Pacific Gas and Electric Company

Pacific Gas and Electric Company
Diablo Canyon Power Plant
P.O. Box 56
Avila Beach, CA 93424

PG&E Letter DCL-2013-506

Electronic Submission
CIWQS Web Application

February 27, 2013

California Regional Water Quality Control Board
Central Coast Region
Attn: Monitoring and Reporting Review Section
895 Aerovista, Suite #101
San Luis Obispo, CA 93401-7906

In accordance with Order 90-09, NPDES No. CA0003751, the 2012 Annual Report on Discharge Monitoring at Diablo Canyon Power Plant is provided. This letter and accompanying annual data summary tables and plots are attached to the CIWQS application submittal.

Facility Name:	Diablo Canyon Power Plant
Address:	P.O. Box 56 Avila Beach, CA 93424
Contact Person: **Job Title:** **Phone Number:**	Bryan K. Cunningham Supervisor, Environmental Operations (805) 545-4439
WDR/NPDES Order Number:	Order No. 90-09, NPDES No. CA0003751
Type of Report: (check one)	**QUARTERLY** ☐ **ANNUAL** ☒
Quarter: (check one):	**1st** ☐ **2nd** ☐ **3rd** ☐ **4th** ☐
Year:	2012 (Annual Reports for **DCPP** are Jan-Dec)
Violation(s) (Place an X by the appropriate choice):	☒ **No** (there are no violations to report) **Note:** *Reference "Review of Compliance Record and Corrective Actions" Section* ☐ **Yes**

IE25
NRR

If Yes is marked (complete a-g):
a) Parameter(s) in Violation:

b) Section(s) of WDR/NPDES Violated:

c) Reported Value(s)

d) WDR/NPDES Limit/Condition:

e) Dates of Violation(s) (reference page of report/data sheet):

f) Explanation of Cause(s): (attach additional information as needed) (If "YES", see overview section of attached report)

g) Corrective Action(s): (attach additional information as needed) (If "YES", see overview section of attached report)

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. The results of the influent and effluent monitoring presented are the observed results of the measurements and analyses required by the monitoring program, and is neither an assertion of the adequacy of any instrument reading or analytical result, nor an endorsement of the appropriateness of any analytical or measurement procedure. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

If you have any questions or concerns, or require additional information, please contact Bryan Cunningham at (805) 545-4439.

Sincerely,

Kenneth W. Cortese

Name: Kenneth W. Cortese
Title: *Manager, Chemistry and Environmental Operations – Diablo Canyon Power Plant*

2013506/jlk/bkc

cc: PDF Formatted Copy of CIWQS Application Submittal:

Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
612 E. Lamar Blvd., Suite 400
Arlington, TX 76011-4125

Hardcopy Print-Out of CIWQS Application Submittal:

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, D.C. 20555-0001

Thomas Hipschman
Senior Resident Inspector
U.S. Nuclear Regulatory Commission
Diablo Canyon Power Plant 104/5

CIWQS Web Application Submittal Print Out and Attached Supporting Documents

eSMR PDF Report
Summary: Annual SMR (MONNPDES) report for 2012

Summary: Annual SMR (MONNPDES) report for 2012 submitted by Kenneth Cortese(No Title) on 02/28/2013.

Facility Name: PG&E DIABLO CANYON POWER PLANT **Order Number:** R3-1990-0009
Waterboard Office: Region 3 - Central Coast **Case Worker:** Peter Von Langen
Report Effective Dates: 01/01/2012 - 12/31/2012

No Discharge Periods

Name	Description	Dates	Comment
Diablo M-001			
Diablo M-001D			
Diablo M-001F			
Diablo M-001G			
Diablo M-001H			
Diablo M-001I		01/01/2012 - 12/31/2012	
Diablo M-001J			
Diablo M-001K		01/01/2012 - 12/31/2012	
Diablo M-001L			
Diablo M-001M			
Diablo M-001N			
Diablo M-001P			
Diablo M-002			
Diablo M-003			
Diablo M-004			
Diablo M-005			
Diablo M-008			
Diablo M-009			
Diablo M-013			
Diablo M-015			
Diablo M-016		01/01/2012 - 12/31/2012	
Diablo M-017		01/01/2012 - 12/31/2012	
Diablo M-INF			

Self-Determined Violations

Violation Type	Description	Corrective Action	Occurrence Date

No Violations Entered

Attachments

File Name	File Description	Upload Date
Attachment 1 - 2012 DCPP Annual Report Overview Section.pdf	2012 Annual Summary Report on Discharge Monitoring at Diablo Canyon Power Plant	02/27/2013
Attachment 2 - 2012 DCPP Annual Rpt Appendix-1 NPDES Discharge Points.pdf	DCPP NPDES Discharge Points Table	02/27/2013
Attachment 3 - 2012 DCPP Annual Rpt Appendix-2 Tabular Summaries of Monitoring.pdf	Tabular Summaries of Influent and Effluent Monitoring	02/27/2013
Attachment 4 - 2012 DCPP Annual Rpt Appendix-3 Graphical Summaries of Monitoring.pdf	Graphical Summaries of Influent and Effluent Monitoring	02/27/2013
Attachment 5 - 2012 DCPP Annual Rpt Appendix-4 Summary of RWMP Monitoring.pdf	Summary of Receiving Water Monitoring Program (RWMP) Activities	02/27/2013

Cover Letter (Uploaded File)

Title	Date Uploaded	File Size
PGE DCL2013506 2012 NPDES Annual Discharge Monitoring Report.pdf	2013-02-27 16:45:36.0	702040 bytes

Data Summary

Analytical Results

No Analytical Data Measurements Available / Reported

Calculated Values

Location	Parameter	Calculation Type	Sample Date/Time	Analysis Date	Qualifier	Result	Units	Method Detection Limit	Minimum Level	Reporting Limit	Review Priority Indicator	QA Codes	Comments	Data Source

No Calculated Data Measurements Available / Reported

Certificate

I certify under penalty of law that all data submitted, including attachments, were prepared under my direction 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 a fine or imprisonment, for knowing violations. I certify that I am Kenneth Cortese and am authorized to submit this report on behalf of PG&E DIABLO CANYON POWER PLANT. I understand that I am submitting a Annual SMR (MONNPDES) report for 2012 and I understand that data submitted in this report can be used by authorized agencies for water quality management related analyses and enforcement actions, if required. I certify that I have not violated any term in my Electronic Signature Agreement and that I am otherwise without any reason to believe that the confidentiality of my password and challenge question answers have been compromised now or at any time prior to this submission. I understand that this attestation of fact pertains to the implementation, oversight, and enforcement of a federal environmental program and must be true to the best of my knowledge.

Name: Kenneth Cortese

Title: No Title

ANNUAL SUMMARY REPORT ON DISCHARGE MONITORING AT THE DIABLO CANYON POWER PLANT

(NPDES NO. CA0003751)

2012

2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

TABLE OF CONTENTS

2012 Annual Summary Report on Discharge Monitoring
at the
Diablo Canyon Power Plant

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 2012, discharges occurred from all discharge paths except 001I, 001K, 016, and 017.

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 2012.

005	non-detect - ND(1.4 mg/l)
008	non-detect - ND(1.4 mg/l)
009	Value below reporting quantity - DNQ(2.3 mg/l)
013	non-detect - ND(1.4 mg/l)
015	Value below reporting quantity - DNQ(2.5 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 0.076 mg/l, 804 mg/l, and DNQ(0.002) 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. The facility conducts biennial internal audits that review NPDES procedures contained in the plant 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 2012 for monitoring compliance. The laboratories are certified by appropriate agencies for the tests/analyses performed. As part of the on-going annual certification process, these laboratories take part in annual performance evaluation testing.

a. PG&E Chemistry Laboratory, DCPP, Avila Beach, California (EPA Lab # CA01036)

b. Aquatic Bioassay Consulting Laboratories, Ventura, California (EPA Lab # CA01907)

c. ALS Environmental (formerly 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. E. S. Babcock & Sons, Inc., Environmental Laboratories, Riverside, California (EPA Lab # CA00102)

h. BSK Associates, Fresno, California (EPA Lab # CA00079)

4. Review of Compliance Record and Corrective Actions

a. Circulating Water Pump Chlorination/Bromination Monitoring

The 2012 quarterly NPDES reports discuss chlorination cycles when discharge monitoring was interrupted. These events are listed below with brief descriptions of the cause and respective corrective action. When these monitoring interruptions occurred, engineering evaluations (as 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
01/16/12 to 01/17/12	Unit 1 & 2 11 Readings	Cross-tie between monitor sample lines left open	Monitor sample line cross-tie valves closed
06/07/12 to 06/13/12	Unit 2 36 Readings	Discharge monitor quality check low out of tolerance	Monitor recalibrated
09/19/12 to 09/20/12	Unit 2 7 Readings	Monitor reagent pump failed	Reagent pump replaced

b. Closed Cooling Water Releases

During 2012, 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 DCPP'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 2012 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
01/04/12	Unit 1 SCW	12,000	< 50	5.4	< 2.0	< 1.4	Routine Maintenance
01/13/12	Unit 1 SCW	10	114	5.4	n/a	n/a	Routine Maintenance
01/13/12	Unit 2 SCW	10	115	4.0	n/a	n/a	Routine Maintenance
01/25/12	Unit 2 SCW	57	< 50	4.0	n/a	n/a	Routine Maintenance
02/08/12	Unit 2 SCW	30	111	5.2	n/a	n/a	Routine Maintenance
02/12/12	Unit 1 ICW	10	112	0.7	n/a	n/a	Routine Maintenance
03/06/12	Unit 2 SCW	33,200	< 50	5.8	< 2.0	< 1.4	Routine Maintenance
03/13/12	Unit 2 SCW	550	< 50	5.8	n/a	n/a	Routine Maintenance
03/15/12	Unit 2 SCW	70	< 50	5.8	n/a	n/a	Routine Maintenance
03/26/12	Unit 2 ICW	9	148	0.7	n/a	n/a	Routine Maintenance
04/16/12	Unit 1 ICW	10	65	2.4	n/a	n/a	Routine Maintenance
04/25/12	Unit 1 SCW	9,500	86	3.4	n/a	n/a	Routine Maintenance
05/19/12	Unit 1 CCW	181,500	125	0.0	< 2.0	1.5	Routine Maintenance
06/11/12	Unit 1 ICW	15	64	4.5	n/a	n/a	Routine Maintenance
06/26/12	Unit 1 CCW	3,200	177	0.0	< 2.0	< 1.4	Routine Maintenance
06/28/12	Unit 2 SCW	33,200	< 50	4.7	7.2	< 1.4	Routine Maintenance
08/05/12	Unit 1 SCW	10	< 50	4.1	n/a	n/a	Routine Maintenance
08/14/12	Unit 1 SCW	33,500	< 50	4.1	3.5	< 1.4	Routine Maintenance
12/04/12	Unit 2 ICW	3,300	63	2.5	4.2	n/a	Routine Maintenance
12/19/12	Unit 1 ICW	3,400	< 50	5.8	n/a	n/a	Routine Maintenance

c. Exceedances

None.

d. Bypasses

1. On April 30, 2012, it was discovered that operator action resulted in a bypass of normal discharge pathway 001F. On April 25th at approximately 23:00, during non-routine plant conditions, operators routed freshwater originating from the plant fire water system to outfall via the clean side of the turbine building sump. Normal routing of this discharge is to the dirty side of the turbine building sump, through the oily water separator system, then overboard. The bypass occurred during power plant recovery efforts caused by a loss of all main seawater circulator pumps, and subsequent forced outage of Unit 2 while Unit 1 was in a scheduled refueling outage.

   Routing of the fire water to the clean side of the sump was determined to be inadvertent, as the operators did not intend to purposefully circumvent the normal 001F permit flow path. At the beginning of the event an assumption had been made that staged hosing in the turbine building was routed to the dirty side of the sump system, when in fact it was routed to the clean side of the sump. It was later found that a verification/review of the configuration to insure appropriate routing before use had also not been completed.

Contributing factors to the inadvertent bypass included a significant amount of plant operator burdens during the period. The specific plant conditions experienced were non-routine, having never occurred prior in the operating history of the facility. The shutdown of all main seawater circulators, and subsequent operating unit trip, was due to an excessive influx of sea salps in the near shore coastal region, which adversely impacted the plant intake cove and intake systems.

Note: The plant auxiliary salt water system once-through cooling remained in continuous operation during the period.

Upon plant management discovery of the 001F pathway bypass on April 30th, samples of the freshwater flow were obtained, and the bypass subsequently terminated. The samples indicted total suspended solids (TSS) of < 2.0 mg/L, conductivity of 126 uS/cm, a pH of 7.7, and a negative result for grease and oil using a camphor screening test. These results confirmed the quality of the freshwater from the plant fire water system was good, as is routinely expected from that resource, and that 001F outfall constituent limitations were most likely never challenged during the bypass period. Regional Board Staff (von Langen) was notified via phone message of the bypass event following the initial discovery on April 30th. In a follow-up phone conversation conducted on May 1st, the facility was directed to provide a description of the event, and any subsequent evaluation or actions, in the 2nd quarter discharge self-monitoring report.

The estimated volume of freshwater routed directly to the clean side of the turbine building sump from April 25th to April 30th was 609,900 gallons, or approximately 144,000 gallons per day. Even though the event was linked to an off-normal and very rare plant condition, the facility is implementing corrective actions to reduce and/or eliminate the potential for event reoccurrence. Relevant plant operating procedures were revised to more clearly outline operator actions and expectations in the event of a similar situation, as well as to enhance the verification of equipment alignment prior to routing water from secondary plant activities to the turbine building sump system.

2. On October 12, 2012, during routine shift inspections the Unit 1 turbine building sump was discovered overflowing from the clean-side standpipe directly to the once-though cooling system, and plant outfall. The cause was determined to be a loss of sump pump operation resulting in an inadvertent bypass of the normal discharge pathway which routes sump wastewater through the oily water separator (OWS) system prior to outfall. Samples of the overflow were taken. Analysis indicated total suspended solids and oil/grease levels were well below the NPDES limitations for discharge pathway 001F. The overflow was estimated at a rate of 3 to 5 gallons per minute for an indeterminate period (exact time of pump function loss unknown), but which is approximated to be less than the period elapsed since the prior sump inspection; < 12-hours.

   The loss of pump operations was determined to be caused by an out of tolerance liquid level indicator transducer. One function of the level indicator is to stop pump operation when low liquid levels (near-empty) conditions exist within the sump. Output from the faulty transducer resulted in low level indications when sump volume was actually at high levels. The transducer was recalibrated, and the turbine building sump level indicator and associated sump pumps were returned to normal operations.

   Notification of the inadvertent 001F pathway bypass was made to the Regional Water Quality Control Board on the same day, within the 24-hour reporting requirement. A follow-up communication was made on October 15th to provide analysis results, and request guidance on further reporting of the event. Regional Board staff (von Langen) advised that the event and corrective actions be documented in the 4th quarter discharge self-monitoring report.

B. Monitoring of Receiving Water

1. Ecological Studies at Diablo Canyon

Marine ecological monitoring was continued during 2012 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 2012. Results of 2011 RWMP data were submitted to the CCRWQCB on April 27, 2012. A table in Appendix 4 summarizes requirements and completed monitoring tasks for 2012.

2. In Situ Bioassay

Results of the Mussel Watch Program are reported to the CCRWQCB directly by the California Department of Fish and Game (CDF&G) 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 through most of 2012. There were brief interruptions in January, February, March, and early April for system maintenance activities. Unit 1 injections were shut down in mid-April for the 1R17 refueling outage. Simultaneous injections were restarted in early June. There were additional brief interruptions in mid-June, November and December for chemical injection system maintenance, and conduit cleaning activities.

Both conduits of Unit 2 were treated with simultaneous injections of sodium bromide and sodium hypochlorite six times a day through most of 2012. There were brief interruptions in January and February for chemical injection system maintenance, and conduit cleaning activities. Additional brief interruptions also occurred in April due to a large influx of sea salps that necessitated shut down of Unit 2 main seawater circulating pumps; and in June, October, and November due to system maintenance activities.

D. Errata

Two reporting errors have been identified in the electronic 4th quarter 2012 discharge self-monitoring report (eSMR) that was submitted via CIWQS. The units for analysis results of Ammonia, Total (as N) at locations M-001 and M-INF (only) were incorrectly reported as µg/L. The correct units for both these results are mg/L.

Annual Discharge Monitoring Report

APPENDIX 1

DIABLO CANYON POWER PLANT

NPDES DISCHARGE POINTS	
DISCHARGE NUMBER	**DESCRIPTION**
001	Once-Though 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

2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

DISCHARGE 001

	TEMPERATURE (DEG F)								FLOW (MGD)		
	INFLUENT			EFFLUENT			DELTA T				
Month	high	low	avg	high	low	avg	high	avg	high	low	avg
JAN	55.6	52.5	54.1	74.4	71.5	73.0	19.4	18.9	2486	2486	2486
FEB	54.8	50.1	52.2	74.5	68.7	71.3	20.2	19.1	2486	1862	2400
MAR	53.1	49.0	50.8	72.1	71.8	74.1	18.9	18.5	2486	1509	2395
APR	52.6	48.4	50.2	71.1	53.5	65.9	19.4	15.7	2486	32	2045
MAY	52.2	48.7	50.2	69.9	66.5	67.9	18.0	17.7	1279	1279	1279
JUN	56.6	49.1	52.3	72.5	62.8	68.1	18.4	15.3	2486	1279	2081
JUL	55.9	50.7	53.0	74.1	68.9	71.3	18.4	18.2	2486	2486	2486
AUG	57.0	52.0	54.0	75.5	70.3	75.3	18.6	18.3	2486	2486	2486
SEP	57.9	53.9	55.6	76.6	71.8	74.1	18.9	18.5	2486	1509	2395
OCT	59.3	55.6	57.2	78.0	74.9	65.0	19.4	17.7	2486	2132	2449
NOV	58.6	55.0	57.3	77.9	73.6	76.2	20.6	19.0	2486	1862	2402
DEC	59.7	54.3	56.8	78.5	72.8	75.5	19.3	18.7	2486	1874	2371
limit:		-			-		22		2760		

The Influent and Effluent "high" and "low" temperture 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

	TOTAL RESIDUAL CHLORINE (daily max. ug/l)			TOTAL CHLORINE USED (lbs/day)		
Month	high	low	avg	high	low	avg
JAN	54	31	41	576	355	516
FEB	65	17	44	475	158	353
MAR	66	31	49	403	288	370
APR	63	*n/a	41	374	*n/a	256
MAY	89	<20	39	230	173	191
JUN	55	<10	25	518	173	390
JUL	32	<10	12	562	490	522
AUG	39	<10	24	662	562	581
SEP	44	<10	20	662	562	611
OCT	60	<10	30	734	494	639
NOV	39	14	26	706	184	583
DEC	66	18	47	677	346	503

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.
***n/a value for low value in April for total residual chlorine & total chlorine use due to no system injections for one day.**

2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

DISCHARGE 001

METALS (monthly avg. ug/l)

	CHROMIUM		COPPER		NICKEL		*ZINC	
Month	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
JAN	ND(5)	ND(5)	ND(5)	ND(5)	DNQ(5)	DNQ(6)	ND(5)	ND(5)
FEB	ND(5)	ND(5)	DNQ(6)	DNQ(6)	DNQ(6)	DNQ(8)	ND(5)	DNQ(7)
MAR	ND(5)	ND(5)	ND(5)	ND(5)	DNQ(6)	DNQ(6)	24	DNQ(8)
APR	ND(5)	DNQ(6)	ND(5)	DNQ(7)	DNQ(6)	10	13	DNQ(5)
MAY	ND(5)	ND(5)	ND(5)	DNQ(5)	DNQ(7)	DNQ(7)	ND(5)	ND(5)
JUN	ND(5)	ND(5)	DNQ(6)	ND(5)	DNQ(7)	DNQ(6)	DNQ(5)	ND(5)
JUL	ND(5)	ND(5)	ND(5)	ND(5)	DNQ(8)	DNQ(8)	ND(5)	ND(5)
AUG	ND(5)	ND(5)	ND(5)	ND(5)	DNQ(8)	DNQ(7)	DNQ(7)	ND(5)
SEP	ND(5)	ND(5)	ND(5)	ND(5)	DNQ(6)	DNQ(6)	DNQ(6)	ND(5)
OCT	ND(5)	ND(5)	ND(5)	ND(5)	DNQ(9)	DNQ(8)	21	DNQ(5)
NOV	DNQ(5)	ND(5)	DNQ(8)	DNQ(7)	DNQ(7)	DNQ(9)	DNQ(7)	ND(5)
DEC	DNQ(7)	DNQ(7)	DNQ(7)	DNQ(6)	DNQ(7)	DNQ(7)	14	DNQ(5)
6-month median limit:		10	-	10	-	30	-	70

DISCHARGE 001
VARIOUS ANNUAL ANALYSES

Parameter	Influent (ug/l)	Effluent (ug/l)	6-Mo. Med. Effluent Limit
Arsenic	1.38	1.40	30
Cadmium	0.036	0.031	10
Cyanide	ND(3)	ND(3)	30
Lead	0.039	DNQ(0.015)	10
Mercury	DNQ(0.00032)	DNQ(0.00027)	0.2
Silver	ND(0.004)	ND(0.004)	2.9
Titanium	ND(50.0)	ND(50.0)	none
*Phenolic Compounds (non-chlorinated)	ND(3.031)	ND(3.031)	150
**Phenolic Compounds (chlorinated)	ND(0.567)	ND(0.567)	10
***PCB's	ND(0.0658)	ND(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)	DNQ(78)
FEB		
MAR		
APR	DNQ(67)	ND(50)
MAY		
JUN		
JUL		
AUG	160	300
SEP		
OCT	86	DNQ(62)
NOV		
DEC		
6-month median limit:		3,060

2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

MONTHLY pH (averages)

Discharge:	001		002	003	004	001P
Month	Influent	Effluent				
JAN	7.9	8.0	8.0	7.9	8.0	7.9
FEB	8.0	8.0	8.0	7.9	7.9	7.9
MAR	7.8	7.8	7.9	7.8	7.9	7.6
APR	7.7	7.8	7.8	7.7	7.7	7.6
MAY	8.0	8.0	8.0	8.0	8.0	7.7
JUN	7.9	7.9	7.9	7.9	7.9	7.7
JUL	7.9	7.9	7.9	7.9	7.9	7.7
AUG	7.8	7.8	7.8	7.9	7.9	7.6
SEP	7.8	7.9	7.9	7.8	7.9	7.6
OCT	7.8	7.9	8.0	8.0	8.0	7.7
NOV	8.2	8.1	8.0	7.8	7.9	7.7
DEC	7.9	8.0	8.0	7.9	8.0	7.8

DISCHARGE 001F

	GREASE & OIL (mg/l)		SUSPENDED SOLIDS (mg/l)	
Month	high	avg	high	avg
JAN	ND(1.4)	ND(1.4)	ND(2)	ND(2)
FEB	ND(1.4)	ND(1.4)	7	7
MAR	ND(1.4)	ND(1.4)	DNQ(2)	DNQ(2)
APR	ND(1.4)	ND(1.4)	DNQ(4)	DNQ(4)
MAY	ND(1.4)	ND(1.4)	ND(2)	ND(2)
JUN	ND(1.4)	ND(1.4)	DNQ(2)	DNQ(2)
JUL	ND(1.4)	ND(1.4)	ND(2)	ND(2)
AUG	ND(1.4)	ND(1.4)	DNQ(3)	DNQ(3)
SEP	ND(1.4)	ND(1.4)	ND(2)	ND(2)
OCT	ND(1.4)	ND(1.4)	DNQ(2)	DNQ(2)
NOV	ND(1.4)	ND(1.4)	DNQ(2)	DNQ(2)
DEC	ND(1.4)	ND(1.4)	DNQ(2)	DNQ(2)
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)

	GREASE & OIL (mg/l)			SUSPENDED SOLIDS (mg/l)			SETTLEABLE SOLIDS (ml/l)		
Month	high	low	avg	high	low	avg	high	low	avg
JAN	<5.0	DNQ(1.4)	<5.0	20	ND(3)	9	ND(0.1)	ND(0.1)	ND(0.1)
FEB	5.7	ND(1.4)	<5.0	75	9	27	ND(0.1)	ND(0.1)	ND(0.1)
MAR	<5.0	ND(1.4)	<5.0	26	5	12	ND(0.1)	ND(0.1)	ND(0.1)
APR	DNQ(3.2)	ND(1.4)	DNQ(1.6)	95	10	34	ND(0.1)	ND(0.1)	ND(0.1)
MAY	<5.0	ND(1.4)	<5.0	18	12	15	ND(0.1)	ND(0.1)	ND(0.1)
JUN	DNQ(2.7)	ND(1.4)	DNQ(1.4)	14	4	8	ND(0.1)	ND(0.1)	ND(0.1)
JUL	<5.0	ND(1.4)	<5.0	12	ND(3)	7	ND(0.1)	ND(0.1)	ND(0.1)
AUG	DNQ(1.4)	ND(1.4)	DNQ(1.4)	19	9	14	ND(0.1)	ND(0.1)	ND(0.1)
SEP	7.0	DNQ(1.6)	<5.0	24	11	15	ND(0.1)	ND(0.1)	ND(0.1)
OCT	DNQ(2.8)	DNQ(1.4)	DNQ(1.8)	25	9	14	ND(0.1)	ND(0.1)	ND(0.1)
NOV	<5.0	ND(1.4)	<5.0	10	7	9	ND(0.1)	ND(0.1)	ND(0.1)
DEC	<5.0	DNQ(1.5)	<5.0	15	ND(3)	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.

2012 Annual Summary Report on Discharge Monitoring
at the
Diablo Canyon Power Plant

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

	001D				001 H				001L				001F			
Month	Ag	Cd	Cr	Cu	Ag	Cd	Cr	Cu	Ag	Cd	Cr	Cu	Ag	Cd	Cr	Cu
JAN	ND(5)	ND(5)	DNQ(6)	26	ND(5)	ND(5)	18	29	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	214	15
FEB																
MAR																
APR	ND(5)	ND(5)	ND(5)	11	ND(5)	ND(5)	34	88	ND(5)	ND(5)	ND(5)	DNQ(5)	ND(5)	ND(5)	ND(5)	20
MAY																
JUN																
JUL	ND(5)	ND(5)	DNQ(5)	17	ND(5)	ND(5)	25	49	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	16
AUG																
SEP																
OCT	ND(5)	ND(5)	ND(5)	20	ND(5)	ND(5)	17	30	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	ND(5)	12
NOV																
DEC																

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)

	001D				001 H				001L				001F			
Month	Hg	Ni	Pb	Zn	Hg	Ni	Pb	Zn	Hg	Ni	Pb	Zn	Hg	Ni	Pb	Zn
JAN	ND(0.050)	DNQ(9)	ND(5)	127	ND(0.050)	13	13	23	ND(0.050)	ND(5)	ND(5)	ND(5)	ND(0.050)	88	DNQ(7)	17
FEB																
MAR																
APR	ND(0.060)	ND(5)	ND(5)	63	ND(0.060)	15	10	71	ND(0.060)	DNQ(5)	ND(5)	ND(5)	ND(0.060)	11	ND(5)	30
MAY																
JUN																
JUL	ND(0.060)	ND(5)	ND(5)	86	ND(0.060)	21	DNQ(9)	<10	ND(0.060)	ND(5)	ND(5)	ND(5)	ND(0.060)	10	ND(5)	26
AUG																
SEP																
OCT	ND(0.060)	ND(5)	ND(5)	75	ND(0.060)	14	<10	DNQ(8)	ND(0.060)	ND(5)	ND(5)	ND(5)	ND(0.060)	10	ND(5)	23
NOV																
DEC																

limit: none

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

2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

MONTHLY TOTAL SUSPENDED SOLIDS

Averages (mg/l)

Month	001D*	001G	001H	001I	001J	001K	001L	001M	001P	002	003
JAN	<5	ND(2)	DNQ(2)				ND(2)		5	DNQ(2)	29
FEB	<5	ND(2)	ND(2)				ND(2)		<5	DNQ(4)	11
MAR	<5	ND(2)	ND(2)				DNQ(2)		21	<5	DNQ(4)
APR	<5	ND(2)	ND(2)		ND(2)		ND(2)	ND(2)	29	11	34
MAY	<5	ND(2)	ND(2)				ND(2)		ND(2)	<5	ND(2)
JUN	<5	ND(2)	ND(2)		DNQ(3)		ND(2)		14	DNQ(2)	DNQ(2)
JUL	<5	DNQ(2)	ND(2)				ND(2)	DNQ(2)	ND(2)	ND(2)	DNQ(4)
AUG	<5	ND(2)	ND(2)				ND(2)	DNQ(3)	11	DNQ(2)	7
SEP	<5	ND(2)	ND(2)		ND(2)		ND(2)	DNQ(2)	DNQ(4)	DNQ(2)	5
OCT	<5	ND(2)	DNQ(2)		ND(2)		ND(2)		ND(2)	DNQ(2)	<5
NOV	<5	ND(2)	ND(2)				ND(2)		DNQ(2)	ND(2)	8
DEC	<5	DNQ(2)	ND(2)				ND(2)		ND(2)	DNQ(2)	DNQ(2)
Limit:	30	30	30	30	30	30	30	30	30	30	-

* Discharges from 001D are batched. Monthly averages are flow weighted.
Note: No discharges occurred from 001I and 001K during 2012.
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	<5.0	ND(1.4)	ND(1.4)				ND(1.4)		ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)
FEB	DNQ(3.9)											
MAR	ND(1.4)											
APR	<5.0	ND(1.4)	ND(1.4)		ND(1.4)		ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)
MAY	DNQ(2.1)											
JUN	DNQ(2.7)											
JUL	<5.0	ND(1.4)	ND(1.4)				ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)	ND(1.4)
AUG	ND(1.4)							ND(1.4)				
SEP	<5.0				ND(1.4)			ND(1.4)				
OCT	<5.0	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	<5.0						ND(1.4)					
DEC	<5.0											
Limit:	15	15	15	15	15	15	15	15	15	15	15	15

* Discharges from 001D are batched. Monthly averages are flow weighted.
Note: No discharges occurred from 001I and 001K during 2012.

2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

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

Month	ACUTE Test Result	ACUTE 6-Month Median	*CHRONIC Test Result
JAN			
FEB	0.00	0.00	1.00
MAR			
APR	0.00	0.00	1.00
MAY			
JUN			
JUL	0.00	0.00	1.00
AUG			
SEP			
OCT	0.00	0.00	1.00
NOV			
DEC			
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	99%	None
Total Kjeldahl Nitrogen	620 mg/l	None
Ammonia (N)	58 mg/l	None
Nitrate (N)	5.9 mg/l	None
Orthophosphate (as P)	97 mg/l	None
pH	7.1	None
Oil and Grease	11 mg/l	None
Boron	1.1 mg/l	None
Cadmium	9.0 ug/l	10 X STLC*
Copper	3500 ug/l	10 X STLC
Chromium	DNQ(37) ug/l	10 X STLC
Lead	54 ug/l	10 X STLC
Nickel	71 ug/l	10 X STLC
Mercury	16 ug/l	10 X STLC
Zinc	5000 ug/l	10 X STLC
Volume	1.11 tons	None

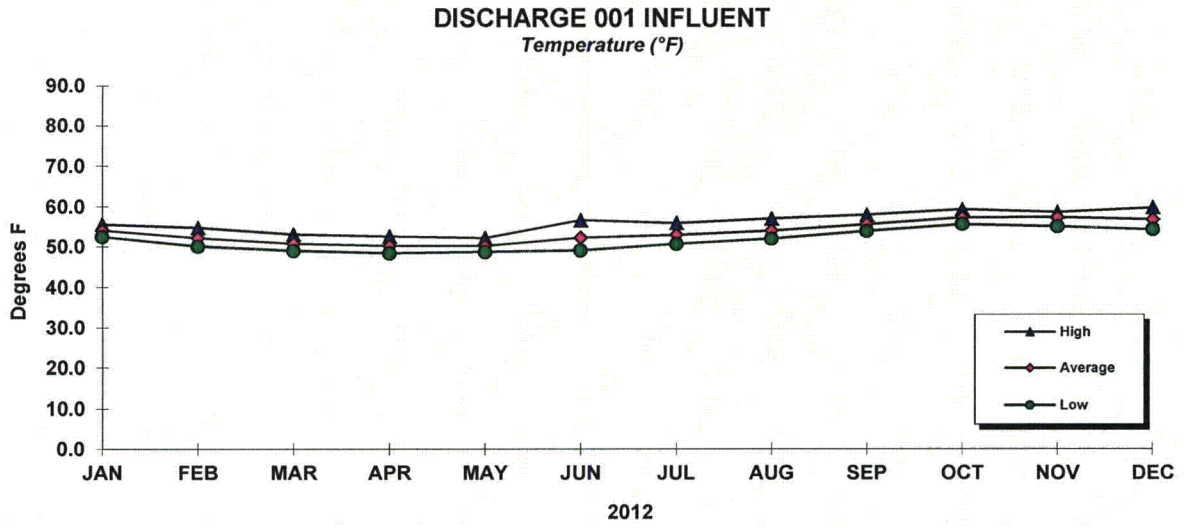
Note: Annual samples were collected in October.
* STLC = Soluble Threshold Limit Concentration

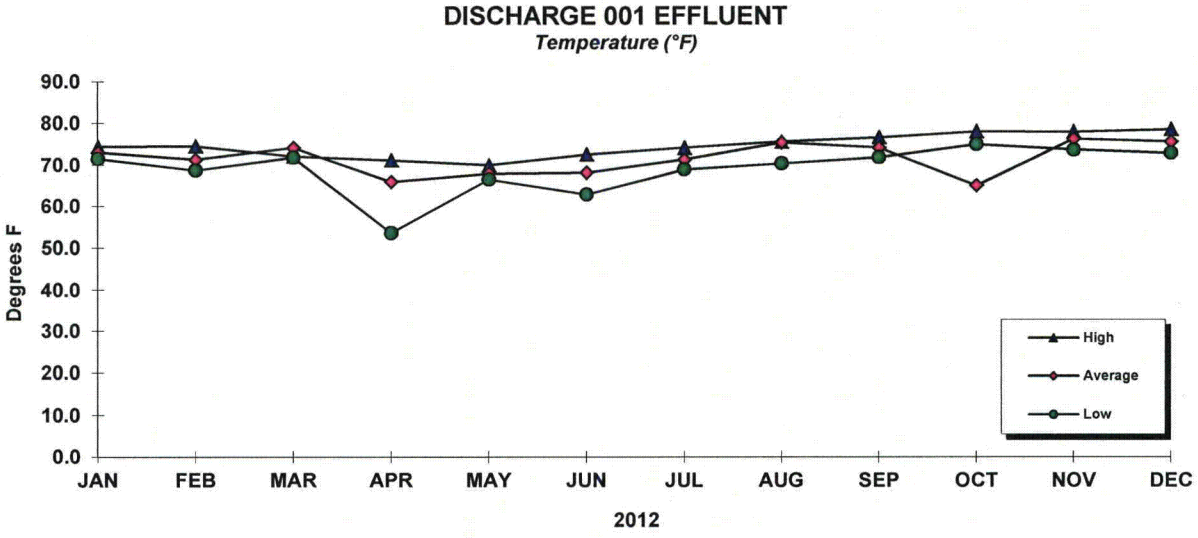
Annual Discharge Monitoring Report

APPENDIX 3

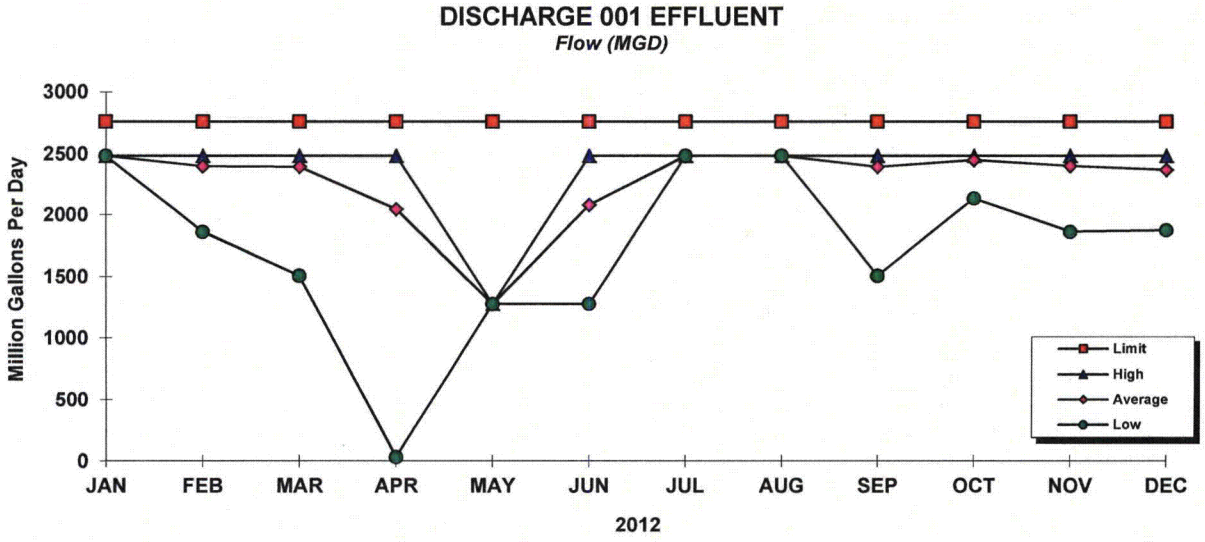
GRAPHICAL SUMMARIES OF INFLUENT AND EFFLUENT MONITORING

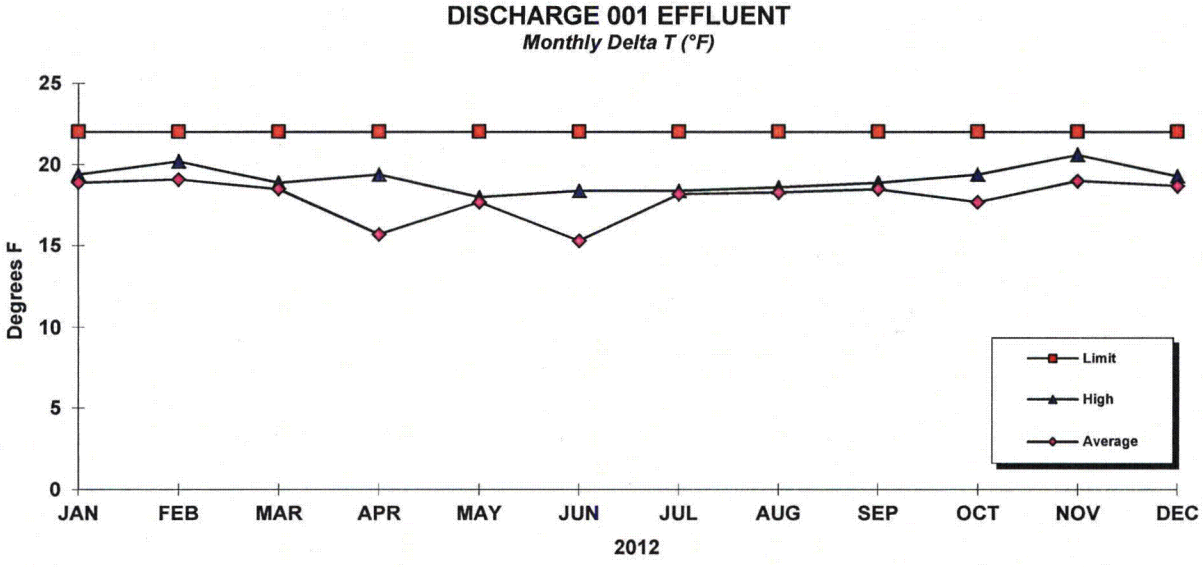
2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant





2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

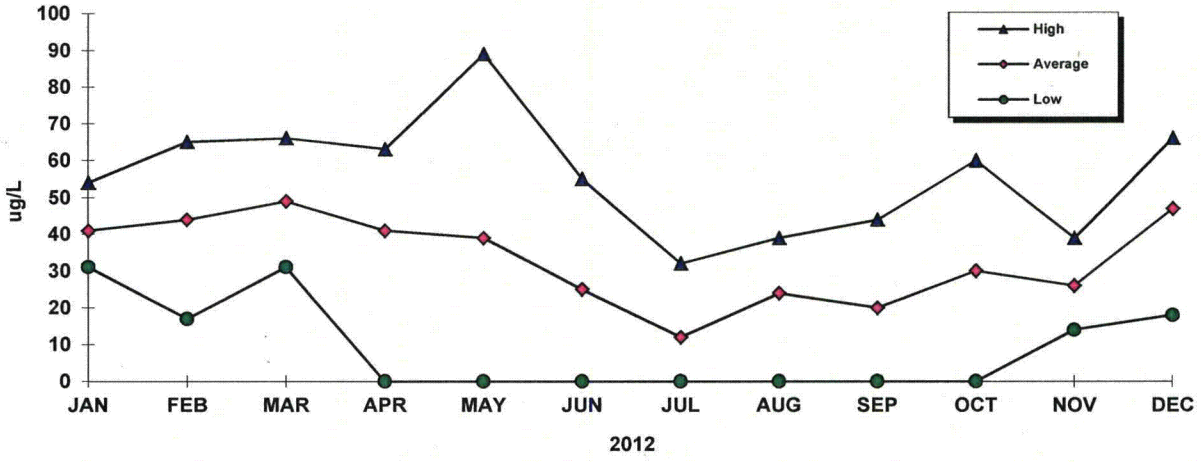




2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

DISCHARGE 001

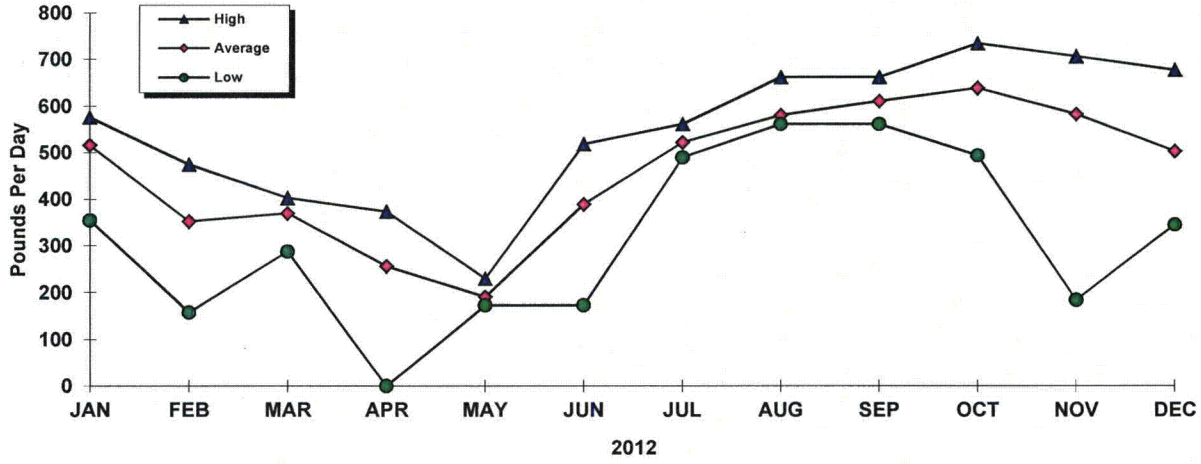
Total Chlorine Residual, ug/l



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

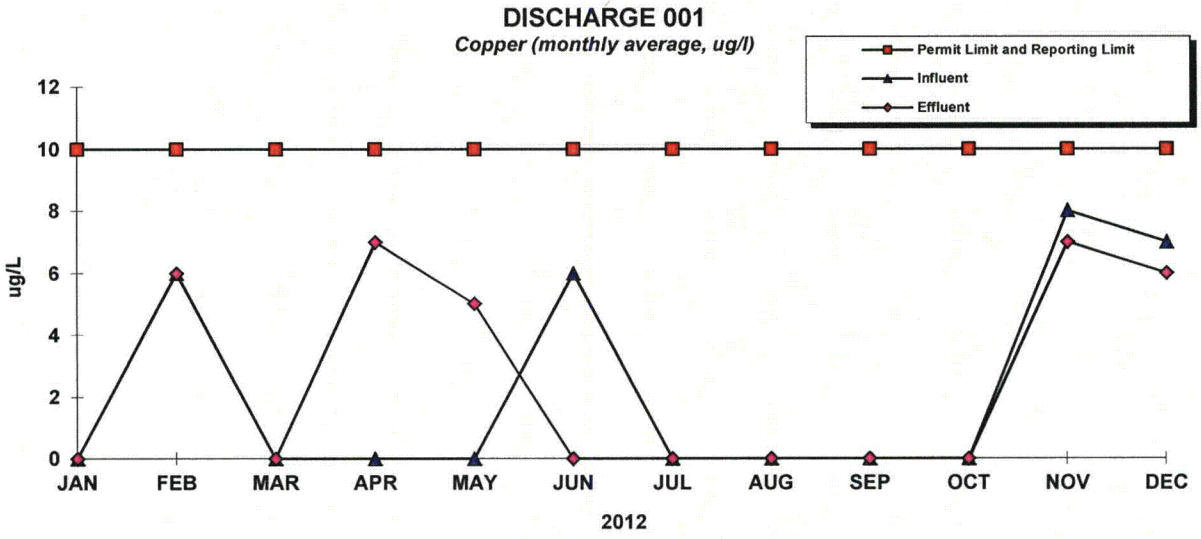
DISCHARGE 001

Total Chlorine Used, pounds per day

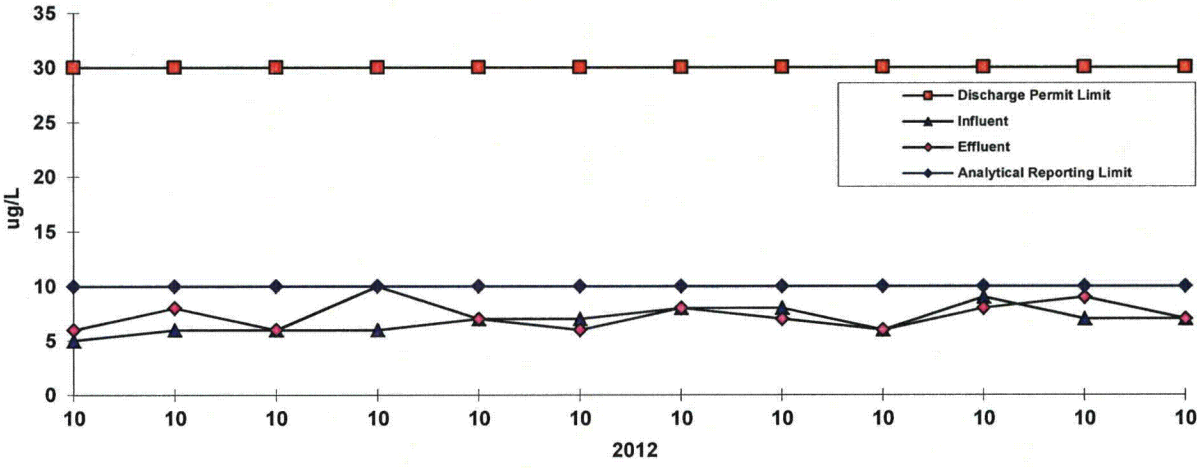


Note: The zero value in April was due to no chlorine system injections for one day.

2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

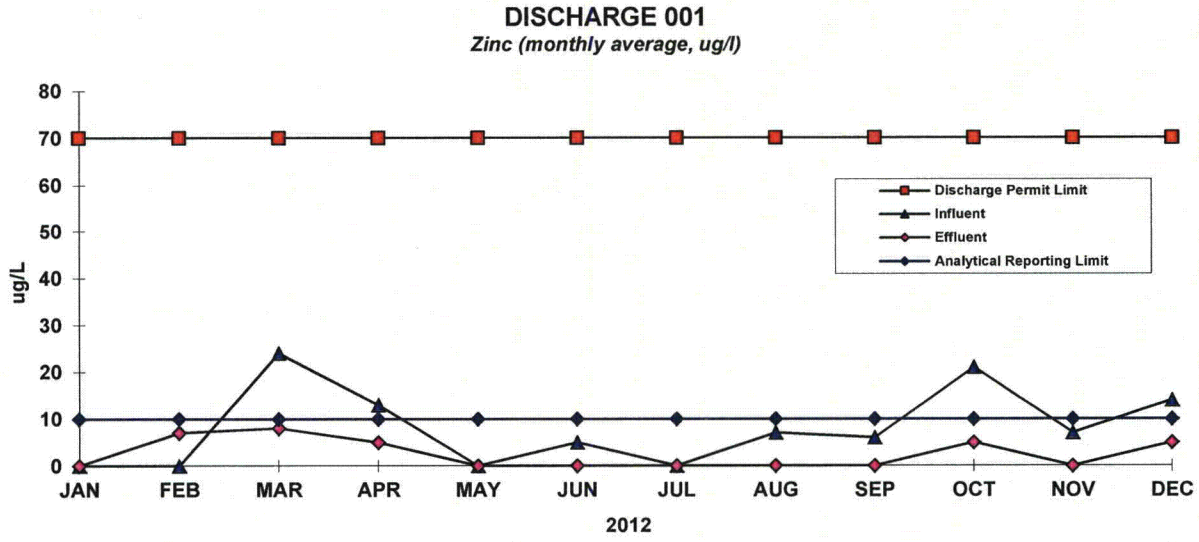


Note: The analyte was not detected at or above the detection limit for values plotted at zero.
The 6-month median limit (the most conservative limit) is plotted on this chart (this is also the analytical reporting limit).
The daily maximum limit for Copper is 50 ug/l.

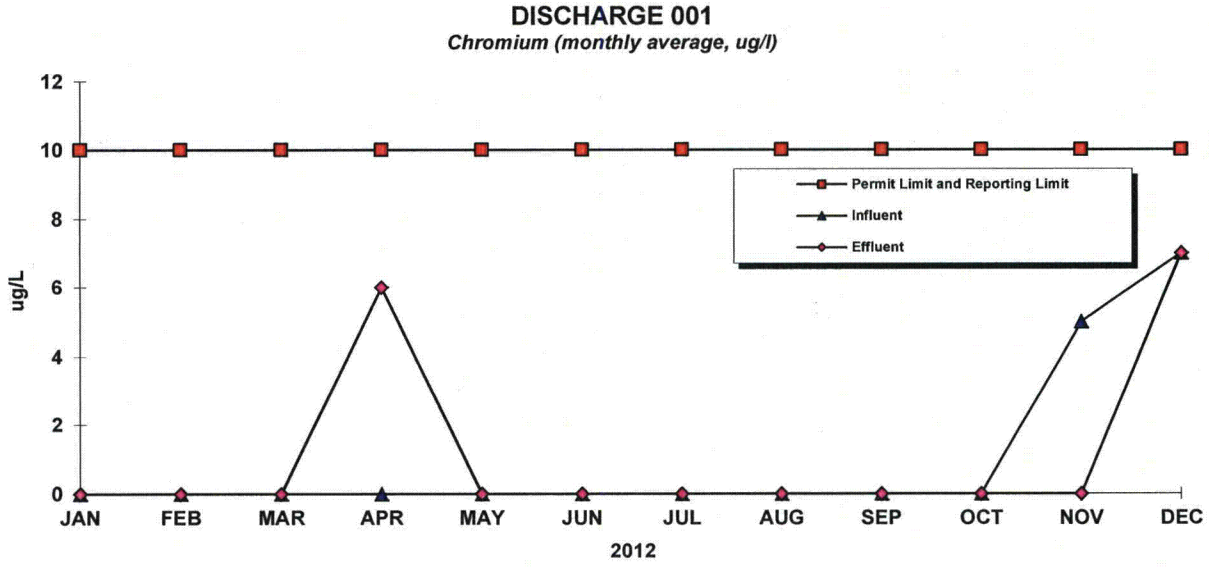


Note: The analyte was not detected at or above the detection limit for values plotted at zero.
The 6-month median limit (the most conservative limit) is plotted on this chart.
The daily maximum limit for Nickel is 100 ug/l.

2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

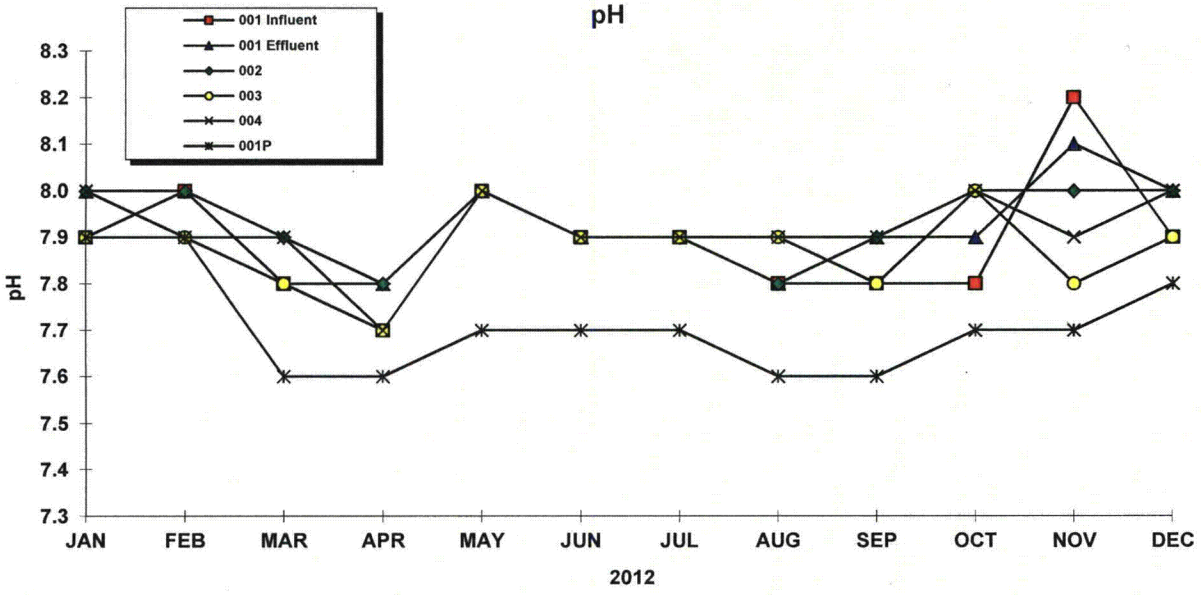


Note: The analyte was not detected at or above the detection limit for values plotted at zero.

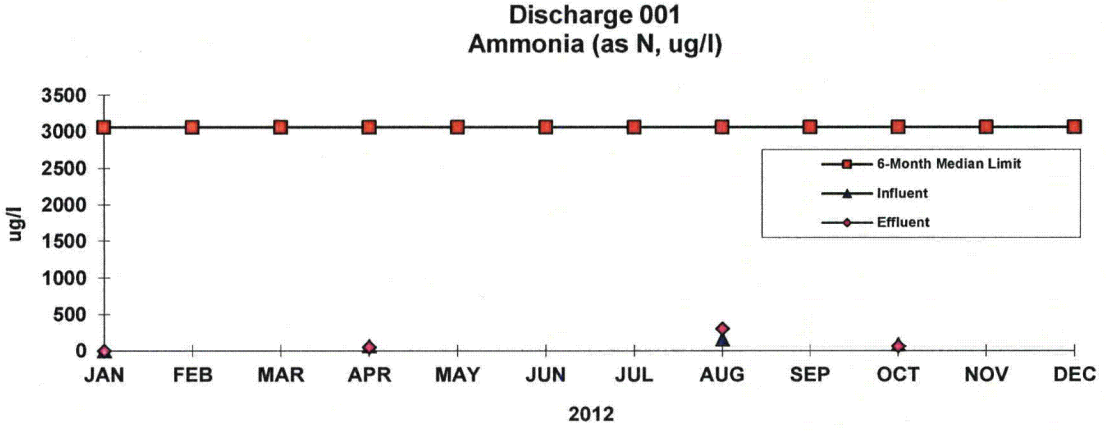


Note: The analyte was not detected at or above the detection limit for values plotted at zero.
The 6-month median limit is plotted on this chart. The daily maximum limit for chromium is 40 ug/l.
The discharge permit limit and the analytical reporting limit are the same (10 ug/l).

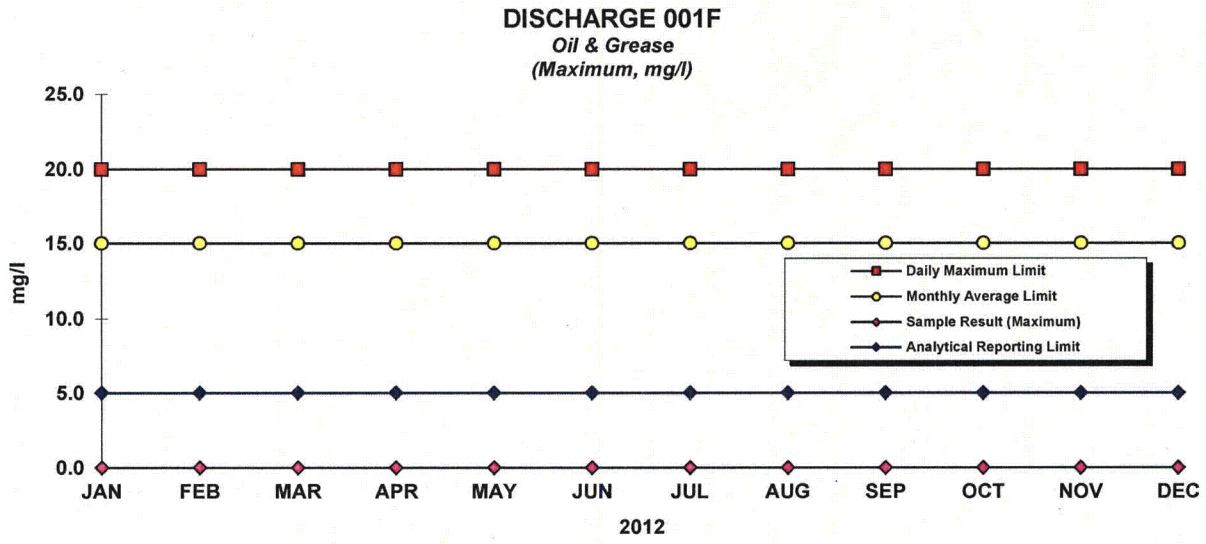
2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant



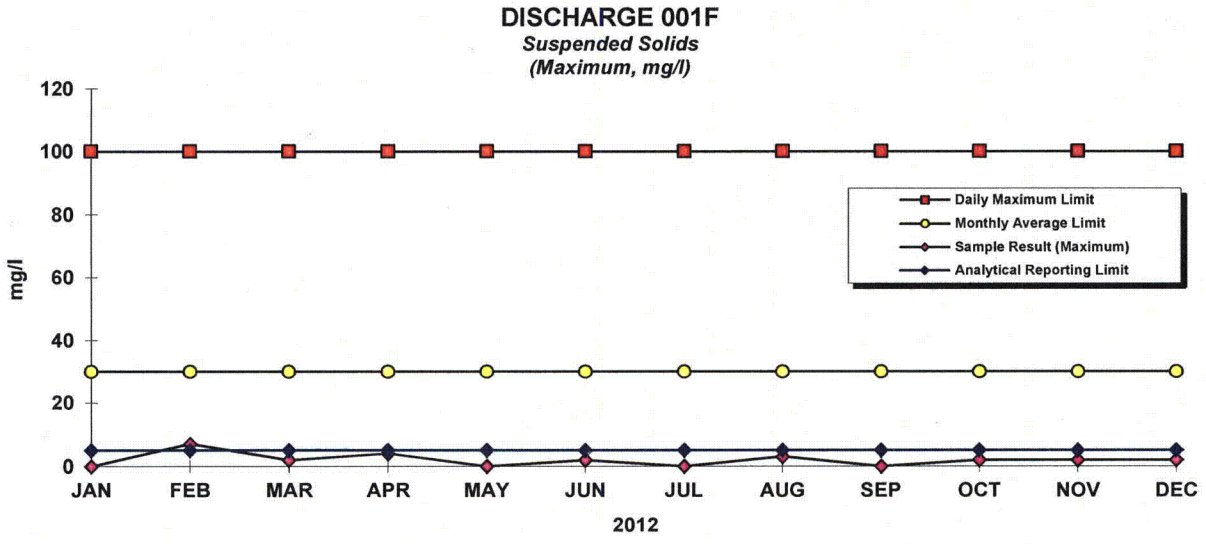
Note: Several data points on this chart overlap.



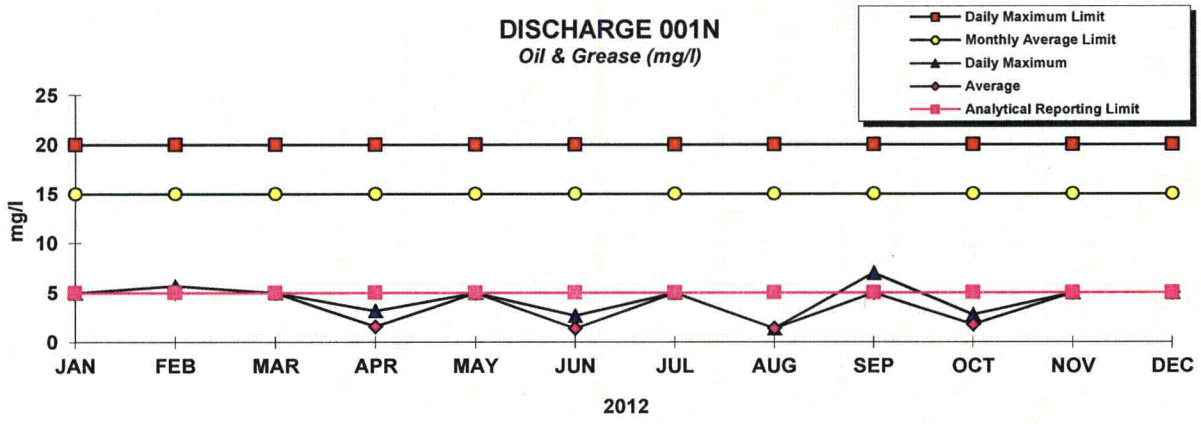
Note: The analyte was not detected at or above the detection limit for values plotted at zero.
Influent and Effluent values overlap at three points on this plot.



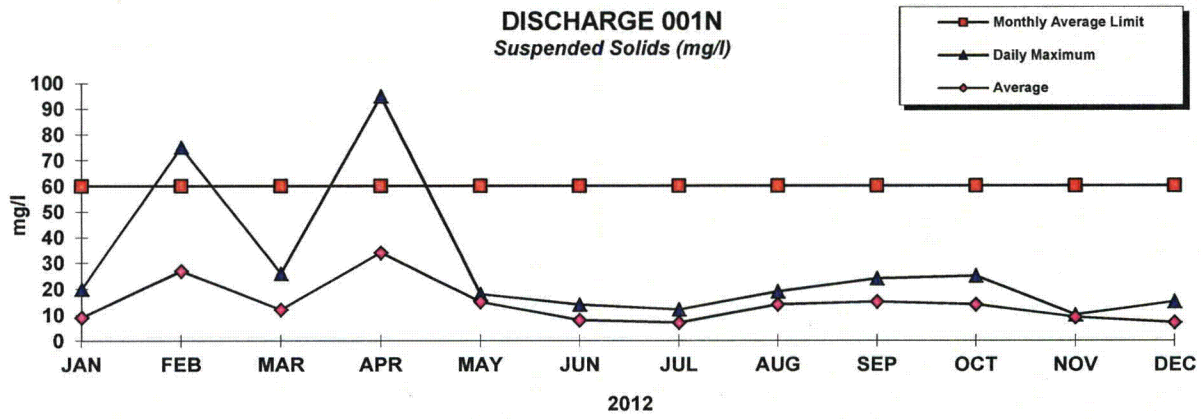
Note: Values plotted at zero were below the detection limit.



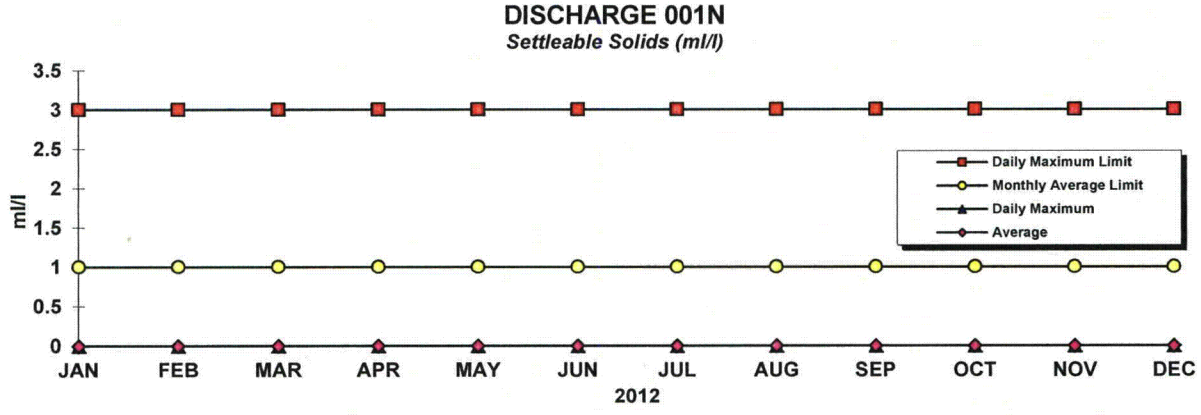
Note: Maximum values are plotted.



Note: Daily maximum and monthly average values overlap at seven points on this plot.

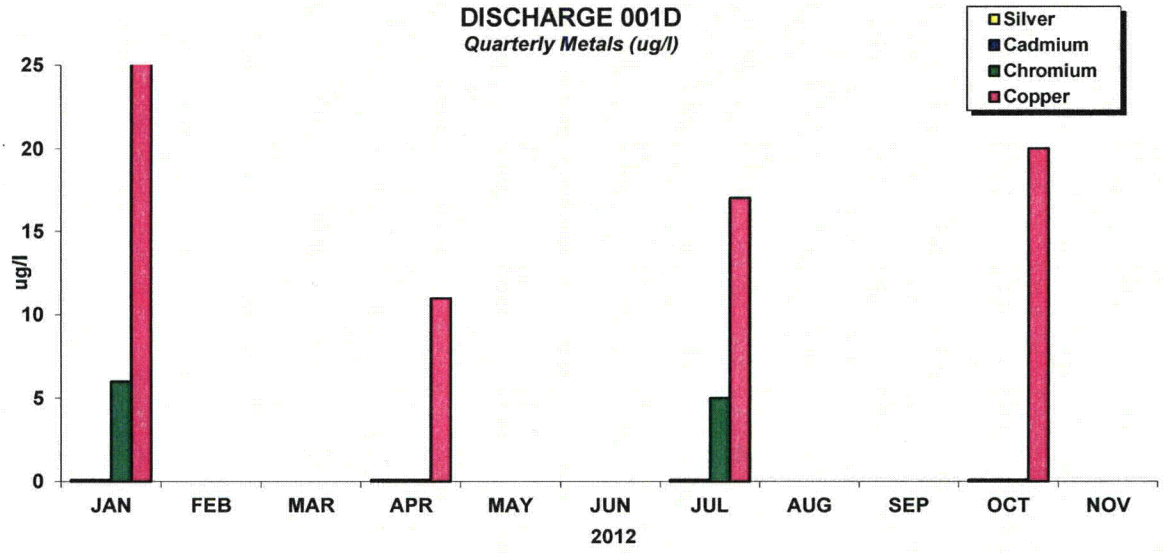


Note: There is no limit for daily maximum values. The average values are below monthly average limit.

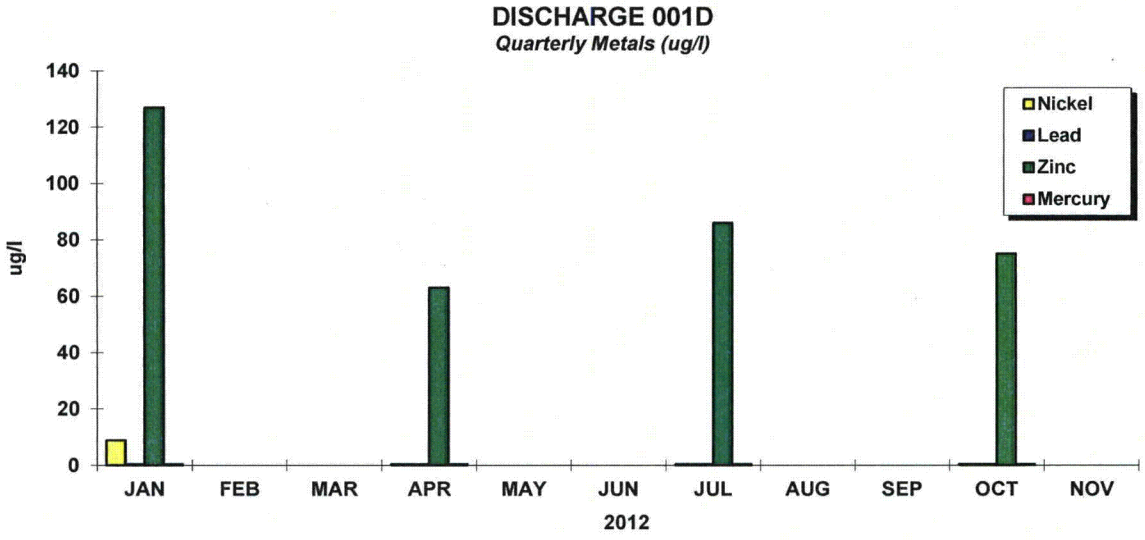


Note: Values plotted at zero were below the detection limit.
High, average, and low values overlap at twelve points on this plot.

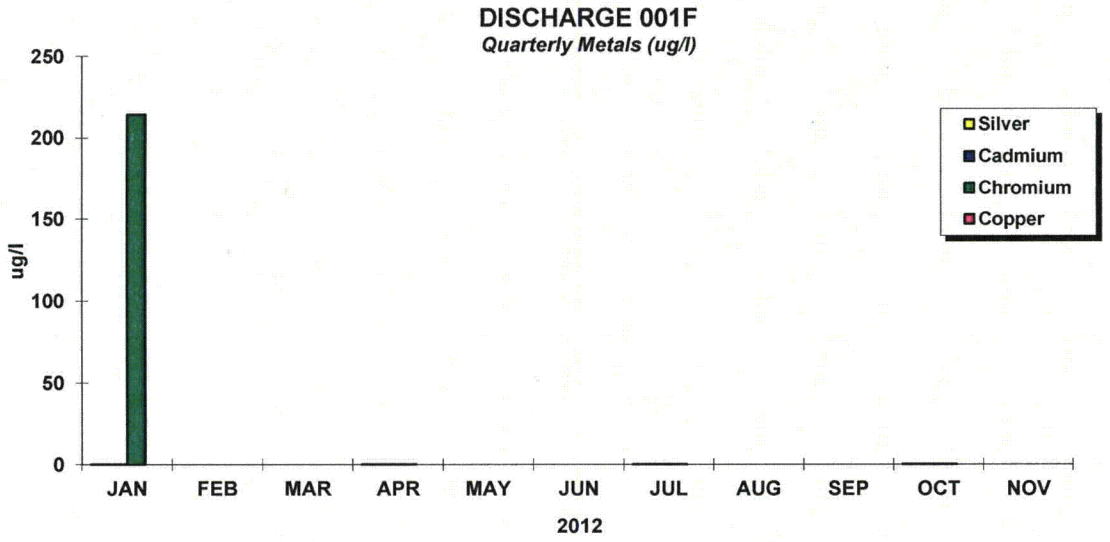
2012 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant



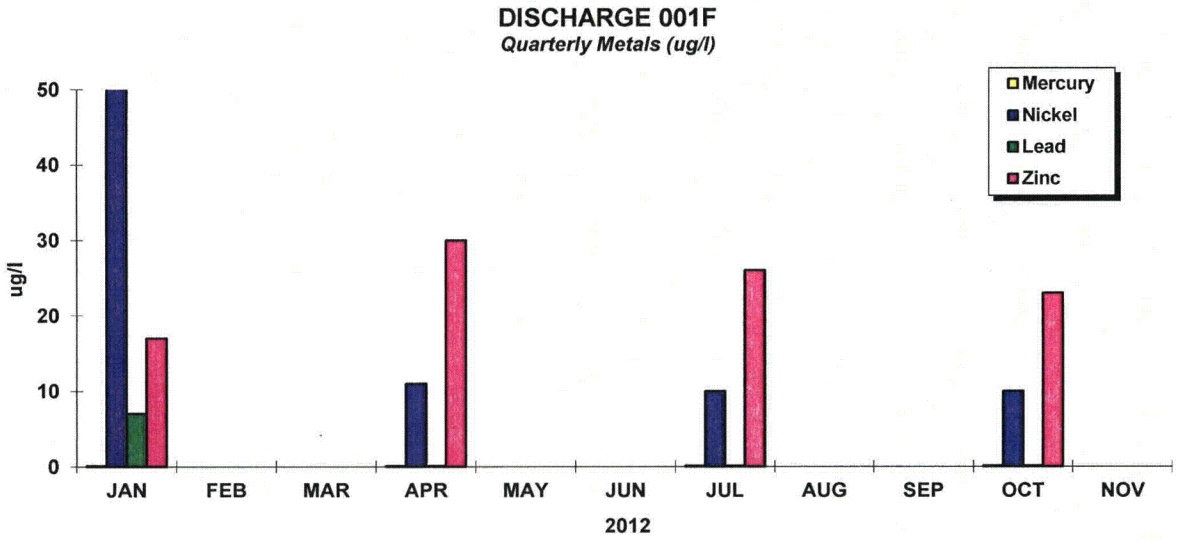
Note: The analyte was not detected at or above the detection limit for values plotted at zero.



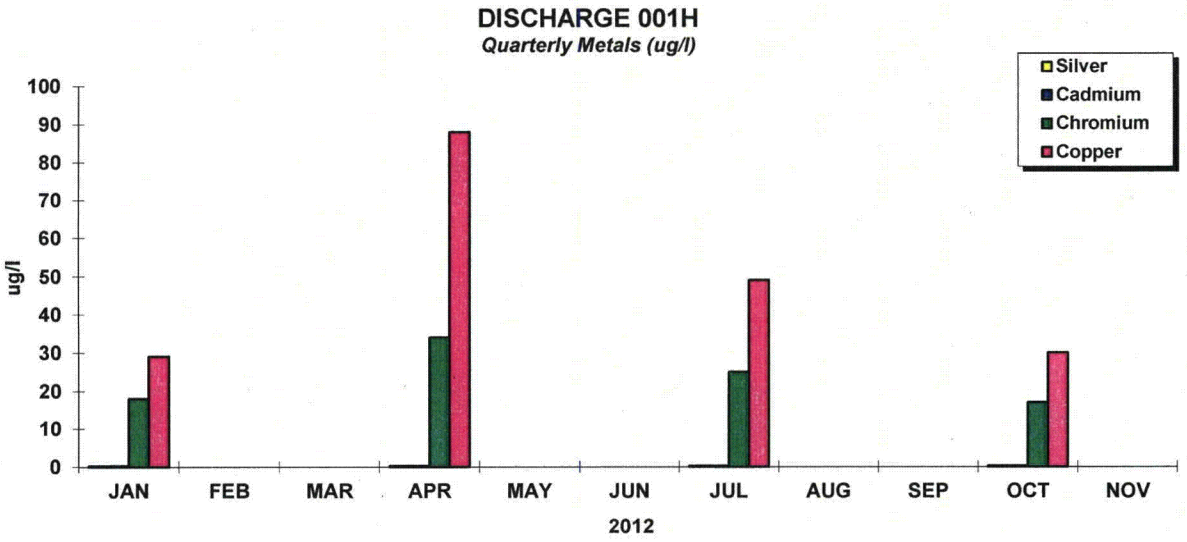
Note: The analyte was not detected at or above the detection limit for values plotted at zero.



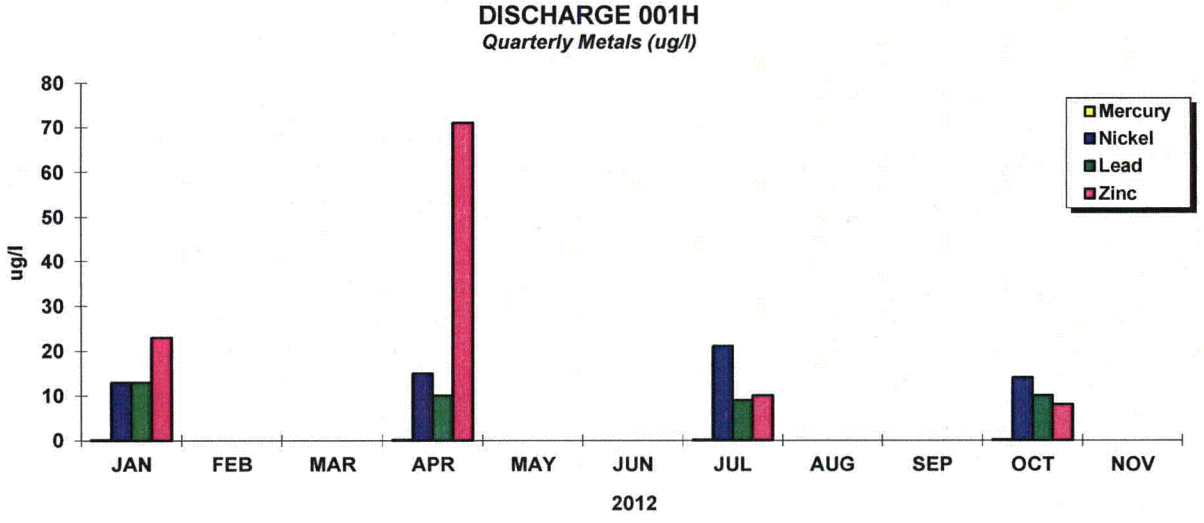
Note: The analyte was not detected at or above the detection limit for values plotted at zero.



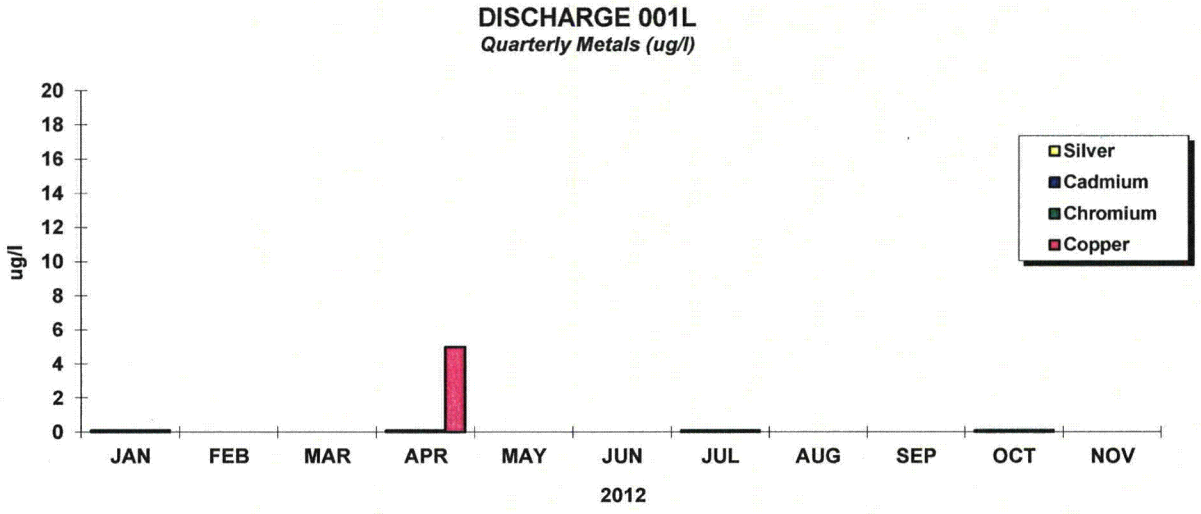
Note: The analyte was not detected at or above the detection limit for values plotted at zero.



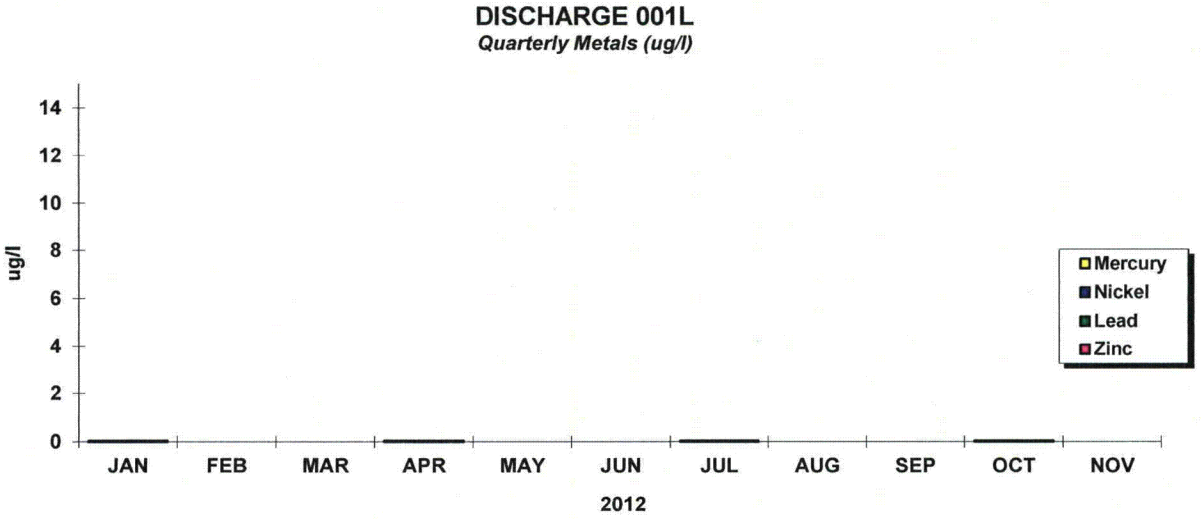
Note: The analyte was not detected at or above the detection limit for values plotted at zero.



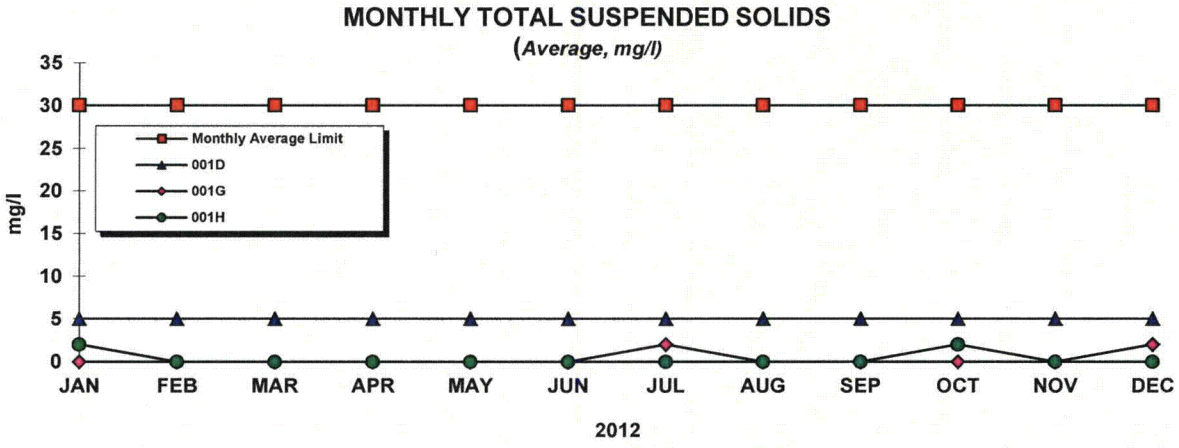
Note: The analyte was not detected at or above the detection limit for values plotted at zero.



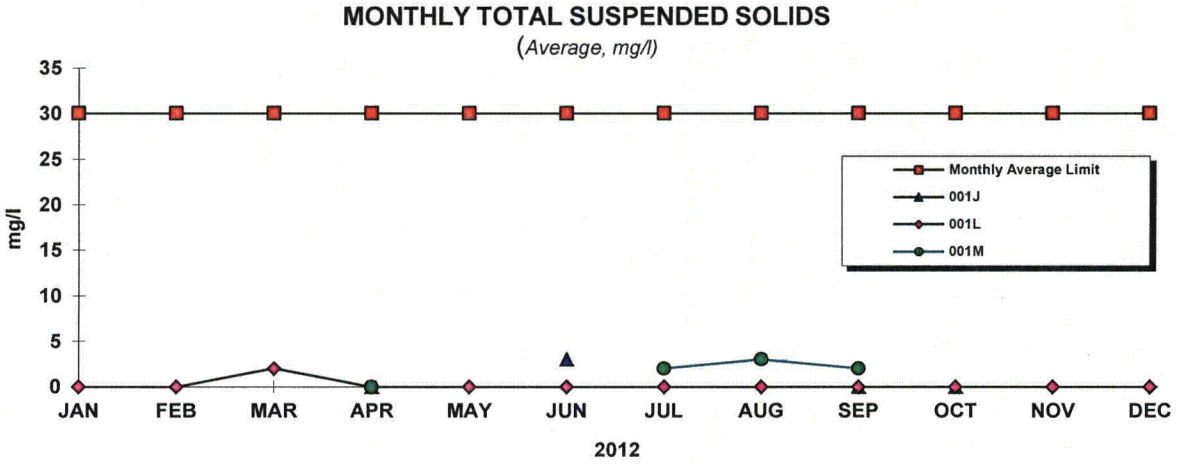
Note: The analyte was not detected at or above the detection limit for values plotted at zero.



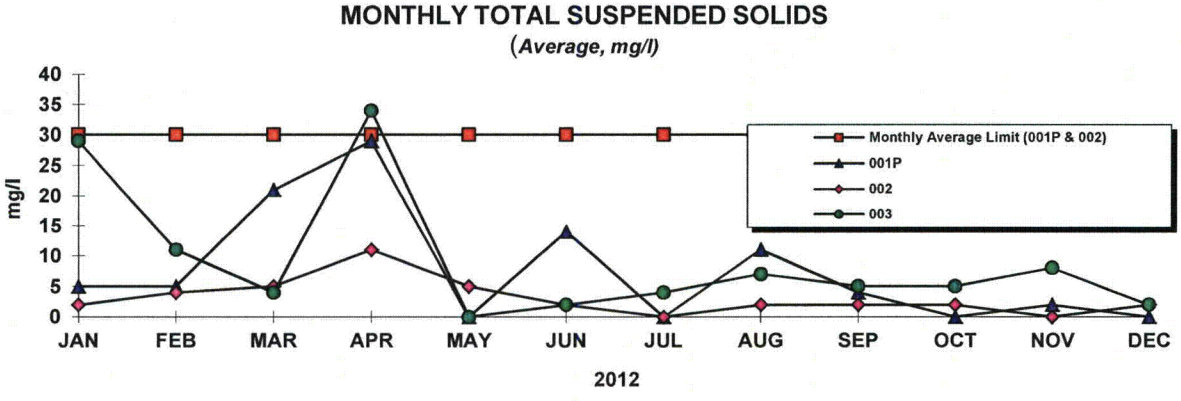
Note: The analyte was not detected at or above the detection limit for values plotted at zero.



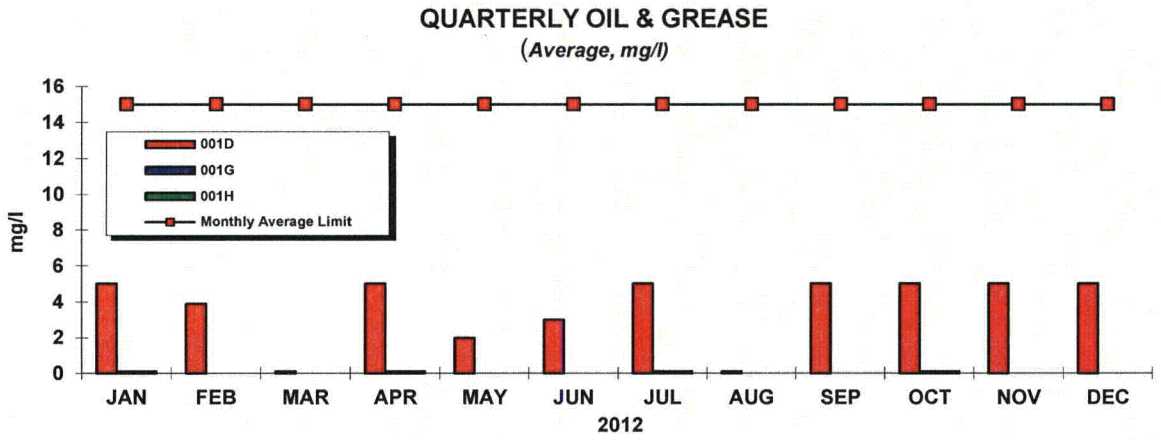
Note: Points on chart may overlap. Values plotted at zero were below the detection limit.



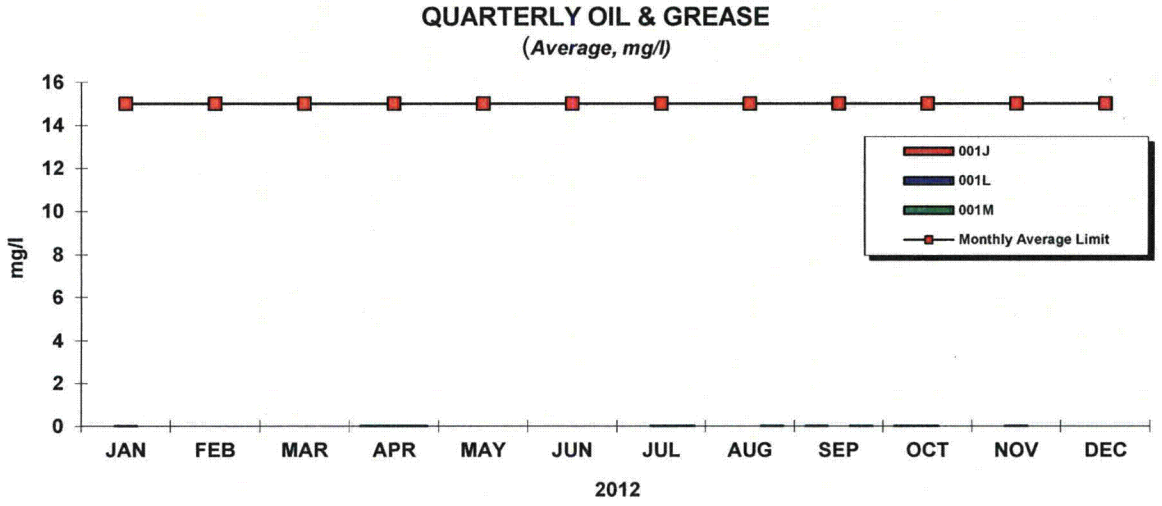
Note: Points on chart may overlap. Values plotted at zero were below the detection limit.



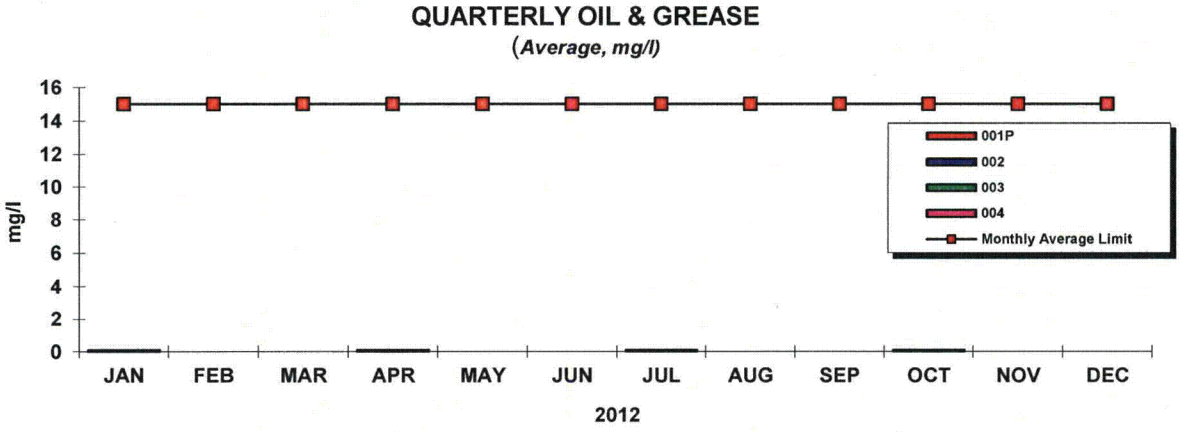
Note: Points on chart may overlap. Values plotted at zero were below the detection limit.
There is no limit for discharge 003. Therefore, the April 003 value of 34 does not exceed a limit.



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

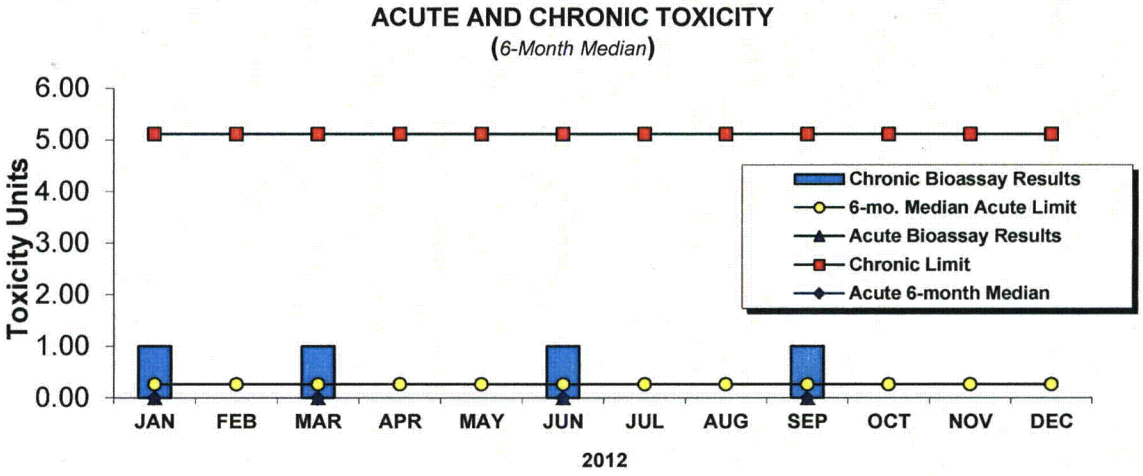


Note: Values plotted at zero were below the detection limit.



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

2012 Annual Summary Report on Discharge Monitoring
at the
Diablo Canyon Power Plant



Annual Discharge Monitoring Report

APPENDIX 4

SUMMARY OF RWMP MONITORING FOR 2012

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	Feb 17	Jun 07	Aug 31	Dec 24
Vertical Band Transects	5 / 4x	Feb 07	Jun 07	Aug 02	Dec 12
Benthic Stations	8 / 4x	Mar 09	Jun 28	Sep 11	Dec 11
Fish Observation Transects	12 / 4x	Apr 24	Jul 13	Oct 09	Jan 17, 2013
Bull Kelp Census	* / 1x	n/a	n/a	n/a	Oct 17
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).