50-275/323

Pacific Gas and Electric Company

David H. Oatley
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805.545.6000

February 25, 2000

PG&E Letter DCL-2000-510

Mr. Roger W. Briggs, Executive Officer
California Regional Water Quality Control Board
Central Coast Region
81 Higuera Street, Suite 200
San Luis Obispo, CA 93401-5414

Discharge Monitoring and Reporting Program
Diablo Canyon Power Plant -- NPDES No. CA0003751

Dear Mr. Briggs:

In accordance with Order 90-09, NPDES No. CA0003751, enclosed is the Annual Summary Report on Discharge Monitoring at Diablo Canyon Power Plant for the period January 1 through December 31, 1999.

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, please contact Drew Squyres at (805) 545-4439.

Sincerely,

David H. Oatley

Enclosures

2000510/RWL/kmo

IE25

cc: Chief, Environmental Services Division
California Department of Fish and Game
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1416 Ninth Street
Sacramento, CA 95814

Regional Administrator, Region 9
U. S. Environmental Protection Agency
75 Hawthorne Street
San Francisco, CA 94105
Attention: Carey Houk (W-5-3)

Resident Inspector, David Proulx
U.S. Nuclear Regulatory Commission
Diablo Canyon Power Plant 104/5

Regional Administrator
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Michael Thomas
California Regional Water Quality Control Board
Central Coast Region
81 Higuera St., Suite 200
San Luis Obispo, CA 93401-5414

ENCLOSURE 1

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

(NPDES NO. CA0003751)

1999

1999 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

TABLE OF CONTENTS

1999 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

OVERVIEW

A. This annual summary report follows the format used in quarterly monitoring reports. During 1999, discharges occurred from all discharge paths except 001I, 001K, 016, and 017.

B. The substances listed in Table B in the 1990 Ocean Plan were each analyzed for and reported in the permit renewal application for Diablo Canyon Power Plant (DCPP) submitted in October 1994. There have been no changes in the activities conducted at the plant that would have significantly affected the results previously reported in the above referenced document.

SUMMARY OF MONITORING PROGRAM

A. Monitoring of Plant Influent and Effluent

1. Monitoring Data

a. Appendix 1 provides a list of the 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 September on Discharges 005, 008, 009, 013, and 015. All results were less than 3 mg/l. No discharges occurred from 016 and 017 during 1999.

c. The annual grab sample results of Discharge 001D, Liquid Radioactive Waste Treatment System, for lithium, boron and hydrazine, were less than 0.020 mg/l, 2300 mg/l, and less than 0.050 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. Biennial internal audits and periodic procedure reviews assure that the manual remains current.

3. Laboratories Used to Monitor Compliance

a. PG&E Chemistry and Oceanography Laboratories, DCPP, Avila Beach, California

b. Aquatic Bioassay Consultants, Ventura, California

c. FGL Analytical, Santa Paula, California

d. PG&E, Technological and Environmental Services, Geotechnical Laboratory, San Ramon, California

e. Creek Environmental, San Luis Obispo, California

4. Sanitary Wastewater Treatment System (Discharge 001N)

The Sanitary Wastewater Treatment System (001N) is maintained and operated under contract by ECO Resources, Inc. The employees of ECO Resources are qualified by the State of California and hold the certifications identified below:

a. Dan Manchester: Grade 2, #8702

b. James Wysong: Grade 2, #8448

5. Review of Compliance Record and Corrective Actions

a. Circulating Water Pump Chlorination/Acti-Brom Monitoring

The 1999 quarterly NPDES reports discuss instances in which required monitoring for some chlorination cycles was not successfully performed or when Ocean Plan limits may have been exceeded. Listed below is a summary of the incidents. All incidents occurred in the 3rd quarter. A brief description of the cause of each incident is included.

The quarterly report for the 3rd quarter describes each of the incidents and corrective actions taken. Engineering evaluations (approved by the CCRWQCB 1/13/94; PG&E Letter No. DCL-94-002) for each event are also described. The evaluations conclude that discharge chlorine limits would not have been expected to be exceeded in the cases when the monitoring was not performed.

Date	Chlorination Cycle Monitoring Incidents	Cause
8/13/99 - 8/15/99	Unit 1 Low flow to monitor for 13 injection cycles	Clogging of the sample line with debris during this time period.
8/21/99 - 8/23/99	Unit 2 No sample for 12 injection cycles	Sample line was air bound. No sample reaching monitor during this time period.
8/24/99	Unit 2, 1300hrs injection. Monitor was in its warm up period	Monitor was calibrated too close to injection time.
9/23/99 - 9/25/99	Unit 1 Monitor biased low	Clogging of sample line with loose debris.

b. Drains of Closed Cooling Water Systems

PG&E received concurrence from the CCRWQCB in response to a letter dated July 19, 1995 (PG&E Letter DCL-95-156), to use the biocides glutaraldehyde and isothiazoline to control microbiological growth and corrosion in DCPP's closed cooling water systems. Any drainage from these systems is discharged at a flowrate 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 1999 from the component cooling water (CCW), intake cooling water (ICW), and service cooling water (SCW) systems are presented below:

Date	System	Volume (gal)	Glutaraldehyde (mg/l)	Isothiazoline (mg/l)	Reason & Comment
2/16/99	Unit 1 SCW	1100	74	10	Routine maintenance.
3/3/99	Unit 1 CCW	25	120	10	Routine maintenance.
3/6/99	Unit 1 CCW	30	126	10	Routine maintenance.
4/24/99	Unit 2 CCW	150	97	10	Routine maintenance.
4/27 - 5/5/99	Unit 2 SCW	99.2	110	10	Routine maintenance.
9/27/99	Unit 2 ICW	1100	150	0	Routine maintenance.
9/27/99	Unit 2 SCW	11000	115	0	Routine maintenance.
11/4/99	Unit 2 SCW	110	150	10	Routine maintenance
11/25/99	Unit 2 ICW	4500	150	10	Routine maintenance

c. Auxiliary Saltwater System Rhodamine Dye Tests

Rhodamine dye was not used to test flowmeters in the Auxiliary Saltwater (ASW) system during 1999.

d. January

On January 1, 1999, the Condensate Pump Discharge Header Overboard, Discharge 001J, was discovered to have been discharging continuously through a leaking valve from December 24, 1998 to January 1, 1999. Due to the unusual volume of condensate discharged during this event, a courtesy notification was made to the CCRWQCB concerning this discharge. No discharge limitations were exceeded.

e. February

On February 4, 1999, revisions to a series of operating procedures was approved as the corrective action to the December 1, 1998, apparent exceedance of the DCPP NPDES Total Residual Chlorine (TRC) permit time limit reported in the 1998 4th Quarter NPDES report.

f. April and May

On April 21, 1999, and May 18, 1999, the Oily Water Separator (OWS) did not operate according to design during the end of a process cycle. Upon each separate routine inspection, the OWS was found to be operating without the float assembly rotating.

On both dates, samples were taken in the annular ring of the OWS, which was representative of the effluent that was discharged. The oil and grease concentrations were non-detectable (less than 3 ppm), which indicated that DCPP was within NPDES permit limitations during the discharge cycles in question.

Courtesy notifications were made to Michael Thomas of the CCRWQCB on April 21, 1999, and May 20, 1999 . The notifications were in the form of telephone messages which stated that unless otherwise specified by Mr. Thomas, a discussion of this event would be included in the quarterly report in lieu of separate five-day reports.

The two incidents were a result of an overload relay being tripped. To prevent recurrence, the overload relay has been replaced.

g. October

On October 17, 1999, when contractor personnel were cleaning up their equipment near the end of the Unit 2 refueling outage, a small quantity of oil was discharged through NPDES Discharge 001L, Steam Generator Blowdown. The equipment being cleaned had been used to pressure wash the Unit 2 Steam Generators with filtered and recycled water during the outage. During the equipment clean up, water was drained from a holding tank within the equipment trailer. The water in this tank contained a small amount of oil due to the early removal of an oil filter from the equipment. This oil originated from a pump lube tank which had been observed to contain some oil (subsequent evaluations estimated this amount of oil as 4.6 ounces). During the equipment clean up, water was discharged to NPDES Discharge 001L from the holding tank.

When plant Chemistry personnel discovered that the now empty hold tank was partially coated with an oil film, an attempt was made to collect a sample from NPDES Discharge 001L. The discharge water had already passed the sampling point, and no sample was available. During the subsequent evaluation of the event, PG&E determined that an estimated 4.6 ounces of oil was discharged. The resulting Oil and Grease concentration was calculated to be between 30 to 70 milligrams per liter (mg/l) which is greater than the Daily Maximum discharge limitation of 20 mg/l for NPDES Discharge 001L. Michael Thomas, CCRWQCB, was notified, and he stated that the event could be detailed in the quarterly report in lieu of a 5 day report.

The contractor personnel involved in this event have been tailboarded on the proper cleaning and draining of their equipment. This event has been entered into the plant's problem

resolution process. This contractor owned equipment is only used during plant outages. The next scheduled use of this equipment will be in the Fall of 2000. Appropriate corrective actions to prevent recurrence of this event will be implemented prior to the next use of this equipment on site.

B. Monitoring of Receiving Water

1. Ecological Studies at Diablo Canyon

Marine ecological monitoring was continued during the first quarter of 1999 under the Ecological Monitoring Program (EMP). Starting with the second quarter, ecological monitoring was conducted under the Diablo Canyon Receiving Water Monitoring Program (RWMP) as requested in a letter from the CCRWQCB dated December 9, 1998 and as detailed in a letter from PG&E dated January 8, 1999. This revised program includes most of the 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). A table in Appendix 4 summarizes requirements and completed tasks for 1999.

2. Temperature Monitoring

Temperature was monitored continuously at twenty minute intervals at eight intertidal stations and eight subtidal stations during the first quarter. For the remainder of 1999 temperature was monitored at twelve intertidal and eight subtidal stations as required in the revised RWMP.

3. Dissolved Oxygen Measurements of the Receiving Water

Dissolved oxygen was measured at eight subtidal stations on March 18, 1999. Under the revised RWMP, dissolved oxygen sampling is no longer required.

4. Shell Debris Deposition Study

The shell debris deposition study was completed in 1999 as part of the revised RWMP described above.

5. In-Situ Bioassay

Results of the Mussel Watch program as related to Diablo Canyon Power Plant and other locations will be reported to the CCRWQCB directly from the California Department of Fish and Game in their periodic report for this program.

C. Acti-Brom Treatment Program

During 1999, DCPP continued its integrated Acti-Brom and "foul release coating" strategy to control macrofouling in the Circulating Water System (CWS). Acti-Brom is a sodium bromide solution with an added biodispersant that is used, in combination with sodium hypochlorite, to control settlement and growth of biofouling organisms. The program consists of six daily 20 minute injections (at four hour intervals) of a 1:1 molar ratio blend of Acti-Brom and sodium hypochlorite to all four of DCPP's intake conduits. Injection rates are adjusted to produce a nominal 200 ppb total residual oxidant (TRO) level in each treated conduit. The corresponding concentration measured at DCPP's discharge ranges from approximately 20 ppb to 60 ppb.

Both Unit 1 circulating water conduits were treated with sodium hypochlorite twice daily for microfouling control from the beginning of 1999 until February 3 when injections were terminated for the Unit 1 refueling outage. Each Unit 1 conduit began sodium hypochlorite and Acti-Brom treatment once the associated circulating water pump was restarted in the first few weeks of March. Simultaneous sodium hypochlorite and Acti-Brom treatment of both Unit 1 conduits continued through the end of the year. There were several interruptions in treatment during the year due to condenser cleaning, piping repair, power supply problems and plant load reductions.

Simultaneous sodium hypochlorite and Acti-Brom treatment of both Unit 2 conduits continued from the first of the year to April 16, 1999, when Acti-Brom injections were terminated in anticipation of Unit 2 tunnel cleaning. Twice daily injections of sodium hypochlorite continued until April 25, 1999 to control microfouling in the condenser. Simultaneous sodium hypochlorite and Acti-Brom injections were resumed after the Unit 2 tunnel cleaning on April 28 for conduit 2-1 and April 27 for conduit 2-2. These injections continued until July 30, 1999, when Acti-Brom injections were again terminated in anticipation of the Unit 2 refueling outage. Twice daily injections of sodium hypochlorite continued until September 20, 1999 to control microfouling in the condenser. Simultaneous sodium hypochlorite and Acti-Brom treatment resumed after the Unit 2 refueling outage on October 21, 1999 for conduit 2-1 and on October 28, 1999 for conduit 2-2. This chemical treatment continued through the rest of 1999. There were several interruptions in treatment due to piping repair, flow problems, and plant load reductions.

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

APPENDIX 2

TABULAR SUMMARIES OF INFLUENT AND EFFLUENT MONITORING

1999 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

DISCHARGE 001

TEMPERATURE (DEG F)

	INFLUENT			EFFLUENT			MONTHLY DELTA T		FLOW (MGD)		
Month	high	low	avg	high	low	avg	high	avg	high	low	avg
JAN	55.7	52.1	54.0	75.5	72.0	73.8	20.1	19.8	2566	2479	2556
FEB	54.0	49.3	52.3	74.2	70.0	72.4	20.8	20.2	2566	1291	1604
MAR	52.7	49.1	50.6	72.9	62.4	67.4	20.4	16.9	2568	1285	2186
APR	51.8	47.6	49.8	72.2	63.4	69.6	21.3	19.9	2564	1926	2486
MAY	53.0	47.8	49.7	72.5	67.4	69.1	19.7	19.4	2485	2485	2485
JUN	56.2	48.0	51.3	75.5	67.4	70.7	19.7	19.4	2485	2485	2485
JUL	56.4	50.6	53.8	76.8	70.3	73.7	20.6	19.9	2503	2503	2503
AUG	54.5	50.3	52.2	74.2	69.9	71.9	20.0	19.7	2503	2503	2503
SEP	56.8	52.5	54.9	76.2	70.8	74.2	20.7	19.3	2503	1238	2249
OCT	55.7	52.9	54.4	75.2	55.5	70.8	19.6	16.4	2122	521	1400
NOV	56.3	51.7	54.4	76.4	58.1	73.0	20.4	18.6	2504	2059	2471
DEC	54.3	51.8	52.9	73.6	70.9	72.1	19.5	19.2	2504	2342	2498
limit:		-			-		22		2760		

The INFLUENT and EFFLUENT "high" and "low" values correspond to the highest and lowest daily average value for that month. The INFLUENT high and low does not necessarily correspond to the same day as the high and low for the EFFLUENT for that month. The "avg" 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 values. The "Avg" is calculated from INF and EFF monthly avg values.

DISCHARGE 001

	TOTAL CHLORINE RESIDUAL (ug/l)			TOTAL CHLORINE USED (lbs/day)		
Month	high	low	avg	high	low	avg
JAN	46	<10	20	432	112	377
FEB	30	<10	20	370	246	292
MAR	30	<10	9	576	276	458
APR	20	<10	<10	534	96	407
MAY	50	17	26	475	388	421
JUN	63	<10	31	552	474	495
JUL	51	21	33	706	323	580
AUG	30	12	22	418	305	376
SEP	67	<10	20	547	87	404
OCT	63	<10	20	492	330	386
NOV	50	<10	11	835	417	712
DEC	88	<10	21	792	552	620

Limit: Note that the residual chlorine limit in Permit 90-09 is a daily max of 200 ug/l and includes a time-based limit (per the Ocean Plan) that depends on the length of each chlorination cycle.

1999 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

DISCHARGE 001

METALS (ug/l)

	CHROMIUM		COPPER		NICKEL		ZINC	
Month	Influent	Effluent	Influent	Effluent	Influent	Effluent	Influent	Effluent
JAN	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
FEB	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
MAR	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
APR	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
MAY	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
JUN	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
JUL	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	10	ND(10)
AUG	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
SEP	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
OCT	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
NOV	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	10	ND(10)
DEC	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)	ND(10)
limit:		10	-	10	-	30	-	70

DISCHARGE 001
VARIOUS ANNUAL ANALYSES
(ug/l)

Parameter	Influent	Effluent	Effluent Limit
Arsenic	2	2	30
Cadmium	0	0	10
Cyanide	ND(10)	ND(10)	30
Lead	0	0	10
Mercury	ND(0.005)	ND(0.005)	0.2
Silver	0	0	2.9
Titanium	-	ND(5)	none
Phenolic Cmpds (non-chlorinated)	ND(2.1)	ND(2.1)	150
Phenolic Cmpds (chlorinated)	ND(1.3)	ND(1.3)	10
PCB's	ND(1.6)	ND(1.6)	

Note: Annual samples were collected in October

DISCHARGE 001

AMMONIA (as N) (ug/l)

Month	Influent	Effluent
JAN		
FEB	ND(200)	ND(200)
MAR		
APR	ND(200)	ND(200)
MAY		
JUN		
JUL	ND(200)	ND(200)
AUG		
SEP		
OCT		
NOV		
DEC	ND(200)	ND(200)
limit:	-	3060

1999 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

MONTHLY pH

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

DISCHARGE 001F

	GREASE & OIL (mg/l)		SUSPENDED SOLIDS (mg/l)	
Month	high	avg	high	avg
JAN	<3	<3	ND(5)	ND(5)
FEB	<3	<3	ND(5)	ND(5)
MAR	<3	<3	ND(5)	ND(5)
APR	<3	<3	ND(5)	ND(5)
MAY	<3	<3	ND(5)	ND(5)
JUN	<3	<3	ND(5)	ND(5)
JUL	<3	<3	8	8
AUG	<3	<3	ND(5)	ND(5)
SEP	<3	<3	ND(5)	ND(5)
OCT	<3	<3	ND(5)	ND(5)
NOV	<3	<3	ND(5)	ND(5)
DEC	<3	<3	ND(5)	ND(5)
limit:	20	15	100	30

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

DISCHARGE 001N

	GREASE & OIL (mg/l)			SUSPENDED SOLIDS (mg/l)			SETTLEABLE SOLIDS (mg/l)		
Month	high	low	avg	high	low	avg	high	low	avg
JAN	ND(5)	ND(5)	ND(5)	9	ND(5)	<2	ND(0.1)	ND(0.1)	ND(0.1)
FEB	6	ND(5)	<5	24	12	18.3	ND(0.1)	ND(0.1)	ND(0.1)
MAR	7	ND(5)	3	18	7	14	ND(0.1)	ND(0.1)	ND(0.1)
APR	11	ND(5)	<5	16	ND(5)	10	ND(0.1)	ND(0.1)	ND(0.1)
MAY	ND(5)	ND(5)	ND(5)	11	5	8	ND(0.1)	ND(0.1)	ND(0.1)
JUN	ND(5)	ND(5)	ND(5)	10	ND(5)	<3	ND(0.1)	ND(0.1)	ND(0.1)
JUL	ND(5)	ND(5)	ND(5)	29	ND(5)	12	ND(0.1)	ND(0.1)	ND(0.1)
AUG	<6	<5	<6	14	ND(5)	10	ND(0.1)	ND(0.1)	ND(0.1)
SEP	ND(5)	ND(5)	ND(5)	25	9	17	<0.1	<0.1	<0.1
OCT	ND(5)	ND(5)	ND(5)	24	7	15	ND(0.1)	ND(0.1)	ND(0.1)
NOV	ND(5)	ND(5)	ND(5)	47	14	24	ND(0.1)	ND(0.1)	ND(0.1)
DEC	ND(5)	ND(5)	ND(5)	26	6	13	ND(0.1)	ND(0.1)	ND(0.1)
limit:	20	-	15	-	-	60	3	-	1

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

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at the
Diablo Canyon Power Plant

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

	001D				001H				001L				001 F			
Month	Ag	Cd	Cr	Cu	Ag	Cd	Cr	Cu	Ag	Cd	Cr	Cu	Ag	Cd	Cr	Cu
JAN	ND(10)	ND(5)	ND(10)	10	ND(10)	ND(5)	10	45	ND(10)	ND(5)	ND(10)	5	ND(10)	ND(5)	ND(10)	ND(10)
FEB																
MAR																
APR	ND(10)	9	ND(10)	10	ND(10)	ND(5)	15	85	ND(10)	ND(5)	ND(10)	40	ND(10)	ND(5)	30	80
MAY																
JUN																
JUL	ND(10)	ND(5)	ND(10)	ND(10)	ND(10)	ND(5)	10	70	ND(10)	ND(5)	ND(10)	ND(10)	ND(10)	ND(5)	ND(10)	20
AUG																
SEP																
OCT	ND(10)	ND(5)	ND(10)	20	ND(10)	ND(5)	15	45	ND(10)	ND(5)	ND(10)	ND(10)	ND(10)	ND(5)	ND(10)	40
NOV																
DEC																

limit: none

Note: 001D, 001H and 001L analyses performed on quarterly composites. 001F analyses performed on a weekly composite, once per quarter.

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

	001D				001H				001L				001 F			
Month	Hg	Ni	Pb	Zn	Hg	Ni	Pb	Zn	Hg	Ni	Pb	Zn	Hg	Ni	Pb	Zn
JAN	0.3	ND(10)	ND(5)	150	ND(.02	20	7	10	ND(.02)	ND(10)	ND(5)	ND(20)	ND(.02	ND(10)	ND(5)	70
FEB																
MAR																
APR	0.12	ND(10)	ND(10)	120	0.13	10	120	10	ND(.02)	ND(10)	ND(10)	ND(20)	1.4	20	170	180
MAY																
JUN																
JUL	0.4	ND(10)	ND(10)	90	0.17	15	35	220	ND(.02)	ND(10)	ND(10)	ND(20)	0.03	ND(10)	150	40
AUG																
SEP																
OCT	0.07	ND(10)	ND(10)	120	0.05	10	<10	25	ND(.02)	ND(10)	ND(10)	ND(20)	0.03	60	ND(10)	20
NOV																
DEC																

limit: none

Note: 001D, 001H and 001L analyses performed on quarterly composites. 001F analyses performed on a weekly composite, once per quarter.

1999 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	6	ND(5)	ND(5)		ND(5)		ND(5)	5	16	5	ND(5)
FEB	7	ND(5)	ND(5)		ND(5)		ND(5)	7	11	ND(5)	6
MAR	9	ND(5)	9		6		ND(5)	11	8	ND(5)	ND(5)
APR	14	ND(5)	ND(5)				ND(5)		ND(5)	6	6
MAY	<5	ND(5)	ND(5)				ND(5)	10	ND(5)	ND(5)	ND(5)
JUN	10	ND(5)	ND(5)				ND(5)		ND(5)	ND(5)	15
JUL	<5	ND(5)	ND(5)				ND(5)		ND(5)	ND(5)	15
AUG	8	ND(5)	ND(5)				ND(5)		ND(5)	ND(5)	6
SEP	5	ND(5)	ND(5)		ND(5)		ND(5)	10	ND(5)	<5	ND(5)
OCT	<5	ND(5)	ND(5)		ND(5)		ND(5)	9	6	5	6
NOV	5	ND(5)	ND(5)		ND(5)		ND(5)	14	ND(5)	ND(5)	ND(5)
DEC	<5	ND(5)	5				ND(5)		11	ND(5)	6
Limit:	30	30	30	30	30	30	30	30	30	30	30

Note: No discharges occurred from 001I and 001K during 1999. 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	<2		<3		<3		<3	3	<3	<3	<3	<3
FEB	6	<3						5				
MAR			<3		<3			<3				
APR	<3	<3	<3				<3		<3	<3	<3	
MAY	2							<3				
JUN												
JUL	<3	<3	<3				<3		<3	<3	<3	<3
AUG	7											
SEP	<3				<3			<3				
OCT	<3	<3	<3		<3		<3	<3	<3	<3	<3	3
NOV								6				
DEC	<3											
Limit:	15	15	15	15	15	15	15	15	15	15	15	15

Note: No discharges occurred from 001I and 001K during 1999. For discharge 001J, discharges did not necessarily occur each quarter. Samples were grabbed when discharges did occur.

1999 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

QUARTERLY ACUTE AND CHRONIC TOXICITY TESTING

Month	ACUTE Test Result	ACUTE 6-Month Median	*CHRONIC Test Result	
JAN				
FEB	0.0	0.0	1.0	**
MAR				
APR				
MAY	0.0	0.0	1.0	
JUN				
JUL				
AUG	0.0	0.0	1.0	
SEP				
OCT	0.0	0.0	1.0	
NOV				
DEC				
Limit:		0.26	5.11	

* It should be noted that this parameter is monitored for the State Ocean Plan instead of the NPDES permit. A value of 1.0 indicates no chronic toxicity.

** Two chronic toxicity tests were performed during the first quarter to ensure that samples included steam generator blowdown. Results from both tests were 1.0.

APPENDIX 3

GRAPHICAL SUMMARIES OF INFLUENT AND EFFLUENT MONITORING

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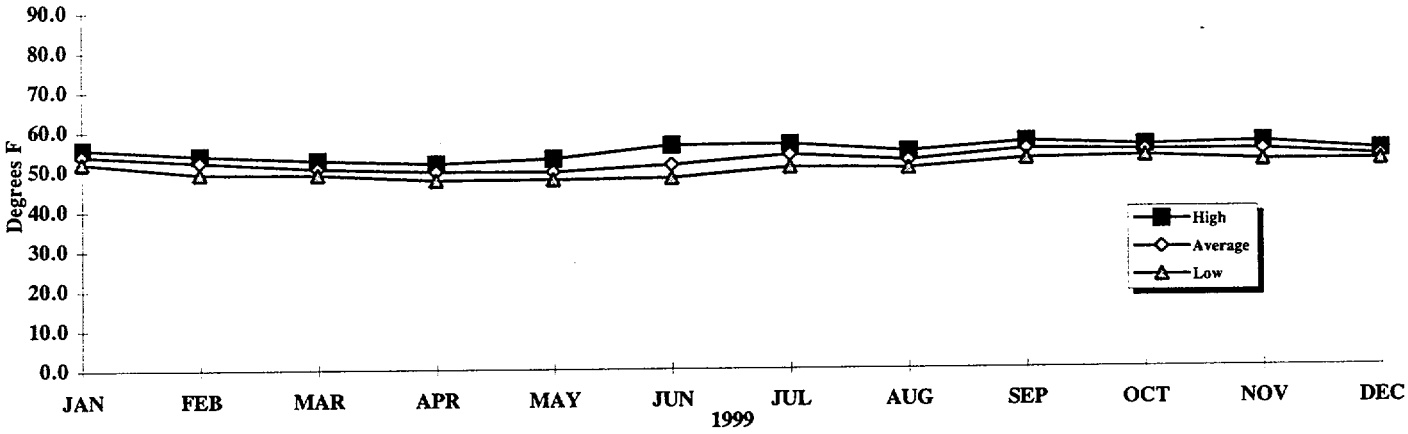
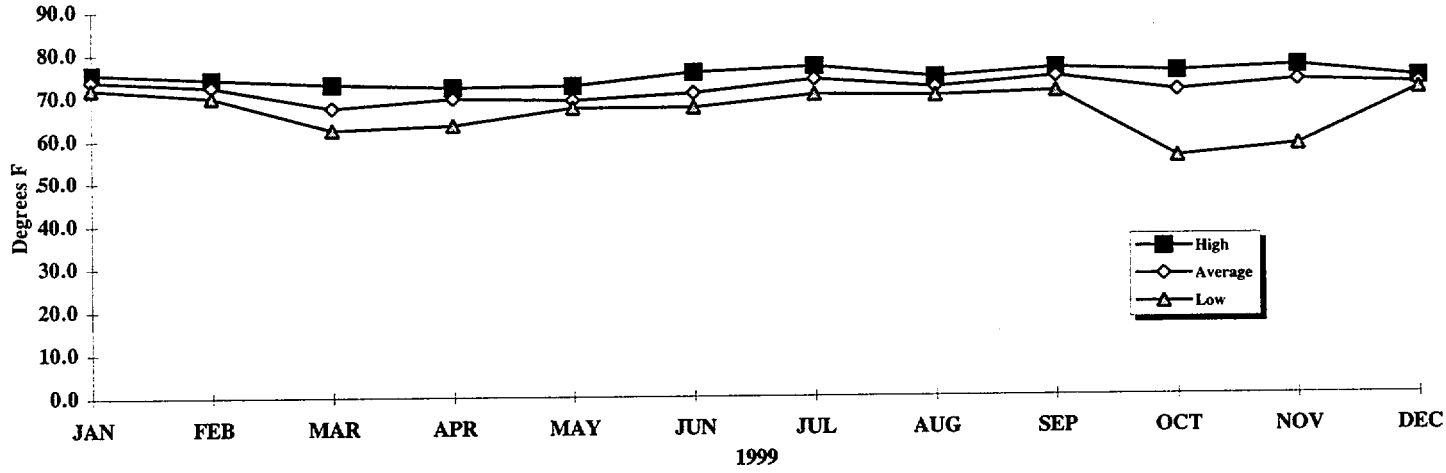
DISCHARGE 001 INFLUENT

Temperature (°F)



DISCHARGE 001 EFFLUENT

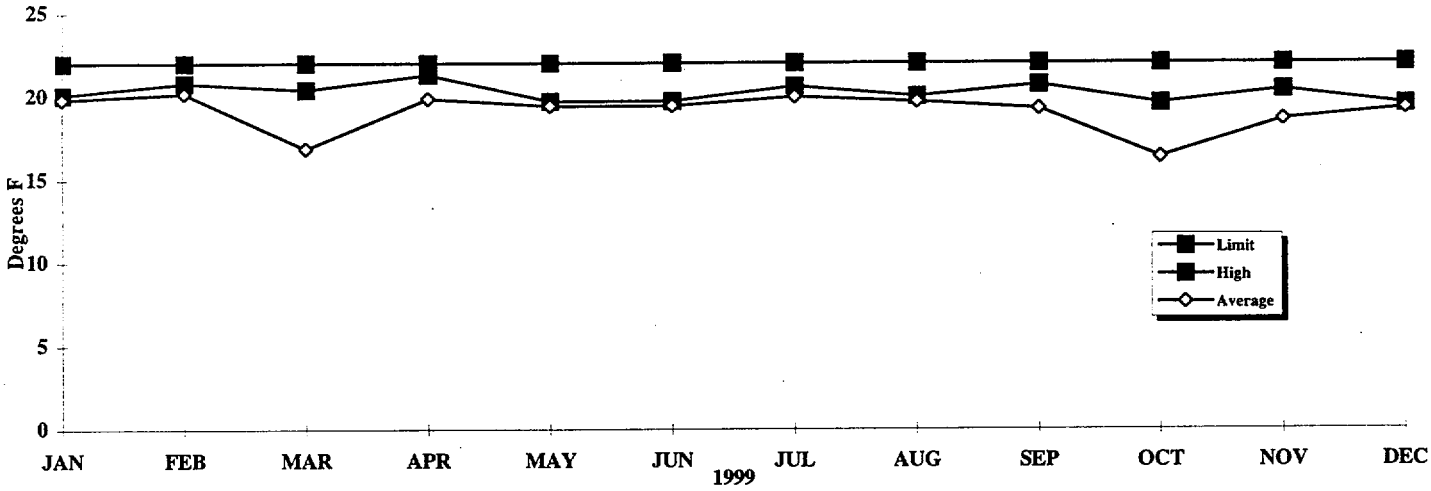
Temperature (°F)



1999 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

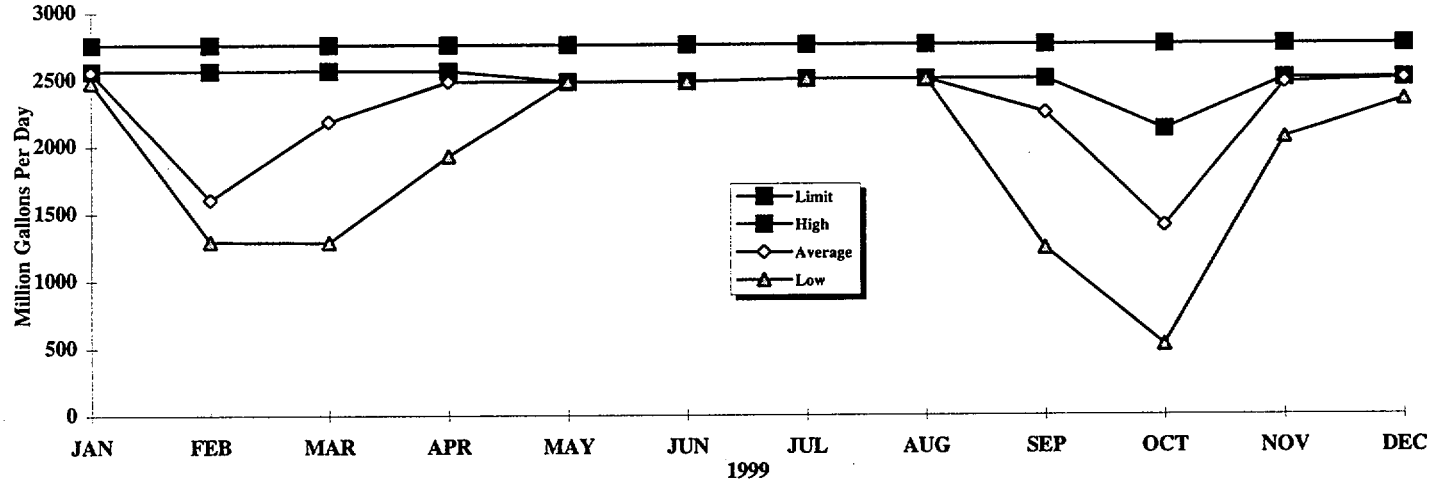
DISCHARGE 001 EFFLUENT

Monthly Delta T (°F)



DISCHARGE 001 EFFLUENT

Flow (MGD)



1999 Annual Summary Report on Discharge Monitoring
at the
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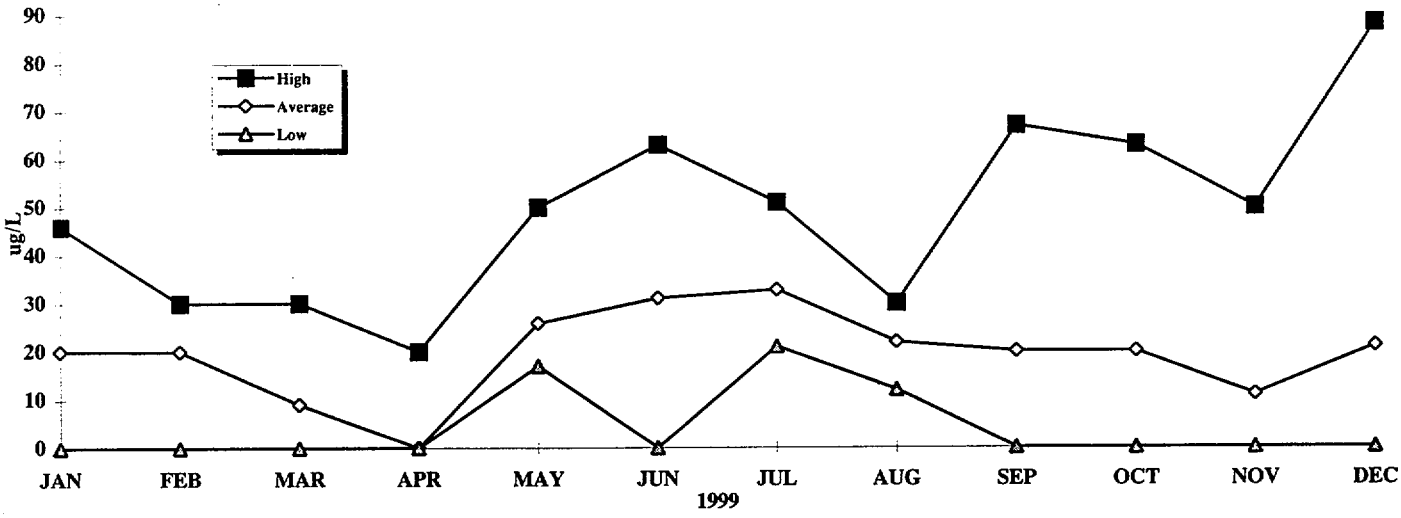
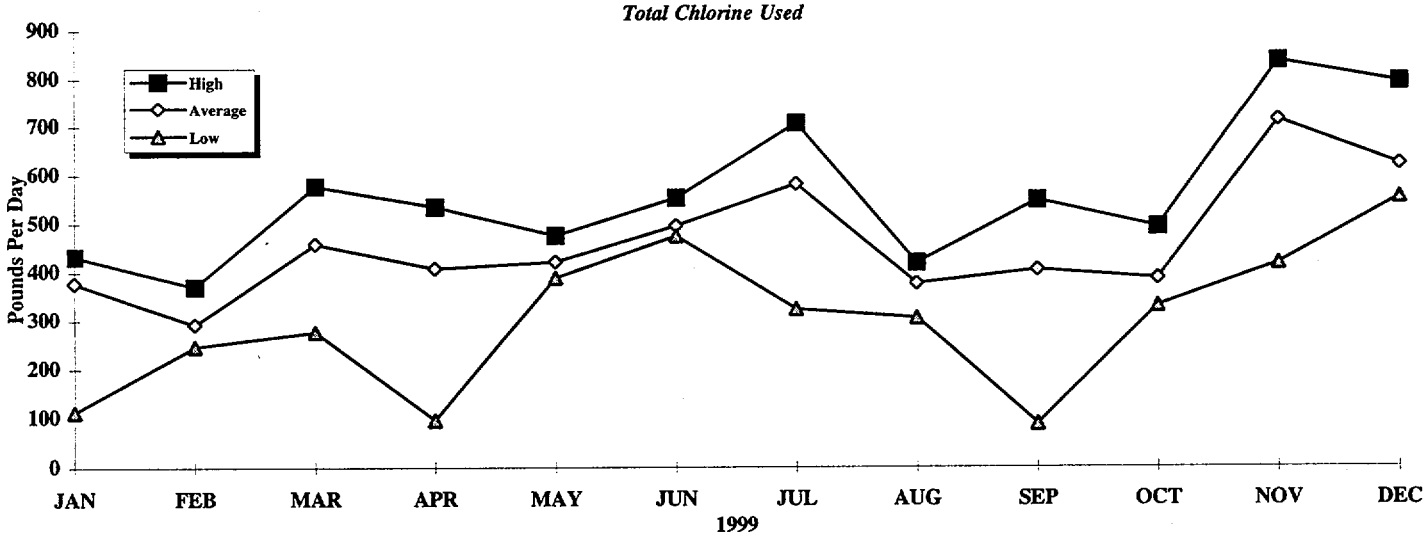
DISCHARGE 001

Total Chlorine Residual



DISCHARGE 001

Total Chlorine Used



1999 Annual Summary Report on Discharge Monitoring
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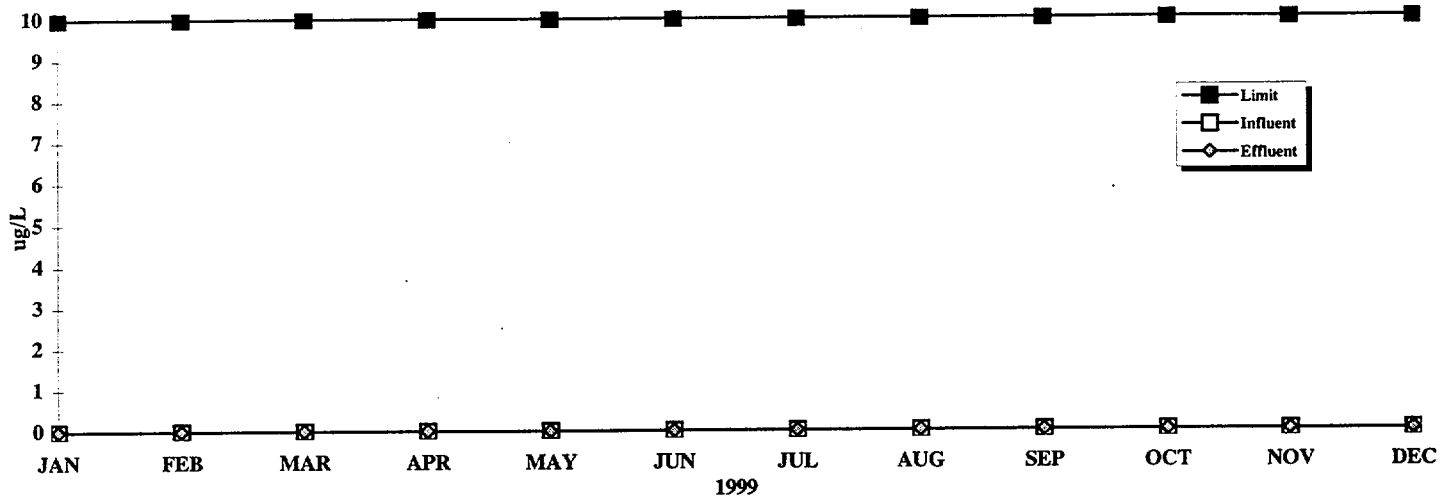
DISCHARGE 001

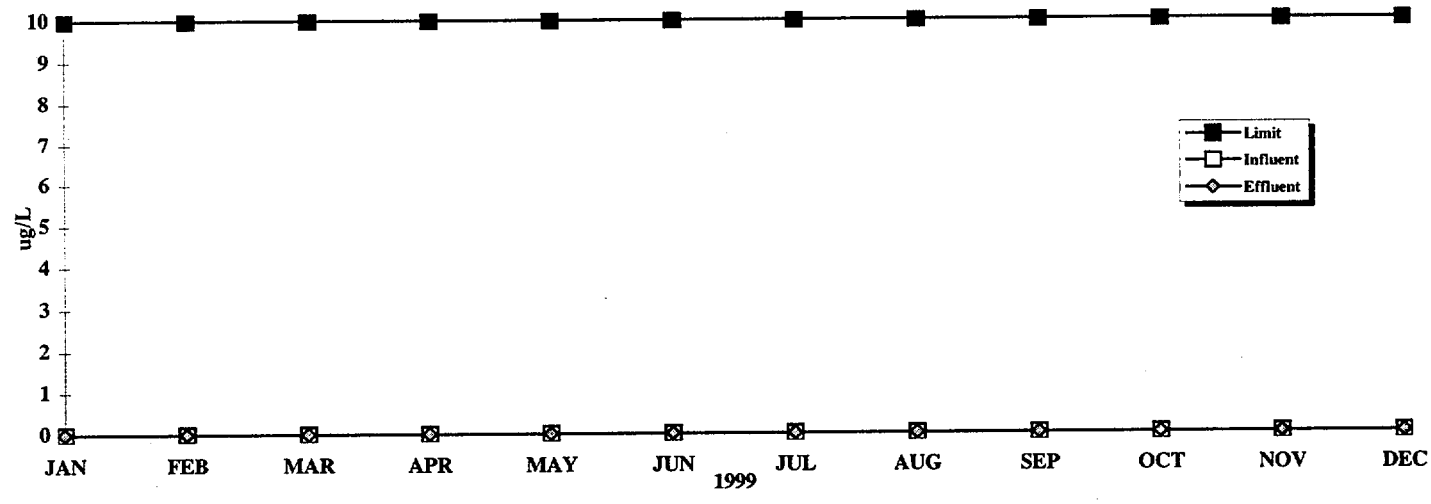
Chromium



Note: Some Influent and Effluent data points overlap on chart
Chromium not detected in any sample. Method reporting limit is 10 ug/l.

DISCHARGE 001

Copper



Note: Some Influent and Effluent data points overlap on chart
Copper was not detetecd in any sample this year. Method reporting limit is 10 ug/l.

1999 Annual Summary Report on Discharge Monitoring
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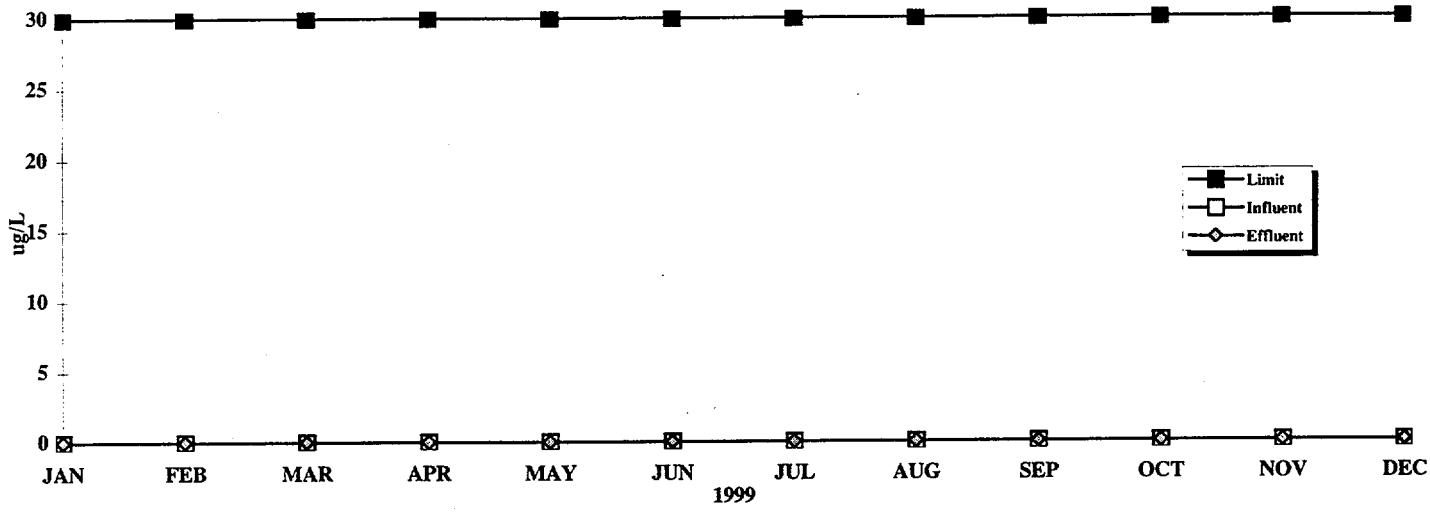
DISCHARGE 001

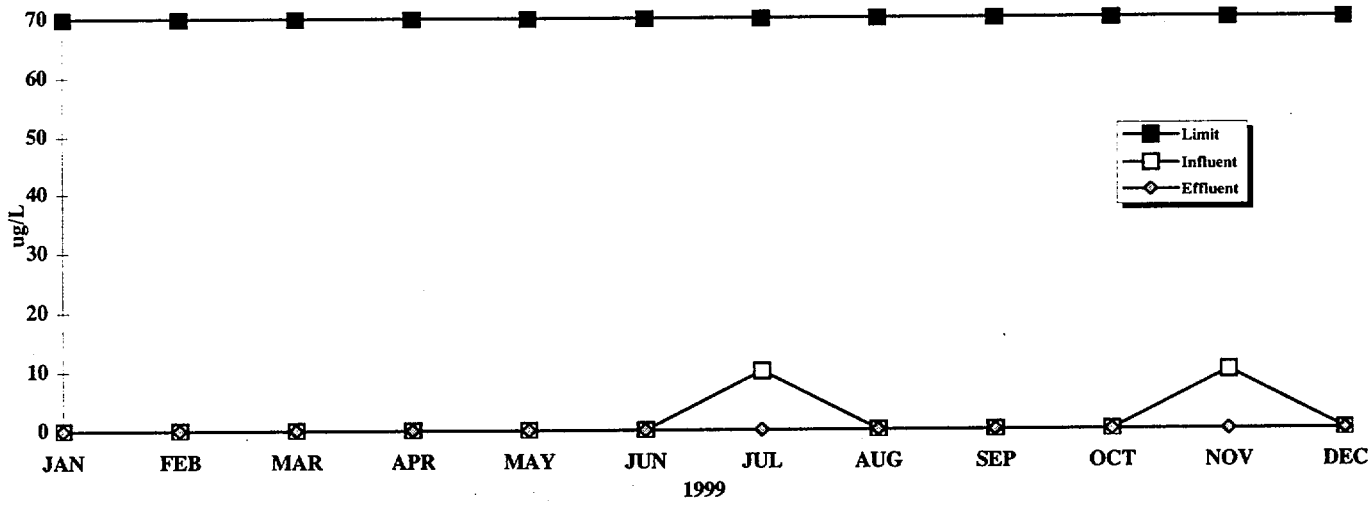
Nickel



Note: Some Influent and Effluent data points overlap on chart
Nickel was not detected in any sample. Method repoting limit is 10 ug/l.

DISCHARGE 001

Zinc



Note: Some Influent and Effluent data points overlap on chart
Zinc only detected in two influent samples. Method reporting limit is 10 ug/l.

1999 Annual Summary Report on Discharge Monitoring
at the
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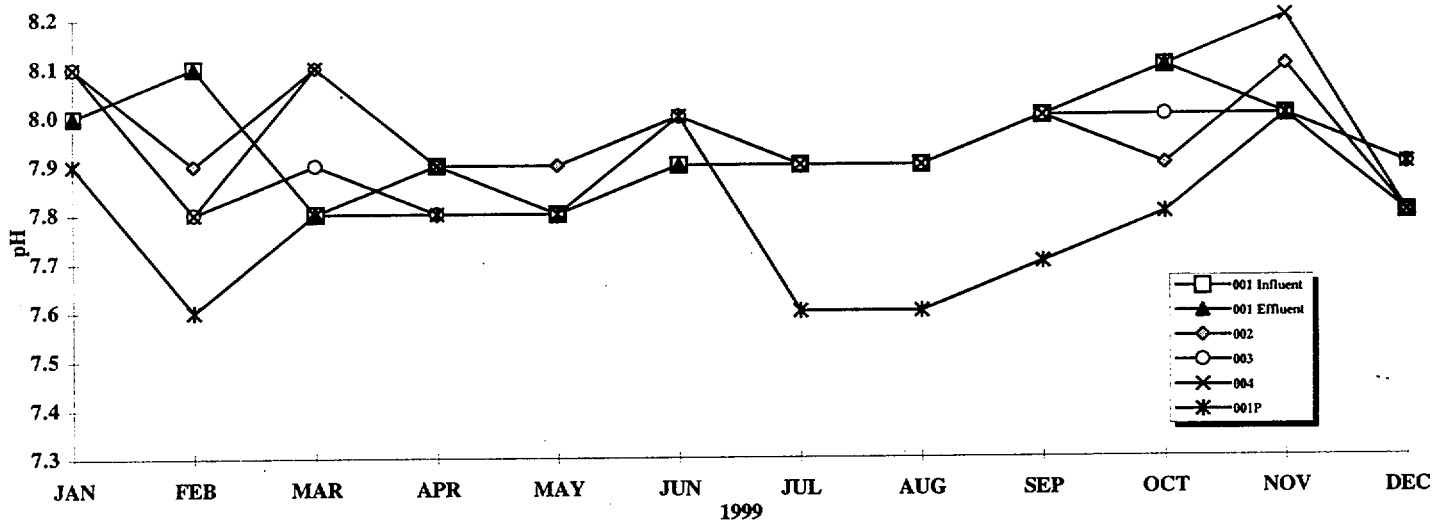
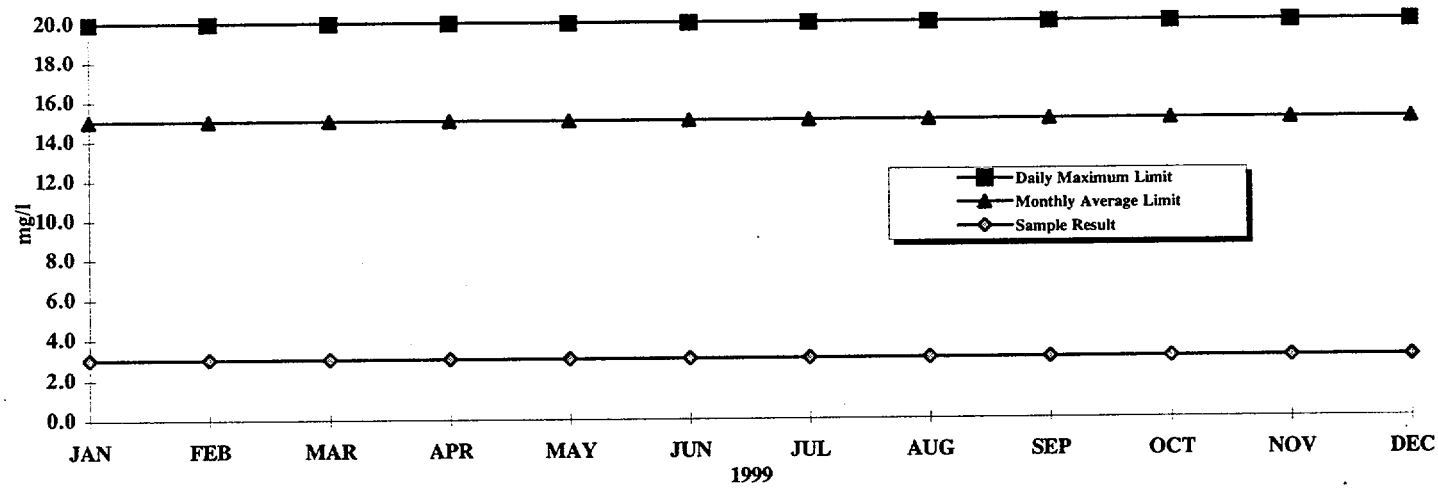
DISCHARGE pH



DISCHARGE 001F

Grease& Oil

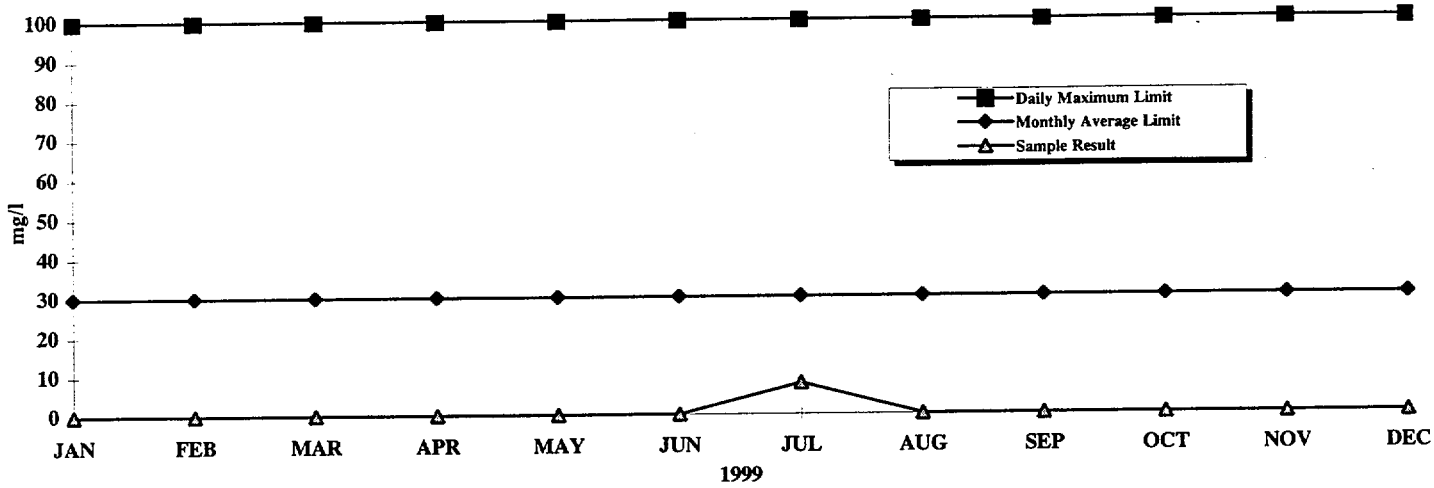


Note: Values shown are the method reporting limit.

1999 Annual Summary Report on Discharge Monitoring
at the
Diablo Canyon Power Plant

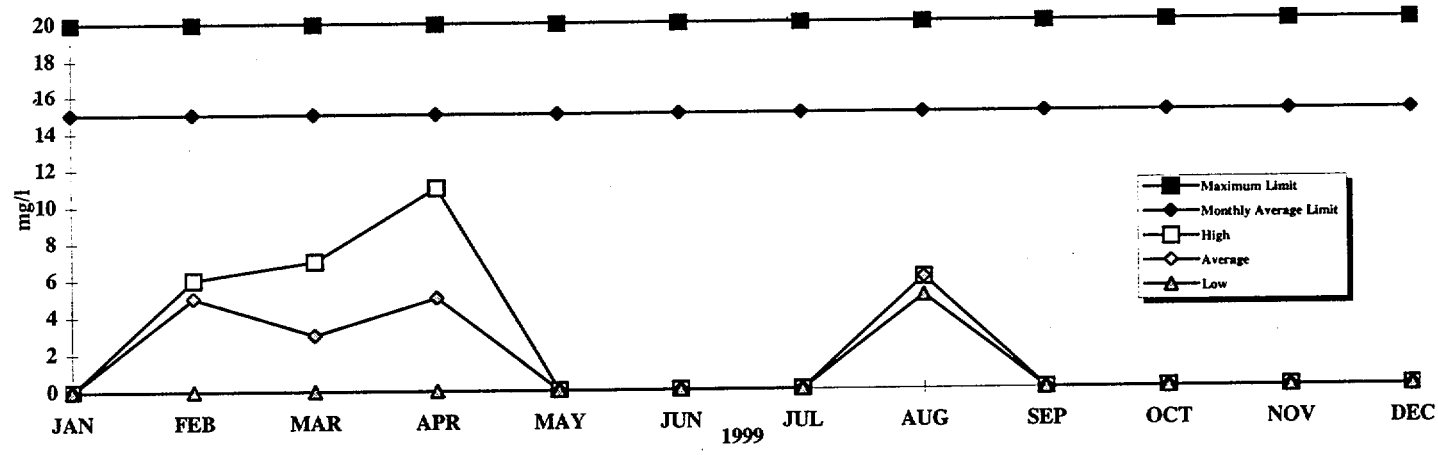
DISCHARGE 001F

Suspended Solids



DISCHARGE 001N

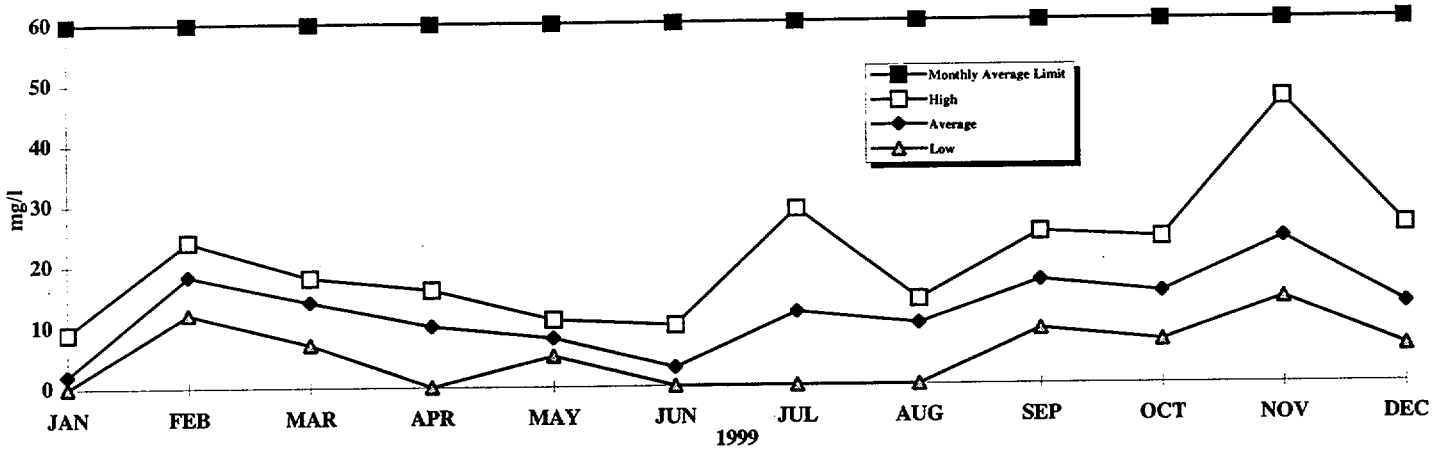
Grease& Oil



1999 Annual Summary Report on Discharge Monitoring
at the
Diablo Canyon Power Plant

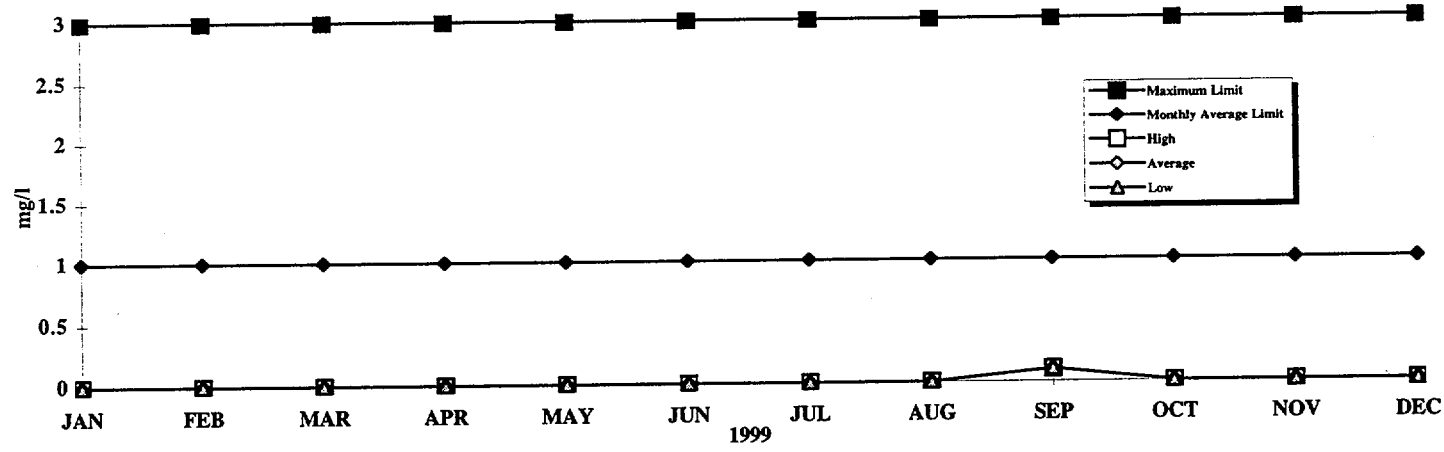
DISCHARGE 001N

Suspended Solids



DISCHARGE 001N

Settleable Solids

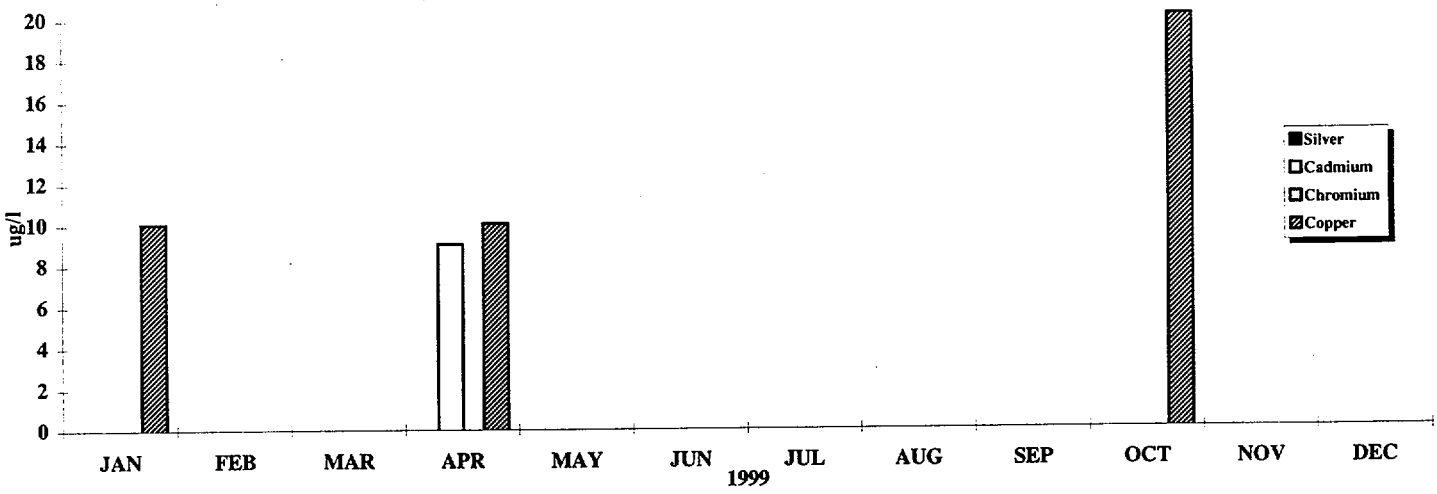


Note: Some Influent and Effluent data points overlap on chart.

1999 Annual Summary Report on Discharge Monitoring
at the
Diablo Canyon Power Plant

DISCHARGE 001D

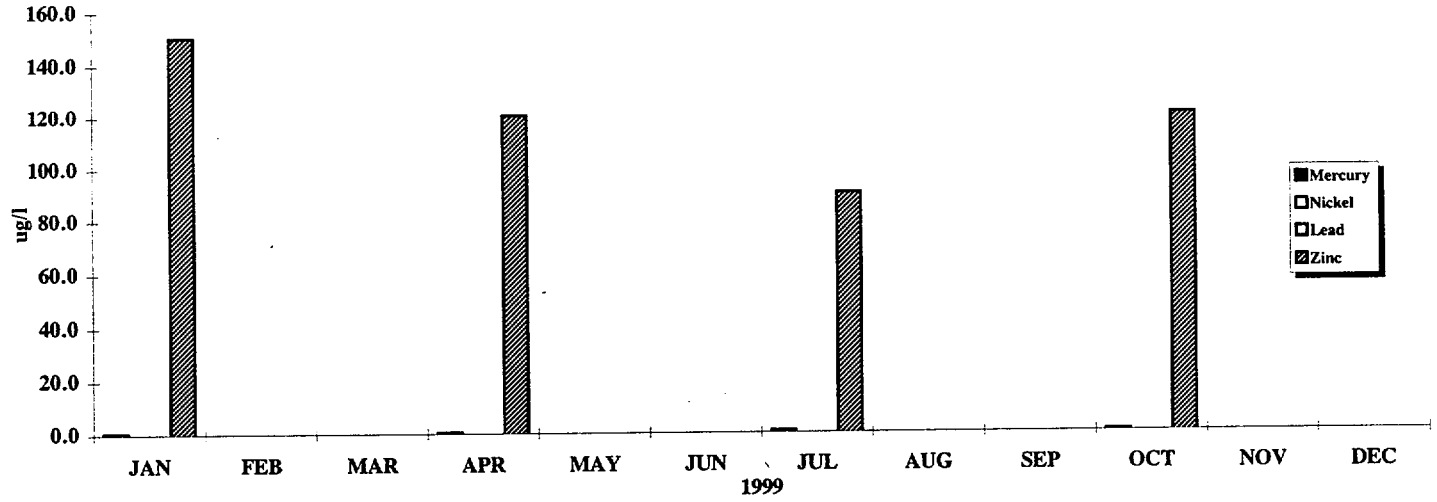
Quarterly Metals



Non-detected metals shown as zero.

DISCHARGE 001D

Quarterly Metals



Non-detected metals shown as zero.

1999 Annual Summary Report on Discharge Monitoring
at the
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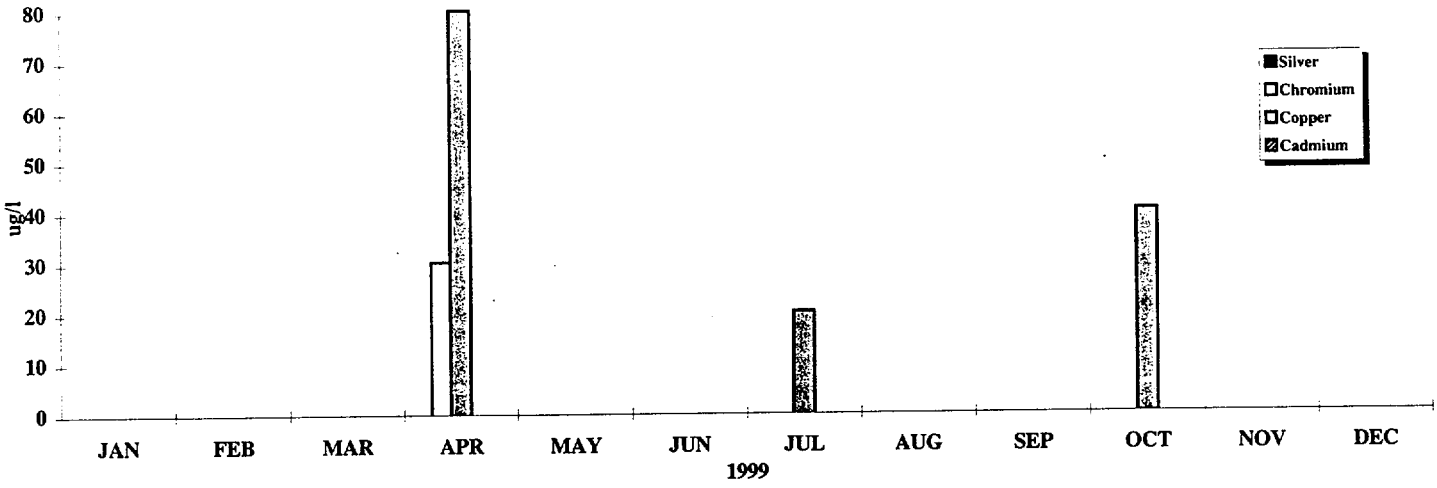
DISCHARGE 001F

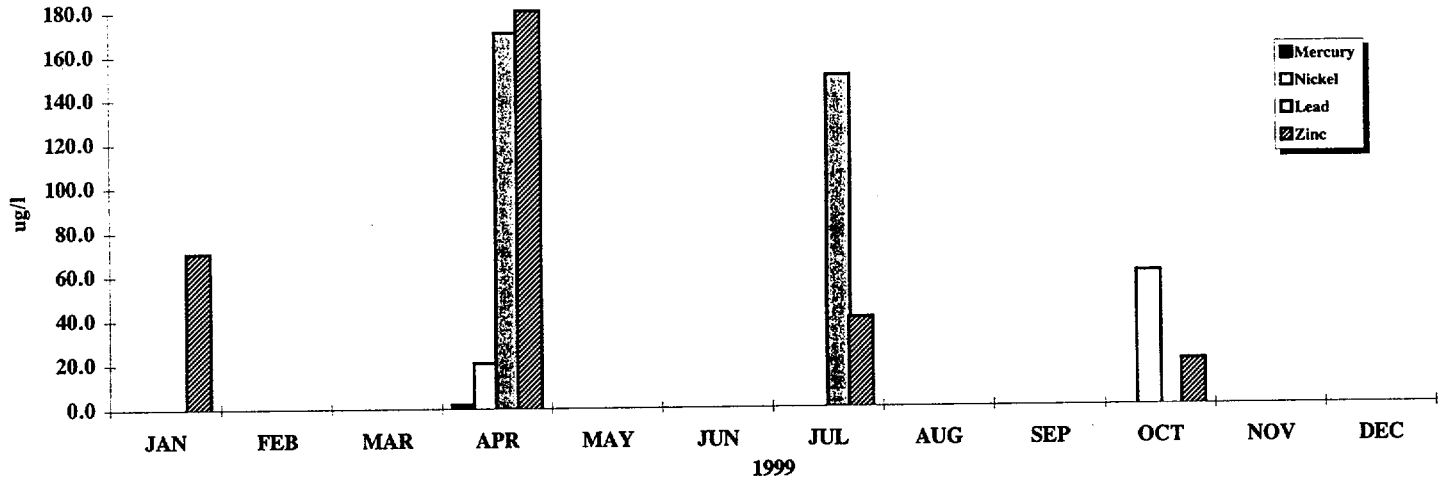
Quarterly Metals



Non-detected metals shown as zero.

DISCHARGE 001F

Quaterly Metals



Non-detected metals shown as zero.

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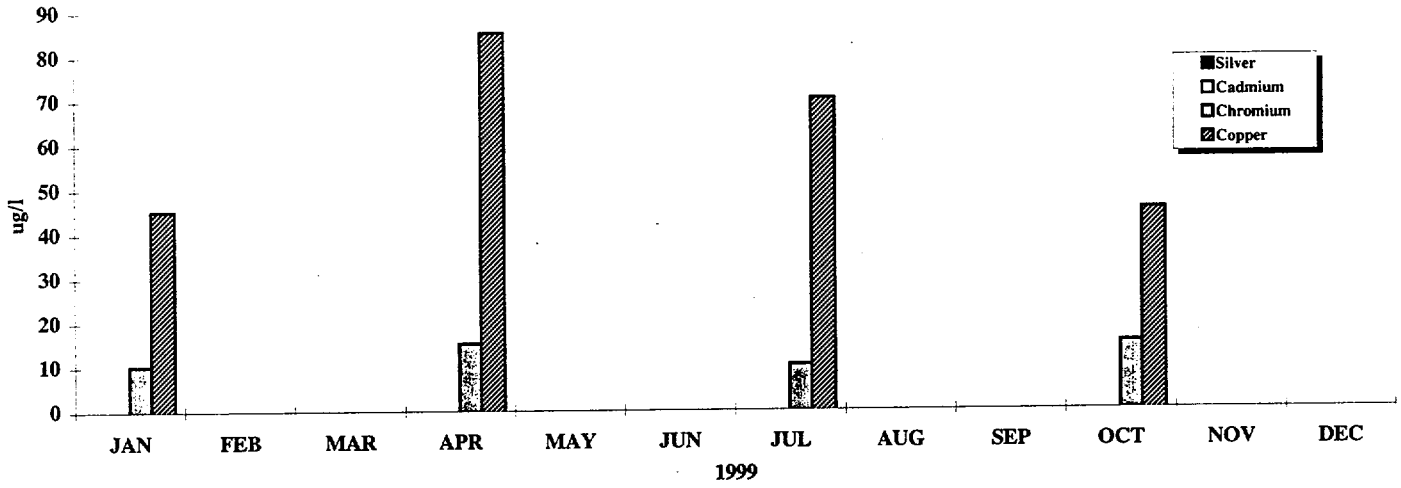
DISCHARGE 001H

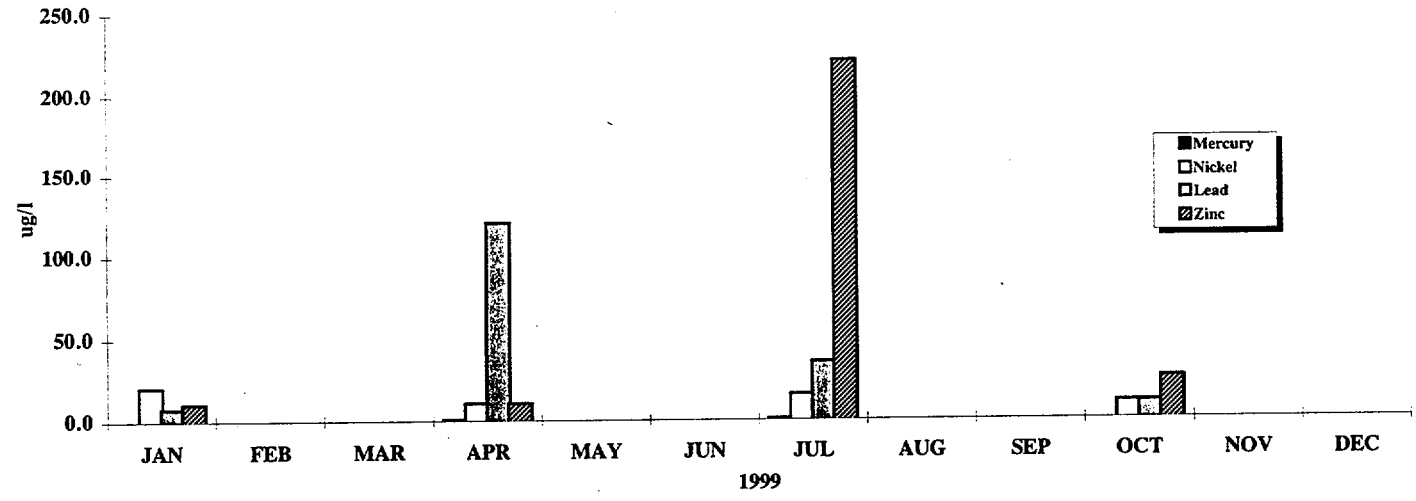
Quarterly Metals



Non-detected metals shown as zero.

DISCHARGE 001H

Quarterly Metals



Non-detected metals shown as zero.

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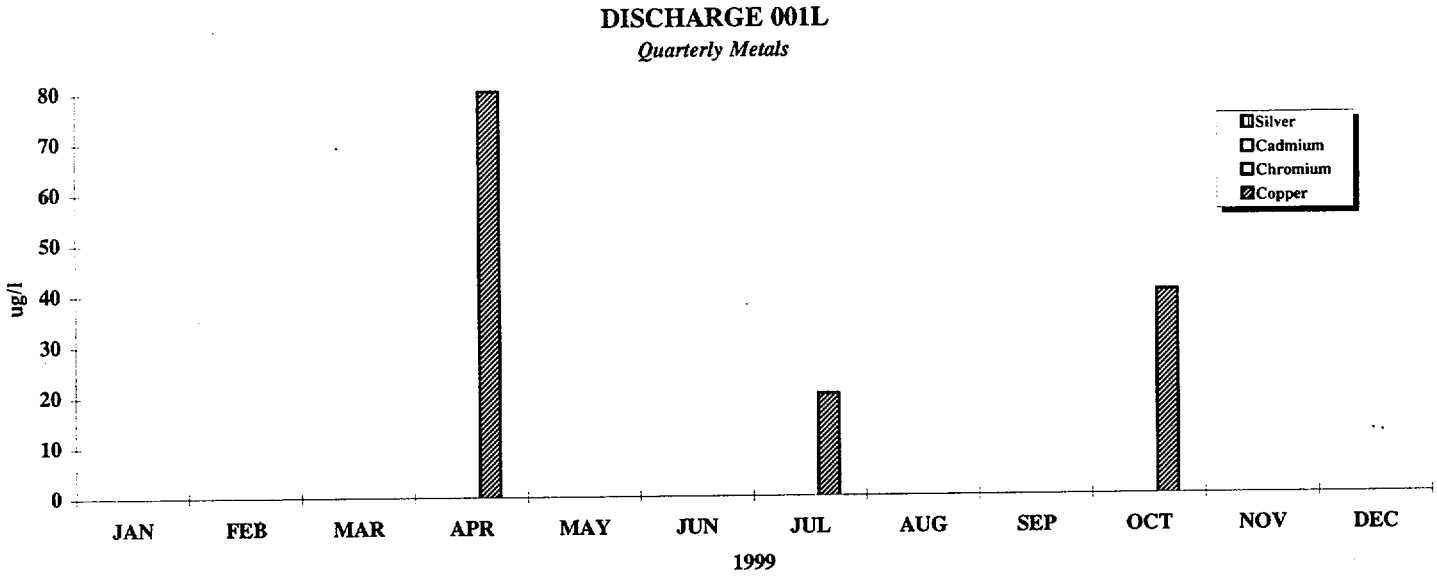

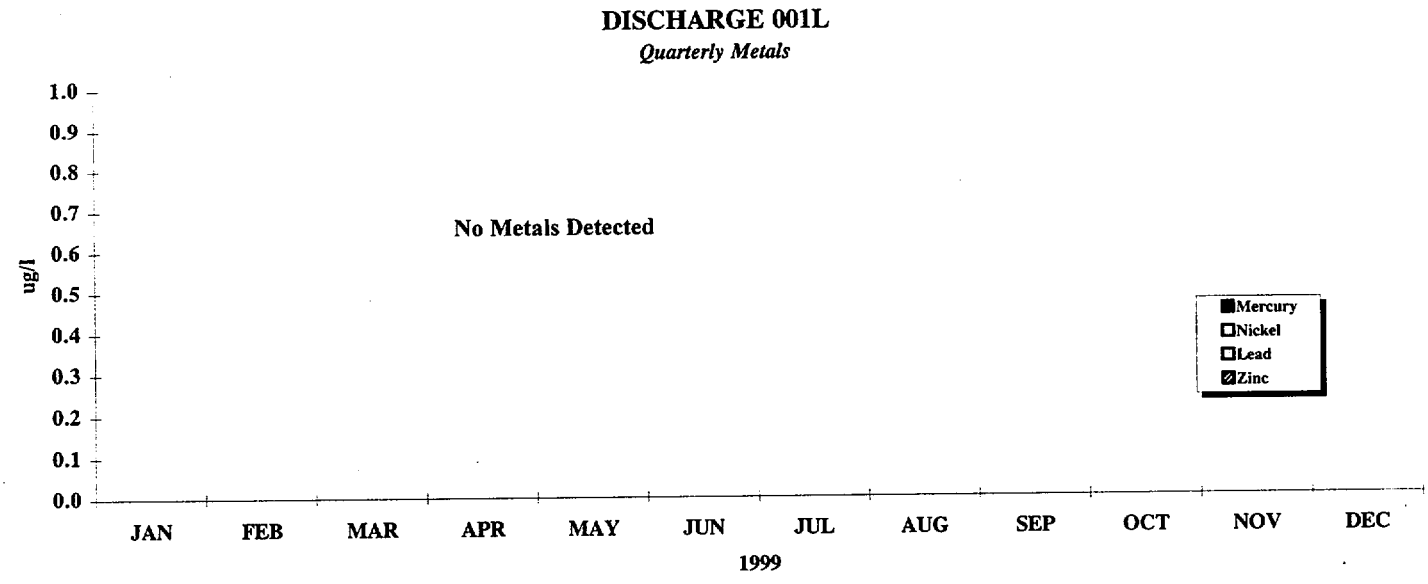

1999 Annual Summary Report on Discharge Monitoring
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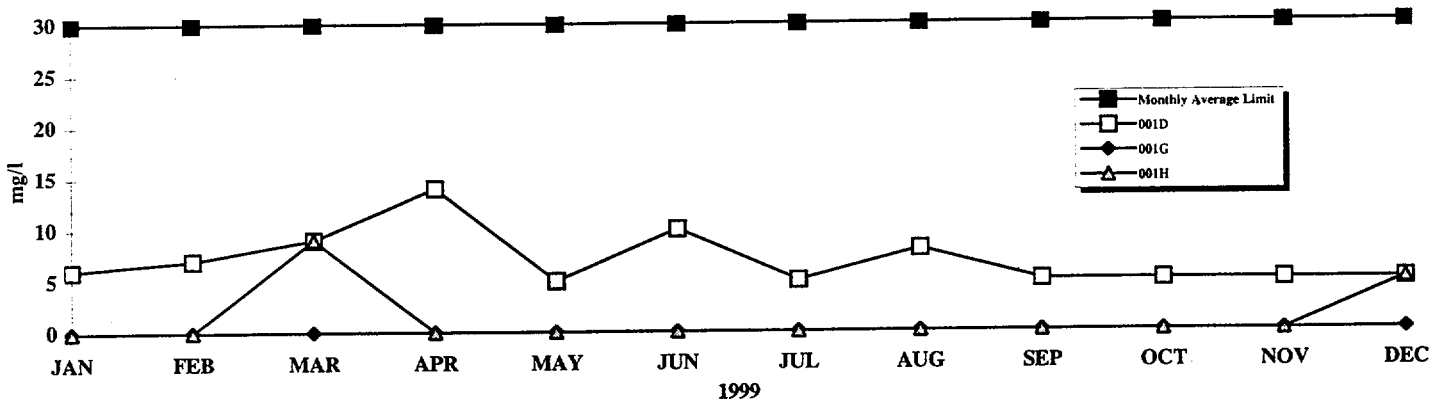
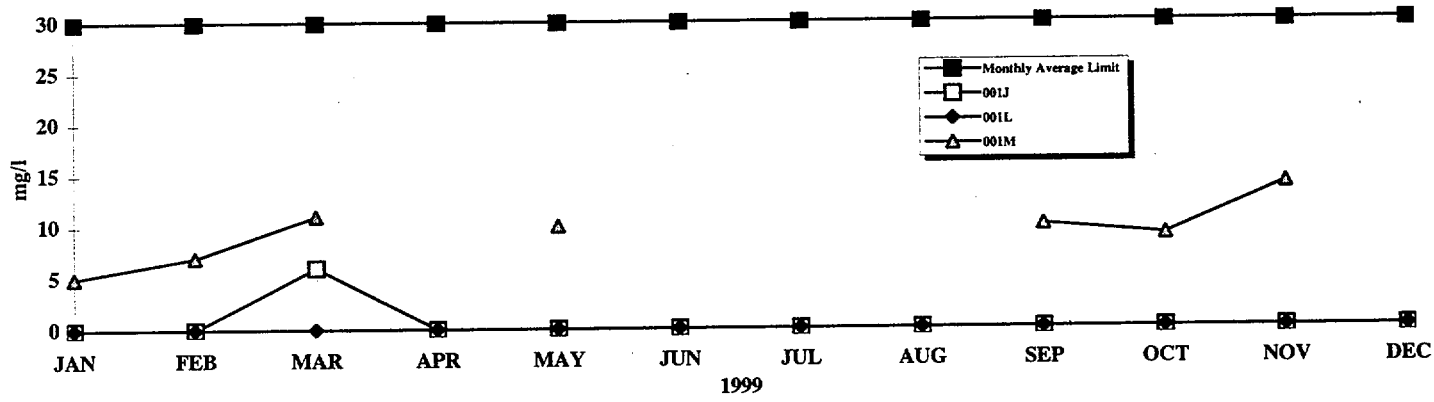
MONTHLY TOTAL SUSPENDED SOLIDS

Average



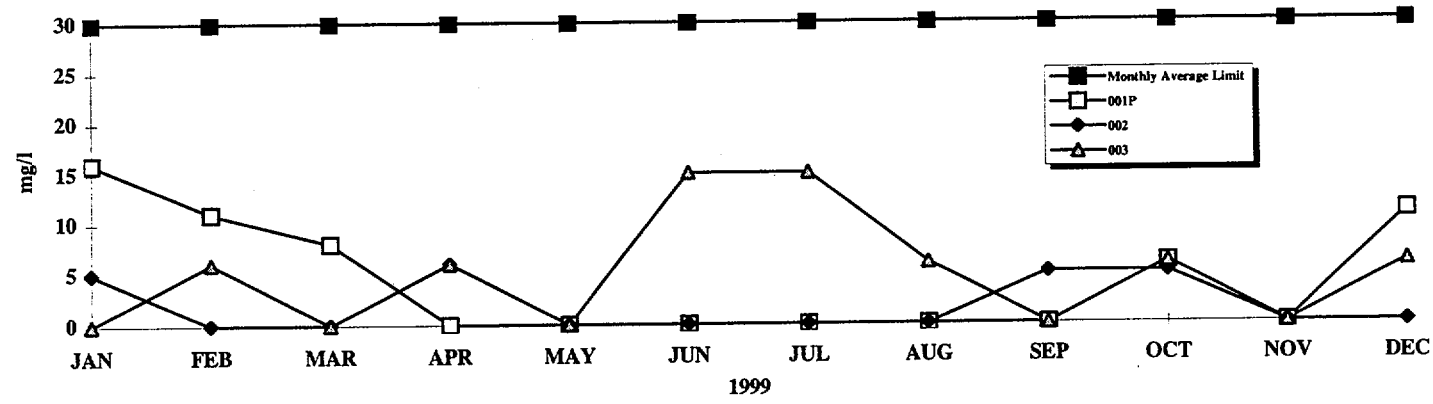
MONTHLY TOTAL SUSPENDED SOLIDS

Average



MONTHLY TOTAL SUSPENDED SOLIDS

Average

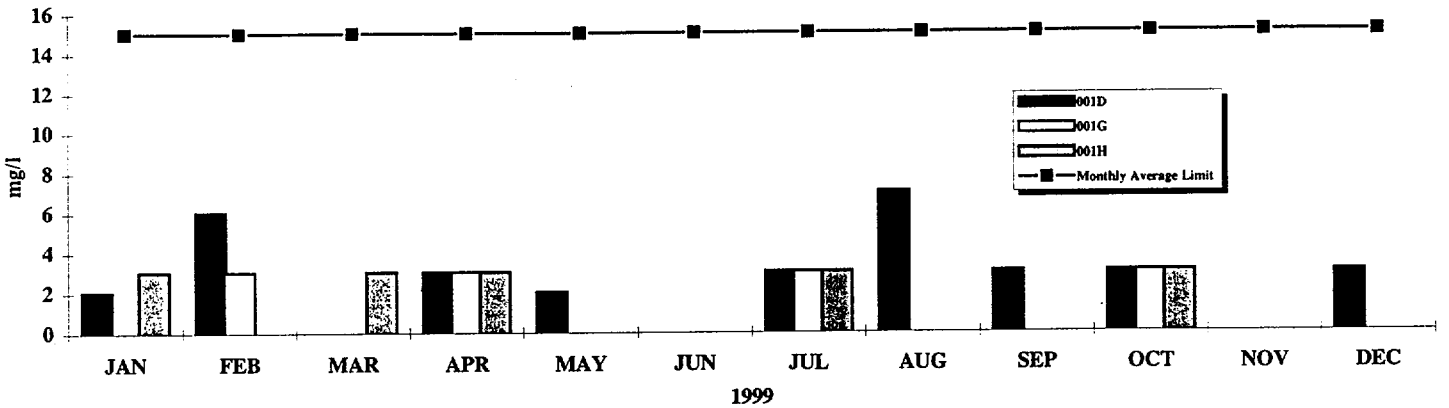


Note: Some points on chart may overlap

1999 Annual Summary Report on Discharge Monitoring at the Diablo Canyon Power Plant

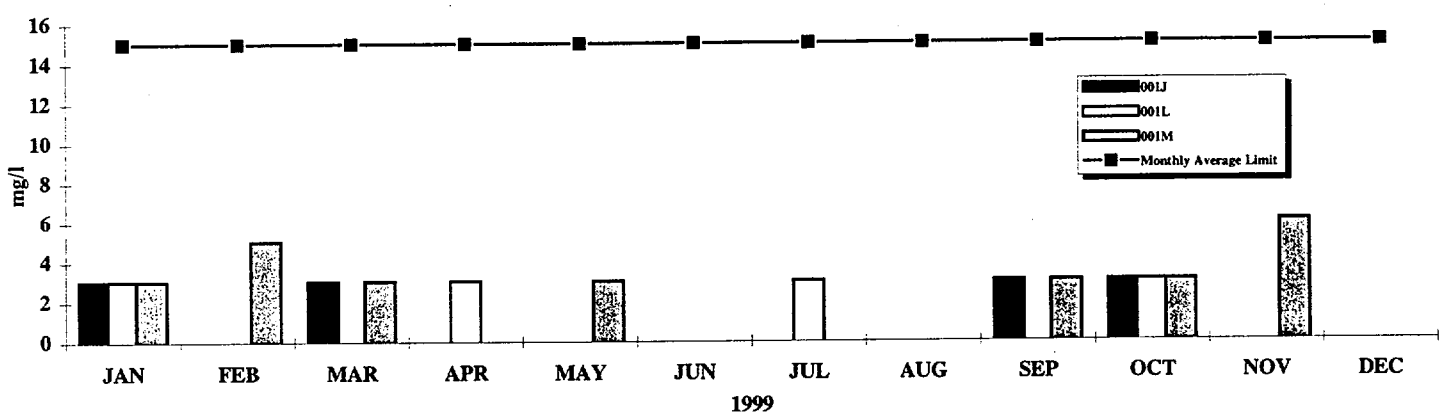
QUARTERLY GREASE & OIL

Average



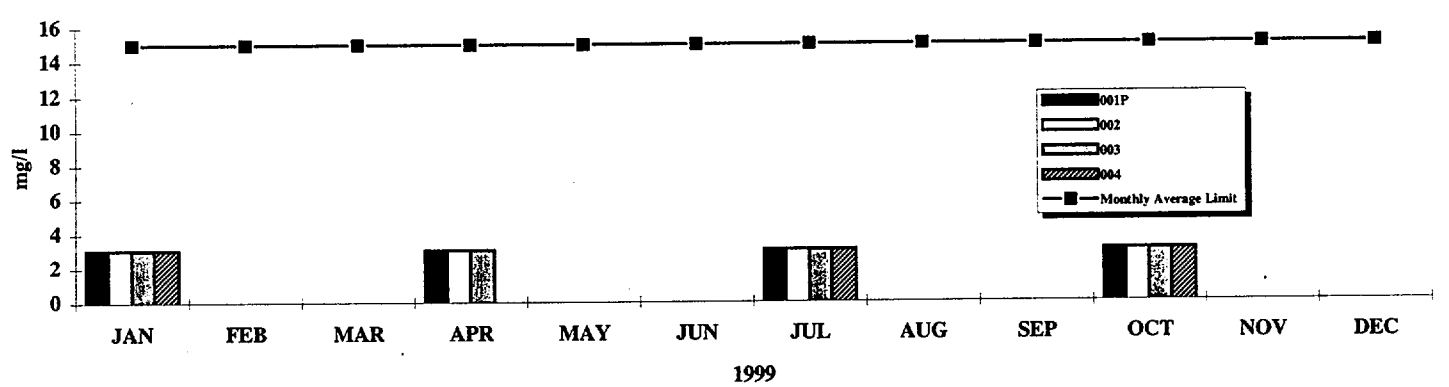
QUARTERLY GREASE & OIL

Average



QUARTERLY GREASE & OIL

Average



Note: Most grease & oil values shown are method reporting limit.

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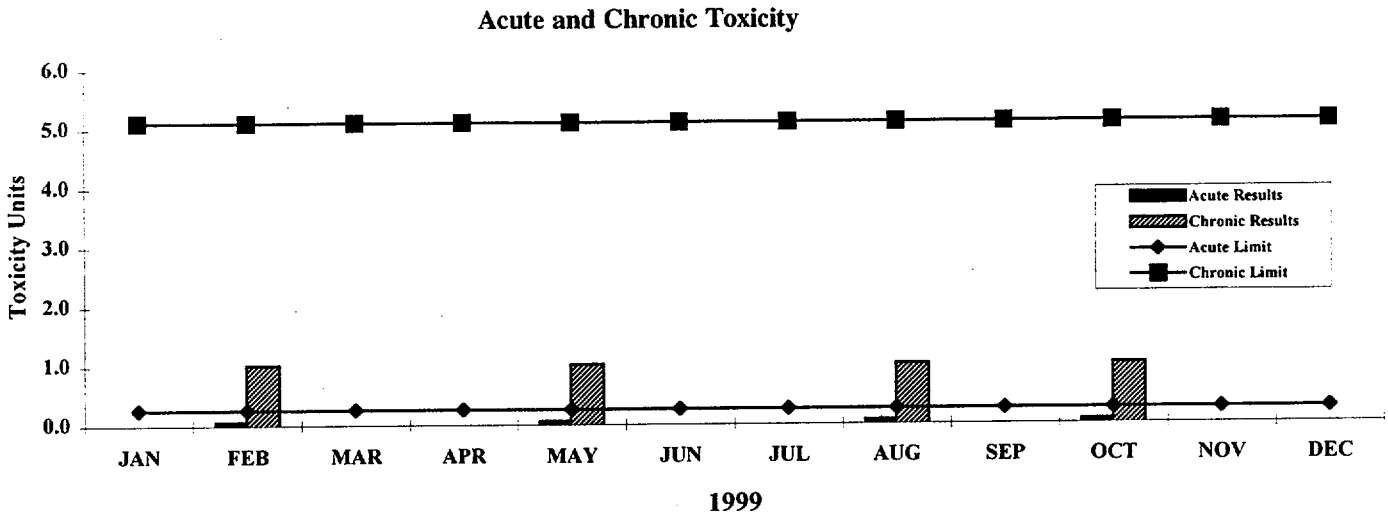

APPENDIX 4

SUMMARY OF EMP MONITORING FOR 1999

APPENDIX 4

SUMMARY OF EMP MONITORING FOR 1999

Study	EMP Stations/ Surveys per Year	RWMP Stations/ Surveys per Year	1st 1999 Survey Completion Stations/ Month(s)	2nd 1999 Survey Completion Stations/ Month(s)	3rd 1999 Survey Completion Stations/ Month(s)	4th 1999 Survey Completion Stations/ Month(s)
Horizontal Band Transects	6 / 2x	12/4x	12/Jan-Feb	14/Jun	14/Jul-Aug	14/Nov-Dec
Vertical Band Transects	2 / 1x	5/4x	3/Feb	5/May	5/Jul	5/Nov-Dec
Black Abalone Studies [a]	20/1x	-----				
Benthic Stations	6 / 2x	8/4x	7/Feb-Apr	8/May-Jun	8/Aug	8/Oct-Nov
Fish Observation Transects	10 / 2x	12/4x	12/May	12/Jul	12/Sep	[b]
Red Abalone Stations [a]	30/2x	-----				
Bull Kelp Census	[c] / 1x	[c] /1x				Oct - Dec
Shell Debris Study	-----	[d] /1x				Oct - Dec
Depth Gradient Study	-----	[e] /1x				Nov - Jan
Temperature Monitoring	15 / [f]	20/ [f]	Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec

a Abalone studies are usually scheduled for summer months. These studies were not done in 1999 because abalone surveys are not required under the revised RWMP.

b Winter survey was not completed in 1999. Completion of this survey is scheduled for 1st quarter of 2000.

c Includes Diablo Cove census and expanded boat and diver surveys north of Diablo Cove.

d Combination of transects and sediment stakes in the discharge plume

e Twenty transects in Diablo Cove and Field's Cove

f Temperature measured throughout the year at 20 minute intervals.