequency, and characteristics of the non-storm water discharges and associated drainage area and shall identify whether the discharge is an authorized or unauthorized non-storm water discharge in accordance with Subsection 11. Examples of unauthorized non-storm water discharges are rinse and wash water (whether detergents are used or not), contact and non-contact cooling water, boiler blow-down,

etc.

vi. Soil Erosion

Describe the facility locations where soil erosion may occur as a result of industrial activity, storm water discharges associated with industrial activity, or authorized non-storm water discharges.

7. Assessment of Potential Pollutant Sources

- a. The SWPPP shall include a narrative assessment of all areas of industrial activity and potential pollutant sources as described in A.6. above. To determine the likelihood that significant materials will be exposed to storm water or authorized non-storm water discharges, the assessment shall include consideration of the quantity, characteristics, and locations of each significant material handled, produced, stored, recycled, or disposed; the direct and indirect pathways that significant materials may be exposed to storm water or authorized non-storm water discharges; history of spills or leaks; non-storm water discharges; prior sampling, visual observation, and inspection records; discharges from adjoining areas; and the effectiveness of existing BMP to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.
- b. Based upon the assessment above, the SWPPP shall identify any areas of industrial activity and corresponding pollutant sources where significant materials are likely to be exposed to storm water or authorized non-storm water discharges and where additional BMP are necessary to reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges.

8. Storm Water Best Management Practices

- a. The SWPPP shall include a narrative description of BMP implemented at the facility. The BMP, when developed and implemented, shall be effective in reducing or preventing pollutants in storm water discharges and authorized non-storm water discharges. The BMP narrative description shall include:
 - i. The type of pollutants the BMP are designed to reduce or prevent.
 - ii. The frequency, time(s) of day, or conditions when the BMP are scheduled for implementation.
 - iii. The locations within each area of industrial activity or pollutant source where the BMP shall be implemented.
 - iv. Identification of the person and/or position responsible for implementing the BMP.

- v. The procedures, including maintenance procedures, and/or instructions to implement the BMP.
- vi. The equipment and tools necessary to implement the BMP.
- b. The discharger shall consider non-structural BMP for implementation at the facility. Non-structural BMP generally consist of processes, prohibitions, procedures, training, schedule of activities, etc., that prevent pollutants associated with industrial activity from contacting with storm water discharges and authorized non-storm water discharges. Below is a list of non-structural BMP that shall be considered:
 - i. Good Housekeeping

Good housekeeping generally consists of practical procedures to maintain a clean and orderly facility.
 - ii. Preventative Maintenance

Preventative maintenance includes the regular inspection and maintenance of storm water structural controls (i.e. catch basins, oil/water separators, etc.) as well as other facility equipment and systems.
 - iii. Spill Response

This includes spill clean-up procedures and necessary clean-up equipment based upon the quantities and locations of significant materials that may spill or leak.
 - iv. Material Handling and Storage

This includes all procedures to minimize the potential for spills and leaks and to minimize exposure of significant materials to storm water and authorized non-storm water discharges.
 - v. Employee Training Program

This includes the development of a program to train personnel responsible for implementing the various compliance activities of this Order including BMP implementation, inspections and evaluations, monitoring activities, and storm water compliance management. The training program shall include:

 - (1) A description of the training program and any training manuals or training materials.

- (2) A discussion of the appropriate training frequency.
- (3) A discussion of the appropriate personnel to receive training.
- (4) A training schedule.
- (5) Documentation of all completed training classes and the personnel who received training.

vi. Waste Handling/Recycling

This includes the procedures or processes to handle, store, or dispose of waste or recyclable materials.

vii. Record Keeping and Internal Reporting

This includes the procedures to ensure that all records of inspections, spills, maintenance activities, corrective actions, visual observations, etc., are developed, retained, and provided, as necessary to the appropriate facility personnel.

viii. Erosion Control and Site Stabilization

This includes a description of all sediment and erosion control activities. This may include the planting and maintenance of vegetation, diversion of run-on and runoff, placement of sandbags, silt screens, or other sediment control devices, etc.

ix. Inspections

Periodic visual inspections of a facility are necessary to ensure that the SWPPP addresses any significant changes to the facility's operations or BMP implementation procedures.

- (1) A minimum of four quarterly visual inspections of all storm water drainage areas and associated potential pollutant sources shall be completed each reporting year. The annual comprehensive site compliance evaluation described in subsection 9 may substitute for one of the quarterly inspections.
- (2) Tracking and follow-up procedures shall be described to ensure appropriate corrective actions and/or SWPPP revisions are implemented.
- (3) A summary of the corrective actions and SWPPP revisions resulting from quarterly inspections shall be reported in the annual report.

(4) Dischargers shall certify in the annual report that each quarterly visual inspection was completed.

(5) All corrective actions and SWPPP revisions shall be implemented in accordance with subsection 10.d. and e.

x. Quality Assurance

This includes the management procedures to ensure that the appropriate staff adequately implements all elements of the SWPPP and Monitoring Program.

c. Structural BMP

Where non-structural BMP identified in Section A.8.b. above are not effective, structural BMP shall be considered. Structural BMP typically consist of structural devices that reduce or prevent pollutants in storm water discharges and authorized non-storm water discharges. Below is a list of structural BMP that shall be considered:

i. Overhead Coverage

This includes structures that protect materials, chemicals, and pollutant sources from contact with storm water and authorized non-storm water discharges.

ii. Retention Ponds

This includes basins, ponds, surface impoundment, bermed areas, etc. that do not allow storm water to discharge from the facility.

iii. Control Devices

This includes berms or other devices that channel or route run-on and runoff away from pollutant sources.

iv. Secondary Containment Structures

This includes containment structures around storage tanks and other areas that collect any leaks or spills.

v. Treatment

This includes inlet controls, infiltration devices, oil/water separators, detention ponds, vegetative swales, etc., which reduce the pollutants in storm water discharges and authorized non-storm water discharges.

- d. The SWPPP shall include a summary identifying each area of industrial activity and associated pollutant sources, pollutants, and BMP in a table similar to Item A-3 at the end of this section.

9. Annual Comprehensive Site Compliance Evaluation

The discharger shall conduct one comprehensive site compliance evaluation (evaluation) in each reporting period (July 1-June 30). Evaluations shall be conducted no less than eight months from each other. The SWPPP shall be revised, as appropriate, and the revisions implemented within 90 days of the evaluation. Evaluations shall include the following:

- a. A review of all visual observation records, inspection records, and sampling and analysis results.
- b. A visual inspection of all areas of industrial activity and associated potential pollutant sources for evidence of, or the potential for, pollutants entering the drainage system. A visual inspection of equipment needed to implement the SWPPP.
- c. A review and evaluation of all BMP, both structural and non-structural, for each area of industrial activity and associated potential pollutant sources to determine whether the BMP are properly designed, implemented, and are effective in reducing and preventing pollutants in storm water discharges and authorized non-storm water discharges.
- d. An evaluation report that includes:
 - i. Identification of personnel performing the evaluation,
 - ii. Date(s) of the evaluation,
 - iii. Summary and implementation dates of all significant corrective actions and SWPPP revisions for the reporting year,
 - iv. Schedule for implementing any incomplete corrective actions and SWPPP revisions,
 - v. Any incidents of non-compliance and the corrective actions taken, and
 - vi. A certification that the discharger has completed the quarterly inspections specified in Storm Water Best Management Practices, Subsection 8.b.ix, above and that the discharger is complying with this Order. If the above certification cannot be provided, explain in the evaluation report why the discharger is not complying with this Order.

- vii. The evaluation report shall be submitted as part of the annual report, retained for at least five years, and signed and certified in accordance with Reporting Requirement F.8 of this Order.

10. SWPPP General Requirements

- a. The SWPPP shall be retained at the facility and made available upon request of a representative of the Regional Water Board, USEPA, or local storm water management agency (local agency).
- b. Upon notification by the Regional Board and/or local agency that the SWPPP does not meet one or more of the minimum requirements of this Section, the discharger shall revise the SWPPP and implement additional BMP that are effective in reducing and eliminating pollutants in storm water discharges and authorized non-storm water discharges. As requested, the discharger shall provide an implementation schedule and/or completion certification to the Regional Board and/or local agency.
- c. The SWPPP shall be revised, as appropriate, and implemented prior to changes in activities, which;
 - i. May significantly increase the quantities of pollutants in storm water discharge; or
 - ii. Cause a new area of industrial activity at the facility to be exposed to storm water; or
 - iii. Begin an industrial activity that would introduce a new pollutant source at the facility.
- d. The discharger shall revise the SWPPP and implement the appropriate BMP in a timely manner and in no case more than 90 days after a discharger determines that the SWPPP is in violation of any Order requirement.
- e. When any part of the SWPPP is infeasible to implement by the deadlines specified above due to proposed significant structural changes, the discharger shall:
 - i. Submit a report to the Regional Board that:
 - (1) Identifies the portion of the SWPPP that is infeasible to implement by the deadline;
 - (2) Provides justification for a time extension, provides a schedule for completing and implementing that portion of the SWPPP; and (3) Describes the BMP that will be implemented in the interim period to

reduce or prevent pollutants in storm water discharges and authorized nonstorm water discharges.

- ii. Comply with any request by the Regional Board to modify the report required in Subsection i. above, or provide certification that the SWPPP revisions have been implemented.

- f. The SWPPP shall be provided, upon request, to the Regional Board, USEPA, local storm water management agency, or Compliance Inspection Designees. The Regional Board under Section 308(b) of the Clean Water Act considers the SWPPP a report that shall be available to the public.

11. Authorized Non-Storm Water Discharges Special Requirements

- a. The following non-storm water discharges are authorized provided they satisfy the conditions of Subsection b., below:
 - i. Fire-hydrant flushing;
 - ii. Potable water sources, including potable water related to the operation, maintenance, or testing of potable water systems;
 - iii. Drinking fountain water; atmospheric condensate, including refrigeration, air conditioning, and compressor condensate;
 - iv. Irrigation drainage and landscape watering;
 - v. Natural springs, ground water, and foundation and footing drainage; and
 - vi. Seawater infiltration where the seawater is discharged back into the sea water source.

- b. The non-storm water discharges identified in subsection a., above, are authorized by this Order if all the following conditions are satisfied:
 - i. The non-storm water discharges comply this Order.
 - ii. The non-storm water discharges comply with local agency ordinances and requirements.
 - iii. BMP are specifically included in the SWPPP to: (1) prevent or reduce the contact of non-storm water discharges with significant materials or equipment, and (2) minimize, to the extent practicable, the flow or volume of non-storm water discharges.

- iv. The non-storm water discharges do not contain significant quantities of pollutants.
- v. The monitoring program includes quarterly visual observations of non-storm water discharges and sources to ensure adequate BMP implementation and effectiveness.
- vi. The non-storm water discharges are reported and described in the annual report.
- c. This Regional Board or local storm water management agency may establish additional monitoring and reporting requirements for any non-storm water discharge authorized by this Order.
- d. Discharges from fire fighting activities are authorized by this Order and are not subject to the conditions of Subsection 11.b.

DEFINITIONS

1. Best Management Practices (BMP) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. The BMP also include treatment measures, operating procedures, and practices to control facility site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. The BMP may include any type of pollution prevention and pollution control measure necessary to achieve compliance with this Order.
2. Clean Water Act (CWA) means the Federal Water Pollution Control Act enacted by Public Law 92-500 as amended by Public Laws 95-217, 95-576, 96-483, and 97-117; 33 USC. 1251 et seq.
3. Facility is a collection of industrial processes discharging storm water associated with industrial activity within the property boundary or operational unit.
4. Non-Storm Water Discharge means any discharge to storm sewer systems that is not composed entirely of storm water.
5. Significant Materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under Section 101(14) of Comprehensive Environmental Response, Compensation, and Liability Act (CERLCA); any chemical the facility is required to report pursuant to Section 313 of Title III of Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

6. Significant Quantities is the volume, concentrations, or mass of a pollutant that can cause or threaten to cause pollution, contamination, or nuisance; adversely impact human health or the environment; and/or cause or contribute to a violation of any applicable water quality standards for the receiving water.
7. Significant Spills includes, but is not limited to: releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR 110.10 and 117.21) or Section 102 of CERCLA (see 40 CFR 302.4).
8. Storm water means storm water runoff, snowmelt runoff, and storm water surface runoff and drainage. It excludes infiltration and runoff from agricultural land.
9. Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under 40 CFR Part 122. For the facilities identified in the Fact Sheet of this Order, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters; sites used for residual treatment, storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, State, or municipally owned or operated that meet the description of the facilities referenced in this paragraph) include those facilities designated under 40 CFR 122.26(a)(1)(v).

ACRONYM LIST

BAT	Best Available Technology Economically Achievable
BCT	Best Conventional Pollutant Control Technology
BMP	Best Management Practices
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (Federal Superfund)
CFR	Code of Federal Regulations
CWA	Clean Water Act
Order	General Industrial Activities Storm Water Permit
GMP	Group Monitoring Plan

NEC	No Exposure Certification
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
O&G	Oil and Grease
RCRA	Resource, Conservation, and Recovery Act
Regional Board	Regional Water Quality Control Board
RQ	Reportable Quantity
SARA	Superfund Amendments and Reauthorization Act of 1986
SIC	Standard Industrial Classification
SMCRA	Surface Mining Control and Reclamation Act
SPCC	Spill Prevention Control and Countermeasures
State Board	State Water Resources Control Board
SWPPP	Storm Water Pollution Prevention Plan
TOC	Total Organic Carbon
TSS	Total Suspended Solids
U.S. EPA	U.S. Environmental Protection Agency
WDID	Waste Discharger Identification
WDR	Waste Discharge Requirement