CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

9174 Sky Park Court, Suite 100, San Diego, CA 92123
(858) 467-2952 • Fax (858) 571-6972
http://www.waterboards.ca.gov/sandiego/

ORDER NO. R9-2007-0006
NPDES NO. CA0109231

WASTE DISCHARGE REQUIREMENTS FOR THE SAN DIEGO STATE UNIVERSITY RESEARCH FOUNDATION COASTAL WATERS LABORATORY DISCHARGE TO SAN DIEGO BAY SAN DIEGO COUNTY

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

Table 1. Discharger Information

Discharger	**San Diego State University Research Foundation**
Name of Facility	**San Diego State University Research Foundation Coastal Waters Laboratory**
Facility Address	**4165 Spruance Road, San Diego, CA 92101**
	San Diego County
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a **minor** discharge.	

The discharge by the San Diego State University Research Foundation from the discharge point identified below is subject to waste discharge requirements as set forth in this Order:

Table 2. Discharge Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	Waste aquaria seawater	32 °, 43', 55.97" N	117 °, 12', 42.85" W	San Diego Bay (NTC Boat Channel)

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**February 14, 2007**
This Order shall become effective on:	**March 1, 2007**
This Order shall expire on:	**March 1, 2012**
The Discharger shall file a Report of Waste Discharge in accordance with title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than:	**September 3, 2011**

IT IS HEREBY ORDERED, that in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

I, John Robertus, 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 February 14, 2007.

John Robertus, Executive Officer

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I. FACILITY INFORMATION

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

Table 4. Facility Information

Discharger	**San Diego State University Research Foundation**
Name of Facility	**San Diego State University Research Foundation Coastal Waters Laboratory**
Facility Address	**4165 Spruance Road**
	San Diego, CA 92101
	San Diego County
Facility Contact, Title, and Phone	**Eric Elson, Project Manager, (619) 594-0276**
Mailing Address	**5250 Campanile Drive San Diego, CA 92182**
Type of Facility	**Non-commercial aquatic research facility**
Facility Design Flow	**0.288 million gallons per day (MGD) daily maximum**

II. FINDINGS

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

A. Background. The San Diego State University Research Foundation (hereinafter Discharger or SDSURF) submitted a Report of Waste Discharge on February 17, 2006, and applied for a National Pollutant Discharge Elimination System (NPDES) permit to discharge up to 0.18 million gallons per day (MGD), calendar monthly average, of untreated waste seawater from flow-through aquaria at the Coastal Waters Laboratory (CWL). Supplemental information and application materials were received on May 10, 2006 and July 3, 2006. The application was deemed complete on July 3, 2006.

Prior to construction of the current CWL facility, a smaller Coastal Marine Institute was operated by San Diego State University for eelgrass genetic diversity studies at the current CWL site. The previous facility drew seawater from the NTC Boat Channel and discharged back to the boat channel at a rate of 500 gallons per hour. The discharge from the previous facility did not require an NPDES permit because the discharged seawater was essentially unchanged from the intake seawater.

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 the SDSURF Coastal Waters Laboratory (CWL), a non-commercial aquatic research facility. The CWL focuses on environmental and ecological problems caused by urbanization in the coastal environment at the land-water interface. The Discharger draws seawater from an extension of San Diego Bay commonly known as the Navy Training Center (NTC) Boat Channel for use in maintaining flow-through aquariums used for academic research at CWL. Untreated waste seawater is subsequently also discharged to the NTC Boat Channel, an extension of San Diego Bay and a water of the United States, from Discharge Point 001 (see table on cover page). Attachment B provides a map of the area around the facility. Attachment C provides a flow schematic 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 U.S. Environmental Protection Agency (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 Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the 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 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 F 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 Regulations[1], 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 Part 125, section 125.3. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet.

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. 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. 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.

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

Requirements of this Order implement the Basin Plan. Beneficial uses applicable to San Diego Bay are as follows:

Table 5. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	**San Diego Bay**	Existing: Industrial Service Supply (IND); navigation (NAV); contact water recreation (REC1); non-contact water recreation (REC2); commercial and sport fishing (COMM); preservation of biological habitats of special significance (BIOL); 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)..

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 Board adopted a Water Quality Control Policy for Enclosed Bays and Estuaries of California (Bays and Estuaries Policy) on May 16, 1974 and amended in 1995. The Bays and Estuary 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 which have been incorporated into this Order.

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 effluent limitations and/or discharge specifications.

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 C.F.R. § 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. The technology-based effluent limitations consist of restrictions on biochemical oxygen demand (BOD) and total suspended solids (TSS). Restrictions on these pollutants are discussed in Section IV.B of the Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements based on best professional judgment. These limitations are not more stringent than required by the CWA.

Water quality-based effluent limitations 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 CTR 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. This Order is the first issuance of waste discharge requirements for a significantly different discharge from the CWL; therefore, anti-backsliding requirements are not applicable.

P. 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.

Q. 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.

R. 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.

S. 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.

T. 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.

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. Wastes shall not be discharged into or adjacent to areas where the protection of beneficial uses requires spatial separation from waste fields. [Enclosed Bays and Estuaries Policy (EBEP)]

D. The discharge or by-passing of untreated waste, other than flow-through aquaria waste seawater, to San Diego Bay, is prohibited. [EBEP]

E. The combined discharge to San Diego Bay from the CWL in excess of 0.288 MGD on any calendar day or 24-hour period representing a calendar day is prohibited unless the discharger obtains revised waste discharge requirements authorizing an increased flowrate.

F. Discharges from the CWL service water system to San Diego Bay are prohibited.

G. The discharge of wastes to San Diego Bay containing concentrations of pollutants in excess of those identified in the Effluent Limitations of this Order is prohibited.

H. Odors, vectors, and other nuisances of waste origin beyond the property line are prohibited.

I. The discharge of waste seawater from the CWL from aquaria used to maintain warm-blooded species is prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations and Discharge Specifications

1. Final Effluent Limitations – Discharge Point 001

a. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 001, with compliance measured at Monitoring Location EFF-001 as described in the attached Monitoring and Reporting Program (MRP, Attachment E):

Table 6. Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10.0		12.4		
	lbs/day	24.0		29.9		
Total Suspended Solids	mg/L	6.2		7.8		
	lbs/day	15.0		18.7		
Total Nitrogen[1,2]	mg/L	1.1		1.2		
	lbs/day	2.6		2.9		
pH	pH units				7.0	9.0
Total Phosphorus[1,2]	mg/L	0.11		0.12		
	lbs/day	0.26		0.30		
Turbidity	NTU	The maximum daily turbidity of the discharge shall not be increased above the turbidity of the intake seawater according to the following increments: Intake Turbidity — Maximum increase in discharge 0. — 50. NTU — 20.% over intake turbidity level 50. — 100. NTU — 10. NTU Greater than 100. NTU — 10.% over intake turbidity level				

[1] If the calendar-month average concentration of this constituent in the effluent exceeds the corresponding calendar-month average effluent limitation, and if the calendar-month average concentration of this constituent in the influent also exceeds the corresponding calendar-month average effluent limitation, then the effective effluent limitation shall be equal to the calendar-month average concentration of this constituent in the influent. The effective effluent limitation is valid only when sampling is conducted in compliance with Provision III.A.2 of the Monitoring and Reporting Program.

[2] If the maximum daily concentration of this constituent in the effluent exceeds the corresponding maximum daily effluent limitation, and if the maximum daily concentration of this constituent in the influent also exceeds the corresponding maximum daily effluent limitation, then the effective effluent limitation shall be equal to the maximum daily concentration of this constituent in the influent. The effective effluent limitation is valid only when sampling is conducted in compliance with Provision III.A.2 of the Monitoring and Reporting Program.

b. Water quality based effluent limitations as described in the State Implementation Policy and the CTR may be established for the discharge after monitoring data is available and a reasonable potential analysis is conducted for the discharge. MRP Provision IV.A of this Order requires the discharger to submit monitoring information for analyses of the discharge for constituents listed under the CTR.

2. Discharge Specifications

a. The discharge shall not result in the release of exotic species or species not native to San Diego Bay, including exotic or non-native pathogens. [Best Engineering Judgment, BEJ]

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.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

1. The discharge of wastes to the NTC Boat Channel and San Diego Bay shall not by itself or jointly with any discharge(s) cause violation of the following water quality objectives contained in the Basin Plan [BP]:

   a. **Physical Characteristics**

      (1) 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. [BP]

      (2) Waters shall not contain floating material, including solids, liquids, foams, and scum in concentrations which cause nuisance or adversely affect beneficial uses. [BP]

      (3) 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. [BP]

      (4) Waters shall not contain suspended and settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses. [BP]

      (5) Waters shall not contain taste or odor producing substances at concentrations, which cause a nuisance or adversely affect beneficial uses. [BP]

      Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. The transparency of the 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 Board. With these two exceptions, increases in turbidity attributable to controllable water quality factors shall not exceed the following limits:

Natural Turbidity	*Maximum Increase*	
0—50 NTU	20% over natural turbidity level	
50—100 NTU	10 NTU	
Greater than 100 NTU	10% over natural turbidity level	[BP]

b. **Thermal Characteristics**

Discharges from Discharge Point 001 to the NTC Boat Channel and San Diego Bay shall not exceed the natural temperature of the receiving waters by more than 20°F.

c. **Chemical Characteristics**

(1) Dissolved oxygen levels shall not be less than 5.0 mg/L in waters of the NTC Boat Channel and San Diego Bay. The annual mean dissolved oxygen concentration shall not be less than 7 mg/L. [BP, BEJ]

(2) The pH shall not be changed at any time more than 0.2 units from that which occurs naturally. The pH shall not be depressed below 7.0 nor raised above 9.0. [BP]

(3) Waters of the NTC Boat Channel and San Diego 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. [BP]

(4) The discharge of wastes shall not cause concentrations of un-ionized ammonia (NH3) to exceed 0.025 mg/l (as N) in the NTC Boat Channel and San Diego Bay. [BP]

(5) 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. [BP]

d. **Bacteriological Characteristics**

(1) 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 the total samples during any 30-day period exceed 400 per 100 ml.

(2) 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 five-tube decimal dilution test or 330/100 ml when a three-tube decimal dilution test is used.

(3) 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.

e. **Biological Characteristics**

(1) Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded.

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

(3) The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

f. **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. [BP]

g. **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 Board. [BP]

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 waste into waters of the state are privileges, not rights.

f. For the 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 on January 1, 2012, 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 EPA personnel and/or their authorized representatives at all times.

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

1. The Discharger shall comply with the Monitoring and Reporting Program (Attachment E), and future revisions thereto.

2. Reports required to be submitted to this Regional Water Board shall be sent to:

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

   Notifications required to be provided to this Regional Water Board shall be made to:

   Telephone - (858) 467-2952
   Facsimile - (858) 571-6972

3. After notification by the State or Regional Water Board, the Discharger may be required to electronically submit self-monitoring reports. Until such time as electronic submission of self-monitoring reports is required, the Discharger shall submit discharge monitoring reports (DMRs) in accordance with the requirements described further below.

   DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharger shall submit the original DMR and one copy to:

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

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

C. Special Provisions

1. Re-opener Provisions

a. The Order may be reopened and modified in accordance with NPDES regulations at 40 CFR 122 and 124, as necessary, to include additional conditions or limitations based on newly available information or to implement any USEPA approved, new, State water quality objective.

   This Order may be modified, revoked and reissued, or terminated for cause including, but not limited to, the following:

   (1) Violations of any terms or conditions of this Order.

   (2) Obtaining this Order by misrepresentation or failure to disclose fully all relevant facts.

   (3) A change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

b. The filing of a request by the Discharger for modifications, revocation and reissuance, or termination of this Order, or a notification of planned change in or anticipated noncompliance with this Order does not stay any condition of this Order.

c. 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.

d. 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.

2. **Special Studies, Technical Reports and Additional Monitoring Requirements**

a. **Toxicity Reduction Evaluation Workplan.**

(1) The Discharger shall develop a Toxicity Reduction Evaluation (TRE) workplan in accordance with the TRE procedures established by the USEPA in the following guidance manuals:

(a) Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations (EPA/600/2-88/070).

(b) Toxicity Identification Evaluation, Phase I (EPA/600/6-91/005F).

(c) Methods for Aquatic Toxicity Identification Evaluations, Phase II (EPA/600/R-92/080).

(d) Methods for Aquatic Toxicity Identification Evaluations, Phase III (EPA/600/R-92/081).

(2) The Discharger shall submit the TRE workplan to the Regional Water Board within 180 days of the adoption of this Order. The TRE workplan shall be subject to the approval of the Regional Water Board and shall be modified as directed by the Regional Water Board.

(3) **Numeric Monitoring Trigger.** The numeric chronic toxicity monitoring trigger is 1 TUC (where TUC = 100/NOEC). The monitoring trigger is not an effluent limitation; it is the toxicity threshold at which the Discharger is required to begin accelerated monitoring.

(4) **Accelerated Monitoring.** If the numeric chronic toxicity monitoring trigger is exceeded, then within 15 days of the exceedance, the Discharger shall begin conducting additional monthly toxicity tests over a 6-month (at least one sample per calendar month) period and provide the results to the Regional Water Board. The additional monthly toxicity tests will be incorporated into the semiannual discharge monitoring reports submitted pursuant to the MRP of Order No. R9-200-002.

(5) If the additional monthly tests indicate that the toxicity numeric monitoring trigger are being consistently exceeded (at least three exceedances out of the six tests), the Regional Water Board may require that the Discharger conduct a TRE and a Toxic Identification Evaluation (TIE), as identified in the approved TRE workplan.

(6) Within fifteen days of completion of the TRE/TIE, the Discharger shall submit the results of the TRE/TIE, including a summary of the findings, data generated, a list of corrective actions necessary to achieve consistent compliance with all the toxicity limitation of this Order and prevent recurrence of violations of those limitation, and a time schedule for implementation of such corrective actions. The corrective actions and time schedule shall be modified at the direction of the Executive Officer.

(7) Failure to conduct required toxicity tests or a TRE within a designated period shall result in the establishment of effluent limitations for chronic toxicity in this Order or appropriate enforcement action.

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

a. The discharger shall comply with the following operation and maintenance specifications to control the discharge of solids:

(1) Employ efficient feed management and feeding strategies to minimize potential discharges of uneaten feed and waste products to waters of the United States. [BPJ]

(2) Identify and implement procedures for routine cleaning of aquaria and related facilities and equipment that minimize potential discharges of wastes to waters of the United States. The written procedures shall be submitted to the Regional Board within 180 days of the adoption of this Order. [BPJ]

(3) Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the United States. [BPJ]

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 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 constituent in the monitoring sample is greater than the effluent limitation and greater than or equal to the reporting level (RL) or lowest quantifiable level.

B. Multiple Sample Data.

When determining compliance with an AMEL or MDEL 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.

C. Average Monthly Effluent Limitation (AMEL).

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar month exceeds the AMEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that month for that parameter (e.g., resulting in 31 days of non-compliance in a 31-day month). 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. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar month during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar month.

D. Average Weekly Effluent Limitation (AWEL).

If the average (or when applicable, the median determined by subsection B above for multiple sample data) of daily discharges over a calendar week exceeds the AWEL for a given parameter, this will represent a single violation, though the Discharger will be considered out of compliance for each day of that week for that parameter, resulting in 7 days of non-compliance. If only a single sample is taken during the calendar week and the analytical result for that sample exceeds the AWEL, the Discharger will be considered out of compliance for that calendar week. The Discharger will only be considered out of compliance for days when the discharge occurs. For any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

E. Maximum Daily Effluent Limitation (MDEL).

If a daily discharge (or when applicable, the median determined by subsection B above for multiple sample data of 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.

F. Instantaneous Minimum Effluent Limitation.

If the analytical result of a single grab sample is lower than the instantaneous minimum effluent limitation for a parameter, 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 non-compliance with the instantaneous minimum effluent limitation).

G. Instantaneous Maximum Effluent Limitation.

If the analytical result of a single grab sample is higher than the instantaneous maximum effluent limitation for a parameter, 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 non-compliance with the instantaneous maximum effluent limitation).

H. Mass Emission Rate.

1. When applicable, the mass emission rate (MER), in pounds per day, shall be obtained from the following calculation for any calendar day:

   $$\text{Mass Emission Rate (lb/Day)} = 8.34 \times Q \times C$$

   in which Q and C are the appropriate flow rate in MGD and the constituent concentration in mg/L (i.e., either calendar monthly average or daily value), respectively, and 8.34 is a conversion factor. If a composite sample is taken, then C is the concentration measured in the composite sample and Q is the average flow rate occurring during the period over which the samples are composited.

2. When the concentration of a constituent in an effluent sample is determined to be "ND" or "DNQ", the corresponding MER determined from that sample concentration shall also be reported as "ND" or "DNQ."

ATTACHMENT A – DEFINITIONS

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 pollutants are 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*) 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.

Detected, but Not Quantified (DNQ) are those sample results less than the RL, but greater than or equal to the laboratory's MDL.

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.

Effluent Concentration Allowance (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 U.S. EPA guidance (Technical Support Document For Water Quality-based Toxics Control, March 1991, second printing, EPA/505/2-90-001).

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

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 include~~d~~, 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.

Inland Surface Waters are 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).

Maximum Daily Effluent Limitation (MDEL) means 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 is 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).

Method Detection Limit (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) 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 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) are those sample results less than the laboratory's MDL.

Ocean Waters are 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 are substances for which degradation or decomposition in the environment is nonexistent or very slow.

Pollutant Minimization Program (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 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.

Reporting Level (RL) is the ML (and its associated analytical method) chosen by the Discharger for reporting and compliance determination from the MLs included in this Order. 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 4 of the SIP in accordance with section 2.4.2 of the SIP or established in accordance with section 2.4.3 of the SIP. 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 RL.

Satellite Collection System is 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.

Source of Drinking Water is any water designated as municipal or domestic supply (MUN) in a Regional Water Board Basin Plan.

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

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

where:

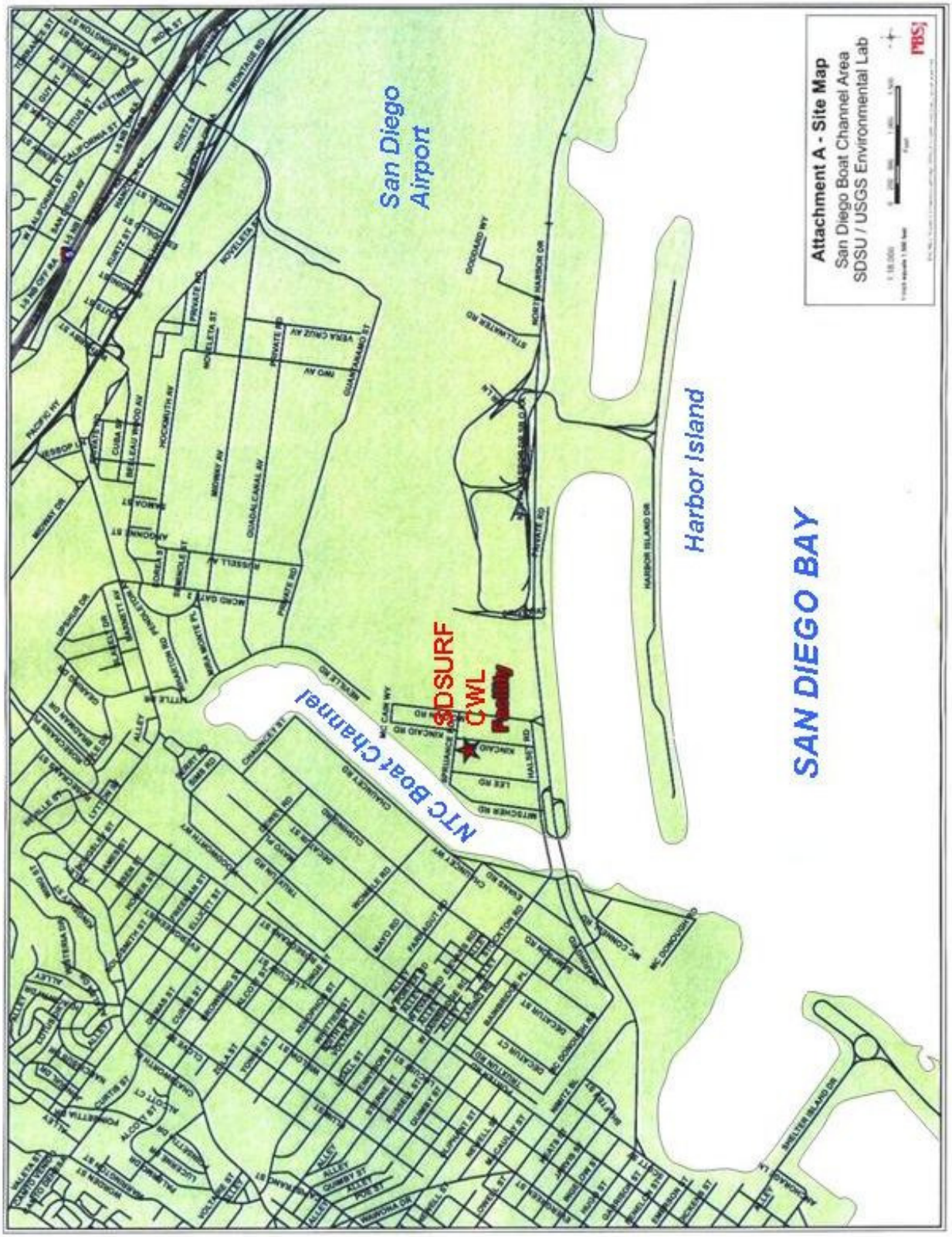
x is the observed value;

μ is the arithmetic mean of the observed values; and

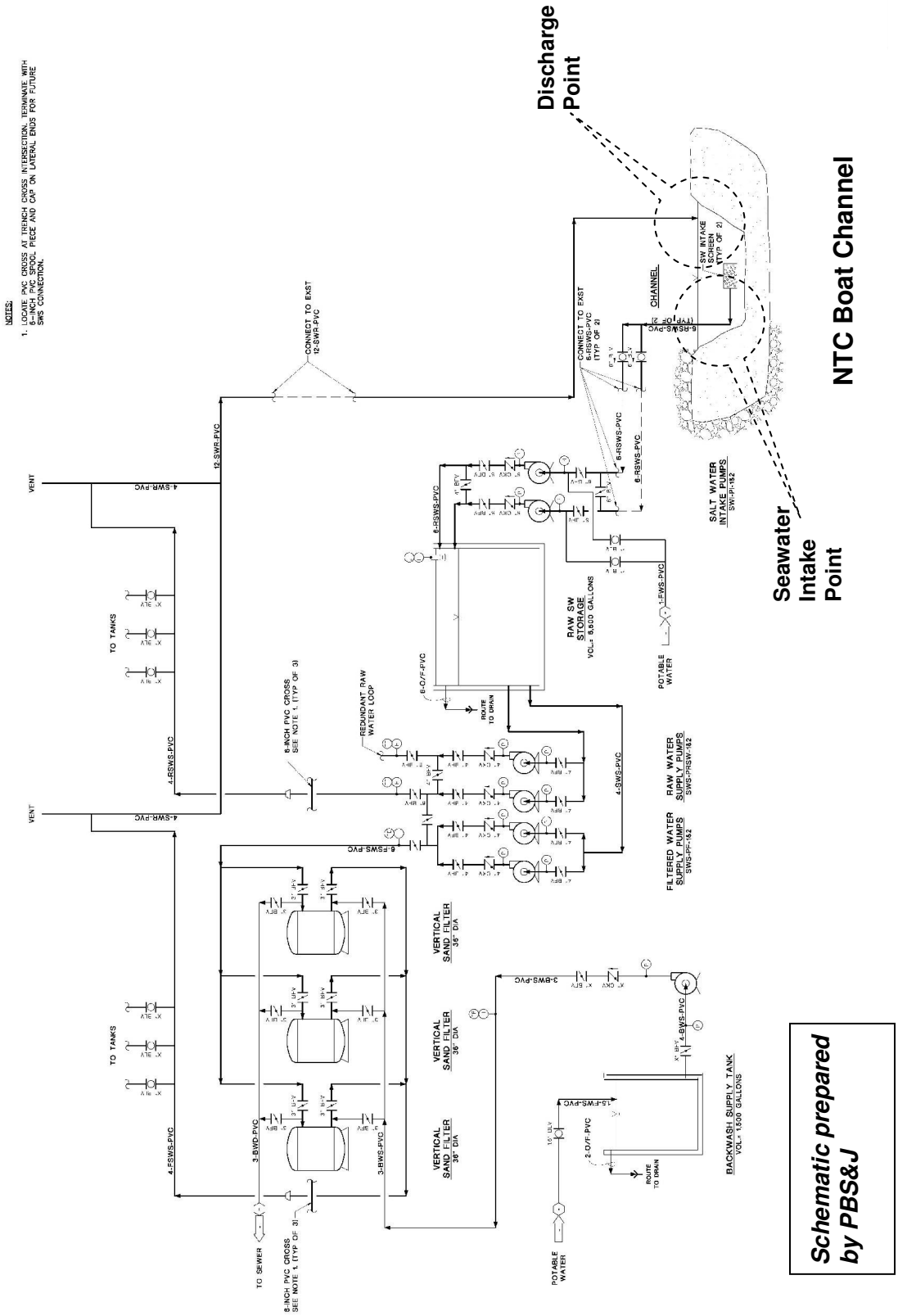
n is the number of samples.

Toxicity Reduction Evaluation (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 – FLOW SCHEMATIC



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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(e).)

E. Property Rights

1. This Order does not convey any property rights of any sort or any exclusive privileges. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(m)(4)(i)):

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(n)(3)):

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset (40 C.F.R. § 122.41(n)(3)(i));

   b. The permitted facility was, at the time, being properly operated (40 C.F.R. § 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 C.F.R. § 122.41(n)(3)(iii)); and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(j)(2).)

B. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements (40 C.F.R. § 122.41(j)(3)(i));

2. The individual(s) who performed the sampling or measurements (40 C.F.R. § 122.41(j)(3)(ii));

3. The date(s) analyses were performed (40 C.F.R. § 122.41(j)(3)(iii));

4. The individual(s) who performed the analyses (40 C.F.R. § 122.41(j)(3)(iv));

5. The analytical techniques or methods used (40 C.F.R. § 122.41(j)(3)(v)); and

6. The results of such analyses. (40 C.F.R. § 122.41(j)(3)(vi).)

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

1. The name and address of any permit applicant or Discharger (40 C.F.R. § 122.7(b)(1)); and

2. Permit applications and attachments, permits and effluent data. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.22(b)(2)); and

   c. The written authorization is submitted to the Regional Water Board and State Water Board. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(l)(6)(i).)

2. The following shall be included as information that must be reported within 24 hours under this paragraph (40 C.F.R. § 122.41(l)(6)(ii)):

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order. (40 C.F.R. § 122.41(l)(6)(ii)(A).)

   b. Any upset that exceeds any effluent limitation in this Order. (40 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.41(l)(1)(i)); or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants that are not subject to effluent limitations in this Order. (40 C.F.R. § 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 C.F.R.§ 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 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 C.F.R. § 122.42(a)(1)):

    a. 100 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(1)(i));

    b. 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(1)(ii));

    c. Five (5) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(1)(iii)); or

    d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 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 C.F.R. § 122.42(a)(2)):

a. 500 micrograms per liter (µg/L) (40 C.F.R. § 122.42(a)(2)(i));

b. 1 milligram per liter (mg/L) for antimony (40 C.F.R. § 122.42(a)(2)(ii));

c. Ten (10) times the maximum concentration value reported for that pollutant in the Report of Waste Discharge (40 C.F.R. § 122.42(a)(2)(iii)); or

d. The level established by the Regional Water Board in accordance with section 122.44(f). (40 C.F.R. § 122.42(a)(2)(iv).)

ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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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 monitored discharge. All samples shall be taken at the monitoring locations 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 locations shall not be changed without notification to and the approval of this Regional Water Board.

B. Monitoring must be conducted according to 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, unless other test procedures are specified in Order No. R9-2006-0020 and/or this MRP and/or this Regional Water Board.

C. A copy of the monitoring reports signed, and certified as required by Attachment D, Standard Provisions V.B., of Order No. R9-2007-0006, shall be submitted to the Regional Water Board at the address listed in Section VII.B.5.c of this MRP.

D. 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 Order No. R9-2007-0006 and this MRP, and records of all data used to complete the application for Order No. R9-2007-0006. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended by request of this Regional Water Board or by the USEPA at any time.

E. All analyses shall be performed in a laboratory certified to perform such analyses by the California Department of Health Services or by a laboratory approved by this Regional Water Board.

F. The Discharger shall report in its cover letter all instances of noncompliance not reported under Attachment D, Section V.E.1 of Order No. R9-20070006 at the time monitoring reports are submitted. The reports shall contain the information listed in Attachment D, Section V.E.1 of Order No. R9-2007-0006.

G. 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 to ensure continued accuracy of the devices.

H. Monitoring results shall be reported at intervals and in a manner specified in Order No. R9-2007-0006 or in this Monitoring and Reporting Program.

I. This Monitoring and Reporting Program may be modified by this Regional Water Board as appropriate.

II. MONITORING LOCATIONS

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

Table 1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
--	**INF-001**	At a location where representative undiluted and unaltered samples of intake seawater from the NTC Boat Channel can be collected and prior to coming into contact with intake pump units
001	**EFF-001**	At a location where representative undiluted and unaltered samples of the discharge from CWL can be collected prior to being discharged into the NTC Boat Channel
		- Receiving Water Monitoring Stations -
	INF-001	At a location where representative undiluted and unaltered samples of intake seawater from the NTC Boat Channel can be collected and prior to coming into contact with intake pump units

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor intake seawater from the NTC Boat Channel at INF-001 as follows:

Table 2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	24-hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Suspended Solids	mg/L	24-hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Nitrogen	mg/L	24-hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
pH	pH Units	24-hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Phosphorus	mg/L	24-hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Turbidity	NTU	24-hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Oil and Grease	mg/L	24-hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B

2. Influent monitoring shall be conducted on the same day as the effluent monitoring for the same parameters. If the effluent monitoring frequency for the parameters listed in *Table 2. Influent Monitoring* is increased, influent monitoring shall also be increased to the same frequency.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor waste seawater from CWL at EFF-001 as follows. 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 3. Effluent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flowrate	MGD	Continuous	Daily	Not specified
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Suspended Solids	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Nitrogen	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
pH		24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Phosphorus	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Turbidity	NTU	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Oil and Grease	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Chronic Toxicity	TUc	24 hr composite	Once during Years 2 and 4	See MRP Provisions I.B and V
Copper	mg/l	24-hr composite	Semiannually (January, July)	See MRP Provision I.B

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
CTR Priority Pollutants (inorganics) except Copper	mg/L	24-hr composite	Once during Year 3	See MRP Provision I.B
CTR Priority Pollutants (organics)	mg/L	Grab	Once during Year 3	See MRP Provision I.B

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

1. Critical life stage toxicity tests shall be performed to measure chronic toxicity (TUc). Testing shall be performed using methods outlined in Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (Chapman, G.A., D.L. Denton, and J.M. Lazorchak, 1995) or Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project (SWRCB, 1996)
2. A screening period for chronic toxicity shall be conducted every other year for three months, using a minimum of three test species with approved test protocols, from the following list (from the Ocean Plan, 2001). Other tests may be used, if they have been approved for such testing by the State Water Board. The test species shall include a fish, an invertebrate, and an aquatic plant. After the screening period, the most sensitive test species shall be used for the monthly testing. Repeat screening periods may be terminated after the first month if the most sensitive species is the same as found previously to be most sensitive. Dilution and control water should be obtained from an unaffected area of the receiving waters. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay test and reported with test results.
3. If the toxicity testing result shows an exceedance of the chronic toxicity numeric monitoring trigger value identified in the performance goals for Discharge Point 001 (Section IV.B.2 of this Order), the Discharger shall:
   a. Take all reasonable measures necessary to immediately minimize toxicity; and
   b. Increase the frequency of the toxicity test(s) that showed a violation to at least two times per month until the results of at least two consecutive toxicity tests do not show violations.

   If the Executive Order determines that toxicity testing shows consistent violation or exceedance of any acute or chronic toxicity limitation or performance goal identified in Section IV.B.2 of this Order, the Discharger shall conduct a Toxicity Reduction Evaluation (TRE) that includes all reasonable steps to identify the source of toxicity. Once the source of toxicity is identified, the Discharger shall take all reasonable steps to reduce the toxicity to meet the toxicity limitations identified in the final effluent limitations for Outfall 001 (Section IV.B.2 of this Order).

Table 4. Approved Tests for Chronic Toxicity

Species	Test	Tier [1]	Reference [2]
giant kelp, *Macrocystis pyrifera*	percent germination; germ tube length	1	a, c
red abalone, *Haliotis rufescens*	abnormal shell development	1	a, c
oyster, *Crassostrea gigas*; mussels, *Mytilus spp.*	abnormal shell development; percent survival	1	a, c
urchin, *Strongylocentrotus purpuratus*; sand dollar, *Dendraster excentricus*	percent normal development	1	a, c
urchin, *Strongylocentrotus purpuratus*; sand dollar, *Dendraster excentricus*	percent fertilization	1	a, c
shrimp, *Homesimysis costata*	percent survival; growth	1	a, c
shrimp, *Mysidopsis bahia*	percent survival; fecundity	2	b, d
topsmelt, *Atherinops affinis*	larval growth rate; percent survival	1	a, c
Silversides, *Menidia beryllina*	larval growth rate; percent survival	2	b, d

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

[2] Protocol References:

a. Chapman, G.A., D.L. Denton, and J.M. Lazorchak. 1995. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms. U.S. EPA Report No. EPA/600/R-95/136.

b. Klemm, D.J., G.E. Morrison, T.J. Norberg-King, W.J. Peltier, and M.A. Heber. 1994. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Marine and Estuarine Organisms. U.S. EPA Report No. EPA-600-4-91-003.

c. SWRCB 1996. Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project. 96-1WQ.

d. Weber, C.I., W.B. Horning, I.I., D.J. Klemm, T.W. Nieheisel, P.A. Lewis, E.L. Robinson, J. Menkedick and F. Kessler 9eds). 1998. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-87/028. National Information Service, Springfield, VA.

VI. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER

The influent monitoring program under MRP Section III also constitutes the receiving water monitoring program. There are no separate receiving water monitoring requirements.

VII. OTHER MONITORING REQUIREMENTS

A. Description of Research Projects and Activities

The Discharger shall submit a report semiannually describing each research project or

activity being conducted or completed at the CWL for the periods January 1 through June 30 and July 1 through December 31 of each year. The following information shall be provided for each research project or activity:

1. Project or Activity Title.
2. Name of Lead Investigator, contact phone number and e-mail address.
3. Project or activity start date and actual or anticipated termination date.
4. A brief description of research purposes, goals, and protocols.
5. List of species (plant, animal, microorganism) involved in the project or activity maintained at the CWL.
6. Description of aquaria failures or significant plant or animal mortalities caused by contagious disease.
7. List of materials (chemicals, additives, feed, substrates, etc.) involved in the project or activity that come into contact with seawater discharged to the NTC Boat Channel.

VIII. 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.

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 quarterly, semiannual, and annual SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. 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 5. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	**January 1, 2007**	**All**	**Submit with quarterly SMR**
Daily	**January 1, 2007**	**(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling.**	**Submit with quarterly SMR**
Monthly	**January 1, 2007**	**1st day of calendar month through last day of calendar month**	**Submit with quarterly SMR**
Quarterly	**January 1, 2007**	**January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31**	**30 days from the end of the monitoring period**
Semiannually	**January 1, 2007**	**January 1 through June 30 July 1 through December 31**	**30 days from the end of the monitoring period**
Annually	**January 1, 2007**	**January 1 through December 31**	**60 days from the end of the monitoring period**

4. Reporting Protocols. The Discharger shall report with each sample result the applicable Reporting Level (RL) 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 RL 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. 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:

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

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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.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table 1. Facility Information

WDID	**9 000001503**
Discharger	**San Diego State University Research Foundation**
Name of Facility	**San Diego State University Research Foundation Coastal Waters Laboratory**
Facility Address	**4165 Spruance Road**
	San Diego, CA 92101
	San Diego County
Facility Contact, Title and Phone	**Eric Elson, Project Manager, (619) 594-0276**
Authorized Person to Sign and Submit Reports	**Norma Clark, Director of Facilities Planning and Management, (619) 594-0276**
Mailing Address	**5250 Campanile Drive, San Diego, CA 92182**
Billing Address	**Same as mailing address**
Type of Facility	**Non-commercial aquatic research facility (SIC 8733)**
Major or Minor Facility	**Minor**
Threat to Water Quality	**3**
Complexity	**B**
Pretreatment Program	**No**
Reclamation Requirements	**Not applicable**
Facility Permitted Flow	**0.288 million gallons per day (MGD) daily maximum**
Facility Design Flow	**0.288 million gallons per day (MGD)**
Watershed	**San Diego Bay**
Receiving Water	**San Diego Bay (Navy Training Center Boat Channel)**
Receiving Water Type	**Enclosed bay**

A. The San Diego State University Research Foundation (hereinafter Discharger or SDSURF) is the owner and operator of the Coastal Waters Laboratory (hereinafter Facility or CWL), a non-commercial aquatic research facility. The CWL focuses on environmental and ecological problems caused by urbanization in the coastal environment at the land-water interface.

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. Prior to construction of the current CWL facility, a smaller Coastal Marine Institute was operated by San Diego State University for eelgrass genetic diversity studies at the current CWL site. The previous facility drew seawater from the NTC Boat Channel and discharged back to the boat channel at a rate of 500 gallons per hour. The discharge from the previous facility did not require an NPDES permit because the discharged seawater was essentially unchanged from the intake seawater.

C. The Facility discharges wastewater to an extension of San Diego Bay commonly known as the Navy Training Center (NTC) Boat Channel, a water of the United States. The discharge is a significantly different discharge than the discharge from the facility that existed prior to the CWL and has not previously been regulated under the National Pollutant Discharge Elimination System.

D. The Discharger filed a report of waste discharge (RoWD) and submitted an application for Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on February 17, 2006. Supplemental information was received on May 10, 2006 and July 3, 2006. A site visit was conducted on July 3, 2006, to observe operations and collect additional data to develop permit limitations and conditions.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls. The Discharger draws seawater from an extension of San Diego Bay commonly known as the Navy Training Center (NTC) Boat Channel for use in maintaining flow-through aquariums used for academic research at CWL. The intake point for seawater is in the middle of the NTC Boat Channel, approximately180 feet from the east bank of the channel. In a flow-through aquarium, fresh intake water is continuously pumped into aquarium tanks and discharged from the tanks at equal flowrates. The daily flowrate of seawater through the Facility is expected to be an average of 0.18 MGD with a maximum one-day flow of 0.288 MGD, the pumping capacity of the Facility. However, depending on research activities at the Facility, a discharge at the maximum one-day flowrate may be sustained for an extended period of time, resulting in an average daily flowrate above 0.18 MGD. The Discharger anticipates maintaining a total aquarium tank volume of 10,000 – 50,000 gallons at the Facility with an animal population totaling 37.9 – 189.4 kg. The Facility will have two seawater supply systems to the aquariums that will continuously supply fresh seawater to the flow-through aquariums. The first supply system will convey raw seawater to aquariums while the second supply system will convey seawater that has been filtered through a vertical sand filter at the Facility. Filter backwash from the sand filtration units of the second supply system will be discharged to the municipal wastewater collection system. No additives or chemicals are being added to the seawater supplied to the aquariums.

Waste seawater from the flow-through aquariums is subsequently discharged without

prior treatment to the NTC Boat Channel, an extension of San Diego Bay and a water of the United States, from Discharge Point 001 (see table on cover page). The discharge point for waste seawater is from an outfall on the east bank of the channel approximately 175 feet from the intake point. The discharge flowrate is the same as the intake rate; i.e., a daily average of 0.18 MGD with a maximum one-day flow of 0.288 MGD. Waste seawater quality will be similar to the intake water quality since the discharge is simply from a flow-through seawater aquarium system. Water quality in the NTC Boat Channel, and therefore the intake seawater, is expected to show typical seasonal variations in temperature, pH, dissolved oxygen and salinity, and environmental variations based on rainfall and runoff to the channel; consequently, similar variation may be observed in the waste seawater. Uneaten food or animal waste may be present in the waste seawater and may contribute additional carbon and nutrients to the NTC Boat Channel. The Discharger provided a calculation of the carbon and total nitrogen in the waste seawater that could be present in the discharge based on the anticipated amount of food applied and the animal population weight. Waste seawater quality, reported by the Discharger based on best professional estimates prior to commencement of the discharge, are as follows:

Table 2. Predicted Waste Seawater Quality

Parameter	Average Daily	Maximum Daily
Biochemical Oxygen Demand (BOD)	< 5 mg/L	8 mg/L
Total Suspended Solids (TSS)	3 mg/L	5 mg/L
Total Nitrogen (as N)	0.02 mg/L	0.09 mg/L
Temperature (winter)	16 ^{o}C	20 ^{o}C
Temperature (summer)	20 ^{o}C	25 ^{o}C
pH	8.0	8.6

Stormwater and run-off from the Facility is also discharged to the NTC Boat Channel via a separate storm water outfall located adjacent to Discharge Point 001.

B. Discharge Points and Receiving Waters. Waste seawater from CWL is discharged to the NTC Boat Channel, an extension of San Diego Bay, and a water of the US, at Discharge Point 001 (32 º, 43', 55.97" N latitude and 117 º, 12', 42.85" W longitude). The waste seawater is discharged through a 12-inch pipe outfall on the east bank of the channel and approximately 500 feet from the channel mouth.

The NTC Boat Channel is a tidally-influenced modified natural channel that was historically one of the outlets of the San Diego River to San Diego Bay before the river was permanently rerouted to discharge only to Mission Bay and subsequently only to the San Diego River flood control channel. The channel is located at the boundary between Hydrologic Subareas (HSA) 908.1 and 908.2. The NTC Boat Channel runs approximately north-east and is approximately 1,600 feet long and 350-400 feet wide. In the vicinity of Discharge Point 001, the channel is approximately 6 feet deep near the banks and 18 feet deep in the middle. The inland end of the channel is approximately 27 feet deep and includes a boat marina. There are ten stormwater outfalls located

along both banks of the channel.

A computer simulation conducted by the Regional Water Board, using the UM3 dilution model within USEPA's Visual Plumes computer modeling package, indicated that effective dilution within the NTC Boat Channel is not significant. The computer modeling was conducted for the dispersal of total suspended solids (TSS) within the channel for each of the following conditions: 1) an average daily discharge flowrate of 0.18 MGD from the CWL with a TSS concentration of 7.8 mg/L, and 2) an average daily discharge flowrate of 0.288 MGD from the CWL with a discharge TSS concentration of 6.2 mg/L. Other computer modeling considerations included using historical San Diego Bay tidal cycle data within the channel, and assuming a TSS ambient concentration of 3 mg/L and dry-weather conditions (i.e., no other inputs of water into the channel). Modeling results indicated minimum effective dilution ratios of 1.8:1 at a discharge flowrate of 0.18 MGD and 1.6:1 at 0.288 MGD; these results indicate that effective dilution is not significantly further reduced if the Facility discharged at its capacity flowrate for an extended period. While the computer modeling results should be verified with actual field observations, the computer modeling suggests that pollutants can tend to accumulate within the NTC Boat Channel with low dilution rates under certain tidal conditions. It has been the Regional Water Board's practice not to consider dilution when setting water quality-based effluent limitations for discharges to bays and estuaries unless the dilution ratio is verified with field data.

As part of the RoWD, the Discharger reported the following water quality data in the channel, prior to commencing the discharge, obtained during rain and non-rain periods and high and low tide periods:

Table 3. NTC Boat Channel Water Quality

Station Description	Date	Tidal Stage [feet (+/-)]	Rainfall last 24 hrs (inches)	Water Temp. (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH	Ammonia (mg/L)	Turbidity (FAU)	TSS (mg/L)
2 ft. Below Surface	01/25/06	-0.42	0	17.0	31.6	7.9	8.09	0.03	4	<1.0
2 ft. Above Bottom	01/25/06			16.7	31.7	8.6	8.05	0.06	3	1.1
2 ft. Below surface	01/31/06	6.59	0	18.4	32.1	8.1	8.20	0.17	2	3.8
2 ft. Above Bottom	01/31/06			17.8	32.3	7.4	8.02	0.13	6	3.3
2 ft. Below Surface	02/28/06	6.4	0.76	16.1	20.0	7.8	8.24	0.05	1	2.6
2 ft. Above Bottom	02/28/06			16.1	21.1	6.9	8.20	0.07	<1	2.0
2 ft. Below Surface	02/28/06	-1.2	0.76	19.1	20.6	8.3	7.52	0.14	6	2.9
2 ft. Above Bottom	02/28/06			19.1	21.0	6.8	7.15	0.1	3	3.4

Station Description	Date	Tidal Stage [feet (+/-)]	Rainfall last 24 hrs (inches)	Water Temp. (°C)	Salinity (ppt)	Dissolved Oxygen (mg/L)	pH	Ammonia (mg/L)	Turbidity (FAU)	TSS (mg/L)
2 ft. Below Surface	03/11/06	5	0.16	14.2	33.1	6.6	8.01	0.3	<1	<5
2 ft. Above Bottom	03/11/06			14.1	32.0	6.8	8.01	0.04	<1	<5
2 ft. Below Surface	03/11/06	-0.5	0.2	14.6	32.7	7.3	8.26	0.09	11	<5
2 ft. Above Bottom	03/11/06			14.9	32.8	7.3	8.28	0.09	10	<5

C. Summary of Existing Requirements and Self-Monitoring Report (SMR) Data. The discharge from the CWL is a significantly different discharge than the discharge from the facility that existed prior to the CWL and for which there were no waste discharge requirements. There are no existing requirements or SMR data for the CWL discharge.

D. Compliance Summary. The discharge from CWL is a significantly different discharge than the discharge that existed prior to the CWL and for which there were no NPDES waste discharge requirements. There is no compliance history.

E. Planned Changes. There are no planned changes to the Facility during the term of this Order.

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 U.S. Environmental Protection Agency (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 San Diego Bay. This Order also serves as Waste Discharge Requirements (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. The Regional Water Board adopted a Water Quality Control Plan for the San Diego Basin (hereinafter Basin Plan) on September 8, 1994. 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. 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. Requirements of this Order implement the Basin Plan. Beneficial uses applicable to San Diego Bay are as follows:

Table 4. Basin Plan Beneficial Uses

Discharge Point	Receiving Water Name	Beneficial Use(s)
001	**San Diego Bay**	Existing: Industrial Service Supply (IND); navigation (NAV); contact water recreation (REC1); non-contact water recreation (REC2); commercial and sport fishing (COMM); preservation of biological habitats of special significance (BIOL); 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)..

2. **Thermal 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. Because the discharge from the Facility is waste seawater from a flow-through aquarium system, the temperature of the discharge is expected to be relatively unchanged from the temperature of the intake water. Receiving water limitations of this Order implement the Thermal Plan.
3. **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.
4. **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.

5. **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 C.F.R. § 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.
6. **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 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 section 131.12 and State Water Board Resolution No. 68-16.
7. **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 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.

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

1. There are no water bodies listed as impaired, pursuant to Section 303 (d) of the CWA, in the NTC Boat Channel.
2. On October 26, 2006, the State Water Board adopted the 2006 draft list of impaired water bodies, prepared pursuant to Section 303 (d) of the CWA. The 2006 list requires the approval of the USEPA which is still pending at the time of adoption of this Order. The 2006 303 (d) list includes the following sections of San Diego Bay shoreline within the proximity of Discharge Point 001 as impaired for copper:
   a. 132 acres of Harbor Island West Basin
   b. 88 acres of the America's Cup Harbor at Shelter Island
3. There are no receiving waters in the immediate vicinity of Discharge Point 001 or in the NTC Boat Channel included on the 2006 303 (d) list.

E. Other Plans, Polices and Regulations

1. **Bays and Estuaries Policy.** The State Board adopted a Water Quality Control Policy for Enclosed Bays and Estuaries of California (Bays and Estuaries Policy) on May 16, 1974 and amended in 1995. The Bays and Estuary 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 San Diego Bay:

      (1) 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. Exceptions to this provision may be granted by a Regional Board only when the Regional Board finds that the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge. For the purpose of this policy, treated ballast waters and innocuous non-municipal wastewater such as clear brines, washwater, and pool drains are not necessarily considered industrial process wastes, and may be allowed by Regional Boards under discharge requirements that provide protection to the beneficial uses of the receiving water.

      (2) For the purpose of the Bays and Estuaries Policy and this Order, the discharge of seawater used to produce native marine species 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 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 San Diego Bay:

      (1) 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.

      (2) 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.

      (3) Wastes shall not be discharged into or adjacent to areas where the protection of beneficial uses requires spatial separation from waste fields.

      (4) Waste discharges shall not cause a blockage of zones of passage required for the migration of anadromous fish.

      (5) Nonpoint sources of pollutants shall be controlled to the maximum practicable extent.

This Regional 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.

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 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.

A. Discharge Prohibitions

1. California Water Code Section 13243 provides that the Regional Board, in a water quality control plan, may specify certain conditions where the discharge of wastes or certain types of wastes that could affect the quality of waters of the state is prohibited. The Basin Plan prohibitions are incorporated by reference in the Order, and Prohibition III.A requires the Discharger to comply with the Basin Plan prohibitions.
2. Prohibition III.B implements Waste Discharge Prohibition 3 of the Basin Plan.
3. In developing the requirements of this Order, the Regional Water Board considered the possible daily discharge of 0.288 MGD for an extended period. . A discharge in excess of 0.288 MGD on any calendar day is prohibited by Prohibition III.E.
4. Prohibition III.I specifically prohibits the discharge of waste seawater from aquaria used to maintain warm-blooded species. SDSURF has stated that no warm-blooded species will be maintained at CWL, and for this reason bacterial monitoring requirements have not been included in the monitoring and reporting program.

B. Technology-Based Effluent Limitations

1. **Scope and Authority.**

   Section 301(b) of the CWA and implementing USEPA permit regulations at section 122.44, title 40 of the Code of Federal Regulations, 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 Part 125, section 125.3.

2. **Applicable Technology-Based Effluent Limitations**

   The US EPA has not promulgated effluent limitation guidelines (ELGs) for the discharge of waste seawater from non-commercial research facilities such as CWL. In such

cases, the Regional Board must evaluate treatment and control technologies applicable to the discharge using BPJ. This discharge is not a "new source" for purposes of federal ELGs. The Discharger reported in its NPDES permit application and RoWD best professional estimates of the concentrations of biochemical oxygen demand (BOD), total suspended solids (TSS), and total nitrogen (TN) that may be expected in the discharge (See Section II.A above). For TSS and TN estimates, the Discharger included calculations based on the amount of food applied and the mass of organisms being maintained at the CWL. While the Discharger does not propose to treat its waste seawater prior to discharge, it can reasonably be expected to control the concentration of BOD and TSS in its discharge through proper management, operation, and maintenance practices. Because ambient nitrogen concentrations in the NTC Boat Channel may at times be elevated at levels which would also result in elevated total nitrogen concentrations in the discharge not caused by the Discharger, technology-based effluent limitations are not appropriate, and water quality-based total nitrogen effluent limitations are instead prescribed in the Order.

The Regional Board established technology-based calendar-monthly average and maximum daily effluent limitations for BOD and TSS for the discharge from the CWL to the NTC Boat Channel using a statistical approach with the following assumptions:

a. The maximum best professional estimates for BOD and TSS concentrations in the waste seawater (8 mg/L and 5 mg/L, respectively), as reported by the Discharger in the RoWD and NPDES permit application, represent long-term average concentrations when the Facility is discharging at a daily flowrate of 0.288 MGD for an extended period.
b. BOD and TSS concentrations in the discharge are log-normally distributed with a small coefficient of variation (i.e., CV = 0.2) because the Discharger will be able to control these concentrations through proper management, operation, and maintenance practices to control solids loading in the discharge.
c. The Discharger will be required to monitor the discharge for BOD and TSS once per month.

Mass Emission Rate (MER) technology-based effluent limitations were calculated using the following calculation:

$$\text{Mass Emission Rate (lb/Day)} = 8.34 \times Q \times C$$

in which Q is the Facility's design flowrate of 0.288 MGD, C is the concentration technology-based effluent limitation in mg/L (AMEL or MDEL), and 8.34 is a conversion factor.

Summary of Technology-based Effluent Limitations
Discharge Point 001

Table 5. Summary of Technology-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10.0		12.4		
	lbs/day	24.0		29.9		
Total Suspended Solids	mg/L	6.2		7.8		
	lbs/day	15.0		18.7		

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.

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).

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

a. Basin Plan

The Basin Plan and its subsequent revisions establish the beneficial uses for San Diego Bay described previously in this Fact Sheet. The Basin Plan includes the following applicable water quality objectives (WQO) for enclosed bays and estuaries, which have been incorporated into Order R9-2007-0006:

(1) Ammonia, un-ionized. The discharge of wastes shall not cause concentrations of un-ionized ammonia (NH3) to exceed 0.025 mg/L (as N).

(2) Bacteria – Total and Fecal Coliform and Enterococci.

(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 of 200/100 ml, nor shall more than 10 percent of the total samples during any 30-day period exceed 400 per 100 ml.

(b) 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.

(c) 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.

(3) Biostimulatory Substances. Inland surface waters, bays and estuaries and coastal lagoon waters shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growths cause nuisance or adversely affect beneficial uses.

(4) Color. Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses. The natural color of fish, shellfish or other resources in inland surface waters, coastal lagoon or bay and estuary shall not be impaired.

(5) Floating Material. Waters shall not contain floating material, including solids, liquids, foams, and scum in concentrations which cause nuisance or adversely affect beneficial uses.

(6) pH. In bays and estuaries, the pH shall not be depressed below 7.0 nor raised above 9.0

(7) Oil and Grease. 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.

(8) Suspended and Settleable Solids. Waters shall not contain suspended and settleable solids in concentration of solids that cause nuisance or adversely affect beneficial uses.

(9) 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.

(10) Turbidity. The transparency of the 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 Board. With these two exceptions, increases in turbidity attributable to controllable water quality factors shall not exceed the following limits:

Natural Turbidity	Maximum Increase
0—50 NTU	20% over natural turbidity level
50—100 NTU	10 NTU
Greater than 100 NTU	10% over natural turbidity level

b. California Toxics Rule (CTR) and State Implementation Policy (SIP)

The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted National Toxics Rule criteria that were applicable in the state. These rules contain water quality criteria for priority pollutants. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Order No. R9-2007-0006 has been written in accordance with the SIP

3. **Determining the need for WQBEL**

a. A WQBEL for pH is included in the Order because all discharges to a receiving water have the potential to alter the pH of the receiving water.

b. A WQBEL for phosphorus is included in the Order because the discharge from the CWL consists of waste seawater that can reasonably be expected to contain fecal wastes containing phosphorus from aquatic organisms. Because the levels of phosphorus in receiving waters that can result in biostimulatory effects is quite low (i.e., 0.1 mg/L in a non-standing body of water), there is reasonable potential for the discharge to result in a biostimulatory effect from the discharge of phosphorus.

c. A WQBEL for total nitrogen is included in the Order because the discharge from the CWL consists of waste seawater that can reasonably be expected to contain fecal wastes containing nitrogen from aquatic organisms. Natural ratios of nitrogen to phosphorus have not been determined for the NTC Boat Channel; however, a ratio of N:P =10:1, on a weight to weight basis, has been used as recommended in the Basin Plan to avoid biostimulatory effects.

d. A WQBEL for turbidity is included in the Order because the discharge from the CWL is expected to contain suspended and dissolved solids which have the potential to contribute to increased turbidity in the NTC Boat Channel surface water.

e. A WQBEL for un-ionized ammonia is not included in the Order. Because the percentage of total ammonia that exists in the un-ionized form increases at higher pH, the impact of ammonia that may be in the CWL discharge on water quality in the NTC Boat channel can be assessed from information on the total ammonia content of the discharge and the pH of the discharge and receiving water. The Order includes a total nitrogen effluent limitation and includes a Monitoring and Reporting Program requirement to also report levels of ammonia and pH in the discharge.

f. At the time of adoption of this Order, the discharge has not commenced. Therefore, no discharge water quality data was available to determine, using the procedures of the SIP, if effluent limitations for CTR priority pollutants are required.

Based on available ambient surface water quality data for the section of the NTC Boat Channel in the vicinity of the CWL discharge (see *Final Investigation Report for IR Site 12, The Boat Channel, Former Naval Training Center, San Diego, California,*

October 2003 conducted by the US Navy), and using the procedures of the SIP, no effluent limitations for CTR priority pollutants are required in this Order. All available ambient water quality data, with one exception, were below CTR water quality criteria. A polychlorinated biphenyl [PCB-52 (2,2',3,5')] was reported as being above the CTR criteria; however, that reported value was based on an estimate and had not been confirmed. Furthermore, PCB-52 is unlikely to be discharged from the CWL.

This Order requires the Discharger to conduct periodic monitoring of the CWL discharge for the CTR priority pollutants to provide data in the future to conduct a reasonable potential analysis to determine the need for effluent limitations.

4. **WQBEL Calculations**

a. The WQBEL for pH is set equal to the WQO.

b. The calendar-monthly average and maximum daily WQBEL for total nitrogen and total phosphorus were calculated using a statistical approach with the following considerations and assumptions:

(1) The nitrogen and phosphorus concentrations in the NTC Boat Channel that would satisfy the Biostimulatory Substances WQO are 1.0 mg/L and 0.1 mg/L, respectively. These values are not to be exceeded more than 10% of the time during a one year period and therefore represent the 90th percentile.

(2) No dilution credit is considered for the discharge from CWL to the NTC Boat Channel. Therefore, the discharge must comply with the WQO at the point of discharge.

(3) The coefficient of variation of nitrogen and phosphorus concentrations in the discharge is 0.2 when the facility is discharging at its capacity of 0.288 MGD for an extended period because the Discharger is expected to control solids loading in the discharge.

(4) The Discharger will be required to monitor the discharge for nitrogen and phosphorus once per month; therefore, the single monthly sample will represent the calendar month average.

Under certain environmental conditions, the total nitrogen and/or total phosphorus concentrations in waters of the NTC Boat Channel, and therefore the intake seawater to the CWL, may already exceed the WQBEL. In those cases, the total nitrogen and/or total phosphorus concentrations in the intake water become the effective WQBELs (see Footnotes 1 and 2 to *Table 6. Effluent Limitations*). In plain terms, the discharge would not be prohibited if nitrogen and/or phosphorus are not added to intake seawater when background levels of nitrogen and phosphorus in the intake seawater are already elevated. The effective WQBELs are only valid when concentrations in both the discharge (effluent) and intake seawater (influent) exceed the WQBEL. This approach is consistent with policy contained in *Section 1.4.4 Intake Water Credits* of the State Implementation Policy although total nitrogen and total phosphorus are not addressed by the State Implementation Policy.

c. Based on the Basin Plan turbidity WQO, a daily maximum turbidity WQBEL is established that is equivalent to an incremental increase in turbidity of the discharge over the turbidity of the intake water.

d. Mass Emission Rate (MER) WQBELs were calculated using the following calculation:

$$\text{Mass Emission Rate (lb/Day)} = 8.34 \times Q \times C$$

in which Q is the Facility's design flowrate of 0.288 MGD, C is the concentration WQBEL in mg/L (AMEL or MDEL), and 8.34 is a conversion factor.

Summary of Water Quality-based Effluent Limitations
Discharge Point 001

Table 6. Summary of Water Quality-based Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
pH	pH Units				7.0	9.0
Total Phosphorus[1,2]	mg/L	0.11		0.12		
	lbs/day	0.26		0.30		
Total Nitrogen[1,2]	mg/L	1.1		1.2		
	lbs/day	2.6		2.9		
Turbidity	NTU	The maximum daily turbidity of the discharge shall not be increased above the turbidity of the intake seawater according to the following increments: Intake Turbidity — Maximum increase in discharge 0. — 50. NTU — 20.% over intake turbidity level 50. — 100. NTU — 10. NTU Greater than 100. NTU — 10.% over intake turbidity level				

[1] If the calendar-month average concentration of this constituent in the effluent exceeds the corresponding calendar-month average effluent limitation, and if the calendar-month average concentration of this constituent in the influent also exceeds the corresponding calendar-month average effluent limitation, then the effective effluent limitation shall be equal to the calendar-month average concentration of this constituent in the influent. The effective effluent limitation is valid only when sampling is conducted in compliance with Provision III.A.2 of the Monitoring and Reporting Program.

[2] If the maximum daily concentration of this constituent in the effluent exceeds the corresponding maximum daily effluent limitation, and if the maximum daily concentration of this constituent in the influent also exceeds the corresponding maximum daily effluent limitation, then the effective effluent limitation shall be equal to the maximum daily concentration of this constituent in the influent. The effective effluent limitation is valid only when sampling is conducted in compliance with Provision III.A.2 of the Monitoring and Reporting Program.

D. Whole Effluent Toxicity (WET)

1. Whole effluent toxicity (WET) tests measure the aggregate toxic effect of a mixture of pollutants that may be present in a waste stream and provides information on potential toxic impacts to receiving waters from the discharge of wastes. WET tests measure the degree of response of exposed aquatic test organisms to an effluent. The WET approach provides a means of assessing compliance with the narrative toxicity water quality objective for aquatic life protection of the Basin Plan 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 Discharger reported in the RoWD that no additives or chemicals are or will be added to the seawater supplied to the CWL aquariums. Therefore, the discharge from CWL is not likely to cause or contribute toxicity in the NTC Boat Channel. This Order does not include effluent limitations for acute or chronic toxicity.

   The SIP requires that a Toxicity Reduction Evaluation (TRE) be conducted if a discharge causes or contributes to chronic toxicity in a receiving water body. This Order requires the Discharger to periodically monitor the toxicity of its discharge and to develop a TRE Workplan. Because this Order does not include toxicity effluent limitations, this Order also includes a numeric monitoring trigger and requires the discharger to conduct a TRE if the chronic toxicity of the discharge exceeds the numeric monitoring trigger. The value of the numeric monitoring trigger is equal to the chronic toxicity water quality objective of the 2005 California Ocean Plan.

E. Final Effluent Limitations

1. Satisfaction of Anti-Backsliding Requirements

The discharge from the CWL is a new discharge. Therefore, anti-backsliding requirements are not applicable.

2. Satisfaction of Antidegradation Policy

Waste Discharge Requirements for the CWL discharge to the NTC Boat Channel extension of San Diego Bay must conform with federal and state antidegradation policies provided at 40 CFR 131.12 and in State 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 available ambient water quality data for the NTC Boat Channel in the vicinity of the CWL discharge (see RoWD supplemental information dated May 9, 2006 and *Final Investigation Report for IR Site 12, The Boat Channel, Former Naval Training Center, San Diego, California, October 2003* conducted by the US Navy) indicates that the NTC Boat Channel is a "Tier One" waters for purposes of the federal Antidegradation Policy. Water quality in the NTC Boat Channel meets the water quality necessary to maintain beneficial uses, but may not have assimilative capacity for additional discharges of pollutants. The discharge from the CWL may discharge additional pollutants to the NTC Boat Channel; however, because of the nature of the discharge and if the discharge complies with the requirements of this Order, the discharge is expected to have negligible impacts on water quality and is not expected to impair beneficial uses. The discharge from the CWL to the NTC Channel, as described earlier in this Fact Sheet, consists of seawater also taken from the NTC Boat Channel and used to maintain aquatic organisms, in a flow-through system without addition of chemicals or additives, at population densities appropriate for academic environmental research purposes.

3. **Stringency of Requirements for Individual Pollutants**

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants. The technology-based effluent limitations consist of restrictions on BOD and TSS. Restrictions on these pollutants are discussed in Section IV.B of this Fact Sheet. This Order's technology-based pollutant restrictions implement the minimum, applicable federal technology-based requirements based on BPJ. These limitations are not more stringent than required by the CWA.

Water quality-based effluent limitations 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. 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.

Summary of Final Effluent Limitations
Discharge Point 001

Table 7. Summary of Final Effluent Limitations

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Minimum	Instantaneous Maximum
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	10.0		12.4		
	lbs/day	24.0		29.9		
Total Suspended Solids	mg/L	6.2		7.8		
	lbs/day	15.0		18.7		
Total Nitrogen[1,2]	mg/L	1.1		1.2		
	lbs/day	2.6		2.9		
pH	pH Units				7.0	9.0
Total Phosphorus[1,2]	mg/L	0.11		0.12		
	lbs/day	0.26		0.30		
Turbidity	NTU	The maximum daily turbidity of the discharge shall not be increased above the turbidity of the intake seawater according to the following increments: Intake Turbidity — Maximum increase in discharge 0. — 50. NTU — 20.% over intake turbidity level 50. — 100. NTU — 10. NTU Greater than 100. NTU — 10.% over intake turbidity level				

[1] If the calendar-month average concentration of this constituent in the effluent exceeds the corresponding calendar-month average effluent limitation, and if the calendar-month average concentration of this constituent in the influent also exceeds the corresponding calendar-month average effluent limitation, then the effective effluent limitation shall be equal to the calendar-month average concentration of this constituent in the influent. The effective effluent limitation is valid only when sampling is conducted in compliance with Provision III.A.2 of the Monitoring and Reporting Program.

[2] If the maximum daily concentration of this constituent in the effluent exceeds the corresponding maximum daily effluent limitation, and if the maximum daily concentration of this constituent in the influent also exceeds the corresponding maximum daily effluent limitation, then the effective effluent limitation shall be equal to the maximum daily concentration of this constituent in the influent. The effective effluent limitation is valid only when sampling is conducted in compliance with Provision III.A.2 of the Monitoring and Reporting Program.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Receiving water limitations of Order No. R9-2007-0006 are derived from the water quality objectives for bays and estuaries established by the Basin Plan (1994), the Bays and Estuaries Policy (1974), the California Toxics Rule (2000), and the State Implementation Plan (2005).

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. Influent Monitoring

Influent monitoring requirements in Order No. R9-2007-0006 are summarized in the following table.

Table 8. Influent Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Suspended Solids	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Nitrogen	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
pH	pH Units	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Phosphorus	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Turbidity	NTU	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Oil and Grease	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B

Influent monitoring for the listed constituents allows for an assessment of the feasibility of complying with the technology-based and water quality-based effluent limitations. The influent monitoring for turbidity is also necessary to determine compliance with the WQBEL for turbidity.

Provision III.A.2 of the Monitoring and Reporting Program requires that the influent be monitored as frequently, and on the same days, as the effluent for biochemical oxygen demand, total suspended solids, total nitrogen, pH, total phosphorus, turbidity, and oil and grease. This provision will ensure proper compliance determination with the turbidity effluent limitation and the effective effluent limitations (see Footnotes 1 and 2 for Table 6: Effluent Limitations) for total nitrogen and total phosphorus.

This Order does not require the Discharger to monitor the influent for total and fecal coliform and enterococci because no warm-blooded species will be maintained at the CWL.

B. Effluent Monitoring

Effluent monitoring requirements for flowrate, BOD, TSS, TN, pH, phosphorus, and turbidity are established in Order No. R9-2007-0006 to allow determination of compliance with the technology-based and water quality-based effluent limitations of the Order. Concentrations of ammonia, total Kjeldahl nitrogen, nitrate, and nitrite in the discharge are also required to be reported. Additionally, the discharge is required to be monitored for Oil and Grease.

This Order requires the Discharger to conduct monitoring of the CWL discharge for the CTR priority pollutants, except for copper, in Year 3 of this permit. More frequent monitoring is necessary to provide data in the future to be able to conduct a reasonable potential analysis to determine the need for priority pollutant effluent limitations; however, SDSURF has stated that no CTR priority pollutants should be expected in the discharged waste seawater because no chemicals or additives will be used in the CWL aquaria. Based on monitoring results, semiannual reports describing research projects and activities at the CWL, and periodic inspections, the Regional Board may determine in the future that more monitoring is necessary. .The frequency of monitoring for copper in the discharge is more frequent than for other CTR priority pollutants because of the proximity of the discharge to the America's Cup Harbor and the Harbor Island West Basin, which have been observed to have elevated ambient copper concentrations.

This Order does not require the Discharger to monitor the effluent for total and fecal coliform and enterococci because no warm-blooded species will be maintained at the CWL.

Effluent monitoring requirements of the MRP of Order No. R9-2007-0006 (Attachment E) are summarized below. In an effort to standardize monitoring and reporting requirements and in order to support electronic data submittal of Discharger Self-Monitoring Reports, reporting units, definitions, and deadlines specified in the MRP for Order No. R9-2007-0006 have been written in accordance with the State Water Resource Control Board's Water Quality Permit Standards Team Final Report.

Table 9. Effluent Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Flowrate	MGD	Continuous	Daily	Not specified
Biochemical Oxygen Demand 5-day @ 20°C	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Suspended Solids	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Nitrogen	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
pH		24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Total Phosphorus	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Turbidity	NTU	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Oil and Grease	mg/L	24 hr composite	Quarterly (January, April, July, October)	See MRP Provision I.B
Chronic Toxicity	TUc	24 hr composite	Once during Years 2 and 4	See MRP Provisions I.B and V
Copper	mg/l	24-hr composite	Semiannually (January, July)	See MRP Provision I.B
CTR Priority Pollutants (inorganics) except Copper	mg/L	24-hr composite	Once during Year 3	See MRP Provision I.B
CTR Priority Pollutants (organics)	mg/L	Grab	Once during Year 3	See MRP Provision I.B

C. Whole Effluent Toxicity Testing Requirements

This Order requires chronic toxicity of the CWL discharge to be monitored once each during Years 2 and 4 of the permit to determine if the discharge causes or contributes to chronic toxicity in the receiving water body, which would trigger a TRE as required by the SIP. The SIP incorporates by reference the test methods for chronic toxicity in Appendix II, "Chapter IV. Compliance With Toxicity Limitations and Objectives" of the California Ocean Plan.

D. Receiving Water Monitoring

Monitoring of the receiving water is necessary to determine if the discharge from the CWL is impacting the NTC Boat Channel. Because the intake seawater for the CWL is also from the NTC Boat Channel, the influent monitoring requirements of this Order fulfills necessary receiving water monitoring.

E. Other Monitoring Requirements

The Discharger is required to provide a summary description of all research projects semiannually. This requirement is intended to identify the following:

1. If any material used at the CWL may be discharged and impact beneficial uses and water quality of receiving waters.
2. If any exotic species is maintained at CWL which could be discharged to the NTC Boat Channel and San Diego Bay.
3. If warm-blooded species are maintained at CWL which could result in the presence of coliform and enterococci bacteria in the discharge.
4. If aquaria failure or significant mortalities at the CWL were due to contagious diseases which could be discharged and infect aquatic life in the NTC Boat Channel and San Diego Bay.

VII. RATIONALE 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. Special Provisions

1. Reopener Provisions

Order No. R9-2007-0006 may be reopened and modified, revoked, and reissued or terminated in accordance with the provisions of 40 CFR Sections 122, 124, and 125.

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

a. **Toxicity Reduction Evaluation Workplan.** These provisions implement the Toxicity Control Provisions of the SIP.

3. Construction, Operation, and Maintenance Specifications

These provisions for proper management, operation, and maintenance are based on best professional judgment to reduce BOD, TSS, TN, and other wastes in the discharge. These provisions support effluent limitations and receiving water limitations of the Order. Additionally, Provision VII.C.3 applies to the cleaning of aquaria and other facilities and equipment, such as the seawater intake structures, in order to minimize the release of biofouling and other materials that may have accumulated.

C. COMPLIANCE DETERMINATION

1. Average Monthly Effluent Limitation, Maximum Daily Effluent Limitation, etc.

Provisions VII.A – VII.H outline the manner by which all instances of non-compliance will be identified consistent with the definitions in Attachment A. These provisions assert that a violation of an effluent limitation based on an average or median over a period consisting of several days results in a violation or non-compliance on each day during the period considered for the average or median. This assertion is based on USEPA Memorandum “Issuance of Guidance Interpreting Single Operational Upset” dated September 27, 1989 in which USEPA clearly states that “The violation of a monthly average limitation is counted as one day of violation for each day in the month,

e.g., 30days of violation in a 30-day month." These provisions only state how violations will be identified and counted but not the type of enforcement action that will be taken or the amount of penalty to be assessed which depend on the type of penalty being proposed for assessment (i.e., discretionary administrative civil liability or mandatory minimum penalties) and other enforcement consideration factors.

2. Multiple Sample Data Reduction

   This provision implements SIP Reporting Requirements provisions.

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 San Diego State University Research Foundation. 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. Notification was provided through the publication in San Diego Union Tribune newspaper on January 8, 2007 and by letter mailed to the Discharger and interested parties on January 8, 2007.

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 ensure that this Regional Water Board has the opportunity to fully consider written material, comments regarding Order No. R9-2007-0006 should be received in the Regional Water Board's office by than 5:00 p.m. on January 31, 2007. Written material submitted after 5:00 p.m. on February 7, 2007 will not be provided to the Regional Water Board members and will not be considered by this Regional Water Board. Oral comments will be received at the hearing on February 14, 2007.

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: **February 14, 2007**
Time: **9:00 a.m.**
Location: **Regional Water Quality Control Board, San Diego Region**

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.waterboards.ca.gov/sandiego** 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, 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.

An electronic copy of the Fact Sheet and Order can be accessed on the Regional Water Board website **http://www.waterboards.ca.gov/sandiego**.

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 Victor Vasquez via e-mail at **vvasquez@waterboards.ca.gov** or at telephone number (858) 636-3155.

ATTACHMENT G – EFFLUENT LIMITATION CALCULATIONS

The technology-based effluent limitations for biochemical oxygen demand (BOD) and total suspended solids (TSS), and the water quality-based effluent limitation for total nitrogen (TN) and total phosphorus (TP) were derived using a statistical procedure that takes into account discharge quality variability and sampling frequency. The calculations are based on the Effluent Numeric Goal (ENG) and/or the Long-Term Average (LTA) which are defined as follows:

- For technology-based effluent limitations – The LTA is equal to the maximum best professional estimates (MBPE) for concentrations of BOD and TSS in the waste seawater that were reported by the Discharger in the Report of Waste Discharge and NPDES application. These reported maximum daily concentrations were assumed to represent long-term average concentrations when the Facility is discharging at a daily flowrate of 0.288 MGD, the Facility's capacity, for an extended period. These discharge concentrations are assumed be log-normally distributed with a small coefficient of variation (i.e., CV=0.2) because the Discharger is expected to be able to regulate these concentrations through proper management, operation, and maintenance practices that control solids loading in the discharge. Setting the reported MBPE as the LTA allows for infrequent excursions above the reported MBPE that may be due to circumstances outside the immediate control of the Discharger.

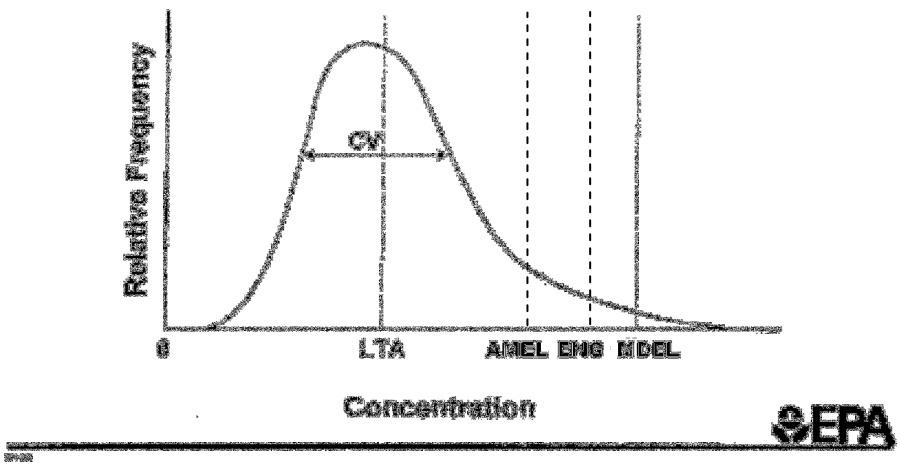
- For water quality-based effluent limitations based on Basin Plan water quality objectives (WQO) – The Basin Plan WQOs for TN and TP are 1 mg/L and 0.1 mg/L, respectively, (Basin Plan, page 3-6), expressed as the concentrations not to be exceeded more than 10 percent of the time. The WQO is interpreted to mean that 90 percent of daily measurements are expected to be below the numerical objective; consequently, the numerical WQO represents the 90th percentile. Because no dilution credit is being considered for the discharge from SDSURF Coastal Waters Lab, the 90th percentile ENG is also set equal to the WQO, and 90 percent of daily measurements of the discharge concentration are expected to be below this value. The LTA is in turn calculated from the 90th percentile ENG.

In order to develop calendar monthly average and maximum daily effluent limitations, a statistical model was employed that is applicable to data sets that follow a log-normal distribution curve and which can be uniquely characterized by a long-term average and a coefficient of variation (CV, defined as the ratio of the standard deviation and the mean of the data set). The statistical model dictates that the concentrations of pollutants from CWL follow a log-normal distribution curve that includes the LTA for both technology-based and water quality-based pollutants, and the 90th percentile ENG for water quality-based pollutants. (See Figure 1 below). Because actual discharge quality data for the CWL is unavailable at the time of adoption of this permit, the CV was assumed to be 0.2 when the Facility is discharging at its capacity of 0.288 MGD for an extended period because the Discharger is expected to control solids loading in the discharge. To derive water quality-based effluent limitations, the LTA is first calculated from the 90th percentile ENG. Afterwards, for both technology-based and water quality-based effluent limitations, the Average Monthly Effluent Limitation (AMEL) and Maximum Daily Effluent limitation (MDEL) were calculated from the LTA. The

calculations are summarized in the table below.

Pollutant	90th percentile ENG mg/L	LTA mg/L	CV	AMEL mg/L	MDEL mg/L
Biochemical Oxygen Demand	---	8	0.2	10.0	12.4
Total Suspended Solids	---	5	0.2	6.2	7.8
Total Nitrogen	1.0	0.79	0.2	1.1	1.2
Total Phosphorus	0.1	0.079	0.2	0.11	0.12

Figure 1: Generalized log-normally distributed concentrations



For water quality-based effluent limitations, the LTA is calculated from the 90th percentile ENG using the following equation:

$$LTA = ENG * Exp\left[\frac{1}{2}\sigma^2 - z\,\sigma\right]$$

where $\sigma^2 = \ln [CV^2 + 1]$, z is the percentile probability score for the 90th percentile, CV is coefficient of variation (assumed here as 0.2), and the ENG is the 90th percentile ENG.

For both technology-based and water quality-based effluent limitations, the maximum daily effluent limitation (MDEL), taken as the 99th percentile, was calculated from the LTA using the following statistical equation:

$$MDEL = LTA * Exp\left[-\frac{1}{2}\sigma^2 + z_{99th}\,\sigma\right]$$

where $\sigma^2 = \ln [CV^2 + 1]$, z_{99th} = 99th percentile probability score, LTA is the long-term average, and CV is the coefficient of variation (0.2).

Similarly, the average monthly effluent limitation (AMEL), based on the 95th percentile for the average of monthly measurements, was calculated from the LTA using the following statistical equation:

$$AMEL = LTA * Exp\left[-\frac{1}{2}\sigma_n^{\ 2} + z_{99th}\,\sigma_n\right]$$

where $\sigma_n^{\ 2} = \ln\left[\frac{CV^2}{\#samples} + 1\right]$, z_{95th} is the 95th percentile probability score, LTA is the long-term average, CV is the coefficient of variation (0.2), and "# samples" is the number of samples per month required by the Order's Monitoring and Reporting Program.