Linda S. Adams
Secretary for
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California Regional Water Quality Control Board
North Coast Region

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Arnold Schwarzenegger
Governor

ORDER NO. R1-2008-0002
NPDES NO. CA0024333
WDID No. 1B84035OSON

WASTE DISCHARGE REQUIREMENTS
FOR THE
UNIVERSITY OF CALIFORNIA - DAVIS
BODEGA MARINE LABORATORY

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

Table 1. Discharger Information

Discharger	**University of California - Davis**
Name of Facility	**Bodega Marine Laboratory**
Facility Address	**2099 Westside Road**
	Bodega Bay, CA 94923
	Sonoma County

The U.S. Environmental Protection Agency (USEPA) and the Regional Water Quality Control Board have classified this discharge as a minor discharge.

The discharges by the University of California – Davis Bodega Marine Laboratory from the discharge points identified below are 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	Once-through sea water	38º 19' 00" N	123º 4' 00" W	Pacific Ocean
002	Once-through freshwater	38º 19' 10" N	123º 4' 14" W	Ground Water
003	Storm water	38º 19' 10" N	123º 4' 14" W	Freshwater Marsh
004	Storm water	38º 19' 10" N	123º 4' 14" W	Freshwater Marsh
016	Storm water	38º 19' 2" N	123º 4' 13" W	Pacific Ocean

Table 3. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	**March 6, 2008**
This Order shall become effective on:	**April 25, 2008**
This Order shall expire on:	**April 25, 2013**
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:	180 days prior to the Order expiration date

IT IS HEREBY ORDERED, that Order No. R1-2000-23 is rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the California Water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, Robert R. Klamt, Interim 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, North Coast Region, on March 6, 2008.

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Robert R. Klamt, Interim 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	University of California – Davis
Name of Facility	Bodega Marine Laboratory
Facility Address	2099 Westside Road Bodega Bay, CA 94923 Sonoma County
Facility Contact, Title, and Phone	Kitty Brown, Laboratory Manager, (707) 875-2006
Mailing Address	University of California – Davis, Bodega Marine Laboratory P.O. Box 247, Bodega Bay, CA 94923
Type of Facility	Marine Laboratory
Facility Design Flow	1.5 million gallons per day (mgd) (maximum pump capacity of the seawater system)

II. FINDINGS

The California Regional Water Quality Control Board, North Coast Region (hereinafter the Regional Water Board), finds:

A. Background. The University of California – Davis (UC-Davis) (hereinafter the Discharger) is currently discharging pursuant to Order No. R1-2000-23 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0024333. The Discharger submitted a Report of Waste Discharge, dated December 28, 2005, and applied for an NPDES permit renewal to discharge up to 1.5 mgd of once-through seawater, once-through freshwater, and storm water from the Bodega Marine Laboratory. The application was deemed complete on September 18, 2007.

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 Bodega Marine Laboratory (BML), a teaching and marine research facility. Two points of discharge are to the Pacific Ocean. The first is Discharge Point 001, which discharges once-through seawater. The marine research facility utilizes a flow-through seawater system in the majority of the research laboratories. Seawater for the flow-through system is pumped continuously from the Pacific Ocean with intake lines located approximately 266 feet offshore in Horseshoe Cove. Each line is fitted with intake screens that are removed, cleaned, and replaced three to four times per year. Two centrifugal pumps provide up to 500 gallons per minute (gpm) to a clarification system, which can be bypassed for researchers requiring unfiltered seawater. The clarification system removes large debris with screens, and removes large-grained sediment with a settling pre-chamber. Eight parallel light weight gravel beds filter the seawater through passive upwelling of the seawater before it is pumped to the north and south wing storage reservoirs. From the storage reservoirs, seawater is then distributed to research labs by gravity flow. The pre-chamber is cleaned by shovel, and the gravel beds are back-washed once per week using high volume, low pressure air. The backwash drains to the waste seawater outfall.

Approximately 15 percent of the seawater, up to 80 gpm, is used in the pathology laboratories. To prevent escape of any disease causing organisms, all effluent from the pathology laboratories is chlorinated with sodium hypochlorite, and then de-chlorinated with gaseous sulfur dioxide before commingling with untreated flow-through seawater prior to discharge. The chlorine concentration in the treatment system is computer-controlled between 12 and 15 milligrams per liter (mg/L) in a cascade system through successive tanks. Alarms activate backup systems when chlorine concentration falls outside the desired treatment concentration or a discharge concentration of 0.05 mg/L. Waste seawater is discharged at a rate of 1.5 mgd at Discharge Point 001, located in near shore waters of the Pacific Ocean, near Horseshoe Cove, waters of the United States.

The second discharge to the Pacific Ocean is storm water runoff from the grounds of the facility which drains to a nearby freshwater marsh. The flow continues through the marsh

to a culvert pipe and concrete trough, which carry storm water to Horseshoe Cove Beach at Discharge Point 016. The freshwater marsh is a water of the State and potentially a water of the United States. The Discharger implements appropriate storm water best management practices and storm water monitoring at Discharge Points 003 and 004 to minimize the discharge of pollutants in the storm water runoff that enters the freshwater marsh from the BML parking lot and operations support areas.

The receiving water for the ocean discharges is designated by the State Water Resources Control Board (State Water Board) as the Bodega Area of Special Biological Significance (Bodega ASBS). The California Ocean Plan prohibits waste discharges to ASBS. The State Water Resources Control Board (State Water Board) contacted the Discharger on October 18, 2004 to inform BML that its discharges into the ASBS are subject to the Ocean Plan waste discharge prohibition. On January 31, 2005, the Discharger applied for Exception to the California Ocean Plan for discharge into the Bodega ASBS. An Initial Study and Mitigated Negative Declaration (IS/MND) was circulated for public review, and on September 18, 2007, the State Water Board approved this Exception and the Mitigated Negative Declaration with Resolution No. 2007-0058.

The facility also discharges once-through freshwater at Discharge Point 002 to a groundwater recharge area. BML utilizes freshwater produced from a well on University property in its Salmon Research Facility. With a salinity of 3,000 mg/L, the well water does not meet potable standards. The well water is first filtered using two sequential gravel beds and then distributed to Salmon Sheds I and II via open pressure lines. Within Salmon Shed I, the water is directed to three settling tanks, and then to the pumphouse. Within the Salmon Shed I pumphouse there are three pumps. Pump I water passes through two 30 micron pleated cartridge filters and a chiller, and is rerouted back to the settling tanks or directly to Salmon Shed I tanks. Pump II water is filtered through two pleated cartridge filters and re-routed back to the settling tanks or directly to Salmon Shed I tanks. Pump III` water is filtered through one cartridge filter prior to use in the pathology lab. Salmon Shed I water is currently flow-through but can be recirculated. Salmon Shed II freshwater is delivered from the gravel beds to an underground tank before being pumped through filter canisters without filters, unless the water appears murky, in which case filters are used. Salmon Shed II is drained to a small settlement catch basin before being recirculated, at not less than 15 gpm makeup. Waste freshwater is discharged to a groundwater recharge area, Discharge Point 002, in the sand dunes adjacent to the laboratory. The freshwater discharge to groundwater is subject to Waste Discharge Requirements (WDRs) in this Order, but is not regulated under the NPDES program.

At times, a portion of the freshwater flow is mixed with seawater to create waters with varying salinities for the Salmon Research Facility, and this brackish water is discharged with the waste seawater effluent. When salmon are held in the Fish Pathology Lab in low salinity water, the effluent must pass through the chlorination/dechlorination system, and can contribute up to 4% of the seawater discharge.

The UCD/BML Housing Enclave is located approximately one mile from the laboratory, and includes a visiting scientist lodge and two dormitories, providing a total of 63 beds plus

a bunkhouse. Domestic wastewater from the Housing Enclave and the laboratory is treated using septic tank-leachfield systems, and is not regulated by this Order. 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 USEPA and chapter 5.5, division 7 of the California Water Code (commencing with section 13370). It shall serve as an 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).

The CWA authorizes the USEPA to permit a state to serve as the NPDES permitting authority in lieu of the USEPA. The State of California has an in-lieu authority of the NPDES program. The State Water Board entered into a Memorandum of Agreement with the USEPA on September 22, 1989, to administer the NPDES program governing discharges to waters of the United States. The Porter-Cologne Water Quality Control Act authorizes the State Water Board, through the Regional Water Board, to regulate and control the discharge of pollutants to waters of the state.

Storm water discharges that the USEPA or the state determines are contributing to water quality impairment or are a significant contributor of pollutants to waters of the United States are required to obtain permit coverage. Discharges of storm water from this facility may impact an Area of Special Biological Significance and therefore are determined to be a significant source of pollutants and hereby designated for coverage under the NPDES storm water program. This Order serves as an NPDES permit for storm water discharges from this facility to surface waters and contains specific requirements for monitoring and control of storm water discharges.

D. Background and Rationale for Requirements. The Regional Water Board developed the requirements in this Order based on information submitted as part of the application, through monitoring and reporting programs, and other available information. The Fact Sheet (Attachment F), which contains background information and rationale for Order requirements, is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments A through E are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). Under Water Code section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code sections 21100 - 21177. As discussed in Section III.B. of the Fact Sheet, however, a CEQA analysis was completed for purposes of the State Water Board's decision regarding this Discharger's points of discharge to the Bodega ASBS.

The issuance of waste discharge requirements for the discharge of once-through freshwater at Discharge Point 002 is not covered by an exemption from the provisions of CEQA under Water Code section 13389. Nonetheless, the waste discharge requirements for Discharge Point 002 are exempt from under California Code of Regulations section

15301, which exempts from the requirements of CEQA the permitting of an existing facility where there is negligible expansion of use.

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. Discharges to surface waters 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 North Coast Region* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for the Pacific Ocean and other receiving waters addressed through the plan. In addition, the Basin Plan implements 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. With total dissolved solids concentrations much greater than 3,000 mg/L, ocean waters meet an exception to State Water Board Resolution No. 88-63; and therefore, the "municipal or domestic supply" designation is not applicable to the ocean receiving water for this Discharger. Beneficial uses applicable to receiving waters from the Bodega Marine Lab are described in Table 5, below.

Table 5. Basin Plan Beneficial Uses

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

Discharge Point	Receiving Water	Beneficial Use(s)
001, 016	Pacific Ocean	Existing: • Navigation (NAV) • Water Contact Recreation (REC-1) • Non-Contact Water Recreation (REC-2) • Commercial and Sport Fishing (COMM) • Area of Special Biological Significance (ASBS) • Wildlife Habitat (WILD) • Rare, Threatened or Endangered Species (RARE) • Migration of Aquatic Organisms (MIGR) • Spawning, Reproduction, and/or Early Development (SPWN) • Shellfish Harvesting (SHELL) • Marine Habitat (MAR) • Aquaculture (AQUA) Potential: • Industrial Service Supply (IND) • Industrial Process Supply (PRO)
002	Ground Water	Existing: • Municipal and Domestic Supply (MUN) • Agricultural Supply (AGR) • Industrial Service Supply (IND) • Native American Culture (CUL) Potential: • Aquaculture (AQUA) • Industrial Process Supply (PRO)
003, 004	Freshwater Marsh	Existing: • Wetland Habitat (WET) Potential: • Municipal and domestic water supply (MUN) • Agricultural Supply (AGR) • Industrial Service Supply (IND) • Ground Water Recharge (GWR) • Freshwater Replenishment (FRESH) • Navigation (NAV) • Water Contact Recreation (REC-1) • Non-contact Water Recreation (REC-2) • Commercial and Sport Fishing (COMM) • Warm Freshwater Habitat (WARM) • Cold Freshwater Habitat (COLD) • Wildlife Habitat (WILD) • Preservation or Rare, Threatened or Endangered Species (RARE) • Migration of Aquatic Organisms (MIGR) • Spawning, Reproduction and/or Early Development (SPWN) • Shellfish Harvesting (SHELL) • Estuarine Habitat (EST) • Aquaculture (AQUA) • Native American Culture (CUL) • Flood Peak Attenuation/Flood Water Storage (FLD) • Water Quality Enhancement (WQE).

Requirements of this Order implement the Basin Plan.
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 coastal waters. Requirements of this Order implement the Thermal Plan.

I. California Ocean Plan. The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California*, California Ocean Plan (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005 and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the Pacific Ocean. The Ocean Plan identifies the beneficial uses of ocean waters of the State to be protected as summarized below:

Table 6. Receiving Water Beneficial Uses Established by the Ocean Plan

Discharge Point	Receiving Water	Beneficial Uses
001, 016	Pacific Ocean	• Water Contact and Non-Contact Recreation, including Aesthetic Enjoyment • Navigation • Commercial and Sport Fishing • Rare and Endangered Species • Marine Habitat • Shellfish Harvesting • Mariculture • Fish Migration • Fish Spawning • Preservation of Designated Areas of Special Biological Significance (ASBS)

In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Requirements of this Order implement the Ocean Plan.

J. 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.

K. 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 suspended solids, settleable solids, and total chlorine residual, and 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. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. These limitations are not more stringent than required by the CWA to protect beneficial uses established in the Basin Plan.

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. The scientific procedures for calculating the individual water quality-based effluent limitations are based on the Ocean Plan, which was approved by USEPA on February 14, 2006. 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.

L. 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 provisions of section 131.12 and State Water Board Resolution No. 68-16.

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

N. Endangered Species Act. This Order does not authorize any act that can result 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.

O. 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 authorize 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.

P. 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 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.

Q. Provisions and Requirements Implementing State Law. The provisions/requirements in subsections IV. B and C, and V. B. of this Order are included to implement state law only. These provisions/requirements are not required or authorized under the federal CWA; consequently, violations of these provisions/requirements are not subject to the enforcement remedies that are available for NPDES violations but are subject to enforcement remedies under the Porter-Cologne Water Quality Control Act.

R. 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.

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

THEREFORE, IT IS HEREBY ORDERED, that this Order supercedes Order No. R1-2000-23 except for enforcement purposes, and, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal CWA and regulations and guidelines adopted thereunder, the Discharger shall comply with the requirements in this Order.

III. DISCHARGE PROHIBITIONS

A. The discharge of any waste disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.

B. The discharge of any waste at any point not described in Finding II.B is prohibited.

C. Creation of pollution, contamination, or nuisance, as defined by Section 13050 of the California Water Code is prohibited.

D. The discharge of exotic organisms (non-endemic, non-naturalized plants, animals and microorganisms, including gametes, spores, larvae, and parts of such organisms) is prohibited.

E. The discharge of waste to land that is not under the control of the Discharger is prohibited, except as authorized under Section VI. C. 6. c (Solids Disposal).

F. The discharge of waste resulting from cleaning activities is prohibited.

G. The discharge of waste containing detectable levels of chemicals used for the treatment and control of disease, other than salt (NaCl), is prohibited.

H. The discharge of constituents to the Ocean at levels exceeding the water quality objectives established by Table B of the Ocean Plan (2005) is prohibited.

I. The discharge rate from the seawater system shall not exceed 1.5 mgd.

J. Discharges of non-storm water facility runoff to the ocean (i.e., any discharge of runoff from the facility that reaches the ocean and that is not composed entirely of storm water), except those associated with the waste seawater system and emergency fire fighting, are prohibited.

IV. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

A. Effluent Limitations – Discharge Point 001

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).

Table 7. Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	6-Month Median
Total Suspended Solids (TSS)	mg/L	[a]	[a]	[a]	---	---
Settleable Solids	mL/L-hr	[a]	[a]	[a]	---	---
pH	s.u.	Not less than 6.0 nor greater than 9.0				
Total Residual Chlorine	mg/L	Non Detect [b]				
Cadmium	µg/L	---	---	4.0	10	1.0
Copper	µg/L	---	---	12	30	3.0
Silver	µg/L	---	---	2.8	7.0	0.7

[a] The discharge shall not contain concentrations of suspended and settleable solids higher than those found in the influent and shall not cause nuisance or adversely affect beneficial uses.

[b] As defined in the Monitoring and Reporting Program

2. Interim Effluent Limitations
   Not applicable.

B. Land Discharge Specifications – Discharge Point 002

1. Water, of freshwater origin, to be discharged from the Salmon Research Facility, shall be discharged to a groundwater recharge area in the sand dunes adjacent to the laboratory, and not to adjacent marsh / wetlands areas or to the Ocean.
2. The Discharger shall maintain compliance with the following effluent limitations at Discharge Point 002, with compliance measured at Monitoring Location EFF-002 as described in the attached Monitoring and Reporting Program (MRP).

Table 8. Effluent Limitations – Discharge Point 002

Parameter	Units	Effluent Limitations	
		Average Monthly	Maximum Daily
Total Suspended Solids (TSS)	mg/L	8 [a]	15 [a]
Settleable Solids	mL/L-hr	0.1 [a]	0.2 [a]
pH	standard units	Not less than 6.5 nor greater than 8.5	
Salinity [b]	mg/L	---	[a]

[a] Limitations reflect a net increase above influent concentrations.
[b] The salinity limitation at Eff-002 is in effect only during months that smoltification is occurring in the Salmon Research Facility or during months when BML is adjusting salinity in its freshwater system.

C. Reclamation Specifications

Not Applicable

D. Storm Water Specifications

This Order does not establish numeric effluent limitations for Discharge Points 016, 003 or 004. Instead, the Discharger is required to develop and implement a Storm Water Management Plan (SWMP), which must include best management practices (BMPs) that eliminate or reduce the presence of pollutants in storm water runoff to the technology-based standard of Maximum Extent Practicable (MEP) to protect water quality. Requirements for the development of a SWMP are described in section VI.C.6.a of the Order.

V. RECEIVING WATER LIMITATIONS

A. Surface Water Limitations

The following receiving water limitations are based on water quality objectives established by the Ocean Plan, State Water Resources Control Board Resolution No. 2007-0058, and the Basin Plan and are a required part of this Order. Compliance with water quality objectives contained in the Ocean Plan and Resolution No. 2007-0058 shall be determined from samples collected at stations representative of the area within the waste field where initial dilution is completed; and for natural / background water quality, for constituents other than indicator bacteria, samples shall be collected at the reference station in the Ocean near Mussel Point. In situations where water quality objectives from the Ocean Plan and from Resolution No. 2007-0058 may both be applicable, the more

stringent water quality objective shall apply. Compliance with other water quality objectives established in the Basin Plan shall be determined by appropriate receiving water monitoring when evidence suggests that the storm water discharges to the freshwater recharge area have the reasonable potential to cause or contribute to an exceedance of applicable water quality objectives.

State Water Resources Control Board Resolution No. 2007-0058

1. Natural water quality conditions in receiving waters, seaward of the surf zone, shall not be altered as a result of discharges from the facility. The surf zone is defined as the area between the breaking waves and the shoreline at any one time. Natural water quality shall be defined by the North Coast Regional Water Board staff, in consultation with the State Water Board's Division of Water Quality.

Ocean Plan

1. Bacterial Characteristics
   a. Body Contact Standards
      Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone designated for water contact recreation use by the Regional Water Board, but including all kelp beds, the following bacteriological objectives shall be maintained throughout the water column.

      30-Day Geometric Mean – The following standards are based on the geometric mean of the five most recent samples from each receiving water monitoring location.
      i. Total coliform density shall not exceed 1,000 per 100 ml;
      ii. Fecal coliform density shall not exceed 200 per 100 mL; and
      iii. Enterococcus density shall not exceed 35 per 100 mL.

      Single Sample maximum;
      i. Total coliform density shall not exceed 10,000 per 100 ml;
      ii. Fecal coliform density shall not exceed 400 per 100 mL; and
      iii. Enterococcus density shall not exceed 104 per 100 mL.
      iv. Total coliform density shall not exceed 1,000 per 100 mL when the fecal coliform to total coliform ratio exceeds 0.1

   b. Shellfish Harvesting
      At all areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the following bacteriological objectives shall be maintained throughout the water column:
      i. The median total coliform density shall not exceed 70 organisms per 100 mLs, and in not more than 10 percent of samples shall coliform density exceed 230 organisms per 100 mLs.

2. Physical Characteristics
   a. Floating particulates and grease and oil shall not be visible.

b. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.
c. Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.
d. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded.

3. Chemical Characteristics
   a. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally as a result of the discharge of oxygen demanding waste material.
   b. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.
   c. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.
   d. The concentration of substances set forth in Chapter IV, Table B of the Ocean Plan in marine sediments shall not be increased to levels that would degrade indigenous biota.
   e. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.
   f. Nutrient levels shall not cause objectionable aquatic growths or degrade indigenous biota.
   g. Discharges shall not cause exceedances of water quality objectives for ocean waters of the State established in Table B of the Ocean Plan.
   h. Discharge of radioactive waste shall not degrade marine life.

4. Biological Characteristics
   a. Marine communities, including vertebrate, invertebrate and plant species, shall not be degraded.
   b. The natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption shall not be altered.
   c. The concentration of organic materials in fish, shellfish, or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

5. General Standards
   a. The discharge shall not cause a violation of any applicable water quality standard for the receiving waters adopted by the Regional Water Board or the State Water Board as required by the Clean Water Act and regulations adopted thereunder.

   b. The discharge shall be essentially free of:
      i. Material that is floatable or will become floatable upon discharge.
      ii. Settleable material or substances that may form sediments that will degrade benthic communities or other aquatic life.

iii. Substances that will accumulate to toxic levels in marine waters, sediments or biota.
iv. Substances that significantly decrease natural light to benthic communities and other marine life.
v. Material that results in aesthetically undesirable discoloration of the ocean surface.

c. Waste effluent shall be discharged in a manner that provides sufficient initial dilution to minimize the concentrations of substances not removed in the treatment.

d. Location of waste discharges must be determined after a detailed assessment of the oceanographic characteristics and current patterns to assure that:
i. Pathogenic organisms and viruses are not present in areas where shellfish are harvested for human consumption or in areas used for swimming or other body contact sports.
ii. Natural water quality conditions are not altered in areas designated as being of special biological significance.
iii. Maximum protection is provided to the marine environment.
iv. The discharge does not adversely affect recreational beneficial uses such as surfing and beach walking.

Basin Plan

1. The waste discharge shall not cause the dissolved oxygen concentration of the receiving waters to be depressed below 7.0 mg/l. In the event that the receiving waters are determined to have dissolved oxygen concentration of less than 7.0 mg/l, the discharge shall not depress the dissolved oxygen concentration below the existing level.

2. The discharge shall not cause the pH of the receiving waters to be depressed below 6.5 nor raised above 8.5. Within this range, the discharge shall not cause the pH of the receiving waters to be changed at any time more than 0.5 units from that which occurs naturally. If the pH of the receiving water is less than 6.5, the discharge shall not cause a further depression of the pH of the receiving water. If the pH of the receiving water is greater than 8.5, the discharge shall not cause a further increase in the pH of the receiving water.

3. The discharge shall not cause the turbidity of the receiving waters to be increased more than 20 percent above naturally occurring background levels.

4. The discharge shall not cause the receiving waters to contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

5. The discharge shall not cause the receiving waters to contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.

6. The discharge shall not cause coloration of the receiving waters that causes nuisance or adversely affects beneficial uses.

7. The discharge shall not cause bottom deposits in the receiving waters to the extent that such deposits cause nuisance or adversely affect beneficial uses.

8. The discharge shall not cause or contribute to the receiving waters concentrations of biostimulants that promote objectionable aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses of the receiving waters.

9. The discharge shall not cause the receiving waters to contain 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 shall be determined according to General Provision K.24 and General Provision K.25.

10. The discharge shall not alter the natural temperature of the receiving waters.

11. The discharge shall not cause an individual pesticide or combination of pesticides to be present in concentrations that adversely affect beneficial uses. There shall be no bioaccumulation of pesticide concentrations found in bottom sediments or aquatic life as a result of the discharge.

    The discharge shall not cause the receiving waters to contain concentrations of pesticides in excess of the limiting concentrations set forth in Table 3-2 of the Basin Plan.

12. The discharge shall not cause the receiving waters to contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

13. The discharge shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board as required by the CWA, and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Water Board will revise and modify this Order in accordance with such more stringent standards.

14. The discharge shall not cause concentrations of chemical constituents to occur in excess of limits specified in Table 3-2 of the Basin Plan.

B. Groundwater Limitations

Discharges and other activities at the facility shall not cause exceedance/deviation from the following water quality objectives for groundwater established by the Basin Plan.

1. Ground water shall not contain taste or odor producing substances in concentrations that adversely affect beneficial uses.

2. Ground water used for domestic or municipal supply shall possess a median concentration of less than 1.1 MPN/100 mL of coliform organisms over any 7-day period, or less than one colony per 100 mL.
3. Ground water used for domestic or municipal supply shall not contain concentrations of radionuclides in excess of the maximum contaminant levels established by the Department of Health Services in title 22 of the California Code of Regulations, sections 64442 – 64443.
4. Ground water used for domestic or municipal supply shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels established by the Department of Health Services in title 22 of the California Code of Regulations section 64431 (Table 64431-A) for inorganic constituents and section 64444 (Table 64444-A) for organic constituents, as listed in Table 3-2 of the Basin Plan.

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. 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.
   b. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, interim or final effluent limitation, reclamation specification, or receiving water limitation of this Order, the Discharger shall notify the Regional Water Board orally[2] 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.
   c. Prior to making any change in the point of discharge, place of use, or purpose of use of treated wastewater that results in a decrease of flow in any portion of a watercourse, the Discharger must file a petition with the State Water Board, Division of Water Rights, and receive approval for such a change. (Water Code section 1211.)

[2] Oral notification to Regional Water Board Staff shall take place in person or by phone. After business hours, oral contact must be made by contacting the State Department of Emergency Services or the Regional water Board spill officer.

B. Monitoring and Reporting Program (MRP) Requirements

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

C. Special Provisions

1. Reopener Provisions

a. Standard Revisions. If applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments thereto, the Regional Water Board may reopen this Order and make modifications in accordance with such revised standards.

b. Reasonable Potential. This Order may be reopened for modification to include an effluent limitation if monitoring establishes that the discharge causes, has the reasonable potential to cause, or contributes to an excursion above an Ocean Plan Table B water quality objective.

2. Special Studies, Technical Reports and Additional Monitoring Requirements

a. Toxicity Reduction Requirements

i. **Whole Effluent Toxicity.** The MRP of this Order requires routine monitoring for whole effluent acute and chronic toxicity at Monitoring Locations EFF-001, EFF-016, RSW-001, and REF-001, which are described in Table E-1 of the MRP, to determine compliance with the Ocean Plan's water quality objective for toxicity. As established by the MRP, if the results of acute or chronic toxicity tests show a significant difference from the control at 100 percent effluent or receiving water, the Discharger shall conduct accelerated toxicity monitoring. Results of accelerated toxicity monitoring will indicate a need to conduct a Toxicity Reduction Evaluation (TRE), if toxicity persists; or it will indicate that a return to routine toxicity monitoring is justified because persistent toxicity has not been identified by accelerated monitoring. TREs shall be conducted in accordance with the TRE workplan prepared by the Discharger pursuant to Section VI. C. 2. a. ii. of this Order, below.

ii. **Toxicity Reduction Evaluations (TRE) workplan.** The Discharger shall prepare and submit to the Regional Water Board Executive Officer a TRE workplan within **180 days of the effective date of this Order**. This plan shall be reviewed and updated as necessary in order to remain current and applicable to the discharge and discharge facilities. The workplan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include at least the following items:

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

(b) A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices.

(c) If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor).

iii. **Toxicity Reduction Evaluations (TRE).** The TRE shall be conducted in accordance with the following:

(a) The TRE shall be initiated within 30 days of the date of completion of the accelerated monitoring test, required by Section V of the MRP, that exceeds either the acute or chronic toxicity "trigger."
(b) The TRE shall be conducted in accordance with the Discharger's workplan.
(c) The TRE shall be in accordance with current technical guidance and reference material including, at a minimum, the USEPA manual EPA/833B-99/002.
(d) The TRE may end at any stage if, through monitoring results, it is determined that there is no longer consistent toxicity.
(e) The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. As guidance, the Discharger shall use the USEPA acute and chronic manuals, EPA/600/6-91/005F (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III).
(f) As toxic substances are identified or characterized, the Discharger shall continue the TRE by determining the source(s) and evaluating alternative strategies for reducing or eliminating the substances from the discharge. All reasonable steps shall be taken to reduce toxicity to levels consistent with acute or chronic toxicity parameters.
(g) Many recommended TRE elements may be implemented in tandem with required efforts of source control, pollution prevention, and storm water control programs. TRE efforts should be coordinated with such efforts. To prevent duplication of efforts, evidence of complying with requirements of recommendations of such programs may be acceptable to comply with requirements of the TRE.
(h) The Regional Water Board recognizes that chronic toxicity may be episodic and identification of a reduction of sources of chronic toxicity may not be successful in all cases. Consideration of enforcement action by the Regional Water Board will be based in part on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

b. Survey of Intertidal Benthic Marine Life

At least once during the five year term of this Order, a quantitative Survey of Intertidal Benthic Marine Life shall be performed near the point of discharge to the ocean and at a reference site. The Regional Water Board, in consultation with the State Water Board's Division of Water Quality, must approve the survey design. The results of the survey must be completed and submitted to the State and Regional Water Boards within at least six months before the end of the permit term. Data from other intertidal and subtidal surveys performed by other researchers in the Bodega ASBS must be included with the Discharger's submittal to the State and Regional Water Boards.

c. Bioaccumulations Study

Once during the five year term of this Order, a Bioaccumulation Study using resident California mussels (*Mytilus californianus*) shall be conducted to determine the concentrations of metals at near field (outfall station) and far field (Mussel Point station) monitoring stations. The Regional Water Board, in consultation with the State Water Board's Division of Water Quality, must

approve the study design. The survey must be completed and results submitted to the Regional Water Board at least six months prior to the permit expiration date. Based on the study results, or on participation in an appropriate regional or state-wide ASBS monitoring effort, the Regional Water Board, in consultation with the State Water Board's Division of Water Quality, may adjust the study design in subsequent permits, or add additional test organisms.

d. Sediment Monitoring

Once annually, in accordance with section IX. A of the MRP, the Discharger shall monitor the subtidal sediment in Horseshoe Cove for the Ocean Plan Table B constituents. For sediment toxicity testing, an acute toxicity test using the amphipod *Eohaustorius estuarius* must be performed during the first year of the permit term. Based on the first year toxicity monitoring results, the Regional Water Board will determine specific constituents in the sediment to be tested during the remainder of each permit cycle, except that sediment must be monitored annually for acute toxicity. Participation in a collaborative regional or statewide ASBS monitoring effort is encouraged. After the first year of monitoring results are reviewed, the Regional Water Board, in conjunction with the State Water Board's Division of Water Quality, may modify sediment, receiving water, and bioaccumulation monitoring requirements that are established by this Order, based on the Discharger's participation in an appropriate regional or statewide monitoring program.

e. Program for Prevention of Biological Pollutants

The Discharger shall implement a Program for Prevention of Biological Pollutants (non-native invasive species) in consultation with the California Department of Fish and Game Marine Resources Division. This program must be submitted to the State and the Regional Water Board no later than September 18, 2009 (two years after the approval date of State Water Board Resolution No. 2007-0058). Any non-native species found in the Bodega ASBS must be reported to the State and Regional Water Boards, and the California Department of Fish and Game.

3. Best Management Practices and Pollution Prevention

a. **Pollutant Minimization Program (PMP)**

The Discharger shall develop and conduct a PMP as further described below when there is evidence (e.g., sample results reported as "Detected, but Not Quantified"(DNQ) when the effluent limitation is less than the Method Detection Limit (MDL), sample results from analytical methods more sensitive than those methods required by this Order, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organism tissue sampling) that a pollutant is present in the effluent above an effluent limitation and either:

i. The concentration of the pollutant is reported as DNQ and the effluent limitation is less than the reported Minimum Level (ML);

ii. The concentration of the pollutant is reported as "Not Detected" (ND) and the effluent limitation is less than the MDL, using definitions described in Attachment A and reporting protocols described in MRP section X.B.4.

The PMP shall include, but not be limited to, the following actions and submittals acceptable to the Regional Water Board:

i. An annual review and semi-annual monitoring of potential sources of the reportable pollutant(s), which may include fish tissue monitoring and other bio-uptake sampling;
ii. Quarterly monitoring for the reportable pollutant(s) in the influent to the wastewater treatment system;
iii. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable pollutant(s) in the effluent at or below the effluent limitation;
iv. Implementation of appropriate cost-effective control measures for the reportable pollutant(s), consistent with the control strategy; and
v. An annual status report that shall be sent to the Regional Water Board including:
(a) All PMP monitoring results for the previous year;
(b) A list of potential sources of the reportable pollutant(s);
(c) A summary of all actions undertaken pursuant to the control strategy; and
(d) A description of actions to be taken in the following year.

4. **Construction, Operation and Maintenance Specifications**
The Discharger shall notify the Regional Water Board 180 days prior to any construction activity that could result in any new or altered discharge or habitat modification in the Bodega ASBS. In accordance with Section III. E. 2 of the Ocean Plan, the Discharger must receive approval from and comply with any conditions regarding such a discharge that are imposed by the Regional Water Board, prior to performing any significant modification, re-building, or renovation of the water front facilities, including the boat launch.
5. **Special Provisions for Municipal Facilities (POTWs Only)**
Not applicable.
6. **Other Special Provisions**
   a. **Storm Water Management Plan (SWMP).** The Discharger shall comply with the monitoring and reporting requirements regarding the discharge of storm water at Discharge Point 016, as required by Section IV. C of the MRP (Attachment E). The Discharger shall also develop, submit to the Regional Water Board, and implement a SWMP for Discharge Points 003, 004, and 016 as required herein, to implement requirements of sections VI.B and VI.C of the MRP (Attachment E).
      i. The SWMP must describe measures by which non-storm water runoff has been eliminated from discharges of storm water to the ASBS and to the freshwater marsh, how these measures will be maintained over time, and how these measures are monitored and documented.
      ii. The SWMP must include a map showing the surface areas that contribute to storm water runoff from the facility, including areas of sheet runoff, and describing any structural Best Management Practices (BMPs) that are employed. The map must also show storm water conveyances relative to other features of the facility such as the laboratory seawater system and its points of discharge, services areas, sewage treatment systems, and waste and hazardous materials storage areas. The SWMP must include a procedure for updating the SWMP, including the map, when significant changes are made to the facility or its operation.

iii. The SWMP shall address storm water discharges, including how pollutants have been and will be reduced in storm water runoff into the ASBS and into the freshwater marsh through the implementation of BMPs. The SWMP must describe BMPs currently employed and those planned (including those for construction activities) and an implementation schedule. BMPs and implementation schedules must be designed to ensure protection of natural water quality conditions in the receiving water through either a reduction of flows from impervious surfaces, or a reduction in pollutants, or some combination thereof. BMPs shall describe measures taken to prevent runoff of herbicides and pesticides from the Bodega Marine Lab or the Reserve into the ASBS or into the freshwater marsh. Implementation schedules shall be developed to assure that BMPs are implemented within one year of the approval date of the SWMP by the Regional Water Board.

iv. If results of receiving water monitoring in Horseshoe Cove, as required by section IV. C of the Monitoring and Reporting Program, indicate that storm water runoff is causing or contributing to an alteration of natural water quality conditions in the ASBS, as measured at the Mussel Point monitoring station, the Discharger shall submit a report to the Regional Water Board within 30 days of receiving such results. The report shall identify those constituents in storm water that are causing alteration of natural water quality or exceedances of applicable water quality objectives. It shall describe BMPs that are currently being implemented, BMPs that are described as planned by the SWMP but not yet implemented, as well as additional BMPs that will be added to the SWMP to address the deterioration of water quality. The report shall include a new or modified implementation schedule and may require modifications pursuant to its review by the Regional Water Board. Within 30 days following approval of the report by the Regional Water Board, the Discharger shall revise its SWMP to incorporate any new or modified BMPs that have been and will be implemented, the implementation schedule, and any additional monitoring required. If the Discharger has complied with the procedures described above and is implementing the revised SWMP, then the Discharger does not need to repeat the same procedure for continuing or recurring exceedances of the same constituent.

b. Waterfront and Marine Operations Non-Point Source Management Plan. The Discharger shall prepare and implement a Waterfront and Marine Operations Non-Point Source Management Plan to address the prohibition against discharges of pollutants from non-point sources, established by section III. H of the Order. The plan shall describe appropriate management practices to address non-point discharges and shall address the current prohibition against launching of motorized vessels, restrictions on motor vehicles, and other appropriate management measures, including those described in Section V of the State's Nonpoint Source Program Five-Year Implementation Plan (December 2003) for marinas and recreational boating, as applicable. The Regional Water Board, in consultation with the State Water Board's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program, shall review

the plan. The Waterfront and Marine Operations Non-Point Source Management Plan must be implemented within six months of its approval.

c. **Solids Disposal.** Screenings, sludge, and other solids removed from liquid wastes shall be disposed of a at a legal point of disposal, and in accordance with the provisions of Title 23, division 3, chapter 15 of the California Code of Regulations.

7. Compliance Schedules

This Order does not establish interim effluent limitations and schedules of compliance with final numeric effluent limitations.

VII. COMPLIANCE DETERMINATION

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

A. General.

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

B. Multiple Sample Data.

When determining compliance with an AMEL**,** AWEL, or MDEL for priority pollutants and more than one sample result is available, the Discharger shall compute the arithmetic mean unless the data set contains one or more reported determinations of "Detected, but Not Quantified" (DNQ) or "Not Detected" (ND). In those cases, the Discharger shall compute the median in place of the arithmetic mean in accordance with the following procedure:

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

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. For purposes of Mandatory Minimum Penalties, a violation of an AMEL will be considered as one violation.

Depending on the nature of the violation, the Regional Water Board may, however, pursue discretionary civil penalties for the remaining days of violation. 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. For purposes of Mandatory Minimum Penalties, a violation of an AWEL will be considered as one violation. Depending on the nature of the violation, the Regional Water Board may, however, pursue discretionary civil penalties for the remaining days of violation. 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 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 numerically 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).

ATTACHMENT A – DEFINITIONS

Acute Toxicity

a. Acute Toxicity (TUa)
Expressed in Toxic Units Acute (TUa)

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

b. Lethal Concentration 50% (LC 50)
LC 50 (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard marine test species as specified in Ocean Plan Appendix III. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC 50 may be determined after the test samples are adjusted to remove the influence of those substances.
When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$TUa = \frac{\log (100 - S)}{1.7}$$

where:
S = percentage survival in 100% waste. If S > 99, TUa shall be reported as zero.

Areas of Special Biological Significance (ASBS)

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

Chlordane

Shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

Chronic Toxicity

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

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

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

b. No Observed Effect Level (NOEL)

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

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.

DDT

Shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

Degradation

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

Detected, but Not Quantified (DNQ)

Sample results that are less than the reported Minimum Level, but greater than or equal to the laboratory's MDL.

Dichlorobenzenes

Shall mean the sum of 1,2- and 1,3-dichlorobenzene.

Downstream Ocean Waters

Waters downstream with respect to ocean currents.

Dredged Material

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

Enclosed Bays

Indentations along the coast that enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Endosulfan

The sum of endosulfan-alpha and -beta and endosulfan sulfate.

Estuaries and Coastal Lagoons
Waters at the mouths of streams that serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams that are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

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

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

Initial Dilution
The process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.
For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.
For shallow water submerged discharges, surface discharges, and non-buoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

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

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

Kelp Beds
For purposes of the bacteriological standards of the Ocean Plan, are significant aggregations of marine algae of the genera Macrocystis and Nereocystis. Kelp beds include the total foliage canopy of Macrocystis and Nereocystis plants throughout the water column.

Mariculture
The culture of plants and animals in marine waters independent of any pollution source.

Material
(a) In common usage: (1) the substance or substances of which a thing is made or composed (2) substantial; (b) For purposes of the Ocean Plan relating to waste disposal, dredging and the disposal of dredged material and fill, MATERIAL means matter of any kind or description

which is subject to regulation as waste, or any material dredged from the navigable waters of the United States. See also, DREDGED MATERIAL.

Maximum Daily Effluent Limitation (MDEL)

The highest allowable daily discharge of a pollutant.

Method Detection Limit (MDL)

The minimum concentration of a substance that can be 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.

Minimum Level (ML)

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

Natural Light

Reduction of natural light may be determined by the Regional Water Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Water Board.

Not Detected (ND)

Those sample results less than the laboratory's MDL.

Ocean Waters

The territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the state could affect the quality of the waters of the state, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

PAHs (polynuclear aromatic hydrocarbons)

The sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

PCBs (polychlorinated biphenyls)

The sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

Pollutant Minimization Program (PMP)

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

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

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

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

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

Six-Month Median Effluent Limitation
The highest allowable moving median of all daily discharges for any 180-day period.

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

TCDD Equivalents
The sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

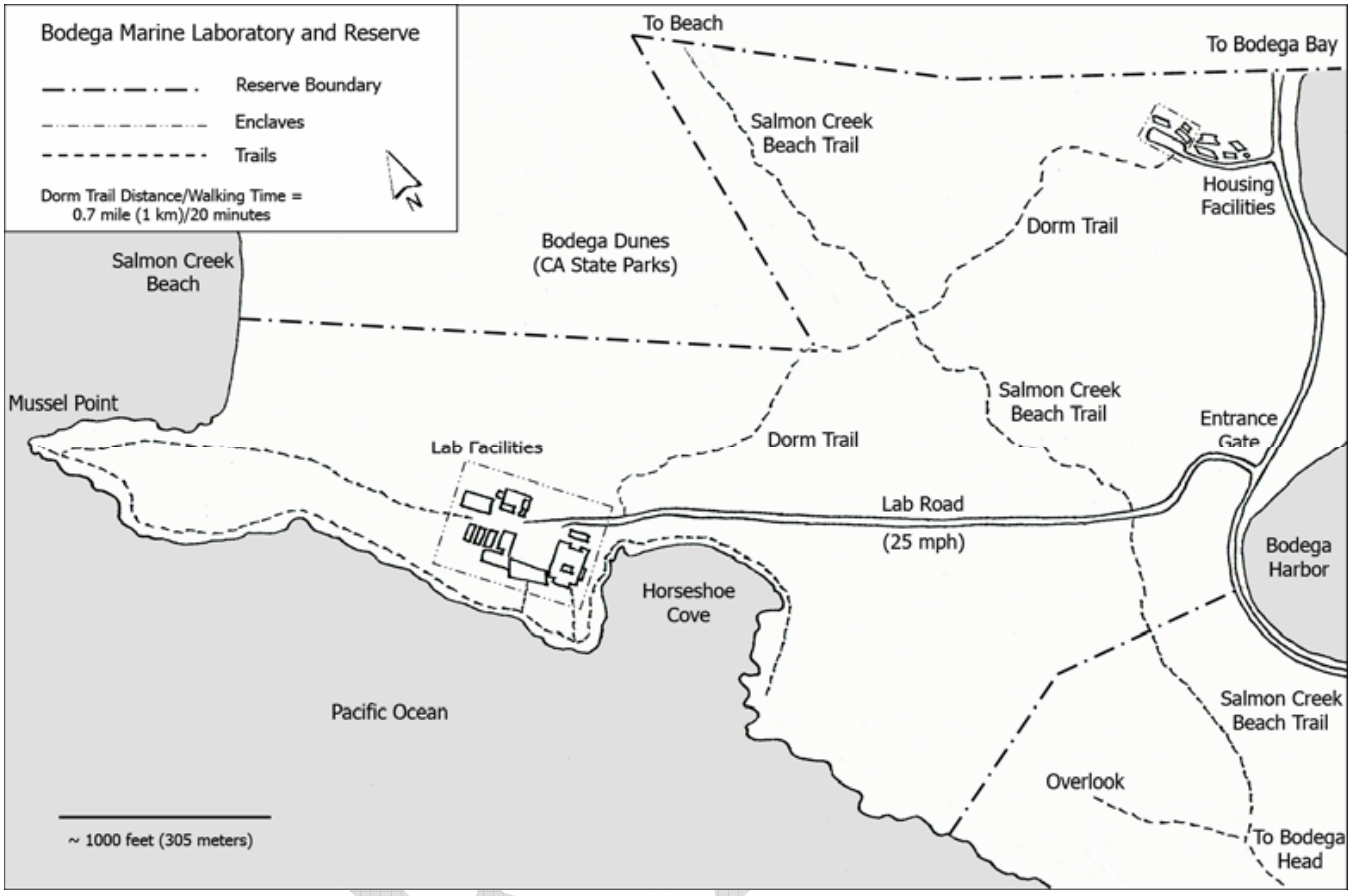
Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

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

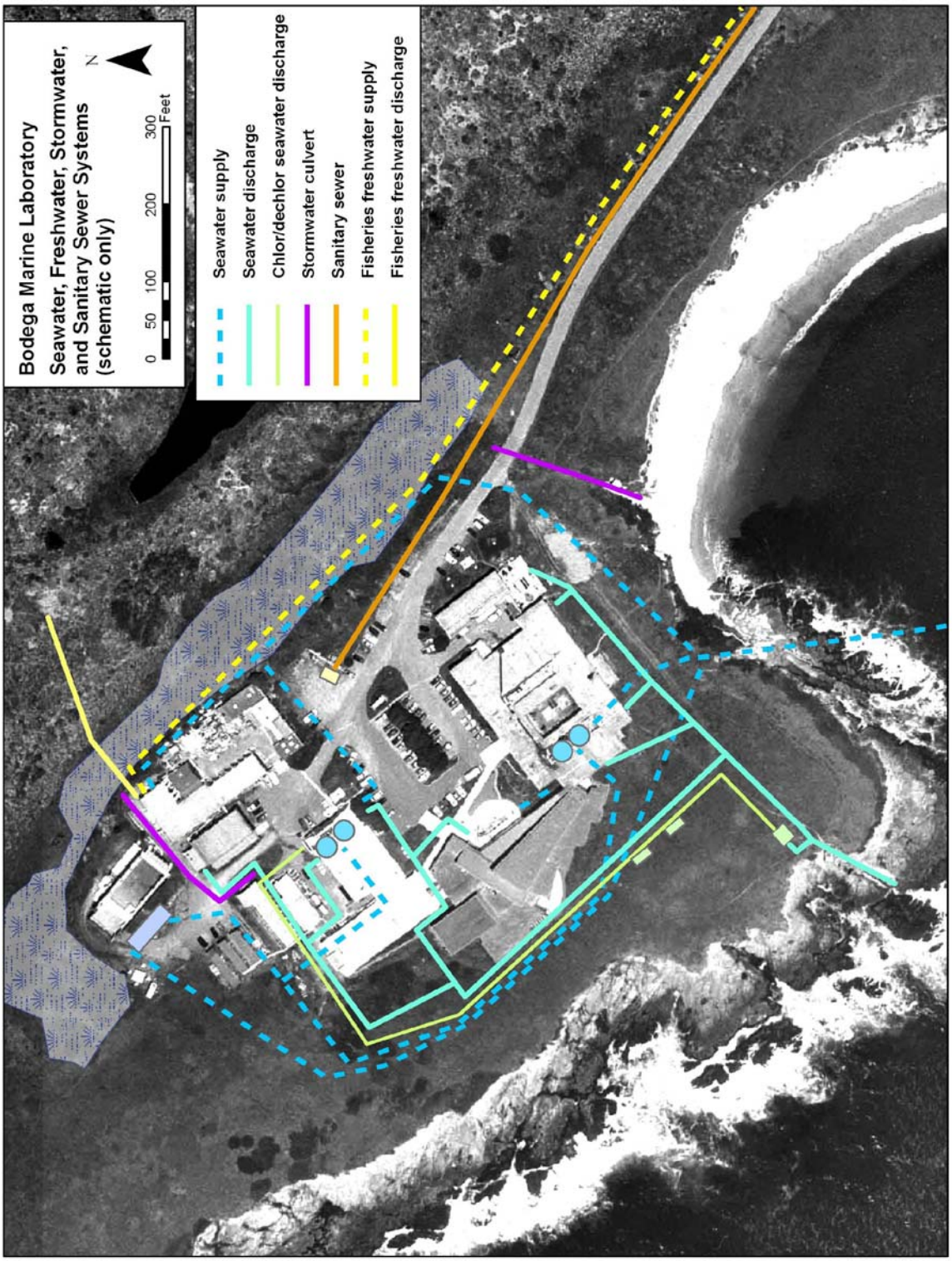
Waste
As used in the Ocean Plan, waste includes a Discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

Water Reclamation
The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

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 13301, 13308, 13350, 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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List of Tables

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. Wastewater Monitoring Provision. Composite samples may be taken by a proportional sampling device approved by the Executive Officer or by grab samples composites. In compositing grab samples, the sampling interval shall not exceed two hours.

B. Laboratories analyzing monitoring samples shall be certified by the Department of Health Services, in accordance with the provision of Water Code section 13176, and must include quality assurance/quality control data with their reports.

II. MONITORING LOCATIONS

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

Table E-1. Monitoring Station Locations

Discharge Point	Monitoring Location	Monitoring Location Description
---	INF-001	A location where representative samples of seawater can be collected prior to its introduction to the laboratory system.
---	INF-002	A location where representative samples of freshwater can be collected prior to introduction into the freshwater laboratory system.
001	EFF-001	A location where representative samples of discharges from the seawater system can be collected, following all treatment and contributions to the waste stream, including dechlorination, but prior to contact with the receiving water.
002	EFF-002	A location where representative samples of discharges from the fresh water system can be collected, following all treatment and contributions to the waste stream, but prior to actual discharge to the sand dune groundwater recharge area
003	EFF-003	A location where representative samples of storm water, discharged to the upper marsh area, can be collected before contact with the receiving water
004	EFF-004	A location where representative samples of storm water, discharged to the vicinity of the marsh outlet culvert, can be collected before contact with the receiving water
016	EFF-016	A location where representative samples of storm water, discharged from the marsh at Discharge Point 016, can be collected before contact with the receiving water.
--	RSW-001	Receiving water in Horseshoe Cove adjacent to Discharge Point 016 and immediately seaward of the surf zone.
--	REF-001	The reference station in the ocean near Mussel Point, representing background / natural water quality conditions.
--	SED-001, SED-002, etc	Subtidal sediment monitoring locations in Horseshoe Cove.

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location INF-001

1. The Discharger shall monitor intake water to the seawater system at Monitoring Location INF-001 as follows.

Table E-2. Seawater Intake Monitoring [1]

Parameter	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
Suspended Solids	mg/L	8-hr Composite	Monthly	Standard Methods
Settleable Solids	mL/L-hr	8-hr Composite	Monthly	Standard Methods
pH	s.u.	Grab	Monthly	Standard Methods

[1] Monitoring of intake water shall occur near simultaneously with monitoring of the discharge from the seawater system at Monitoring Location EFF-001.

B. Monitoring Location INF-002

1. The Discharger shall monitor intake water to the freshwater system at Monitoring Location INF-002 as follows.

Table E-3. Freshwater Intake Monitoring [1]

Parameter	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
Suspended Solids	mg/L	8-hr Composite	Monthly	Standard Methods
Settleable Solids	mL/L-hr	8-hr Composite	Monthly	Standard Methods
pH	s.u.	Grab	Monthly	Standard Methods
Salinity[2]	mg/L	8-hr Composite	Monthly	Standard Methods
Nitrate (as N)	mg/L	8-hr Composite	Monthly	Standard Methods

[1] Monitoring of intake water shall occur near simultaneously with monitoring of the discharge from the fresh water system at Monitoring Location EFF-002.

[2] Salinity monitoring is required only during period when smoltification is occurring in the Salmon Research Facility or when BML is adjusting salinity in its freshwater system.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location EFF-001

1. The Discharger shall monitor the discharge from the seawater system prior to contact with the receiving water at Monitoring Location EFF-001 as follows.

Table E-4. Effluent Monitoring, Monitoring Location EFF-001

Parameter	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
Flow	mgd	Continuous	Continuous	Meter
Suspended Solids	mg/L	8-hr Composite	Monthly	Standard Methods
Settleable Solids	mL/L-hr	8-hr Composite	Monthly	Standard Methods
Total Residual Chlorine [1]	µg/L	Continuous	Continuous	
Cadmium	µg/L	8-hr Composite	Q [2]	EPA 200.7
Copper	µg/L	8-hr Composite	Q [2]	EPA 200.7
Silver	µg/L	8-hr Composite	Q [2]	EPA 200.7
Ocean Plan Table B Pollutants [3]	µg/L	8-hr Composite	2X /Year	
Halomethanes [4]	µg/L	Grab	Monthly	EPA 624
Ammonia	mg/L N	Grab	Monthly	EPA 4500
Salinity	ppt	Grab	Monthly	Standard Methods

Parameter	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
Temperature	º F	Grab	Monthly	Standard Methods
pH	s.u.	Grab	Monthly	Standard Methods
Ocean Plan Table B Metals [5]	µg/L	8-hr Composite	2X /Year	
Chronic Toxicity[6]	TUc	Grab	2X /Year	

[1] In accordance with State Water Board Resolution No. 2007-0058, total residual chlorine (TRC) shall be monitored continuously with a reporting limit (RL) of 50 µg/L or as low as technically feasible. Alternatively, sulfite may be monitored continuously as a proxy for assuring that the discharge meets effluent limitations for TRC. Bench top TRC measurements shall also be performed at least one time per month with a minimum detection limit of 10 µg/L and an RL of 13 µg/L.

[2] Analytical results for this pollutant, generated to meet monitoring requirements for the "Ocean Plan Table B Pollutants" or the "Ocean Plan Table B Metals," will satisfy this quarterly monitoring requirement, if the analysis is performed in the appropriate quarterly period.

[3] In accordance with State Water Board Resolution No. 2007-0058, the pollutants identified in Table B of the Ocean Plan shall be monitored two times (one time during dry weather and one time during a storm event) during the first year of the permit term. Based on results of the first year of monitoring, the Regional Water Board will determine the frequency of monitoring as well as the specific Table B pollutants to be monitored thereafter; however, monitoring shall be required, at a minimum, one time per year during wet weather. All wet weather monitoring events shall coincide with monitoring required for Table B pollutants at the ocean reference station (REF-001) and at monitoring locations for storm water runoff (EFF-016) and Horseshoe Cove (RSW-001).

[4] As defined in Appendix I of the Ocean Plan (2005), halomethanes are the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

[5] In accordance with State Water Board Resolution No. 2007-0058, the Regional Water Board will determine the frequency of monitoring for the Table B pollutants following the first year of monitoring; however the 10 metals identified in Table B of the Ocean Plan (As, Cd, Cr^{+6}, Cu, Pb, Hg, Ni, Se, Ag, Zn) shall be monitored one time per year, at a minimum, following the first year of the permit term. Metals shall be analyzed by the approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry), as described in Appendix II of the Ocean Plan (2005).

[6] In accordance with State Water Board Resolution No. 2007-0058, the Regional Water Board will determine the frequency of monitoring for the Table B pollutants following the first year of monitoring; however whole effluent chronic toxicity shall be tested one time per year, at a minimum, following the first year of the permit term, in accordance with section V of this Monitoring and Reporting Program.

B. Monitoring Locations EFF-003 and EFF-004

1. The Discharger shall monitor storm water runoff to the freshwater marsh at EFF-003 and EFF-004 in accordance with the following schedule.

Table E-5. Effluent Monitoring, Monitoring Locations EFF-003 and EFF-004

Parameter	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
Total Suspended Solids	mg/L	Grab	2X/Year [1,2]	Standard Methods
pH	s.u.	Grab	2X/Year [1,2]	Standard Methods
Specific Conductance	µmhos/cm	Grab	2X/Year [1,2]	Standard Methods
Total Organic Carbon	mg/L	Grab	2X/Year [1,2]	Standard Methods

[[1] Storm water samples shall be collected during the first hour of discharge from 1) the first storm event of the wet season, and 2) at least one other storm event in the wet season. If the Discharger is unable to collect samples from the first storm event of the wet season, the Discharge shall collect an additional sample from a subsequent rain event such that no less than two storm events are sampled during any wet season and explain in the Annual Report why the first storm event was not sampled.

[2] The Discharger may conduct sample collection and visual observation more than one hour after discharge begins if the Discharger determines that the objectives of this section are will be better satisfied. The Discharger shall include an explanation in the Annual Report why sample collection and/or visual observations were conducted after the first hour of discharge.

2. The Discharger shall visually observe storm water discharges from one storm event per month during the wet season (October 1-May 30). These observations shall occur during the first hour of discharge and at all discharge locations. Visual observations are only required during daylight hours that are preceded by at least three working days without storm water discharges and that occur during scheduled facility operating hours. Visual observation shall document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and any source of pollutants.
3. The Discharger shall visually observe all drainage areas within its facility for the presence of unauthorized non-storm water discharges and their sources. Visual observations shall occur quarterly, during daylight hours, on days with no storm water discharges, and during scheduled facility operating hours. Visual observation shall document the presence of any floating and suspended material, oil and grease, discolorations, turbidity, odor, and any source of pollutants.

C. Monitoring Location EFF-016

1. The Discharger shall monitor storm water runoff at EFF-016 in accordance with the following schedule.

Table E-6. Effluent Monitoring, Monitoring Location EFF-016

Parameter	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
Flow	mgd	---	Each Storm Event	Meter or Calculation [1]
Total Coliform	MPN/100 mL	Grab	1X/Year [2]	SM 9221B [3]
Fecal Coliform	MPN/100 mL	Grab	1X/Year [2]	SM 9221C [3]
Enterococcus Bacteria	MPN/100 mL	Grab	1X/Year [2]	EPA 1600 [4]
Ocean Plan Table B Pollutants [5]	µg/L	Grab	1X/Year	

[1] In accordance with State Water Board Resolution No. 2007-0058, methods for calculating flow must be approved by the Regional Water Board.

[2] Monitoring for bacteria shall occur one time per year during a storm event and shall coincide with monitoring for bacteria in Horseshoe Cove (RSW-001).

[3] Detection methods for total and fecal coliform bacteria shall be those presented in Table 1A of 40 CFR Part 136, unless alternative methods have been approved in advance by the USEPA pursuant to 40 CFR Part 136,

[4] Detection methods for enterococcus shall be those presented in EPA publication EPA 600/4-85/076. Test Methods for *Escherichia coli* and *Enterococci* in Water By Membrane Filter Procedure or any improved method determined by the Regional Water Board to be appropriate.

[5] In accordance with State Water Board Resolution No. 2007-0058, the pollutants identified in Table B of the Ocean Plan shall be monitored one time during a storm event in the first year of the permit term. Based on results of the first year of monitoring, the Regional Water Board will determine which specific Table B pollutants shall be monitored on an annual basis thereafter. All monitoring events for the Table B pollutants at EFF-016 shall coincide with monitoring required for Table B pollutants in the seawater discharge (EFF-001), at the ocean reference station (REF-001), and at Horseshoe Cove (RSW-001). The Table B metals shall be analyzed by an approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry), as described by the Ocean Plan (2005).

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

Although effluent limitations for whole effluent toxicity (WET) are not established by the Order, WET testing of discharges and receiving water is required by this MRP to determine compliance with water quality objectives established by the Ocean Plan for acute and chronic WET. In certain circumstances, accelerated WET testing and/or a Toxicity

Reduction Evaluation (TRE) are required by the MRP when WET "triggers" are exceeded. Table E-7, below, summarizes the WET testing requirements of the MRP. Note that sediment toxicity testing requirements are addressed in section IX.A. of this MRP and not as part of the WET testing requirements.

Table E-7. Summary of WET Testing Requirements

Monitoring Location	WET Testing Requirement
EFF-001	Acute and chronic WET shall be tested 2 times in the first year of the permit term [1], and at the discretion of the Regional Water Board thereafter; however chronic WET shall be tested at least 1 time per year after the first year.
EFF-016	Acute and chronic WET shall be tested 1 time in the first year of the permit term [1], and at the discretion of the Regional Water Board thereafter.
REF-001	Acute and chronic WET shall be tested 2 times in the first year of the permit term [1], and at the discretion of the Regional Water Board thereafter.
RSW-001	Acute and chronic WET shall be tested 2 times in the first year of the permit term [1], and at the discretion of the Regional Water Board thereafter; however chronic WET shall be tested at least 1 time per year after the first year.

[1] Acute and chronic WET are constituents included in Table B of the Ocean Plan, and therefore, a requirement to monitor the "Ocean Plan Table B Pollutants" includes a monitoring requirement for acute and chronic WET.

A. Acute Toxicity Testing

1. **Test Frequency**. The Discharger shall conduct acute WET testing in accordance with the schedules established by this MRP, as summarized in Table E-6, above.
2. **Sample Type**. For 96-hour static renewal or 96-hour static non-renewal testing, the effluent samples, from Monitoring Locations EFF-001 and EFF-016, and receiving water samples, collected at REF-001 and RSW-001, shall be grab samples that are representative of the volume and quality of the discharge from the facility. For toxicity tests requiring renewals, grab samples collected on successive days are required.
3. **Test Species**. Test species for acute WET testing shall be with a marine species, either: mysid, *Mysidopsis bahia*; sheepshead minnow, *Cyprinodon variegatius*; or silverside, *Menidia* spp.
4. **Test Methods**. The presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (USEPA Report No. EPA-821-R-02-012, 5th edition or subsequent editions), or other methods approved by the Executive Officer.
5. **Test Dilutions.** All acute WET tests on effluent samples collected at Monitoring Locations EFF-001 and EFF-016 and on receiving water samples, collected at REF-001 and RSW-001, shall be conducted using 100 percent effluent and 100 percent receiving water, respectively, with control samples being laboratory synthesized water (when testing at REF-001 or RSW-001) or receiving water samples collected beyond the influence of the discharges (when testing at RSW-001).
6. **Test Failure.** If an acute toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger shall re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

7. **Accelerated Monitoring.** If the result of any acute toxicity test shows a significant difference from the control at 100 percent effluent (t-test) and the testing meets all test acceptability criteria, the Discharger shall take two more samples, one within 14 days and one within 21 days following receipt of the initial sample result. If any one of the additional samples shows a significant difference from the control at 100 percent effluent, the Discharger shall initiate a Toxicity Reduction Evaluation (TRE) in accordance with section VI. C. 2. a of the Order. If the two additional samples do not show a significant difference from the control at 100 percent effluent, and testing meets all test acceptability criteria, then a TRE will not be required. If the discharge stops before additional samples can be collected, the Discharger shall contact the Executive Officer within 21 days with a plan to demonstrate compliance with these accelerated monitoring requirements.
8. **Notification.** The Discharger shall notify the Regional Water Board in writing 14 days after the receipt of test results that show a significant difference from the control at 100 percent effluent. The notification will describe actions the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by this Order, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.
9. **Reporting**. Test results for acute toxicity tests shall be reported according to section 12 (Report Preparation) of *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* or in an equivalent format that clearly demonstrates that the Discharger is in compliance with Ocean Plan water quality objectives, and other permit requirements.

B. Chronic Toxicity Testing

The Discharger shall conduct chronic toxicity testing to demonstrate compliance with the Ocean Plan's water quality objective for toxicity. The Discharger shall meet the following chronic toxicity testing requirements:

1. **Test Frequency**. The Discharger shall conduct chronic WET testing in accordance with the schedules established by this MRP, as summarized in Table E-6, above.
2. **Sample Type.** For 96-hour static renewal or 96-hour static non-renewal testing, effluent samples, from Monitoring Locations EFF-001 and EFF-016, and receiving water samples, collected at REF-001 and RSW-001, shall be grab samples that are representative of the volume and quality of the discharge from the facility. For toxicity tests requiring renewals, grab samples collected on successive days are required.
3. **Test Species.** Critical life stage bioassay testing shall be conducted using an approved test, and test species, as described by Table III-1 of the Ocean Plan and presented below. Initial testing shall be conducted with a vertebrate, an invertebrate, and a plant species, and thereafter, monitoring can be reduced to the most sensitive species.

Table E-8. Approved Tests—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
Silverside, *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 (eds). 1998. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms. EPA/600/4-87/028. National Information Service, Springfield, VA.

4. **Test Methods.** The presence of chronic toxicity shall be estimated as specified in USEPA's Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to West Coast Marine and Estuarine Organisms (USEPA Report No. EPA/600/R-95/136, or subsequent editions).
5. **Test Dilutions.** All chronic WET tests on effluent samples, collected at Monitoring Locations EFF-001 and EFF-016, and receiving water samples collected at Monitoring Locations RSW-001 and REF-001, shall be conducted using 100 percent effluent and 100 percent receiving water, respectively. Control water shall be either receiving water collected beyond the influence of the discharge or laboratory synthesized water.
6. **Reference Toxicant.** If organisms are not cultured in-house, concurrent testing with a reference toxicant shall be conducted. Where organisms are cultured in-house, monthly reference toxicant testing is sufficient. Reference toxicant tests also shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).
7. **Test Failure.** If either the reference toxicant test or the chronic toxicity test does not meet all test acceptability criteria, as specified in the test method, the Discharger

shall re-sample and re-test as soon as possible, not to exceed 7 days following notification of test failure.

8. **Accelerated Monitoring Requirements**. If the result of any chronic toxicity test exceeds a monitoring "trigger" of 1.0 TUc (the water quality objective for chronic toxicity established by the Ocean Plan), and the testing meets all test acceptability criteria, the Discharger shall initiate accelerated monitoring. Accelerated monitoring shall consist of four additional samples – with one test conducted approximately every week over a four week period. Testing shall commence within 14 days of receipt of initial sample results which indicated an exceedance of the chronic toxicity "trigger." If the discharge will cease before the additional samples can be collected, the Discharger shall contact the Executive Officer within 21 days with a plan to address elevated levels of chronic toxicity in effluent and/or receiving water. The following protocol shall be used for accelerated monitoring and TRE implementation:
   a. If the results of four consecutive accelerated monitoring tests do not exceed the chronic toxicity "trigger" of 1.0 TUc, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring. However, if there is adequate evidence of a pattern of effluent toxicity, the Regional Water Board's Executive Officer may require that the Discharger initiate a TRE.
   b. If the source(s) of the toxicity is easily identified (i.e. temporary plant upset), the Discharger shall make necessary corrections to the facility and shall continue accelerated monitoring until four (4) consecutive accelerated tests do not exceed the monitoring "trigger." Upon confirmation that the chronic toxicity has been removed, the Discharger may cease accelerated monitoring and resume regular chronic toxicity monitoring.
   c. If the result of any accelerated toxicity test exceeds the monitoring "trigger", the Discharger shall cease accelerated monitoring and initiate a TRE to investigate the cause(s) and identify corrective actions to reduce or eliminate the chronic toxicity. Within thirty (30) days of notification by the laboratory of the test results exceeding the monitoring "trigger" during accelerated monitoring, the Discharger shall submit a TRE Action Plan to the Regional Water Board including, at minimum:
      (1) Specific actions the Discharger will take to investigate and identify the cause(s) of toxicity, including a TRE WET monitoring schedule;
      (2) Specific actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and
      (3) A schedule for these actions.
9. **Notification.** The Discharger shall notify the Regional Water Board in writing 14 days after the receipt of test results, which indicate the exceedance of the monitoring "trigger" for chronic toxicity.

C. Chronic Toxicity Reporting

1. **Routine Reporting**. Test results for chronic WET tests shall be reported according to the appropriate acute and chronic guidance manuals and this Monitoring and Reporting Program and shall be attached to the self-monitoring report. Test results shall include, at a minimum, for each test:
   a. sample date(s)

b. test initiation date
c. test species
d. end point values for each dilution (e.g., number of young, growth rate, percent survival)
e. NOEC value(s) in percent effluent
f. IC15, IC25, IC40, and IC50 values (or EC15, EC25…etc.) in percent effluent
g. TUc values (100/NOEC)
h. Mean percent mortality (±s.d.) after 96 hours in 100 percent effluent (if applicable)
i. NOEC and LOEC values for reference toxicant test(s)
j. IC50 or EC50 value(s) for reference toxicant test(s)
k. Available water quality measurements for each test (e.g., pH, DO, temperature, conductivity, hardness, salinity, ammonia)
l. Statistical methods used to calculate endpoints.

2. **Compliance Summary**: The results of the chronic toxicity testing shall be provided in the most recent self-monitoring report and shall include a summary table organized by test species, type of test (survival, growth or reproduction) and monitoring frequency (routine, accelerated or TRE) of toxicity data from at least three of the most recent samples. The final report shall clearly demonstrate that the Discharger is in compliance with Ocean Plan water quality objectives and other permit requirements.

VI. LAND DISCHARGE MONITORING REQUIREMENTS

A. Monitoring Location EFF-002

1. The Discharger shall monitor the discharge from the fresh water system at Monitoring Location EFF-002 in accordance with the following schedule.

Table E-9. Effluent Monitoring, Monitoring Location EFF-002

Parameter	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
Flow	mgd	Continuous	Continuous	NA
Suspended Solids	mg/L	8-hr Composite	Monthly	Standard Methods
Settleable Solids	mL/L-hr	8-hr Composite	Monthly	Standard Methods
pH	s.u.	Grab	Monthly	Standard Methods
Salinity	mg/L	Grab	Daily [1]	Standard Methods
Nitrate	mg/L N	8-hr Composite	Monthly	Standard Methods

[1] Salinity monitoring is required only during periods when smoltification is occurring in the Salmon Research Facility or when BML is adjusting salinity in its freshwater system.

VII. RECLAMATION MONITORING REQUIREMENTS

Not applicable.

VIII. RECEIVING WATER MONITORING REQUIREMENTS – SURFACE WATER AND GROUNDWATER

A. Monitoring Location REF-001

1. The Discharger shall monitor the receiving water at Monitoring Location REF-001 in accordance with the following schedule.

Table E-10. Receiving Water Monitoring Requirements, Monitoring Location REF-001

Parameter	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
pH	s.u.	Grab	2X/Year [1]	Standard Methods
Salinity	mg/L	Grab	2X/Year [1]	Standard Methods
Temperature	° F	Grab	2X/Year [1]	Standard Methods
Ocean Plan Table B Pollutants	µg/L	Grab	2X/Year [2]	

[1] This constituent shall be monitored whenever samples are collected at REF-001 to satisfy the requirements of footnote [2] immediately below.

[2] In accordance with State Water Board Resolution No. 2007-0058, the pollutants identified in Table B of the Ocean Plan shall be monitored at REF-001 two times (one time during dry weather and one time during a storm event) during the first year of the permit term, coinciding with monitoring events for the Table B pollutants at EFF-001. Based on results of the first year of monitoring, the Regional Water Board will determine the frequency of monitoring as well as the specific Table B pollutants to be monitored at REF-001 thereafter. Wet weather samples at REF-001 may be collected immediately after a storm event, but in no case more than 24 hours after, if sampling conditions are unsafe during the storm. The Table B metals shall be analyzed by an approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry), as described by the Ocean Plan (2005).

B. Monitoring Location RSW-001

1. The Discharger shall monitor the receiving water at Monitoring Location RSW-001 in accordance with the following schedule.

Table E-11. Receiving Water Monitoring Location RSW-001

Parameter	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
Total Coliform	MPN/100 mL	Grab	1X/Year [1]	SM 9221B [2]
Fecal Coliform	MPN/100 mL	Grab	1X/Year [1]	SM 9221C [2]
Enterococcus Bacteria	MPN/100 mL	Grab	1X/Year [1]	EPA 1600 [3]
Ocean Plan Table B Pollutants [4]	µg/L	Grab	1X/Year	
Chronic Toxicity	TUc		1X/Year [5]	

[1] In accordance with State Water Board Resolution No. 2007-0058, monitoring for bacteria at Monitoring Location RSW-001 in Horseshoe Cove shall occur one time per year during a storm event and shall coincide with monitoring for bacteria at Monitoring Location EFF-016.

[2] Detection methods for total and fecal coliform bacteria shall be those presented in Table 1A of 40 CFR Part 136, unless alternative methods have been approved in advance by the USEPA pursuant to 40 CFR Part 136,

[3] Detection methods for enterococcus shall be those presented in EPA publication EPA 600/4-85/076. Test Methods for *Escherichia coli* and *Enterococci* in Water By Membrane Filter Procedure or any improved method determined by the Regional Water Board to be appropriate.

[4] In accordance with State Water Board Resolution No. 2007-0058, the pollutants identified in Table B of the Ocean Plan shall be monitored one time during a storm event in the first year of the permit term. Based on results of the first year of monitoring, the Regional Water Board will determine which specific Table B pollutants shall be monitored on an annual basis thereafter. Monitoring events for the Table B pollutants at RSW-001 shall coincide with monitoring required for Table B pollutants in the seawater discharge (EFF-001), at the ocean reference station (REF-001), and at the storm water outfall (EFF-016). The Table B metals shall be analyzed by an approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry), as described by the Ocean Plan (2005).

[5] In accordance with State Water Board Resolution No. 2007-0058, the Regional Water Board will determine the frequency of monitoring for the Table B pollutants following the first year of monitoring; however, whole effluent chronic toxicity shall be tested one time per year, at a minimum, following the first year of the permit term in accordance with section V of this Monitoring and Reporting Program.

IX. OTHER MONITORING REQUIREMENTS

A. Sediment Monitoring - Monitoring Location SED-001

1. In accordance with section VI. C. 2. d. of the Order, the Discharger shall monitor sediment at Monitoring Location SED-001 in Horseshoe Cove in accordance with the following schedule.

Table E-12. Sediment Monitoring Requirements

Parameter	Units	Sample Type	Sampling Frequency	Required Analytical Test Method
Ocean Plan Table B Pollutants [1]	µg/L	Grab	1X / Year	
Acute Toxicity [2]	TUa	Grab	1X/ Year	In accordance with EPA/R-94/025

[1] In accordance with State Water Board Resolution No. 2007-0058, subtidal sediment in Horseshoe Cove shall be monitored annually. Based on results of the first year of sediment monitoring, the Regional Water Board will determine which specific Table B pollutants shall be monitored on an annual basis thereafter.

[2] In accordance with State Water Board Resolution No. 2007-0058, acute toxicity of sediment in Horseshoe Cove at SED-001 shall be tested annually using the amphipod *Eohaustorius estuarius*.

2. The presence of sediment toxicity shall be estimated as specified in USEPA's *Methods for Assessing the Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Amphipods* (USEPA Report 600/R-94/025, June 1994), using the amphipod *Eohaustorius estuarius*.

B. Survey of Intertidal Benthic Marine Life

Once during the five year term of this Order, the Discharger shall conduct a quantitative Survey of Intertidal Benthic Marine Life in accordance with section VI. C. 2. b. of the Order.

C. Bioaccumulation Study

Once during the five year term of this Order, the Discharger shall conduct a Bioaccumulation Study in accordance with section VI. C. 2. c. of the Order.

D. Chemical and Drug Use

The Discharger shall report on chemicals and drugs used for disease control, disinfection, and health maintenance at the facility with sufficient information to determine compliance with Discharge Prohibition III. G. Reporting shall include the following information.

1. Product name, active ingredients, and reasons for use;
2. Duration of treatment and method of application (batch or continuous);
3. The location where treatment was applied (seawater or freshwater laboratories, etc.) and volume of water that received treatment;
4. Application rates of products,
5. The amount of medicated feed used, including active medicinal ingredients; and
6. The fate of chemicals and drugs (e.g., discharged, transported off-site, etc.)

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using

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

2. The Discharger shall report in the SMR the results for all monitoring specified in this MRP under sections III through IX. The Discharger shall submit monthly and annual summary SMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. If the Discharger monitors any pollutant more frequently than required by this Order, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the SMR.
3. Monitoring periods and reporting for all required monitoring shall be completed according to the following schedule:

Table E-13. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	SMR Due Date
Continuous	May 1, 2008	All	1st day of the second calendar month following month of sampling
Daily	May 1, 2008	Midnight through 11:59 PM or any 24-hour period that reasonably represents a calendar day for purposes of sampling.	1st day of the second calendar month following month of sampling
Weekly	April 27, 2008	Sunday through Saturday	1st day of the second calendar month following month of sampling
Monthly	May 1, 2008	1st day of calendar month through last day of calendar month	1st day of the second calendar month following month of sampling
Twice Annually	January 1, 2008	January 1 through June 30 July 1 through December 31	30 days from the end of the monitoring period
Annually	January 1, 2008	January 1 through December 31	February 1
1X / Order Term	March 7, 2008	January 1 through December 31	1st day of the second calendar month following month of sampling

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 40 CFR Part 136.
   The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols.
   a. Sample results greater than or equal to the 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 reported data shall include calculation of all effluent limitations that require averaging, taking of a median or other computation. 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. During periods of land discharge, the reports shall certify "land discharge".

b. The Discharger shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify:
(1) Facility name
(2) WDID number
(3) Applicable period of monitoring and reporting
(4) Violations of the WDRs (identified violations must include a description of the requirement that was violated and a description of the violation)
(5) Corrective actions taken or planned; and
(6) The proposed time schedule for corrective actions.

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:

North Coast Regional Water Quality Control Board
5550 Skylane Blvd, Suite A
Santa Rosa, CA 95403

C. Discharge Monitoring Reports (DMRs)

1. As described in Section X.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

2. DMRs must be signed and certified as required by the standard provisions (Attachment D). The Discharge shall submit the original DMR and one copy of the DMR to the address listed below:

Standard Mail	FedEx/UPS/ Other Private Carriers
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814

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

D. Other Reports

1. The Discharger shall report the results of any special studies required by Special Provisions – VI. C. 2. a., b., c., d., and e. of this Order.
2. Annual Report. The Discharger shall submit an Annual Report to the Regional Water Board for each calendar year. The report shall be submitted by January 30th of the following year. The report shall, at a minimum, include the following.
   a. Both tabular and, where appropriate, graphical summaries of the monitoring data and disposal records from the previous year. If the Discharger monitors any pollutant more frequently than required by this Order, using test procedures approved under 40 CFR Part 136 or as specified in this Order, the results of this monitoring shall be included in the calculation and report of the data submitted SMR.
   b. A comprehensive discussion of the facility's compliance (or lack thereof) with all effluent limitations and other WDRs, and the corrective actions taken or planned, which may be needed to bring the discharge into full compliance with the Order.

ATTACHMENT F – FACT SHEET

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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. Only those sections or subsections of this Order that are specifically identified as "not applicable" have been determined not to apply to this Discharger. Sections or subsections of this Order not specifically identified as "not applicable" are fully applicable to this Discharger.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the facility.

Table F-1. Facility Information

WDID	**1B840350SON**
Discharger	**University of California- Davis**
Name of Facility	**University of California-Davis Bodega Marine Laboratory**
Facility Address	**2099 West Side Road**
	Bodega Bay, CA 94923
	Sonoma County
Facility Contact, Title and Phone	**Kitty Brown, Laboratory Manager, (707) 875-2006**
Authorized Person to Sign and Submit Reports	**SAME**
Mailing Address	**P.O Box 247, Bodega Bay, CA 94923**
Billing Address	**SAME**
Type of Facility	**Marine Laboratory**
Major or Minor Facility	**Minor**
Threat to Water Quality	**3**
Complexity	**C**
Pretreatment Program	**NO**
Reclamation Requirements	**NO**
Facility Permitted Flow	**1.5 million gallons per day (mgd) (maximum pump capacity of the seawater system)**
Facility Design Flow	**1.5 mgd**
Watershed	**Bodega Bay**
Receiving Water	**Pacific Ocean**
Receiving Water Type	**Marine**

A. The University of California-Davis (UC-Davis, hereinafter Discharger) is the owner and operator of the UC-Davis Bodega Marine Laboratory (BML), a teaching and marine research facility. 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. The BML discharges waste seawater and storm water effluent to the Pacific Ocean, a water of the United States, and is currently regulated by Order R1-2000-23 which was adopted on March 23, 2000 and expired on March 23, 2005. The facility also discharges wastewater, of fresh water origin, to land. The terms and conditions of the current Order have been automatically continued and remain in effect until new Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) permit are adopted pursuant to this Order.

C. The Discharger filed a report of waste discharge and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and NPDES permit on January 31, 2005.

II. FACILITY DESCRIPTION

The Discharger owns and operates the Bodega Marine Laboratory (BML), a teaching and marine research facility. Researchers at BML investigate population dynamics of marine invertebrates and fishes, fisheries management, fish health, aquaculture, invertebrate diseases, and many other topics. Annually, approximately 1,000 undergraduate students participate in classes and field trips, and marine science graduate students conduct thesis research at BML. The BML is not a public aquarium, but tours are provided to approximately 12,000 visitors per year for public education regarding the science conducted at the laboratory and maintaining healthy coastal marine ecosystems.

Two points of discharge from the BML are to the Pacific Ocean. The first is Discharge Point 001, which discharges once-through seawater. The marine research facility utilizes a flow-through seawater system in the majority of the research laboratories. Seawater for the flow-through system is pumped continuously from the Pacific Ocean with intake lines located approximately 266 feet offshore in Horseshoe Cove. Each line is fitted with intake screens that are removed, cleaned, and replaced three to four times per year. Two centrifugal pumps provide up to 500 gallons per minute (gpm) to a clarification system, which can be bypassed for researchers requiring unfiltered seawater. The clarification system removes large debris with screens and includes a settling pre-chamber for large-grained sediment. Eight parallel light weight gravel beds filter the seawater through passive upwelling of the seawater before it is pumped to north and south wing storage reservoirs. From the storage reservoirs, seawater is distributed to research laboratories by gravity flow. The pre-chamber is cleaned by shovel, and the gravel beds are back-washed once per week using high volume, low pressure air, and the backwash drains to the waste seawater outfall.

Approximately 15 percent of the seawater, up to 80 gpm, is used in pathology labs. To prevent escape of any disease causing organisms, effluent from the pathology laboratories is chlorinated with sodium hypochlorite, and then de-chlorinated with gaseous sulfur dioxide before commingling with untreated seawater prior to discharge. The chlorine concentration in the treatment system is computer-controlled between 12 and 15 milligrams per liter (mg/L) in a cascade system through successive tanks. Alarms activate backup systems when chlorine concentration falls outside the desired treatment concentration or when a discharge concentration of 0.05 mg/L is detected. Waste seawater is discharged at a rate of 1.5 mgd at Discharge Point 001, located in the near shore waters within Horseshoe Cove.

The second discharge to the Pacific Ocean is storm water runoff from the grounds of the facility which drains over the surrounding soil and vegetation before draining into a nearby freshwater marsh, located approximately 220 feet from the beach at Horseshoe Cove. The flow continues through the marsh to a culvert pipe and concrete trough, which carry storm water to Horseshoe Cove Beach at Discharge Point 016. As storm water flows over the vegetation and through the marsh, natural treatment of the run-off may occur. The freshwater marsh is a water of the State and potentially a water of the United States. BML implements appropriate storm water best management practices and storm water monitoring to minimize the discharge of pollutants in the storm water runoff that enters the freshwater marsh at Discharge Points 003 and 004 from the BML parking lot and operations support areas.

The receiving water for the ocean discharges is designated by the State Water Resources Control Board (State Water Board) as the Bodega Area of Special Biological Significance (Bodega ASBS). The California Ocean Plan prohibits waste discharges to ASBSs. The State Water Resources Control Board (State Water Board) contacted the Discharger on October 18, 2004 to inform BML that its discharges into the ASBS are subject to the Ocean Plan waste discharge prohibition. On January 31, 2005, the Discharger applied for Exception to the California Ocean Plan for discharge into the Bodega ASBS. An Initial Study and Mitigated Negative Declaration (IS/MND) was circulated for public review, and on September 18, 2007, the State Water Board approved this Exception and the Mitigated Negative Declaration with Resolution No. 2007-0058.

The facility also discharges once-through freshwater at Discharge Point 002 to a groundwater recharge area. BML utilizes freshwater produced from a well on University property in its Salmon Research Facility. With a salinity of 3,000 mg/L, the well water does not meet potable standards. The well water is first filtered using two sequential gravel beds and then distributed to Salmon Sheds I and II via open pressure lines. Within Salmon Shed I, the water is directed to three settling tanks, and then to the pumphouse. Within the Salmon Shed I pumphouse there are three pumps. Pump I water passes through two 30 micron pleated cartridge filters and a chiller, and is rerouted back to the settling tanks or directly to Salmon Shed I tanks. Pump II water is filtered through two pleated cartridge filters and re-routed back to the settling tanks or directly to Salmon Shed I tanks. Pump III water is filtered through one cartridge filter prior to use in the pathology laboratory. Salmon Shed I water is currently flow-through but can be recirculated. Salmon Shed II freshwater is delivered from the gravel beds to an underground tank before being pumped through filter canisters without filters, unless the water appears murky, in which case filters are used. Salmon Shed II is drained to a small settlement catch basin before being recirculated, at not less than 15 gpm makeup. Waste freshwater is discharged to a groundwater recharge area, Discharge Point 002, in the sand dunes adjacent to the laboratory. The freshwater discharge to groundwater is subject to WDRs in this Order, but is not regulated under the NPDES program.

Salmon research at BML can entail raising newly hatched or young fish to adult salmon. Some BML projects may include introducing the young salmon to seawater when they are at smolting age. Smolting is a physiological hormonal process that allows salmon to gradually transition from fresh water to seawater. During smoltification periods, which may last up to 21 days per year, a portion of the freshwater flow is mixed with seawater to create waters with varying salinities for the Salmon Research Facility. This brackish water is discharged with the waste seawater effluent. When salmon are held in the Fish Pathology Lab in low salinity water, the effluent must pass through the chlorination/dechlorination system, and can contribute up to 4% of the seawater discharge.

The UCD/BML Housing Enclave is located approximately one mile from the laboratory, and includes a visiting scientist lodge and two dormitories, providing a total of 63 beds plus a bunkhouse. Domestic wastewater from the Housing Enclave and the laboratory is treated using septic tank-leachfield systems, and is not regulated by this Order.

A. Description of Wastewater Treatment

Except for a small portion of the seawater system, which is chlorinated and dechlorinated following use in pathology laboratories, the Bodega Marine Laboratory does not employ physical, chemical, or biological wastewater treatment processes prior to discharging. The

facility does employ best management practices, however, to control and minimize the discharge of pollutants from the facility.

B. Discharge Points and Receiving Waters

The BML and its points of discharge are located within the Bodega Head Hydrologic Subarea of the Bodega Hydrologic Unit. Receiving waters for Discharge Points 001 and 016 are part of the Bodega ASBS. The receiving water for Discharge Points 003 and 004 is the freshwater marsh.

1. Discharge Points 001 and 016

   The Ocean Plan prohibits discharges to ASBS waters, unless an exception to the prohibition is granted by the State Water Board. The Ocean Plan states that the State Water Board may, in compliance with CEQA, subsequent to a public hearing, and with the concurrence of USEPA, grant exceptions where the Board determines: (a) the exception will not compromise protection of ocean waters for beneficial uses, and (b) the public interest will be served. The State Water Board granted an exception to this prohibition for the BML on September 18, 2007 with Resolution No. 2007-0058, which establishes terms and conditions of approval that must be incorporated into this Order. The following table provides a summary of these terms and conditions, and reference to the section of the Order in which they are located.

Table F-2. Provision of Resolution 2007-0058 Cross Referenced to the Order

Resolution Provision	Description of Provision	Order Section Number
2a	Mussel Point station to be used to determine natural water quality conditions.	Order Section V. A. 1
2a	Natural water quality conditions in the receiving water shall not be altered as a result of the discharge.	MRP Section III
2b	Constituents in excess of Ocean Plan Table B water quality objectives shall not be discharged.	Order Discharge Prohibition III. F
2c	Total residual chlorine shall be continuously monitored.	MRP Section IV. A
2d	The current approved analytical method with the lowest detection limit shall be used for metals analyses.	MRP Sections IV. A and B, VIII. A and B
2e	The waste seawater effluent flow rate shall not exceed 1.5 mgd. Storm water effluent flow rate shall be measured or calculated.	Order, Discharge Prohibition III. G and MRP Section IV.B
2f	Freshwater discharge must be discharged to the groundwater recharge area in the sand dunes adjacent to the laboratory.	MRP Section II
2g	Non-storm water facility run-off, except for the waste seawater discharge and emergency fire fighting run-off, must be prevented.	Order Discharge Prohibition III. H
2h	A Storm Water Management Plan/Program (SWMP) shall be developed and address the prohibition on non-storm water run-off and the reduction of pollutants in storm water discharges to the ASBS.	Order Section VI. C. 6. a
2i	The SWMP must include measures that describe how non-storm water discharges have been eliminated and how the measures are maintained, monitored, and documented.	Order Section IV. C. 6. a. i
2j	The SWMP must include a map of storm water run-off, and BMPs employed.	Order Section IV. C. 6. a. ii

Resolution Provision	Description of Provision	Order Section Number
2k	The SWMP must address how pollutants have been and will be reduced in storm water run-off into the ASBS, and the BMPs employed and BMPs planned, with an implementation plan for those BMPs.	Order Section VI. C. 6. a. iii
2l	A quantitative survey of intertidal benthic life must be performed near the discharge and a reference site at least once per permit term.	Order Section VI. C. 2. b and MRP Section IX. B
2m.	A bioaccumulation study using Californian mussels must be performed near the discharge and a reference site once per permit term.	Order Section VI. C. 2. c and MRP Section IX.C
2n	Sampling for the waste seawater effluent and the reference station must occur twice the first year of the permit term, and annually thereafter for analysis of Table B pollutants, pH, salinity, and temperature.	MRP Sections IV. A. and VIII. A.
2o	Storm water run-off and the Horseshoe Cove receiving water must be sampled once annually for Table B pollutants and Ocean Plan indicator bacteria.	MRP Sections IV. B. and VIII. B
2p	Subtidal sediment in Horseshoe Cove must be sampled annually for Table B pollutants.	Order Section VI. C. 2. d and MRP Section IX. A
2q	If Horseshoe Cove receiving water monitoring indicates that storm water run-off is altering natural water quality, a report must be submitted 30 days within receiving the results.	Order Section VI. C. 6. a. iv
2r	A Program for prevention of Biological Pollutants must be developed and implemented.	Order Section VI. C. 2. e
2s	A waterfront and marine operations non-point source management plan must be prepared.	Order Section VI. C. 6. b
2t	The Regional Water Board must be notified 180 days prior to any construction activity that could result in any discharge or habitat modification in the ASBS.	Order Section VI. C. 4
2u	The conditions of approval (described above) shall be included in the NPDES permit.	throughout

2. Discharge Points 003 and 004
   The freshwater marsh is a water of the State and potentially a water of the United States. Storm water discharges from the BML to the freshwater marsh may contribute pollutants to waters of the United States and, therefore, are required to obtain permit coverage. This Order serves as an NPDES permit for storm water discharges from this facility to surface waters and contains appropriate storm water best management practices and storm water monitoring to minimize the discharge of pollutants in the storm water runoff that enters the freshwater marsh from the BML parking lot and operations support areas.

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

1. Effluent limitations contained in the previous Order (R1-2000-23) for discharges from Discharge Point 001 and representative monitoring data from the term of the previous Order are presented in Table F-3.

Table F-3. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation			Monitoring Data (From 1/2000 – 7/2007)
		Average Monthly	Average Weekly	Maximum Daily	Highest Average Monthly Discharge
Flow	mg/L	---	---	---	1.5
TSS	mg/L	---[a]	---[a]	---[a]	21[b]
Settleable Solids	mL/L/hr	---[a]	---[a]	---[a]	0.1[b]
Chlorine Residual	mg/L	---	---	0.1	0.3
pH	s.u.	6.0 – 9.0			7.2 - 8.3

[a] The discharge shall not contain concentrations of solids higher than those found in the influent.
[b] Above the concentration of the influent.

2. Effluent limitations contained in the previous Order for discharges from Discharge Point 002 and representative monitoring data from the term of the previous Order are presented in Table F-4.

Table F-4. Historic Effluent Limitations and Monitoring Data

Parameter	Units	Effluent Limitation		Monitoring Data (From 1/2000 – 7/2007)
		Average Monthly	Maximum Daily	Highest Average Monthly Discharge
TSS	mg/L	8[a]	15[a]	12[b]
Settleable Solids	mL/L/hr	0.1[a]	0.2[a]	0.1[b]
pH	s.u.	6.5 – 8.5		5.2 – 8.2
Chloride	mg/L	---	250[a]	3000[b]

[a] The limit is the allowable incremental increase above the concentration present in the influent.
[b] Above the concentration of the influent.

3. The previous Order did not address discharges of storm water from the site of the Bodega Marine Laboratory.

D. Compliance Summary

Exceedances of numeric effluent limits were observed during the previous permit term for suspended solids, total residual chlorine, and settleable solids for discharges at Discharge Point 001, and for suspended solids and chloride for discharges at Discharge Point 002 are summarized in the table below.

Table F-5. Compliance Summary

Date of Violation	Discharge Point	Exceeded Parameter	Units	Effluent Limitation	Reported Concentration
06/21/00	001	Suspended Solids	mg/L	65	68
07/20/00	001	Suspended Solids	mg/L	52	57
07/24/01	001	Suspended Solids	mg/L	39	50
08/14/01	001	Suspended Solids	mg/L	47	49
09/17/01	001	Suspended Solids	mg/L	47	53
03/19/02	001	Suspended Solids	mg/L	31	44
04/23/02	001	Suspended Solids	mg/L	42	45
08/26/02	001	Suspended Solids	mg/L	53	54
08/27/02	001	Total Residual Chlorine	mg/L	0.1	0.1
09/24/02	001	Suspended Solids	mg/L	47	51
11/20/02	001	Suspended Solids	mg/L	45	66

Date of Violation	Discharge Point	Exceeded Parameter	Units	Effluent Limitation	Reported Concentration
01/27/03	001	Suspended Solids	mg/L	45	63
05/14/03	001	Suspended Solids	mg/L	41	51
10/20/03	001	Suspended Solids	mg/L	56	59
02/24/04	001	Total Residual Chlorine	mg/L	0.1	0.3
02/25/04	001	Total Residual Chlorine	mg/L	0.1	0.2
03/29/04	001	Suspended Solids	mg/L	62	79
06/21/04	001	Total Residual Chlorine	mg/L	0.1	0.13
06/14/04	001	Total Residual Chlorine	mg/L	0.1	0.2
07/22/04	001	Suspended Solids	mg/L	9	13
08/02/04	001	Total Residual Chlorine	mg/L	0.1	0.19
08/03/04	001	Total Residual Chlorine	mg/L	0.1	0.19
09/13/04	001	Total Residual Chlorine	mg/L	0.1	0.15
10/15/04	001	Total Residual Chlorine	mg/L	0.1	0.17
10/29/04	001	Total Residual Chlorine	mg/L	0.1	0.2
12/23/04	001	Total Residual Chlorine	mg/L	0.1	0.19
01/27/05	001	Suspended Solids	mg/L	22	25
03/25/05	001	Suspended Solids	mg/L	29	32
07/28/05	001	Suspended Solids	mg/L	18	21
08/30/05	001	Suspended Solids	mg/L	33	37
08/30/05	001	Settleable Solids	mg/L	0.2	0.3
10/27/05	001	Suspended Solids	mg/L	13	14
05/25/07	001	Settleable Solids	mg/L	<0.1	0.1
06/21/00	002	Suspended Solids	mg/L	8.0	10.0
11/16/00	002	Suspended Solids	mg/L	8.0	11.0
09/21/04	002	Suspended Solids	mg/L	8.0	12.0

E. Planned Changes

There are no changes in operation or modifications to facilities planned for the BML, during the anticipated term of this Order, that will cause a material change in the volume or quality of discharges from the facility.

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 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).

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 through 21177.
Before the Regional Water Board could consider adoption of this NPDES permit, however, the Discharger was required to seek an exception to the California Ocean Plan to allow discharges to the Bodega ASBS. On September 18, 2007, with Resolution No. 2007-

0058, the State Water Board approved an exception to the California Ocean Plan for the Bodega Marine Laboratory, a decision that was subject to the requirements of CEQA. The State Water Board, as the lead agency for the CEQA analysis, prepared and circulated an Initial Study / Mitigated Negative Declaration for the proposed exception; held a public hearing on June 30, 2007 to hear comments regarding the exception and the Initial Study / Mitigated Negative Declaration; and formally responded to comments. Based on the whole record, including the Initial Study / Mitigated Negative Declaration, comments received, and the response to comments, the State Water Board concluded that there was no substantial evidence that approval of such an exception would have a significant effect on the environment, so long as specific terms and conditions were incorporated into the facility's NPDES permit. Resolution No. 2007-0058 therefore approved an exception to the California Ocean Plan, approved a Mitigated Negative Declaration, and required that certain specific terms and conditions be included into the NPDES permit to assure on-going protection of the Bodega ASBS.

The issuance of waste discharge requirements for the discharge of once-through freshwater at Discharge Point 002 is not covered by an exemption from the provisions of CEQA under Water Code section 13389. Nonetheless, the waste discharge requirements for Discharge Point 002 are exempt from under California Code of Regulations section 15301, which exempts from the requirements of CEQA the permitting of an existing facility where there is negligible expansion of use.

C. State and Federal Regulations, Policies, and Plans

1. **Water Quality Control Plans.** The Regional Water Quality Control Board (Regional Water Board) adopted a *Water Quality Control Plan for the North Coast Region* (hereinafter Basin Plan) that designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which establishes State policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply (MUN). With total dissolved solids concentrations much greater than 3,000 mg/L, ocean waters meet an exception to State Water Board Resolution No. 88-63; and therefore, the MUN designation is not applicable to the ocean receiving water for this Discharger. Beneficial uses applicable to the Pacific Ocean and the ground water recharge area for discharges from the Bodega Marine Laboratory are described in Table F-6 below.

Table F-6. Basin Plan Beneficial Uses for the Receiving Water

Discharge Point	Receiving Water	Beneficial Use(s)
001, 016	Pacific Ocean	Existing: • Navigation (NAV) • Water Contact Recreation (REC-1) • Non-Contact Water Recreation (REC-2) • Commercial and Sport Fishing (COMM) • Area of Special Biological Significance (ASBS) • Wildlife Habitat (WILD) • Rare, Threatened or Endangered Species (RARE) • Migration of Aquatic Organisms (MIGR) • Spawning, Reproduction, and/or Early Development (SPWN) • Shellfish Harvesting (SHELL) • Marine Habitat (MAR) • Aquaculture (AQUA) Potential: • Industrial Service Supply (IND) • Industrial Process Supply (PRO)
002	Ground Water	Existing: • Municipal and Domestic Supply (MUN) • Agricultural Supply (AGR) • Industrial Service Supply (IND) • Native American Culture (CUL) Potential: • Aquaculture (AQUA) • Industrial Process Supply (PRO)

003, 004	Freshwater Marsh	Existing: • Wetland Habitat (WET) Potential: • Municipal and domestic water supply (MUN) • Agricultural Supply (AGR) • Industrial Service Supply (IND) • Ground Water Recharge (GWR) • Freshwater Replenishment (FRESH) • Navigation (NAV) • Water Contact Recreation (REC-1) • Non-contact Water Recreation (REC-2) • Commercial and Sport Fishing (COMM) • Warm Freshwater Habitat (WARM) • Cold Freshwater Habitat (COLD) • Wildlife Habitat (WILD) • Preservation or Rare, Threatened or Endangered Species (RARE) • Migration of Aquatic Organisms (MIGR) • Spawning, Reproduction and/or Early Development (SPWN) • Shellfish Harvesting (SHELL) • Estuarine Habitat (EST) • Aquaculture (AQUA) • Native American Culture (CUL) • Flood Peak Attenuation/Flood Water Storage (FLD) • Water Quality Enhancement (WQE).

Requirements of this Order implement the Basin Plan.

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. The Bodega Marine Laboratory does not discharge thermal waste, as there is not a significant temperature difference between the seawater intake and discharge; and therefore the Order does not include effluent limitations for temperature in response to the requirements of the Thermal Plan.
3. **California Ocean Plan.** The State Water Board adopted the *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan) in 1972 and amended it in 1978, 1983, 1988, 1990, 1997, 2000, and 2005. The State Water Board adopted the latest amendment on April 21, 2005 and it became effective on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the Pacific Ocean. The Ocean Plan identifies the following beneficial uses of ocean waters of the State.

Table F-7. Receiving Water Beneficial Uses Established by the Ocean Plan

Discharge Point	Receiving Water	Beneficial Uses
001, 016	Pacific Ocean	• Water Contact and Non-Contact Recreation, including Aesthetic Enjoyment • Navigation • Commercial and Sport Fishing • Rare and Endangered Species • Marine Habitat • Shellfish Harvesting • Mariculture • Fish Migration • Fish Spawning • Preservation of Designated Areas of Special Biological Significance

In order to protect the beneficial uses, the Ocean Plan establishes water quality objectives and a program for implementation. Requirements of this Order implement the Ocean Plan.

4. **Alaska Rule.** On March 30, 2000, USEPA revised its regulation that specifies when new and revised state and tribal water quality standards (WQS) become effective for CWA purposes (40 CFR 131.21; 65 Fed. Reg. 24641 (April 27, 2000).) Under the revised regulation (also known as the Alaska Rule), new and revised standards submitted to USEPA after May 30, 2000, must be approved by USEPA before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by USEPA.
5. **Antidegradation Policy.** 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 discharges are consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16.
6. **Anti-Backsliding Requirements.** Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at title 40, Code of Federal Regulations[1] 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.

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

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

The USEPA approved the State's 2006 303(d) list of impaired water bodies on December 26, 2006. The coastal waters which are the receiving waters for this Discharger are not listed on the 303(d) list as being impaired; however, there are several sections of the Pacific Ocean which are on the 303(d) list. The nearest 303 (d) listed waters are 810 acres of Bodega Harbor, which are listed as impaired by exotic species. It is not anticipated that the discharge will affect the 303(d) listed waters of Bodega Harbor because the discharge of exotic species is prohibited by this Order. (Discharge Prohibition III.D)

E. Other Plans, Polices and Regulations

On September 18, 2007, with Resolution No. 2007-0058, the State Water Board approved an exception to the California Ocean Plan's prohibition regarding discharges to Areas of Special Biological Significance, thereby allowing continued discharges from the Bodega Marine Laboratory to the Bodega ASBS. In its CEQA analysis, the State Water Board, concluded that there was no substantial evidence that approval of such an exception would have a significant effect on the environment, so long as specific terms and conditions were incorporated into the facility's NPDES permit. Resolution No. 2007-0058 therefore included several specific terms and conditions that have been incorporated into this Order. (See Table F-2)

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

The discharge prohibitions established by the Order are based on requirements of the Basin Plan and the California Water Code, including its implementing regulations; State Water Board plans and policies, including Resolution No. 2007-0058; as well as prohibitions and conditions that were established by the previous permit for the Bodega Marine Laboratory. Specific rationale for each discharge prohibition is discussed below.

1. **Discharge Prohibition III.A**. (The discharge of any waste disclosed by the Discharger or not within the reasonable contemplation of the Regional Water Board is prohibited.)
   Because limitations and other requirements of the Order have been established based on the current understanding of facility operations by Regional Water Board staff, as provided by the Discharger, discharges not addressed by the Order have not been properly considered by the Regional Water Board and are viewed as unauthorized discharges.
2. **Discharge Prohibition III.B.** (The discharge of any waste at any point not described in Finding II.B is prohibited)

This prohibition is based on the Basin Plan to protect beneficial uses of the receiving waters from unpermitted discharges, and the intent of California Water Code section 13376 which requires anyone discharging or proposing to discharge pollutants to waters of the United States to file a report of the discharge in compliance with the procedures set forth in Water Code section 13260, and sections 13261 through 13265, which requires waste discharge requirements be issued for discharges to waters of the state, and set out potential to civil liability for discharging waste to waters of the State without filing a report of waste discharge and being issued a permit. This prohibition applies to spills not related to sanitary sewer overflows and other unauthorized discharges of wastewater within the collection, treatment and disposal facilities. The discharge of untreated or partially treated wastewater from the collection, treatment, or disposal system represents an unauthorized bypass pursuant to 40 CFR 122.41(m) or an unauthorized discharge that poses a threat to human health and/or aquatic life, and therefore, is explicitly prohibited by this Order.

3. **Discharge Prohibition III.C.** (Creation of a pollution, contamination, or nuisance is prohibited.)
   This prohibition is retained from the previous permit and is a restatement of California Health and Safety Code section 5411. It is a standard condition/prohibition included in NPDES and waste discharge requirements adopted by the North Coast Regional Water Board.
4. **Discharge Prohibition III.D.** (The discharge of exotic organisms is prohibited.)
   This prohibition is retained from the previous permit and reflects the Regional Water Board's concern regarding the introduction of non-native and/or exotic species and/or fish pathogens to the Bodega ASBS. The prohibition is particularly important in light of the fact that Bodega Harbor is 303 (d) listed as impaired by exotic species.
5. **Discharge Prohibition III.E.** [The discharge of waste to land that is not under the control of the Discharger is prohibited, except as authorized under Section VI.C.6.c. (Solids Disposal and Handling).]
   This prohibition is retained from the previous permit.
6. **Discharge Prohibition III.F.** (The discharge of waste resulting from cleaning activities is prohibited.)
   This prohibition is contained in the Basin Plan *Policy On the Regulation of Fish Hatcheries, Fish Rearing Facilities, and Aquaculture Operations*.
7. **Discharge Prohibition III.G.** (Discharge of waste containing detectable levels of chemicals used for the treatment and control of disease, other than salt (NaCl), is prohibited.)
   This prohibition is retained from the previous permit and reflects the importance of protecting the Bodega ASBS. It is also based on Regional Water Board's *Policy on the Regulation of Fish Hatcheries, Fish Rearing Facilities, and Aquaculture Operations*, as expressed in the Basin Plan.
6. **Discharge Prohibition III.H.** (Discharge shall not contain concentrations of toxic pollutants that exceed water quality objectives expressed by Table B of the Ocean Plan)
   State Water Board Resolution No. 2007-0058, which approved an exception to the Ocean Plan's prohibition against discharges to the Bodega ASBS for the Bodega

Marine Laboratory, required inclusion of this specific prohibition in the discharge permit to be issued by the Regional Water Board.

7. **Discharge Prohibition III.I.** (The rate of discharge from the seawater system at Discharge Point 001 shall not exceed 1.5 mgd.)
   State Water Board Resolution No. 2007-0058, which approved an exception to the Ocean Plan's prohibition against discharges to the Bodega ASBS for the Bodega Marine Laboratory, required inclusion of this specific prohibition in the discharge permit to be issued by the Regional Water Board.
8. **Discharge Prohibition III.J.** (Discharge of waste at any point not described, or authorized by the State Water Board or another Regional Water Board permit, except run-off associated with storm water or emergency firefighting, is prohibited.)
   State Water Board Resolution No. 2007-0058 requires that discharges of non-storm water runoff to the Bodega ASBS, except those associated with the seawater system and emergency fire fighting, be prohibited by this Order.

B. Technology-Based Effluent Limitations

1. Scope and Authority

Section 301(b) of the CWA and implementing USEPA permit regulations at 40 CFR 122.44 require that permits include conditions meeting applicable technology-based requirements at a minimum, and any more stringent effluent limitations necessary to meet applicable water quality standards. When USEPA has not promulgated technology-based Effluent Limitations Guidelines for a particular industry, the Regional Water Board can establish technology-based requirements using best professional judgment (BPJ) pursuant to 40 CFR 125.3 (c). When using BPJ to establish technology-based limitations, the factors described at 40 CFR 125.3 (d) must be considered. Technology-based requirements of the Order, placed on discharges to surface waters, have been established using BPJ.

2. Applicable Technology-Based Effluent Limitations

Technology-based limitations established for Discharge Point 001 are summarized in the following table.

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

Parameter	Units	Effluent Limitations		
		Average Monthly	Average Weekly	Maximum Daily
Flow	mgd	---	---	1.5
Total Suspended Solids (TSS)	mg/L	[a]	[a]	[a]
Settleable Solids	ml/L/hr	[a]	[a]	[a]
pH	standard units	Not less than 6.0 nor greater than 9.0		
Total Residual Chlorine	mg/L	Non Detect[b]		

[a] The discharge shall not contain concentrations of solids higher than those found in the influent and shall not cause nuisance or adversely affect beneficial uses.
[b] As defined in the Monitoring and Program.

Requirements for TSS, settleable solids, pH, and chlorine are retained from the previous permit and reflect a reasonable level of pollutant control for such facilities which hold and grow aquatic organisms.

The flow limitation of the previous Order (3.0 mgd) for Discharge Point 001 has been reduced to 1.5 mgd to be consistent with the conditions of approval established by State Water Board Resolution No. 2007-0058, and that flow limitation is now expressed as a discharge prohibition in Section III of the Order.

This Order does not establish numeric effluent limitations for Discharge Points 016, 003 or 004. Instead, the Discharger is required to develop and implement a Storm Water Management Plan (SWMP), which must include best management practices (BMPs) that eliminate or reduce the presence of pollutants in storm water runoff to the technology-based standard of Maximum Extent Practicable (MEP) to protect water quality. Requirements for the development of a SWMP are described in section VI.C.6.a of the Order.

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 the Ocean Plan, and achieve applicable water quality objectives and criteria that are contained in other state plans and policies, or any applicable water quality criteria.

2. Applicable Beneficial Uses and Water Quality Criteria and Objectives

Beneficial uses established by the Basin Plan and Ocean Plan, applicable to the coastal receiving waters for discharges from the Bodega Marine Laboratory, are described in the findings of the Order and in section III. C. 1 of this fact sheet. Water quality objectives, applicable to these receiving waters, are established by the Basin Plan and the Ocean Plan and include the water quality objectives for toxic pollutants established in Table B of the Ocean Plan.

3. Determining the Need for WQBELs

a. Reasonable Potential Analysis

Procedures for performing a Reasonable Potential Analysis (RPA) for ocean dischargers are described in Section III. C. and Appendix VI of the Ocean Plan.

In general, the procedure is a statistical method that projects an effluent data set while taking into account the averaging period of water quality objectives, the long term variability of pollutants in the effluent, limitations associated with sparse data sets, and uncertainty associated with censored data sets. The procedure assumes a lognormal distribution of the effluent data set, and compares the 95th percentile concentration at 95 percent confidence of each Table B pollutant, accounting for dilution, to the applicable water quality criterion. The RPA results in one of three following endpoints.

Endpoint 1 – There is "reasonable potential," and a WQBEL and monitoring are required.

Endpoint 2 - There is no "reasonable potential." WQBELs are not required, and monitoring is required at the discretion of the Regional Water Board.

Endpoint 3 - The RPA is inconclusive. Existing WQBELs are retained, and monitoring is required.

The State Water Board has developed a reasonable potential calculator, which is available at http://www.waterboards.ca.gov/plnspols/docs/oplans/rpcalc.zip. The calculator (RPcalc 2.0) was used in the development of this Order and considers several pathways in the determination of reasonable potential.

i. First Path

If available information about the receiving water or the discharge supports a finding of reasonable potential without analysis of effluent data, the Regional Water Board may decide that WQBELs are necessary after a review of such information. Such information may include: the facility or discharge type, solids loading, lack of dilution, history of compliance problems, potential toxic effects, fish tissue data, 303 (d) status of the receiving water, or the presence of threatened or endangered species or their critical habitat, or other information.

ii. Second Path

If any pollutant concentration, adjusted to account for dilution, is greater than the most stringent applicable water quality objective, there is reasonable potential for that pollutant.

iii. Third Path

If the effluent data contains 3 or more detected and quantified values (i.e., values that are at or above the ML), and all values in the data set are at or above the ML, a parametric RPA is conducted to project the range of possible effluent values. The 95th percentile concentration is determined at 95 percent confidence for each pollutant, and compared to the most stringent applicable water quality objective to determine reasonable potential. A parametric analysis assumes that the range of possible effluent values is distributed lognormally. If the 95th percentile value is greater than the most stringent applicable water quality objective, there is reasonable potential for that pollutant.

iv. Fourth Path

If the effluent data contains 3 or more detected and quantified values (i.e., values that are at or above the ML), but at least one value in the data set is less than the ML, a parametric RPA is conducted according to the following steps.

(1) If the number of censored values (those expressed as a "less than" value) account for less than 80 percent of the total number of effluent values, calculate the M_L (the mean of the natural log of transformed data) and S_L (the standard deviation of the natural log of transformed data) and conduct a parametric RPA, as described above for the Third Path.

(2) If the number of censored values account for 80 percent or more of the total number of effluent values, conduct a non-parametric RPA, as described below for the Fifth Path. (A non-parametric analysis becomes necessary when the effluent data is limited, and no assumptions can be made regarding its possible distribution.)

v. Fifth Path

A non-parametric RPA is conducted when the effluent data set contains less than 3 detected and quantified values, or when the effluent data set contains 3 or more detected and quantified values but the number of censored values accounts for 80 percent or more of the total number of effluent values. A non-parametric analysis is conducted by ordering the data, comparing each result to the applicable water quality objective, and accounting for ties. The sample number is reduced by one for each tie, when the dilution-adjusted method detection limit (MDL) is greater than the water quality objective. If the adjusted sample number, after accounting for ties, is greater than 15, the pollutant has no reasonable potential to exceed the water quality objective. If the sample number is 15 or less, the RPA is inconclusive, monitoring is required, and any existing effluent limits in the expiring permit are retained.

b. Reasonable Potential Determination.

Here, an RPA was conducted using effluent monitoring data generated in four monitoring events in February, April, and August 2006, and July 2007. Results from the RPA have been used to determine the need for effluent limitations for Table B pollutants. No credit for dilution was allowed in conducting the RPA. The following table presents the results of the RPA, performed in accordance with procedures described by the Ocean Plan, for the Bodega Marine Laboratory.

During the four monitoring events, only metals, ammonia, and the halomethanes were analyzed; and therefore, only those results are shown here. The table identifies the RPA endpoint for each Table B pollutant, and shows the analysis reaches an Endpoint 3 for most of the pollutants analyzed. An Endpoint 3 RPA is inconclusive and results when a majority of the effluent data is reported as ND (not detected). In these circumstances, the Regional Water Board views the "inconclusive" result as an indication of no concern for a particular pollutant;

however, additional monitoring will be required for those pollutants during the term of the reissued permit.

The RPA conducted for the Bodega Marine Laboratory resulted in Endpoint 1, a finding of "reasonable potential" requiring water quality based effluent limitations for cadmium, copper, and silver.

Through personal communication with State Water Board and Regional Water Board staff, the Discharger has requested that sample results from February and April 2006 for cadmium, copper, and silver not be used in the RPA. The Discharger assert that the test method used for these tests, atomic absorption direct aspiration (EPA Method 213.1, EPA Method 220.1, and EPA Method 272.2 for cadmium, copper, and silver, respectively) are not appropriate because they are not specific for seawater and had method detection limits that are too high to meet the six-month median water quality objective in Table B of the Ocean Plan. The Discharger also points to later test results from additional samples collected in August 2006 and July 2007 and analyzed by a different contract laboratory that indicated a low dissolved concentration of these metals as evidence that the February and April 2006 results were misleading.

Regional Water Board staff have considered the Discharger's request and determined that there is not sufficient justification to invalidate the February and April 2006 results for cadmium, copper, and silver. Regional Water Board staff reviewed the laboratory reports for the analyses conducted in 2006 and found no evidence in the laboratory reports that would indicate that the test results are invalid. The Discharger's assertion that it is inappropriate to use methods that express metal concentrations as total recoverable metals, as was done in the results from the February and April 2006 tests, instead of using methods to determine the dissolved metal concentration as in the subsequent tests is not supported by the Ocean Plan. The Ocean Plan does not explicitly specify whether metal concentrations in Tables B, C, and D apply as total recoverable metals or as the dissolved metals fraction. Historically, State Water Board staff documents provide an implicit understanding that all metals objectives in the Ocean Plan are to be expressed as total recoverable concentrations and will recommend that the State Water Board amend the Ocean Plan to clarify that metals are expressed as total recoverable concentrations.

The Discharger has not provided evidence that the results from February and April 2006 were not representative of the effluent. Regional Water Board staff can not simply discount valid monitoring results because results of subsequent sampling events were numerically lower. Consequently, monitoring results from February and April 2006 were used in the RPA and contributed to an affirmative finding of reasonable potential.

Another contributing factor considered by Regional Water Board staff in determining reasonable potential for copper and cadmium was results from the California Mussel Watch Program, which showed elevated concentrations of cadmium (16 out of 36 analyses) and copper (2 out of 36 analyses) at the Bodega Head ASBS station over the period 1986 to 1999. Elevated concentrations of metals indicate that there is a source of cadmium and copper in the vicinity of Bodega Head. The Regional Water Board does not have sufficient information to eliminate the BML discharge as a potential source.

Table F-9. RPA Results for Discharges of Seawater Effluent

Table B Pollutant	Most Stringent WQO (µg/L)	No. of Samples	No. of Non-Detects	Max Effluent Conc. (µg/L)	RPA Result, Comment
Objectives for Protection of Marine Aquatic Life					
Arsenic	8	3	1	1.42	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Cadmium	1 [A]	4	0	1.40	**Endpoint 1 - Detected value greater than the most stringent applicable water quality objective.**
Chromium (VI)	2	3	1	0.76	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Copper	3 [A]	4	1	48	**Endpoint 1 - Detected value greater than the most stringent applicable water quality objective.**
Lead	2	3	1	0.09	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Mercury	0.04	4	4	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Nickel	5	3	1	1.22	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Selenium	15	3	3	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Silver	0.7 [A]	4	2	41	**Endpoint 1 - Detected value greater than the most stringent applicable water quality objective.**
Zinc	20	3	1	0.94	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Ammonia	600	1	1	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Objectives for Protection of Human Health - Carcinogens					
Chlorodibromomethane	8.6	2	2	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Chloroform	130	2	2	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Dichlorobromomethane	6.2	2	2	ND	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.
Halomethanes	130	2	0	4.10	Endpoint 3 – RPA is inconclusive. Less than 3 detects or greater than 80% ND.

[A] The most stringent applicable water quality objective in these circumstances is a "6-month median" objective established by Table B of the Ocean Plan. The following effluent data for these metals was available to perform the RPA and demonstrates exceedances of the "6-month median" objectives.

Metal	Feb. 14, 2006	April 4, 2006	Aug. 17, 2006	July 10, 2007
Cadmium	1.4 µg/L	1.2 µg/L	---	0.074 µg/L
Copper	48 µg/L	---	< 10 µg/L	0.074 µg/L
Silver	28 µg/L	41 µg/L	---	ND

4. WQBEL Calculations

Based on results of the RPA, performed in accordance with methods of the Ocean Plan for discharges to the Pacific Ocean, the Regional Water Board is establishing WQBELs for cadmium, copper, and silver.

As described by Section III. C of the Ocean Plan, effluent limits for Table B pollutants are calculated according to the following equation.

Ce = Co + Dm (Co – Cs)

Where …

Ce = the effluent limitation (µg/L)

Co = the concentration (the water quality objective) to be met at the completion of initial dilution (µg/L).

Cs = background seawater concentration (µg/L)

Dm = minimum probable initial dilution expressed as parts seawater per part wastewater (here, Dm = 0)

For the Bodega Marine Laboratory, the Dm is set equal to zero as the Discharger has not initiated a dilution study. Initial dilution is the process that results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge. As site-specific, background water quality data is not available, in accordance with Table B implementing procedures, Cs equals zero for all pollutants, except the following.

Table F-10. Background Concentrations—Ocean Plan

Pollutant	Background Seawater Concentration
Arsenic	3 µg/L
Copper	2 µg/L
Mercury	0.0005 µg/L
Silver	0.16 µg/L
Zinc	8 µg/L

Applicable water quality objectives from Table B of the Ocean Plan are as follows.

Table F-11. Water Quality Objectives–Ocean Plan

Pollutant	Units	6-Month Median	Daily Maximum	Instantaneous Maximum	30 Day Avg
Cadmium	µg/L	1	4	10	---
Copper	µg/L	3	12	30	---
Silver	µg/L	0.7	2.8	7	---

Using the equation, Ce = Co + Dm (Co – Cs), effluent limitations are calculated as follows. Here, Dm is equal to zero.

Copper

Ce = 3.0 + 0 (3.0 – 2.0) = 3.0 µg/L (6-Month Median)
Ce = 12 + 0 (12 – 2.0) = 12 µg/L (Daily Maximum)
Ce = 30+ 0 (30 – 2.0) = 30 µg/L (Instantaneous Maximum)

Silver

Ce = 0.7 + 0 (0.7 – 0.16) = 0.7 µg/L (6-Month Median)
Ce = 2.8 + 0 (2.8 – 0.16) = 2.8 µg/L (Daily Maximum)
Ce = 7.0 + 0 (7.0 – 0.16) = 7.0 (Instantaneous Maximum)

Cadmium

Ce = 1.0 + 0 (1.0 - 0) = 1.0 µg/L (6-Month Median)
Ce = 4.0 + 0 (4.0 – 0) = 4.0 µg/L (Daily Maximum)
Ce = 10 + 0 (10 – 0) = 10 µg/L (Instantaneous Maximum)

WQBELs established by the Order for Discharge Point 001 are summarized in the following table.

Table F-12. Summary of WQBELs for Ocean Plan Table B Pollutants

Pollutant	Units	6-Month Median	Daily Maximum	Instantaneous Maximum
Cadmium	µg/L	1.0	4.0	10
Copper	µg/L	3.0	12	30
Silver	µg/L	0.70	2.8	7.0

5. Whole Effluent Toxicity (WET)

Effluent limits for whole effluent toxicity (WET), acute or chronic, protect the receiving water quality from the aggregate toxic effect of a mixture of pollutants in the effluent. 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/or growth. This Order does not contain WET limitations, but, in accordance with State Water Board Resolution No. 2007-0058, establishes acute and chronic monitoring requirements for seawater effluent at Discharge Point 001, for storm water run-off at Discharge Point 016, for the natural water quality reference station at REF-001, and the receiving water in Horseshoe Cove at RSW-001. If the result of any acute test shows a significant difference from the control at the 100 percent effluent or the 100 percent receiving water or chronic toxicity test exceeds the respective water quality objective or "trigger," the Discharger must initiate accelerated monitoring as described in section V of the MRP. After accelerated monitoring, if conditions of acute or chronic toxicity are found to persist, the Discharger will be required to conduct a Toxicity Reduction Evaluation, as described by the MRP.

D. Final Effluent Limitations

1. Satisfaction of Anti-Backsliding Requirements

All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order, and therefore, this Order is consistent with anti-backsliding provisions of the Clean Water Act and its implementing regulations.

2. Satisfaction of Antidegradation Policy

Provisions of the Order are consistent with applicable antidegradation policy expressed by State Water Board Resolution No. 68-16 and NPDES regulations at 40 CFR 131.12, which require that water quality be maintained and protected where high quality waters constitute an outstanding National resource, such as waters of National and State parks and wildlife refuges and waters of exceptional recreational or ecological significance. The Bodega Marine Life Refuge, into which the Bodega Marine Laboratory discharges seawater, is identified in the Ocean Plan as an Area of Special biological significance. In issuing Resolution No. 2007-0058 approving an exception to the Ocean Plan's prohibition against discharges to ASBSs, the State Water Board stated:

Recent actions by UCD/BML and the conditions specified in the MND and exception will improve water quality over previously permitted levels. Federal and state antidegradation policies have been considered. Granting the exception will not violate federal antidegradation requirements because water quality will not be lowered, but rather will be improved. Allowance of the exception will not violate the State Water Board's antidegradation policy (Resolution No. 68-16) since water quality conditions will improve; the discharge will not unreasonably affect present and anticipated uses; the discharge will not result in water quality lower than that prescribed in the Ocean Plan; and the people of California will benefit from the research and education provided by UCD/BML while beneficial uses will still be protected.

3. Stringency of Requirements for Individual Pollutants

This Order contains both technology-based and water quality-based effluent limitations for individual pollutants at Discharge Point 001. The technology-based effluent limitations consist of restrictions on TSS, settleable solids, total chlorine residual, and pH. Restrictions on these pollutants are discussed in Section IV.B.2 of this Fact Sheet. In addition, this Order contains effluent limitations more stringent than the minimum, federal technology-based requirements that are necessary to meet water quality standards. The rationale for including these water quality-based limitations for cadmium, copper, and silver is explained in section IV.C.3. of this Fact Sheet.

Summary of Final Effluent Limitations
Discharge Point 001

Table F-13. Effluent Limitations – Discharge Point 001

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	6-Month Median
TSS	mg/L	[a]	[a]	[a]	---	---
Settleable Solids	ml/L/hr	[a]	[a]	[a]	---	---
pH	standard units	Not less than 6.0 nor greater than 9.0				
Total Residual Chlorine	mg/L	Non Detect[b]				
Cadmium	µg/L	---	---	4.0	10.	1.0

Parameter	Units	Effluent Limitations				
		Average Monthly	Average Weekly	Maximum Daily	Instantaneous Maximum	6-Month Median
Copper	µg/L	---	---	12	30.	3.0
Silver	µg/L	---	---	2.8	7.0	0.7

[a] The discharge shall not contain concentrations of solids above those found in the influent.
[b] As defined in the Monitoring and Reporting Program

Although the Order does not establish numeric effluent limitations for Discharge Points 016, 003 and 004, the Discharger is required to develop and implement a Storm Water Management Plan (SWMP), which must include best management practices (BMPs) that eliminate or reduce the presence of pollutants in storm water runoff to the technology-based standard of Maximum Extent Practicable (MEP) to protect water quality.

E. Interim Effluent Limitations

Not applicable.

F. Land Discharge Specifications

This Order contains waste discharge requirements for the discharge at EFF-002 to the groundwater recharge area. Effluent limitations for total suspended solids, settleable solids, and pH are retained from the previous permit. The effluent limitation for chloride in the previous permit has been removed because a limitation for chloride limit was deemed to be inappropriate for the BML freshwater discharge because the Discharger does not use sodium chloride as an additive for disease prevention in its freshwater system. The addition of sodium chloride for disease prevention and treatment is commonly used in large-scale freshwater fish hatcheries.

The intent of the salinity limitation is to prevent degradation of groundwater quality with respect to background salinity concentrations in local groundwater and to serve as a check to ensure that brackish water present in the freshwater system during the smoltification period is not discharged to the freshwater Discharge Point 002. Accordingly, the salinity limitation at Eff-002 is effect only during months that smoltification is occurring in the Salmon Research Facility or during months when BML is adjusting salinity in its freshwater system.

Table F-14. Effluent Limitations – Discharge Point 002

Parameter	Units	Effluent Limitations	
		Average Monthly [a]	Maximum Daily [a]
Total Suspended Solids (TSS)	mg/L	8[b]	15[b]
Settleable Solids	ml/L-hr	0.1[b]	0.2[b]
pH	standard units	Not less than 6.5 nor greater than 8.5	
Salinity	mg/L	---	[b]

[a] See Attachment A for definitions.
[b] Above the concentration in the influent.

Note that, throughout the Order, including the MRP and this fact sheet, requirements for discharges at Discharge Point 002 are described as “land discharge specifications” and

not as "effluent limitations." This distinction is drawn because requirements of the federal NPDES program apply only to discharges to surface waters, and therefore, do not apply to discharges at Discharge Point 002. Although the Regional Water Board views the requirements for Discharge Point 002 as "waste discharge requirements," which control a discharge to groundwater, within the State standardized permit template, these requirements appear to be most appropriately expressed as "land discharge specifications."

G. Reclamation Specifications

Not applicable.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

A. Surface Water

Receiving water quality is a result of many factors, some unrelated to the discharge. This Order considers these factors and is designed to minimize the influence of the discharge on the receiving water. Receiving water limitations within the proposed Order generally include the receiving water limitations of the previous Order; however these limitations have been supplemented and modified to reflect all applicable, general water quality objectives of the Ocean Plan (2005) and to reflect the terms and conditions required by State Water Board Resolution No. 2007-0058.

B. Groundwater

Basin Plan water quality objectives for groundwater include narrative objectives for chemical constituents, tastes and odors, bacteria and radioactivity. The groundwater limitations in this Order reflect the objectives established by the Basin Plan for the protection of the beneficial uses of the underlying groundwater.

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 authorize 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 discussion provides the rationale for the monitoring and reporting requirements contained in the MRP for this facility.

A. Influent Monitoring

Intake water monitoring requirements for the BML for both the seawater and freshwater systems are retained from the previous permit. Intake water monitoring provides characterization of natural / background water quality and is necessary to determine compliance with certain effluent limitations, which are expressed as allowable increases from those concentrations measured in intake water. Intake water monitoring requirements are contained in Attachment E, Section III.A. of the MRP.

B. Effluent Monitoring

Pursuant to the requirements of section 122.44 (i), effluent monitoring is required for all constituents with effluent limitations (e.g., cadmium, copper, and silver at Discharge Point 001). Additional, routine monitoring of discharges from the seawater system (Discharge Point 001) and storm water (Discharge Point 016) is required to characterize the quality of the discharges and potential impacts to the receiving water. Several effluent monitoring requirements have been retained from the previous permit (e.g., flow, chlorine, pH, and

suspended and settleable solids at Discharge Point 001); and several effluent monitoring requirements must be included in the MRP pursuant to State Water Board Resolution No. 2007-0058 (e.g., Ocean Plan Table B pollutants, halomethanes, ammonia, salinity, temperature, and chronic toxicity at Discharge Point 001; and all monitoring requirements for Discharge Point 016) .

Effluent monitoring requirements are contained in Attachment E, Section IV of the MRP.

C. Whole Effluent Toxicity Testing Requirements

Monitoring requirements for acute and chronic toxicity are established for discharges to the Bodega ASBS (Monitoring Locations EFF-001 and EFF-016) and for the receiving waters at Monitoring Locations RSW-001 and REF-001. The toxicity monitoring requirements are included in the MRP pursuant to State Water Board Resolution No. 2007-0058 and are found in section V. A and B of the MRP. The Regional Water Board may adjust the frequency of certain toxicity testing requirements after the first year of monitoring.

D. Receiving Water Monitoring

1. Surface Water

Receiving water monitoring requirements at Monitoring Locations REF-001 and RSW-001 are included in section VIII. B of the MRP pursuant to State Water Board Resolution No. 2007-0058 and are necessary to assure protection of the Bodega ASBS.

2. Groundwater.

Not applicable.

E. Land Discharge Monitoring

Land discharge monitoring requirements are retained from the previous permit where they were described as “freshwater effluent monitoring requirements,” except for requirements for monitoring of the freshwater system effluent, where chloride monitoring has been removed because it was deemed inappropriate for the BML freshwater discharge. The requirement for monthly effluent monitoring for nitrate has been retained because the concentration of nitrate in monthly effluent samples from the freshwater system is routinely greater than the contemporaneous influent nitrate concentrations (but at concentrations well below the water quality objective of 10 mg/l for nitrate as nitrogen.)

A new limitation for salinity was added to prevent degradation of groundwater quality with respect to background salinity concentrations in local groundwater and to serve as a check to ensure that brackish water present in the freshwater system during the smoltification period is not discharged to the freshwater Discharge Point 002.

F. Other Monitoring Requirements

1. Subtidal Sediment.

Subtidal sediment monitoring requirements are required for inclusion in the MRP pursuant to State Water Board Resolution No. 2007-0058.

2. Survey of Intertidal Benthic Life.

A requirement to conduct a survey of intertidal benthic life one time during the term of the Order is included in the MRP pursuant to State Water Board Resolution No. 2007-0058.

3. **Bioaccumulation Study.**
   A requirement to conduct a bioaccumulation study one time during the term of the Order is included in the MRP pursuant to State Water Board Resolution No. 2007-0058.
4. **Chemical and Drug Use.**
   The requirement to record and report regarding the use of chemicals and drugs at the facility is retained from the previous permit and is necessary to determine compliance with Discharge Prohibition III. G.

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 - 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

Provision VI. C. 1 contains reopener provisions. The Regional Water Board may reopen the Order to modify Order conditions and requirements. Causes for modifications include demonstration that the Discharger is causing or significantly contributing to adverse impacts to water quality and/or beneficial uses of receiving waters; new interpretation of water quality objectives of the Basin Plan; or if effluent monitoring or other new information demonstrates reasonable potential for any pollutant or pollutant parameter with applicable water criteria established by the Ocean Plan or Basin Plan.

2. Special Studies and Additional Monitoring Requirements

a. Toxicity Reduction Requirements (Special Provision VI. C. 2. a)

In addition to routine toxicity monitoring, Special Provision VI. C. 2. b requires the Discharger to submit to the Regional Water Board an Initial Investigative TRE Work Plan within 180 days of the effective date of this Order for approval by the Executive Officer, to ensure the Discharger has a plan to immediately move forward with the initial tiers of a TRE, in the event effluent toxicity is encountered. The TRE is initiated by evidence of a pattern of toxicity demonstrated through the additional effluent monitoring provided as a result of an accelerated monitoring program.

TRE Guidance. The Discharger is required to prepare a TRE Work Plan in accordance with appropriate USEPA guidance. Numerous guidance documents are available, as identified below.

1. Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants, (EPA/833B-99/002), August 1999.
2. Generalized Methodology for Conducting Industrial TREs, (EPA/600/2-88/070), April 1989.
3. Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures, Second Edition, EPA 600/6-91/005F, February 1991.
4. Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA 600/6-91/005F, May 1992.
5. Methods for Aquatic Toxicity Identification Evaluations: Phase II Toxicity Identification Procedures for Samples Exhibiting acute and Chronic Toxicity, Second Edition, EPA 600/R-92/080, September 1993.
6. Methods for Aquatic Toxicity Identification Evaluations: Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity, Second Edition, EPA 600/R-92/081, September 1993.
7. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, EPA-821-R-02-012, October 2002.
8. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, EPA-821-R-02-013, October 2002.
9. Technical Support Document for Water Quality-based Toxics Control, EPA/505/2-90-001, March 1991

b. Survey of Intertidal Benthic Marine Life

The provision for a quantitative survey of intertidal benthic life is a condition of State Water Board Resolution No. 2007-0058, which must be included in the Order.

c. Bioaccumulation Study

The provision for a bioaccumulation study is a condition of State Water Board Resolution No. 2007-0058, which must be included in the Order.

d. Sediment Monitoring

Sediment monitoring requirements must be included in the discharge permit pursuant to State Water Board Resolution No. 2007-0058.

e. Program for Prevention of Biological Pollutants

The provision to develop and implement a program for prevention of Biological Pollutants is required to prevent the incidental release of non-native invasive species to the Bodega ASBS, and is based on the conditions within State Water Board Resolution No. 2007-0058.

3. Best Management Practices and Pollution Prevention

a. Pollution Minimization Program

Provision VI. C. 3. a is included in this Order pursuant to section III. C. 9 of the Ocean Plan. A Pollutant Minimization Program is required when there is

evidence that a toxic pollutant is present in effluent at a concentration greater than an applicable effluent limitation.

4. **Construction, Operation, and Maintenance Specifications**
   40 CFR 122.41 (e) requires proper operation and maintenance of permitted facilities to achieve compliance with permit conditions. An up-to-date operation and maintenance manual, as required by Section VI. C. 4. a of the permit, is an integral part of a well-operated and maintained facility.
   The provision to notify the Regional Water Board 180 days prior to construction/facility modification is based on conditions required by State water Board Resolution No. 2007-0058.
5. **Special Provisions for Municipal Facilities (POTWs Only)**
   Not applicable.
6. **Other Special Provisions**
   a. **Storm Water Management Plan**
      The Discharger is required to develop and maintain a Storm Water Management Plan (SWMP) to comply with the conditions of State Water Board Resolution No. 2007-0058.
   b. **Waterfront and Marine Operations Non-point Source Management Plan**
      The Discharger is required to prepare and implement a Waterfront and Marine Operations Non-Point Source Management Plan pursuant to State Water Board Resolution No. 2007-0058.
   c. **Solids Disposal**
      This provision regarding proper disposal of solids is retained from the previous permit.
7. **Compliance Schedules**
   Not applicable.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, North Coast Region (Regional Water Board) is considering the issuance of WDRs that will serve as a NPDES permit for the Bodega Marine Laboratory. 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 publication in the Press Democrat on December 26, 2007 and through posting on the Regional Water Board's Internet site at http://www.waterboards.ca.gov/northcoast/agenda/pending.html beginning on December 26, 2007. The comment period ended on January 25, 2008.

B. Written Comments

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

To be fully responded to by staff and considered by the Regional Water Board, written comments should be received at the Regional Water Board offices by 5:00 p.m. on January 25, 2008.

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: March 6, 2008
Time: 8:30 AM
Location: North Coast Regional Water Quality Control Board
5550 Skylane Boulevard, Suite A
Santa Rosa, California 95403

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/northcoast/contact.html where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

The Report of Waste Discharge (RWD), related documents, tentative effluent limitations and special provisions, comments received, and other information are on file and may be inspected at the address above at any time between 8:30 a.m. and 4:45 p.m., Monday through Friday. Copying of documents may be arranged through the Regional Water Board by calling (707) 576-2220.

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 Charles Reed at (707) 576-2752.