

**ANNUAL SUMMARY REPORT ON
DISCHARGE MONITORING
AT THE
DIABLO CANYON POWER PLANT
(NPDES NO. CA0003751)**

2011

**2011 Annual Summary Report on Discharge Monitoring
at the
Diablo Canyon Power Plant**

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2011 Annual Summary Report on Discharge Monitoring
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OVERVIEW

This annual summary report follows the format used in quarterly monitoring reports. Analytical results below the respective analytical detection limit (ND or non-detect) are plotted as a “zero” value in accordance with ELAP guidance. Results between the analytical detection limit and reporting (quantitation) limits are plotted at the value and shown as 'DNQ' in the tabular summaries as is done for CIWQS reports. Less-than results are typically reported to express an average of values that include non-detects and at least one positive result. These less-than results are plotted conservatively at the value. During 2011, discharges occurred from all discharge paths except 001I, 001K, 016, and 017.

- B. California Ocean Plan Table B substances that were not analyzed for have not been added to the discharge stream. The substances listed in Table B in the California Ocean Plan were each analyzed for and reported in the permit renewal application and application updates for Diablo Canyon Power Plant (DCPP) submitted in October 1994, January 2001, and April 2011. There have been no changes in activities conducted at the plant that would have significantly affected the results previously reported in the above referenced documents.

SUMMARY OF MONITORING PROGRAM

A. Monitoring of Plant Influent and Effluent

1. Monitoring Data

- a. Appendix 1 provides a list of discharge path names for ease of reference. Appendix 2 contains monitoring data in tabular form. Appendix 3 contains monitoring data in graphical form.
- b. Annual oil and grease analyses were performed in October on Stormwater/Yard Drain Discharges 005, 008, 009, 013, and 015. Results are listed below. No discharges that resulted in adequate sample quantities occurred from pathway 016, and no discharge occurred from pathway 017 during 2011.

005	non-detect - ND(1.4 mg/l)
008	non-detect - ND(1.4 mg/l)
009	Value below reporting quantity - DNQ(1.5 mg/l)
013	non-detect - ND(1.4 mg/l)
015	Value below reporting quantity - DNQ(2.9 mg/l)

- c. In October, Discharge 001D (Liquid Radioactive Waste Treatment System) annual grab samples for lithium, boron, and hydrazine were collected and analyzed. The results were non-detect (less than 0.050 mg/l), 380 mg/l, and 0.004 mg/l, respectively.

2. Facility Operating and Maintenance Manual

Pacific Gas and Electric Company (PG&E) maintains a multiple volume Plant Manual at DCPP that contains procedures used for operation and maintenance activities at the plant, including those activities that relate to wastewater handling, treatment, sampling, analysis and discharge.

Plant procedures are prepared and reviewed by DCPP Staff and approved by DCPP Management. DCPP conducts biennial internal audits that review NPDES plant procedures contained in the manual. Ongoing reviews of plant procedures are conducted to assure that the manual remains valid, current, and complete for the facility.

3. Laboratories Used to Monitor Compliance

The following laboratories were used during 2011 for monitoring compliance. They are certified under the appropriate agencies for the test/analyses they perform. As part of the on-going annual certification process, these laboratories take part in annual performance evaluation testing.

- a. PG&E Chemistry Laboratory, DCP, Avila Beach, California (EPA Lab # CA01036)
- b. Aquatic Bioassay Consulting Laboratories, Ventura, California (EPA Lab # CA01907)
- c. Columbia Analytical Services, Kelso, Washington (EPA Lab # WA00035)
- d. TestAmerica, Inc., Earth City, Missouri (EPA Lab # MO00054)
- e. Abalone Coast Analytical, San Luis Obispo, California (EPA Lab # CA02661)
- f. Oilfield Environmental and Compliance, Santa Maria, California (EPA Lab # CA02438)
- g. Pacific EcoRisk, Fairfield, California (EPA Lab # CA01307)

4. Review of Compliance Record and Corrective Actions

a. Circulating Water Pump Chlorination/Bromination Monitoring

The 2011 quarterly NPDES reports discuss chlorination cycles when discharge monitoring was interrupted. These are listed below with brief descriptions of the cause and respective corrective action. When these monitoring interruptions occurred, engineering evaluations (approved by the CCRWQCB January 13, 1994; PG&E Letter No. DCL-94-002) were performed. Detailed descriptions of these evaluations are included in the quarterly reports. Evaluations concluded that discharge chlorine limits were not exceeded during these events.

Date	Chlorination Cycle Monitoring Interruptions	Cause	Corrective Action
03/09/11 to 03/16/11	Unit 2 22 Readings	Sample Pump Fouled with Aggressive Biological Growth.	Sample Pump Cleaned.
06/22/11 to 06/29/11	Unit 1 42 Readings	Three-Way Sample Valve Fouled with Biological Debris.	Valve Cleaned.
07/06/11 to 07/13/11	Unit 1 5 Readings	Meter Test Value Low. No Apparent Cause Determined.	Monitor Power Cycled. Test Value Returned to Normal.
08/03/11 to 08/04/11	Units 1 and 2 10 Readings	Electric Line Power to Discharge Monitors Lost.	Electrical Power Restored.
08/17/11 to 08/24/11	Unit 1 31 Readings	Monitor Sample Pump Discharge Fouled by Debris.	Sample Pump Cleaned.

b. Closed Cooling Water Releases

During 2011, maintenance activities that required draining of closed cooling water systems were performed, and are summarized below. PG&E received concurrence from the CCRWQCB in response to letters dated July 19, 1995 (PG&E Letter DCL-95-156), May 23, 1996 (PG&E Letter DCL-96-522), and May 19, 1997 (PG&E Letter DCL-97-533) regarding the use of glutaraldehyde and isothiazolin to control microbiological growth and corrosion in DCP's freshwater closed cooling water systems. Any drainage from these systems is discharged at a flow-rate such that the chronic toxicity level is below the "No Observable Effect Concentration" (NOEC) at NPDES Discharge 001.

The volumes of cooling water drained in 2011 from the component cooling water (CCW), service cooling water (SCW), and intake cooling water (ICW) systems are presented below. The glutaraldehyde (Glut) and isothiazoline (Iso) concentrations presented in the table are system concentrations, not concentrations at the point of discharge to receiving water.

Date	System	Volume (gallons)	Glut (mg/l)	Iso (mg/l)	Total Suspended Solids (mg/l)	Oil & Grease (mg/l)	Reason & Comments
01/07/11 to 01/15/11	Unit 2 SCW	1,670	54	1.3	n/a	n/a	Routine Maintenance
01/19/11	Unit 1 SCW	29,800	112	2.0	6.5	2.5	Routine Maintenance
02/01/11	Unit 1 ICW	9	< 50	1.3	n/a	n/a	Routine Maintenance
02/03/11	Unit 2 SCW	15	107	2.0	n/a	n/a	Routine Maintenance
03/30/11	Unit 2 ICW	22	< 50	6.0	n/a	n/a	Routine Maintenance
05/05/11	Unit 2 SCW	9,500	136	7.8	< 2.0	< 1.4	Routine Maintenance
05/07/11	Unit 2 ICW	1,150	116	5.4	n/a	n/a	Routine Maintenance
05/31/11	Unit 1 ICW	3,300	83	1.1	n/a	n/a	Routine Maintenance
06/08/11	Unit 1 SCW	33,158	62	4.9	9.3	< 1.4	Routine Maintenance
06/09/11	Unit 2 SCW	33,000	<50	2.4	29.1	4.5	Routine Maintenance
06/20/11	Unit 2 SCW	450	98	<0.25	n/a	n/a	Routine Maintenance
07/19/11	Unit 2 SCW	12	55	<0.25	n/a	n/a	Routine Maintenance
07/25/11	Unit 2 ICW	5	167	3.1	n/a	n/a	Routine Maintenance
10/11/11	Unit 2 SCW	28,400	6.1	3.7	< 2.0	< 1.4	Routine Maintenance
11/28/11	Unit 2 SCW	500	< 50	0.6	n/a	n/a	Routine Maintenance
11/28/11	Unit 2 SCW	10	< 50	0.6	n/a	n/a	Routine Maintenance
12/18/11	Unit 2 SCW	10	84	2.5	n/a	n/a	Routine Maintenance
12/20/11	Unit 1 ICW	3,306	80	6.4	n/a	n/a	Routine Maintenance
12/26/11	Unit 1 SCW	10	117	5.0	n/a	n/a	Routine Maintenance
12/27/11	Unit 2 ICW	3,514	117	6.5	n/a	n/a	Routine Maintenance

c. Exceedances

On February 11, 2011 it was discovered that Unit 1 outfall residual chlorine monitor readings were abnormally high during the first few minutes of the five previous unit specific 20-minute seawater conduit chemical treatment cycles. Two chemical injections on February 10th, and three chemical injections on February 11th, resulted in momentary high residual chlorine readings as tabulated below.

February 10, 2011	1600 hrs	156 ppb
	2000 hrs	171 ppb
February 11, 2011	0000 hrs	171 ppb
	0400 hrs	171 ppb
	0800 hrs	171 ppb

For each monitored injection cycle, the high readings occurred only during the beginning of each 20-minute scheduled treatment, then residual chlorine readings returned to normal expected levels at the 001 Outfall for the remainder of each respective cycle.

Following discovery of the abnormally elevated monitor readings, chemical treatment was immediately shut down to both Units until the cause was evaluated. The event resulted from a failed diverter valve within the intake chemical injection system that selects between the 1-2 and 2-2 seawater conduits. The valve failed such that it remained in a partially closed position during chemical treatments to the Unit 2 2-2 conduit, resulting in excessive sodium hypochlorite build-up in the upstream system piping.

Upon initiation of subsequent injection treatments to the Unit 1 1-2 conduit, the excess hypochlorite was quickly released from the system resulting in short-duration concentrated chemical spiking during the 1-2 conduit treatment cycles.

Following system evaluation and discovery of the mechanical problem, the chemical treatment system was restarted with dechlorination in use as a precaution, and treatment to the 2-2 conduit terminated until the diverter valve could be repaired or replaced. Injections to conduit 2-2 were not restarted until the valve was replaced and verified fully operational on February 17, 2011.

The five high readings exceeded the California Ocean Plan calculated effluent limit of 89 ppb (ug/l) for 20-minute continuous treatment cycles. The event however did not result in an exceedance of the DCPD NPDES Permit Limit of 200 ppb (ug/l) Instantaneous Maximum for chlorine residual at Outfall 001. CCRWQCB staff were notified of the high discharge residual chlorine values that exceeded the calculated Ocean Plan Limit on February 11, 2011.

d. Bypasses

On December 13, 2011 the Unit 2 turbine building sump overflowed directly to the seawater once-through cooling system for approximately 5-minutes. This was an unexpected bypass of the normal 001F discharge path caused by an equipment failure. A pressure relief valve lifted on a regeneration water pump in the Unit 2 secondary condensate polisher buttress resulting in a rapid influx of relatively clean condensate system water into the turbine building sump. The estimated volume of water released directly overboard was a maximum of 600 gallons. Regional Staff were notified of the pathway 001F bypass event at 15:20 on 12/13/11, within the required 24-hour period. Three samples of the sump contents were analyzed for total suspended solids (TSS) and one sample was analyzed for oil and grease (O&G). The average analytical result for TSS was 41 mg/l, below the daily maximum limit of 100 mg/l. The analytical result for O&G was 8.3 mg/L, also below the daily maximum limit of 20 mg/L. Therefore, no pathway discharge permit concentration exceedances occurred due to this event.

B. Monitoring of Receiving Water

1. Ecological Studies at Diablo Canyon

Marine ecological monitoring was continued during 2011 under the Receiving Water Monitoring Program (RWMP) as requested in a letter from the Central Coast Regional Water Quality Control Board (CCRWQCB) dated December 9, 1998, and as detailed in a letter from PG&E dated January 8, 1999 (DCL-99-503). This program includes tasks from the Ecological Monitoring Program (EMP) with additional stations and increased sampling frequencies. This program replaces the EMP and the Thermal Effects Monitoring Program (TEMP). Several one-year-only tasks outlined in the above letters were completed in 1999 and were not requested to be performed in 2011. Results of 2010 RWMP data were submitted to the CCRWQCB on May 2, 2011. A table in Appendix 4 summarizes requirements and completed monitoring tasks for 2011.

2. In Situ Bioassay

Results of the Mussel Watch Program are reported to the CCRWQCB directly by the California Department of Fish and Game in the agency's periodic report for this program.

C. Sodium Bromide Treatment Program

DCPP continued its integrated sodium bromide and "foul release coating" strategy to control macrofouling in the Circulating Water System (CWS). The treatment program consists of six 20-minute injections (at four hour intervals) of a blend of generic sodium bromide and sodium hypochlorite into DCPP's seawater intake conduits. Each injection attempts to achieve a target concentration of 200 parts per billion (ppb) Total Residual Oxidant (TRO) at the inlet waterbox of the main condensers. Discharge TRO, measured at the plant outfall, remained below NPDES limitations. Typically, discharge values were between 20 ppb and 50 ppb. In conjunction with the chemical treatment, untreated portions of the cooling water system were previously painted with a non-toxic "foul release coating" to reduce or prevent attachment of fouling organisms.

Both conduits of Unit 1 were treated with simultaneous injections of sodium bromide and sodium hypochlorite six times a day throughout 2011 with brief interruptions in mid-February, May, July, early September, and December for maintenance activities. The September interruption was due to a scheduled Unit 1 seawater tunnel cleaning.

Both Unit 2 conduits were treated with simultaneous injections of sodium bromide and sodium hypochlorite six times a day throughout 2011. Brief interruptions occurred in mid-February due to an injection system equipment failure related issue, and in March due to planned maintenance activities. Near the end of April injections were shut down entirely in preparation for the 2R16 refueling outage. Simultaneous injections of sodium bromide and sodium hypochlorite were reinitiated near the end of May when Unit 2 circulating water pumps were restarted. These simultaneous injections continued through the remainder of 2011, with brief interruptions in July and December due to planned equipment maintenance activities.

Annual Discharge Monitoring Report

APPENDIX 1

DIABLO CANYON POWER PLANT

NPDES DISCHARGE POINTS	
DISCHARGE NUMBER	DESCRIPTION
001	Once-Through Cooling Water
001 A	Firewater Systems
001 B	Auxiliary Salt Water Cooling System
001 C	Discharge Deleted
001 D	Liquid Radioactive Waste Treatment System
001 E	Service Cooling Water System
001 F	Turbine Building Sump
001 G	Make-Up Water System Waste Effluent
001 H	Condensate Demineralizer Regenerant
001 I	Seawater Evaporator Blowdown
001 J	Condensate Pumps Discharge Header Overboard
001 K	Condenser Tube Sheet Leak Detection Dump Tank Overboard
001 L	Steam Generator Blowdown
001 M	Wastewater Holding and Treatment System
001 N	Sanitary Wastewater Treatment System
001 P	Seawater Reverse Osmosis System Blowdown
002	Intake Structure Building Floor Drains
003	Intake Screen Wash
004	Bio Lab and Storm Water Runoff
005, 008, 009, 013, 014, 015	Yard Storm Drains
006, 007, 010, 011, 012	Storm Water Runoff
016	Bio Lab Seawater Supply Pump Valve Drain
017	Seawater Reverse Osmosis System Blowdown Drain

**Annual Discharge Monitoring Report
APPENDIX 2**

TABULAR SUMMARIES OF INFLUENT AND EFFLUENT MONITORING

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DISCHARGE 001

Month	TEMPERATURE (DEG F)						FLOW (MGD)				
	INFLUENT			EFFLUENT			DELTA T		high	low	avg
	high	low	avg	high	low	avg	high	avg			
JAN	54.0	52.6	53.2	72.6	71.3	71.9	18.8	18.7	2486	2486	2486
FEB	54.2	52.2	53.4	72.9	71.0	72.1	18.8	18.7	2486	2486	2486
MAR	53.2	49.1	51.1	71.9	60.4	68.7	19.1	17.6	2486	1862	2445
APR	52.5	48.6	50.1	71.2	66.4	68.8	19.2	18.7	2486	2356	2482
MAY	52.9	48.9	50.2	72.4	64.2	69.1	19.6	18.9	1862	1239	1290
JUN	53.2	48.6	51.0	72.3	59.0	68.5	19.2	17.0	2486	1862	2431
JUL	56.1	51.3	53.9	75.0	70.4	73.0	19.4	19.1	2486	2486	2486
AUG	55.6	51.8	53.5	74.7	71.2	72.8	19.7	19.3	2486	2486	2486
SEP	58.1	52.7	55.9	76.8	69.6	74.3	19.9	18.5	2486	1509	2395
OCT	57.5	53.8	55.6	76.4	71.5	74.2	19.0	18.6	2486	2027	2471
NOV	57.1	54.1	55.6	75.5	72.1	73.9	18.6	18.3	2486	2188	2476
DEC	56.1	53.5	55.2	74.6	71.6	73.6	18.8	18.4	2486	2486	2486
limit:	-	-	-	-	-	-	22	-	2760	-	-

The Influent and Effluent "high" and "low" temperature values correspond to the highest and lowest daily average value for that month. The Influent high and low temperature does not necessarily correspond to the same day as the Effluent high and low temperature for that month. The "avg" temperature for Influent and Effluent is the average for the entire month. The Monthly Delta T "high" is the highest Delta T for a day of the month based on daily average Influent and Effluent temperature values. The "Avg" temperature is calculated from Influent and Effluent monthly avg values.

DISCHARGE 001

Month	TOTAL RESIDUAL CHLORINE (daily max. ug/l)			TOTAL CHLORINE USED (lbs/day)		
	high	low	avg	high	low	avg
JAN	49	27	36	475	418	433
FEB	171	<10	27	475	259	430
MAR	54	14	32	504	300	418
APR	36	17	28	360	202	346
MAY	54	<13	22	216	134	194
JUN	45	16	31	418	274	381
JUL	28	<10	14	518	336	475
AUG	31	10	20	576	504	554
SEP	33	<7	17	691	317	591
OCT	43	<10	26	691	516	623
NOV	39	12	19	648	619	633
DEC	37	16	30	713	517	616

Note: The residual chlorine limits in Permit CA0003751, Order 90-09, is an instantaneous max of 200 ug/l, and includes a time-based limit (per the Ocean Plan) which depends on the length of the respective chlorination cycle.

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DISCHARGE 001

METALS (monthly avg. ug/l)

Month	CHROMIUM		COPPER		NICKEL		*ZINC	
	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
JAN	ND(5)	ND(5)	DNQ(6)	ND(5)	11	13	ND(5)	ND(5)
FEB	ND(5)	ND(5)	DNQ(8)	DNQ(6)	11	14	DNQ(6)	ND(5)
MAR	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	DNQ(6)	14	DNQ(8)
APR	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	25	ND(5)
MAY	ND(5)	ND(5)	ND(5)	DNQ(6)	10	11	18	DNQ(7)
JUN	ND(5)	ND(5)	DNQ(5)	ND(5)	14	15	16	11
JUL	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	DNQ(9)	ND(5)
AUG	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)
SEP	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	DNQ(7)	ND(5)	ND(5)
OCT	ND(5)	ND(5)	ND(5)	DNQ(6)	6	DNQ(7)	ND(5)	ND(5)
NOV	ND(5)	DNQ(6)	ND(5)	ND(5)	7	10	ND(5)	ND(5)
DEC	ND(5)	ND(5)	ND(5)	ND(5)	7	DNQ(8)	ND(5)	ND(5)
6-month median limit:		10	-	10	-	30	-	70

**DISCHARGE 001
VARIOUS ANNUAL ANALYSES
(monthly avg. ug/l)**

Parameter	Influent	Effluent	6-Mo. Med. Effluent Limit
Arsenic	1.50	1.51	30
Cadmium	0.041	0.044	10
Cyanide	ND(3)	ND(3)	30
Lead	DNQ(0.012)	0.020	10
Mercury	DNQ(0.00037)	DNQ(0.00034)	0.2
Silver	DNQ(0.007)	DNQ(0.008)	2.9
Titanium	3.1	2.2	none
*Phenolic Compounds (non-chlorinated)	ND(3.031)	ND(3.031)	150
**Phenolic Cmpds (chlorinated)	ND(0.567)	ND(0.567)	10
***PCB's	ND(0.0658)	DNQ(0.0658)	none

- * Results for analysis of 9 target compounds. The sum of the 9 detection limits is 8.42.
- ** Results for analysis of 6 target compounds. The sum of the 6 detection limits is 2.02.
- ***Detection limits shown are the sum of individual detection limits for 7 target compounds.

**DISCHARGE 001
AMMONIA (as N) (ug/l)**

Month	Influent	Effluent
JAN	ND(50)	ND(50)
FEB		
MAR		
APR	DNQ(50)	DNQ(50)
MAY		
JUN		
JUL	77	85
AUG		
SEP		
OCT	ND(50)	ND(50)
NOV		
DEC		
6-month median limit:		3,060

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MONTHLY pH (averages)

Discharge: Month	001		002	003	004	001P
	Influent	Effluent				
JAN	7.9	7.9	7.9	7.9	8.0	7.8
FEB	8.1	8.1	8.1	8.0	8.1	7.8
MAR	7.7	7.7	8.1	8.0	8.1	7.8
APR	7.8	7.9	7.9	7.7	8.0	7.7
MAY	7.8	7.7	7.9	7.8	7.8	7.7
JUN	7.8	7.8	7.9	7.8	7.9	7.8
JUL	8.1	8.1	8.1	8.0	8.0	7.8
AUG	8.0	8.0	7.9	7.9	8.0	7.9
SEP	7.8	7.8	8.0	8.0	8.0	7.9
OCT	7.7	7.8	7.9	7.8	7.8	7.7
NOV	8.1	8.1	7.9	7.8	8.0	7.9
DEC	8.1	8.1	8.4	8.4	8.1	7.6

DISCHARGE 001F

Month	GREASE & OIL (mg/l)		SUSPENDED SOLIDS (mg/l)	
	high	avg	high	avg
JAN	ND(1.4)	ND(1.4)	DNQ(3)	DNQ(3)
FEB	ND(1.4)	ND(1.4)	DNQ(2)	DNQ(2)
MAR	ND(1.4)	ND(1.4)	DNQ(2)	DNQ(2)
APR	ND(1.4)	ND(1.4)	ND(2)	ND(2)
MAY	DNQ(1.9)	DNQ(1.9)	5	5
JUN	ND(1.4)	ND(1.4)	DNQ(2)	DNQ(2)
JUL	ND(1.4)	ND(1.4)	DNQ(2)	DNQ(2)
AUG	ND(1.4)	ND(1.4)	ND(2)	ND(2)
SEP	DNQ(1.5)	DNQ(1.5)	DNQ(4)	DNQ(4)
OCT	ND(1.4)	ND(1.4)	ND(2)	ND(2)
NOV	ND(1.4)	ND(1.4)	ND(2)	ND(2)
DEC	8.3	DNQ(4.2)	41	10
limit:	20	15	100	30

Note: "high" limits based upon Daily Maximum limits. "avg" limits based upon Monthly Average Limits.

**DISCHARGE 001N
(Monthly Summary of Weekly Data)**

Month	GREASE & OIL (mg/l)			SUSPENDED SOLIDS (mg/l)			SETTLABLE SOLIDS (ml/l)		
	high	low	avg	high	low	avg	high	low	avg
JAN	DNQ(1.4)	ND(1.4)	DNQ(1.4)	10	DNQ(3)	6	ND(0.1)	ND(0.1)	ND(0.1)
FEB	DNQ(1.6)	ND(1.4)	DNQ(1.4)	25	9	19	ND(0.1)	ND(0.1)	ND(0.1)
MAR	6.7	DNQ(1.4)	<5.0	29	12	19	ND(0.1)	ND(0.1)	ND(0.1)
APR	6.6	DNQ(2.8)	<5.0	40	9	22	ND(0.1)	ND(0.1)	ND(0.1)
MAY	DNQ(3.4)	DNQ(1.4)	DNQ(1.4)	20	9	14	ND(0.1)	ND(0.1)	ND(0.1)
JUN	6.0	DNQ(2.8)	<5.0	28	8	13	ND(0.1)	ND(0.1)	ND(0.1)
JUL	DNQ(3.1)	ND(1.4)	DNQ(1.4)	13	5	10	ND(0.1)	ND(0.1)	ND(0.1)
AUG	DNQ(2.0)	ND(1.4)	DNQ(1.4)	13	8	10	ND(0.1)	ND(0.1)	ND(0.1)
SEP	DNQ(2.0)	ND(1.4)	DNQ(1.4)	17	ND(3)	11	ND(0.1)	ND(0.1)	ND(0.1)
OCT	DNQ(3.7)	DNQ(1.4)	DNQ(2.0)	15	6	11	ND(0.1)	ND(0.1)	ND(0.1)
NOV	DNQ(1.4)	DNQ(1.4)	DNQ(1.4)	9	5	7	ND(0.1)	ND(0.1)	ND(0.1)
DEC	DNQ(1.4)	DNQ(1.4)	DNQ(1.4)	9	5	7	ND(0.1)	ND(0.1)	ND(0.1)
limit:	20	-	15	-	-	60	3.0	-	1.0

Note: "high" limits based upon Daily Maximum limits. "avg" limits based upon Monthly Average limits.

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DISCHARGE 001D, H, L, F, METALS (avg. ug/l)

Month	001D				001 H				001L				001F			
	Ag	Cd	Cr	Cu	Ag	Cd	Cr	Cu	Ag	Cd	Cr	Cu	Ag	Cd	Cr	Cu
JAN																
FEB																
MAR	ND(5)	ND(5)	ND(5)	14	ND(5)	ND(5)	15	36	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	13
APR																
MAY																
JUN	DNQ(8)	ND(5)	DNQ(9)	ND(5)	<10	ND(5)	19	52	DNQ(9)	ND(5)	ND(5)	ND(5)	20	ND(5)	ND(5)	11
JUL																
AUG																
SEP	ND(5)	ND(5)	DNQ(8)	DNQ(9)	ND(5)	ND(5)	23	45	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	34
OCT																
NOV																
DEC	ND(5)	ND(5)	10	20	ND(5)	ND(5)	14	32	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	13

limit: none

Note: 001D, 001H and 001L analyses performed on quarterly composites.
001F analyses performed quarterly on a composite of weekly samples.

DISCHARGE 001D, H, L, F, METALS (avg. ug/l)

Month	001D				001 H				001L				001F			
	Hg	Ni	Pb	Zn	Hg	Ni	Pb	Zn	Hg	Ni	Pb	Zn	Hg	Ni	Pb	Zn
JAN																
FEB																
MAR	DNQ(0.12)	DNQ(5)	ND(5)	108	DNQ(0.06)	15	12	14	ND(0.05)	ND(5)	ND(5)	<10	ND(0.05)	DNQ(7)	DNQ(8)	43
APR																
MAY																
JUN	ND(0.060)	DNQ(7)	ND(5)	114	ND(0.060)	16	13	21	ND(0.060)	ND(5)	ND(5)	ND(5)	ND(0.060)	15	DNQ(9)	23
JUL																
AUG																
SEP	0.41	DNQ(7)	ND(5)	584	DNQ(0.14)	15	12	12	DNQ(0.077)	ND(5)	ND(5)	ND(5)	ND(0.060)	11	ND(5)	19
OCT																
NOV																
DEC	ND(0.050)	DNQ(7)	ND(5)	61	ND(0.050)	12	<10	DNQ(9)	ND(0.050)	ND(5)	ND(5)	ND(5)	ND(0.050)	DNQ(8)	ND(5)	53

limit: none

Note: 001D, 001H and 001L analyses performed on quarterly composites.
001F analyses performed quarterly on a composite of weekly samples.

**2011 Annual Summary Report on Discharge Monitoring
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**MONTHLY TOTAL SUSPENDED SOLIDS
Averages (mg/l)**

Month	001D*	001G	001H	001I	001J	001K	001L	001M	001P	002	003
JAN	<5	ND(2)	ND(2)				ND(2)		16	ND(2)	6
FEB	<5	ND(2)	ND(2)				ND(2)		7	DNQ(2)	DNQ(3)
MAR	<5	ND(2)	DNQ(2)		ND(2)		ND(2)	DNQ(4)	20	DNQ(3)	DNQ(2)
APR	<5	ND(2)	DNQ(2)				ND(2)		24	13	23
MAY	<5	ND(2)	DNQ(4)		ND(2)		ND(2)		<5	DNQ(3)	31
JUN	<5	ND(2)	ND(2)		ND(2)		ND(2)		<5	DNQ(2)	DNQ(2)
JUL	8	ND(2)	ND(2)				ND(2)		9	8	7
AUG	<5	ND(2)	ND(2)				ND(2)	DNQ(2)	ND(2)	ND(2)	DNQ(3)
SEP	<5	ND(2)	ND(2)				ND(2)	<5	ND(2)	DNQ(2)	DNQ(3)
OCT	<5	ND(2)	DNQ(2)				ND(2)	ND(2)	8	<5	6
NOV	<5	ND(2)	ND(2)				ND(2)		9	DNQ(2)	5
DEC	16	DNQ(2)	ND(2)				ND(2)		<5	ND(2)	DNQ(3)
Limit:	30	-									

* Discharges from 001D are batched. Monthly averages are flow weighted.
 Note: No discharges occurred from 001I and 001K during 2011.
 Blank spots for other discharge points indicate that no discharge occurred during that particular month.

**QUARTERLY GREASE & OIL
Averages by Month (mg/l)**

Month	001D*	001G	001H	001I	001J	001K	001L	001M	001P	002	003	004
JAN	DNQ(1.4)	ND(1.4)	ND(1.4)				ND(1.4)		ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)
FEB	DNQ(4.0)											
MAR	5.5				ND(1.4)			ND(1.4)				
APR	DNQ(1.7)	ND(1.4)	ND(1.4)				ND(1.4)		ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)
MAY	DNQ(3.1)				ND(1.4)		ND(1.4)					
JUN	7.0				ND(1.4)							
JUL	<5	ND(1.4)	ND(1.4)				ND(1.4)		ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)
AUG	<5							DNQ(1.4)				
SEP	DNQ(3.2)							ND(1.4)				
OCT	<5	ND(1.4)	ND(1.4)				ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)
NOV	DNQ(2.3)											
DEC	ND(1.4)						ND(1.4)					
Limit:	15											

* Discharges from 001D are batched. Monthly averages are flow weighted.
 Note: No discharges occurred from 001I and 001K during 2011.

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**QUARTERLY ACUTE AND CHRONIC TOXICITY TESTING
(toxicity units, tu_a and tu_c)**

Month	ACUTE		*CHRONIC
	Test Result	6-Month Median	Test Result
JAN	0.00	0.00	1.0
FEB			
MAR			
APR	0.00	0.00	1.0
MAY			
JUN			
JUL	0.00	0.00	1.0
AUG			
SEP			
OCT			
NOV			
DEC	0.00	0.00	1.0
6-month median limit:		0.26	5.1

* This parameter is monitored for the State Ocean Plan instead of the NPDES Permit. A value of 1.0 indicates no chronic toxicity.

**DISCHARGE 001N
ANNUAL ANALYSES**

Sludge Parameter	Result	Limit
Percent Moisture	90.0%	None
Total Kjeldahl Nitrogen	940 mg/kg	None
Ammonia (N)	55 mg/kg	None
Nitrate (N)	5.7 mg/kg	None
Total Phosphorus	170 mg/kg	None
pH	7.0	None
Oil and Grease	DNQ(4.9) mg/kg	None
Boron	DNQ(9.2) mg/kg	None
Cadmium	ND(0.25) mg/kg	10 X STLC*
Copper	DNQ(4.9) mg/kg	10 X STLC
Chromium	ND(0.88) mg/kg	10 X STLC
Lead	ND(0.15) mg/kg	10 X STLC
Nickel	ND(0.41) mg/kg	10 X STLC
Mercury	ND(0.090) mg/kg	10 X STLC
Zinc	DNQ(11) mg/kg	10 X STLC
Volume	0.71 tons	None

Note: Annual samples were collected in October.

* STLC = Soluble Threshold Limit Concentration

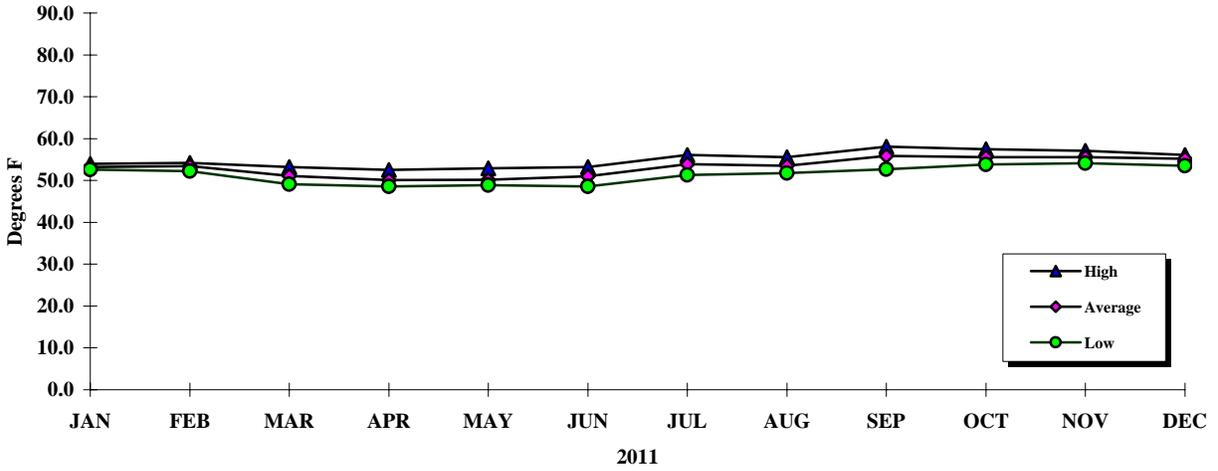
Annual Discharge Monitoring Report

APPENDIX 3

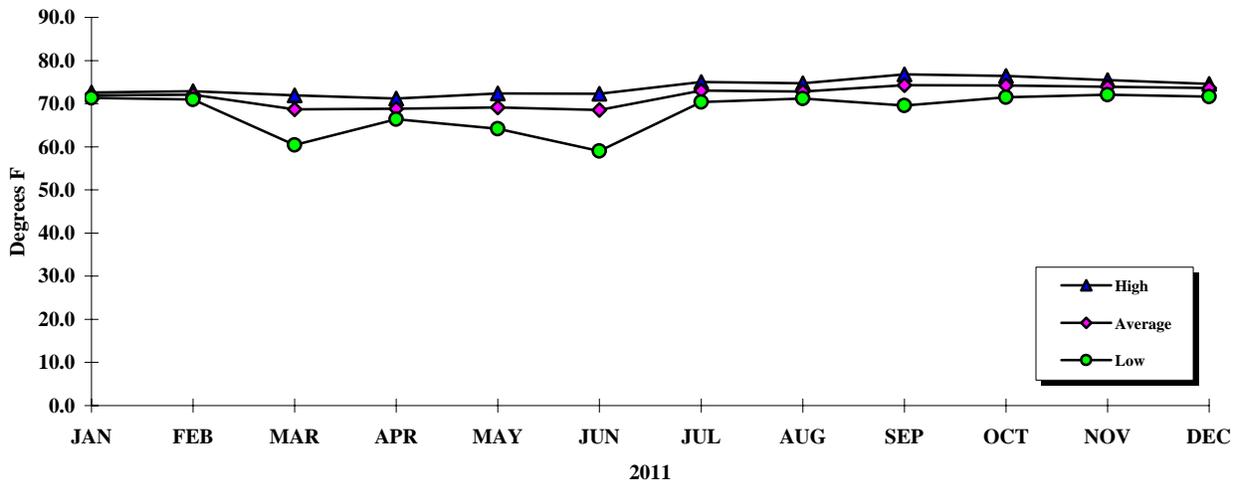
GRAPHICAL SUMMARIES OF INFLUENT AND EFFLUENT MONITORING

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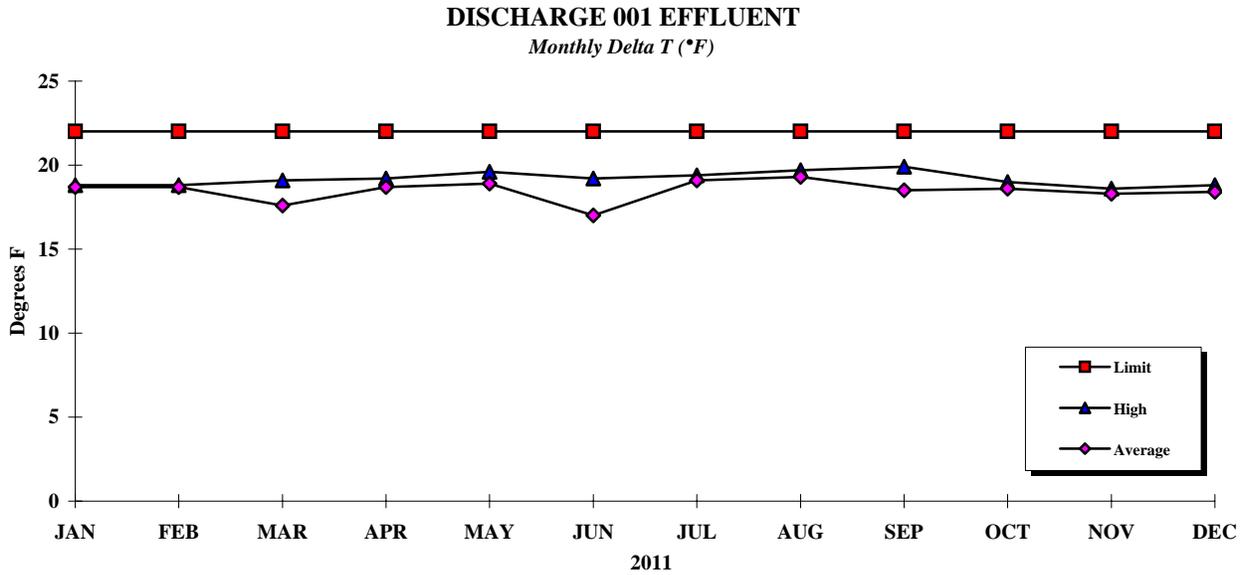
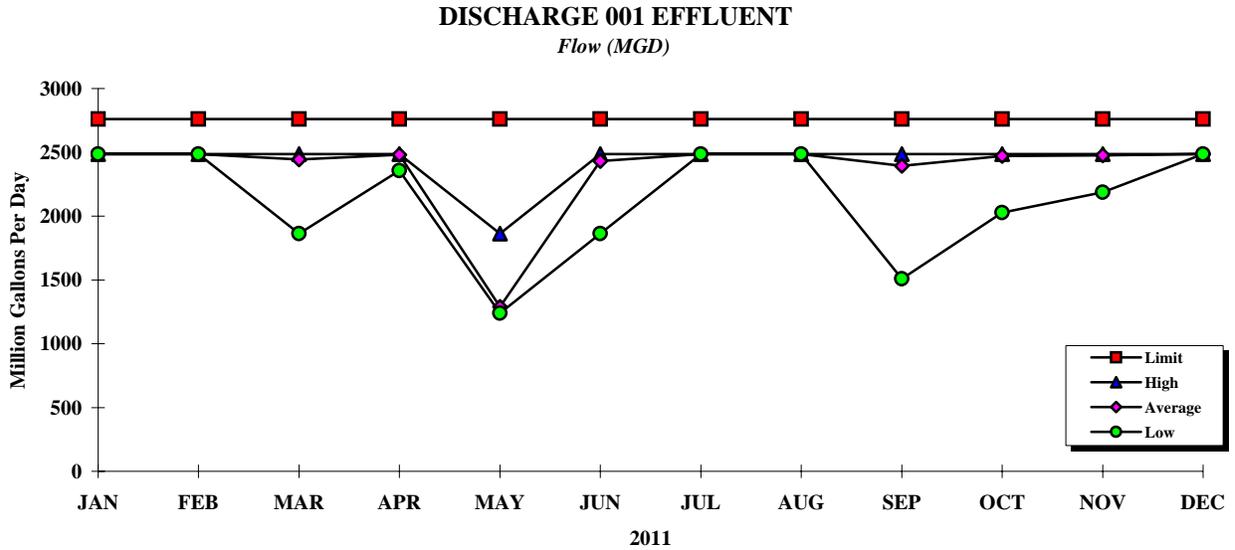
DISCHARGE 001 INFLUENT
Temperature (*°F*)



DISCHARGE 001 EFFLUENT
Temperature (*°F*)

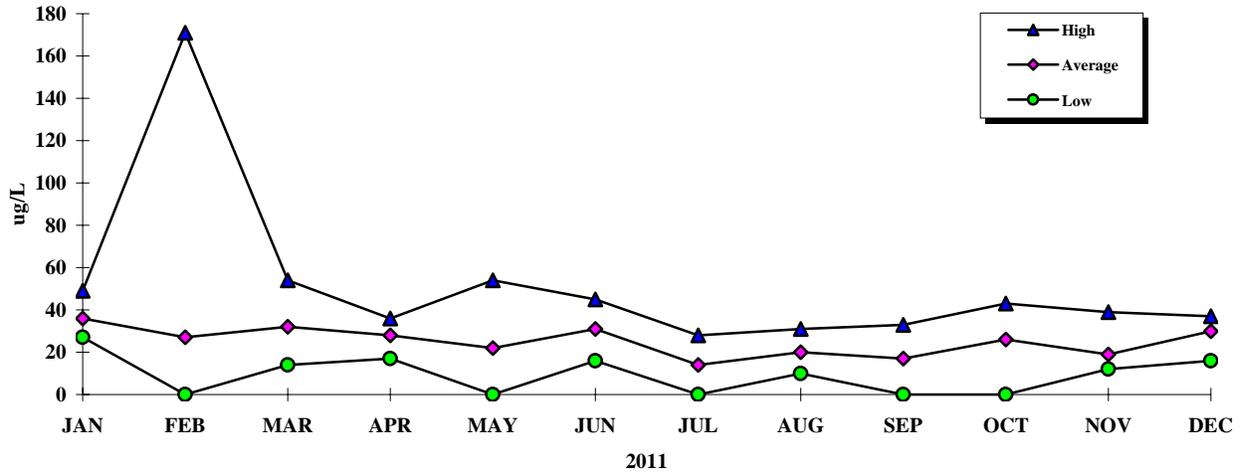


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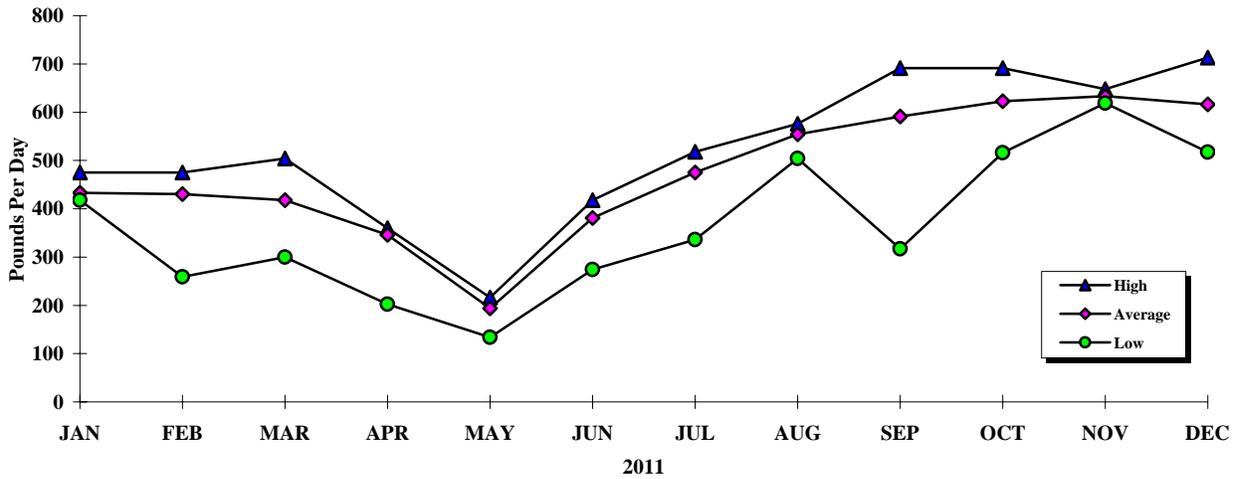
2011 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

DISCHARGE 001
Total Chlorine Residual, ug/l



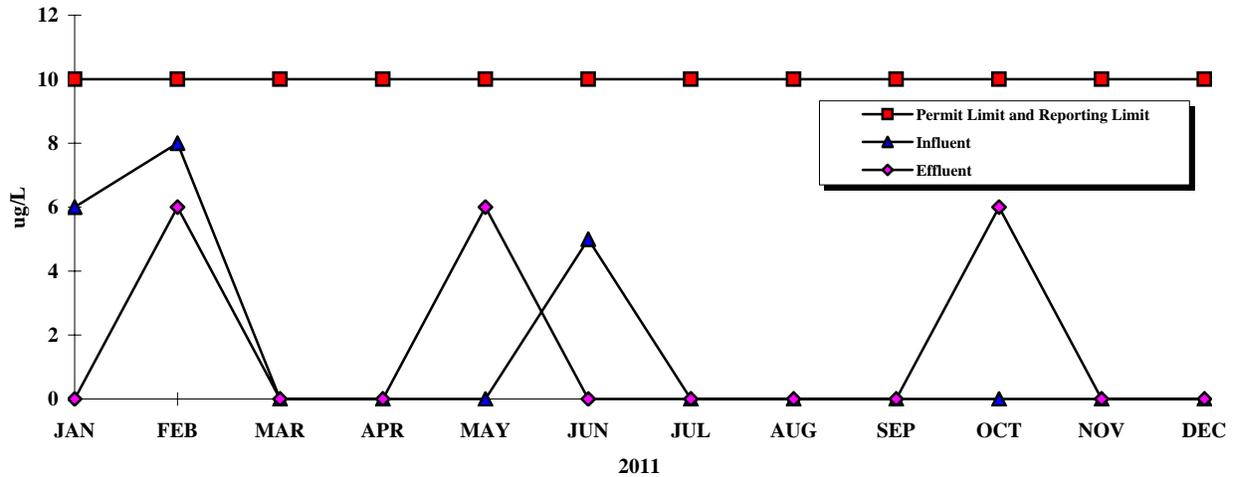
Note: Values plotted at zero were below the reporting limit.

DISCHARGE 001
Total Chlorine Used, pounds per day



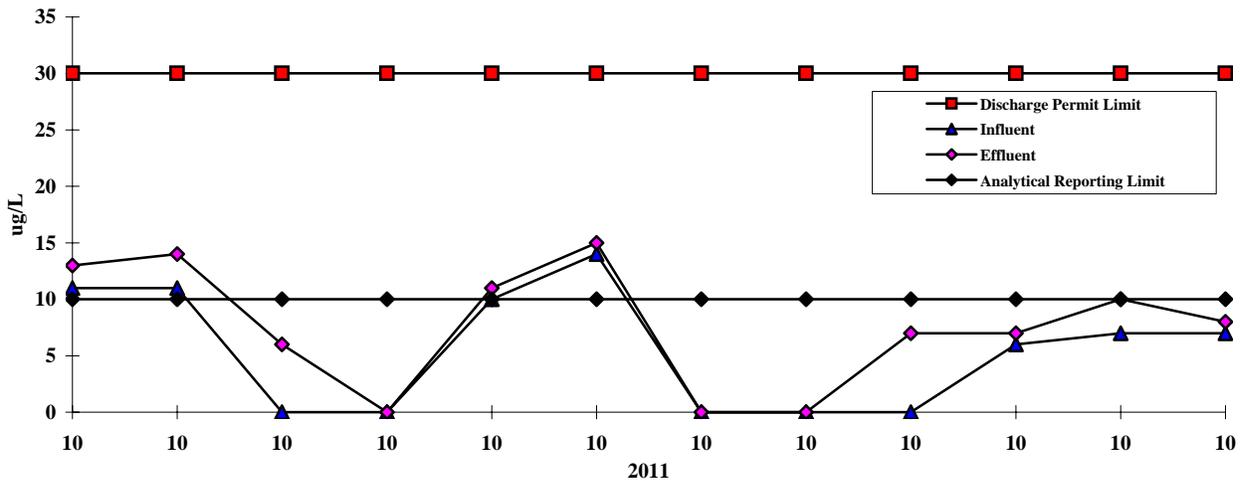
2011 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

DISCHARGE 001
Copper (monthly average, ug/l)



Note: The analyte was not detected at or above the detection limit for values plotted at zero.
The 6-month median limit (the most conservative limit) is plotted on this chart (this is also the analytical reporting limit).
The daily maximum limit for Copper is 50 ug/l.

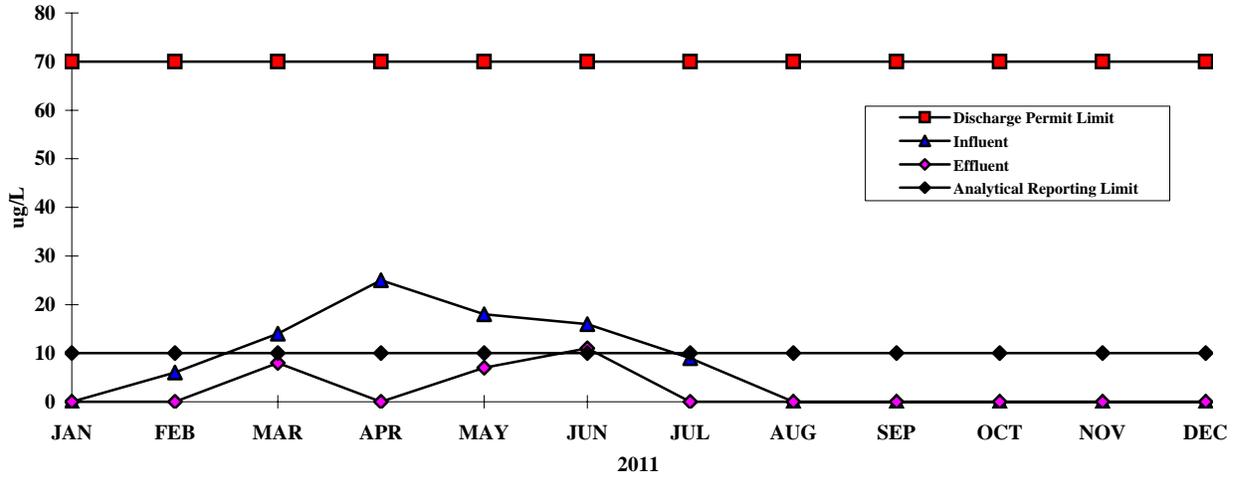
DISCHARGE 001
Nickel (monthly average, ug/l)



Note: The analyte was not detected at or above the detection limit for values plotted at zero.
The 6-month median limit (the most conservative limit) is plotted on this chart.
The daily maximum limit for Nickel is 100 ug/l.

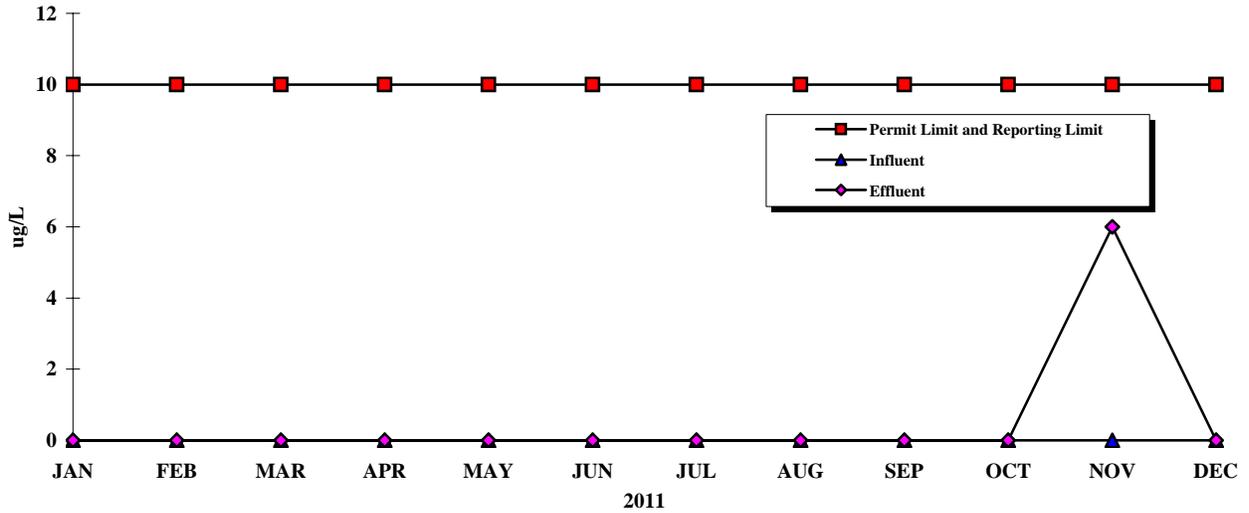
2011 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

DISCHARGE 001
Zinc (monthly average, ug/l)



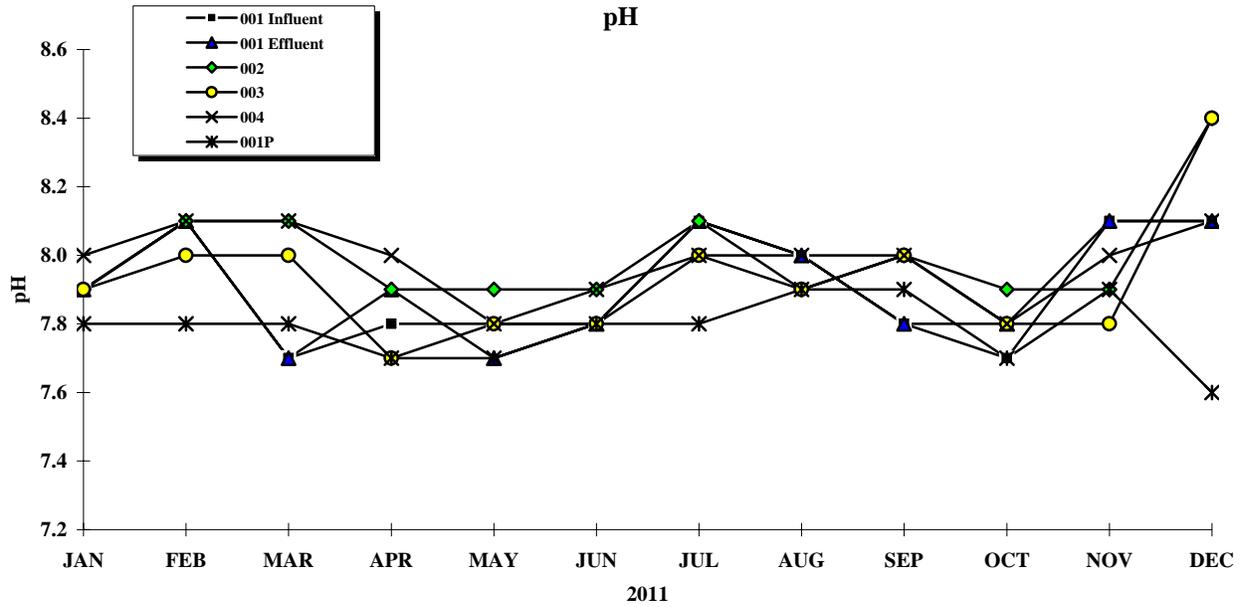
Note: The analyte was not detected at or above the detection limit for values plotted at zero.

DISCHARGE 001
Chromium (monthly average, ug/l)

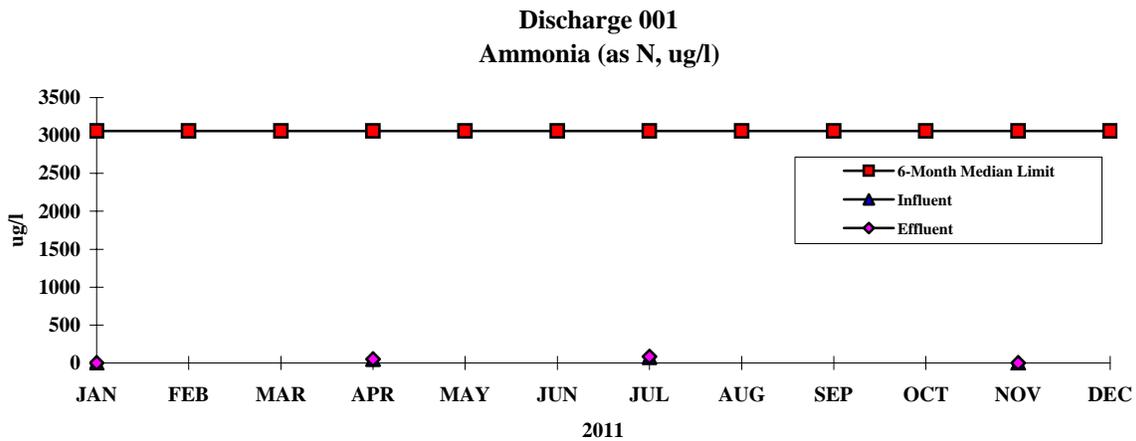


Note: The analyte was not detected at or above the detection limit for values plotted at zero.
The 6-month median limit is plotted on this chart. The daily maximum limit for chromium is 40 ug/l.
The discharge permit limit and the analytical reporting limit are the same (10 ug/l).

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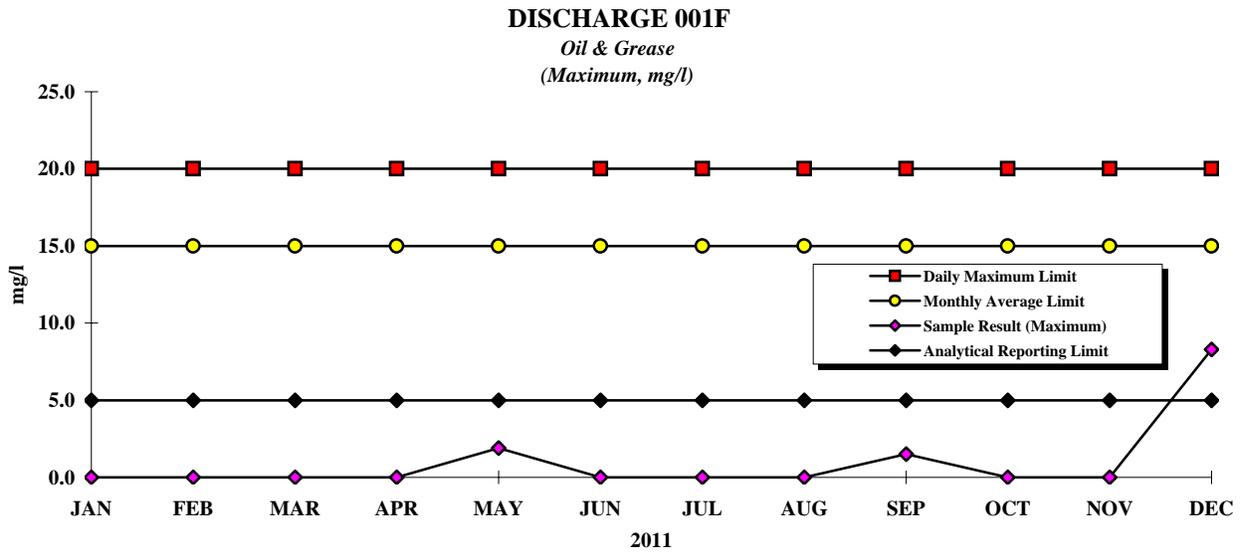


Note: Several data points on this chart overlap.

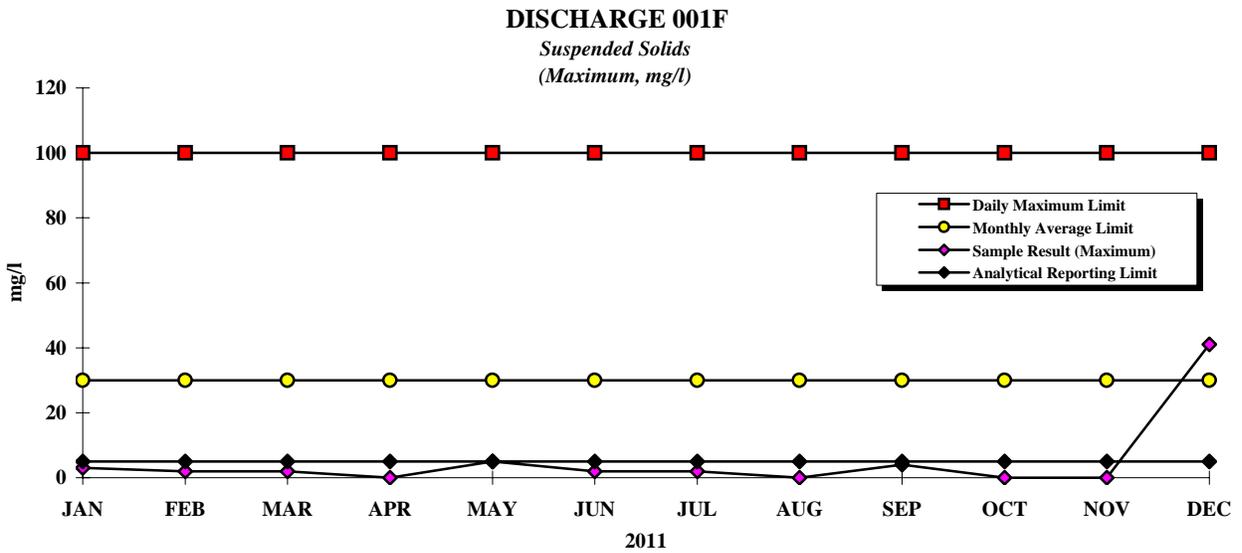


Note: The analyte was not detected at or above the detection limit for values plotted at zero.
Influent and Effluent values overlap at three points on this plot.

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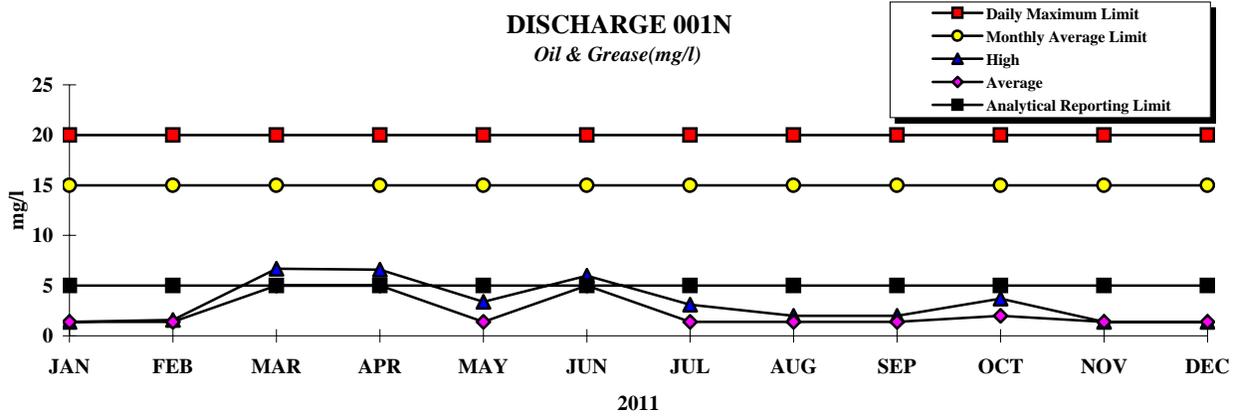


Note: Values plotted at zero were below the detection limit. December's monthly average was below the monthly average limit.

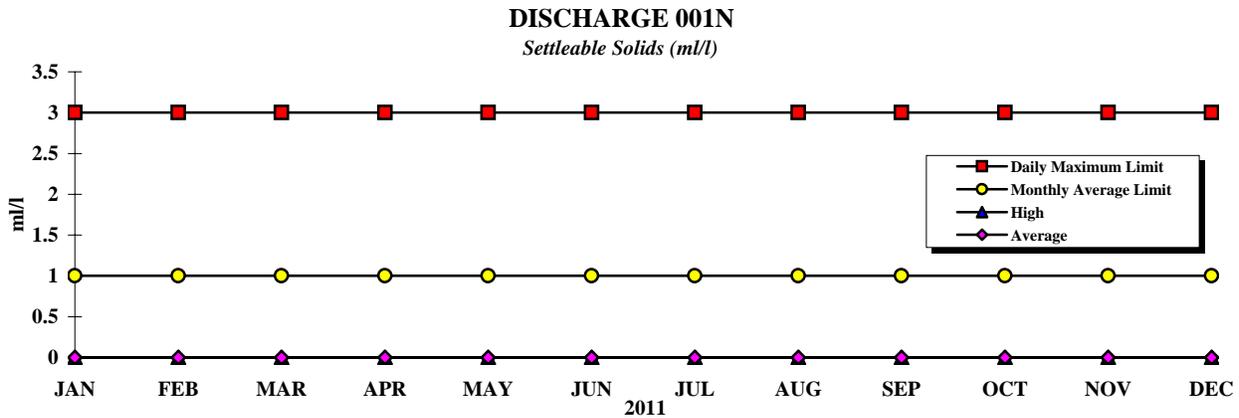
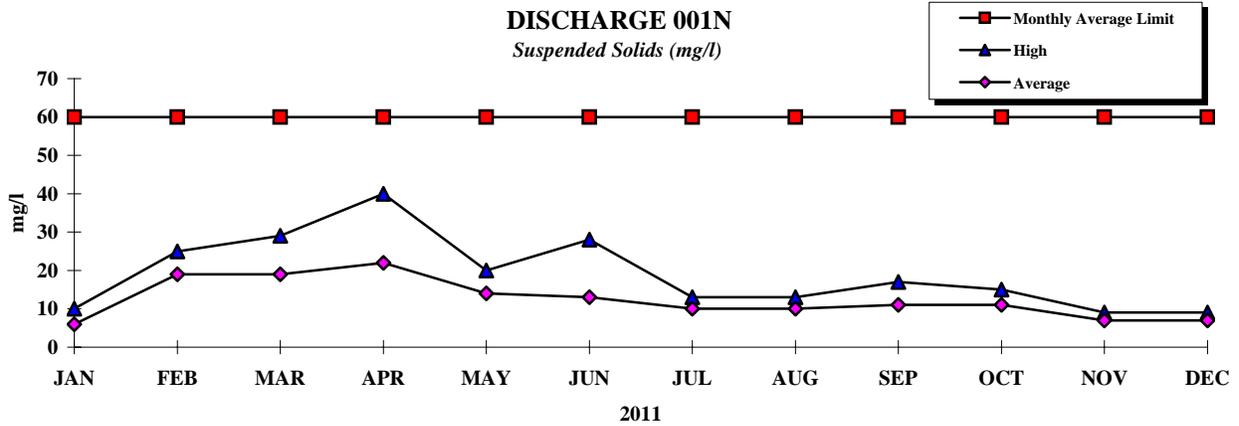


Note: Maximum values are plotted. December's monthly average was below the monthly average limit.

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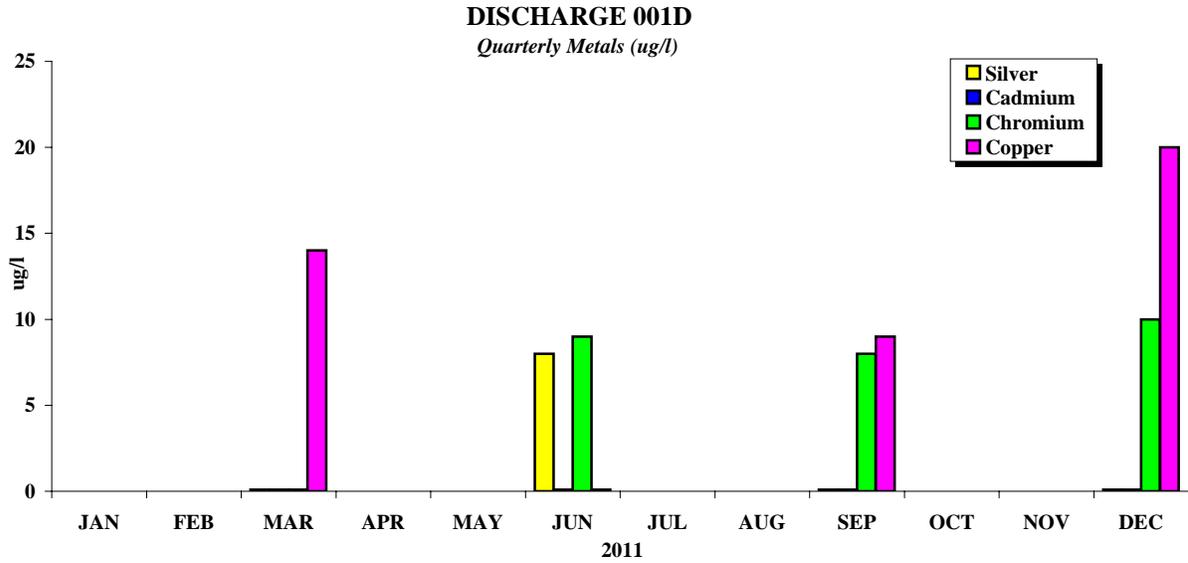


Note: Values plotted at zero were below the detection limit.
High and average values overlap at four points on this plot.

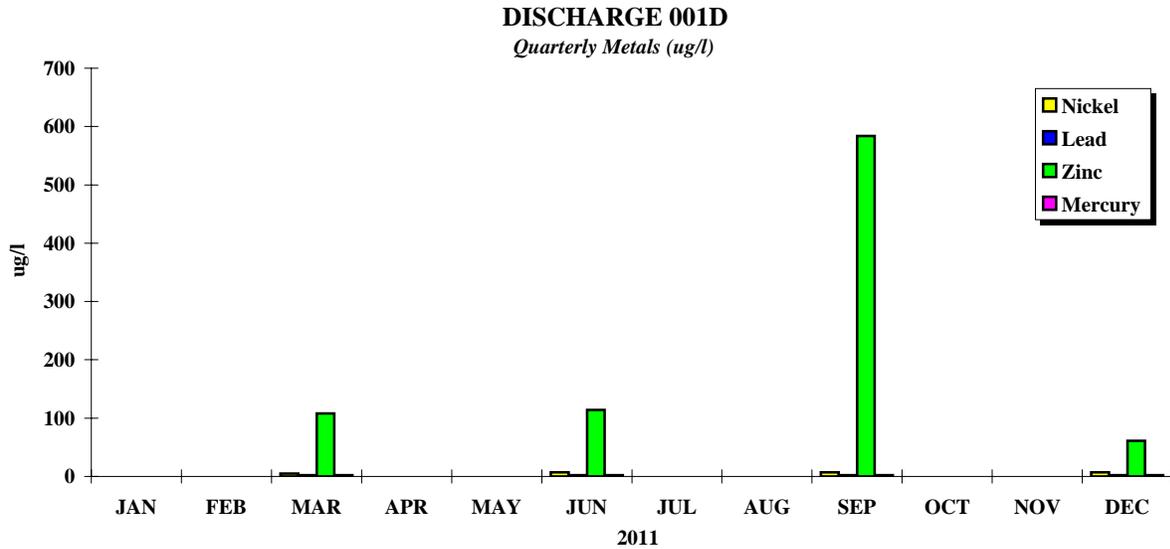


Note: Values plotted at zero were below the detection limit.
High, average, and low values overlap at twelve points on this plot.

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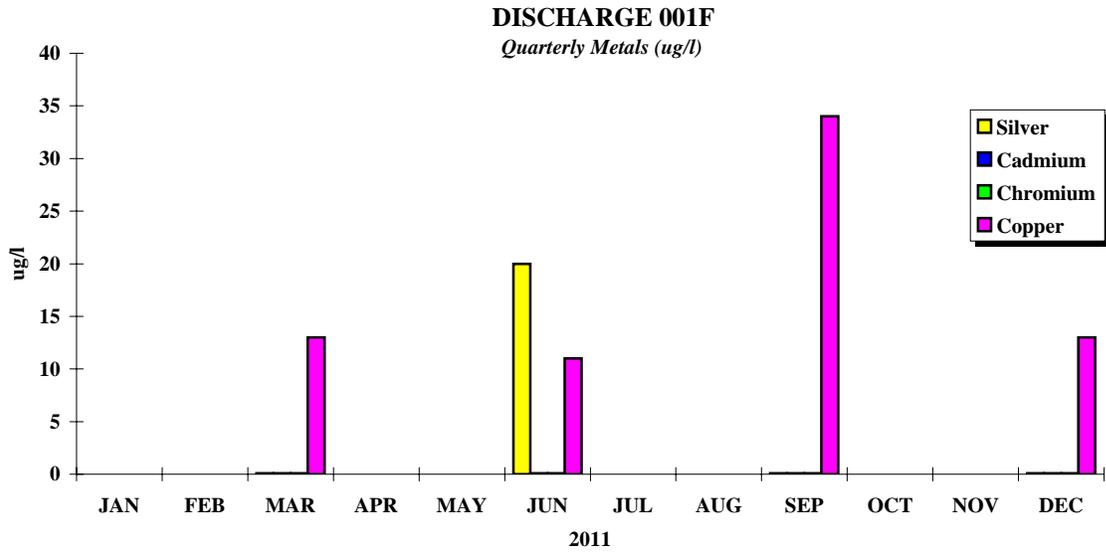


Note: The analyte was not detected at or above the detection limit for values plotted at zero.

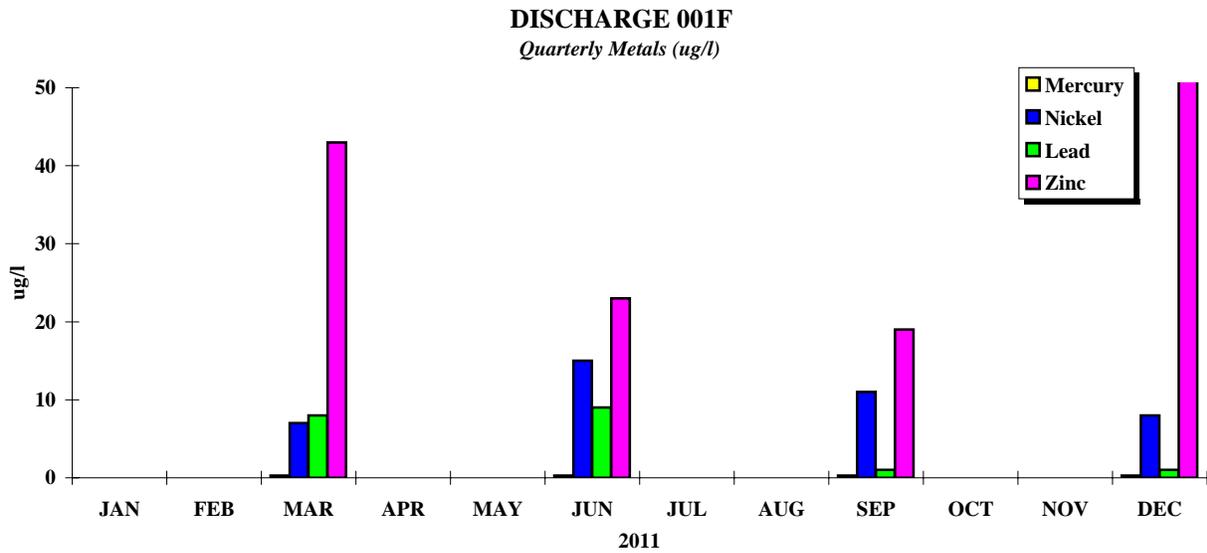


Note: The analyte was not detected at or above the detection limit for values plotted at zero.

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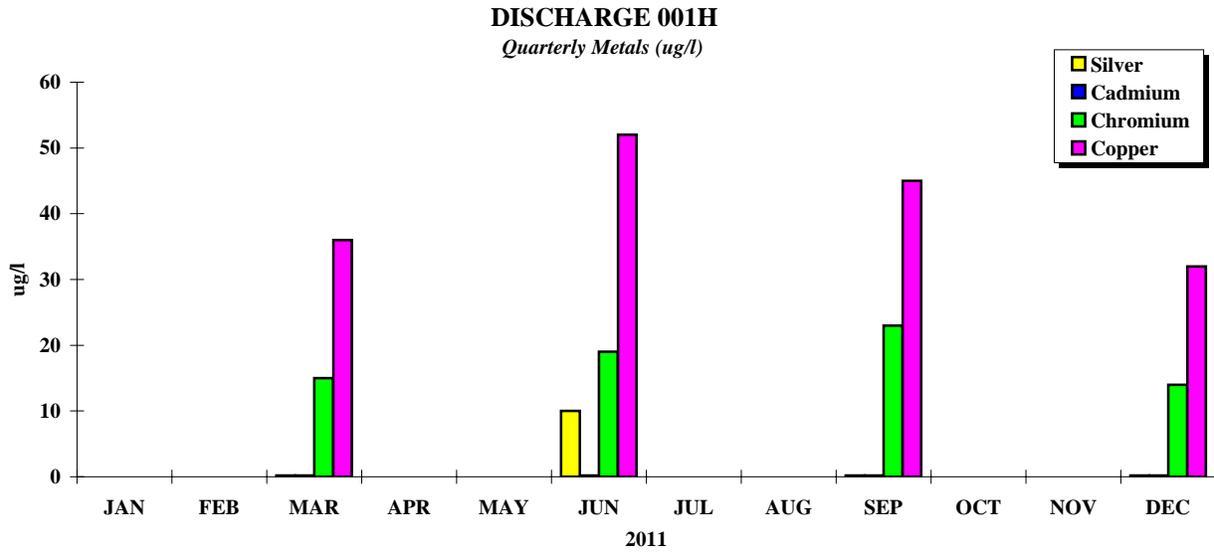


Note: The analyte was not detected at or above the detection limit for values plotted at zero.

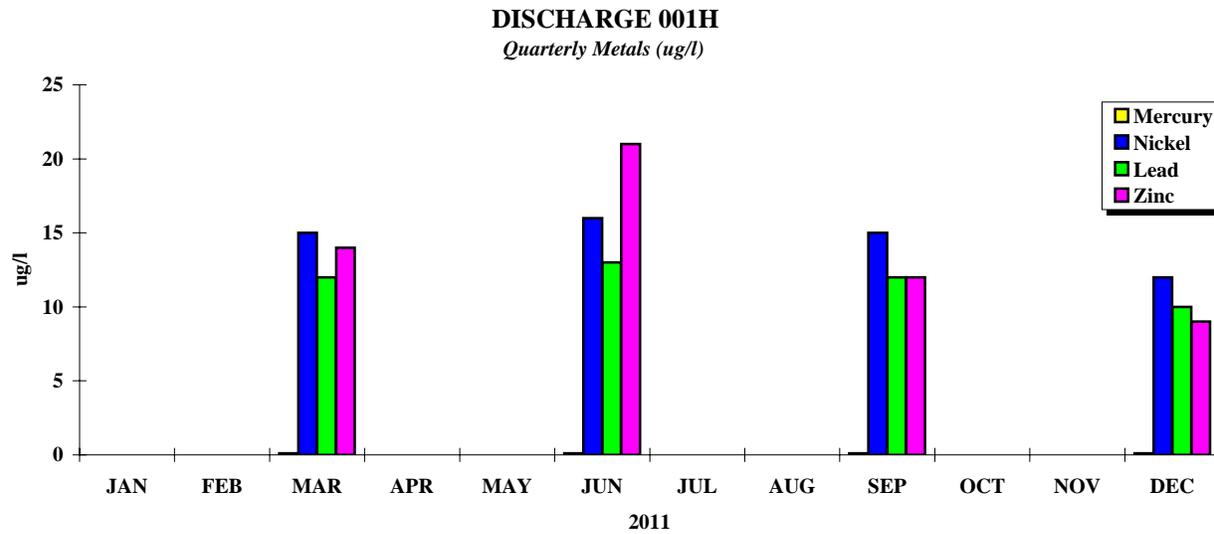


Note: The analyte was not detected at or above the detection limit for values plotted at zero.

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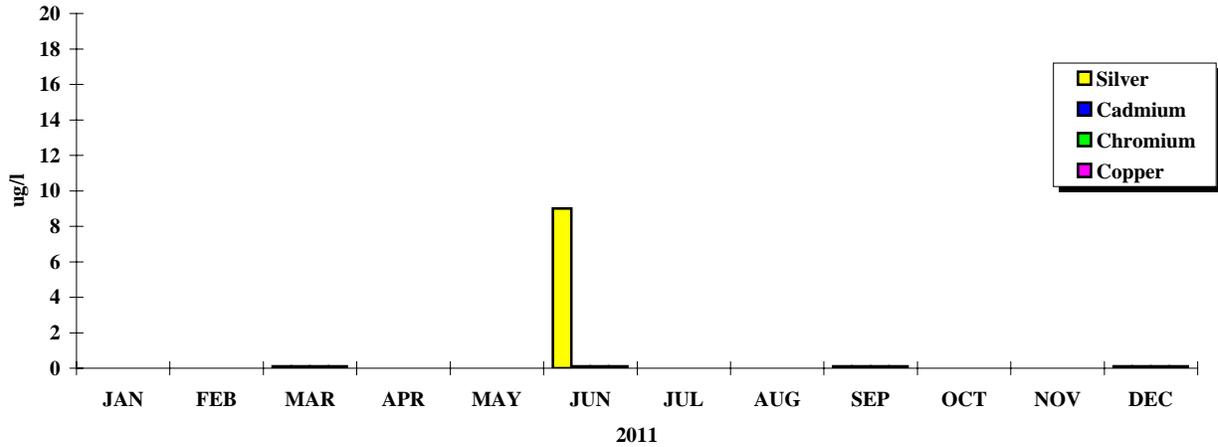
Note: The analyte was not detected at or above the detection limit for values plotted at zero.



Note: The analyte was not detected at or above the detection limit for values plotted at zero.

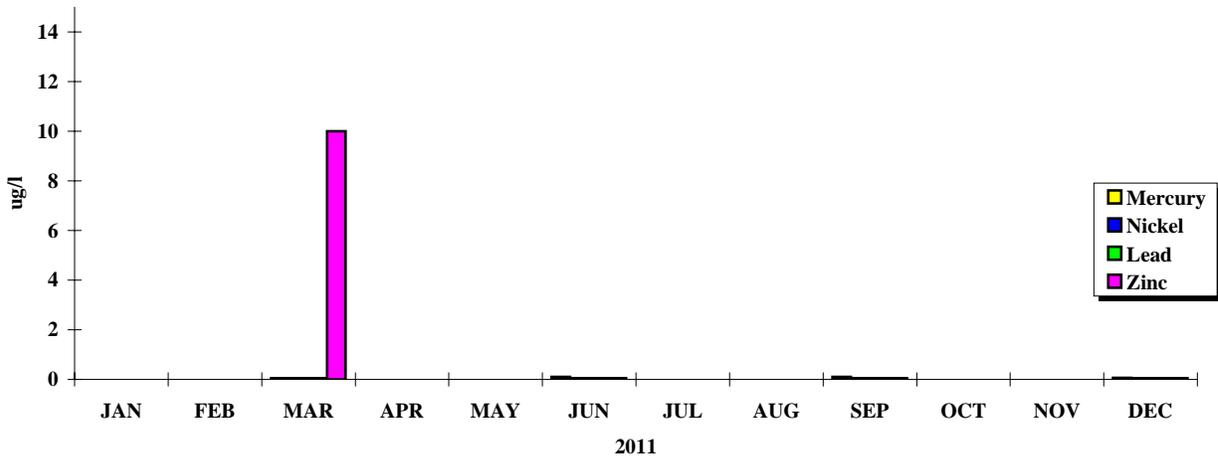
2011 Annual Summary Report on Discharge Monitoring
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DISCHARGE 001L
Quarterly Metals (ug/l)



Note: The analyte was not detected at or above the detection limit for values plotted at zero.

DISCHARGE 001L
Quarterly Metals (ug/l)

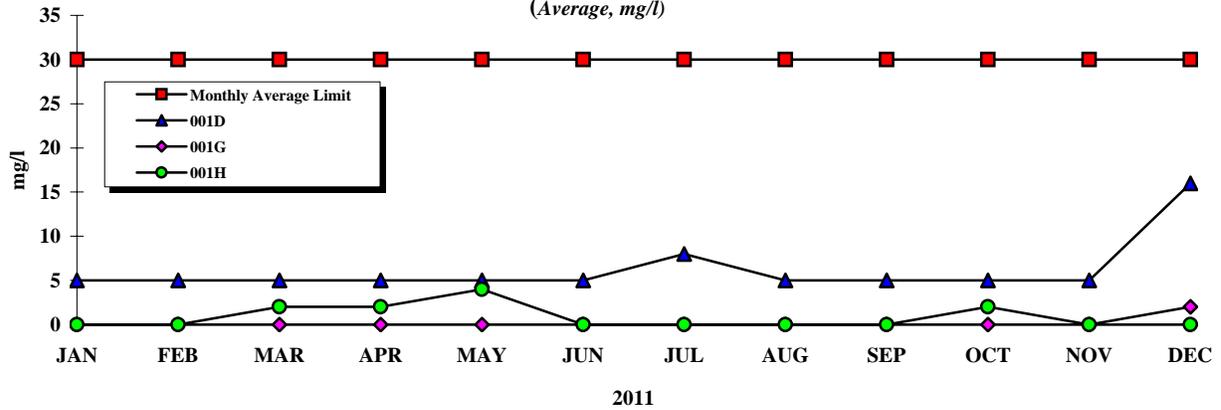


Note: The analyte was not detected at or above the detection limit for values plotted at zero.

2011 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

MONTHLY TOTAL SUSPENDED SOLIDS

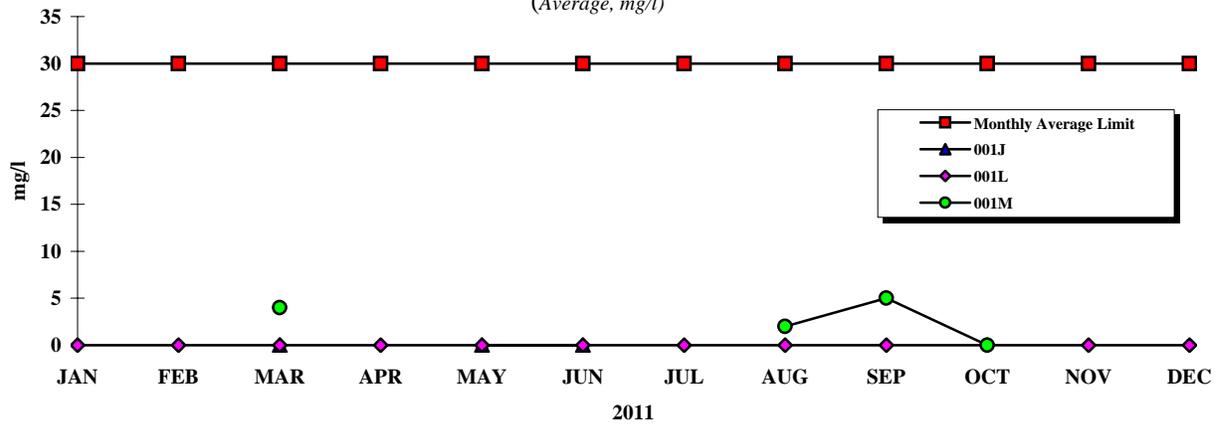
(Average, mg/l)



Note: Points on chart may overlap. Values plotted at zero were below the detection limit.

MONTHLY TOTAL SUSPENDED SOLIDS

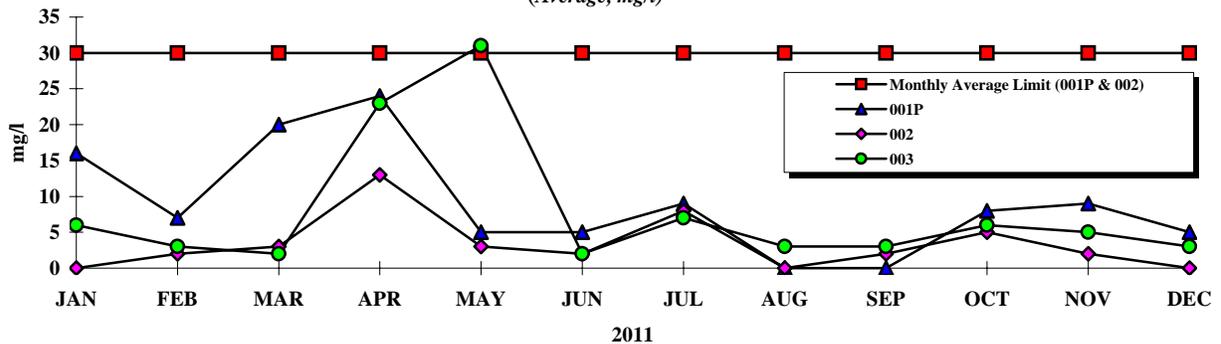
(Average, mg/l)



Note: Points on chart may overlap. Values plotted at zero were below the detection limit.

MONTHLY TOTAL SUSPENDED SOLIDS

(Average, mg/l)

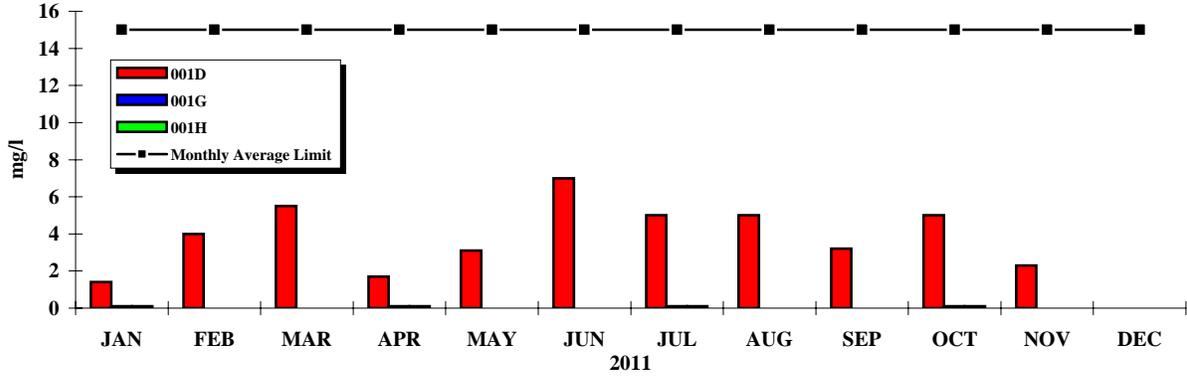


Note: Points on chart may overlap. Values plotted at zero were below the detection limit.
There is no limit for discharge 003. Therefore the May 003 value of 31 does not exceed a limit.

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QUARTERLY OIL & GREASE

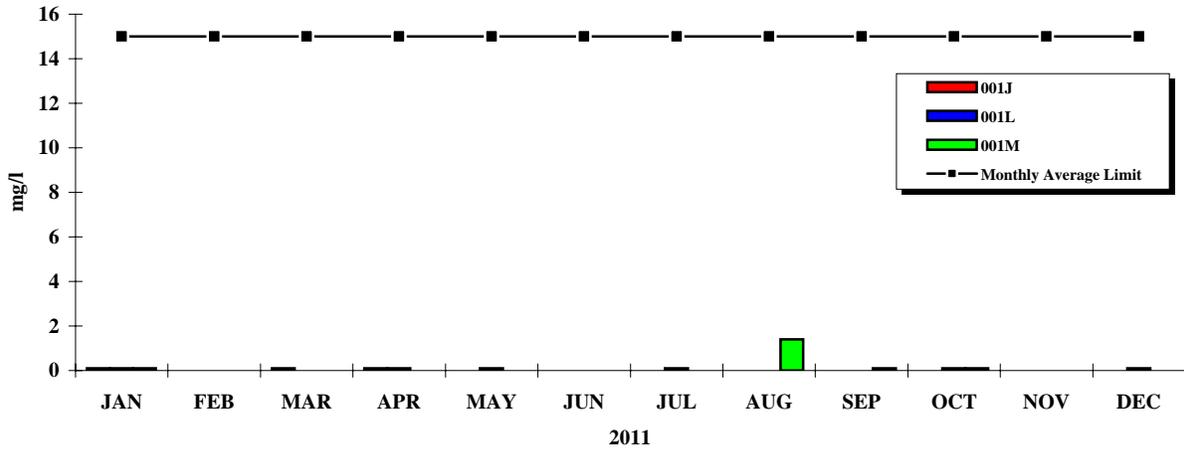
(Average, mg/l)



Note: Values plotted at zero were below the detection limit. Less than values are plotted at the value.

QUARTERLY OIL & GREASE

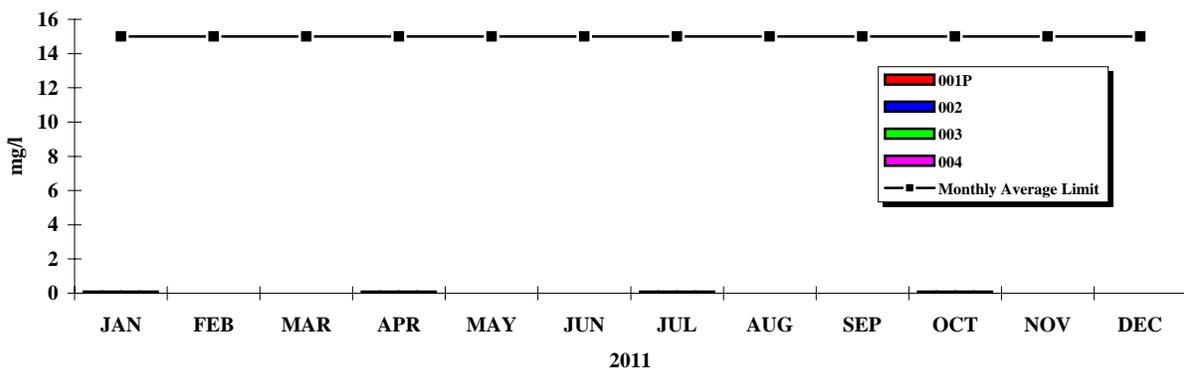
(Average, mg/l)



Note: Values plotted at zero were below the detection limit.

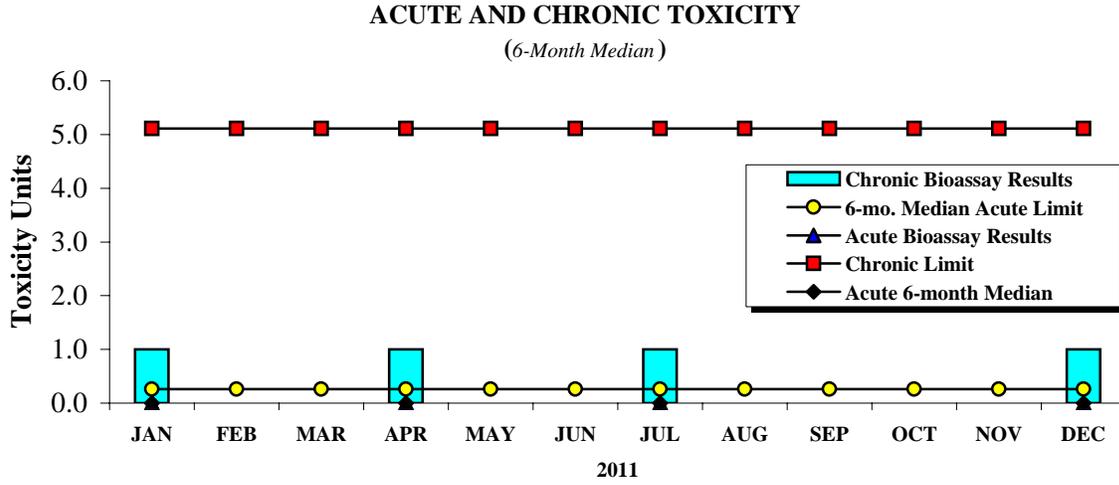
QUARTERLY OIL & GREASE

(Average, mg/l)



Note: Values plotted at zero were below the detection limit.

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APPENDIX 4

SUMMARY OF RWMP MONITORING FOR 2011

Study	RWMP Stations/ Surveys per Year	1st Survey Completion Stations/ Dates	2nd Survey Completion Stations/ Dates	3rd Survey Completion Stations/ Dates	4th Survey Completion Stations/ Dates
Horizontal Band Transects	14 / 4x	Mar 03	Jun 07	Sep 09	Dec 21
Vertical Band Transects	5 / 4x	Mar 15	Jun 01	Aug 01	Dec 21
Benthic Stations	8 / 4x	Feb 28	Jun 13	Aug 22	Nov 18
Fish Observation Transects	12 / 4x	Apr 14	Jun 29	Sep 19	Dec 14
Bull Kelp Census	* / 1x	n/a	n/a	n/a	Oct 13
Temperature Monitoring	24 / **	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec

* Diablo Cove census.

** Temperature measured throughout the year at 20 minute intervals (14 intertidal and 10 subtidal stations).