CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
REGION 9, SAN DIEGO REGION

TENTATIVE ORDER NO. R9-2006-002
NPDES NO. CA0108031

WASTE DISCHARGE REQUIREMENTS FOR THE FALLBROOK PUBLIC UTILITY DISTRICT WASTEWATER TREATMENT PLANT NO. 1 DISCHARGE TO THE PACIFIC OCEAN VIA THE OCEANSIDE OCEAN OUTFALL

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

Table 1. Discharger Information

Discharger	Fallbrook Public Utility District
Name of Facility	Wastewater Treatment Plant No. 1
Facility Address	1425 South Alturas Street Fallbrook, CA 92028 San Diego County

The discharge by the Fallbrook Public Utility District from the discharge point identified below is subject to waste discharge requirements as set forth in this Order.

Table 2. Outfall Location

Discharge Point	Effluent Description	Discharge Point Latitude	Discharge Point Longitude	Receiving Water
001	POTW Effluent	33º 09' 46" N	117º 23' 29" W	Pacific Ocean

Table 3. Administrative Information

This Order was adopted by the Regional Water Board on:	April 12, 2006
This Order shall become effective on:	June 1, 2006
This Order shall expire on:	June 1, 2011
The U.S. Environmental Protection Agency (U.S. EPA) and the Regional Water Board have classified this discharge as a major discharge.	
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of the Order expiration date as application for issuance of new waste discharge requirements.	

IT IS HEREBY ORDERED, that this Order supercedes Order No. 2000-012 except for enforcement purposes, and, in order to meet the provisions contained in Division 7 of the California Water Code (CWC) 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 herein.

I, John H. Robertus, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Diego Region, on February 8, 2006.

TENTATIVE
JOHN H. ROBERTUS
Executive Officer

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DISCHARGE TO THE PACIFIC OCEAN VIA THE OCEANSIDE OCEAN OUTFALL

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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	Fallbrook Public Utility District
Name of Facility	Wastewater Treatment Plant No. 1
Facility Address	1425 South Alturas Street Fallbrook, CA 92028 San Diego County
Facility Contact, Title, and Phone	Jos. F. Jackson, Chief Engineer, (760) 728-1125
Mailing Address	P.O. Box 2290 Fallbrook, CA 92028 San Diego County
Type of Facility	Municipal POTW
Facility Design Flow	2.7 million gallons per day (MGD)

II. FINDINGS

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

A. Background. The Fallbrook Public Utility District (hereinafter Discharger or FPUD) is currently discharging pursuant to Order No. 2000-012 and National Pollutant Discharge Elimination System (NPDES) Permit No. CA0108031 which was adopted on February 9, 2000. FPUD submitted a Report of Waste Discharge, dated August 13, 2004, with subsequent revisions and supplements, in application for a NPDES permit renewal to discharge up to 2.7 MGD of treated wastewater from the Fallbrook Public Utility District Wastewater Treatment Plant No. 1. The Regional Board acknowledged receipt of the application on October 4, 2004 and notified FPUD on February 18, 2005 that review of the application was complete.

B. Facility Description. FPUD owns and operates Wastewater Treatment Plant No. 1 (WTP1), the Fallbrook Public Utility District land outfall pipeline, and the Fallbrook Public Utility District sanitary collection system, hereinafter Facilities. FPUD provides for the collection, treatment, and disposal of wastewater generated in the community of Fallbrook, with an approximate population of 25,000, which represents a portion of FPUD's drinking water service area. Wastewater treatment at WTP1 consists of preliminary treatment by screening and grit removal, primary sedimentation and scum removal, biological treatment using activated sludge followed by secondary clarification, tertiary treatment by coagulation and flocculation followed by sand filtration, and chlorine disinfection. Typically, all wastewater entering Plant No. 1 is treated to full tertiary treatment with disinfection. Sludge from the secondary treatment processes at Plant No. 1 is aerobically digested, then dewatered by a belt press or, if the belt press is inoperative, dewatered in sludge drying beds located within the WTP1 property. Screenings from the headworks and solids from grit removal are trucked to a local landfill. FPUD contracts with a private company for composting of dewatered sludge to Class A requirements for land application. During the period 1999-2003, approximately 15 to 32 percent of the tertiary effluent from WTP1 was distributed as recycled water, the discharge of which is covered under separate waste discharge requirements. Treated wastewater from WTP1 that is not distributed as recycled water, hereinafter referred to as effluent, is discharged to the FPUD-owned land outfall pipeline which conveys the effluent approximately 14 miles from Fallbrook to the Oceanside Ocean Outfall (OOO) at the City of Oceanside's La Salina Wastewater Treatment Plant site. FPUD has an agreement with the City of Oceanside to discharge effluent through the OOO at a maximum daily flowrate of 3.1 million gallons per day (MGD) and a flow rate of up to 2.4 MGD on an annual average basis. FPUD's effluent commingles with discharges from City of Oceanside, US Marine Corps Base Camp Pendleton, and Biogen IDEC Pharmaceuticals Corporation. The combined discharge enters the Pacific Ocean, a water of the United States, at Discharge Point 001 (see table on cover page). Attachment B provides a map of the area around the Facilities. Attachment C provides a flow schematic of the Facilities.

C. Legal Authorities. This Order is issued pursuant to section 402 of the Federal Clean Water Act (CWA) and implementing regulations contained in the Code of Federal Regulations (CFR) adopted by the U.S. Environmental Protection Agency (USEPA) and Chapter 5.5, Division 7 of the California Water Code (CWC). It shall serve as a NPDES permit for point source discharges

from these Facilities to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to Article 4, Chapter 4 of the CWC.

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 environmental information. The Fact Sheet, Attachment F, which contains background information and rationale for Order requirements and other provisions, is hereby incorporated into this Order and constitute part of the Findings for this Order. Attachments A, D and E are also incorporated into this Order.

E. California Environmental Quality Act (CEQA). This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Chapter3, Division 13 commencing with Section 21100) in accordance with Section 13389 of the CWC.

F. Technology-Based Effluent Limitations. The Code of Federal Regulations (CFR) at 40 CFR Section 122.44(a) requires that permits include applicable technology-based limitations and standards. This Order includes technology-based effluent limitations based on Secondary Treatment Standards at 40 CFR Part 133. The Regional Board has considered the factors listed in CWC Section 13241in establishing these requirements. A detailed discussion of the technology-based effluent limitations development is included in the Fact Sheet (Attachment F).

G. Water Quality-Based Effluent Limitations. Section 122.44(d) of 40 CFR requires that permits include water quality-based effluent limitations (WQBELs) to attain and maintain applicable numeric and narrative water quality objectives to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, 40 CFR 122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed State criteria or a State policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter.

H. Water Quality Control Plans. The Regional Water Board adopted a Water Quality Control Plan for the San Diego Basin (hereinafter Basin Plan) on September 8, 1994. The Basin Plan was subsequently approved by the State Water Resources Control Board (State Water Board) on December 13, 1994. Subsequent revisions to the Basin Plan have also been adopted by the Regional Water Board and approved by the State Water Board. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan. Beneficial uses applicable to the Pacific Ocean are as follows:

Table 5. Basin Plan Beneficial Uses of the Pacific Ocean

Discharge Point	Receiving Water Name	Beneficial Use
001	Pacific Ocean	Industrial Service Supply (IND); Navigation (NAV); Contact Water Recreation (REC-1); Non-Contact Water Recreation (REC-2); Commercial and Sport Fishing (COMM); Preservation of Biological Habitats of Special Significance (BIOL); Wildlife Habitat (WILD); Rare, Threatened, or Endangered Species (RARE); Marine Habitat (MAR); Aquaculture (AQUA); Migration of Aquatic Organisms (MIRG); Spawning, Reproduction, and/or Early Development (SPWN); Shellfish Harvesting (SHELL)

The Basin Plan relies primarily on the requirements of the *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan) for protection of the beneficial uses of the State ocean waters. The terms and conditions of the Ocean Plan and any revisions thereto are incorporated into the Basin Plan by reference. The Basin Plan, however, may contain additional water quality objectives applicable to the Discharger.

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

Requirements of this Order specifically implement the applicable Water Quality Control Plans.

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 was approved by USEPA on February 14, 2006. The Ocean Plan is applicable, in its entirety, to point source discharges to the ocean. The Ocean Plan identifies beneficial uses of ocean waters of the State to be protected as summarized below:

Table 6. Ocean Plan Beneficial Uses

Discharge Point	Receiving Water	Beneficial Uses
Outfall 001	Pacific Ocean	Industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish spawning and shellfish harvesting

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

CFR 131.21, 65 FR 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 restrictions on individual pollutants that are no more stringent than required by the federal Clean Water Act. Individual pollutant restrictions consist of technology-based restrictions and water quality-based effluent limitations. The technology-based effluent limitations consist of restrictions on carbonaceous biochemical oxygen demand (CBOD5), total suspended solids (TSS), and hydrogen ion concentration (pH). Restrictions on CBOD5, TSS, and pH are specified in federal regulations as discussed in Finding F, and the Order's technology-based pollutant restrictions are no more stringent than required by the Clean Water Act. Water quality-based effluent limitations have been 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. All beneficial uses and water quality objectives contained in the Basin Plan and the Ocean 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 40 CFR 131.21(c)(1). The remaining water quality objectives and beneficial uses implemented by this Order (specifically temperature) were adopted in 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 on September 18, 1975 and are applicable water quality standards pursuant to 40 CFR 131.21(c)(1). Collectively, this Order's restrictions on individual pollutants are no more stringent than required to implement the technology-based requirements of the Clean Water Act and the applicable water quality standards for purposes of the CWA.

L. Antidegradation Policy. Section 131.12 of 40 CFR requires that 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, which incorporates the requirements of the federal antidegradation policy. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. As discussed in detail in the Fact Sheet the permitted discharge is consistent with the antidegradation provision of 40 CFR 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 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent than those in the previous Order or have been removed. As discussed in detail in the Fact Sheet (Attachment F), relaxation or removal of

effluent limitations is consistent with the anti-backsliding requirements of the CWA and federal regulations.

N. Monitoring and Reporting. Section 122.48 of 40 CFR requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorizes the Regional Water Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements. This Monitoring and Reporting Program is provided in Attachment E.

O. Standard and Special Provisions. Standard Provisions, which in accordance with 40 CFR 122.41and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, 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 (Attachment F).

P. 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 (Attachment F) of this Order.

Q. 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 (Attachment F) of this Order.

THE REQUIREMENTS AND PROVISIONS BELOW CONSTITUTE THE ENFORCEABLE PORTION OF THIS ORDER. Attachments A, D, and E, which are specifically referenced in the requirements and provisions, are also part of the enforceable portion of this Order.

III. DISCHARGE PROHIBITIONS

A. The discharge of waste from WTP1 not treated by a secondary treatment process and the discharge of waste from the Facilities not in compliance with the effluent limitations specified in Tables 7 and 8 of Section IV.B of this Order, and/or to a location other than the Oceanside Ocean Outfall (Outfall 001), unless specifically regulated by this Order or separate waste discharge requirements, is prohibited.

B. The Discharger shall comply with the following waste discharge prohibitions of the Basin Plan:

1. The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination, or nuisance as defined in California Water Code Section 13050, is prohibited.

2. The discharge of waste to land, except as authorized by waste discharge requirements or the terms described in California Water Code Section 13264 is prohibited.

3. The discharge of pollutants or dredged or fill material to waters of the United States except as authorized by an NPDES permit or a dredge or fill material permit (subject to the exemption described in California Water Code Section 13376) is prohibited.

4. The discharge of treated or untreated waste to lakes or reservoirs used for municipal water supply, or to inland surface water tributaries thereto, is prohibited.

5. The discharge of waste to inland surface waters, except in cases where the quality of the discharge complies with applicable receiving water quality objectives, is prohibited. Allowances for dilution may be made at the discretion of this Regional Water Board. Consideration would include streamflow data, the degree of treatment provided and safety measures to ensure reliability of facility performance. As an example, discharge of secondary effluent would probably be permitted if streamflow provided 100:1 dilution capability.

6. The discharge of waste in a manner causing flow, ponding, or surfacing on lands not owned or under the control of the discharger is prohibited unless the discharge is authorized by this Regional Water Board.

7. The dumping, deposition, or discharge of waste directly into waters of the state, or adjacent to such waters in any manner that may permit its being transported into the waters, is prohibited unless authorized by the Regional Water Board.

8. Any discharge to a storm water conveyance system that is not composed entirely of "storm water" is prohibited unless authorized by this Regional Water Board. [Federal Regulations 40 CFR 122.26 (b) defines storm water as storm water runoff, snow melt runoff, and surface runoff and drainage.]

9. The unauthorized discharge of treated or untreated sewage to waters of the state or to a storm water conveyance system is prohibited.

10. The discharge of radioactive wastes amenable to alternative methods of disposal into the waters of the state is prohibited.

11. The discharge of any radiological, chemical, or biological warfare agent into waters of the state is prohibited.

12. The discharge of sand, silt, clay, or other earthen materials from any activity, including land grading and construction, in quantities that cause deleterious bottom deposits, turbidity or discoloration in waters of the state or that unreasonably affect, or threaten to affect, beneficial uses of such waters is prohibited.

C. The discharge of waste shall not cause violation of water quality objectives for ocean waters established by Chapter II of the Ocean Plan.

D. The discharge of waste to Areas of Special Biological Significance, as designated by the State Water Board, is prohibited.

E. The discharge of sludge to the ocean is prohibited; the discharge of municipal and industrial waste sludge directly to the ocean or into a waste stream that discharges to the ocean is prohibited. The discharge of sludge digester supernatant directly to the ocean or to a waste stream that discharges to the ocean without further treatment is prohibited.

F. The bypassing of untreated wastes containing concentrations of pollutants in excess of those in Tables A or B of the Ocean Plan is prohibited.

IV. DISCHARGE SPECIFICATIONS AND EFFLUENT LIMITATIONS

A. Discharge Specifications

The discharge of effluent through Outfall 001 from FPUD's facilities shall comply with the following:

1. Waste management systems that discharge to the Pacific Ocean through Outfall 001 must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community.

2. Waste discharged to the Pacific Ocean through Outfall 001 must be essentially free of:

   a. Material that is floatable or will become floatable upon discharge.

   b. Settleable material or substances that may form sediments, which will degrade benthic communities or other aquatic life.

   c. Substances, which will accumulate to toxic levels in marine waters, sediments, or biota.

   d. Substances that significantly decrease the natural light to benthic communities and other marine life.

   e. Materials that result in aesthetically undesirable discoloration of the ocean surface.

3. Waste effluents from FPUD's Facilities shall be discharged through Outfall 001 in a manner that provides sufficient initial dilution to minimize the concentrations of substances not removed in treatment.

4. The location of waste discharges from FPUD's Facilities shall assure that:

a. 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.

b. Natural water quality conditions are not altered in areas designated as being areas of special biological significance or areas that existing marine laboratories use as a source of seawater.

c. Maximum protection is provided to the marine environment.

5. A discharge that may contain pathogenic organisms or viruses shall be discharged from the FPUD Facilities through Outfall 001 a sufficient distance from shellfishing and water contact sports areas to maintain applicable bacterial standards without disinfection. Where conditions are such that an adequate distance cannot be attained, reliable disinfection in conjunction with a reasonable separation of the discharge point from the area of use must be provided. Disinfection procedures that do not increase effluent toxicity and that constitute the least environmental and human hazard shall be used.

6. The calendar-monthly average of daily effluent discharge flow rates from FPUD's Facilities through the Oceanside Ocean Outfall shall not exceed 2.7 million gallons per day (MGD).

B. Effluent Limitations and Performance Goals

The discharge of effluent to Outfall 001 shall be measured at Monitoring Location M-001 and M-002 as described in the Attachment E, Monitoring and Reporting Program, except as otherwise noted. Scientific notation, with some exceptions, is used to express the effluent limitations and performance goals to prevent ambiguity. The effluent limitations below are enforceable to the number of significant digits shown in the effluent limitation.

1. The discharge of effluent from WTP1 to Outfall 001, as monitored at Monitoring Location M-001, shall maintain compliance with the following effluent limitations:

Table 7. Effluent Limitations based on Secondary Treatment Standards

Constituent	Units	Effluent Limitations					
		Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
					Min	Max	
CBOD 5-day 20°C	mg/l		25.	40.			
Solids	%	The average monthly percent removal shall not be less than 85 percent.					
Total Suspended	mg/l		30.	45.			
	%	The average monthly percent removal shall not be less than 85 percent.					
pH	Standard units				6.0	9.0	

2. The discharge of effluent from FPUD's Facilities to Outfall 001, as monitored at Monitoring Locations M-001 or M-002, shall maintain compliance with the following effluent limitations:

Table 8. Effluent Limitations based on California Ocean Plan 2001[1]

Constituent	Units	Effluent Limitations					
		Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
					Min	Max	
Oil and Grease	mg/l		25.	40.		75.	
Settleable Solids	ml/l		1.0	1.5		3.0	
Turbidity	NTU		75.	100.		225.	
Chronic Toxicity [2]	TUc	8.8 E+01					

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

[2] Chronic toxicity expressed as Chronic Toxicity Units (TUc) = 100 / NOEL, where NOEL (No Observed Effect Level) 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 critical life stage toxicity tests identified in Section V of Monitoring and Reporting Program No. R9-2006-002.

3. Constituents that do not have reasonable potential are referred to as performance goal constituents and assigned the performance goals listed in the following table. Performance goal constituents shall also be monitored at M-001 or M-002, but the results will be used for informational purposes only and for later reasonable potential analysis, not compliance determination. The listed effluent performance goals are not enforceable effluent limitations or standards.

Table 9. Performance Goals based on California Ocean Plan 2001[1]

Constituent	Units	Perfomance Goals					
		Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
					Min	Max	
Arsenic	ug/l	2.6 E+03				6.8 E+03	4.4 E+02
	lbs/day	5.8 E+01				1.5 E+02	1.0 E+01
Cadmium	ug/l	3.5 E+02				8.8 E+02	8.8 E+01
	lbs/day	7.9 E+00				2.0 E+01	2.0 E+00
Mercury	ug/l	1.4 E+01				3.5 E+00	3.5 E+00
	lbs/day	3.2 E-01				7.8 E-02	7.8 E-02
Chromium VI [2]	ug/l	7.0 E+02				1.8 E+03	1.8 E+02
	lbs/day	1.6 E+01				4.0 E+01	4.0 E+00
Copper	ug/l	8.8 E+02				2.5 E+03	9.0 E+01
	lbs/day	2.0 E+01				5.6 E+01	2.0 E+00
Lead	ug/l	7.0 E+02				1.8 E+03	1.8 E+02
	lbs/day	1.6 E+01				4.0 E+01	4.0 E+00
Nickel	ug/l	1.8 E+03				4.4 E+03	4.4 E+02
	lbs/day	4.0 E+01				9.9 E+01	9.9 E+00
Silver	ug/l	2.3 E+02				6.0 E+02	4.8 E+01
	lbs/day	5.2 E+00				1.4 E+01	1.1 E+00
Selenium	ug/l	5.3 E+03				1.3 E+04	1.3 E+03
	lbs/day	1.2 E+02				3.0 E+02	3.0 E+01
Zinc	ug/l	6.3 E+03				1.7 E+04	1.1 E+03
	lbs/day	1.4 E+02				3.8 E+02	2.4 E+01
Cyanide [3]	ug/l	3.5 E+02				8.8 E+02	8.8 E+01
	lbs/day	7.9 E+00				2.0 E+01	2.0 E+00
Total Chlorine Residual [4]	ug/l	7.0 E+02				5.3 E+03	1.8 E+02
	lbs/day	1.6 E+01				1.2 E+02	4.0 E+00

Constituent	Units	Perfomance Goals					
		Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
					Min	Max	
Ammonia (expressed as nitrogen)	ug/l	2.1 E+05				5.3 E+05	5.3 E+04
	lbs/day	4.8 E+03				1.2 E+04	1.2 E+03
Acute Toxicity	TUa	2.9 E+00					
Phenolic Compounds (non-chlorinated) [5]	ug/l	1.1 E+04				2.6 E+04	2.6 E+03
	lbs/day	2.4 E+02				5.9 E+02	5.9 E+01
Phenolics Compounds (chlorinated) [6]	ug/l	3.5 E+02				8.8 E+02	8.8 E+01
	lbs/day	7.9 E+00				2.0 E+01	2.0 E+00
Endosulfan [7]	ug/l	1.6 E+00				2.4 E+00	7.9 E-01
	lbs/day	3.6 E-02				5.4 E-02	1.8 E-02
Endrin	ug/l	3.5 E-01				5.3 E-01	1.8 E-01
	lbs/day	7.9 E-03				1.2 E-02	4.0 E-03
HCH [8]	ug/l	7.0 E-01				1.1 E+00	3.5 E-01
	lbs/day	1.6 E-02				2.4 E-02	7.9 E-03
Radioactivity [9]	- - -	Not to exceed limits specified under Column 2 of Table 2 in Appendix B of Title 10 Code of Federal Regulations Part 20, Standards for Protection Against Radiation					
Acrolein	ug/l		1.9 E+04				
	lbs/day		4.4 E+02				
Acrolein	ug/l		1.9 E+04				
	lbs/day		4.4 E+02				
Antimony	ug/l		1.1 E+05				
	lbs/day		2.4 E+03				
Bis (2-chloroethoxy) Methane	ug/l		3.9 E+02				
	lbs/day		8.7 E+00				
Bis (2-chloroisopropyl) ether	ug/l		1.1 E+05				
	lbs/day		2.4 E+03				

Constituent	Units	Perfomance Goals					
		Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
					Min	Max	
Chlorobenzene	ug/l		5.0 E+04				
	lbs/day		1.1 E+03				
Chromium (III)	ug/l		1.7 E+07				
	lbs/day		3.8 E+05				
Di-n-butyl Phthalate	ug/l		3.1 E+05				
	lbs/day		6.9 E+03				
Dichlorobenzenes [10]	ug/l		4.5 E+05				
	lbs/day		1.0 E+04				
Diethyl Phthalate	ug/l		2.9 E+06				
	lbs/day		6.5 E+04				
Dimethyl Phthalate	ug/l		7.2 E+07				
	lbs/day		1.6 E+06				
4,6-dinitro-2-methylphenol	ug/l		1.9 E+04				
	lbs/day		4.4 E+02				
2,4-dinitrophenol	ug/l		3.5 E+02				
	lbs/day		7.9 E+00				
Ethylbenzene	ug/l		3.6 E+05				
	lbs/day		8.1 E+03				
Fluoranthene	ug/l		1.3 E+03				
	lbs/day		3.0 E+01				
Hexachlorocyclo-pentadiene	ug/l		5.1 E+03				
	lbs/day		1.1 E+02				
Nitrobenzene	ug/l		4.3 E+02				
	lbs/day		9.7 E+00				
Thallium	ug/l		1.8 E+02				
	lbs/day		4.0 E+00				

Constituent	Units	Perfomance Goals					
		Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
					Min	Max	
Toluene	ug/l		7.5 E+06				
	lbs/day		1.7 E+05				
Tributyltin	ug/l		1.2 E-01				
	lbs/day		2.8 E-03				
1,1,1-trichloroethane	ug/l		4.8 E+07				
	lbs/day		1.1 E+06				
Acrylonitrile	ug/l		8.8 E+00				
	lbs/day		2.0 E-01				
Aldrin	ug/l		1.9 E-03				
	lbs/day		4.4 E-05				
Benzene	ug/l		5.2 E+02				
	lbs/day		1.2 E+01				
Benzidine	ug/l		6.1 E-03				
	lbs/day		1.4 E-04				
Beryllium	ug/l		2.9 E+00				
	lbs/day		6.5 E-02				
Bis (2-chloroethyl) Ether	ug/l		4.0 E+00				
	lbs/day		8.9 E-02				
Bis (2-ethlyhexyl) Phthalate	ug/l		3.1 E+02				
	lbs/day		6.9 E+00				
Carbon Tetrachloride	ug/l		7.9 E+01				
	lbs/day		1.8 E+00				
Chlordane [11]	ug/l		2.0 E-03				
	lbs/day		4.6 E-05				
Chlorodibromo-methane	ug/l		7.6 E+02				
	lbs/day		1.7 E+01				

Constituent	Units	Perfomance Goals					
		Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
					Min	Max	
Chloroform	ug/l		1.1 E+04				
	lbs/day		2.6 E+02				
DDT [12]	ug/l		1.5 E-02				
	lbs/day		3.4 E-04				
1,4-dichlorobenzene	ug/l		1.6 E+03				
	lbs/day		3.6 E+01				
3,3'-dichlorobenzidine	ug/l		7.1 E-01				
	lbs/day		1.6 E-02				
1,2-dichloroethane	ug/l		2.5 E+03				
	lbs/day		5.5 E+01				
1,1-dichloroethylene	ug/l		7.9 E+01				
	lbs/day		1.8 E+00				
Dichlorobromo-methane	ug/l		5.5 E+02				
	lbs/day		1.2 E+01				
Dichloromethane	ug/l		4.0 E+04				
	lbs/day		8.9 E+02				
1,3-dichloropropene	ug/l		7.8 E+02				
	lbs/day		1.8 E+01				
Dieldrin	ug/l		3.5 E-03				
	lbs/day		7.9 E-05				
2,4-dinitrotoluene	ug/l		2.3 E+02				
	lbs/day		5.2 E+00				
1,2-diphenylhydrazine	ug/l		1.4 E+01				
	lbs/day		3.2 E-01				
Halomethanes [13]	ug/l		1.1 E+04				
	lbs/day		2.6 E+02				

Constituent	Units	Perfomance Goals					
		Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
					Min	Max	
Heptachlor	ug/l		4.4 E-03				
	lbs/day		9.9 E-05				
Heptachlor Epoxide	ug/l		1.8 E-03				
	lbs/day		4.0 E-05				
Hexachloro-benzene	ug/l		1.8 E-02				
	lbs/day		4.2 E-04				
Hexachloro-butadiene	ug/l		1.2 E+03				
	lbs/day		2.8 E+01				
Hexachloroethane	ug/l		2.2 E+02				
	lbs/day		5.0 E+00				
Isophorone	ug/l		6.4 E+04				
	lbs/day		1.4 E+03				
N-nitroso-dimethylamine	ug/l		6.4 E+02				
	lbs/day		1.4 E+01				
N-nitrosodi-N-propylamine	ug/l		3.3 E+01				
	lbs/day		7.5 E-01				
N-nitrosodiphenyl-amine	ug/l		2.2 E+02				
	lbs/day		5.0 E+00				
PAHs [14]	ug/l		7.7 E-01				
	lbs/day		1.7 E-02				
PCBs [15]	ug/l		1.7 E-03				
	lbs/day		3.8 E-05				
TCDD equivalents [16]	ug/l		3.4 E-07				
	lbs/day		7.7 E-09				
1,1,2,2-tetrachloroethane	ug/l		2.0 E+02				
	lbs/day		4.6 E+00				

Constituent	Units	Perfomance Goals					
		Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
					Min	Max	
Tetrachloroethylene	ug/l		1.8 E+02				
	lbs/day		4.0 E+00				
Toxaphene	ug/l		1.8 E-02				
	lbs/day		4.2 E-04				
Trichloroethylene	ug/l		2.4 E+03				
	lbs/day		5.4 E+01				
1,1,2-trichloroethane	ug/l		8.3 E+02				
	lbs/day		1.9 E+01				
2,4,6-trichlorophenol	ug/l		2.6 E+01				
	lbs/day		5.7 E-01				
Vinyl Chloride	ug/l		3.2 E+03				
	lbs/day		7.1 E+01				

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

[2] Dischargers may, at their option, apply this performance goal as a total chromium performance goal.

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

[4] The water quality objectives for total chlorine residual applicable to intermittent discharges not exceeding two hours, shall be determined through the use of the following equation: log y = - 0.43 (log x) + 1.8, where y = the water quality objective (in ug/l) to apply when chlorine is being discharged; x = the duration of uninterrupted chlorine discharge in minutes. Actual performance goals for total chlorine, when discharging intermittently, shall then be determined according to Implementation Procedures for Table B from the Ocean Plan (2001), using a minimum probable initial dilution factor of 87 and a flow rate of 2.7 MGD.

[5] Non-chlorinated phenolic compounds shall mean the sum of 2-nitrophenol, 4-nitrophenol, and phenol.

[6] Chlorinated phenolic compounds shall mean the sum of 2-chlorophenol, 2,4-dichlorophenol, 3-methyl-4-chlorophenol, and pentachlorophenol.

[7] Endosulfan shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

[8] HCH shall mean the sum of the alpha, beta, gamma (lindane), and delta isomers of hexachlorocyclohexane.

[9] Radioactivity performance goals are as specified in Title 17 California Code of Regulations, Section 30253, Standards for Protection Against Radiation. Reference to Section 30253 is prospective, including future changes to any incorporated provisions of federal law, as the changes take effect.

[10] Dichlorobenzenes shall mean the sum of 1,2- and 1,3-dichlorobenzene.

[11] Chlordane shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

[12] 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.

[13] Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

[14] PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenapthalene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorine, indeno[1,2,3-cd]pyrene, phenanthrene, and pyrene.

[15] PCBs (polychlorinated biphenyls) shall mean he 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.

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

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

V. RECEIVING WATER LIMITATIONS

Unless specifically excepted by this Order, the discharge shall not cause violation of the following water quality objectives. Compliance with these objectives shall be determined by samples collected at stations representative of the area within the waste field where initial dilution is completed.

A. Bacterial Characteristics

1. 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 used for water contact sports, as determined by the Regional Water Board, but including all kelp beds, the following bacterial objectives shall be maintained throughout the water column.

a. Samples of water from each sampling station shall have a density of total coliform organisms less than 1,000 per 100 ml (10 per ml); provided that not more than 20 percent of the samples at any sampling station, in any 30-day period, may exceed 1,000 per 100 ml (10 per ml), and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 ml (100 per ml).

b. The fecal coliform density, based on a minimum of not less than five samples for any 30-day period, shall not exceed a geometric mean of 200 per 100 ml nor shall more than 10 percent of the total samples during any 60-day period exceed 400 per 100 ml.

2. The Initial Dilution Zone for any wastewater outfall shall be excluded from designation as kelp beds for purposes of bacterial standards. Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp beds for purposes of bacterial standards.

3. At all areas where shellfish may be harvested for human consumption, as determined by the Regional Water Board, the median total coliform density shall not exceed 70 per 100 ml throughout the water column, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

B. Physical Characteristics

1. Floating particulates and grease and oil shall not be visible.

2. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface.

3. Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste.

4. 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.

C. Chemical Characteristics

1. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste materials.

2. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.

3. The dissolved sulfide concentration of waters in and near sediments shall not be significantly increased above that present under natural conditions.

4. The concentration of substances set forth in Chapter II, Table B of the Ocean Plan (2001), shall not be increased in marine sediments to levels that would degrade indigenous biota.

5. The concentration of organic materials in marine sediments shall not be increased to levels that would degrade marine life.

6. Nutrient materials shall not cause objectionable aquatic growths or degrade indigenous biota.

7. Numerical water quality objectives established in Chapter II, Table B of the California Ocean Plan (2001) shall not be exceeded outside of the zone of initial dilution as a result of discharges from the Facilities.

D. Biological Characteristics

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

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

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

E. Radioactivity

Discharge of radioactive waste shall not degrade marine life.

VI. PROVISIONS

A. Standard Provisions

1. **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. FPUD shall comply with all requirements and conditions of this Order. Any permit non-compliance constitutes a violation of the CWA and/or the CWC and is grounds for enforcement action, permit termination, revocation and reissuance, or modification, or for denial of an application for permit renewal, modification, or reissuance.

   b. FPUD shall comply with all applicable federal, state, and local laws and regulations that pertain to sewage sludge [biosolids] handling, treatment, use, and disposal, including CWA Section 405 and U.S. EPA regulations at 40 CFR Part 257.

c. FPUD's wastewater treatment facilities shall be supervised and operated by persons possessing certificates of appropriate grade pursuant to Title 23, Division 3, Chapter 26 of the California Code of Regulations.

d. All proposed new treatment facilities and expansions of existing treatment facilities shall be completely constructed and operable prior to initiation of the discharge from the new or expanded facilities. FPUD shall submit a certification report for each new treatment facility, expansion of an existing treatment facility, and re-rating of an existing treatment facility. For new treatment facilities and expansions, the certification report shall be prepared by the design engineer. For re-ratings, the certification report shall be prepared by the engineer who evaluated the treatment facility capacity. The certification report shall:

   1) Identify the design capacity of the treatment facility, including the daily and 30-day design capacity,

   2) Certify the adequacy of each component of the treatment facility, and

   3) Contain a requirement-by-requirement analysis, based on acceptable engineering practices, of the process and physical design of the facility to ensure compliance with this Order.

   The signature and engineering license number of the engineer preparing the certification report shall be affixed to the report. If reasonable, the certification report shall be submitted prior to beginning construction. FPUD shall not initiate a discharge from an existing treatment facility at a daily flow rate in excess of its previously approved design capacity until:

   1) The certification report is received by the Executive Officer,

   2) The Executive Officer has received written notification of completion of construction (new treatment facilities and expansions only),

   3) An inspection of the facility has been made by staff of the Regional Water Board (new treatment facilities and expansions only), and

   4) The Executive Officer has provided FPUD with written authorization to discharge at a daily flow rate in excess of its previously approved design capacity.

e. All waste treatment, containment, and disposal facilities shall be protected against 100-year peak stream flows as defined by the San Diego County flood control agency.

f. All waste treatment, containment, and disposal facilities shall be protected against erosion, overland runoff and other impacts resulting from a 100-year, 24-hour storm event.

g. This Order expires on August 10, 2010, after which, the terms and conditions of this permit are automatically continued pending issuance of a new permit, provided that all requirements of U.S. EPA's NPDES regulations at 40 CFR 122.6 and the State's regulations at CCR Title 23, Section 2235.4 regarding the continuation of expired permits and waste discharge requirements are met.

h. FPUD's wastewater treatment facilities shall be operated and maintained in accordance with the operations and maintenance manual prepared by FPUD pursuant to the Clean Water Grant Program.

i. A copy of this Order shall be posted at a prominent location at or near the treatment and disposal facilities and shall be available to operating personnel at all times.

j. FPUD shall comply with any interim limitations established by addendum, enforcement action, or revised waste discharge requirements that have been or may be adopted by the Regional Water Board.

B. Monitoring and Reporting Program Requirements

The Discharger shall comply with the Monitoring and Reporting Program (Attachment E) of this Order.

C. Special Provisions

1. Reopener Provisions

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

      1) Violation of any terms or conditions of this Order.

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

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

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

   b. This Order may be reopened and modified, to incorporate in accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include requirements for the implementation of the watershed management approach.

c. This Order may be reopened and modified, in accordance with the provisions set forth in 40 CFR Parts 122 and 124, to include new Minimum Levels (ML).

d. This Order may be reopened and modified to revise effluent limitations as a result of future Basin Plan Amendments, or the adoption of a total maximum daily load allocation (TMDL) for the receiving water.

e. This Order may be reopened upon submission by FPUD of adequate information, as determined by this Regional Water Board, to provide for dilution credits or a mixing zone, as may be appropriate.

f. This Order may be reopened and modified to revise the toxicity language once that language becomes standardized.

g. This Order may also be reopened and modified, revoked, and reissued or terminated in accordance with the provisions of 40 CFR sections 122.44, 122.62 to 122.64, 125.62, and 125.64. Causes for taking such actions include, but are not limited to, failure to comply with any condition of this Order and permit, and endangerment to human health or the environment resulting from the permitted activity.

h. 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. Treatment Plant Capacity

FPUD shall submit a written report to the Executive Officer within 90 days after the monthly average influent flow rate equals or exceeds 75 percent of the design secondary treatment capacity (3.94 MGD) of the wastewater treatment and/or disposal facilities. FPUD's senior administrative officer shall sign a letter in accordance with Standard Provision V.B.2.a (Attachment D) which transmits that report and certifies that the policy-making body is adequately informed of the influent flow rate relative to the Facilities' design capacity. The report shall include the following:

1) Average influent daily flow for the calendar month; the date on which the maximum daily flow occurred; and the rate of that maximum flow.

2) FPUD's best estimate of when the average daily influent flow for a calendar month will equal or exceed the design capacity of the facilities.

3) FPUD's intended schedule for studies, design, and other steps needed to provide additional capacity for the waste treatment and/or disposal facilities, and/or control the flow rate before the waste flow exceeds the capacity of present units.

b. Spill Prevention and Response Plans

1) For purposes of this section, a spill is a discharge of treated or untreated wastewater that occurs at or downstream of the WTP1 headworks in violation of Discharge Prohibition A of this Order, or a discharge of other materials related to treatment and operations of the WTP1 that occurs anywhere throughout the collection and treatment system owned and/or operated by FPUD. This section does not include sanitary sewer overflows reportable under separate waste discharge requirements.

2) FPUD shall maintain a Spill Prevention Plan (SPP) for the facilities owned and/or operated by FPUD in an up-to-date condition and shall amend the SPP whenever there is a change (e.g., in the design, construction, operation, or maintenance of the sewerage system or sewerage facilities) which materially affects the potential for spills. FPUD shall review and amend the SPP as appropriate after each spill from the WTP1, FPUD's land outfall pipeline or in the service area of FPUD's Facilities. The SPP and any amendments thereto shall be subject to the approval of the Executive Officer and shall be modified as directed by the Executive Officer. FPUD shall submit the SPP and any amendments thereto to the Executive Officer upon request of the Executive Officer. FPUD shall ensure that the up-to-date SPP is readily available to the sewerage system personnel at all times and that the sewerage system personnel are familiar with it.

3) FPUD shall maintain a Spill Response Plan (SRP) for the facilities owned and/or operated by FPUD in an up-to-date condition and shall amend the SRP, as necessary. FPUD shall review and amend the SRP as appropriate after each spill from the WTP1, FPUD's land outfall pipeline or in the service area of FPUD's Facilities. The SRP and any amendments thereto shall be subject to the approval of the Executive Officer and shall be modified as directed by the Executive Officer. FPUD shall submit the SRP and any amendments thereto to the Executive Officer upon request of the Executive Officer. FPUD shall ensure that the up-to-date SRP is readily available to the sewerage system personnel at all times and that the sewerage system personnel are familiar with it.

c. Spill Reporting Requirements

FPUD shall report spills as defined in Section VI.C.2.b.1) above in accordance with the following procedures:

1) If a spill results in a discharge of treated or untreated wastewater that is greater than 1,000 gallons or results in a discharge of any volume that reaches surface waters, FPUD shall:

a) Report the spill to the Regional Water Board by telephone, by voice mail, or by FAX within 24 hours from the time FPUD becomes aware of the spill. FPUD shall inform the Regional Water Board of the date of the spill, spill location and

its final destination, time the spill began and ended, estimated total spill volume, and type of spill material.

b) Submit a written report, as well as any additional pertinent information, to the Regional Water Board no later than five days following the starting date of the spill event. FPUD shall submit the written report using the Sanitary Sewer Overflow Report Form (June 13, 2001) provided under Regional Water Board Order No. 96-04.

2) If a spill results in a discharge of treated or untreated wastewater under 1,000 gallons and the discharge does not reach surface waters:

a) FPUD is not required to notify the Regional Water Board within 24 hours.

b) FPUD shall submit a written report, as well as any additional pertinent information, in the monthly self-monitoring report for the month in which the spill occurred. FPUD shall submit the written report using the Sanitary Sewer Overflow Report Form (June 13, 2001) provided under Regional Water Board Order No. 96-04.

3) For spills of material other than treated or untreated wastewater that cause, may cause, or are caused by significant operational failure, or endangers or may endanger human health or the environment, FPUD shall notify the Regional Water Board by telephone, by voice mail, or by FAX within 24 hours from the time FPUD becomes aware of the spill. FPUD shall inform the Regional Water Board of the date of the spill, spill location and its final destination, time the spill began and ended, estimated total spill volume, and type of spill material.

4) For all spills, FPUD shall submit an annual summary containing the following information for each spill: date of spill, location of spill and its final destination, time the spill began and ended, estimated total spill volume, and type of spill material.

5) The spill reporting requirements contained in this Order do not relieve FPUD of responsibilities to report to other agencies, such as the Office of Emergency Services (OES) and the County of San Diego Department of Environmental Health Services.

d. Sanitary Sewer Systems and Sanitary Sewer Overflow Reporting Requirements

A sanitary sewer system is a wastewater collection system including sewers, pipes, pumps, or other conveyances which convey wastewater (e.g. domestic, commercial, and industrial wastewaters) to a wastewater treatment plant. A sanitary sewer system is part of the publicly owned treatment works and subject to all federal Standard Provisions of this Order if it is owned and operated by the Discharger. A sanitary sewer overflow is each instance of a discharge from a sanitary sewer system at any point upstream of the headworks of a wastewater treatment plant. Temporary storage and conveyance facilities (such as wet wells, impoundments, tanks, highlines, etc.) are part of the sanitary sewer

system and are not sanitary sewer overflows provided that sewage from these facilities is not discharged to waters of the State.

The Discharger shall report sanitary sewer overflows from the sanitary sewer system owned and operated by the Discharger in accordance with Monitoring and Reporting Program No. 96-04, Sanitary Sewer Overflow Reporting Procedures for Sewage Collection Agencies, incorporated by reference into this Order.

e. Sludge [Biosolids] Disposal Requirements

1) The handling, treatment, use, management, and disposal of sludge [biosolids] and solids derived from wastewater treatment must comply with applicable provisions of CWA section 405 and U.S. EPA regulations at 40 CFR parts 257, 258, 501, and 503, including all monitoring, record keeping, and reporting requirements.

2) Sludge [biosolids] and wastewater solids must be disposed of in a municipal solid waste landfill, reused by land application, or disposed of in a sludge [biosolids]-only landfill in accordance with 40 CFR Parts 258 and 503 and Title 23, Chapter 15 of the California Code of Regulations. If FPUD desires to dispose of solids and/or sludge [biosolids] in a different manner, a request for permit modification must be submitted to the U.S. EPA and to this Regional Water Board at least 180 days prior to beginning the alternative means of disposal.

3) Sludge [biosolids] that is disposed of in a municipal solid waste landfill must meet the requirements of 40 CFR 25 pertaining to providing information to the public. In the annual self-monitoring report, FPUD shall include the amount of sludge [biosolids] placed in the landfill as well as the landfill to which it was sent.

4) All requirements of 40 CFR 503 and 23 CCR Chapter 15 are enforceable whether or not the requirements of those regulations are stated in an NPDES permit or any other permit issued to FPUD.

5) FPUD shall take all reasonable steps to prevent and minimize any sludge [biosolids] use or disposal in violation of this Order that has a likelihood of adversely affecting human health or the environment.

6) Solids and sludge [biosolids] treatment, storage, and disposal or reuse shall not create a nuisance, such as objectionable odors or flies, and shall not result in ground water contamination.

7) The solids and sludge [biosolids] treatment and storage site shall have adequate facilities to divert surface water runoff from adjacent areas to protect the boundaries of the site from erosion, and to prevent drainage from the treatment and storage site. Adequate protection is defined as protection, at the minimum, from a 100-year storm and protection from the highest possible tidal stage that may occur.

8) The discharge of sewage sludge [biosolids] and solids shall not cause waste material to be in a position where it is, or can be, conveyed from the treatment and storage sites and deposited in waters of the State.

9) FPUD shall submit an annual report to the U.S. EPA and the Regional Water Board containing monitoring results and pathogen and vector attraction reduction requirements, as specified by 40 CFR 503. FPUD shall also report the quantity of sludge [biosolids] removed from the Facilities and the disposal method. This self-monitoring report shall be postmarked by February 19 of each year and report for the period of the previous calendar year.

f. Pretreatment Program

1) FPUD shall conduct an annual Industrial Waste Survey (IWS) of all the Industrial Users (IUs) in the service area of the Facilities in order to determine whether any IUs are subject to pretreatment standards specified in 40 CFR 403. FPUD shall also perform an annual priority pollutant scan of treated effluent from the Facilities. Based on results of the IWS, the priority pollutant scan, and the requirements of 40 CFR 403, FPUD shall submit an annual certification report indicating whether the treatment facility receives pollutants from any IU that would require FPUD to establish a pretreatment program in accordance with 40 CFR 403. Annual certification reports, along with results of the IWS and priority pollutant monitoring, shall be submitted to the Regional Water Board no later than March 1 of each year. If FPUD becomes aware of an IU in the service area of the Facilities, which would require development of a pretreatment program pursuant to 40 CFR 403, FPUD shall notify the Regional Water Board and request a modification of this Order to include pretreatment program requirements. In such circumstances FPUD shall develop and implement a pretreatment program in accordance with the requirements of CWA Sections 307 (b) and (c) and 402 (b) (8) and 40 CFR 403. FPUD shall assure compliance with applicable federal and local pretreatment standards by the IUs within the service area of the Facilities.

2) The Regional Water Board may amend this Order, at any time, to require FPUD to develop and implement an industrial pretreatment program pursuant to the requirements of 40 CFR 403, if the Regional Water Board finds that the Facilities receive pollutants from an IU, which is subject to pretreatment standards, or if other circumstances so warrant.

3) To ensure continued protection of the sewer system, FPUD shall implement sewer protection programs and activities (which collectively constitute the Non-industrial Source Control Program) and submit a written report, which summarizes the adequacy of those programs and activities, to the Regional Water Board at least one time before the expiration date of this Order.

g. Toxicity Reduction Evaluation (TRE)

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

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

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

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

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

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

3) If toxicity performance goals identified in Section IV.B.2 of this Order are exceeded, then within 15 days of the exceedance, the Discharger shall begin conducting six additional toxicity tests over a 6-month (at least one sample per calendar month, for a total of two samples per calendar month) period and provide the results to the Regional Water Board. The additional monthly toxicity tests will be incorporated into the semiannual discharge monitoring reports submitted pursuant to MRP No. R9-2006-002.

4) If the additional monthly tests indicate that toxicity effluent limitations are being consistently violated (at least three exceedances out of the six tests), the Regional Water Board may recommend that the Discharger conduct a TRE and a Toxic Identification Evaluation (TIE), as identified in the approved TRE workplan.

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

VII. COMPLIANCE DETERMINATION AND ENFORCEMENT PROVISIONS

Compliance with the requirements contained in Section IV of this Order will be determined as specified below:

A. Average Monthly Effluent Limitation (AMEL).
If the average of daily discharges over a calendar month exceeds the AMEL for a given

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

B. Average Weekly Effluent Limitation (AWEL).

If the average of daily discharges over a calendar week (Sunday through Saturday) exceeds the AWEL for a given parameter,. The average of daily discharges over the calendar week that exceeds the AWEL for a parameter will be considered out of compliance for that week only. 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 any one calendar week during which no sample (daily discharge) is taken, no compliance determination can be made for that calendar week.

C. Maximum Daily Effluent Limitation (MDEL).

The MDEL shall apply to flow weighted 24-hour composite samples. If a daily discharge exceeds the MDEL for a given parameter, an alleged violation will be flagged and 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.

D. Instantaneous Minimum Effluent Limitation.

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

E. Instantaneous Maximum Effluent Limitation.

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

F. Six-month Median Effluent Limitation.

If the median of daily discharges, based on flow-weighted 24-hour composite samples, over any calendar six-month period (i.e., January-June and July-December) exceeds the six-month median effluent limitation for a given parameter, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that calendar six-month period for that parameter (e.g., 184 days of non-compliance for the July-December period). If only a single sample is taken during a given calendar six-month period and the analytical result for that sample exceeds the six-month median, the Discharger will be considered out of compliance for that calendar six-month period. For any calendar six-month period during which no sample is taken, no compliance determination can be made for the six-month median limitation.

G. Mass Emission Rate.

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

   Mass Emission Rate (lb/Day) = 8.34 x Q x C

   in which Q and C are the flow rate in MGallons/Day and the constituent concentration in mg/L, respectively, and 8.34 is a conversion factor. If a composite sample is taken, then C is the concentration measured in the composite sample and Q is the average flow rate occurring during the period over which the samples are composited.

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

H. Percent Removal.

Compliance with the secondary treatment standard for monthly average percent removal of biochemical oxygen demand, carbonaceous biochemical oxygen demand, and total suspended solids pursuant to 40 CFR Part 133 shall be determined separately for each wastewater treatment facility discharging through an outfall. For each wastewater treatment facility, the monthly average percent removal is the average of the calculated daily discharge percent removals only for days on which the constituent concentration is monitored in both the influent and effluent of the wastewater treatment facility at locations specified in the Monitoring and Reporting Program (Attachment E) within a calendar month.

The percent removal for each day shall be calculated according to the following equation:

$$\text{Daily discharge percent removal} = \frac{\text{Influent concentration} - \text{Effluent concentration}}{\text{Influent concentration}} \; x \; 100\%$$

I. Ocean Plan Provisions for Table B Constituents.

1. Sampling Reporting Protocols

   a. Dischargers must report with each sample result the reported Minimum Level (ML) and the laboratory's current Method Detection Limit (MDL).

   b. Dischargers must also report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

      1) Sample results greater than or equal to the reported ML must be reported "as measured" by the laboratory (i.e., the measured chemical concentration in the sample).

      2) Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, must be reported as "Detected, but Not Quantified", or DNQ. The laboratory must write the estimated chemical concentration of the sample next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc.").

      3) Sample results less than the laboratory's MDL must be reported as "Not Detected", or ND.

2. Compliance Determination

   Sufficient sampling and analysis shall be required to determine compliance with the effluent limitation.

   a. Compliance with Single-Constituent Effluent Limitations

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

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

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

   c. Multiple Sample Data Reduction

      The concentration of the pollutant in the effluent may be estimated from the result of a single sample analysis or by a measure of central tendency (arithmetic mean, geometric mean, median, etc.) of multiple sample analyses when all sample results are quantifiable (i.e., greater than or equal to the reported ML). When one or more sample results are

reported as ND or DNQ, the central tendency concentration of the pollutant shall be the median (middle) value of the multiple samples. If, in an even number of samples, one or both of the middle values is ND or DNQ, the median will be the lower of the two middle values.

3. Pollutant Minimization Program

   a. Pollutant Minimization Program Goal

      The goal of the Pollutant Minimization Program is to reduce all potential sources of a pollutant through pollutant minimization (control) strategies, including pollution prevention measures, in order to maintain the effluent concentration at or below the 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 completion and implementation of a Pollution Prevention Plan, required in accordance with California Water Code Section 13263.3 (d) will fulfill the Pollution Minimization Program requirements in this section.

   b. Determining the need for a Pollutant Minimization Program

      1) The Discharger must develop and conduct a Pollutant Minimization Program if all of the following conditions are true:

         (a) The calculated effluent limitation is less than the reported ML.

         (b) The concentration of the pollutant is reported as DNQ.

         (c) There is evidence showing that the pollutant is present in the effluent above the calculated effluent limitation.

      2) Alternatively, the Discharger must develop and conduct a Pollutant Minimization Program if all of the following conditions are true:

         (a) The calculated effluent limitation is less than the Method Detection Limit.

         (b) The concentration of the pollutant is reported as ND.

         (c) There is evidence showing that the pollutant is present in the effluent above the calculated effluent limitation.

   c. Regional Water Board may include special provisions in the discharge requirements to require the gathering of evidence to determine whether the pollutant is present in the effluent at levels above the calculated effluent limitation. Examples of evidence may include:

      1) Health advisories for fish consumption,

2) Presence of whole effluent toxicity,

3) Results of benthic or aquatic organism tissue sampling,

4) Sample results from analytical methods more sensitive than methods included in the permit.

5) The concentration of the pollutant is reported as DNQ and the effluent limitation is less than the MDL

d. Elements of a Pollutant Minimization Program

The Regional Board may consider cost-effectiveness when establishing the requirements of a Pollutant Minimization Program. The program shall include actions and submittals acceptable to the Regional Board including, but not limited to, the following:

1) An annual review and semi-annual monitoring of potential sources of the reportable pollutant, which may include fish tissue monitoring and other biouptake sampling;

2) Quarterly monitoring for the reportable pollutant in the influent to the wastewater treatment system;

3) Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable pollutant in the effluent at or below the calculated effluent limitation;

4) Implementation of appropriate cost-effective control measures for the pollutant, consistent with the control strategy; and,

5) An annual status report that shall be sent to the Regional Board including:

(a) All Pollutant Minimization Program monitoring results for the previous year;

(b) A list of potential sources of the reportable pollutant;

(c) A summary of all action taken in accordance with the control strategy; and,

(d) A description of actions to be taken in the following year.

J. Receiving Water Sampling Protocol.

The instantaneous maximum and daily maximum receiving water limitations shall apply to grab sample determinations.

K. Acute Toxicity.

1. Compliance with the Acute Toxicity limitation in the Final Effluent Limitations for Outfall 001 (Section IV.B.1 of this Order) shall be determined using an established protocol, e.g., American Society for Testing Materials (ASTM), U.S. EPA, American Public Health Association, or State Board. Acute Toxicity (TUa) shall be expressed in Toxic Units Acute (TUa), where:

TUa = 100 / 96-hr LC50

Where LC50 is the Lethal Concentration 50%, and the percent waste giving 50% survival of test organisms. LC50 shall be determined by static or continuous flow bioassay techniques using standard test species. 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 LC50 may be determined after the test samples are adjusted to remove the influence of those substances.

2. When it is not possible to measure the 96-hour LC50 due to greater than 50% survival of the test species in 100% waste, the toxicity concentration shall be calculated by the following:

   TUa = log (100-S) / 1.7

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

3. In addition, when there is greater than 50% survival of the test species in 100% waste, the percentage survival in 100% waste sample shall be statistically compared to the percentage survival in the test control sample, and the acute toxicity result shall also be reported as follows:

   a. "Pass" when the percentage survival in 100% waste is not statistically different from the percentage survival in the test control sample.

   b. "Fail" when the percentage survival in 100% waste is less than and statistically different from the percentage survival in the test control sample.

L. Chronic Toxicity.

Chronic toxicity is used to measure the acceptability of waters for supporting a healthy marine biota until approved methods are developed to evaluate biological response. Compliance with the Chronic Toxicity performance goal established in Section IV.B.2 of this Order for Outfall 001 shall be determined using critical life stage toxicity tests in accordance with procedures prescribed by the Ocean Plan (2001) and restated in MRP R9-2006-002. Chronic Toxicity (TUc) shall be expressed as Toxic Units Chronic (TUc), where:

TUc = 100 / NOEL

where NOEL is the No Observed Effect Level and is expressed as the maximum percent of effluent that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test

M. Bacterial Standards and Analysis.

1. The geometric mean used for determining compliance with bacterial standards is calculated with the following equation:

$$\text{Geometric Mean} = (C_1 \times C_2 \times \ldots \times C_n)^{1/n}$$

where n is the number of days samples were collected during the period and C is the concentration of bacteria (MPN/100 mL) found on each day of sampling.

2. For all bacterial analyses, sample dilutions should be performed so the range of values extends from 2 to 16,000 MPN (most probable number). The detection methods used for each analysis shall be reported with the results of the analysis. Detection methods used for coliforms (total and fecal) shall be those presented in the most recent edition of Standard Methods for the Examination of Water and Wastewater or any improved method determined by the Regional Water Board (and approved by U.S. EPA) to be appropriate. Detection methods used for enterococcus shall be those presented in U.S. EPA publication U.S. EPA 600/4-85/076, 40 CFR 136, and any other approved method approved by the Regional Water Board. 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.

N. Single Operational Upset.

A single operational upset (SOU) that leads to simultaneous violations of more than one pollutant parameter shall be treated as a single violation and limits the Discharger's liability in accordance with the following conditions:

1. A single operational upset is broadly defined as a single unusual event that temporarily disrupts the usually satisfactory operation of a system in such a way that it results in violation of multiple pollutant parameters.

2. A Discharger may assert SOU to limit liability only for those violations which the Discharger submitted notice of the upset as required in Attachment D Standard Provisions – Reporting V.E.2.b.

3. For purposes outside of CWC Section 13385 (h) and (i), determination of compliance and civil liability (including any more specific definition of SOU, the requirements for Dischargers to assert the SOU limitation of liability, and the manner of counting violations) shall be in accordance with the USEPA Memorandum "Issuance of Guidance Interpreting Single Operational Upset" (September 27, 1989).

4. For purposes of CWC Section 13385 (h) and (i), determination of compliance and civil liability (including any more specific definition of SOU, the requirements for Dischargers to assert the SOU limitation of liability, and the manner of counting violations) shall be in accordance with CWC Section 13385 (f)(2).

ATTACHMENT A – DEFINITIONS

Anti-Backsliding. Provisions in the Clean Water Act and U.S. EPA regulations [CWA 303 (d) (4); CWA 402 (o); CFR 122.44 (l)] that require a reissued permit to be as stringent as the previous permit with some exceptions.

Antidegradation. Policies which ensure protection of water quality for a particular water body where the water quality exceeds levels necessary to protect fish and wildlife propagation and recreation on and in the water. This also includes special protection of waters designated as outstanding natural resource waters. Antidegradation plans are adopted by the State to minimize adverse effects on water.

Applicable Standards and Limitations means all State, interstate, and federal standards and limitations to which a discharge, a sewage sludge [biosolids] use or disposal practice, or a related activity is subject under the CWA, including effluent limitations, water quality standards, standards of performance, toxic effluent standards or prohibitions, best management practices, pretreatment standards, and standards for sewage sludge [biosolids] use or disposal under sections 301, 302, 303, 304, 306, 307, 308, 403 and 405 of CWA.

Areas of Special Biological Significance (ASBS) are those areas designated by the State Water Board as requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable.

Average Monthly Effluent Limitation (AMEL): the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

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

Beneficial Uses of the waters of the State that may be protected against quality degradation include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge [biosolids] or waste disposal, or drainage from raw material storage.

Best Professional Judgment (BPJ). The method used by permit writers to develop technology-based NPDES permit conditions on a case-by-case basis using all reasonably available and relevant data.

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

Bioassay. A test used to evaluate the relative potency of a chemical or a mixture of chemicals by comparing its effect on a living organism with the effect of a standard preparation on the same type of organism.

Biochemical Oxygen Demand (BOD). A measurement of the amount of oxygen utilized by the decomposition of organic material, over a specified time period (usually 5 days) in a wastewater sample; it is used as a measurement of the readily decomposable organic content of a wastewater.

Biosolids. Sewage sludge that is used or disposed through land application, surface disposal, incineration, or disposal in a municipal solid waste landfill. Sewage sludge is defined as solid, semi-solid, or liquid untreated residue generated during the treatment of domestic sewage in a treatment facility.

Bypass. The intentional diversion of wastestreams from any portion of a treatment (or pretreatment) facility.

Carbonaceous Biochemical Oxygen Demand (CBOD). The measurement of oxygen required for carbonaceous oxidation of a nonspecific mixture of organic compounds. Interference caused by nitrifying bacteria in the standard 5-day BOD test is eliminated by suppressing the nitrification reaction.

Chemical Oxygen Demand (COD). A measure of the oxygen-consuming capacity of inorganic and organic matter present in wastewater. COD is expressed as the amount of oxygen consumed in mg/L. Results do not necessarily correlate to the biochemical oxygen demand (BOD) because the chemical oxidant may react with substances that bacteria do not stabilize.

Composite Sample. Sample composed of two or more discrete samples of at least 100 milliliters collected at periodic intervals during the operating hours of a facility over a 24-hour period. The aggregate sample will reflect the average water quality covering the compositing or sample period. For volatile pollutants, aliquots must be combined in the laboratory immediately before analysis. The composite must be flow proportional; either the time interval between each aliquot or the volume of each aliquot must be proportional to either stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot. Aliquots may be collected manually or automatically.

Conventional Pollutants. Pollutants typical of municipal sewage, and for which municipal secondary treatment plants are typically designed; defined at 40 CFR 401.16 as BOD, TSS, fecal coliform bacteria, oil and grease, and pH.

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.

Daily Maximum Limit. The maximum allowable daily discharge of pollutant. Where daily maximum limitations are expressed in units of mass, the daily discharge is the total mass discharged over the course of the 24-hour period. Where daily maximum limitations are expressed in terms of a concentration, the daily discharge is the arithmetic average measurement of the pollutant concentration derived from all measurements taken that 24-hour period.

Degrade (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.

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

Dilution Ratio is the critical low flow of the upstream receiving water divided by the flow of the effluent discharged.
Discharge when used without qualification means the discharge of a pollutant. Discharge of a pollutant means:

1. Any addition of any pollutant or combination of pollutants to waters of the United States from any point source, or

2. Any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft that is being used as a means of transportation.

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any indirect Discharger.

Discharge Monitoring Report (DMR) means the U.S. EPA uniform form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs

must be used by approved states as well as by U.S. EPA. The U.S. EPA will supply DMRs to any approved state upon request. The U.S. EPA national forms may be modified to substitute the state agency name, address, logo, and other similar information, as appropriate, in place of U.S. EPA's.

Effluent Limitation means any restriction imposed by an Order on quantities, discharge rates, and concentrations of pollutants that are discharged from point sources into waters of the United States, the waters of the contiguous zone, or the ocean.

Grab Sample. An individual sample of at least 100 milliliters collected at a randomly selected time over a period not exceeding 15 minutes. The sample is taken from a waste stream on a one-time basis without consideration of the flow rate of the waste stream and without consideration of time of day.

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

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

Maximum Daily Effluent Limitation (MDEL): the highest allowable daily discharge of a pollutant.

Method Detection Limit (MDL) is the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero.

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

Sanitary Sewer. A pipe or conduit (sewer) intended to carry wastewater or water-borne wastes from homes, businesses, and industries to the POTW.

Sanitary Sewer Overflows (SSO). Untreated or partially treated sewage overflows from a sanitary sewer collection system.

Secondary Treatment Standards. Technology-based requirements for direct discharging municipal sewage treatment facilities. Standards are based on a combination of physical and biological processes typical for the treatment of pollutants in municipal sewage. Standards are expressed as a minimum level of effluent quality in terms of: BOD_5, total suspended solids (TSS), and pH (except as provided for special considerations and treatment equivalent to secondary treatment).

Six-month Median Effluent Limitation: the highest allowable median of all daily discharges, based on 24-hour flow-weighted composite samples, for a calendar six-month period (i.e., January-June and July-December).

Surface Waters include navigable waters, rivers, streams (including ephemeral streams), lakes, playa lakes, natural ponds, bays, the Pacific Ocean, lagoons, estuaries, man-made canals, ditches, dry arroyos, mudflats, sandflats, wet meadows, wetlands, swamps, marshes, sloughs and water courses, and storm drains tributary to surface waters. Surface Waters include waters of the United States as used in the federal Clean Water Act (see 40 CFR 122.2).

Technology-Based Effluent Limit. A permit limit for a pollutant that is based on the capability of a treatment method to reduce the pollutant to a certain concentration.

Toxic Pollutant. Pollutants or combinations of pollutants, including disease-causing agents, which after discharge and upon exposure, ingestion, inhalation or assimilation into any organism, either directly from the environment or indirectly by ingestion through food chains, will, on the basis of information available to the Administrator of U.S. EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions, (including malfunctions in reproduction) or physical deformations, in such organisms or their offspring. Toxic pollutants also include those pollutants listed by the Administrator under CWA Section 307 (a) (1) or any pollutant listed under Section 405 (d) which relates to sludge [biosolids] management.

Toxicity Reduction Evaluation (TRE). A site-specific study conducted in a stepwise process designed to identify the causative agent(s) of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

Upset is defined as (a) An unusual event that temporarily disrupts the usually satisfactory operation of a system. This definition constitutes the plain meaning or broad definition of the term "upset." (b) An event more narrowly defined at 40 CFR 122.41 (n)(1) and which belongs to a subset of events that fit the definition of the term "upset" provided in (a).

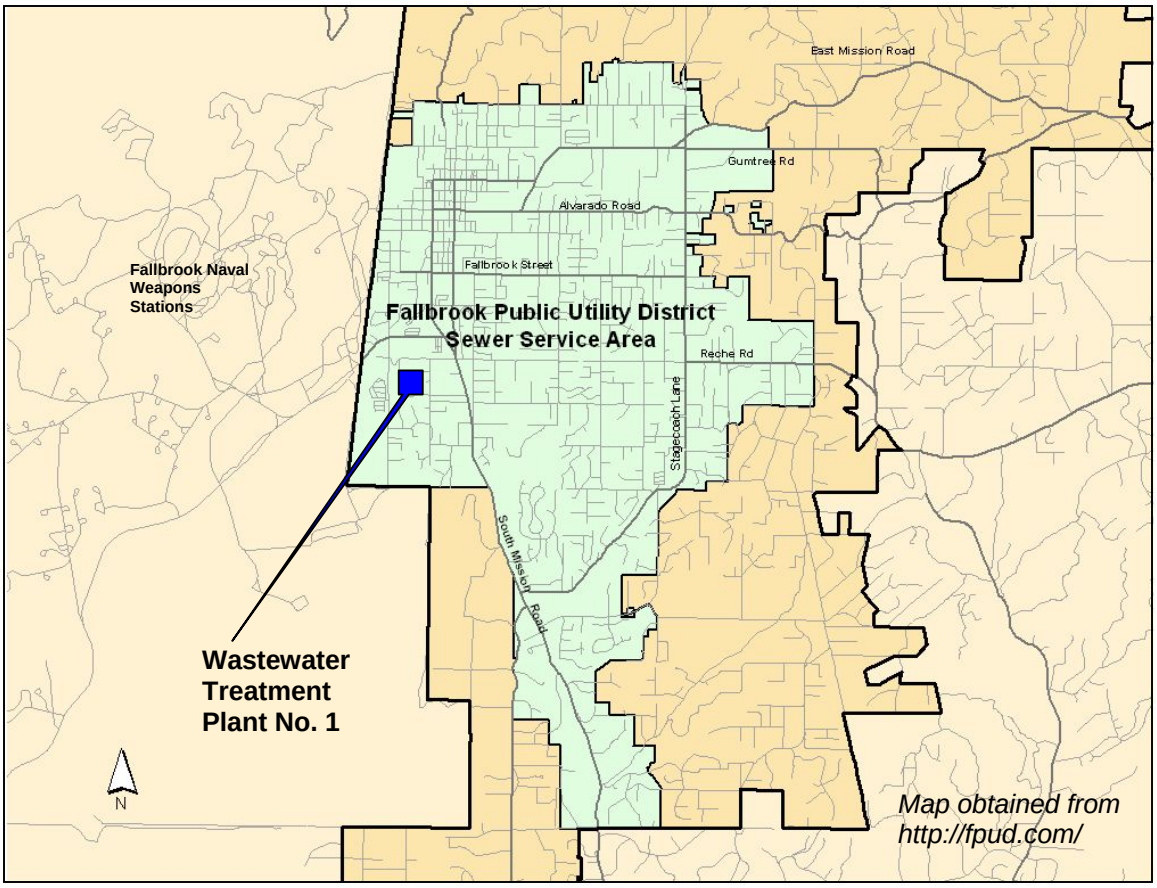
Water Quality Control Plan consists of a designation or establishment for the waters within a specified area of all of the following:

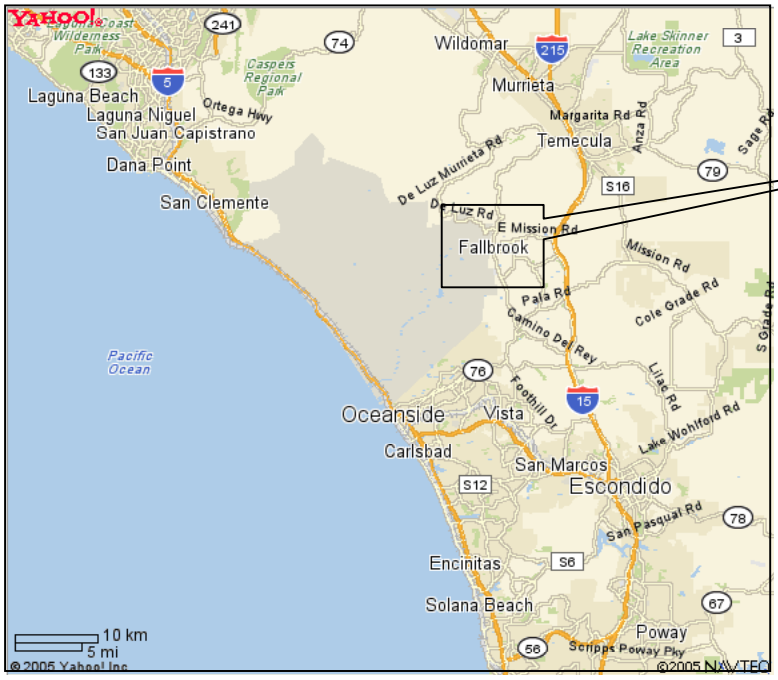
1. Beneficial uses to be protected.
2. Water quality objectives.
3. A program of implementation needed for achieving water quality objectives.

Water Quality Objectives means the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.

Whole Effluent Toxicity (WET). The total toxic effect of an effluent measured directly with a toxicity test.

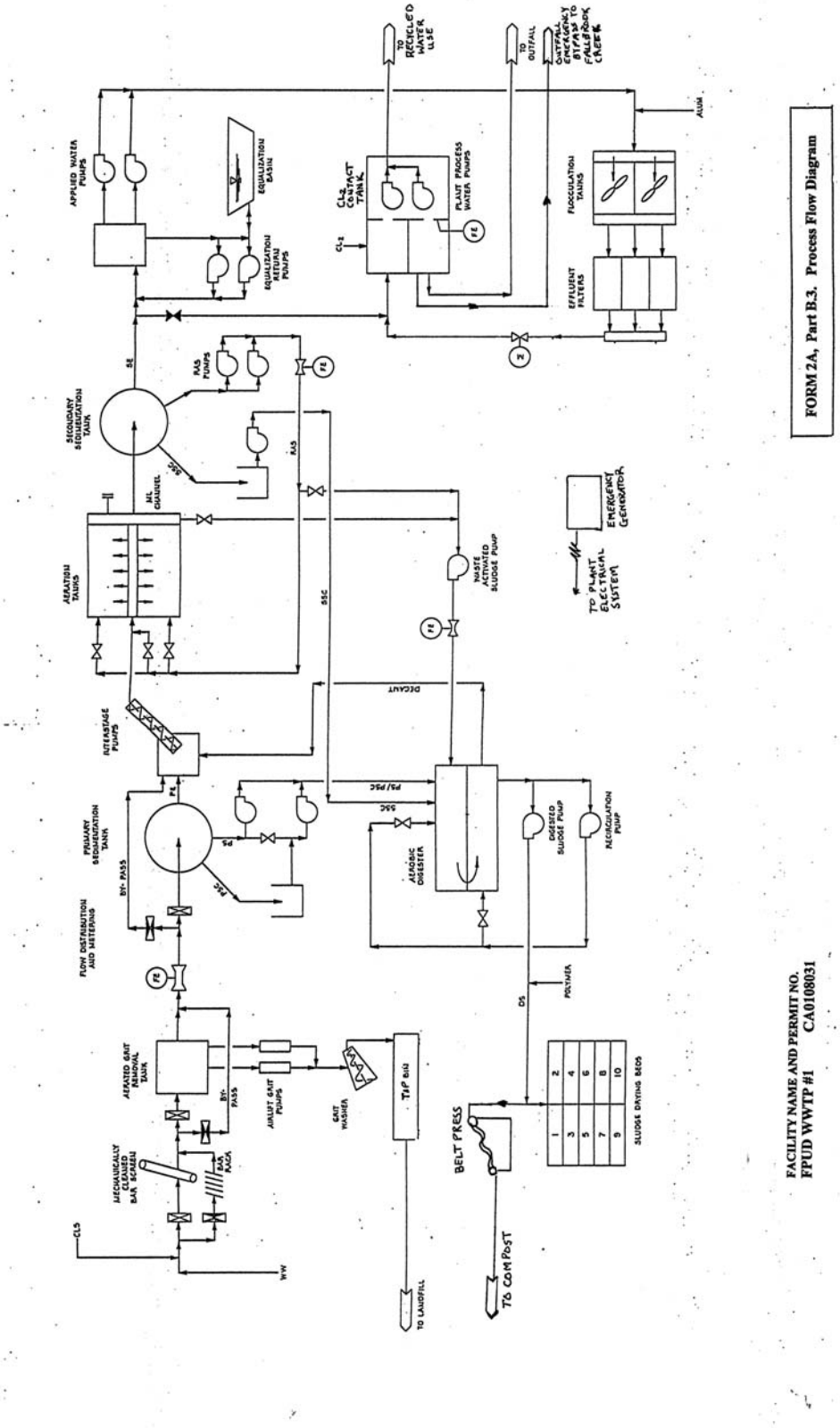
ATTACHMENT B – MAP





Location of enlarged map above

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 (CWC) and is grounds for enforcement action, for permit termination, revocation and reissuance, or denial of a permit renewal application [*40 CFR §122.41(a)*].

2. The Discharger shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act 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 been modified to incorporate the requirement [*40 CFR §122.41(a)(1)*].

B. Need to Halt or Reduce Activity Not a Defense

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

C. Duty to Mitigate

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

D. Proper Operation and Maintenance

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

E. Property Rights

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

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

F. Inspection and Entry

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

1. Enter upon the Discharger's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this Order [*40 CFR §122.41(i)(1)*];

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Order [*40 CFR §122.41(i)(2)*];

3. Inspect and photograph, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order [*40 CFR §122.41(i)(3)*];

4. Sample or monitor, at reasonable times, for the purposes of assuring Order compliance or as otherwise authorized by the CWA or the CWC, any substances or parameters at any location [*40 CFR §122.41(i)(4)*].

G. Bypass

1. Definitions

   a. "Bypass" means the intentional diversion of waste streams from any portion of a treatment facility [*40 CFR §122.41(m)(1)(i)*].

   b. "Severe property damage" means substantial physical damage to property, damage to the treatment facilities, which causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production [*40 CFR §122.41(m)(1)(ii)*].

2. Bypass not exceeding limitations – The Discharger may allow any bypass to occur which does not cause exceedances of effluent limitations, but only if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions listed in Standard Provisions – Permit Compliance I.G.3, I.G.4, and I.G.5 below [*40 CFR §122.41(m)(2)*].

3. Prohibition of bypass – Bypass is prohibited, and the Regional Water Board may take enforcement action against a Discharger for bypass, unless [*40 CFR §122.41(m)(4)(i)*]:

   a. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage [*40 CFR §122.41(m)(4)(A)*];

   b. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass that occurred during normal periods of equipment downtime or preventive maintenance [*40 CFR §122.41(m)(4)(B)*]; and

   c. The Discharger submitted notice to the Regional Water Board as required under Standard Provision – Permit Compliance I.G.5 below [*40 CFR §122.41(m)(4)(C)*].

4. The Regional Water Board may approve an anticipated bypass, after considering its adverse effects, if the Regional Water Board determines that it will meet the three conditions listed in Standard Provisions – Permit Compliance I.G.3 above [*40 CFR §122.41(m)(4)(ii)*].

5. Notice

   a. Anticipated bypass. If the Discharger knows in advance of the need for a bypass, it shall submit a notice, if possible at least 10 days before the date of the bypass [*40 CFR §122.41(m)(3)(i)*].

   b. Unanticipated bypass. The Discharger shall submit notice of an unanticipated bypass as required in Standard Provisions - Reporting V.E below (24-hour notice) [*40 CFR §122.41(m)(3)(ii)*].

H. Upset

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

1. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of Standard Provisions – Permit Compliance I.H.2 below are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review [*40 CFR §122.41(n)(2)*].

2. Conditions necessary for a demonstration of upset. A Discharger who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs or other relevant evidence that [*40 CFR §122.41(n)(3)*]:

   a. An upset occurred and that the Discharger can identify the cause(s) of the upset [*40 CFR §122.41(n)(3)(i)*];

   b. The permitted facility was, at the time, being properly operated [*40 CFR §122.41(n)(3)(i)*];

   c. The Discharger submitted notice of the upset as required in Standard Provisions – Reporting V.E.2.b below (24-hour notice) [*40 CFR §122.41(n)(3)(iii)*]; and

   d. The Discharger complied with any remedial measures required under Standard Provisions – Permit Compliance I.C above [*40 CFR §122.41(n)(3)(iv)*].

3. Burden of proof. In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof [*40 CFR §122.41(n)(4)*].

II. STANDARD PROVISIONS – PERMIT ACTION

A. General

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

B. Duty to Reapply

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

C. Transfers

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

III. STANDARD PROVISIONS – MONITORING

A. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [*40 CFR §122.41(j)(1)*].

B. Monitoring results must be conducted according to test procedures under 40 CFR Part 136 or, in the case of sludge [biosolids] use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503 unless other test procedures have been specified in this Order [*40 CFR §122.41(j)(4)*] [*40 CFR §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 40 CFR Part 503), the Discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Regional Water Board Executive Officer at any time [*40 CFR §122.41(j)(2)*].

B. Records of monitoring information shall include:

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

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

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

V. STANDARD PROVISIONS – REPORTING

A. Duty to Provide Information

The Discharger shall furnish to the Regional Water Board, SWRCB, or USEPA within a reasonable time, any information which the Regional Water Board, SWRCB, 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, SWRCB, or USEPA copies of records required to be kept by this Order [*40 CFR §122.41(h)*] [*CWC 13267*].

B. Signatory and Certification Requirements

1. All applications, reports, or information submitted to the Regional Water Board, SWRCB, and/or USEPA shall be signed and certified in accordance with Standard Provisons – Reporting V.B.c, V.B.3, V.B.4, and V.B.5 below [*40 CFR §122.41(k)*].

2. All permit applications shall be signed by either a principal executive officer or ranking elected official. For purposes of this provision, a principal executive officer of a federal agency includes: (i) the chief executive officer of the agency, or (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of USEPA) [*40 CFR §122.22(a)(3)*].

3. All reports required by this Order and other information requested by the Regional Water Board, SWRCB, or USEPA shall be signed by a person described 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 Standard Provisions – Reporting V.B.2 above [*40 CFR §122.22(b)(1)*];

    b. The authorization specified either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company (a duly authorized representative may thus be either a named individual or any individual occupying a named position) [*40 CFR §122.22(b)(2)*]; and

    c. The written authorization is submitted to the Regional Water Board, SWRCB, or USEPA [*40 CFR §122.22(b)(3)*].

4. If an authorization 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, State Water Board or USEPA

prior to or together with any reports, information, or applications, to be signed by an authorized representative [40 CFR §122.22(c)].

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

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

C. Monitoring Reports

1. Monitoring results shall be reported at the intervals specified in the Monitoring and Reporting Program in this Order [*40 CFR §122.41(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 SWRCB for reporting results of monitoring of sludge use or disposal practices [*40 CFR §122.41(l)(4)(i)*].

3. If the Discharger monitors any pollutant more frequently than required by this Order using test procedures approved under 40 CFR Part 136 or, in the case of sludge [biosolids] use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in this Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Regional Water Board [*40 CFR §122.41(l)(4)(ii)*].

4. Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order [*40 CFR §122.41(l)(4)(iii)*].

D. Compliance Schedules

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

E. Twenty-Four Hour Reporting

1. The Discharger shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Discharger becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Discharger becomes aware of the circumstances. The written

submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance [*40 CFR §122.41(l)(6)(i)*].

2. The following shall be included as information that must be reported within 24 hours under this paragraph [*40 CFR §122.41(l)(6)(ii)*]:

   a. Any unanticipated bypass that exceeds any effluent limitation in this Order [*40 CFR §122.41(l)(6)(ii)(A)*].

   b. Any upset that exceeds any effluent limitation in this Order [*40 CFR §122.41(l)(6)(ii)(B)*].

3. The Regional Water Board may waive the above-required written report under this provision on a case-by-case basis if an oral report has been received within 24 hours [*40 CFR §122.41(l)(6)(iii)*].

F. Planned Changes

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

1. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR §122.29(b) [*40 CFR §122.41(l)(1)(i)*]; or

2. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are not subject to effluent limitations in this Order [*40 CFR §122.41(l)(1)(ii)*].

3. The alteration or addition results in a significant change in the Discharger's sludge [biosolids] use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan [*40 CFR §122.41(l)(1)(iii)*].

G. Anticipated Noncompliance

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

H. Other Noncompliance

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

I. Other Information

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

VI. STANDARD PROVISIONS – ENFORCEMENT

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

VII. ADDITIONAL PROVISIONS – NOTIFICATION LEVELS

A. Publicly-Owned Treatment Works (POTWs)

All POTWs shall provide adequate notice to the Regional Water Board of the following [*40 CFR §122.42(b)*]:

1. Any new introduction of pollutants into the POTW from an indirect Discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants [*40 CFR §122.42(b)(1)*]; and

2. Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order [*40 CFR §122.42(b)(2)*].

3. Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW [*40 CFR §122.42(b)(3)*].

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

I. GENERAL MONITORING PROVISIONS

A. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified below and, unless otherwise specified, before the monitored flow joins or is diluted by any other waste stream, body of water, or substance. Monitoring points shall not be changed without notification to and the approval of the Regional Water Board. Samples shall be collected at times representative of "worst case" conditions with respect to compliance with the requirements of Order No. R9-2006-002.

B. Appropriate flow measurement devices and methods consistent with accepted scientific practices shall be selected and used to ensure the accuracy and reliability of measurements of the volume of monitored discharges. The devices shall be installed, calibrated and maintained to ensure that the accuracy of the measurements are consistent with the accepted capability of that type of device. Devices selected shall be capable of measuring flows with a maximum deviation of less than ±5 percent from true discharge rates throughout the range of expected discharge volumes.

C. Monitoring must be conducted according to United States Environmental Protection Agency (U.S. EPA) test procedures approved at 40 CFR Part 136, *Guidelines Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act* as amended, or unless other test procedures are specified in Order No. R9-2006-002 and/or in this MRP and/or by the Regional Water Board.

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

E. Records of monitoring information shall include information required under Standard Provision IV.

F. All monitoring instruments and devices used by FPUD to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once per year, or more frequently, to ensure continued accuracy of the devices.

G. FPUD shall have, and implement, an acceptable written quality assurance (QA) plan for laboratory analyses. Duplicate chemical analyses must be conducted on a minimum of ten percent of the samples or at least one sample per month, whichever is greater. A similar

frequency shall be maintained for analyzing spiked samples. When requested by U.S. EPA or the Regional Water Board, FPUD will participate in the NPDES discharge monitoring report QA performance study. FPUD should have a success rate equal or greater than 80 percent.

H. Analysis for toxic pollutants, including acute and chronic toxicity, with effluent limitations based on water quality objectives of the California Ocean Plan (2001) shall be conducted in accordance with procedures described in the Ocean Plan (2001) and restated in this MRP.

I. This permit may be modified in accordance with the requirements set forth at 40 CFR Parts 122 and 124, to include appropriate conditions or limits to address demonstrated effluent toxicity based on newly available information, or to implement any U.S. EPA approved, new, state water quality standards applicable to effluent toxicity.

II. MONITORING LOCATIONS

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

Table 1. Monitoring Station Locations

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
	M-INF	At a location where all influent flows to WTP1 are accounted for in monitoring events; upstream of any in-plant return flows; and where representative samples of influent can be collected.
	M-001	Downstream of any in-plant return flows and chlorine disinfection process at WTP1 where representative samples of effluent treated solely at WTP1 can be collected.
Outfall 001	M-002	At a location other than M-001 where representative samples of effluent from WTP can be collected before combining with wastewaters from the City of Oceanside and US Marine Corp Base Camp Pendleton.
		- Receiving Water Monitoring Stations -
		- Surf Zone Monitoring Stations -
	S1	Surf Zone; 5,500 ft south of the outfall
	S2	Surf Zone; 2,500 ft south of the outfall
	S3	Surf Zone; at the outfall
	S4	Surf Zone; 2,000 ft north of the outfall
	S5	Surf Zone; 5,800 ft north of the outfall
	S6	To be determined at a later date
	S7	To be determined at a later date
		- Near Shore Monitoring Stations -
	N1	Opposite S1; at the 30 foot depth contour, MLLW
	N2	Opposite S2; at the 30 foot depth contour, MLLW
	N3	Opposite S3; at the 30 foot depth contour, MLLW
	N4	Opposite S4; at the 30 foot depth contour, MLLW

Discharge Point Name	Monitoring Location Name	Monitoring Location Description
	N5	Opposite S5; at the 30 foot depth contour, MLLW
	N6	To be determined at a later date
	N7	To be determined at a later date
		- Offshore Monitoring Stations -
	A1 – A4	At the corners of a 1,000 ft x 1,000 ft square having one side parallel to shore and the intersection of its diagonals at the seaward end of the outfall
	A5	At the seaward end of the outfall
	B1	One mile downcoast from the outfall, and over the same depth contour as Station A5
	B2	One mile upcoast from the outfall, and over the same depth contour as Station A5
		- Biological Transects -
	T0	At the 20, 40, 60, and 80 ft depth contours along the transect located 50 ft downcoast of and parallel to the outfall
	T1	At the 20, 40, 60, and 80 ft depth contours along the transect located 1 mile downcoast of and parallel to the outfall
	T2	At the 20, 40, 60, and 80 ft depth contours along the transect located 1.5 miles upcoast of and parallel to the outfall

CORE MONITORING

III. INFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-INF

1. FPUD shall monitor influent to FPUD WTP1at M-INF1 as follows:

Table 2. Influent Monitoring

Parameter	Units	Sample Type	Minimum Sampling Frequency
Flow	MGD	recorder / totalizer	continuous
$CBOD_5$ @ 20º C	mg/L	24 hr composite	weekly
TSS	mg/L	24 hr composite	weekly
BOD_5 @ 20º C	mg/L	24 hr composite	monthly

2. FPUD shall calculate and report the CBOD, TSS and BOD mass influent to FPUD WTP1 for the days when the influent is sampled for these constituents. Calculation of influent mass shall be in accordance with Provision VII.G of this Order.

IV. EFFLUENT MONITORING REQUIREMENTS

A. Monitoring Location M-001

1. FPUD shall monitor final effluent from WTP1 at monitoring location M-001 as follows:

Table 3. Effluent Monitoring at M-001

Parameter	Units	Sample Type [1]	Minimum Sampling Frequency
Flow [3]	MGD	recorder / totalizer	continuous
$CBOD_5$	mg/L	24 hr composite	daily [2]
BOD_5	mg/L	24 hr composite	monthly
TSS	mg/L	24 hr composite	daily [2]
pH	pH Units	grab	daily [2]

[1] For samples, which are to be physically composited prior to analyses, or for the results of analyses that are to be arithmetically composited, the basis for compositing shall be the rate of discharge to the ocean, not the rate of inflow to the plant.

[2] Five days per week except seven days per week for at least one week during July or August of each year.

[3] Report the total daily effluent flow and the monthly average effluent flow.

2. FPUD shall calculate and report the CBOD, TSS and BOD effluent mass emission rate from FPUD WTP1 for the days when the effluent is sampled for these constituents. Calculation of effluent mass emission rate shall be in accordance with Provision VII.G of this Order.

3. FPUD shall calculate the daily percent average removal and report the monthly average percent removal for CBOD, BOD and TSS in accordance with Provision VII.H of this Order.

B. Monitoring Locations M-001 or M-002

1. FPUD shall monitor final effluent from WTP1at monitoring location M-001 or M-002 as follows:

Table 4. Effluent Monitoring at M-001 or M-002

Parameter	Units	Sample Type [1]	Minimum Sampling Frequency
Oil and Grease	mg/L	grab	monthly [3]
Settleable Solids	mL/L	grab	daily [2]
Turbidity	NTU	24 hr composite	weekly [3]
Dissolved Oxygen	mg/L	grab	weekly
Temperature	º F	- - -	weekly
Total Residual Chlorine	µg/L	grab	weekly [5]
arsenic	µg/L	24 hr composite	semiannually [3, 4]
cadmium	µg/L	24 hr composite	semiannually [3, 4]

Parameter	Units	Sample Type [1]	Minimum Sampling Frequency
chromium (VI)	µg/L	24 hr composite	semiannually [3, 4, 6]
copper	µg/L	24 hr composite	semiannually [3, 4]
lead	µg/L	24 hr composite	semiannually [3, 4]
mercury	µg/L	24 hr composite	semiannually [3, 4]
nickel	µg/L	24 hr composite	semiannually [3, 4]
selenium	µg/L	24 hr composite	semiannually [3, 4]
silver	µg/L	24 hr composite	semiannually [3, 4]
zinc	µg/L	24 hr composite	semiannually [3, 4]
cyanide	µg/L	24 hr composite	semiannually [3, 4]
ammonia	mg/L	24 hr composite	monthly [3]
non-chlorinated phenolics	µg/L	24 hr composite	semiannually [3, 4]
chlorinated phenolics	µg/L	24 hr composite	semiannually [3, 4]
endosulfan	µg/L	24 hr composite	semiannually [3, 4]
endrin	µg/L	24 hr composite	semiannually [3, 4]
HCH	µg/L	24 hr composite	semiannually [3, 4]
Radioactivity (Individual analyses for gross alpha, gross beta, radium-226, radium-228, strontium-90)	pCi/L	24 hr composite	semiannually [3, 7]
acrolein	µg/L	grab	annually [3]
antimony	µg/L	24 hr composite	annually [3]
bis (2-chloroethoxy) methane	µg/L	grab	annually [3]
bis (2-chloroisopropyl) ether	µg/L	grab	annually [3]
chlorobenzene	µg/L	grab	annually [3]
chromium (trivalent)	µg/L	24 hr composite	annually [3]
di-n-butyl phthalate	µg/L	grab	annually [3]
dichlorobenzenes	µg/L	grab	annually [3]
diethyl phthalate	µg/L	grab	annually [3]
dimethyl phthalate	µg/L	grab	annually [3]
4,6-dinitro-2-methylphenol	µg/L	grab	annually [3]
2,4-dinitrophenol	µg/L	grab	annually [3]
ethylbenzene	µg/L	grab	annually [3]
fluoranthene	µg/L	grab	annually [3]
hexachlorocyclopentadiene	µg/L	grab	annually [3]
nitrobenzene	µg/L	grab	annually [3]
thallium	µg/L	24 hr composite	annually [3]
toluene	µg/L	grab	annually [3]
1,1,1-trichloroethane	µg/L	grab	annually [3]
tributyltin	µg/L	24 hr composite	annually [3]

Parameter	Units	Sample Type [1]	Minimum Sampling Frequency
acrylonitrile	µg/L	grab	annually [3]
aldrin	µg/L	grab	annually [3]
benzene	µg/L	grab	annually [3]
benzidine	µg/L	grab	annually [3]
beryllium	µg/L	24 hr composite	annually [3]
bis (2-chloroethyl) ether	µg/L	grab	annually [3]
bis (2-ethylhexyl) phthalate	µg/L	grab	annually [3]
carbon tetrachloride	µg/L	grab	annually [3]
chlordane	µg/L	grab	annually [3]
chlorodibromomethane	µg/L	grab	annually [3]
chloroform	µg/L	grab	annually [3]
DDT	µg/L	grab	annually [3]
1,4-dichlorobenzene	µg/L	grab	annually [3]
3,3'-dichlorobenzidine	µg/L	grab	annually [3]
1,2-dichloroethane	µg/L	grab	annually [3]
1,1-dichloroethylene	µg/L	grab	annually [3]
dichlorobromomethane	µg/L	grab	annually [3]
dichloromethane	µg/L	grab	annually [3]
1,3-dichloropropene	µg/L	grab	annually [3]
dieldrin	µg/L	grab	annually [3]
2,4-dinitrotoluene	µg/L	grab	annually [3]
1,2-diphenylhydrazine	µg/L	grab	annually [3]
halomethanes	µg/L	grab	annually [3]
heptachlor	µg/L	grab	annually [3]
heptachlor epoxide	µg/L	grab	annually [3]
hexachlorobenzene	µg/L	grab	annually [3]
hexachlorobutadiene	µg/L	grab	annually [3]
hexachloroethane	µg/L	grab	annually [3]
isophorone	µg/L	grab	annually [3]
N-nitrosodimethylamine	µg/L	grab	annually [3]
N-nitrosodi-N-propylamine	µg/L	grab	annually [3]
N-nitrosodiphenylamine	µg/L	grab	annually [3]
PAHs	µg/L	grab	annually [3]
PCBs	µg/L	grab	annually [3]
TCDD equivalents	µg/L	grab	annually [3, 8]
1,1,2,2-tetrachloroethane	µg/L	grab	annually [3]
tetrachloroethylene	µg/L	grab	annually [3]
toxaphene	µg/L	grab	annually [3]
trichloroethylene	µg/L	grab	annually [3]
1,1,2-trichloroethane	µg/L	grab	annually [3]
2,4,6-trichlorophenol	µg/L	grab	annually [3]
vinyl chloride	µg/L	grab	annually [3]

[1] For samples, which are to be physically composited prior to analyses, or for the results of analyses that are to be arithmetically composited, the basis for compositing shall be the rate of discharge to the ocean, not the rate of inflow to the plant.

[2] Five days per week except seven days per week for at least one week during July or August of each year.

[3] The minimum frequency of monitoring for this constituent is automatically increased to twice the minimum frequency specified, if any analysis for this constituent yields a result higher than the effluent limit specified in this Order for this constituent. The increased minimum frequency of monitoring shall remain in effect until the results of a minimum of four consecutive analyses for this constituent are below all effluent limits specified in this Order for this constituent.

[4] The minimum frequency of monitoring for this constituent is automatically reduced to annually if the results of twelve consecutive analyses, representing each month of the year, or the results of twenty four consecutive analyses, representing each quarter of the year, are below the Ocean Plan 6-month median water quality objective for this constituent, or below the Minimum Level for this constituent in the matrix being analyzed, whichever is higher.

[5] Monitoring of total chlorine residual is not required on days when none of the treatment units that are subject to Order No. R9-2006-002 use chlorine for disinfection. If only one sample is collected for total chlorine residual analysis, on a particular day, that sample must be collected at the time when the concentration of total chlorine residual in the discharge would be expected to be greatest. The times of chlorine discharges on the days that samples are collected, and the time at which samples are collected, shall be reported.

[6] FPUD may, at its option, monitor for total chromium. If the measured total chromium concentration exceeds the hexavalent chromium limitation, it will be assumed that the hexavalent chromium limitation was exceeded unless the results of a hexavalent chromium analysis of a replicate sample indicate otherwise. When analyzing for hexavalent chromium, the appropriate sampling and analytical method must be used (i.e., 24-hour composite, cooled to 4º C and analyzed within 24 hours).

[7] Analyses for radioactivity shall be by the following USEPA methods: Method 900.0 for gross alpha and gross beta, Method 903.0 or 903.1 for radium-226, Method 904.0 for radium-228, and Method 905.0 for strontium-90. Monitoring for radium-226 and radium-228 for an effluent sample is not required unless results for gross alpha for the same effluent sample exceed 60 pCi/L.

[8] U.S. EPA method 8280 shall be used to analyze for TCDD equivalents.

C. Minimum Levels

For each numeric effluent limitation identified in Table B of the California Ocean Plan (2001), FPUD shall select one or more Minimum Levels (ML) and their associated analytical methods from Appendix II of the 2001 Ocean Plan. For constituents listed in Appendix II, FPUD shall submit an appropriate ML (and its associated analytical method) for determining compliance with the effluent limitation for that constituent. All MLs must be approved by the Regional Water Board and/or the State Water Board. The "reported" ML is the ML (and its associated analytical method) chosen by FPUD for reporting and compliance determination from Appendix II. ML's chosen by FPUD must be approved by the Executive Officer.

1. Selection of Minimum Levels from Appendix II

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

2. Use of Minimum Levels

   a. MLs, as defined in Appendix II of the Ocean Plan (2001), represent the lowest quantifiable concentration in a sample based on the proper application of method-specific analytical procedures and the absence of matrix interferences. MLs also represent the lowest standard concentration in the calibration curve for a specific analytical technique after the application of appropriate method-specific factors.

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

   b. Other factors may be applied to the ML depending on the specific sample preparation steps employed. For example, the treatment typically applied when there are matrix effects is to dilute the sample or sample aliquot by a factor of ten. In such cases, this additional factor must be applied during the computation of the reporting limit. Application of such factors will alter the reported ML.

   c. FPUD shall instruct its laboratories to establish calibration standards so that the ML (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is FPUD to use analytical data derived from extrapolation beyond the lowest point of the calibration curve. In accordance with the Ocean Plan, FPUD's laboratory may employ a calibration standard lower than the ML in Appendix II.

3. Reporting

   For those constituents identified in Table B of the Ocean Plan (2001), FPUD shall report with each sample result the applicable ML, the analytical method used, and the current Method Detection Limit (MDL). For reporting and compliance determinations for toxic pollutants (those identified in Table B of the Ocean Plan, 2001) FPUD shall use analytical methods identified in Appendix II of the Ocean Plan or as approved by the Regional Water Board or the State Water Board.

V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

FPUD shall conduct acute and chronic toxicity testing on effluent samples collected at Effluent Monitoring Station M-002 in accordance with the following schedule and requirements:

Table 5. Whole Effluent Toxicity Testing

Test	Unit	Sample [1]	Minimum Test Frequency
Acute Toxicity	TUa	24-Hr. Composite	quarterly
Chronic Toxicity	TUc	24-Hr. Composite	quarterly

[1] For samples, which are to be physically composited prior to analyses, or for the results of analyses that are to be arithmetically composited, the basis for compositing shall be the rate of discharge to the ocean, not the rate of inflow to the plant.

1. Acute toxicity testing shall be performed using either a marine fish or invertebrate species in accordance with procedures established by the U.S. EPA guidance manual, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition, October 2002 (EPA-821-R-02-012).

2. Critical life stage toxicity tests shall be performed to measure chronic toxicity (TUc). Testing shall be performed using methods outlined in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (Chapman, G.A., D.L. Denton, and J.M. Lazorchak, 1995) or *Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project* (SWRCB, 1996)

3. A screening period for chronic toxicity shall be conducted every other year for three months, using a minimum of three test species with approved test protocols, from the following list (from the Ocean Plan, 2001). Other tests may be used, if they have been approved for such testing by the State Water Board. The test species shall include a fish, an invertebrate, and an aquatic plant. After the screening period, the most sensitive test species shall be used for the monthly testing. Repeat screening periods may be terminated after the first month if the most sensitive species is the same as found previously to be most sensitive. Dilution and control water should be obtained from an unaffected area of the receiving waters. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay test and reported with test results.

4. If the toxicity testing result shows an exceedance of the chronic toxicity limitation identified in the performance goals for Outfall 001 (Section IV.B.2 of this Order), the Discharger shall:

   a. Take all reasonable measures necessary to immediately minimize toxicity; and

   b. Increase the frequency of the toxicity test(s) that showed a violation to at least two times per month until the results of at least two consecutive toxicity tests do not show violations.

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

Table 6. Approved Tests for Chronic Toxicity

Species	Test	Tier [1]	Reference [2]
giant kelp, *Macrocystis pyrifera*	percent germination; germ tube length	1	a, c

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

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

[2] Protocol References:

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

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

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

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

VI. LAND DISCHARGE MONITORING REQUIREMENTS

[Not applicable]

VII. RECLAMATION MONITORING REQUIREMENTS

[Not applicable]

VIII. RECEIVING WATER MONITORING REQUIREMENTS

The receiving water monitoring program required herein is also required by Regional Water Board Order No. R9-2006-002, which establishes limitations and conditions for discharges from FPUD's Facilities. FPUD may conduct the required receiving water monitoring together with the City of Oceanside, US Marine Corps Base Camp Pendleton, and Biogen IDEC Pharmaceuticals Corporation, as these entities discharge through the Oceanside Ocean Outfall (OOO).

Receiving water and sediment monitoring in the vicinity of the OOO shall be conducted as specified below. Station location, sampling, sample preservation and analyses, when not specified, shall be by methods approved by the Executive Officer.

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

During monitoring events, if possible, sample stations shall be located using a land-based microwave positioning system or a satellite positioning system such as GPS. If an alternate navigation system is proposed, its accuracy should be compared to that of microwave and satellite based systems, and any compromises in accuracy shall be justified.

A. Surf Zone Water Quality Monitoring

All surf zone stations shall be monitored as follows:

1. Grab samples shall be collected and analyzed for total and fecal coliform and enterococcus bacteria at a minimum frequency of one time per week.

   As required by implementation procedures at section III. D of the Ocean Plan (2001), measurement of enterococcus density shall be conducted at all stations where measurement of total and fecal coliform bacteria is required. When a shore station consistently exceeds a coliform objective or exceeds a geometric mean enterococcus density of 24 organisms per 100 mL for a 30-day period or 12 organisms per 100 mL for a 6-month period, FPUD shall conduct a sanitary survey, if so directed by the Regional Water Board, to determine if FPUD's Facilities are the source of the contamination.

2. Samples shall be collected in accordance with "Standard Operating Procedures for the Collection of Water Samples for Bacterial Analysis from Ocean and Bay Receiving Waters" developed by the County of San Diego Department of Environmental Health and incorporated herein by reference.

3. At the same time samples are collected from surf zone stations, the following information shall be recorded: observation of wind direction and speed; weather (cloudy, sunny, or rainy); current direction; tidal conditions; and observations of water color, discoloration, oil and grease; turbidity, odor, and materials of sewage origin in the water or on the beach; water temperature (º F); and status of the mouth of the Buena Vista Lagoon (open, closed, flow, etc.)

4. If a surf zone water quality monitoring station consistently exceeds a coliform objective or exceeds a geometric mean enterococcus density of 24 organisms per 100 mL for a thirty day period or 12 organisms per 100 mL for a six month period, FPUD shall conduct a survey to determine if discharges from FPUD's Facilities are the source of the contamination. If the survey indicates that elevated coliform and/or enterococcus levels are attributable to discharges from FPUD's Facilities, FPUD shall take action to control the source.

B. Near Shore Water Quality Monitoring

1. Reduced Monitoring

If the Executive Officer determines that the effluent at all times complies with Section IV.B Effluent Limitations and Performance Goals of Order No. R9-2005-0136, only reduced near shore water quality monitoring specified below is required.

Table 7a. Near Shore Water Quality Reduced Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	-	-	monthly
Total and Fecal Coliform	number / 100 ml	grab [1]	monthly
Enteroccoccus [2]	number / 100 ml	grab [1]	monthly

[1] At the surface.

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

2. Intensive Monitoring

The intensive near shore water quality monitoring specified below is required during the 12-month period beginning July 1, 2008 through June 30, 2009, and must be submitted by August 31, 2009. This monitoring data will assist Regional board staff in the evaluation of the Report of Waste Discharge. The intensive near shore water quality monitoring specified below is also required if the Executive Officer determines that the effluent does not at all times comply with Section IV.B Effluent Limitations and Performance Goals of Order No. R9-2005-0136.

Table 7b. Near Shore Water Quality Intensive Monitoring Requirements

Determination	**Units**	**Type of Sample**	**Minimum Frequency**
Visual Observations	-	-	monthly
Total and Fecal Coliform	number / 100 ml	grab [1]	monthly
Enteroccoccus	number / 100 ml	grab [1]	monthly

[1] At the surface and mid-depth.

C. Off Shore Water Quality Monitoring

1. Reduced Monitoring

If the Executive Officer determines that the effluent at all times complies with Section IV.B Effluent Limitations and Performance Goals of Order No. R9-2005-0136, only reduced off shore water quality monitoring specified below is required.

Table 8a. Off Shore Water Quality Reduced Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	-	-	monthly
Total and Fecal Coliform	number / 100 ml	grab [1]	monthly
Enteroccoccus [2]	number / 100 ml	grab [1]	monthly

[1] At the surface and mid-depth.

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

2. Intensive Monitoring

The intensive off shore water quality monitoring specified below is required during the 12-month period beginning July 1, 2008 through June 30, 2009, and must be submitted by August 31, 2009. This monitoring data will assist Regional board staff in the evaluation of the Report of Waste Discharge. The intensive off shore water quality monitoring specified below is also required if the Executive Officer determines that the effluent does not at all times comply with Section IV.B Effluent Limitations and Performance Goals of Order No. R9-2005-0136.

Table 8b. Off Shore Water Quality Intensive Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations	-	-	monthly
Total and Fecal Coliform	number / 100 ml	grab [1]	monthly
Enteroccoccus	number / 100 ml	grab [1]	monthly
Conductivity, Temperature and Depth (CTD)	Practical salinity units, ° C, feet	instrument [2]	monthly
Dissolved Oxygen	mg/L	grab [3]	monthly
Light Transmittance	percent	instrument [3]	monthly
pH	pH units	grab [4]	monthly

[1] At the surface and mid-depth.

[2] At 1-meter intervals, surface to bottom.

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

[4] At the surface.

D. Benthic Monitoring

The monitoring specified below is required during the 12-month period beginning July 1, 2008 through June 30, 2009. The monitoring data will assist Regional Water Board staff in the evaluation of the Report of Waste Discharge, which is required to be submitted by FPUD within 180 days prior to the Order's expiration date. Benthic monitoring shall be conducted at all offshore monitoring stations.

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

Table 9. Sediment Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Sulfides	mg/kg	core	Semiannually
Total Chlorinated Hydrocarbons	mg/kg	core	Semiannually
BOD_5	mg/kg	core	Semiannually
COD	mg/kg	core	Semiannually
Particle Size Distribution	mg/kg	core	Semiannually
Arsenic	mg/kg	core	Annually
Cadmium	mg/kg	core	Annually
Total Chromium	mg/kg	core	Annually
Copper	mg/kg	core	Annually
Lead	mg/kg	core	Annually
Mercury	mg/kg	core	Annually
Nickel	mg/kg	core	Annually
Silver	mg/kg	core	Annually
Zinc	mg/kg	core	Annually
Cyanide	mg/kg	core	Annually
Phenolic Compounds	mg/kg	core	Annually
Radioactivity	pCi/kg	core	Annually

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

Table 10. Infauna Monitoring Requirements

Determination	Units	Minimum Frequency
Benthic Biota	Identification and enumeration	3 grabs, semiannually

E. Additional Biological Monitoring

Demersal Fish and Macroinvertebrates

The monitoring specified below is required during the 12-month period beginning July 1, 2008 through June 30, 2009. The monitoring data will assist Regional Water Board staff in the evaluation of the Report of Waste Discharge, which is required to be submitted by FPUD within 180 days prior to the Order's expiration date of August 10, 2010.

Table 11. Demersal Fish and Macroinvertebrates Monitoring Requirements

Determination	Units	Minimum Frequency
Biological Transects	Identification and enumeration	Annually

In rocky or cobble areas, a 30-meter band transect, one meter wide, shall be established on the ocean bottom. Operations at each underwater station shall include: (1) recording of water temperature (may be measured from a boat) and estimated visibility and pelagic macrobiota at each 10-foot depth increment throughout the water column and at the bottom; (2) recording of general bottom description; (3) enumeration by estimate of the larger plants and animals in the band transect area; (4) development of a representative photographic record of the sample area; and (5) within each band, three one-quarter meter square areas shall be randomly selected, and all macroscopic plant and animal life shall be identified within each square to as low a taxon as possible, and measured. Sampling techniques will follow those employed by biologist divers of the California State Department of Fish and Game.

In sandy areas, a 30-meter band transect, one meter wide, shall be established on the ocean bottom. Operations at each underwater station shall include: (1) recording of water temperature (may be measured from a boat), and estimated visibility and pelagic macrobiota at each 10-foot depth increment throughout the water column and at the bottom; (2) recording of general bottom description; (3) recording of height, period, and crest direction of ripple marks; (4) recording of amount, description, and location of detritus on bottom; (5) creation of a representative photographic record of the area sampled; and (6) within each band, three cores of at least 42.5 cm2 in area shall be randomly taken to a depth of 15 cm where possible, (the three cores may be taken from a boat) and the material removed sifted through at least a 1 mm mesh screen, and all organisms identified to as low a taxon as possible, enumerated, measured, and reproductive conditions assessed where feasible. Sampling techniques will follow those employed by biologist divers of the California State Department of Fish and Game.

For each epifauna and infauna, size frequency and distribution shall be shown for at least the three numerically largest populations identified to the lowest possible taxon and appropriate graphs showing the relationship between species frequency and population shall be plotted from each sample.

REGIONAL MONITORING

F. Kelp Bed Monitoring

FPUD shall participate with other ocean Dischargers in the San Diego Region in an annual regional kelp bed photographic survey. Kelp beds shall be monitored annually by means of vertical aerial infrared photography to determine the maximum areal extent of the region's coastal kelp beds within the calendar year. Surveys shall be conducted as close as possible to the time when kelp bed canopies cover the greatest area. The entire San Diego Region coastline, from the international boundary to the San Diego Region / Santa Ana Region boundary, shall be photographed on the same day.

The images produced by the surveys shall be presented in the form of a 1:24,000 scale photo-mosaic of the entire San Diego Region coastline. Onshore reference points, locations of all ocean outfalls and diffusers, and the 30-foot (MLLW) and 60 foot (MLLW) depth contours shall be shown

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

G. Intensive Monitoring

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

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

IX. OTHER MONITORING REQUIREMENTS

A. Solids Monitoring

FPUD shall report, annually, the volume of screenings, sludge [biosolids], grit, and other solids generated and/or removed during wastewater treatment and the locations where these waste materials are placed for disposal. Copies of all annual reports required by 40 CFR 503 shall be submitted to the Regional Water Board at the same time they are submitted to the U.S. EPA.

B. Special Studies

[None at this time]

X. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

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

2. FPUD shall arrange the data in tabular form so that the specified information is readily discernible. The data shall be summarized in such a manner as to clearly illustrate whether the facility is operating in compliance with waste discharge requirements.

3. FPUD shall report with each sample result the applicable Minimum Level (ML) and the laboratory current Method Detection Limit (MDL) as determined by the procedure in 40 CFR 136.

4. FPUD shall report all instances of noncompliance not reported under (Attachment E) E.III, E.V, and E.VI of Order No. R9-2006-002 at the time monitoring reports are submitted.

5. Each year FPUD shall submit an annual report to the Regional Water Board and U.S. EPA Region 9 that contains tabular and graphical summaries of the monitoring data obtained during the previous year. FPUD shall discuss the compliance record and corrective actions taken, or which may be taken, or which may be needed to bring the discharge into full compliance with the requirements of Order No. R9-2006-002 and this MRP.

6. Laboratory method detection limits (MDLs), practical quantitation limits (PQLs), and minimum Levels (MLs) shall be identified for each constituent in the matrix being analyzed with all reported analytical data. Acceptance of data shall be based on demonstrated laboratory performance.

7. FPUD shall attach a cover letter to the Discharge Monitoring Report. The information contained in the cover letter shall clearly identify violations of the WDRs, discuss corrective actions taken or planned and the proposed time schedule of corrective actions. Identified violations should include a description of the requirement that was violated and a description of the violation.

B. Self Monitoring Reports (SMRs)

1. At any time during the term of this permit, the State or Regional Water Board may notify FPUD to electronically submit self-monitoring reports. Until such notification is given, FPUD shall submit self-monitoring reports in accordance with the requirements described below.

2. FPUD shall submit monthly, quarterly, semiannual, and annual Self Monitoring Reports including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order. Monthly reports shall be due on the 1st day of the second month following the end of each calendar month; Quarterly reports shall be due on May 1, August 1, November 1, and February 1 following each calendar quarter; Semi-annual reports shall be due on August 1 and March 1 following each semi-annual period; Annual reports shall be due on March 1 following each calendar year.

3. Monitoring reports shall be submitted at intervals and in a manner specified in Order No. R9-2006-002 and in this MRP. Unless otherwise specified, monitoring reports shall be submitted to the Regional Water Board and to the U.S. EPA Region 9 according to the following schedule:

Table 12. Reporting Schedule

Monitoring Frequency	Reporting Period	Report Due
Continuous[14], Daily, Weekly, or Monthly	All	By the first day of the second month after the month of sampling
Quarterly	Jan – March April – June July – September Oct - Dec	May 1 August 1 Nov 1 February 1
Semiannually	Jan – June July - Dec	August 1 March 1
Annually	Jan – Dec	March 1

4. FPUD shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the Facilities are operating in compliance with interim and/or final effluent limitations.

5. FPUD shall attach a cover letter to the SMR. The information contained in the cover letter shall clearly identify violations of the WDRs; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

6. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below:

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

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

C. Discharge Monitoring Reports (DMRs)

1. As described in Section VII.B.1 above, at any time during the term of this permit, the State or Regional Water Board may notify FPUD to electronically submit self-monitoring reports. Until such notification is given, FPUD shall submit discharge monitoring reports (DMRs) in accordance with the requirements described below.

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

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

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

Attachment F – Fact Sheet

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List of Tables

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.

I. PERMIT INFORMATION

The following table summarizes administrative information related to the FPUD's Facilities.

Table 1. Facility Information

WDID	**9 000000115**
Discharger	**Fallbrook Public Utility District**
Name of Facility	**Wastewater Treatment Plant No. 1**
Facility Address	**1425 South Alturas Street Fallbrook, CA 92028 San Diego County**
Facility Contact, Title and Phone	**Jos. F. Jackson, Chief Engineer, (760) 728-1125**
Authorized Persons to Sign and Submit Reports	**Keith Lewinger, General Manager, (760) 728-1125 Jos. F. Jackson, Chief Engineer/Assistant Genera Manager, (760) 728-1125 David Deem, Chief Plant Operator, (760) 728-1125**
Mailing Address	**P.O. Box 2290 Fallbrook, CA 92028 San Diego County**
Billing Address	**P.O. Box 2290 Fallbrook, CA 92028 San Diego County**
Type of Facility	**Municipal POTW**
Major or Minor Facility	**Major**
Threat to Water Quality	**1**
Complexity	**A**
Pretreatment Program	**No**
Reclamation Requirements	**Producer and Distributor (regulated under separate WDRs)**
Facility Permitted Flow	**2.7 MGD**
Facility Design Flow	**2.7 MGD**
Watershed	**Pacific Ocean**
Receiving Water	**Pacific Ocean**
Receiving Water Type	**Ocean**

A. The Fallbrook Public Utility District (hereinafter Discharger) is the owner and operator of Fallbrook Public Utility District Wastewater Treatment Plant No. 1 (WTP1), the Fallbrook Public Utility District land outfall pipeline, and the Fallbrook Public Utility District sanitary sewer system; together these facilities comprise a municipal POTW. Hereinafter, these facilities are collectively referred to as the Discharger's (FPUD's) Facilities.

B. The Discharger discharges effluent consisting of treated wastewater from WTP1 through the Oceanside Ocean Outfall, owned and operated by the City of Oceanside, to the Pacific Ocean, a water of the United States, and is currently regulated by Order No. 2000-012, which was adopted on February 9, 2000 and expired on February 9, 2005. The terms of the existing Order automatically continued in effect after the permit expiration date.

C. The Discharger filed a Report of Waste Discharge (RoWD) and submitted an application for renewal of its Waste Discharge Requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permit on August 13, 2004. The Regional Water Board acknowledged receipt of the application on October 4, 2004. Supplemental Information submitted by the Discharger was received on October 15, 2004. The Regional Water Board notified the Discharger on February 18, 2005 that review of the RoWD/application was complete.

D. A summary of previous Waste Discharge Requirements and NPDES permits and related amendments for the discharge from FPUD through the OOO is as follows:

1. On July 18, 1983, the Regional Water Board adopted Order No. 83-19, NPDES No. CA0108031, *Waste Discharge Requirements for Fallbrook Sanitary District, San Diego County*. Order No. 83-19, and Addenda Nos. 1, 2, and 3 thereto, established requirements for the combined discharge of up to 1.95 million gallons per day (MGallons/Day) of treated wastewater from the Fallbrook Sanitary District Water Pollution Control Facility Plant Nos. 1 and 2 to the Pacific Ocean through the Oceanside Ocean Outfall. Order No. 83-19 contained an expiration date of July 18, 1988.

2. On February 27, 1989, the Regional Water Board adopted Order No. 89-13, NPDES No. CA0108031, *Waste Discharge Requirements for the Fallbrook Sanitary District Water Pollution Control Facilities Plant Nos. 1 and 2 Discharge Through The Oceanside Ocean Outfall, San Diego County*. Order No. 89-13 established requirements for the combined discharge of up to 3.1 MGallons/Day of treated wastewater from the Fallbrook Sanitary District Water Pollution Control Facility Plant Nos. 1 and 2 to the Pacific Ocean through the Oceanside Ocean Outfall. Monitoring and Reporting Program No. 83-19 remained in effect with the adoption of Order No. 89-13, as no new monitoring and reporting program was issued with Order No. 89-13. Order No. 89-13 contained an expiration date of February 27, 1994.

3. On January 26, 1995, the Fallbrook Public Utility District submitted a letter notifying the Regional Water Board that the Fallbrook Sanitary District had merged with the Fallbrook Public Utility District. The Fallbrook Public Utility District has been responsible for NPDES permit conditions since the transfer date of December 20, 1994.

4. On February 9, 1995, the Regional Water Board adopted Order No. 95-08, NPDES No. CA0108031, *Waste Discharge Requirements for the Fallbrook Public Utility District Discharge to the Pacific Ocean Through The Fallbrook Land Outfall and the Oceanside Ocean Outfall*. Order No. 95-08 established requirements for the combined discharge of up to 3.1 MGallons/Day of treated wastewater from the Fallbrook Public Utility District Water

Pollution Control Facility Plant Nos. 1 and 2 to the Pacific Ocean through the Oceanside Ocean Outfall. Order No. 95-08 contained an expiration date of February 9, 2000.

On June 8, 1995, this Regional Board adopted *Technical Change Order No. 1 to Monitoring and Reporting Program No. 95-08 for the Fallbrook Public Utility District Discharge Through the Oceanside Ocean Outfall*, which became effective on July 1, 1995.

5. On February 9, 2000, the Regional Water Board adopted Order No. 2000-12, NPDES permit No. CA0108031, *Waste Discharge Requirements for the Fallbrook Public Utility District Wastewater Treatment Plant No. 1 Discharge to the Pacific Ocean Via the Oceanside Ocean Outfall*, which superseded Order No. 95-08. Order No. 2000-12 renewed the requirements for the discharge of up to 2.7 MGD of treated wastewater from the Fallbrook Public Utility District Wastewater Treatment Plant No. 1 to the Pacific Ocean through the Oceanside Ocean Outfall. Order No. 2000-036 contained an expiration date of February 9, 2005. On November 12, 2003, the Regional Water Board adopted Addendum No. 1 to Order No. 2000-12 to revise the surf zone receiving water monitoring and reporting program of Order No. 2000-12.

II. FACILITY DESCRIPTION

A. Description of Wastewater and Biosolids Treatment or Controls

The Fallbrook Public Utility District (hereinafter Discharger) is the owner and operator of Fallbrook Public Utility District Wastewater Treatment Plant No. 1, the Fallbrook Public Utility District land outfall pipeline, and the Fallbrook Public Utility District sanitary sewer system; together these facilities comprise a municipal POTW. These facilities are collectively referred to as the Facilities in this Order. Order No. R9-2006-002 establishes discharge prohibitions, limitations, and conditions to regulate discharges of effluent consisting of treated wastewater from FPUD's Facilities to the Pacific Ocean; these discharges were regulated by Order No. 2000-012 (NPDES Permit No. CA0108031) that expired on February 9, 2005 and administratively extended until the adoption of this Order.

FPUD provides for the collection, treatment, and disposal of wastewater generated in the community of Fallbrook, with an approximate population of 25,000, which represents a portion of FPUD's drinking water service area. Additionally, FPUD provides treatment and disposal for approximately 10,000 gallons of wastewater generated at Fallbrook US Naval Weapons Station , located adjacent to the community of Fallbrook. Fallbrook Public Utility District is not required to have an industrial pretreatment program at this time because WTP1 does not currently receive pollutants from any industry subject to pretreatment standards and other circumstances do not currently warrant a pretreatment program.

The Fallbrook Public Utility District Wastewater Treatment Plant No. 1 (WTP1) is located at 1425 Alturas Street in the community of Fallbrook, adjacent to the Fallbrook Creek. Wastewater treatment at WTP1 consists of preliminary treatment by screening and grit removal, primary

sedimentation and scum removal, biological treatment using activated sludge followed by secondary clarification, tertiary treatment by coagulation and flocculation followed by sand filtration, and chlorine disinfection. WTP1 has a secondary treatment design capacity of 2.7 MGD and a tertiary treatment design capacity of 3.1 MGD. Typically, all wastewater entering Plant No. 1 is treated to full tertiary treatment with disinfection. During the period 1999-2003, approximately 15 to 32 percent of the tertiary effluent from WTP1 was distributed as recycled water, the discharge of which is covered under separate waste discharge requirements, Order No. 91-39, *Waste Discharge Requirements for Fallbrook Public Utility District, Plant No.1 and 2 Reclamation Projects, San Diego County*. There are approximately 10 recycled water use sites in Fallbrook which are supplied directly from WTP1. All WTP1 effluent not used by recycled water users in Fallbrook is discharged to FPUD's land outfall pipeline, a 16-inch diameter ductile iron gravity flow pipeline, which conveys the effluent approximately 18 miles from Fallbrook to the Oceanside Ocean Outfall (OOO) at the City of Oceanside's La Salina Wastewater Treatment Plant site. CalTrans is the final recycled water user and takes WTP1 effluent from the land outfall pipeline for irrigation of Interstate 5 landscaping within Oceanside. All treated wastewater from WTP1 that is not distributed as recycled water, hereinafter referred to as effluent, is eventually discharged to the Pacific Ocean through the OOO. FPUD has an agreement with the City of Oceanside to discharge effluent through the OOO at a maximum daily flowrate of 3.1 million gallons per day (MGD) and a flow rate of up to 2.4 MGD on an annual average basis. Sludge from the secondary treatment processes at WTP1 is aerobically digested, then dewatered by a belt press or, if the belt press is inoperative, dewatered in sludge drying beds located within the WTP1 property. The Regional Water Board requested a certification report verifying the design capacities of WTP1 and the land outfall pipeline as part of the RoWD/application; FPUD referred the Regional Water Board to the original certification reports from the 1980s.

At the time of adoption, screenings from the headworks and solids from grit removal at WTP1 are collected on-site and trucked to landfills in San Diego County. Dewatered treated sludge [biosolids] from WTP1 is trucked to Corona, California where it is composted to Class A requirements for land application by Synagro Technologies, Inc. (P.O. Box 7027, Corona, CA 92878-7027).

Over the three-year period between 2001 and 2003 the flowrate of effluent discharged through the Oceanside Ocean Outfall from WTP1 were reported by FPUD as follows:

Table 2. Historical Flows (MGD)

Fallbrook Public Utility Distict Discharge to the OOO	2001	2002	2003
Annual Average Daily Flow	1.821	2.045	1.979
Maximum Daily Flow	1.966	2.228	2.344

B. Discharge Points and Receiving Waters

FPUD is subject to a flow limitation of 2.7 MGD contained in this Order for the discharge of effluent from its Facilities through the OOO to the Pacific Ocean. FPUD has a contractual agreement with the City of Oceanside to discharge effluent through the OOO at a maximum daily flowrate of 3.1 million gallons per day (MGD) and a flow rate of up to 2.4 MGD on an annual average basis.

The City of Oceanside owns and operates the Oceanside Ocean Outfall (OOO) which begins at the City of Oceanside's La Salina Wastewater Treatment Plant site just north of the mouth of Loma Alta Creek and extends southwesterly approximately 8,850 ft offshore to a depth of approximately 100 ft. The OOO is a 38-inch ID steel pipe with a 1-inch thick cement mortar interior lining and 2.75-inch thick cement mortar outer jacket; the OOO has a 36-inch internal diameter. The OOO terminates with a 230-ft diffuser collinear with the rest of the outfall and extends to a depth of approximately 108 ft. The diffuser has fourteen 5-inch diameter ports and ten 4-inch diameter ports. The terminus of the diffuser is located at Latitude 33° 09' 46" North, Longitude 117° 23' 29" West.

The design capacity of the OOO is 30 MGallons/Day (average daily flow), with a maximum rated peak-day capacity of 45 MGallons/Day. The City of Oceanside may discharge up to 22.9 MGD through the OOO subject to waste discharge requirements contained in Order No. R9-2005-0136 (NPDES Permit No. CA0109347) which is scheduled for adoption by the Regional Water Board on June 8, 2005. The City of Oceanside has a contract with the US Marine Corp Base Camp Pendleton (USMCBCP) for the discharge of up to 3.6 MGD of undisinfected secondary effluent, treated at USMCBCP Wastewater Treatment Plant Nos. 1, 2, 3, and 13, to the Pacific Ocean through the OOO, subject to waste discharge requirements contained in Order No. R9-2003-0155 (NPDES Permit No. CA0109347) which was adopted by the Regional Board on August 13, 2003. The City of Oceanside has a contract with Biogen IDEC Pharmaceuticals Corporation (IDEC) for the discharge of up to 0.155 MGD of brine and other wastes associated with water softening and purification processes and other non-industrial maintenance-type activities to the Pacific Ocean through the OOO, subject to waste discharge requirements contained in Order No. R9-2003-0140 (NPDES Permit No. CA0109193) which was adopted by the Regional Board on August 13, 2003. The combined permitted flowrate from all agencies discharging through the OOO, including the discharge from Fallbrook Public Utility District, is 29.055 MGD.

The Regional Water Board, with assistance from the State Water Board, determined the minimum initial dilution factor to be 87 for the discharge of up to 29.055 MGD of effluent through the OOO using the US EPA-approved computer modeling package Visual Plumes with the UM3 model. The computer modeling was performed based on characteristics of the OOO, the effluent, and the receiving water, subject to the input limitations of Visual Plumes. The flowrate use in the computer modeling are summarized in Table No. 3 below. Initial dilution factors were determined for each month during the period July 2003 through June 2004 using receiving water characteristics for each month provided by the City of Oceanside; the minimum initial dilution factor was determined using the May 2004 receiving water data. Section IV.C of this Fact Sheet includes additional discussion on initial dilution. Additional details of the initial

dilution computer modeling performed are provided in Attachment G and in the Regional Water Board records.

Table No. 3 Discharges through the Oceanside Ocean Outfall

Discharger and Permit	Discharging Facility	Nature of Discharge	Flow (MGD)
City of Oceanside (Tentative Order No. 2005-0136)	La Salina WWTP	Secondary treated effluent	5.5
	San Luis Rey WWTP	Secondary treated effluent	15.4
	Brackish Groundwater Desalination Facility	Reverse Osmosis Brine	2.0
FPUD (Tentative Order No. 2006-002)	FPUD Plant No. 1	Tertiary treated effluent	2.4
USMC Camp Pendleton (Order No. R9-2003-0155)	USMCB CP Plant Nos. 1, 2, 3, and 13	Secondary treated effluent	3.6
Biogen IDEC Pharmaceuticals Corp. (Order No. R9-2003-0140)	New IDEC Manufacturing Operations (NIMO)	Brine waste discharge from water purification and softening processes	0.155
TOTAL			**29.055**

Oceanside Artificial Fishing Reef No. 1, described in the California Department of Fish and Game Guide to Artificial Reefs of Southern California, is located approximately 6,000 feet north of the inshore end of the OOO diffuser at Latitude 33° 10' 57" North, Longitude 117° 25' 00" West. Additionally, the North Carlsbad and Agua Hedionda kelp beds are the closest significant kelp beds to the Oceanside Ocean Outfall.

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

Effluent limitations contained in Order No. 2000-012 for discharges from FPUD's Facilities and representative monitoring data obtained at Monitoring Location M-001 or M-002 for years 1999 through 2003 are as follows:

Table 4. Historic Effluent Limitations and Monitoring Data

Parameter (units)		Effluent Limitation			Monitoring Data (From 1999 To 2003)	
		Monthly Average (30 day)	Weekly Average (7 day)	Maximum at any time	Mean Discharge	Maximum Discharge
$CBOD_5$	mg/L	25	40	45	5.9	220
	lbs/day	410	650	730	71.8	2,766
TSS	mg/L	30	45	50	4.7	430
	lbs/day	490	730	810	56.2	5,407

Parameter (units)		Effluent Limitation			Monitoring Data (From 1999 To 2003)	
		Monthly Average (30 day)	Weekly Average (7 day)	Maximum at any time	Mean Discharge	Maximum Discharge
Oil and Grease	mg/L	25	40	75	5.3	29
	lbs/day	410	650	730	58.9	212
Settleable Solids	mL/L	1.0	1.5	3.0	0.1	0.1
Turbidity	NTU	75	100	225	1.8	11.52
pH		6.0 to 9.0			N/A	7.48
Acute toxicity	TUa	1.5	2.0	2.5	0.6	1.2

Order No. 2000-012 also requires that the 30-day average removals of $CBOD_5$ and TSS through FPUD's Facilities be 85 percent or greater; and it establishes concentration and mass based effluent limitations for 77 toxic pollutants, based on water quality objectives presented in the Ocean Plan (1997).

WTP1 experienced process failures in its secondary clarifier on May 12, 2000; April 16, 2001; May 13, 2001; June 3, 2002; and September 12, 2002 which caused multiple exceedances of TSS and CBOD5 effluent limitations contained in Order No. 2000-012. These process failures were attributed to the growth of filamentous organisms, incomplete nitrification, and sludge bulking resulting in poor settling and removal of solids in the secondary clarifier. Since the last occurrence in September 2002, WTP1 has not experienced similar process failures.

FPUD reported an acute toxicity result for an effluent sample taken on March 13, 2000 which appeared to exceed the acute toxicity limitation. That sample was taken at WTP1 prior to being discharged to FPUD's land outfall line. FPUD explained that residual chlorine was the cause of the toxicity and that the effluent would not have exhibited toxicity if the sample were taken at the terminal end of its land outfall pipeline in Oceanside, approximately 18 miles from WTP1. FPUD explained that the chlorine would have dissipated from the effluent as the effluent traveled in the land outfall which in turn would result in lower effluent toxicity. FPUD currently takes effluent samples for toxicity tests at its metering vault at the City of Oceanside's La Salina Wastewater Treatment plant prior to the point where FPUD's land outfall pipeline merges with the Oceanside Ocean Outfall. In 2002 and 2003, several chronic toxicity results for effluent taken at the metering vault raised questions about chronic toxicity in the effluent remaining even after much of the chlorine has dissipated. FPUD reasoned that effluent samples for toxicity tests should be allowed to be dechlorinated in the laboratory prior to initiating the toxicity tests because USEPA toxicity methods allowed for dechlorination of samples. The Regional Water Board maintained that samples for whole effluent toxicity tests for routine monitoring may not be dechlorinated. USEPA scientists confirmed that the USEPA allowance of sample dechlorination is intended for toxicity monitoring in specific situations such as in a Toxicity Reduction Evaluation.

Order No. 2000-012 established effluent limitations for toxic pollutants based on water quality objectives of the Ocean Plan (1997) and required monitoring at the following intervals:

Table 5. Toxic Pollutant Monitoring

Toxic Pollutant from Table B of the Ocean Plan (1997)	Monitoring Frequency
Chlorine	Daily
Metals, Cyanide, Chlorinated and Non-Chlorinated Phenolics, Endosulfan, Endrin, HCH, Radioactivity	Semi-Annually
All other Table B pollutants from the Ocean Plan (1997)	Annually

Monitoring of toxic pollutants for the period 2000 through 2004 showed the following results:

1. During this 5-year period, effluent limitations for toxic pollutants from Table B of the Ocean Plan were not exceeded.

2. Prior to April 2003, FPUD took effluent samples for total chlorine residual (TCR) compliance at WTP1. Since all effluent from WTP1 is disinfected with chorine in order to comply with recycled water requirements, TCR tended to be high in effluent samples taken at WTP1 and at times appeared to exceed the TCR effluent limitations. Since April 2003, FPUD has also been monitoring for TCR at the metering vault at the La Salina Wastewater Treatment Plant in Oceanside. TCR levels at the metering vault have been consistently below the TCR effluent limitations.

3. Analytical results reported by FPUD indicate that the method detection limits used for analyses of several pollutants were, at times, greater than the corresponding effluent limitation and/or the Minimum Level established by the Ocean Plan (2001). Some of these pollutants include endrin, cyanide, hexachlorohexane, and endosulfan.

D. Compliance Summary

As described above, FPUD has generally complied with the effluent limitations of Order No. 2000-012 with some exceptions. Enforcement actions taken against FPUD for monetary penalties were as follows:

FPUD was issued a Mandatory Minimum Penalty Complaint for a $3,000 mandatory minimum penalty on January 19, 2001 for four apparent violations of Order No 2000-012: one violation of the daily maximum CBOD5 effluent limitation on May 12, 2000; one violation of the 30-day average oil and grease effluent limitation on June 20, 2000; and two violations of the daily maximum CBOD5 effluent limitation on May 17 and 18, 2000. These four violations within a six-month period were chronic violations that required a mandatory minimum penalty of $3,000 for the fourth violation pursuant to Water Code Section 13385(i). The Complaint was subsequently dropped during a public hearing of the Regional Water Board in April 2001 because the 30-day average oil and grease effluent concentration on June 20, 2000 was determined to have been improperly calculated and, therefore, was not a violation.

FPUD was issued an Administrative Assessment of Civil Liability containing a $87,000 mandatory minimum penalty on December 11, 2002 for 31 violations of the total suspended solids and CBOD5 effluent limitations of Order No. 2000-012 during the period April 2001

through June 2002. FPUD subsequently petitioned the enforcement action to the State Water Board and San Diego Superior Court. A settlement agreement was reached between the Regional Water Board and FPUD on July 15, 2004 for a reduced penalty of $33,000.

E. Planned Changes

FPUD has not indicated any planned changes to its Facilities.

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 (CWC). It shall serve as a NPDES permit for point source discharges from the Discharger's Facilities to the Pacific Ocean at Outfall 001. This Order also contains discharge prohibitions, effluent limitations, discharge specifications, provisions, and other requirements pursuant to the CWC.

B. California Environmental Quality Act (CEQA)

This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Chapter 3, Division 13 commencing with Section 21100) in accordance with Section 13389 of the CWC.

C. State and Federal Regulations, Policies, and Plans

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

Table 6. Basin Plan Beneficial Uses of the Pacific Ocean

Discharge Point	Receiving Water Name	Beneficial Use
Outfall 001	Pacific Ocean	Industrial Service Supply (IND); Navigation (NAV); Contact Water Recreation (REC-1); Non-Contact Water Recreation (REC-2); Commercial and Sport Fishing (COMM); Preservation of Biological Habitats of Special Significance (BIOL); Wildlife Habitat (WILD); Rare, Threatened, or Endangered Species (RARE); Marine Habitat (MAR); Aquaculture (AQUA); Migration of Aquatic Organisms (MIRG); Spawning, Reproduction, and/or Early Development (SPWN); Shellfish Harvesting (SHELL)

The Basin Plan relies primarily on the requirements of the *Water Quality Control Plan for Ocean Waters of California* (Ocean Plan) for protection of the beneficial uses of the State ocean waters. The Basin Plan, however, may contain additional water quality objectives applicable to the Discharger.

On November 16, 2000 the State Water Board adopted a revised Ocean Plan. The revised Ocean Plan became effective on December 3, 2001. The Ocean Plan contains water quality objectives and beneficial uses for the ocean waters of California. The beneficial uses of State ocean waters to be protected are summarized below:

Table 7. Ocean Plan Beneficial Uses of the Pacific Ocean.

Discharge Point	Receiving Water Name	Beneficial Use
Outfall 001	Pacific Ocean	Industrial Water Supply; Water Contact and Non-Contact Recreation, Including Aesthetic Enjoyment; Navigation; Commercial and Sport Fishing; Mariculture; Preservation and Enhancement of Designated Areas of Special Biological Significance (ASBS); Rare and Endangered Species; Marine Habitat; Fish Migration; Fish Spawning and Shellfish Harvesting

In order to protect these beneficial uses, the Ocean Plan establishes water quality objectives (for bacterial, physical, chemical, and biological characteristics, and for radioactivity), general requirements for management of waste discharged to the ocean, quality requirements for waste discharges (effluent quality requirements), discharge prohibitions, and general provisions.

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 Thermal plan contains temperature objectives for coastal waters.

Requirements of this Order specifically implement the applicable Water Quality Control Plans.

2. **Antidegradation Policy.** 40 CFR 131.12 requires that 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, which incorporates the requirements of the federal antidegradation policy. Resolution No. 68-16 requires that existing water quality is maintained unless degradation is justified based on specific findings. As discussed in detail in this Fact Sheet, the permitted discharge is consistent with the antidegradation provision of 40 CFR 131.12 and State Water Board Resolution No. 68-16.

3. **Anti-Backsliding Requirements.** Sections 402(o) and 303(d)(4) of the CWA and 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. Some effluent limitations in this Order are less stringent than those in the previous Order or have been removed, consistent with the anti-backsliding requirements of the CWA and federal regulations. Technology-based acute toxicity effluent limitations have been replaced with water quality-based acute toxicity effluent limitations consistent with Sections 402(o) and 303(d)(4) of the CWA and 40 CFR 122.44(l). Effluent limitations for silver have been relaxed based on the modification of water quality objectives for silver in the Ocean Plan and is consistent with Section 303(d)(4) of the CWA. Effluent limitations for several constituents listed under Table B of the Ocean Plan have been removed as a result of new information stemming from a reasonable potential analysis and is consistent with Section 402(o) of the CWA and 40 CFR 122.44(l). Mass emission rate effluent limitations have been increased as a result of greater flowrates stemming from material and substantial alterations or additions to the permitted facilities and is consistent with Section 402(o) of the CWA and 40 CFR 122.44(l).

4. **Monitoring and Reporting Requirements.** 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program (Attachment E) establishes monitoring and reporting requirements to implement federal and State requirements.

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

On June 5 and July 25, 2003, the U.S. EPA approved the list of impaired water bodies, prepared by the State Water Board pursuant to Section 303 (d) of the CWA, which are not expected to meet applicable water quality standards after implementation of technology-based effluent limitations for point sources. The 303 (d) list includes the following sections of Pacific Ocean shoreline within the proximity of the OOO as impaired for bacteria indicators:

1. 0.5 miles of Pacific Ocean shoreline at the mouth of the San Luis Rey River
2. 1.1 miles of Pacific Ocean shoreline at the mouth of Loma Alta Creek
3. 1.2 miles of Pacific Ocean shoreline at Buena Vista Creek

Impairment has been detected at the shorelines indicated above; however, the receiving waters in the immediate vicinity of the Facilities' discharge point (Outfall 001) are not included on the current 303 (d) list.

E. Other Plans, Polices and Regulations

1. **Secondary Treatment Regulations.** 40 CFR 133 establishes the minimum levels of effluent quality to be achieved by secondary treatment. These limitations, established by the U.S. EPA, are incorporated into Order No. R9-2006-002, except where more stringent limitations are required by other applicable plans, policies, or regulations.

2. **Storm Water.** Sewage treatment works with a design flow of 1.0 MGD or greater are required to comply with Water Quality Order No. 97-03-DWQ (NPDES General Permit No. CAS000001), Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activity, Excluding Construction Activities. The Discharger shall file a Notice of Intent within 60 days of adoption of this Order (unless already submitted under the previous Order) and comply with Order No. 97-03-DWQ or the Discharger shall provide certification to the Regional Water Board that all storm water is captured and treated on-site and no storm water is discharged or allowed to run off-site from the Facilities.

3. **Pretreatment.** Discharges of pollutants that may interfere with operations of a POTW are regulated by U.S. EPA's pretreatment regulations at 40 CFR 403. These regulations require Dischargers to develop and implement pretreatment programs that impose limitations on industrial users of the POTW.

IV. RATIONALE FOR EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

The CWA requires point source discharges 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: 40 CFR 122.44(a) requires that permits include applicable technology-based limitations and standards; and 40 CFR 122.44(d) requires that permits include water quality-based effluent limitations to attain and maintain applicable numeric and narrative water quality objective to protect the beneficial uses of the receiving water. Where numeric water quality objectives have not been established, three options exist to protect water quality: 1) 40 CFR 122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a); 2) proposed State criteria or a State policy interpreting narrative objective supplemented with other relevant information may be used; or 3) an indicator parameter may be established.

A. Discharge Prohibitions

1. Prohibition A.1 of Order No. 2000-012 has been modified to clearly define what types of discharges are prohibited by this Order. The modified prohibition is stated as Prohibition A in Section III of this Order.

   Prohibition A requires all discharges from FPUD's Facilities to be treated by at least a secondary treatment process. The USEPA states that "The biological treatment component of a municipal treatment plant is termed secondary treatment and is usually preceded by

simple settling (primary treatment). Secondary treatment standards are established by EPA for publicly owned treatment works (POTWs) and reflect the performance of secondary wastewater treatment plants. These technology-based regulations apply to all municipal wastewater treatment plants and represent the minimum level of effluent quality attainable by secondary treatment, as reflected in terms of 5-day biochemical oxygen demand (BOD5) and total suspended solids (TSS) removal." (See http://cfpub.epa.gov/npdes/techbasedpermitting/sectreat.cfm?program_id=15). At this time, USEPA has not promulgated any provisions that would allow a discharge of treated municipal wastewater to waters of the US that has not been treated through a secondary treatment process or a process equivalent to secondary treatment.

Prohibition A also prohibits discharges from FPUD's Facilities that do not comply with the effluent limitations contained in this Order, or a dishcarge to a location other than the Oceanside Ocean Outfall, unless specifically regulated by this Order or separate waste discharge requirements. Currently, FPUD also holds Order No. 91-39, waste discharge requirements for the discharge of recycled water to various recycled water use sites.

2. Section III.B of this Order lists additional discharge prohibitions from the Basin Plan. California Water Code Section 13243 provides that the Regional Board, in a water quality control plan, may specify certain conditions where the discharge of wastes or certain types of wastes that could affect the quality of waters of the state is prohibited. Inclusion of the Basin Plan prohibitions in the Order implements the requirements of the Basin Plan. The Basin Plan prohibitions included in this Order are a subset of the complete set of Basin Plan prohibitions. Certain Basin Plan prohibitions did not apply to FPUD's discharge and were not included in this Order.

3. Prohibitions C, D and E in Section III of this Order are additional discharge prohibitions from the California Ocean Plan. Prohibition C prohibits the discharge of waste to Areas of Special Biological Significance. Prohibition D prohibits the discharge of waste sludge and sludge digester supernatant to the ocean. Prohibition E prohibits the discharge of untreated wastes that has bypassed all treatment processes, unless excepted in accordance with Ocean Plan Provision III.I. Discharges subject to this prohibition would include the discharge to the ocean of raw municipal wastewater that has not undergone any treatment through any of the treatment plant processes, and sanitary sewer overflows to the ocean.

B. Technology-Based Effluent Limitations

1. Scope and Authority

U.S. EPA regulations at 40 CFR Part 122.44(a)(1) require permits to include technology-based effluent limitations and standards based on limitations and standards promulgated by the U.S. EPA authorized under Section 301 of the CWA. U.S. EPA promulgated technology-based effluent limitations and standards for POTWs as secondary treatment regulations at 40 CFR Part 133.

2. Applicable Technology-Based Effluent Limitations

Pursuant to Sections 301 (b) (1) (B) and 304 (d) (1) of the CWA, U.S. EPA has established standards of performance for secondary treatment at 40 CFR Part 133. Secondary treatment is defined in terms of three parameters – 5-day biochemical oxygen demand (BOD_5), total suspended solids (TSS), and pH. The following table summarizes the technology-based requirements for secondary treatment, which are applicable to SLRWTP and LSWTP:

Table 8. Summary of Technology-Based Effluent Limitations for Secondary Treatment Facilities Established by U.S. EPA at 40 CFR 133.102

Constituent	Monthly Avg	Weekly Avg	Percent Removal
BOD_5	30 mg/L	45 mg/L	85
$CBOD_5$	25 mg/L	40 mg/L	85
TSS	30 mg/L	45 mg/L	85
pH	6.0 to 9.0		

The parameters BOD_5, TSS, and pH must be included in NPDES permits for POTWs; however, the parameter $CBOD_5$ (5-day carbonaceous biochemical oxygen demand) may be substituted for BOD_5 at the option of the permitting authority. In Order No. 89-13, a previous NPDES permit for the Discharger, limitations for $CBOD_5$ were incorporated into FPUD's NPDES discharge permit in lieu of BOD_5 limitations. Mass emission rate effluent limitations for $CBOD_5$ and TSS in this Order were calculated using the design flowrate of 2.7 MGD for WTP1.

Table A of the Ocean Plan (2001) also establishes the following technology-based effluent limitations for publicly owned treatment works:

Table 9. Summary of Technology-Based Effluent Limitations for POTWs Established by the Ocean Plan (2001)

Constituent	Monthly Avg	Weekly Avg	Instantaneous Max	Percent Removal
O&G	25 mg/L	40 mg/L	75 mg/L	
TSS				75 *
Settleable Solids	1.0 mL/L	1.5 mL/L	3.0 mL/L	
Turbidity	75	100	225	
pH	6.0 to 9.0			

* Dischargers shall, as a monthly average, remove 75% of TSS from the influent stream before discharging to the ocean, except that the effluent limitation to be met shall not be lower than 60 mg/L

The TSS percent removal requirement and standards under 40 CFR 133 are more stringent than the Ocean Plan requirement; the more stringent TSS requirements are included in Order No. R9-2006-002.

All technology-based effluent limitations from Order No. 2000-012 for $CBOD_5$, total suspended solids, settleable solids, oil and grease, turbidity, and pH are retained by Order No. R9-2006-002 with four exceptions. Order No. R9-2006-002 does not retain the

maximum at anytime concentration and mass emission rate limitations for $CBOD_5$ and total suspended solids contained in Order No. 2000-012 and previous permits for the Discharger which were established using best professional judgment. Recent attempts to derive maximum at anytime limitations based on the secondary treatment standards at 40 CFR 133 using appropriate statistical approaches did not yield similar results as the previous maximum at anytime limitations; therefore, based on this new information, retaining the previous maximum at anytime limitations in Order No. R9-2006-002 is not supported.

C. Water Quality-Based Effluent Limitations (WQBELs)

1. Scope and Authority

U.S. EPA regulations at 40 CFR 122.44 (d) (1) (i) require permits to include WQBELs for pollutants (including toxicity) that are or may be discharged at levels, which cause, have reasonable potential to cause, or contribute to an excursion above any state water quality standard. The establishment of WQBELs in this Order, based on water quality objectives contained in the Ocean Plan (2001), is in accordance with the U.S. EPA regulations.

2. Applicable Beneficial Uses and Water Quality Objectives

a. Basin Plan

For all ocean waters of the State, the Basin Plan and its subsequent revisions establish the beneficial uses described previously in this Fact Sheet. The Basin Plan includes the following water quality objectives for dissolved oxygen and pH in ocean waters, which have been incorporated into Order R9-2006-002:

1) Dissolved Oxygen. The dissolved oxygen concentration in ocean waters 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 materials.

2) pH. The pH of receiving waters shall not be changed at any time more than 0.2 pH units from that which occurs naturally

b. Ocean Plan

Order No. R9-2006-002 has been written using the guidance of the Ocean Plan, which was most recently updated in 2001, during the term of Order No. 2000-012.

For all ocean waters of the State, the Ocean Plan (2001) establishes the beneficial uses described previously in this Fact Sheet. The Ocean Plan also includes water quality objectives for the ocean receiving water for bacterial characteristics, physical characteristics, chemical characteristics, biological characteristics, and radioactivity. A water quality objective for acute toxicity was added to the Ocean Plan (2001) while the

acute toxicity technology-based effluent limitation contained in the Ocean Plan (1997) was eliminated. Water quality objectives from the Ocean Plan (1997) were included as receiving water limitations in Order No. 2000-012 and water quality objectives from the Ocean Plan (2001) are similarly included as receiving water limitations in Order No. R9-2006-002.

Table B of the Ocean Plan includes the following water quality objectives for toxic pollutants and whole effluent toxicity:

1) 6-month median, daily maximum, and instantaneous maximum objectives for 21 chemicals and chemical characteristics, including total residual chlorine and chronic toxicity, for the protection of marine aquatic life.

2) 30-day average objectives for 20 non-carcinogenic chemicals for the protection of human health.

3) 30-day average objectives for 42 carcinogenic chemicals for the protection of human health.

4) Daily maximum objectives for acute and chronic toxicity.

4. Expression of WQBELS

NPDES regulations at 40 CFR 122.45(d) require that all permit limits for POTWs be expressed, unless impracticable, as both average monthly and average weekly effluent limits (AMEL and AWEL). This Order contains WQBELs that are based on water quality objectives contained in the California Ocean Plan that are expressed as six-month median, maximum daily, and instantaneous maximum water quality objectives; the implementation provision of the Ocean Plan provides procedures for developing six-month median, maximum daily, and instantaneous maximum effluent limitation from the water quality objectives. The Ocean Plan does not provide procedures for deriving monthly and weekly-average effluent limitations from the water quality objectives, and other technically- and statistically-sound procedures are not available for deriving statistically-equivalent monthly-average and weekly-average effluent limitations from the COP objectives that would satisfy the six-month median, maximum daily, and instantaneous maximum objectives simultaneously. Consequently, this Order does not express effluent limitations in terms of only monthly and week averages but contains effluent limitations (and performance goals) derived directly from the water quality objectives according to the implementation procedures of the Ocean Plan. For similar reasons, effluent limitations and performance goals for constituents with water quality objectives expressed as a 30-day average are only provided as an Average Monthly effluent limitation but not also as a weekly average limitation.

The USEPA's *Technical Support Document for Water Quality-based Toxics Control* (TSD; EPA/505/2-90-001, 1991) provides supporting rationale for shorter term effluent limitations such as maximum daily and instantaneous maximum WQBELS. In the TSD, USEPA

recommends the use of maximum daily effluent limitations in lieu of AWELs for two reasons: 1) the AWEL is based on secondary treatment standards for POTWs and is not related to assuring achievement of water quality standards, and 2) weekly averages could average out peak toxic concentrations and therefore the effluent's potential for causing acute toxic effects would be missed. The TSD states that a maximum daily limitation would be toxicologically protective of potential acute toxicity impacts.

The MRP for this Order requires the effluent to be monitored for toxic constituents and parameters using a 24-hour composite sample or a grab sample, but not both. As explained in Section VII, Compliance Determination, of this Order, compliance with maximum daily limitations is determined only with composite samples while compliance with instantaneous maximum limitations is determined only with grab samples, in accordance with the Ocean Plan implementation provisions. This means if a constituent is required to be monitored with a composite sample, then the monitoring result can only be compared to the maximum daily and six-month median effluent limitations but not the instantaneous maximum limitation.

4. Determining the Need for WQBELs

40 CFR 122.44(d) requires that NPDES permits to include any requirements necessary to achiever water quality standards that are in addition to or more stringent than technology-based standards. 40 CFR 122.44(d) requires that limitations must control all pollutants or pollutant parameters which are or may be discharged at a level that cause, has reasonable potential to cause, or contribute to an excursion above a water quality objective for a constituent (i.e., the permitting authority may not omit an effluent limitation for pollutants with demonstrated reasonable potential).

Order No. 2000-012 contained effluent limitations for non-conventional and toxic pollutant parameters in Table B of the Ocean Plan. For Order No. R9-2006-002, the need for effluent limitations based on water quality objectives in Table B of the Ocean plan was re-evaluated in accordance with 40 CFR 122.44(d) and guidance for statistically determining the "reasonable potential" for a discharged pollutant to exceed an objective, as outlined in the *Technical Support Document for Water Quality-based Toxics Control* (TSD; EPA/505/2-90-001, 1991) and the California Ocean Plan Reasonable Potential Analysis (RPA) Amendment that was adopted by the State Water Board on April 21, 2005. The statistical approach combines knowledge of effluent variability (as estimated by a coefficient of variation) with the uncertainty due to a limited number of effluent data to estimate a maximum effluent value at a high level of confidence. This estimated maximum effluent value is based on a lognormal distribution of daily effluent values. Projected receiving water values (based on the estimated maximum effluent value or the reported maximum effluent value and minimum probable initial dilution), can then be compared to the appropriate objective to determine the potential for an exceedance of that objective and the need for an effluent limitation. According to the Ocean Plan amendment, the reasonable potential analysis can yield three endpoints: 1) Endpoint 1, an effluent limitation is required and monitoring is required; 2) Endpoint 2, an effluent limitation is not required and the Regional Water Board may require monitoring; and 3) Endpoint 3, the RPA is inconclusive, monitoring is required, and an existing effluent limitation may be retained or a permit reopener clause is included to allow

inclusion of an effluent limitation if future monitoring warrants the inclusion. Endpoint 3 is typically the result when there are fewer than 15 data points and all are censored data (i.e., below quantitation or method detection levels for an analytical procedure). were used in the. was considered in this evaluation. Additional details of the reasonable potential analysis performed are provided in the Regional Water Board records.

The State Water Board developed the RPcalc 2.0 software tool for conducting the RPA procedures of the Ocean Plan amendment. The Regional Board conducted RPA for all the Table B constituents using RPcalc 2.0, effluent data provided by FPUD in its monitoring reports from January 1999 to December 2003 or December 2004, the Ocean Plan Table B water quality objectives, and a minimum probable initial dilution of 87:1 for the OOO. The RPA results indicated that FPUD's discharge has reasonable potential to exceed the Ocean Plan water quality objective for chronic toxicity when discharged through Outfall 001 (i.e., Endpoint 1), and therefore, a chronic toxicity effluent limitation is required. RPA results also indicated that 10 constituents or parameters did not have reasonable potential (i.e., Endpoint 2) and do not require effluent limitations. 71 constituents or parameters had inconclusive RPA results primarily due to insufficient data points (i.e., Endpoint 3), and effluent limitations were not retained or included for these constituents, although recommended in the Ocean Plan's RPA procedures. Instead performance goals were assigned to all constituents with RPA results of Endpoint 2 or 3. Tables 15 and 16 of this Fact Sheet lists the effluent limitations and performance goals for all constituents and their corresponding RPA results. The MRP for this Order requires monitoring for constituents with RPA Endpoints 1 for compliance determination and future RPA. The MRP also requires monitoring for constituents with RPA Endpoints 2 or 3 to obtain effluent data that would allow determination of reasonable potential for these constituents in future permit renewals and/or updates.

This Order includes desirable maximum effluent concentrations, referred to in this Order as "performance goals", for constituents that do not have reasonable potential or had inconclusive RPA results. Performance goals were derived using the WQBEL calculation procedures described below. Performance goals are discussed further below.

Conventional pollutants (i.e., BOD or CBOD, TSS, pH, Oil and Grease, settleable solids, and turbidity) were not a part of the reasonable potential analysis, and technology-based effluent limitations for these conventional pollutants are included in this Order as described in Section VI.B.2 of this Fact Sheet. As discussed above, reasonable potential analysis determines the need to include water-quality based effluent limitations that are in addition to technology-based effluent limitations. Effluent limitations for conventional pollutants are required as technology-based standards, and reasonable potential analysis is not necessary to determine if these effluent limitations are required.

In the case of non-chlorinated phenolics, chlorinated phenolics, chlordanes, halomethanes, PAHs, PCBS, and TCDD equivalents, Table B of the Ocean Plan stipulate a water quality objective for sum of the constituents in a group but not for individual constituents that comprise the group. Therefore, reasonable potential for each constituent within a group cannot be determined individually but reasonable potential for the group may be determined.

5. WQBEL Calculations

From the Table B water quality objectives of the Ocean Plan, effluent limitations are calculated according to the following equation for all pollutants, except for acute toxicity (if applicable) and radioactivity:

Ce = Co + Dm (Co – Cs) where,
Ce = the effluent limitation (µg/L)
Co = the water quality objective to be met at the completion of initial dilution (µg/L)
Cs = background seawater concentration
Dm = minimum probable initial dilution expressed as parts seawater per part wastewater

The effluent limitation for acute toxicity is calculated according to the following equation:

Ce = Co + (0.1) Dm (Co – Cs)

where all variables are as indicated above. This equation applies only when Dm > 24.

The Dm is based on observed waste flow characteristics, receiving water density structure, and the assumption that no currents of sufficient strength to influence the initial dilution process flow across the discharge structure.

Prior to issuance of Order No. 2000-012, the State Water Board had determined the minimum initial dilution factor, Dm, for the OOO to be 82 to 1. This determination was based on 24 diffuser ports being open and a flowrate of 21.3 MGD although, at the time, the total permitted flowrate through the OOO was only 20.9 MGD, (i.e., 18.2 MGD from City of Oceanside Facilities prior to the expansion of the SLRWTP, and 2.7 from FPUD). When USMC Camp Pendleton and Biogen IDEC Pharmaceuticals Corporation applied for NPDES permits to discharge through the OOO in 2003, the dilution factor was recalculated by the State Water Board and was found not significantly different from the previous Dm. As discussed elsewhere in this Fact Sheet, the initial dilution factor, Dm, was recalculated for this current permit renewal in order to account for the expansion of the City of Oceanside's SLRWTP and the addition of discharges from USMC Camp Pendleton and Biogen IDEC Pharmaceuticals Corporation which all discharge through the OOO. The new recalculated Dm was determined as 87 using the US-EPA approved computer modeling application Visual Plumes with the UM3 model.

Initial dilution is 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. As site-specific water quality data is not available, in accordance with Table B implementing procedures, Cs equals zero for all pollutants, except the following:

Table 10. Pollutants Having Background Concentrations

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

As examples, WQBELS for arsenic, cyanide, and zinc are determined as follows:

Water quality objectives from the Ocean Plan are:

Table 11. Copper, Chronic Toxicity, Chloroform, and Chlorine Ocean Plan Objectives

Pollutant	6-Month Median	Daily Maximum	Instantaneous Maximum	30 Day Avg
Copper	3 µg/L	12 µg/L	30 µg/L	-
Chronic Toxicity	-	1 TUc	-	-
Chloroform	-	-	-	130 µg/L
Total Chlorine Residual	2 µg/L	8 µg/L	60 µg/L	-

Using the equation, Ce = Co + Dm (Co – Cs), effluent limitations are calculated as follows before rounding to two significant digits.

Copper

Ce = 3 + 87 (3 – 2) = 90 µg/L (6-Month Median)
Ce = 12 + 87 (12 – 2) = 882 µg/L (Daily Maximum)
Ce = 30 + 87 (30 – 2) = 2,466 µg/L (Instantaneous Maximum)

Chronic Toxicity

Ce = 1 + 87 (1 - 0) = 88 TUc (Daily Maximum)

Chloroform

Ce = 130 + 87 (130 – 0) = 11,440 µg/L (30-Day Average)

Total Residual Chlorine

Ce = 2 + 87 (2 – 0) = 176 µg/L (6-Month Median)
Ce = 8 + 87 (8 – 0) = 704 µg/L (Daily Maximum)
Ce = 60 + 87 (60 – 0) = 5,280 µg/L (Instantaneous Maximum)

Based on the implementing procedures described above, effluent limitations have been calculated for all Table B pollutants from the Ocean Plan and incorporated into Order R9-2006-002.

Because of the Reasonable Potential Analysis (RPA), many WQBELs established by Order No. 2000-012 are not retained in Order R9-2006-002. The WQBELs that are retained have been changed to reflect the revised dilution factor. Differences between the WQBELs as they are required by the current Ocean Plan and how they are expressed in Order No. 2000-012 and/or Order No. R9-2006-002 are described below:

a. The Ocean Plan (1997) did not include water quality objectives for four toxic pollutants, which are included in the Ocean Plan (2001) – chlorodibromomethane, dichlorobromomethane, N-nitrosodi-N-propylamine, and heptachlor epoxide; and therefore, effluent limitations for these pollutants were not established by Order No. 2000-012. Although not required to be monitored under Order No. 2000-012, FPUD submitted effluent data for these constituents in its NPDES permit renewal application/Report of Waste Discharge which were used in reasonable potential analysis. Based on methods of the Ocean Plan (2001) and a design discharge flowrate of 2.7 MGD, the following performance goals are included in Order No. R9-2006-002.

Table 12. New Toxic Pollutants and Corresponding Performance Goals

Pollutant	Units	Monthly Average
Chlorodibromomethane	µg/L	7.6 E+02
	lbs/day	1.4 E+02
Dichlorobromomethane	µg/L	5.5 E+02
	lbs/day	1.0 E+02
N-nitrosodi-N-propylamine	µg/L	3.3 E+02
	lbs/day	6.4 E+00
Heptachlor epoxide	µg/L	1.8 E-03
	lbs/day	3.4 E-04

a. For eight toxic pollutants, water quality objectives are more stringent in the Ocean Plan (2001) than in the Ocean Plan (1997). The following table contains effluent limitations for these pollutants, which are based on methods and water quality objectives of the Ocean Plan (2001) and a design discharge flowrate of 2.7 MGD. These performance goals are included in Order No. R9-2006-002.

Table 13. Toxic Pollutant Performance Goals Based on the 2001 Ocean Plan

Pollutant	Units	Monthly Average
1,1-dichloroethylene	µg/L	7.9 E+01
	lbs/day	1.8 E+00
Isophorone	µg/L	6.4 E+04
	lbs/day	1.4 E+03
Tetrachloroethylene	µg/L	1.8 E+02
	lbs/day	4.0 E+00

Pollutant	Units	Monthly Average
Thallium	µg/L	1.8 E+02
	lbs/day	4.0 E+00
1,1,2,2-tetrachloroethane	µg/L	2.0 E+02
	lbs/day	4.6 E+00
1,1,2-trichloroethane	µg/L	8.3 E+02
	lbs/day	1.9 E+01
1,2-dichloroethane	µg/L	2.5 E+03
	lbs/day	5.5 E+01
Heptachlor	µg/L	4.4 E-03
	lbs/day	9.9 E-05

b. Table B of the Ocean Plan includes objectives for chlorinated and non-chlorinated phenolic compounds but does not define the individual chemical constituents comprising each group. In this Order, chlorinated phenolics are defined as the sum of 2-chlorophenol, 2,4-dichlorophenol, 3-methyl-4-chlorophenol, and pentachlorophenol; non-chlorinated phenolics are defined as the sum of 2-nitrophenol, 4-nitrophenol, and phenol.

6. Mass and Concentration Limits

40 C.F.R. §122.45(f)(1)(ii) states that all permit limitations, standards or prohibitions shall be expressed in terms of mass except under certain circumstances including "when applicable standards and limitations are expressed in terms of other units of measurement." This provision originates from regulations adopted by USEPA on June 7, 1979 as 40 CFR 122.15 (d) which required effluent limitations in terms of mass except under certain circumstances including "where applicable promulgated effluent guideline limitations, standards or prohibitions are expressed in other terms than mass, e.g., as concentration levels." The 1979 provision indicated that concentration was clearly one of the "other terms than mass" and that the provision was limited to technology-based effluent limitations.

The 1979 provision underwent several modifications but achieved the language of the current 40 CFR 122.45 in revised rules promulgated by USEPA on May 19, 1980. The Federal Register Preamble for the revised rule promulgation (45 FR 33342) states "[the revised regulation] now provides permit issuers greater flexibility in using concentration limits. Whenever appropriate, permits may include a concentration limit in addition to a mass limit. Limitations expressed exclusively in terms other than mass may be used (1) when applicable effluent guideline limitations are expressed other than in mass; (2) when on a case-by-case basis the mass of the discharge cannot be related to production or other measures of operation, and dilution will not be used as a substitute for treatment; or (3) for pH or other pollutants which cannot appropriately be expressed as mass. For example, total suspended solids discharges from certain mining operations may be unrelated to measures of operation. Finally,

a permit can always contain a non-mass limit in addition to a mass limit, and the permittee must comply with both."

In the case of secondary treatment standards which are expressed as BOD (or CBOD) and TSS concentrations and technology-based concentration effluent standards for Oil and Grease under Table A of the Ocean Plan, the need for mass emission rate (MER) limitations that are directly related to protection of ocean waters or proper operation has not been determined. Consequently, MER effluent limitations for CBOD, TSS and Oil and Grease have not been included in this Order; however, if information demonstrating a need for these limitations become available in the future, they may be reinstated in this Order.

For effluent limitations and performance goals based on water quality objectives, MER limitations are retained in the revised tentative Order. This is appropriate because the California Ocean Plan's Implementation Provisions for Table B require that "[d]ischarge requirements shall also specify effluent limitations in terms of mass emission rate limits using the general formula: Equation 3: lbs/day = 0.00834 x Ce x Q . . . ." The Ocean Plan clearly intended to also limit the discharge of toxic pollutants on a mass-loading basis.

No differentiation is made between discharges during dry-weather and wet-weather periods. Inflow and infiltration within FPUD's system is nonexcessive because wet-weather wastewater flowrates do not exceed 275 gallons per capita per day [see 40 CFR 133.103(d)(3)]. Any flow contributed from nonexcessive inflow and infiltration during wet-weather can reasonably be considered to be within the design capacity of the FPUD treatment plant and are assumed to be free of pollutants and to not negatively impact the treatment processes. To avoid apparent violations of MER effluent limitations when flows to the POTW increase during wet weather and sample concentrations are either non-detect (ND) or "detected, not quantified" (DNQ), Provision VII.G of this Order requires that corresponding calculated mass emission rates also be reported as either ND or DNQ, as appropriate.

7. Whole Effluent Toxicity (WET)

Implementing provisions at Section III. C of the Ocean Plan (2001) require chronic toxicity monitoring for ocean waste discharges with minimum initial dilution factors below 100. Based on methods of the Ocean Plan (2001), a maximum daily effluent limitation of 88 TUc for chronic toxicity is required.

There is no requirement to monitor for acute toxicity for discharges with minimum initial dilution factors below 100. However, based on reasonable potential analysis and FPUD's compliance history, a water quality-based acute toxicity limitation of 2.91 TUa is included in Order No. R9-2006-002 which replaces the technology-based acute toxicity effluent limitation in Order No. 2000-012.

Toxicity Reduction Evaluation (TRE) is a site-specific study conducted in a stepwise process designed to identify the causative agent(s) of effluent toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in effluent toxicity.

8. Radioactivity

Table B of the California Ocean Plan includes an objective for radioactivity which references limits specified in Title 17, Division 1, Chapter 5, Subchapter 4, Group 3, Section 30253 of the California Code of Regulations (CCR). The California Ocean Plan also states that these objectives shall apply directly to the undiluted waste effluent. Title 17 CCR does not actually contain limits but instead references Title 10, Part 20 of the Code of Federal Regulations which contains effluent limitations for the discharge of radioactive nuclides in aqueous effluent under Column 2 of its Appendix B, Table 2. Incorporation of those limits in the Ocean Plan is prospective. The Ocean Plan's radioactivity objective holds all discharge of effluent that could potentially have radioactive materials to the same standards as effluents from facilities that would require a license under Title 17 CCR and Title 10 CFR regulations. It is appropriate to hold effluent from POTWs to the same standards because 10 CFR regulations do allow licensed facilities to dispose of radioactive materials to sanitary sewer systems. Effluent limitations for several important radionuclides taken from Appendix B, Table 2, 10 CFR 20 are provided below.

Table 14. Selected Radioactivity Effluent Limitations (from Table 2, Appendix B, Title 10 CFR Part 20)

Constituent	Units	Daily Maximum
Radium-226	pCi/ L	60
Radium-228	pCi/ L	60
Strontium-90	pCi/ L	500
Tritium	pCi/ L	1,000,000
Uranium	pCi/ L	300

D. Final Effluent Limitations

The following tables lists the effluent limitations established by Order No. R9-2006-002. Where Order No. R9-2006-002 establishes mass emission limitations, these limitations have been derived based on a flow of 2.7 MGD and a minimum probable initial dilution factor of 87:1.

Table 15. Effluent Limitations based on Secondary Treatment Standards

Constituent	Units	Effluent Limitations					
		Max Daily	Average Monthly	Average Weekly	Instantaneous Min	Instantaneous Max	6 Month Median
CBOD 5-day 20°C	mg/l		25	40			
	%	The average monthly percent removal shall not be less than 85 percent.					

Constituent	Units	Effluent Limitations					
		Max Daily	Average Monthly	Average Weekly	Instantaneous Min	Instantaneous Max	6 Month Median
Total Suspended Solids	mg/l		30	45			
	%	The average monthly percent removal shall not be less than 85 percent.					
pH	Standard units				6.0	9.0	

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

2. The discharge of effluent from FPUD's Facilities to Outfall 001, as monitored at Monitoring Location M-001 or M-002, shall maintain compliance with the following effluent limitations:

Table 16. Effluent Limitations based on California Ocean Plan 2001

Constituent	RPA End point	Units	Effluent Limitations					
			Max Daily	Average Monthly	Average Weekly	Instantaneous Min	Instantaneous Max	6 Month Median
Oil and Grease	N/A	mg/l		25	40		75	
Settleable Solids	N/A	ml/l		1.0	1.5		3.0	
Turbidity	N/A	NTU		75	100		225	
Chronic Toxicity	1	TUc	8.8 E+01					

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

E. Performance Goals

Performance goals serve to maintain existing treatment levels and effluent quality and support State and federal antidegradation policies. Additionally, performance goals provide all interested parties with information regarding the expected levels of pollutants in the discharge that should not be exceeded in order to maintain the water quality objectives established in the Ocean Plan. Performance goals are not limitations or standards for the regulation of the discharge. Effluent concentrations above the performance goals will not be considered as violations of the permit but serve as red flags that indicate water quality concerns. Repeated red flags may prompt the Regional Board to reopen and amend the permit to replace performance goals for constituents of concern with effluent limitations, or the Regional Board may coordinate such actions with the next permit renewal.

Constituents that do not have reasonable potential are listed as performance goals in this Order. The following tables lists the performance goals established by Order No. R9-2006-002. These constituents shall also be monitored at M-001, but the results will be used for informational purposes only, not compliance determination. Mass emissions have been derived based on a flow of 2.7 MGD, which is the combined design capacity of FPUD's Facilities, and a minimum probable initial dilution factor of 87:1. The listed effluent performance goals are not enforceable effluent limitations or standards.

Table 17. Performance Goals based on California Ocean Plan 2001

Constituent	RPA End point	Units	Perfomance Goals					
			Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
						Min	Max	
Arsenic	3	ug/l	2.6 E+03				6.8 E+03	4.4 E+02
		lbs/day	5.8 E+01				1.5 E+02	1.0 E+01
Cadmium	3	ug/l	3.5 E+02				8.8 E+02	8.8 E+01
		lbs/day	7.9 E+00				2.0 E+01	2.0 E+00
Mercury	3	ug/l	1.4 E+01				3.5 E+00	3.5 E+00
		lbs/day	3.2 E-01				7.8 E-02	7.8 E-02
Chromium VI	2	ug/l	7.0 E+02				1.8 E+03	1.8 E+02
		lbs/day	1.6 E+01				4.0 E+01	4.0 E+00
Copper	2	ug/l	8.8 E+02				2.5 E+03	9.0 E+01
		lbs/day	2.0 E+01				5.6 E+01	2.0 E+00

Constituent	RPA End point	Units	Perfomance Goals					
			Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
						Min	Max	
Lead	2	ug/l	7.0 E+02				1.8 E+03	1.8 E+02
		lbs/day	1.6 E+01				4.0 E+01	4.0 E+00
Nickel	2	ug/l	1.8 E+03				4.4 E+03	4.4 E+02
		lbs/day	4.0 E+01				9.9 E+01	9.9 E+00
Silver	3	ug/l	2.3 E+02				6.0 E+02	4.8 E+01
		lbs/day	5.2 E+00				1.4 E+01	1.1 E+00
Selenium	2	ug/l	5.3 E+03				1.3 E+04	1.3 E+03
		lbs/day	1.2 E+02				3.0 E+02	3.0 E+01
Zinc	2	ug/l	6.3 E+03				1.7 E+04	1.1 E+03
		lbs/day	1.4 E+02				3.8 E+02	2.4 E+01
Cyanide	2	ug/l	3.5 E+02				8.8 E+02	8.8 E+01
		lbs/day	7.9 E+00				2.0 E+01	2.0 E+00
Total Chlorine Residual	2	ug/l	7.0 E+02				5.3 E+03	1.8 E+02
		lbs/day	1.6 E+01				1.2 E+02	4.0 E+00
Ammonia (expressed as nitrogen)	2	ug/l	2.1 E+05				5.3 E+05	5.3 E+04
		lbs/day	4.8 E+03				1.2 E+04	1.2 E+03
Acute Toxicity	2	TUa	2.9 E+00					
Phenolic Compounds (non-chlorinated)	3	ug/l	1.1 E+04				2.6 E+04	2.6 E+03
		lbs/day	2.4 E+02				5.9 E+02	5.9 E+01
Phenolics Compounds (chlorinated)	3	ug/l	3.5 E+02				8.8 E+02	8.8 E+01
		lbs/day	7.9 E+00				2.0 E+01	2.0 E+00
Endosulfan	3	ug/l	1.6 E+00				2.4 E+00	7.9 E-01
		lbs/day	3.6 E-02				5.4 E-02	1.8 E-02
Endrin	3	ug/l	3.5 E-01				5.3 E-01	1.8 E-01
		lbs/day	7.9 E-03				1.2 E-02	4.0 E-03

Constituent	RPA End point	Units	Perfomance Goals					
			Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
						Min	Max	
HCH	3	ug/l	7.0 E-01				1.1 E+00	3.5 E-01
		lbs/day	1.6 E-02				2.4 E-02	7.9 E-03
Radioactivity	2	- - -	Not to exceed limits specified under Column 2 of Table 2 in Appendix B of Title 10 Code of Federal Regulations Part 20, Standards for Protection Against Radiation					
Acrolein	3	ug/l		1.9 E+04				
		lbs/day		4.4 E+02				
Acrolein	3	ug/l		1.9 E+04				
		lbs/day		4.4 E+02				
Antimony	3	ug/l		1.1 E+05				
		lbs/day		2.4 E+03				
Bis(2-chloroethoxy) Methane	3	ug/l		3.9 E+02				
		lbs/day		8.7 E+00				
Bis(2-chloroisopropyl) ether	3	ug/l		1.1 E+05				
		lbs/day		2.4 E+03				
Chlorobenzene	3	ug/l		5.0 E+04				
		lbs/day		1.1 E+03				
Chromium (III)	3	ug/l		1.7 E+07				
		lbs/day		3.8 E+05				
Di-n-butyl Phthalate	3	ug/l		3.1 E+05				
		lbs/day		6.9 E+03				
Dichlorobenzenes	3	ug/l		4.5 E+05				
		lbs/day		1.0 E+04				
Diethyl Phthalate	3	ug/l		2.9 E+06				
		lbs/day		6.5 E+04				
Dimethyl Phthalate	3	ug/l		7.2 E+07				
		lbs/day		1.6 E+06				

Constituent	RPA End point	Units	Perfomance Goals					
			Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
						Min	Max	
4,6-dinitro-2-methylphenol	3	ug/l		1.9 E+04				
		lbs/day		4.4 E+02				
2,4-dinitrophenol	3	ug/l		3.5 E+02				
		lbs/day		7.9 E+00				
Ethylbenzene	3	ug/l		3.6 E+05				
		lbs/day		8.1 E+03				
Fluoranthene	3	ug/l		1.3 E+03				
		lbs/day		3.0 E+01				
Hexachlorocyclo-pentadiene	3	ug/l		5.1 E+03				
		lbs/day		1.1 E+02				
Nitrobenzene	3	ug/l		4.3 E+02				
		lbs/day		9.7 E+00				
Thallium	3	ug/l		1.8 E+02				
		lbs/day		4.0 E+00				
Toluene	3	ug/l		7.5 E+06				
		lbs/day		1.7 E+05				
Tributyltin	3	ug/l		1.2 E-01				
		lbs/day		2.8 E-03				
1,1,1-trichloroethane	3	ug/l		4.8 E+07				
		lbs/day		1.1 E+06				
Acrylonitrile	3	ug/l		8.8 E+00				
		lbs/day		2.0 E-01				
Aldrin	3	ug/l		1.9 E-03				
		lbs/day		4.4 E-05				
Benzene	3	ug/l		5.2 E+02				
		lbs/day		1.2 E+01				

Constituent	RPA End point	Units	Perfomance Goals					
			Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
						Min	Max	
Benzidine	3	ug/l		6.1 E-03				
		lbs/day		1.4 E-04				
Beryllium	3	ug/l		2.9 E+00				
		lbs/day		6.5 E-02				
Bis (2-chloroethyl) Ether	3	ug/l		4.0 E+00				
		lbs/day		8.9 E-02				
Bis (2-ethlyhexyl) Phthalate	3	ug/l		3.1 E+02				
		lbs/day		6.9 E+00				
Carbon Tetrachloride	3	ug/l		7.9 E+01				
		lbs/day		1.8 E+00				
Chlordane	3	ug/l		2.0 E-03				
		lbs/day		4.6 E-05				
Chlorodibromo-methane	3	ug/l		7.6 E+02				
		lbs/day		1.7 E+01				
Chloroform	3	ug/l		1.1 E+04				
		lbs/day		2.6 E+02				
DDT	3	ug/l		1.5 E-02				
		lbs/day		3.4 E-04				
1,4-dichlorobenzene	3	ug/l		1.6 E+03				
		lbs/day		3.6 E+01				
3,3'-dichlorobenzidine	3	ug/l		7.1 E-01				
		lbs/day		1.6 E-02				
1,2-dichloroethane	3	ug/l		2.5 E+03				
		lbs/day		5.5 E+01				
1,1-dichloroethylene	3	ug/l		7.9 E+01				
		lbs/day		1.8 E+00				

Constituent	RPA End point	Units	Perfomance Goals					
			Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
						Min	Max	
Dichlorobromo-methane	3	ug/l		5.5 E+02				
		lbs/day		1.2 E+01				
Dichloromethane	3	ug/l		4.0 E+04				
		lbs/day		8.9 E+02				
1,3-dichloropropene	3	ug/l		7.8 E+02				
		lbs/day		1.8 E+01				
Dieldrin	3	ug/l		3.5 E-03				
		lbs/day		7.9 E-05				
2,4-dinitrotoluene	3	ug/l		2.3 E+02				
		lbs/day		5.2 E+00				
1,2-diphenylhydrazine	3	ug/l		1.4 E+01				
		lbs/day		3.2 E-01				
Halomethanes	3	ug/l		1.1 E+04				
		lbs/day		2.6 E+02				
Heptachlor	3	ug/l		4.4 E-03				
		lbs/day		9.9 E-05				
Heptachlor Epoxide	3	ug/l		1.8 E-03				
		lbs/day		4.0 E-05				
Hexachloro-benzene	3	ug/l		1.8 E-02				
		lbs/day		4.2 E-04				
Hexachloro-butadiene	3	ug/l		1.2 E+03				
		lbs/day		2.8 E+01				
Hexachloroethane	3	ug/l		2.2 E+02				
		lbs/day		5.0 E+00				
Isophorone	3	ug/l		6.4 E+04				
		lbs/day		1.4 E+03				

Constituent	RPA End point	Units	Perfomance Goals					
			Max Daily	Average Monthly	Average Weekly	Instantaneous		6 Month Median
						Min	Max	
N-nitroso-dimethylamine	3	ug/l		6.4 E+02				
		lbs/day		1.4 E+01				
N-nitrosodi-N-propylamine	3	ug/l		3.3 E+01				
		lbs/day		7.5 E-01				
N-nitrosodiphenyl-amine	3	ug/l		2.2 E+02				
		lbs/day		5.0 E+00				
PAHs	3	ug/l		7.7 E-01				
		lbs/day		1.7 E-02				
PCBs	3	ug/l		1.7 E-03				
		lbs/day		3.8 E-05				
TCDD equivalents	3	ug/l		3.4 E-07				
		lbs/day		7.7 E-09				
1,1,2,2-tetrachloroethane	3	ug/l		2.0 E+02				
		lbs/day		4.6 E+00				
Tetrachloro-ethylene	3	ug/l		1.8 E+02				
		lbs/day		4.0 E+00				
Toxaphene	3	ug/l		1.8 E-02				
		lbs/day		4.2 E-04				
Trichloroethylene	3	ug/l		2.4 E+03				
		lbs/day		5.4 E+01				
1,1,2-trichloroethane	3	ug/l		8.3 E+02				
		lbs/day		1.9 E+01				
2,4,6-trichlorophenol	3	ug/l		2.6 E+01				
		lbs/day		5.7 E-01				
Vinyl Chloride	3	ug/l		3.2 E+03				
		lbs/day		7.1 E+01				

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

F. Antidegradation

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

1. Technology-based Effluent Limitations
   The technology-based standards for POTW performance are promulgated at 40 CRF 133 expressed as 30-day averages and 7-day averages for BOD, CBOD and TSS. In previous NPDES permits for FPUD, including Order No. 2000-012, these standards were incorporated as "Monthly Average (30-day)" and "Weekly Average (7-day)" effluent limitations for CBOD and TSS which were enforced by the Regional Water Board as running averages. To comply with 40 CFR 122.45, which requires that effluent limitations be expressed as average weekly and average monthly limitations for POTWs, the CBOD and TSS standards have been revised in this current permit as Average Monthly Effluent Limitations (AMEL) and Average Weekly Effluent Limitations (AWEL) that are numerically equal to the previous effluent limitations. As explained in the Compliance Determination section of this Order, compliance with the AMEL and AWEL will be determined by considering the average of sampling results within a calendar month or calendar week, respectively, rather than as running averages. As also further explained in the Compliance Determination and Enforcement section of this Order, if the average for the calendar month or calendar week exceeds the AMEL or the AWEL, respectively, an alleged violation will be flagged and the Discharger will be considered out of compliance for each day of that month or week, respectively, for that parameter. Consequently, the AMEL and AWEL are expected to provide a similar level of incentive for POTWs to operate treatment facilities to be in compliance at all times as the previous "Monthly Average (30-day)" and "Weekly Average (7-day)" running average effluent limitations. The conversion of the CBOD and TSS effluent limitations to AMEL and AWEL are not expected to cause a change in the physical nature of the effluent discharged and are not expected to impact beneficial uses nor cause a

reduction of the water quality of the receiving water. For these reasons, the Regional Water Board has determined that an antidegradation analysis is not required to consider the possible impacts resulting from the CBOD and TSS AMELs and AWELs.

2. Water Quality-based Effluent Limitations

The water quality-based effluent limitations contained in this Order have been modified from previous NPDES permits for the City of Oceanside, including Order No. 2000-012, due to a recalculation of the ocean outfall initial dilution factor, an increase in permitted flow rates, and removal of effluent limitations after a reasonable potential analysis. In accordance with the State Water Board's Administrative Procedures Update, the Regional Board assessed the potential impact of the modified effluent limitations on existing water quality and the need for an antidegradation analysis as follows:

a. Recalculation of Ocean Outfall Initial Dilution Factor and Flowrate Increase

As discussed elsewhere in this Fact Sheet, the initial dilution factor, Dm, was recalculated for this current permit renewal to account for the expansion of the City of Oceanside's SLRWTP, and the addition of discharges from USMC Camp Pendleton and Biogen IDEC Pharmaceutical, Corp. which all discharge through the Oceanside Ocean Outfall (OOO). The new recalculated Dm of 87, which is based on an OOO total permitted flow rate of 29.055 MGD, is an increase over the previous permit's Dm of 82 which was based on the permitted total flowrate in 2000 through the OOO of 21.3 MGD. (The previous Dm was determined using 21.3 MGD although the total permitted flowrate was previously only 20.9 MGD, i.e., 18.2 MGD from City of Oceanside prior to expansion of the SLRWTP, and 2.7 from FPUD). The mass emission rate (MER) effluent limitations in this Order are also calculated using the actual design capacity of WTP1 of 2.7 MGD whereas they were calculated using WTP1's previous design capacity of 1.95 MGD in Order No. 2000-011 to comply with the antidegradation policies without an antidegradation analysis. The new Dm and greater flowrate used in the calculation of MER effluent limitations in this Order result in a relaxation of effluent limitations in this Order compared to the those in Order No. 2000-012 and also reflects an expansion of the zone of initial dilution (ZID), both of which may indicate a lowering of water quality.

With the exception of effluent limitations for silver and acute toxicity, the concentration and mass emission rate (MER) water quality-based effluent limitations in this Order, recalculated using the new Dm and higher design capacity flowrate for WTP1, have been relaxed and are approximately 6% and 47% higher, respectively, than the concentration and MER effluent limitations in Order No. 2000-012. Because the total permitted flowrate through the OOO in 2000 was previously only 20.9 MGD, as provided in the previous NPDES permits for the City of Oceanside and FPUD, the relaxed effluent limitations in this permit combined with the new total permitted flowrate through the OOO of 29.055 MGD, as provided in the new NPDES permits for the City of Oceanside and FPUD and the existing NPDES permits for USMC Camp Pendleton and Biogen IDEC Pharmaceutical Corporation, results in a greater permitted mass emission rate (MER) for a given constituent. The greater MER for a given constituent, except for silver, is expected to result in a lowering of existing water quality for that constituent by an increment not greater than approximately 32% of the six-month median, daily

maximum and instantaneous water quality objectives (WQO). See example calculations considering Arsenic below:

- Arsenic Daily Maximum WQO (Ocean Plan 2001, Table B) = 32 ug/L

- Previous mass emission rate (MER) =
  (previous effluent limitation) x (previous permitted total flow rate) =
  (2410 ug/L) x (20.9 MGD) x 0.00834 = 420 lbs/day

- Current MER =
  (current effluent limitation) x (current permitted total flow rate) =
  (2560 ug/L) x (29.055 MGD) x 0.00834 = 620 lbs/day

- MER difference =
  (Current MER) - (Previous MER) =
  620 lbs/day - 420 lbs/day = 200 lbs/day

- Increment Change in Arsenic water quality =
  (MER difference) / [(effluent flowrate) +(diluting ocean water "flowrate")] =
  (200 lbs/day) / [(29.055 MGD + 2,528 MGD)(0.00834)] = 9.4 ug/L

  where Ocean water "flowrate" =
  (Effluent flowrate) x (initial dilution factor) =
  29.055 MGD x 87 = 2,528 MGD

- Increment water quality change as a percentage of the water quality objective =
  9.4 ug/L / 32 ug/L x 100% = 29.4%

The example calculations illustrate that if the actual existing water quality for arsenic in the receiving water is better than the daily maximum WQO of 32 ug/L, then the water quality will be degraded by 9.4 ug/L for arsenic, or 29.4% of the WQO. This lowering of water quality is not expected to be significant and is not expected to cause adverse effects to the overall receiving water. Furthermore, the example calculations assume that the effluent will contain arsenic at the concentration of the effluent limitation, whereas historical effluent data for the discharge through the OOO indicate that the concentration of constituents listed under Table B of the Ocean Plan in the effluent discharged are considerably lower. For these reasons, the Regional Board has determined that an antidegradation analysis is not required to consider the possible impacts resulting from the recalculation of initial dilution factor and consequent relaxation of effluent limitations.

The recalculation of Dm at the current permitted total flowrate of 29.055 MGD also indicated that the zone of initial dilution (ZID) expands to 78.5 feet from the outfall diffuser which is approximately 20 feet greater to compared to the ZID if the total flowrate was the previous total permitted flowrate of 20.9 MGD. The ZID is recognized as the mixing zone in the receiving water where water quality objectives may be

exceeded however adverse effects to the overall receiving water body must be prevented. The computer model results indicate that lowering of water quality may occur in the area up to five feet from the outfall diffuser by an increment not greater than 200% of the WQO for a given constituent and by an increment not greater than 50 % of the WQO in the area five feet to 78.5 feet from the outfall diffuser. In addition to being spatially limited, the incremental lowering of water quality in the ZID is expected to be temporally limited because, as explained previously, the concentrations of a given constituent in the effluent discharged through the OOO have historically been considerably lower than the effluent limitations except for exceptional circumstances of short-term duration. For these reasons, the lowering of water quality within the ZID is not expected to be significant and is not expected to cause adverse effects to the overall receiving water; therefore, the Regional Board has determined that an antidegradation analysis is not required to consider the possible impacts resulting from the recalculation of the initial dilution factor, the increase in permitted flowrates, and the expansion of the ZID.

b. Removal of effluent limitations after a reasonable potential analysis
Effluent limitations were not included in this Order for constituents for which reasonable potential to exceed the water quality objective was not indicated following a reasonable potential analysis although the previous permit included effluent limitations for those constituents. The procedures for conducting the reasonable potential analysis are explained elsewhere in this Fact Sheet. For constituents for which effluent limitations were not included, non-regulatory performance goals were included which will indicate the level of discharge at which possible water quality impacts may be significant. The removal of effluent limitations by itself is not expected to cause a change in the physical nature of the effluent discharged and is not expected to impact beneficial uses nor cause a reduction of the water quality of the receiving water. Coupled with the inclusion of performance goals and retention of the monitoring program for constituents without effluent limitations, the existing water quality is expected to be maintained. For these reasons, the Regional Water Board has determined that an antidegradation analysis is not required to consider the possible impacts resulting from the removal of effluent limitations following a reasonable potential analysis.

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

Receiving water limitations of Order No. R9-2006-002 are derived from the water quality objectives for ocean waters established by the Basin Plan (1994) and the Ocean Plan (2001).

VI. RATIONALE FOR MONITORING AND REPORTING REQUIREMENTS

Section 122.48 of 40 CFR requires all NPDES permits to specify recording and reporting of monitoring results. Sections 13267 and 13383 of the California Water Code authorize the Regional Water Boards to require technical and monitoring reports. The Monitoring and Reporting Program, Attachment E of this Order, establishes monitoring and reporting requirements to implement federal

and state requirements. The following provides the rationale for the monitoring and reporting requirements contained in the Monitoring and Reporting Program for FPUD's Facilities.

A. Influent Monitoring

Influent monitoring in Order No. R9-2006-002 is unchanged from Order No. 2000-012. These monitoring requirements are summarized in the following table.

Table 18. Influent Monitoring Requirements

Constituent	Units	Sample Type	Sampling Frequency
Flow	MGD	recorder / totalizer	continuous
$CBOD_5$ @ 20º C	mg/L	24 hr composite	weekly
TSS	mg/L	24 hr composite	weekly
BOD_5 @ 20º C	mg/L	24 hr composite	monthly

Influent monitoring for $CBOD_5$ and TSS allows determination of removal efficiencies, which are limited by Order No. R9-2006-002.

B. Effluent Monitoring

In an effort to standardize monitoring and reporting requirements and in order to support electronic data submittal of Discharger Self-Monitoring Reports, reporting units, definitions, and deadlines specified in the MRP for Order No. R9-2006-002 have been written in accordance with the State Water Resource Control Board's Water Quality Permit Standards Team Final Report.

Effluent monitoring requirements of MRP No. R9-2006-002 (Attachment E) should be consulted for greater detail regarding specific monitoring requirements.

Order No. R9-2006-002 requires monitoring for acute toxicity and chronic toxicity to be monitored quarterly. All organic constituents are now required to be monitored using a grab sample as requested by FPUD. All other effluent monitoring requirements from Order No. 2000-012 are retained by MRP No. R9-2006-002.

C. Whole Effluent Toxicity Testing Requirements

FPUD shall conduct acute and chronic toxicity testing on 24-hour composite effluent samples collected at Effluent Monitoring Station M-002, as defined in Section II of the MRP (Attachment E), on a quarterly frequency.

Acute toxicity testing shall be performed using either a marine fish or invertebrate species in accordance with procedures established by the U.S. EPA guidance manual, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th Edition, October 2002 (EPA-821-R-02-012).

Critical life stage toxicity tests shall be performed to measure chronic toxicity (TUc). Testing shall be performed using methods outlined in *Short-Term Methods for Estimating the Chronic*

Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (Chapman, G.A., D.L. Denton, and J.M. Lazorchak, 1995) or *Procedures Manual for Conducting Toxicity Tests Developed by the Marine Bioassay Project* (SWRCB, 1996)

A screening period for chronic toxicity shall be conducted every other year for three months, using a minimum of three test species with approved test protocols, from the following list (from the Ocean Plan, 2001). Other tests may be used, if they have been approved for such testing by the State Water Board. The test species shall include a fish, an invertebrate, and an aquatic plant. After the screening period, the most sensitive test species shall be used for the monthly testing. Repeat screening periods may be terminated after the first month if the most sensitive species is the same as found previously to be most sensitive. Dilution and control water should be obtained from an unaffected area of the receiving waters. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay test and reported with test results.

D. Receiving Water Monitoring

1. Surf Zone Water Quality Monitoring

   To assess bacteriological conditions in areas used for body contact activities and to assess aesthetic conditions for general recreational uses, Monitoring and Reporting Program (MRP) No. R9-2006-002 requires that total and fecal coliform and enterococcus bacteria be monitored at a minimum frequency of once per week on an annual basis at six surf zone locations. Recognizing that significant water-contact recreation, such as surfing and scuba diving, occurs year-round in ocean waters that may be impacted by the discharge from the OOO, the Regional Board adopted previously adopted Addendum No. 2 to Order No. 2000-012 which increased the surf zone monitoring frequency to weekly year-round from the previous minimum frequency of once per week from May 1 through October 31 and once every other week from November 1 through April 30 of each year.

   In correspondence dated October 6, 2003, County of San Diego Department of Environmental Health (DEH) recommends using its "Standard Operating Procedures (SOP) for the Collection of Water Samples for Bacterial Analysis from Ocean and Bay Receiving Waters" as the sampling protocol at surf zone monitoring stations to reflect conditions during all critical environmental periods and be most protective of public health. The SOP specifies the time of day and depth for water sampling to reduce the effects of bacterial die-off in determining the actual bacterial densities that may be encountered by beach users. The SOP would also make sampling procedures consistent at sampling stations along the San Diego County coastline to facilitate data comparison.

   For the period of July 2001 through August of 2004, samples collected five surf zone stations have at times showed elevated bacterial levels that exceeded water quality objectives of the Ocean Plan for total and fecal coliform and exceeded recommended levels for enterococcus. Surf zone monitoring station S-1, located at the mouth of the Buena Vista Lagoon south of the OOO, have frequently had elevated bacteria levels that may be due to outward flow from

the lagoon. Order No. R9-2006-002 suspends monitoring at station S1 and adds monitoring at two surf zone stations located 8,000 feet and 10,000 feet south of the OOO.

Order and MRP No. R9-2006-002 retain the requirements of Order No. 2000-012 for surf zone water quality monitoring with the following modifications:

a. Increases the overall sampling frequency from at surf zone stations.
b. Removes one surf zone station and adds two new surf zone stations.
c. Requires a sampling procedure for surf zone stations in accordance with County of San Diego DEH Standard.

2. Near Shore Water Quality Monitoring

To assess bacteriological conditions in areas used for body contact activities and where shellfish and/or kelp may be harvested, and to assess aesthetic conditions for general boating and recreational uses, MRP No. R9-2006-002 establishes monitoring at six near shore locations (3,000 feet seaward MLLW) for total and fecal coliform and enterococcus bacteria in surface samples on a year-round, monthly basis. These stations are located at the 30-foot depth contours opposite the surf zone stations. Monitoring at one near shore station monitored under Order No. 2000-012 has been suspended and two stations have been added.

For the sample period of July 2001 through August of 2004, samples collected at near shore station N2 have at times exceeded the recommended 6-month geometric mean level for enterococcus but this may be due to the less sensitive analytical method used by FPUD at times to measure enterococcus levels. Most other sample results were below the method detection limit for the period.

MRP No. R9-2006-002 alters the sampling frequency and monitoring stations from Order No. 2000-012 , otherwise, Order and MRP No. R9-2006-002 retain the requirements of Order No. 2000-012 for near shore water quality monitoring.

3. Offshore Water Quality Monitoring

To determine compliance with water quality objectives of the Ocean Plan and to determine if discharges cause significant impacts to water quality within the zone of initial dilution, and beyond the zone of initial dilution, MRP No. R9-2006-002 establishes a schedule of monitoring at seven off shore locations. On a routine basis, MRP No. R9-2006-002 requires monitoring for total and fecal coliform and enterococcus bacteria in surface and mid-depth samples on a year-round, monthly basis.

For the sample period of July 2001 through August of 2004, no samples collected at any of the seven off shore water quality monitoring stations showed elevated bacteria levels exceeding water quality objective of the Ocean Plan. Most sample results were below the method detection limit for the period of review.

MRP No. R9-2006-002 only alters the sampling frequency from Order No. 2000-012, otherwise, Order and MRP No. R9-2006-002 retain the requirements of Order No. 2000-012 for offshore water quality monitoring.

E. Other Monitoring Requirements

1. Benthic Monitoring

To assess the status of the benthic community and to evaluate the physical and chemical quality of sediments in the receiving water, Order No. R9-2006-002 requires the following monitoring during the fourth year of the Order.

a. Sediment Characteristics. Analyses shall be performed on the upper two inches of sediment core samples in accordance with the following schedule:

Table 19. Sediment Monitoring Requirements

Determination	Units	Type of Sample	Minimum Frequency
Sulfides	mg/kg	core	Year 4
Total Chlorinated Hydrocarbons	mg/kg	core	Year 4
BOD_5	mg/kg	core	Year 4
COD	mg/kg	core	Year 4
Particle Size Distribution	mg/kg	core	Year 4
Arsenic	mg/kg	core	Year 4
Cadmium	mg/kg	core	Year 4
Total Chromium	mg/kg	core	Year 4
Copper	mg/kg	core	Year 4
Lead	mg/kg	core	Year 4
Mercury	mg/kg	core	Year 4
Nickel	mg/kg	core	Year 4
Silver	mg/kg	core	Year 4
Zinc	mg/kg	core	Year 4
Cyanide	mg/kg	core	Year 4
Phenolic Compounds	mg/kg	core	Year 4
Radioactivity	pCi/kg	core	Year 4

b. Infauna. Samples shall be collected with a Paterson, Smith-McIntyre, or orange-peel type dredge, having an open sampling area of not less than 124 square inches and a sediment capacity of not less than 210 cubic inches. The sediment shall be sifted through a one-millimeter mesh screen and all organisms shall be identified to as low a taxon as possible. Sampling shall consist of 3 grab samples per year taken during years 1 and 3 of the Order.

Table 20. Infauna Monitoring Requirements

Determination	Units	Minimum Frequency
Benthic Biota	Identification and enumeration	3 grabs, year 4

If FPUD does not comply with effluent limitations of the Order, the Regional Water Board may require FPUD to perform the sediment monitoring, described above, on a year-round basis during the term of Order No. R9-2006-002.

MRP No. R9-2006-002 only alters the sampling frequency from Order No. 2000-012, otherwise, Order and MRP No. R9-2006-002 retain the requirements of Order No. 2000-012 for benthic monitoring.

2. Demersal Fish and Macroinvertebrate Monitoring

Order No. R9-2006-002 requires FPUD to establish a 30-meter band transect on the ocean bottom, within the receiving waters. During the 12-month period beginning July 1, 2008 through June 30, 2009 of Order No. R9-2006-002, FPUD must perform a survey of demersal fish and macroinvertebrates within the transect. If FPUD does not comply with effluent limitations of the Order, the Regional Water Board may also require FPUD to perform this monitoring, one time each year during the term of Order No. R9-2006-002.

MRP No. R9-2006-002 only alters the sampling frequency from Order No. 2000-012, otherwise, Order and MRP No. R9-2006-002 retain the requirements of Order No. 2000-012 for demersal fish and macroinvertebrate monitoring.

3. Solids Monitoring

FPUD shall report, annually, the volume of screenings, sludge [biosolids]s, grit, and other solids generated and/or removed during wastewater treatment and the locations where these waste materials are placed for disposal.

4. Kelp Bed Monitoring

To assess the extent to which the discharge of wastes may affect the areal extent and health of coastal kelp beds, Order No. R9-2006-002 requires FPUD to participate with other ocean Dischargers in the San Diego Region in an annual regional kelp bed photographic survey.

Order and MRP No. R9-2006-002 retain the requirements of Order No. 2000-012 for kelp bed monitoring.

5. Intensive Monitoring

FPUD shall perform the intensive monitoring as described by MRP No. R9-2006-002 for the 12-month period beginning July1, 2008 through June 30, 2009 and participate in the next Southern California Coastal Water Research Project (SCCWRP) Bight.

VII. RATIONALE FOR PROVISIONS

A. Standard Provisions

Standard Provisions, which in accordance with 40 CFR 122.41and 122.42, apply to all NPDES discharges and must be included in every NPDES permit, are provided in Attachment D to the Order.

B. Special Provisions

1. Reopener Provisions

   Order No. R9-2006-002 may be reopened and modified, revoked, and reissued or terminated in accordance with the provisions of 40 CFR Sections 122, 124, and 125.

2. Special Studies and Additional Monitoring Requirements

   a. Oceanside Ocean Outfall Capacity

      Order No. R9-2006-002 retains the provision contained in Order No. 2000-012 with minor modifications.

   b. Treatment Plant Capacity

      The treatment plant capacity study required by Order No. R9-2006-002 shall serve as an indicator for the Regional Water Board regarding the FPUD Facilities' increasing hydraulic capacity and growth in the service area.

   c. Spill Prevention and Response Plans

      Order No. R9-2006-002 updates the Sewer Overflow Prevention Plan (SOPP) and the Sewer Overflow Response Plan (SORP) contained in Order No. 2000-012. Order No. R9-2006-002 defines what types of spills are reportable to the Regional Water Board under this Order and what types (such as sanitary sewer overflows) are covered under other existing Orders. The SOPP and the SORP (now called SPP and SRP, respectively) established by Order No. 2000-012 are retained by this Order with minor modifications.

   d. Spill Reporting Requirements

      Order No. R9-2006-002 establishes a reporting protocol for how different types of spills covered by this Order shall be reported to regulatory agencies.

e. Solids Monitoring

Order No. R9-2006-002 retains the requirements from Order No. 2000-012.

f. Pretreatment Program

Because the FPUD Facilities do not currently receive discharges from industry that is subject to U.S. EPA's pretreatment standards, FPUD is not currently required to develop and implement an industrial pretreatment program. Order No. R9-2006-002 retains provisions from Order No. 2000-012 that require an annual survey of industrial facilities, which discharge to the collection system, to determine if the FPUD Facilities receive pollutants from any user that is subject to pretreatment standards, or if other circumstances warrant development of a pretreatment program.

C. Compliance Determination and Enforcement Provisions

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

   Provisions VII.A – VII.H outline the manner by which all instances of non-compliance will be identified consistent with the definitions in Attachment A. These provisions assert that a violation of an effluent limitation based on an average or median over a period consisting of several days results in a violation or non-compliance on each day during the period considered for the average or median. This assertion is based on USEPA Memorandum "Issuance of Guidance Interpreting Single Operational Upset" dated September 27, 1989 in which USEPA clearly states that "The violation of a monthly average limitation is coundted as oned day of violation for each day in the month, e.g., 30days of violation in a 30-day month." These provisions only state how violations will be identified and counted but not the amount of penalty to be assessed which depend on the type of penalty being proposed for assessment (i.e., discretionary administrative civil liability or mandatory minimum penalties) and other enforcement consideration factors.

   Provision VII.F and the corresponding definition in Attachment A for the six-month median effluent limitation deviate with the Implementation Provision C.3.f of the Ocean Plan in order to maintain consistency with Compliance and Enforcement provisions.

2. Ocean Plan Provisions

   Provisions G, I, J, K, L, and M of Section VII of the Order are either taken directly from the Ocean Plan or are based on provisions of the Ocean Plan.

3. Single Operational Upset

   a. The term "upset" has broad and narrow definitions in *Attachment A – Definitions* because the term is used both to refer to an "upset" in the general sense as any malfunction or operational failure at a treatment facility and also in a more specific sense to refer to an "upset" as defined at 40 CFR 122.41 (n). The determination that the term "upset" has broad and narrow definitions is discussed further below.

   b. Regulatory Upset Defense.
   Provision 8 of *Attachment D – Standard Provisions* addresses the use of the regulatory upset defense to completely relieve dischargers of liability for violations under specific situations. According to the US EPA Memorandum "Issuance of Guidance Interpreting Single Operational Upset" (September 27, 1989), upset events that fit the definition of "upset" under 40 CFR 122.41 (n) "provide those who violate technology-based effluent limitations . . . with an affirmative defense to allegations of permit noncompliance, if the exceedance results from an exceptional, unintentional incident which is beyond the control of the party who discharges in violation of his permit. A party who successfully claims upset is not legally liable for the exceedances at issue, and has not violated the (Clean Water Act), his NPDES permit, or categorical pretreatment standards." 40 CFR 122.41 (n) states that the regulatory upset defense does not apply to those events caused by operational error, improperly designed treatment facilities, lack of preventive maintenance, or careless or improper operation. Provision 8 of Attachment D specifies the conditions that FPUD must satisfy to claim the regulatory upset defense.

   c. Single Operational Upset Defense.
   Compliance Determination section VII.Q of Order No. R9-2006-002 addresses how a Discharger may be able to limit his liability in the event of a single operational upset (SOU) resulting in multiple violations. The US EPA Memorandum "Issuance of Guidance Interpreting Single Operational Upset" (September 27, 1989) provides the necessary regulatory guidance in case of SOU except for purposes of California Water Code Section 13385 (h) and (i). The US EPA SOU guidance memo spells out that multiple violations due to an SOU are treated as one violation for each day only. For example, an SOU that results in multiple violations each day over a period of seven days will result in counting seven violations because the multiple violations on each of the seven days are treated as one violation for each day only. If the State or Regional Water Board is taking enforcement in accordance with CWC 13385 (h) and (i), commonly referred to as Mandatory Minimum Penalties, CWC Section 13385 (f)(2) expands a POTW discharger's ability to limit liability in the case of an SOU by allowing all violations that occur within a 30-day period, instead of each day, due to an SOU to be counted as one violation.

   The regulatory upset defense completely relieves a discharger of all liability for violations of technology-based effluent limitations but not in cases where the violations are caused by operator error. In contrast, according to the US EPA SOU guidance memo, the SOU defense serves to only limit a discharger's liability for violations but applies to both technology-based and water quality-based effluent limitations even if caused by

unknowing and unintentional operator error. For purposes of Mandatory Minimum Penalties in accordance with CWC Section 13385 (f)(2), the SOU defense does not apply when the upset was caused by operator error.

The effect of CWC Section 13385 (f)(2) on reducing a POTW discharger's liability is illustrated in the following example:

> A POTW discharged 20,000 gallons of treated effluent each day over two days, and the effluent quality exceeded the concentration effluent limitations and the mass emission rate limitations of the POTW's NPDES permit for iron and copper on both days. The POTW reported to the Regional Water Board that despite its best efforts, increased filamentous bacteria growth in the aeration tank due to a single operational upset resulted in a slight reduction in settling in the secondary clarifier which in turn resulted in the increased iron and copper content of the effluent. The Regional Water Board determined that four serious violations occurred on each day for a total of eight serious violations over the two days due to a single operational upset. Taking the SOU defense into account according to US EPA guidance, the Regional Water Board would determine that the four violations on each day collapse to one violation on each day and the POTW can be civilly liable for up to $10,000 per day of violation plus up to $10 per gallon discharged over 1,000 gallons [in accordance with CWC Section 13385 (c)] for a total possible maximum civil liability of $410,000 (i.e., $20,000 for two days of violations and $390,000 for the 39,000 gallons discharged over the initial 1,000 gallons). However, if the Regional Water Board determines mandatory minimum penalties in accordance with CWC Sections 13385 (h) and (i), the Regional Water Board must also consider the SOU defense in accordance with CWC Section 13385 (f)(2). In that case, the eight serious violations collapse to one violation with a Mandatory Minimum Penalty of $3,000.

d. Twenty-four Hour Reporting for Upsets.
Provision V.E.2.b of Attachment D Standard Provisions – Reporting requires that "any upset that exceeds any effluent limitation in this Order" must be reported within 24 hours from the time FPUD becomes aware of the circumstances. This standard provision is authorized at 40 CFR 122.41(l)(6)(ii)(B) and is interpreted to require reporting of any upset, in the broad sense, that results in an exceedance of any effluent limitation. The term "upset" in this provision cannot be limited to the meaning of the term "upset" within 40 CFR 122.41 (n), which only applies to exceedances of technology-based effluent limitations, and must be interpreted broadly because an "upset", in the broad sense, can result in exceedance of water quality-based effluent limitations. Therefore, this provision also applies to the reporting of single operational upsets.

VIII. PUBLIC PARTICIPATION

The California Regional Water Quality Control Board, San Diego Region (Regional Water Board) is considering the issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the Fallbrook Public Utility District

Wastewater Treatment Plant No. 1. 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 FPUD 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 North County Times on May 3, 2005 and by letter mailed to interested parties on May 13, 2005.

B. Written Comments

The staff determinations are tentative. Interested persons are invited to submit written comments concerning these tentative WDRs. Comments should 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 August 3, 2005.

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:	August 10, 2005
Time:	9:00 am
Location:	Regional Water Quality Control Board, San Diego 9174 Sky Park Court Suite 100 San Diego, CA 92123

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

Please be aware that dates and venues may change. Our web address is **http://www.waterboards.ca.gov/sandiego** where you can access the current agenda for changes in dates and locations.

D. Waste Discharge Requirements Petitions

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

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

E. Information and Copying

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

F. Register of Interested Persons

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

G. Additional Information

Requests for additional information or questions regarding this Order should be directed to Victor Vasquez at (858) 636-3155.

ATTACHMENT G – DILUTION MODEL INFORMATION

The dilution model used to determine the dilution factor of the Oceanside Ocean Outfall (OOO) was U.S. EPA-approved computer modeling application Visual Plumes (UM3 Model). The U.S. EPA Visual Plumes website is located at <http://www.epa.gov/ceampubl/swater/vplume/index.htm>. The dilution model results are summarized in Table G.1 below.

Table 1: Summary of Visual Plumes dilution model results.

Ambient Profile	Effluent Temperature (^{o}C)	Dm to last Trap level	Dm to Surface
Jan-04	16		131.2
Feb-04	16	101.4	117.4
Mar-04	16	87.87	100.6
Apr-04	16	110.3	
May-04	21.1	86.89	
Jun-04	21.1	101.6	
Jul-03	21.1	89.75	103.3
Aug-03	21.1	98.36	113.7
Sep-03	21.1	104	115.4
Oct-03	21.1	87.41	99.58
Nov-03	16	81.52	99.67
Dec-03	16		119.7

Information about the OOO and the outfall diffuser were obtained from the City of Oceanside Report of Waste Discharge Supplemental Information (February 2005). The following information and assumptions were used for the input into the model:

Port diameter – 4.6 inches - Average of 14 five-inch diameter ports and 10 four-inch diameter ports

Port elevation – 4 feet

Vertical angle - 0 degrees

Horizontal angle – 0 degrees – The City of Oceanside indicated that diffuser ports alternated facing 0 degrees and 180 degrees. This model does not have input abilities for a diffuser with ports facing various directions. A single direction for all ports was assigned. This will result in a conservative dilution factor.

Number of ports – 24 ports

Port spacing – 10 feet

Acute mix zone - Not relevant, value does not effect dilution factor as defined by the SWRCB.

Chronic mix zone - Not relevant, value does not effect dilution factor as defined by the SWRCB.

Port depth – 104 feet

Effluent flow – 29.055 mgd – The total of permitted discharge flows through the OOO from the City of Oceanside, Fallbrook Public Utility District, Biogen IDEC Pharmaceuticals Corporation, and US Marine Corps Base Camp Pendleton. The actual operating capacity of the outfall is 30 MGD.

Effluent salinity – 1.43 psu – This value was calculated from total dissolve solids information for discharger from City of Oceanside, Fallbrook Public Utility District, Biogen IDEC Pharmaceuticals Corporation, and US Marine Corps Base Camp Pendleton.

Effluent temp – 21.1 °C average temperatue assumed for May through October; 16 °C average temperature assumed for November through April.

Effluent concentration - Not relevant, input does not affect dilution factor.

Ambient data - Monthly ambient data for July 2003 through June 2004 obtained from 2003- 2004 Ocean Outfall Monitoring Program Report Addendum (March 2005) submitted by City of Oceanside. Salinity and temperature data taken at offshore monitoring stations A1-A5 were averaged at each depth and the average values were used in Visual Plumes. For each month and for each Visual Plumes run, initial dilution was interpreted to occur either when the plume first reaches the surface, or at the last trapping level when the plume does not surface. The minimum initial dilution was the lowest dilution factor attained using the May 2004 ambient profile.

Far-field diffusion coefficient - 0.0003 m0.67/s2 - recommended in the Visual Plumes manual as a conservative value.

Special Settings Tab, Farfield Diffusivity Option - 4/3 Power Diffusivity was chosen based on the fact that the discharge is occurring in open water.

Special Settings Tab, Diffuser Port Contraction Coefficient - 0.61 - based on the use of cylindrical ports in the diffuser.

Special Settings Tab, Standard Light Adsorption Coefficient - 0.16 - recommended in the manual as a conservative value.