Prima Deshecha Channel

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Annual NPDES Progress Report-Co of Orange (15 Nov 00)
Prima Deshecha Channel (PDCMO1)

Cd (ug/L)	Hardness (mg/L)	CTR CMC 1 Hr Avg	Exceedance D-B	Ni (ug/L)	Hardness (mg/L)	CTR and USEPA CMC 1 Hr Avg	Exceedance I-G	CTR and USEPA CCC 4 day Avg	Exceedance K-G
50	2000	108.53	58.53	240	2000	5903.9	5663.9	655.7	415.7
6	390	18.60	12.60	83	390	1480.8	1397.8	164.5	81.5
9	1736	93.18	84.18	110	1736	5237.5	5127.5	581.7	471.7
17	2200	120.26	103.26	160	2200	6399.6	6239.6	710.8	550.8
5	200	9.03	4.03	43	200	841.7	798.7	93.5	50.5
22	988	50.75	28.75	254	988	3251.1	2997.1	361.1	107.1
39	2000	108.53	69.53	354	2000	5903.9	5549.9	655.7	301.7
38	1910	103.28	65.28	336	1910	5678.3	5342.3	630.7	294.7
7	290	13.50	6.50	48	290	1152.5	1104.5	128.0	80.0
18	590	29.09	11.09	173	590	2101.9	1928.9	233.5	60.5
26	1608	85.80	59.80	241	1608	4908.9	4667.9	545.2	304.2
22	1065	55.03	33.03	234	1065	3464.2	3230.2	384.8	150.8
6	110	4.73	-1.27	32	110	507.6	475.6	56.4	24.4
16	1235	64.56	48.56	90	1235	3926.6	3836.6	436.1	346.1
23	2912	162.62	139.62	117	2912	8112.8	7995.8	901.1	784.1
6	160	7.10	1.10	35	160	696.9	661.9	77.4	42.4
14	1030	53.08	39.08	92	1030	3367.6	3275.6	374.0	282.0
25	2750	152.91	127.91	128	2750	7729.3	7601.3	858.5	730.5
12	1155	60.06	48.06	82	1155	3710.3	3628.3	412.1	330.1
10	264	12.20	2.20	56	264	1064.5	1008.5	118.2	62.2
11	1610	85.92	74.92	90	1610	4914.0	4824.0	545.8	455.8
26	3228	181.68	155.68	204	3228	8851.6	8647.6	983.1	779.1
21	464	22.44	1.44	81	464	1715.3	1634.3	190.5	109.5
18	2460	135.63	117.63	129	2460	7033.9	6904.9	781.2	652.2
21	2618	145.03	124.03	148	2618	7414.2	7266.2	823.5	675.5
14	394	18.81	4.81	70	394	1493.7	1423.7	165.9	95.9
9	1268	66.42	57.42	70	1268	4015.2	3945.2	446.0	376.0
29	3046	170.69	141.69	207	3046	8427.5	8220.5	936.0	729.0
9	952	48.76	39.76	67	952	3150.6	3083.6	349.9	282.9
9	1052	54.31	45.31	73	1052	3428.4	3355.4	380.8	307.8
30	3325	187.56	157.56	218	3325	9076.1	8858.1	1008.1	790.1
14	1280	67.10	53.10	93	1280	4047.3	3954.3	449.5	356.5
19	1950	105.61	86.61	144	1950	5778.7	5634.7	641.8	497.8
13	875	44.52	31.52	100	875	2933.6	2833.6	325.8	225.8
23	1275	66.82	43.82	161	1275	4033.9	3872.9	448.0	287.0
47	416	19.95	-27.05	240	416	1563.9	1323.9	173.7	-66.3
14	724	36.29	22.29	724	724	2499.2	1775.2	277.6	-446.4
10	620	30.69	20.69	88	620	2191.9	2103.9	243.5	155.5
14	840	42.60	28.60	110	840	2834.0	2724.0	314.8	204.8
27	1008	51.86	24.86	200	1008	3306.7	3106.7	367.3	167.3
AVG= 18.725	1349.95	71.06	52.34	153.125	1349.95	4233.6	4080.5	470.2	317.1

Prima Deshecha NPDES Annual Report from the Co. of Orange

Date	Turbidity (NTU)	NH3 (mg/L)	PO4 (mg/L)	P (mg/L)	P (avg)	P (median)	Exceed (count)	Exceed (%)
7/2/97	4.1	0	1.4	0.46				
8/7/97	61	0	1.9	0.62				
9/17/97	7.9	0	1.7	0.55				
10/9/97	72	0	2.4	0.78				
1/9/98	680	0	4.6	1.50				
1/29/98	130	0	1.3	0.42				
1/30/98	36	1	1.3	0.42				
2/14/98	200	0	2.4	0.78				
2/14/98	1300	1	10	3.26				
2/15/98	100	0	10	3.26				
2/16/98	850	0	10	3.26				
3/25/98	180	0	0	0.00				
3/25/98	2900	0	0.3	0.10				
3/25/98	650	1	0.6	0.20				
3/28/98	1660	1	0.3	0.10				
6/22/98	22	0	1.3	0.42	1.01	0.51	13 of 16	81%
8/11/98	280	2	6.12	2.00				
9/2/98	1000	0	1.84	0.60				
10/1/98	10	0	0	0.00				
11/8/98	95	0.41	3.37	1.10				
11/8/98	580	0.64	8.57	2.80				
11/9/98	58	0.22	1.44	0.47				
11/28/98	900	0	9	2.94				
11/29/98	152	0	2	0.65				
12/1/98	3360	1	6	1.96				
12/7/98	120	0	1	0.33				
1/13/98	6	0	1	0.33				
2/9/99	190	0	3	0.98				
2/9/99	72	0	1	0.33				
2/10/99	14	0	0	0.00				
2/18/99	14	0	0	0.00				
3/1/99	13	0	1	0.33				
3/11/99	130	1	2	0.65				
3/11/99	13	0	0	0.00				
3/12/99	9	0	0	0.00				
3/25/99	112	1	4	1.31				
3/25/99	54	0	1	0.33				
3/26/99	15	0	1	0.33				
4/7/99	194	0	1	0.33				
4/7/99	323	0	2	0.65				
4/7/99	15	0	1	0.33				
4/29/99	4	0	1	0.33				
5/20/99	24	0	1	0.33				
6/9/99	6	0	1	0.33				
7/12/99	18	0	1	0.33	0.69	0.33	24 of 29	83%
10/26/99	26	0	1	0.33				
12/16/99	70	0.24	1.41	0.46				
1/7/00	65	0.19	1.62	0.53				
2/29/00	5400	0.38	11.3	3.69				
3/5/00	1400	0.79	7.96	2.60				
3/23/00	110	0.07	1.47	0.48				
4/6/00	117	0.18	2.75	0.90				
5/30/00	74	0.12	1.32	0.43				
6/29/00	1400	0.11	8.87	2.89	1.37	0.53	9 of 9	100%
Avg =	468.4	0.23	2.75	0.90				
Median =	97.5	0.00	1.41	0.46				
Std Dev	967.7	0.43	3.13	1.02				
95 % CI =	258.1	0.114	0.83	0.272				

.1 mg/L

54 SAMPLES
8 EXCEEDANCES

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Phosphorus Basin Plan Water Quality Objective for flowing streams = 0.1 mg/L and is not to be exceeded more than 10% of the time in any one year

Prima Deshecha Channel (901.310) – 303(d) Fact Sheet
County of Orange NPDES Annual Progress Report

Prima Deshecha Channel should be 303(d) listed due to the presence of elevated ~~turbidity, ammonia and phosphate~~ in water samples. Cadmium, ~~chromium~~ and nickel should be listed as threatened.

Watershed Characteristics
Prima Deshecha Channel is an approximately 6.20 mile waterway in the San Juan Watershed of Region 9. It is classified inland surface water with the following beneficial uses: AGR, REC1, REC2, WARM and WILD[1].

Water Quality Objectives not Obtained
Region 9 Basin Plan[1] standards for turbidity, ammonia (NH_3), phosphate (PO_4) were exceeded. Drinking water Secondary Maximum Contaminant Levels (MCLs)[6] for cadmium (Cd), chromium (Cr) and nickel (Ni) were exceeded. Very strong[2] total suspended solids (TSS) and volatile suspended solids (VSS) were measured in the water body. Very hard water[3] was also measured. The secondary maximum contaminant level[6] of 900µhmos for electrical conductivity was also exceeded. California Ocean Plan[4] limits were exceeded for several metals.

Evidence of Impairment
Thirty-nine out of fifty-four measurements of turbidity exceeded the Region 9 Basin Plan[1] standard of 20 NTU. Thirty-six of these were at least twice the standard, and sixteen of these were ten times the standard. Basin plan standards for PO_4 and NH_3 were also exceeded for at least 59% of the samples. Metal concentrations of Cd, Cr and Ni exceeded Maximum Contaminant Levels[6] (MCLs) in at least 17% of the samples. Very strong[2] TSS and VSS values were measured in 52% and 17% of the samples. Very hard water levels were exceeded in 88% of the samples. The electrical conductivity standard of 900µhmos[6] was exceeded for 52 of 54 samples. Cal Ocean Plan[4] limits for cadmium, copper, chromium, lead, nickel and zinc were exceeded. Since Prima Deshecha drains into the ocean, this is a problem. See Table 1 for standards and number of exceedances.

Extent of Impairment
Site PDCM01 is near the mouth of the creek. The specific standards exceeded are most likely due to cumulative effects throughout the waterbody, but the data is for only one site. The extent of impairment is estimated to be approximately from one mile upstream of the station, down to the mouth of the Creek.

Potential Sources
Most of Prima Deshecha runs through highly urbanized areas and that has seen tremendous growth in recent years. Channalization of the stream has probably increased water velocity that could be causing the undercutting of banks and

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increasing turbidity. Metal pollution is most likely coming from roads and highways.

TMDL Priority
A medium TMDL priority is suggested because turbidity may be hiding other problems.

Notes
Other constituents in the water are in excess of known standards, but are not being suggested for 303(d) listing. It is believed that practices that will eliminate turbidity problems may also help to reduce TSS and VSS. No standards are set for hardness. Prima Deshecha Creek waters are very hard and may be buffering the system from pollution by metals. Cadmium, Cr and Ni exceeded known standards and this occurred in up to 55 of 78 samples. Several of the metal samples were twice the numeric standard. National Toxics Rules[5] for the protection of aquatic life could not be applied as they are applicable to 1-hour averages and the data in this report are only a single point in time. The system may be loaded with metals that are being buffered by the high concentration of cations in the water. This would also explain the high electrical conductivity values. The metal pollution has already exceeded the high buffering capacity of the water. This impairment of water quality has no known remediations. Until further investigation, it may be detrimental to aquatic life in Oso Creek if Total Hardness and Electrical Conductivity values are lowered. Metals, nutrients and turbidity should be addressed first.

No 303(d) listing is recommended for metals at this time. Since there is no MUN beneficial use for this creek, drinking water standards cannot be applied. It should be noted that this creek does drain into the Pacific Ocean and the concentrations of Cd, Cr, Cu, Pb, Ni and Zn were frequently in excess of Ocean Plan Standards.

Turbidity concentrations consistently exceeded the Basin Plan Standard of 20 NTU. High turbidity can decrease the penetration of light into the water column and adversely affect photosynthesis which aquatic organisms depend upon for survival. High concentrations of particulate matter that produce turbidity can be directly lethal to aquatic life. This would impair the WARM and WILD beneficial uses of this water body.

High concentrations of ammonia are toxic to fish and other aquatic organisms. This would directly impair the WARM and WILD beneficial uses of this creek.

Concentrations of phosphate over the Basin Plan Standard are expected to contribute to excess algae growth. Excess algae growth would impair REC1, REC2, WARM and WILD beneficial uses through the creation of odors, colors, increased turbidity and low dissolved oxygen environments.

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Information Sources

[1] Water Quality Control Plan for the San Diego Basin (9), 1994

[2] Metcalf and Eddy, Wastewater Engineering, Third Edition

[3] Boulder Area Sustainability Information Network. Water Quality (Advanced), http://bcn.boulder.co.us/basin/learning/wq2teacher.html

[4] California Ocean Plan, 1997. State Water Resources Control Board. California Environmental Protection Agency.

[5] U.S. Environmental Protection Agency, 2000, Federal Register, Vol 65, No. 97, California Toxics Rule

[6] State of California, 2001. California Code of Regulations, TITLE 22. Social Security Division 4. Environmental Health Chapter 15. Domestic Water Quality and Monitoring Regulations, Articles 4 and 16.

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Table 1 - Prima Deshecha Channel NPDES Annual Data
Sampling from 2 July 97 through 30 June 00

	EC (umhos)	Trubidity (NTU)	pH	NO3 (mg/L)	NH3 (mg/L)	TKN (mg/L)	PO4 (mg/L)	o-PO4 (mg/L)	TSS (mg/L)	VSS (mg/L)	Cd (ug/L)	Cr (ug/L)	Cu (ug/L)	Pb (ug/L)	Ni (ug/L)	Ag (ug/L)	Zn (ug/L)	Hardness (mg/L)
Basin Plan Std		20	6.5 - 9.0	45	0.025	?	0.306	?			5*	50*	1000*		100*	100*	5000*	
A Compilation of Water Quality Goals														280				
Secondary MCL	900																	
from B. Ott									350	275								300
# of times the standard was exceeded	52 of 54 (96%)	39 of 54 (72%)	none	none	32 of 54 (59%)		46 of 54 (85%)		33 of 64 (52%)	9 of 54 (17%)	55 of 78 (71%)	13 of 78 (17%)	none	none	35 of 78 (45%)	none	none	35 of 40 (88%)
National Toxics Rule (Freshwater Aquatic Life) 1-hr avg											0.35-51	83-3600	1.5-118	5-700	67-3284	0.07-181	17-824	
Cal Ocean Plan (Instnts Max)											10	20	30	20	150	7	200	
# of times the standard was exceeded											44 of 78 (56%)	26 of 78 (33%)	36 of 78 (46%)	10 of 78 (13%)	22 of 78 (28%)	none	19 of 78 (24%)	

* = Drinking Water Secondary Maximum Contaminant Level

Cd

Ag = 10 ug/L

Aquatic Life = varys w/ hardness cmc 1mg/L → 19 ccc 1 → 6

25 → 400 mg/L $CaCO_3$

Saltwater CC = 9.3

MC = 42

Hardness 2000, 390

lowest = 110

South East Regional Reclamation Authority (SERRA) Ocean Outfall Monitoring Reports

Order No. 2000.13
NPDES No. 0107417

The following SERRA reports are on file at Region 9:

File #	Folder #	Date	Status
01--175.01	48	4/01 -	O
01--175.01	47	11/00 - 4/01	C
01--175.01	46	7/00 - 10/00	C
01--175.01	45	01/00 - 7/00	C
01--175.01	44	5/99 - 12/99	C
01--175.01	43	8/98 - 4/99	C
01--175.01	42	12/97 - 8/98	C

All monitoring data can be found in each file. Attached is the monitoring and reporting program for SERRA. All monitoring locations, monitoring frequency, and monitored parameters are given in the document.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

ORDER NO. 2000-13
NPDES NO. 0107417

MONITORING AND REPORTING PROGRAM
FOR THE
SOUTH EAST REGIONAL RECLAMATION AUTHORITY
ORANGE COUNTY

DISCHARGE TO THE PACIFIC OCEAN
THROUGH THE SOUTH EAST REGIONAL RECLAMATION
AUTHORITY OCEAN OUTFALL

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN DIEGO REGION

This Monitoring and Reporting Program supersedes Technical Change Order No. 1 to Order 95-01 in its entirety. This Monitoring and Reporting program shall become effective with the adoption of Order No. 2000-13.

A. PURPOSE

This monitoring program is intended to:

1. Document short-term and long-term effects of the discharge on receiving waters, sediments, biota, and beneficial uses of the receiving water.

2. Determine compliance with NPDES permit terms and conditions.

3. Assess the need for industrial pretreatment and toxic control programs.

The monitoring data will be used to determine compliance with water quality standards.

B. MONITORING PROVISIONS

1. Samples and measurements taken as required herein shall be representative of the volume and nature[1] of the monitored discharge. All samples shall be taken at the monitoring points specified in this monitoring program and, unless otherwise specified, before the

effluent 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 Executive Officer. Samples shall be collected at times representative of "worse case" conditions with respect to compliance with the requirements of Order No. 2000-13.

2. 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 ± 10% from true discharge rates throughout the range of expected discharge volumes.

3. Monitoring must be conducted according to United States Environmental Protection Agency (USEPA) test procedures approved under Title 40 of the Code of Federal Regulations Part 136 (40 CFR 136), Guidelines Establishing Test Procedures for the Analysis of Pollutants, as amended, unless otherwise specified for sludge in 40 CFR 503, or unless other test procedures have been specified in Order No. 2000-13 and/or in this monitoring and reporting program.

4. If the discharger monitors any pollutants more frequently than required by Order No. 2000-13 or by this monitoring and reporting program, using test procedures approved under 40 CFR Part 136, or as specified in Order No. 2000-13 and this monitoring and reporting program, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the discharger's monitoring report. The increased frequency of monitoring shall also be reported.

5. The discharger shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by Order No. 2000-13 and this monitoring and reporting program, and records of all data used to complete the application for Order No. 2000-13. Records shall be maintained for a minimum of 5 years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Regional Board Executive Officer or the USEPA.

   a. Records of monitoring information shall include:

      (1) The date, exact location, and time of sampling or measurements;

      (2) The name(s) of individual(s) who performed the sampling or measurements;

      (3) The date(s) analyses were performed;

(4) The name(s) of the laboratory and individual(s) who performed the analyses;

(5) The analytical techniques or methods used; and

(6) The results of such analyses.

6. Calculations for all limitations that require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in Order 2000-13 or this monitoring and reporting program.

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

8. 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 Board Executive Officer.

9. The discharger shall have and implement an acceptable written quality assurance (QA) plan for laboratory analyses. An annual report shall be submitted by February 1st of each year that summarizes the QA activities for the previous year. Duplicate chemical analyses must be conducted on a minimum of ten percent of the samples, or at least one sample per month, whichever is more frequent. A similar frequency shall be maintained for analyzing spiked samples. When requested by the USEPA or the Regional Board, the discharger will participate in the NPDES discharge monitoring report QA performance study. The discharger shall have a success rate equal to or greater than 80 percent.

10. The discharger shall report all instances of noncompliance not reported under Reporting Requirement G.11 of Order No. 2000-13 at the time monitoring reports are submitted. The reports shall contain the information listed in Reporting Requirement G.11 of Order No. 2000-13.

11. By February 1st of each year, the discharger shall submit an annual report to the Regional Board and USEPA Region 9 that contains tabular and graphical summaries of the monitoring data obtained during the previous year. The discharger shall discuss the compliance record and corrective actions taken, or which may be needed to bring the discharge into full compliance with the requirements of Order No. 2000-13 and this monitoring and reporting program.

12. Laboratory method detection limits (MDLs) and practical quantitation levels (PQLs) 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.

13. Monitoring results shall be reported at intervals and in a manner specified in Order No. 2000-13 and in this monitoring and reporting program.

14. Monitoring reports shall be submitted to the Regional Board and to USEPA Region 9 according to the following schedule:

Monitoring Frequency	Reporting Period	Report Due
Continuous, Daily, Weekly, or Monthly	All	By the first day of the second month after the month of sampling.
Quarterly	Jan.-March	May 1
	April-June	August 1
	July-September	November 1
	October-December	February 1
Semiannually	January-June	August 1
	July-December	February 1
Annually	January-December	February 1
Once every 5 years ---		February 1

C. INFLUENT MONITORING

1. Influent monitoring is intended to:

   a. Determine compliance with NPDES permit conditions and water quality standards.

   b. Assess treatment plant performance.

   c. Assess the need for an Industrial Pretreatment Program and a Toxic Control Program.

2. Sampling stations shall be established at each point of inflow to all treatment plants and shall be located upstream of any in-plant return flows, and where representative samples of the influent can be obtained. Influent samples shall be collected on the same day as, and shortly before the collection of effluent samples.

3. During periods when no effluent from a particular treatment plant is discharged to the Pacific Ocean, no influent monitoring, except for flowrate monitoring, is required at that treatment plant.

4. The following shall constitute the influent monitoring program:

Parameter	Unit	Type of Sample[1]	Minimum Frequency
Flowrate	MGallons/Day	recorder/ totalizer	continuous
$CBOD_5$ @ 20°C	mg/L	24-hour composite	weekly
BOD_5 @ 20°C	mg/L	24-hour composite	monthly
Suspended Solids	mg/L	24-hour composite	weekly

D. EFFLUENT MONITORING

1. Effluent monitoring is intended to:

   a. Determine compliance with NPDES permit conditions and water quality standards.

   b. Identify operational problems in order to improve plant performance.

   c. Provide information on waste characteristics and flows for use in interpreting water quality and biological data.

2. The effluent sampling station shall be located downstream of any in-plant return flows, and disinfection units, where representative samples of the effluent discharged through the ocean outfall can be obtained.

3. During periods where no effluent from a particular treatment plant is discharged to the Pacific Ocean, no effluent monitoring, except for flowrate monitoring, is required at that treatment plant.

4. The following shall constitute the effluent monitoring program:

Parameter	Unit	Type of Sample[1]	Minimum Frequency
Flowrate	MGallons/day	recorder/totalizer	continuous
$CBOD_5$ @ 20°C	mg/L	24-hour composite	daily[2]
BOD_5 @ 20°C	mg/L	24-hour composite	monthly
Suspended Solids	mg/L	24-hour composite	daily[2]
pH	pH units	grab	daily[2]
Oil and Grease	mg/L	grab	monthly[3]
Settleable Solids	mL/L	grab	daily[2]

Parameter	Unit	Type of Sample[1]	Minimum Frequency
Turbidity	NTU	24-hour composite	weekly[3]
Acute Toxicity	TUa	24-hour composite	monthly
Dissolved Oxygen	mg/L	grab	weekly
Temperature	°F	--	weekly
Arsenic	ug/L	24-hour composite	quarterly[3,4]
Cadmium	ug/L	24-hour composite	quarterly[3,4]
Chromium (hexavalent)	ug/L	24-hour composite	quarterly[3,4,5]
Copper	ug/L	24-hour composite	quarterly[3,4]
Lead	ug/L	24-hour composite	quarterly[3,4]
Mercury	ug/L	24-hour composite	quarterly[3,4]
Nickel	ug/L	24-hour composite	quarterly[3,4]
Selenium	ug/L	24-hour composite	quarterly[3,4]
Silver	ug/L	24-hour composite	quarterly[3,4]
Zinc	ug/L	24-hour composite	quarterly[3,4]
Cyanide	mg/L	24-hour composite	quarterly[3,4]
Total Residual Cl	mg/L	grab	daily[6]
Ammonia (as N)	mg/L	24-hour composite	monthly[3]
Chronic Toxicity	TUc	24-hour composite	monthly[7]
Phenolic Compounds (nonchlorinated)	mg/L	24-hour composite	quarterly[3,4]
Phenolic Compounds (chlorinated)	mg/L	24-hour composite	quarterly[3,4]
Endosulfan	ug/L	24-hour composite	quarterly[3,4]
Endrin	ug/L	24-hour composite	quarterly[3,4]
HCH	ug/L	24-hour composite	quarterly[3,4]
Radioactivity	pCi/L	24-hour composite	quarterly[3]
Acrolein	ug/L	grab	semiannually[3]
Antimony	ug/L	24-hour composite	semiannually[3]
bis(2-chloroethoxy) methane	ug/L	grab	semiannually[3]
bis(2-chloroisopropyl) ether	ug/L	grab	semiannually[3]
chlorobenzene	ug/L	grab	semiannually[3]
chromium (III)	ug/L	24-hour composite	semiannually[3]
di-n-butyl phthalate	ug/L	grab	semiannually[3]
dichlorobenzenes	ug/L	grab	semiannually[3]
1,1-dichloroethylene	ug/L	grab	semiannually[3]
diethyl phthalate	ug/L	grab	semiannually[3]
dimethyl phthalate	ug/L	grab	semiannually[3]
4,6-dinitro-2-methylphenol	ug/L	grab	semiannually[3]
2,4 dinitrophenol	ug/L	grab	semiannually[3]

Parameter	Unit	Type of Sample[1]	Minimum Frequency
ethylbenzene	ug/L	grab	semiannually[3]
fluoranthene	ug/L	grab	semiannually[3]
hexacyclopentadiene	ug/L	grab	semiannually[3]
isophorone	ug/L	grab	semiannually[3]
nitrobenzene	ug/L	grab	semiannually[3]
thallium	ug/L	24-hour composite	semiannually[3]
toluene	ug/L	grab	semiannually[3]
1,1,2,2-tetrachloro-ethane	ug/L	grab	semiannually[3]
tributyltin	ug/L	24-hour composite	semiannually[3]
1,1,1-trichloroethane	ug/L	grab	semiannually[3]
1,1,2-trichloroehtane	ug/L	grab	semiannually[3]
acrylonitrile	ug/L	grab	semiannually[3]
aldrin	ug/L	grab	semiannually[3]
benzene	ug/L	grab	semiannually[3]
benzidine	ug/L	grab	semiannually[3]
beryllium	ug/L	24-hour composite	semiannually[3]
bis(2-chloroethyl) ether	ug/L	grab	semiannually[3]
bis(2-ethylhexyl) phthalate	ug/L	grab	semiannually[3]
carbon tetrachloride	ug/L	grab	semiannually[3]
chlordane	ug/L	grab	semiannually[3]
chloroform	ug/L	grab	semiannually[3]
DDT	ug/L	grab	semiannually[3]
1,4-dichlorobenzene	ug/L	grab	semiannually[3]
3,3-dichlorobenzidine	ug/L	grab	semiannually[3]
1,2-dichloroethane	ug/L	grab	semiannually[3]
dichloromethane	ug/L	grab	semiannually[3]
1,3-dichloropropene	ug/L	grab	semiannually[3]
dieldrin	ug/L	grab	semiannually[3]
2,4-dinitrotoluene	ug/L	grab	semiannually[3]
1,2-diphenylhydrazine	ug/L	grab	semiannually[3]
halomethanes	ug/L	grab	semiannually[3]
heptachlor	ug/L	grab	semiannually[3]
hexachlorobenzene	ug/L	grab	semiannually[3]
hexachlorobutadiene	ug/L	grab	semiannually[3]
hexachloroethane	ug/L	grab	semiannually[3]
N-nitrosodimethyl-amine	ug/L	grab	semiannually[3]
N-nitrosodiphenyl-amine	ug/L	grab	semiannually[3]

Parameter	Unit	Type of Sample[1]	Minimum Frequency
PAHs	ug/L	grab	semiannually[3]
PCBs	ng/L	grab	semiannually[3]
TCDD equivalents	pg/L	grab	semiannually[8,3]
Tetrachloroethylene	ug/L	grab	semiannually[3]
Toxaphene	ug/L	grab	semiannually[3]
Trichloroethylene	ug/L	grab	semiannually[3]
2,4,6-trichlorophenol	ug/L	grab	semiannually[3]
vinyl chloride	ug/L	grab	semiannually[3]

E. SOLIDS MONITORING

1.Solids monitoring is intended to:

a. Assess the need for a pretreatment program.

b. Maintain a record of the volume of solids generated and disposal sites used.

c. Evaluate the character of sludge to ensure that appropriate disposal methods are employed.

2. A report identifying the volume of screenings, sludges, grit, and other solids removed from the wastewater and the point(s) at which these wastes were disposed of shall be submitted annually. A copy of all annual reports required by 40 CFR 503 shall be submitted to the Regional Board at the same time those reports are submitted to the USEPA.

F. RECEIVING WATER MONITORING

1. To determine compliance with water quality standards, the receiving water quality monitoring program must document conditions in the vicinity of the "Zone of Initial Dilution" (ZID) boundary, at reference stations, and at areas beyond the ZID where discharge impacts might reasonably be expected. Monitoring must reflect conditions during all critical environmental periods.

2. Receiving water and sediment monitoring in the vicinity of the SERRA Ocean Outfall shall be conducted as specified below. Station location, sampling, samplepreservation and analyses, when not specified, shall be by methods approved by the Executive Officer. The monitoring program may be modified by the Executive Officer at any time.

3. Receiving water and sediment monitoring stations shall be located and numbered as follows:

Monitoring Station Locations

Station	Description
	Surf Zone Stations:
C1	San Juan Creek
C2	San Juan Creek above SERRA plant (enter through park)
S0	Surf at outfall
S1	Surf 1,000 feet southeasterly of outfall
S2	Surf, North Doheny Beach, midpoint between jetty and San Juan Creek
S3	Surf, 2,000 feet southeasterly of outfall
S4	Surf at entrance to Dana Point Harbor
S5	Surf 3,000 feet southeasterly of outfall
S6	Surf 50 feet west of westerly end of the Dana Point Harbor complex
S7	Surf 4,000 feet southeasterly of outfall
S9	Surf 5,000 feet southeasterly of outfall
S11	Surf 7,500 feet southeasterly of outfall
S13	Surf 10,000 feet southeasterly of outfall
S15	Surf 14,000 feet southeasterly of outfall
S17	Surf 20,000 feet southeasterly of outfall
S19	Surf 25,000 feet southeasterly of outfall
S21	Surf 31,000 feet southeasterly of outfall
S23	Surf 35,000 feet southeasterly of outfall
	Nearshore Stations:
N1	At the 30-foot depth countour, 6,000 feet down-coast from the outfall
N2	At the 30-foot depth countour, 4,000 feet down-coast from the outfall
N3	At the 30-foot depth countour, 2,000 feet down-coast from the outfall
N4	At the 30-foot depth countour, 2,000 feet up-coast from the outfall
N5	At the 30-foot depth countour, 4,000 feet up -coast from the outfall
N6	At the 30-foot depth countour, 6,000 feet up -coast from the outfall
	Offshore Stations:
A1-A4	At the corners of a 2,000 x 2,000-foot square having one side parallel to shore and the intersection of the diagonals located at the center of the outfall diffuser sections. Station A1 shall be located at the east corner and Stations A2 through A4 at successive corners in a clockwise direction.
A5	At the intersection of the diagonals of the above square.
B1	One mile down-coast from the outfall and over the same depth contour as Station A5.
B2	One mile up-coast from the outfall and over the same depth contour as Station A5.

Monitoring Station Locations

Station	Description
	Biological Transects:
T0	At the 20, 40, 60, and 80-foot depth contours along the transect located 50 feet down-coast of and parallel to the outfall.
T0	At the 20, 40, 60, and 80-foot depth contours along the transect located one mile down-coast of and parallel to the outfall.
T0	At the 20, 40, 60, and 80-foot depth contours along the transect located one-and-one-half miles up-coast of and parallel to the outfall.

It is recommended that stations be located using a land-based microwave positioning system, such as Mini-Ranger or trisponder, or a satellite positioning system such as Global Positioning System (GPS). The high levels of accuracy and precision afforded by this type of positioning system will ensure that stations are properly located with respect to the ZID. If an alternate navigation system (e.g. Loran C) is proposed, its accuracy should be compared to that of the systems recommended herein, and any compromises in accuracy should be justified.

Monitoring station locations may be modified with the approval of the Executive Officer.

4. SURF ZONE WATER QUALITY MONITORING

a. Surf zone monitoring is intended to assess bacteriological conditions in areas used for body-contact activities (e.g., swimming); and to assess aesthetic conditions for general recreational uses (e.g., picnicking).

b. All "surf zone stations" shall be monitored as follows:

(1) Grab samples shall be collected and analyzed for total and fecal coliforms, and enterococcus at a minimum frequency of once per week from May 1 through October 31, and at a minimum frequency of once every other week from November 1 through April 30 of each year.

(2) At the same time samples are collected from "surf zone stations," the following information shall be recorded: observation of wind (direction and speed), weather (e.g., cloudy, sunny, or rainy), current (e.g., direction), and tidal conditions; observations of water color, discoloration, oil and grease, turbidity, odor, and materials of sewage origin in the water or on the beach; and water temperature (°F).

5. NEARSHORE WATER QUALITY MONITORING

a. Nearshore monitoring is intended to assess bacteriological conditions in areas used for body-contact activities (e.g. scuba diving) and where shellfish and/or kelp may be harvested; and to assess aesthetic conditions for general boating and recreational uses.

b. All "nearshore stations" shall be monitored as follows:

(1) Reduced Monitoring

If the Executive Officer determines that the effluent at all times complies with Discharge Specifications B.1, B.3, and B.5 of Order No. 2000-13, only the reduced nearshore water quality monitoring specified below is required.

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations			Monthly
Total and FecalColiforms,	#/100mL	Grab[9]	Monthly
Enterococcus[10]	#/100mL	Grab[9]	Monthly

(2) Intensive Monitoring

The intensive nearshore water quality monitoring specified below is required during the 12-month period beginning August 1, 2003 through July 31, 2004, and must be submitted by August 31, 2004. This monitoring data will assist Regional Board staff in the evaluation of the Report of Waste Discharge required by Reporting Requirement G.2 to be submitted by August 9, 2004, 180 days prior to the Order's expiration date of February 9, 2005. The intensive nearshore water quality monitoring specified below is also required if the Executive Officer determines that the effluent does not at all times comply with Discharge Specifications B.1, B.3, and B.5 of Order No. 2000-13.

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations --	--		Monthly
Total and Fecal Coliforms,	#/100mL	Grab[11]	Monthly
Enterococcus	#/100mL	Grab[11]	Monthly

6. OFFSHORE WATER QUALITY MONITORING

Offshore monitoring is intended to determine compliance with the Ocean Plan; and to determine if the applicant's discharge causes significant impacts on the water quality within the ZID and beyond the ZID as compared to reference areas.

a. All "offshore stations" shall be monitored as follows:

(1) Reduced Monitoring

If the Executive Officer determines that the effluent at all times complies with Discharge Specifications B.1, B.3, and B.5 of Order No. 2000-13, only the reduced offshore water quality monitoring specified below is required.

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations			Monthly
Total and Fecal Coliforms,	#/100mL	Grab[11]	Monthly
Enterococcus[10]	#/100mL	Grab[11]	Monthly

(2) Intensive Monitoring

The intensive water quality monitoring specified below is required during the 12-month period beginning August 1, 2003 through July 31, 2004, and must be submitted by August 31, 2004. This monitoring data will assist Regional Board staff in the evaluation of the Report of Waste Discharge required by Reporting Requirement G.2 to be submitted by August 9, 2004, 180 days prior to the Order's expiration date of February 9, 2005. The intensive offshore water quality monitoring specified below is also required if the Executive Officer determines that the effluent does not at all times comply with Discharge Specifications B.1, B.3, and B.5 of Order No. 2000-13.

Determination	Units	Type of Sample	Minimum Frequency
Visual Observations			Monthly
Total and Fecal Coliforms,	#/100mL	Grab[11]	Monthly
Enterococcus	#/100mL	Grab[11]	Monthly
Temperature	°F	Grab[12]	Monthly
Dissolved Oxygen	mg/L	Grab[12]	Monthly
Light Transmittance	%	Instrument[12]	Monthly
pH	pH units	Grab[9]	Annually

7. BENTHIC MONITORING

Benthic monitoring is intended to assess the status of the benthic community, and to evaluate the physical and chemical quality of the sediments.

a. The intensive monitoring specified below is required during the 12-month period beginning August 1, 2003 through July 31, 2004, and must be submitted by August 31, 2004. This monitoring data will assist Regional Board staff in the evaluation of the Report of Waste Discharge required by Reporting Requirement

G.2 to be submitted by August 9, 2004, 180 days prior to the Order's expiration date of February 9, 2005. The sediment monitoring specified below is also required if the Executive Officer determines that the effluent does not at all times comply with Discharge Specifications B.1, B.3, and B.5 of Order No. 2000-13. Sediment monitoring shall be conducted at all "offshore stations".

b. Sediment Characteristics

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

Determination	Units	Type of Sample	Minimum Frequency
Sulfides	mg/kg	Core	Semiannually
Total Chlorinated Hydrocarbons	mg/kg	Core	Semiannually
BOD	mg/kg	Core	Semiannually
COD	mg/kg	Core	Semiannually
Particle Size Distribution	--------	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 (non-chlorinated)	mg/kg	Core	Annually
Chorinated Phenolics	mg/kg	Core	Annually
Aldrin and Dieldrin	mg/kg	Core	Annually
Chlordane and Related Compounds	mg/kg	Core	Annually
DDT and Derivatives	mg/kg	Core	Annually
Endrin	mg/kg	Core	Annually
HCH	mg/kg	Core	Annually
PCBs	mg/kg	Core	Annually
Toxaphene	mg/kg	Core	Annually
Radioactivity	pCi/kg	Core	Annually

c. Infauna

Samples are to 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.

Determination	Units	Type of Sample	Minimum Frequency
Benthic Biota	Identification and Enumeration	3 Grabs	Semiannually

8. ADDITIONAL BIOLOGICAL MONITORING

a. Demersal Fish and Macroinvertebrates

Monitoring of demersal fish and macroinvertebrates is intended to assess the populations of such organisms, to assess bioaccumulation of toxic pollutants, and to determine whether a significant difference exists between those populations near the outfall diffuser and those in reference areas.

(1) The intensive monitoring specified below is required during the 12-month period beginning August 1, 2003 through July 31, 2004, and must be submitted by August 31, 2004. This monitoring data will assist Regional Board staff in the evaluation of the Report of Waste Discharge required by Reporting Requirement G.2 to be submitted by August 9, 2004, 180 days prior to the Order's expiration date of February 9, 2005. The biological transect monitoring specified below is also required if the Executive Officer determines that the effluent does not at all times comply with Discharge Specification B.1, B.3, and B.5 of Order No. 2000-13.

Determination	Units	Type of Sample	Minimum Frequency
Biological Transects		Identification/ Enumeration	*** Annually

(2) 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) Water temperature (may be measured from a boat), estimated visibility and pelagic macrobiota at each 10-foot depth increment throughout the water column and at the bottom recorded; (2) general bottom description recorded; (3) enumeration by estimate of the larger plants and animals in the band transect area recorded; (4) representative photographic record of sampled area taken; 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 to as low a taxon as possible and measured.

(3) For both 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.

b. Kelp Bed Monitoring

Kelp bed monitoring is intended to assess the extent to which the discharge of wastes may affect the areal extent and health of coastal kelp beds.

(1) The discharger 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.

(2) 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.

(3) 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.

I, John H. Robertus, Executive Officer of the San Diego Regional Water Quality Control Board, do hereby certify the foregoing is a full, true, and correct copy of Order No. 2000-13 adopted by the California Regional Water Quality Control Board, San Diego Region, on February 9, 2000.

TENTATIVE
JOHN H. ROBERTUS
Executive Officer

MONITORING AND REPORTING PROGRAM ENDNOTES

1 For samples collected from the various treatment plants which are to be physically composited prior to analysis or for the results of analyses which are to be arithmetically composited, the basis for compositing shall be the rate of discharge from the various plants to the ocean, not the rate of inflow to the various plants.

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

3 The minimum frequency of monitoring for this constituent shall be automatically increased to twice the minimum frequency specified here if any analysis for this constituent yields a result higher than the effluent limit specified in Order No. 2000-13 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 Order No. 2000-13 for this constituent.

4 The minimum frequency of monitoring for this constituent is automatically reduced to semiannually 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 laboratory MDL for this constituent in the matrix being analyzed, whichever is higher.

5 The discharger 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 4° C and analyzed within 24 hours).

6 Monitoring of Total Chlorine Residual is not required on days when none of the treatment facilities that are subject to Order No. 2000-13 use chlorine for disinfection. If only one sample is collected for total Chlorine residual analysis on a particular day, that samples 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 the samples are collected, and the time at which samples are collected shall be reported.

7 A screening period for chronic toxicity shall be conducted every other year for three quarters, using a minimum of three test species (one plant, one invertebrate, and one vertebrate) chosen from the list of approved chronic toxicity test protocols specified in the 1997 Ocean Plan. After the screening period, the most sensitive species (i.e. the species exhibiting the lowest NOEL) shall be used for the quarterly testing. Repeat screening periods may be terminated after the first month if the most sensitive species is the same as the species previously found to be most sensitive.

Results for chronic toxicity shall be submitted, electronically, in the TOXIS version 2.4-database format. After one year, the data will be evaluated by regional board staff to determine if a reduction in the minimum monitoring frequency is appropriate. If the Executive Officer determines that a reduction in the minimum monitoring frequency is appropriate, the minimum monitoring frequency will be specified by the Executive Officer.

8 EPA method 8280 shall be used to analyze for TCDD equivalents.

9 At the surface.

[10] If the discharger 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 100 mL, enterococcus monitoring may be suspended. The discharger 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.

[11] At surface and mid-depth.

[12] At surface, mid-depth, and bottom.