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Pacific Gas and Electric Company

Diablo Canyon Power Plant
P.O. Box 56
Avila Beach, CA 93424
805/545-6000

John D. Townsend
Vice President–Diablo Canyon
Operations and Plant Manager

February 26, 1992

PG&E Letter No. DCL-92-046

William R. Leonard, Executive Officer
California Regional Water Quality Control Board
Central Coast Region
81 Higuera, Suite 200
San Luis Obispo, CA 93401-5414

Dear Mr. Leonard:

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

Enclosed is the annual summary report for the period January 1 through December 31, 1991, of the Diablo Canyon Power Plant Discharge Monitoring Program, in accordance with Order 90-09, NPDES No. CA0003751.

I certify under penalty of law that this document and its enclosure 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 any analytical result, nor an endorsement of the appropriateness of any 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 further questions, please contact Thomas Wilson of my staff at (805) 545-4439.

Sincerely,

D. Mikkelsen for J. D. Townsend

John D. Townsend

Enclosure

5663S/85K/ERK/935



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1/1

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

Regional Administrator, Region 9
Environmental Protection Agency
75 Hawthorne Street
San Francisco, California 94103

Regional Administrator
U.S. Nuclear Regulatory Commission
Region 5
1450 Maria Lane, Suite 21
Walnut Creek, California 94596-5368

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Chief, Marine Resources Division
California Department of Fish and Game
Resources Building
1416 Ninth Street
Sacramento, California 95814

Enclosure

5663S/85K

PACIFIC GAS & ELECTRIC COMPANY

DIABLO CANYON POWER PLANT

# ANNUAL SUMMARY REPORT ON DISCHARGE MONITORING AT DIABLO CANYON POWER PLANT 1991

TABLE OF CONTENTS

## OVERVIEW

A. This annual summary report follows the format used in the monthly and quarterly monitoring reports. During 1991, discharges occurred from all discharge paths except 001I, 001K, 016, 001N to 001P and 001P to 003.

B. PG&E submitted its application for Environmental Laboratory Accreditation for the Diablo Canyon Chemistry Section Laboratories to the State Of California on October 11, 1991. The Department Of Health Services acknowledged receipt of the application on October 29, 1991.

C. The substances listed in Table B of the 1990 Ocean Plan were each analyzed for and reported in either the permit renewal application for Diablo Canyon submitted in 1989, or the Engineering Report Evaluation of Diablo Canyon's compliance with the Ocean Plan, submitted in November, 1990.

There have been no changes in the activities conducted at the plant which would have significantly affected the results reported previously in the referenced documents.

D. In all cases, chemical, radiochemical, and toxicity analyses were performed in accordance with chemical analysis procedures contained in the Diablo Canyon Power Plant, Units 1 and 2 Plant Manual, Volume 8, by State approved laboratories, or laboratories meeting the requirements specified in the California Regional Water Quality Control board Central Coast Region "Standard Provisions and Reporting Requirements" dated January 25, 1985. Receiving water monitoring was performed in accordance with approved biological and oceanographic procedures.

## SUMMARY OF MONITORING PROGRAM

### A. Monitoring of Plant Influent and Effluent

#### 1. Monitoring Data

a. Appendix 1 contains data in tabular form. Appendix 2 contains data in graphical form.

b. Annual oil and grease analyses were performed in October on Discharges 005, 008, 009, 013, 015, and 017. All results were <3 mg/ℓ. No discharges occurred from 016 during 1991.

c. The annual grab sample analysis results of Discharge 001D, Liquid Radioactive Waste Treatment System, for lithium, boron and hydrazine, were 0.059 mg/ℓ, 0.510 mg/ℓ and <0.020 mg/ℓ respectively.

2. Facility Operating and Maintenance Manual

PG&E maintains a multiple volume plant manual at Diablo Canyon that contains procedures used for all of the operation and maintenance activities at the plant, including those activities that relate to wastewater handling, treatment, sampling, analysis and discharge.

The procedures are reviewed by the plant staff and approved by the Plant Management. The normal review cycle is two years.

3. Laboratories Used To Monitor Compliance

a. Pacific Gas and Electric Co., Diablo Canyon Power Plant, Avila Beach, California
b. Coast To Coast Analytical Services, San Luis Obispo, California
c. SOCI, Inc., Auburn, California
d. TMA/NORCAL, Richmond, California

4. Sanitary Wastewater Treatment System (Discharge 001N)

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

1) Michael Buckley --- Grade 3, #3512

2) James Wysong --- Operator In Training under Buckley

5. Review Of Compliance Record And Corrective Actions

a. January

o All discharges were in full compliance.

b. February, March, April

- During the months of February, March and part of April, 1991, the Sanitary Wastewater Treatment System, Discharge 001N, experienced an increase in the effluent suspended solids and settleable solids concentration. The daily maximum and monthly average settleable solids limits were exceeded in February and the monthly average suspended solids limit was exceeded in March. The increase in solids was attributed to changes made in the operation of the Sanitary Wastewater Treatment System to control foam. A reduction in the number of air blowers used during the aeration cycle was effective in reducing the foam, but led to an increase in solids concentration. Installation of a spray system then allowed the proper number of air blowers to be used while controlling the foam.

  Prior to fully controlling the foaming in the system, some foam was blown onto the ground near the Sanitary Wastewater Treatment System. Water was used to wash down the area. Some of the water, along with the foam, entered a storm drain and entered Discharge 004, Biolab Discharge. Notification was made to a Regional Board Staff person who agreed with PG&E's assessment that the volume of sewage involved was very small and did not warrant special sampling of the Intake Cove.

  An identification of waste streams entering the Sanitary Wastewater Treatment System that contained foaming agents was made. Efforts to reduce the introduction of excessive amounts of these domestic materials into the system were conducted.

  Installation of a spray system and the reduction of foaming agents being introduced to Discharge 001N resulted in bringing the system's effluent quality within specified limits.

- On March 15, 1991, approximately 50 gallons of diesel fuel oil was spilled onto the ground during a fuel truck tank filling operation. While most of the fuel absorbed into the soil, some of the light fraction of the fuel from the soil was washed by rain into a storm drain approximately 600 feet away (Discharge 006) and ultimately into the ocean. No sheen was visible in the ocean.

  The drains were sandbagged and absorbent pads were used to stop the sheen from entering the storm drain.

Steps taken to prevent this situation from occurring again in the filling station area include:

* Posting of signs indicating response actions for emergencies;

* Changes in plant operating procedures to improve awareness of proper steps in the event of a fuel spill;

* New training program for all employees that identifies emergency response procedures; and

* Plans for a concrete fueling slab that will contain any released fuel.

o During the month of April, and again in October and November, several analyses for Total Residual Chlorine (TRC) using an amperometric titrator, performed on samples from the Main Circulating Water Pumps during routine chlorination, indicated concentrations that exceeded discharge limits. More complete details are provided in the second and fourth quarter reports for 1991.

Inspections and evaluations of the chlorine injection system did not reveal any abnormalities. Potential problems that could cause a bias in the analytical results were identified and corrected. However, it appears that other analytical errors exist that interfere with precise and accurate detection of low level chlorine. These were described in the fourth quarter report.

Analysis results using an Orion 1770 Chlorine Monitor, performed in conjunction with some of the samples analyzed on the amperometric titrator, show a very distinct, sharp rise, then a leveling, followed by a distinct, sharp fall of TRC values during the chlorination cycle. This pattern is consistent from day to day. The values from the titrator occasionally indicate an erratic TRC value which is not believed to be a true representation of the TRC concentration.

During the first quarter of 1992, PG&E plans to incorporate the use of the Orion 1770 Chlorine Monitor in place of the Amperometric Titrator, except when the Orion is not operational. We expect the results from the Orion will provide more consistent information and will allow PG&E to more accurately control the TRC concentrations in Discharge 001.

o All other discharges were in full compliance.

c. May

- On May 22, 1991, during a routine chlorination of Main Circulating Water Pump 2-2, grab sample analysis results indicated the TRC concentration was above discharge limits. More complete details are provided in the second quarter report for 1991.

  A review of the operation of the chlorine injection system revealed that the operator had used an incorrect chlorine injection rate. Personnel error was the cause for the incorrect setting. The individual received additional training in the correct operation of the system.

- All other discharges were in full compliance.

d. June, July, August, September

- All discharges were in full compliance.

e. October, November, December

- Refer to section b. above for discussion about TRC compliance during October and November.

- All other discharges were in full compliance.

6. Static Bioassays

Static bioassays of Discharge 001 were performed January 7, April 1, July 8, and October 21, 1991. Results were reported in the appropriate quarterly report. No toxicity was detected in any of the samples.

7. Chronic Bioassays

During 1991, three chronic bioassays using three test species were performed quarterly as required by the 1990 California Ocean Plan. Results are to be reported in a separate report to the Regional Water Quality Control Board.

## B. Monitoring of Receiving Waters

### 1. Ecological Studies at Diablo Canyon

Marine ecological monitoring continued during 1991 under the Thermal Effects Monitoring Program. The following table summarizes completed subtasks for the year. An annual report will be prepared and submitted by March 31, 1992. Fish observations during the first quarter were not completed due to consistent adverse weather conditions during February and March. However, they were completed in April.

| Subtask | Date Surveys Began | | | |
|---|---|---|---|---|
| Horizontal Transects | 01/25 | 05/15 | 07/12 | 11/04 |
| Vertical Transects | 01/13 | 05/14 | 07/09 | 11/20 |
| Algal Scrape Surveys | 01/16 | 05/17 | 07/29 | 11/04 |
| Subtidal Benthic Surveys | 02/08 | 05/07 | 08/20 | 10/23 |
| Fish Observations | | 04/15 | 08/01 | 10/12 |
| Black Abalone Surveys* | 01/26 | | 06/25 | |
| Subtidal Red Abalone Surveys* | | 07/16 | 09/10 | |
| Bull Kelp Population Census* | | | | 10/01 |

* Abalone surveys are conducted twice annually and the Bull Kelp Census is conducted once annually.

### 2. Sediment Analysis

Annual sediment samples were collected on September 5, 1991. Analysis results were presented in the third quarter report. Values observed were within normal ranges.

### 3. Stratified Water Temperatures

Stratified water temperatures were measured on March 3, June 19, and October 3, 1991. Temperatures were not measured in February due to consistent adverse weather conditions. Results were reported in the appropriate quarterly reports, and summarized by station in Appendix 3.

### 4. Dissolved Oxygen and pH

Dissolved oxygen and pH monitoring was conducted on March 3, June 19, and October 3, 1991. Dissolved Oxygen and pH were not measured in February due to consistent adverse weather conditions. Results were reported in the appropriate quarterly reports, and are summarized by station in Appendix 4.

### 5. In-Situ Bioassay

Results of the Mussel Watch program are reported directly by the California Department of Fish and Game in their periodic report for this program.

# APPENDIX 1

## Tabular Summaries of Influent and Effluent Monitoring

APPENDIX 1

TABLE OF CONTENTS

DISCHARGE 001

| month | TEMPERATURE (DEG F) INFLUENT high | INFLUENT low | INFLUENT avg | EFFLUENT high | EFFLUENT low | EFFLUENT avg | MONTHLY DELTA T high | MONTHLY DELTA T avg | FLOW (MGD) high | FLOW (MGD) low | FLOW (MGD) avg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JAN | 55.2 | 54.2 | 54.9 | 74.4 | 68.3 | 73.3 | 19.5 | 18.4 | 2506 | 1956 | 2442 |
| FEB | 56.0 | 51.8 | 54.3 | 74.0 | 68.6 | 72.3 | 19.5 | 18.0 | 2103 | 655 | 1280 |
| MAR | 56.0 | 50.0 | 52.5 | 73.5 | 59.5 | 69.3 | 18.9 | 16.8 | 2492 | 914 | 1428 |
| APR | 51.7 | 48.1 | 49.6 | 70.1 | 59.9 | 65.9 | 19.4 | 16.3 | 2493 | 1869 | 2408 |
| MAY | 51.0 | 48.0 | 49.4 | 68.6 | 59.2 | 66.3 | 18.4 | 16.9 | 2493 | 1879 | 2420 |
| JUN | 54.5 | 50.0 | 50.1 | 72.0 | 67.2 | 67.1 | 18.1 | 17.1 | 2492 | 2492 | 2492 |
| JUL | 57.3 | 52.4 | 55.5 | 75.4 | 70.4 | 73.6 | 18.8 | 18.1 | 2569 | 2469 | 2505 |
| AUG | 57.5 | 53.0 | 54.9 | 76.8 | 67.1 | 73.5 | 19.4 | 18.6 | 2571 | 2465 | 2541 |
| SEP | 59.0 | 53.8 | 57.1 | 78.0 | 68.7 | 76.2 | 20.2 | 19.0 | 1757 | 932 | 1257 |
| OCT | 59.2 | 55.2 | 57.3 | 78.1 | 67.9 | 73.8 | 20.3 | 16.5 | 2557 | 1243 | 1789 |
| NOV | 57.2 | 53.3 | 55.5 | 75.9 | 71.4 | 74.1 | 19.6 | 18.5 | 2559 | 1923 | 2441 |
| DEC | 57.7 | 54.4 | 56.1 | 76.2 | 72.6 | 74.5 | 19.1 | 18.4 | 2574 | 2492 | 2550 |
| 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 INF and EFF values. The "avg" is calculated from INF and EFF monthly avg values.

DISCHARGE 001

| month | TOTAL CHLORINE RESIDUAL (ug/l) high | low | avg | TOTAL CHLORINE USED (lbs/day) high | low | avg |
|---|---|---|---|---|---|---|
| JAN | 20 | <20 | <20 | 154 | 154 | 154 |
| FEB | <20 | <20 | <20 | 31 | 31 | 31 |
| MAR | <20 | <20 | <20 | 113 | 31 | 47 |
| APR | 100 | <20 | 23 | 154 | 81 | 138 |
| MAY | 140 | <20 | 23 | 250 | 39 | 146 |
| JUN | * | * | * | * | * | * |
| JUL | <20 | <20 | <20 | 145 | 109 | 121 |
| AUG | <20 | <20 | <20 | 145 | 27 | 133 |
| SEP | 30 | <20 | 21 | 187 | 36 | 113 |
| OCT | 150 | <20 | 32 | 360 | 90 | 230 |
| NOV | 80 | 20 | 39 | 360 | 331 | 346 |
| DEC | 70 | <20 | 35 | 331 | 248 | 323 |
| limit: | 75 | | | | | |

* - Chlorination did not occur during June

DISCHARGE 001

METALS (ug/l)

| month | COPPER INF | COPPER EFF | CHROMIUM INF | CHROMIUM EFF | NICKEL INF | NICKEL EFF | ZINC INF | ZINC EFF | TITANIUM EFF |
|---|---|---|---|---|---|---|---|---|---|
| JAN | 1 | <1 | <1 | <1 | <1 | <1 | 2 | <1 | |
| FEB | 1 | <1 | <1 | <1 | 1 | 1 | 4 | <1 | |
| MAR | <2 | 11 | 2 | 5 | 1 | 5 | 4 | 25 | |
| APR | 2 | 2 | <2 | <2 | <1 | <1 | 3 | 1 | |
| MAY | 1 | 1 | <2 | <2 | 1 | 3 | 2 | <2 | |
| JUN | 1 | 1 | <2 | <2 | 2 | 2 | 2 | <1 | |
| JUL | 2 | 1 | 3 | 6 | 1 | 4 | 10 | 1 | |
| AUG | 2 | 1 | <2 | <2 | <1 | <1 | 5 | 1 | |
| SEP | <1 | <1 | <1 | <1 | <1 | 3 | <1 | <1 | |
| OCT | <1 | <1 | <1 | <1 | 1 | 1 | <1 | <1 | <50 |
| NOV | 3 | <1 | <1 | <1 | <1 | <1 | 6 | <1 | |
| DEC | <1 | <1 | <1 | <1 | <1 | <1 | 5 | <1 | |
| limit: | -- | 10 | -- | 10 | -- | 30 | -- | 70 | -- |

Note: Order 90-09 changed the monitoring frequency of titanium from monthly to annually

Note: Value for March represent average values. Refer to first quarter report for values.

DISCHARGE 001

| month | AMMONIA (N) (mg/l) INFLUENT | EFFLUENT |
|---|---|---|
| JAN | <0.041 | <0.041 |
| FEB | | |
| MAR | | |
| APR | <0.040 | <0.040 |
| MAY | | |
| JUN | | |
| JUL | <0.040 | <0.040 |
| AUG | | |
| SEP | | |
| OCT | <0.082 | <0.082 |
| NOV | | |
| DEC | | |
| limit: | -- | 3.06 |

DISCHARGE 001
VARIOUS ANNUAL ANALYSES
(ug/l)

| PARAMETER | INFLUENT | EFFLUENT | EFF LIMIT |
|---|---|---|---|
| Arsenic | <5 | <5 | -- |
| Cadmium | <1 | <1 | 10 |
| Cyanide | <5 | <5 | 30 |
| Lead | <1 | <1 | 10 |
| Mercury | <0.2 | <0.2 | 0.2 |
| Silver | <1 | <1 | 2.9 |
| Titanium | NA | <50 | -- |
| Phenolic Cmpds (non-chlorinated) | <5 | <5 | 150 |
| Phenolic Cmpds (chlorinated) | <1 | <1 | 10 |
| PCB's | <0.2 | <0.2 | -- |

Note: Annual samples were collected in October, 1991

## MONTHLY pH

| DISCHARGE: month | 001 INFLUENT | 001 EFFLUENT | 002 | 003 | 004 | 001P |
|---|---|---|---|---|---|---|
| JAN | 8.1 | 8.1 | 8.1 | 8.0 | 8.0 | 7.7 |
| FEB | 8.0 | 8.0 | 8.0 | 7.8 | 8.0 | 7.9 |
| MAR | 8.0 | 8.0 | 8.1 | 8.0 | 8.0 | 7.9 |
| APR | 7.8 | 7.8 | 8.0 | 7.9 | 7.9 | 7.8 |
| MAY | 7.9 | 7.8 | 7.8 | 7.6 | 7.9 | 7.8 |
| JUN | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 | 8.1 |
| JUL | 8.1 | 8.1 | 8.3 | 8.3 | 8.2 | 7.8 |
| AUG | 7.9 | 7.9 | 8.0 | 7.8 | 8.0 | 7.8 |
| SEP | 8.0 | 8.0 | 7.4 | 7.7 | 7.7 | 7.9 |
| OCT | 7.9 | 8.0 | 8.0 | 8.0 | 8.1 | 7.9 |
| NOV | 8.1 | 8.1 | 8.1 | 7.9 | 8.1 | 8.0 |
| DEC | 8.1 | 8.1 | 8.1 | 8.0 | 7.9 | 8.0 |

## DISCHARGES 001F AND 001N

| | <--------- DISCHARGE 001F ----------> | | | | | | <----------DISCHARGE 001N----------> | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | GREASE & OIL (mg/l) | | | SUSPENDED SOL (mg/l) | | | GREASE & OIL (mg/l) | | | SUSPENDED SOL (mg/l) | | | SET SLDS (ml/l | | |
| month | high | low | avg | hi | low | avg | high | low | avg | high | low | avg | high | low | a |
| JAN | <3 | <3 | <3 | 5 | 5 | 5 | 8 | 3 | 5 | 74 | 16 | 32 | .2 | .1 | |
| FEB | <3 | <3 | <3 | 6 | 6 | 6 | 14 | 3 | 7 | 60 | 16 | 41 | 10 | .1 | 2 |
| MAR | 16 | <3 | 8 | 13 | 12 | 13 | 8 | 5 | 6 | 440 | 16 | 123 | .6 | .1 | |
| APR | <3 | <3 | <3 | 4 | 4 | 4 | 7 | 3 | 4 | 190 | 10 | 48 | 6 | .1 | |
| MAY | <3 | <3 | <3 | 2 | 2 | 2 | 6 | <3 | 4 | 22 | 16 | 20 | <.1 | <.1 | < |
| JUN | 5 | 5 | 5 | 6 | 6 | 6 | 4 | <3 | 3 | 27 | 16 | 22 | <0.1 | <0.1 | <0 |
| JUL | <3 | <3 | <3 | 4 | 4 | 4 | 5 | <3 | 4 | 18 | 14 | 16 | <0.1 | <0.1 | <0 |
| AUG | <3 | <3 | <3 | 2 | 2 | 2 | 3 | <3 | 3 | 31 | 9 | 14 | <0.1 | <0.1 | <0 |
| SEP | <3 | <3 | <3 | 10 | 10 | 10 | 7 | 3 | 5 | 42 | 18 | 29 | .1 | .1 | |
| OCT | <3 | <3 | <3 | 4 | 4 | 4 | 7 | 3 | 5 | 40 | 23 | 31 | <0.1 | <0.1 | <0. |
| NOV | 6 | 6 | 6 | 7 | 7 | 7 | 10 | 3 | 6 | 36 | 16 | 24 | <0.1 | <0.1 | <0. |
| DEC | 3 | 3 | 3 | 3 | 3 | 3 | 10 | <3 | 6 | 38 | 8 | 23 | <0.1 | <0.1 | <0. |
| limit: | 20 | -- | 15 | 100 | -- | 30 | 20 | -- | 15 | -- | -- | 60 | 3 | -- | |

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

Note: The 001F Suspended Solid high value for December is listed as 137 mg/l, and represents an instantaneous value. More than one sample was analyzed on the same day. The actual Daily Average for that day was 70 mg/l.

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

| month | 001D Ag | 001D Cd | 001D Cr | 001D Cu | 001F Ag | 001F Cd | 001F Cr | 001F Cu | 001H Ag | 001H Cd | 001H Cr | 001H Cu | 001L Ag | 001L Cd | 001L Cr | 001L Cu |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JAN | <8 | <11 | 68 | 18 | <8 | <11 | 30 | 9 | 30 | 44 | 181 | 317 | <8 | <11 | 31 | 67 |
| FEB | | | | | | | | | | | | | | | | |
| MAR | | | | | | | | | | | | | | | | |
| APR | <3 | 7 | <7 | 24 | <3 | <5 | 23 | 146 | 23 | 22 | 362 | 279 | <3 | <5 | <7 | 27 |
| MAY | | | | | | | | | | | | | | | | |
| JUN | | | | | | | | | | | | | | | | |
| JUL | <2 | 7 | 17 | 31 | <2 | <3 | <9 | <19 | 31 | 31 | 365 | 288 | <2 | <3 | <9 | 51 |
| AUG | | | | | | | | | | | | | | | | |
| SEP | | | | | | | | | | | | | | | | |
| OCT | <1 | 4 | 19 | 15 | <10 | <3 | 11 | 9 | 14 | 35 | 345 | 261 | <1 | <1 | 12 | 9 |
| 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, H, L, F, METALS
(ug/l)

| month | 001D Hg | 001D Ni | 001D Pb | 001D Zn | 001F Hg | 001F Ni | 001F Pb | 001F Zn | 001H Hg | 001H Ni | 001H Pb | 001H Zn | 001L Hg | 001L Ni | 001L Pb | 001L Zn |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JAN | <3 | 32 | 5 | 138 | <0.2 | 23 | 4 | 137 | .8 | 186 | 186 | 95 | <0.2 | <14 | 1 | <10 |
| FEB | | | | | | | | | | | | | | | | |
| MAR | | | | | | | | | | | | | | | | |
| APR | 8.4 | <5 | 4 | 131 | <0.2 | 15 | 18 | 218 | .8 | 198 | 231 | 137 | <0.2 | <5 | <1 | 14 |
| MAY | | | | | | | | | | | | | | | | |
| JUN | | | | | | | | | | | | | | | | |
| JUL | .9 | 33 | 6 | 133 | <0.2 | <17 | 5 | 33 | <0.4 | 164 | 144 | 295 | <0.2 | <17 | <3 | 19 |
| AUG | | | | | | | | | | | | | | | | |
| SEP | | | | | | | | | | | | | | | | |
| OCT | 23 | 49 | 9 | 105 | <0.2 | <17 | 14 | 68 | 1.2 | 339 | 165 | 98 | <0.2 | <1 | 2 | 18 |
| NOV | | | | | | | | | | | | | | | | |
| DEC | | | | | | | | | | | | | | | | |

limit: none

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

QUARTERLY GREASE & OIL
averages by month
(mg/l)

| month | 001D | 001G | 001H | 001I | 001J | 001K | 001L | 001M | 001P | 002 | 003 | 004 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JAN | <3 | <3 | <3 | -- | | -- | <3 | <3 | <3 | <3 | 5 | <3 |
| FEB | | | | -- | <3 | -- | | <3 | | | | |
| MAR | | | | -- | | -- | | <3 | | | | |
| APR | <3 | <3 | <3 | -- | <3 | -- | <3 | 5 | <3 | <3 | <3 | <3 |
| MAY | | | | -- | | -- | | | | | | |
| JUN | | | | -- | | -- | | <3 | | | | |
| JUL | <3 | <3 | <3 | -- | | -- | <3 | | <3 | <3 | <3 | <3 |
| AUG | | | | -- | | -- | | | | | | |
| SEP | | | | -- | <3 | -- | | <3 | | | | |
| OCT | <3 | <3 | <3 | -- | 4 | -- | <3 | | <3 | <3 | <3 | <3 |
| NOV | | | | -- | | -- | | <3 | | | | |
| DEC | | | | -- | | -- | | <3 | | | | |
| limit: | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |

Note: No discharges occurred from 001I and 001K during 1991

MONTHLY SUSPENDED SOLIDS
(mg/l)

| month | 001D | 001G | 001H | 001I | 001J | 001K | 001L | 001M | 001P | 002 | 003 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| JAN | 1 | <1 | 6 | -- | | -- | 2 | 16 | 17 | 1 | 2 |
| FEB | <1 | 1 | 2 | -- | 1 | -- | <1 | 23 | <1 | 10 | 1 |
| MAR | 1 | <1 | 3 | -- | 1 | -- | <1 | 22 | 10 | 13 | 4 |
| APR | <1 | <1 | 1 | -- | <1 | -- | <1 | 15 | 9 | 3 | 3 |
| MAY | <1 | <1 | 6 | -- | | -- | <1 | | 19 | 4 | 5 |
| JUN | <1 | <1 | 5 | -- | | -- | <1 | 6 | 22 | 11 | 8 |
| JUL | <1 | <1 | 2 | -- | | -- | <1 | | 11 | 5 | 3 |
| AUG | 3 | <1 | 4 | -- | | -- | <1 | | 1 | 5 | <1 |
| SEP | <1 | <1 | 13 | -- | <1 | -- | <1 | 6 | 3 | 4 | 14 |
| OCT | <1 | <1 | 5 | -- | <1 | -- | <1 | | 5 | 2 | 1 |
| NOV | 20 | <1 | <1 | -- | | -- | <1 | 1 | 12 | 3 | <1 |
| DEC | <1 | <1 | 5 | -- | | -- | <1 | 3 | 4 | 1 | 4 |
| limit: | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | |

Note: No discharges occurred from 001I and 001K during 1991

DISCHARGE 001N
SANITARY WASTEWATER TREATMENT SYSTEM

| DATE | MOISTURE (%) | TOTAL KJELDAHL N (mg/l) | AMMONIA (N) (mg/l) | NITRATE (N) (mg/l) | TOTAL PHOSPORUS (mg/l) | pH | OIL & GREASE (mg/l) | BORON (mg/l) |
|---|---|---|---|---|---|---|---|---|
| 08/07/91 | NA | 110 | NA | <1 | 100 | NA | NA | 1.9 |
| 10/30/91 | 99.5 | 160 | 64 | <0.1 | 83 | 6.1 | 18 | 1.1 |

DISCHARGE 001N
SANITARY WASTEWATER TREATMENT SYSTEM

| DATE | CADMIUM (mg/l) | COPPER (mg/l) | CHROMIUM (mg/l) | LEAD (mg/l) | NICKEL (mg/l) | MERCURY (mg/l) | ZINC (mg/l) |
|---|---|---|---|---|---|---|---|
| 07/31/91 | 0.005 | 1.3 | 0.013 | 0.068 | <0.05 | NA | 2.6 |
| 10/30/91 | 0.003 | 1.6 | <0.01 | <0.03 | <0.1 | 0.0034 | 2.5 |

Discharge 001N sludge sample is obtained with the system's sludge holding tank in an aeration cycle while liquid from the react tank is being pumped into the holding tank, resulting in an overflow of the holding tank into the react tank. The sample of the "slurry" overflowing from the holding tank is sampled for the analysis.

Because the sample is a slurry rather than a dried sludge, the sample result units are mg/l rather than mg/kg as stated in the permit.

DISCHARGE 001N
SLUDGE REMOVED

| MONTH | DRY WEIGHT (lbs) |
|---|---|
| January | 2264 |
| February | 5250 |
| March | 4425 |
| April | 2770 |
| May | 2896 |
| June | 2734 |
| July | 2695 |
| August | 3078 |
| September | 5238 |
| October | 5076 |
| November | 2636 |
| December | 2743 |
| Total = | 41,805 lbs (20.9 tons) |

All sludge is taken to the Harold Walsh Sludge Disposal site, Orchard Road, Nipomo Mesa in San Luis Obispo County

The "dry weight" removed is calculated by analyzing the system influent suspended solids on a weekly basis. The volume of sludge removed is then multiplied by the suspended solid concentration to obtain weight removed.

# APPENDIX 2

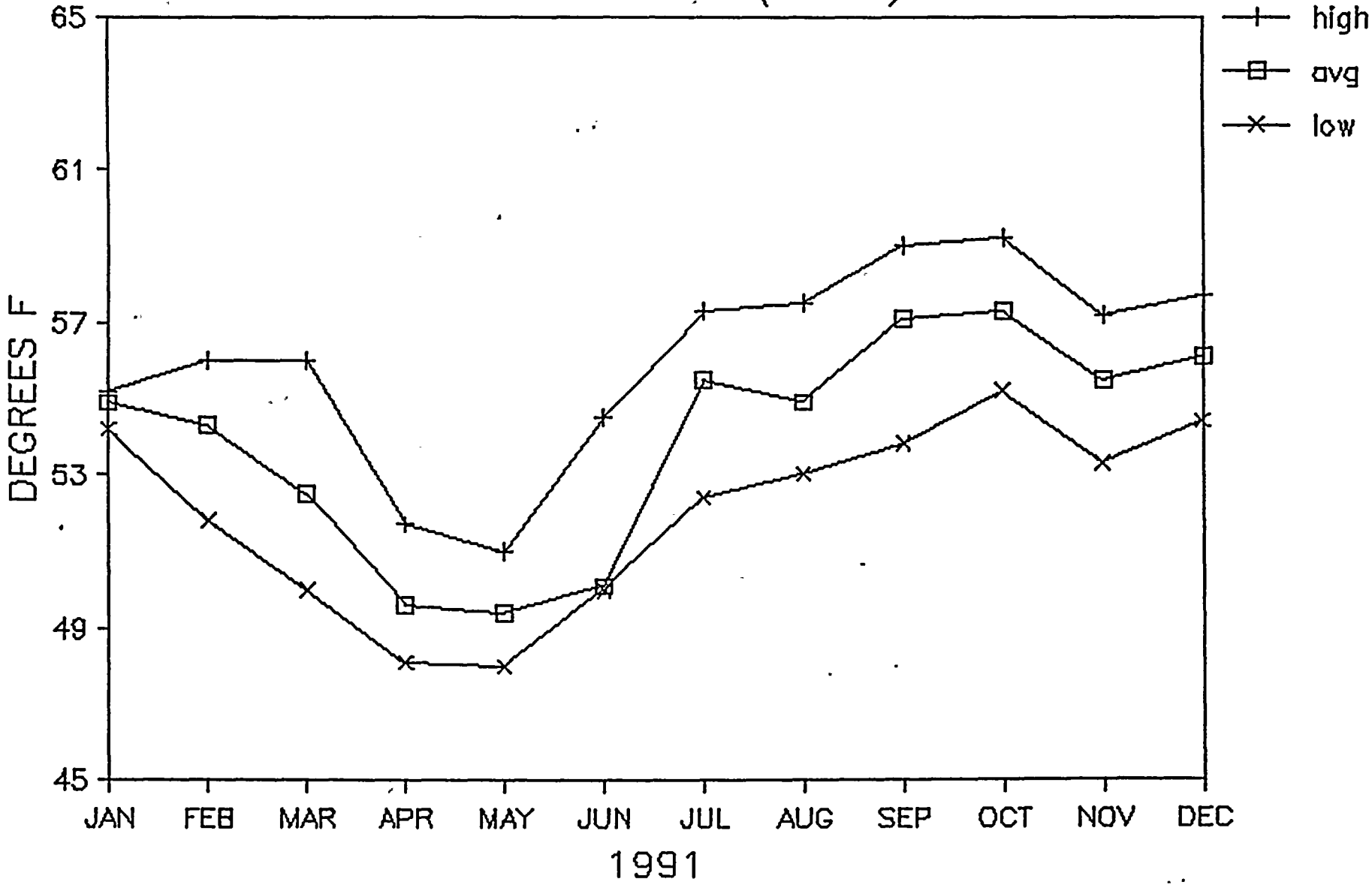
## Graphical Summaries of Influent and Effluent Monitoring

APPENDIX 2

TABLE OF CONTENTS

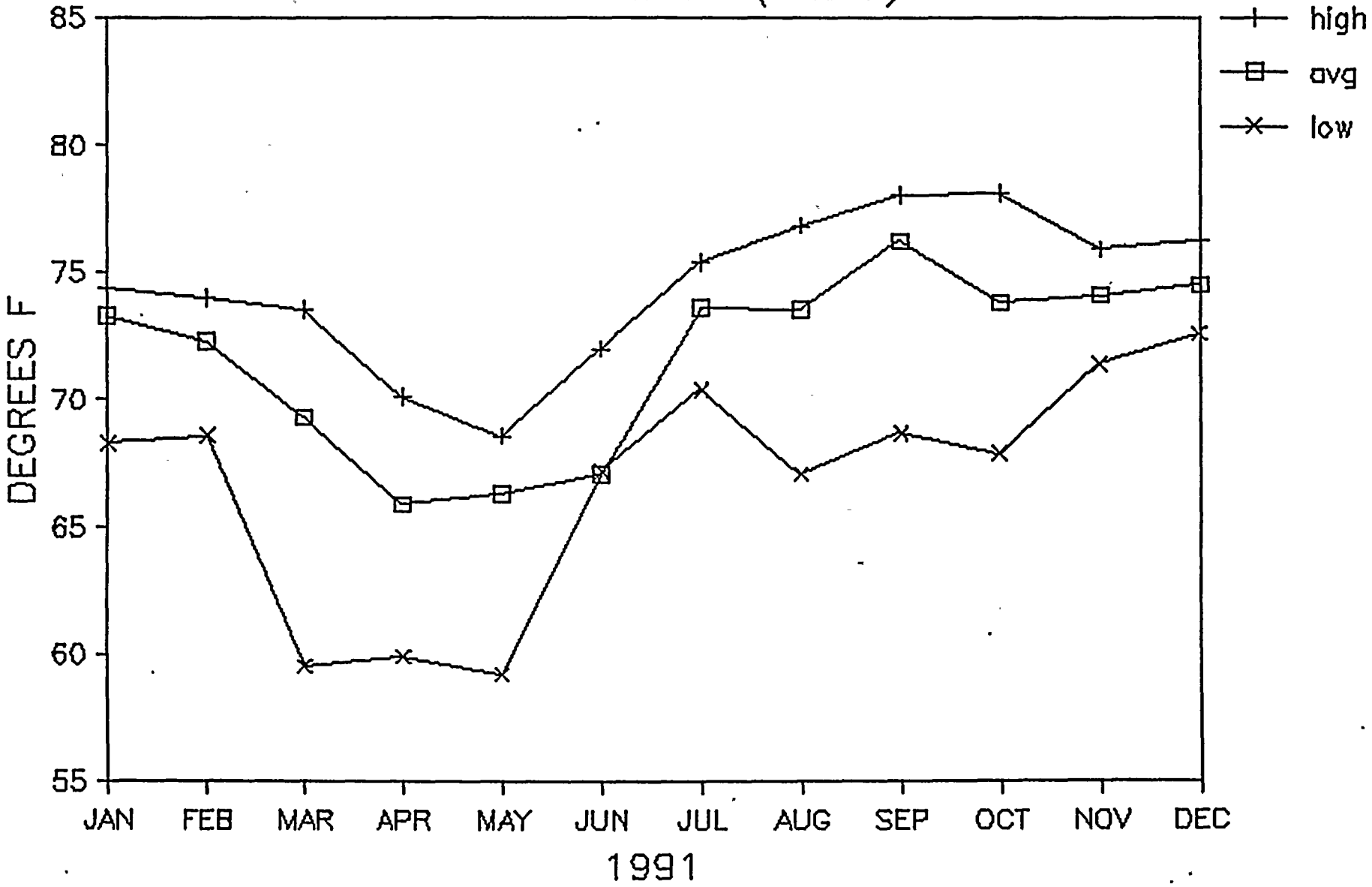
# DISCHARGE 001 INFLUENT

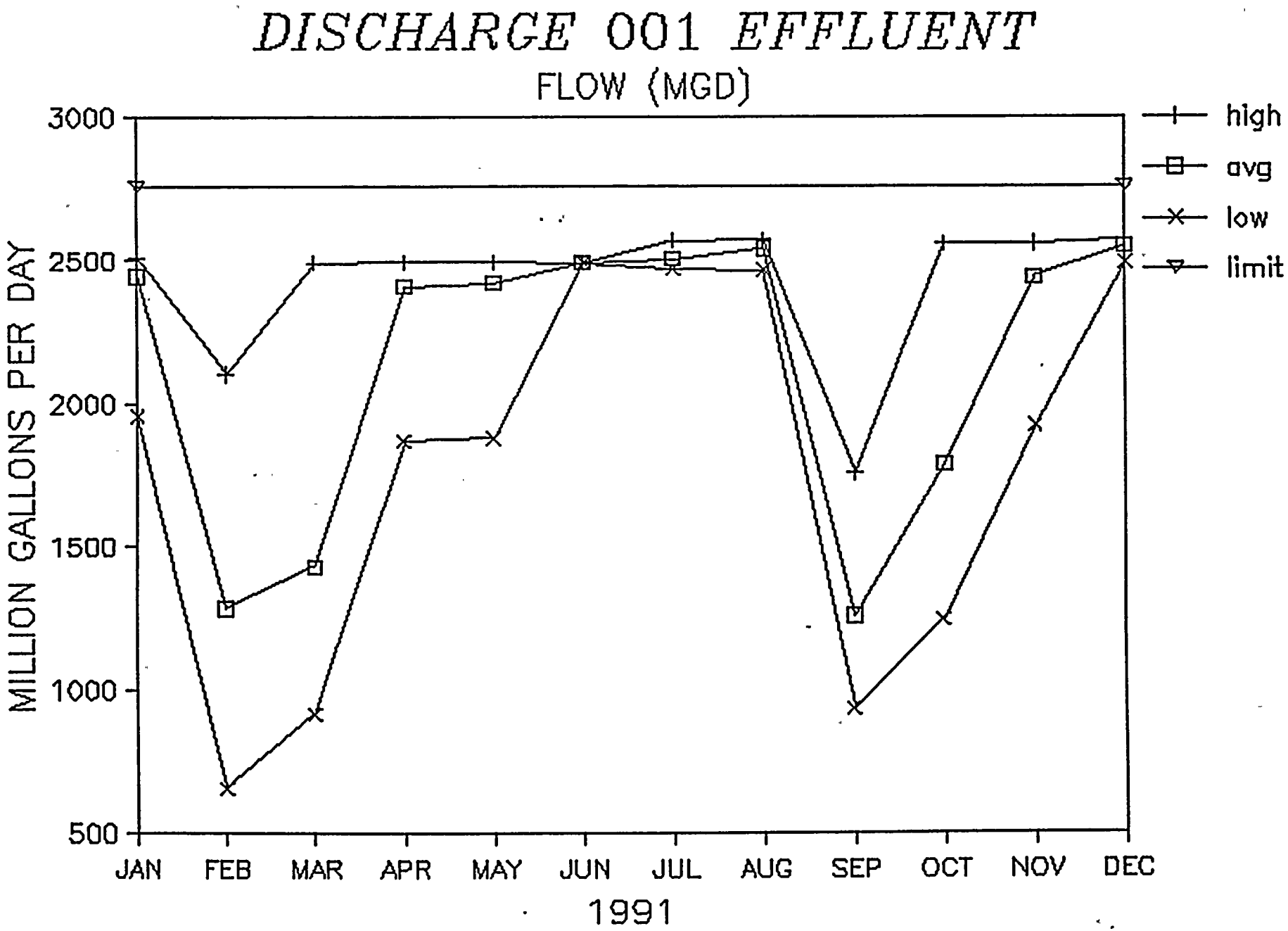
TEMPERATURE (DEG F)



# DISCHARGE 001 EFFLUENT

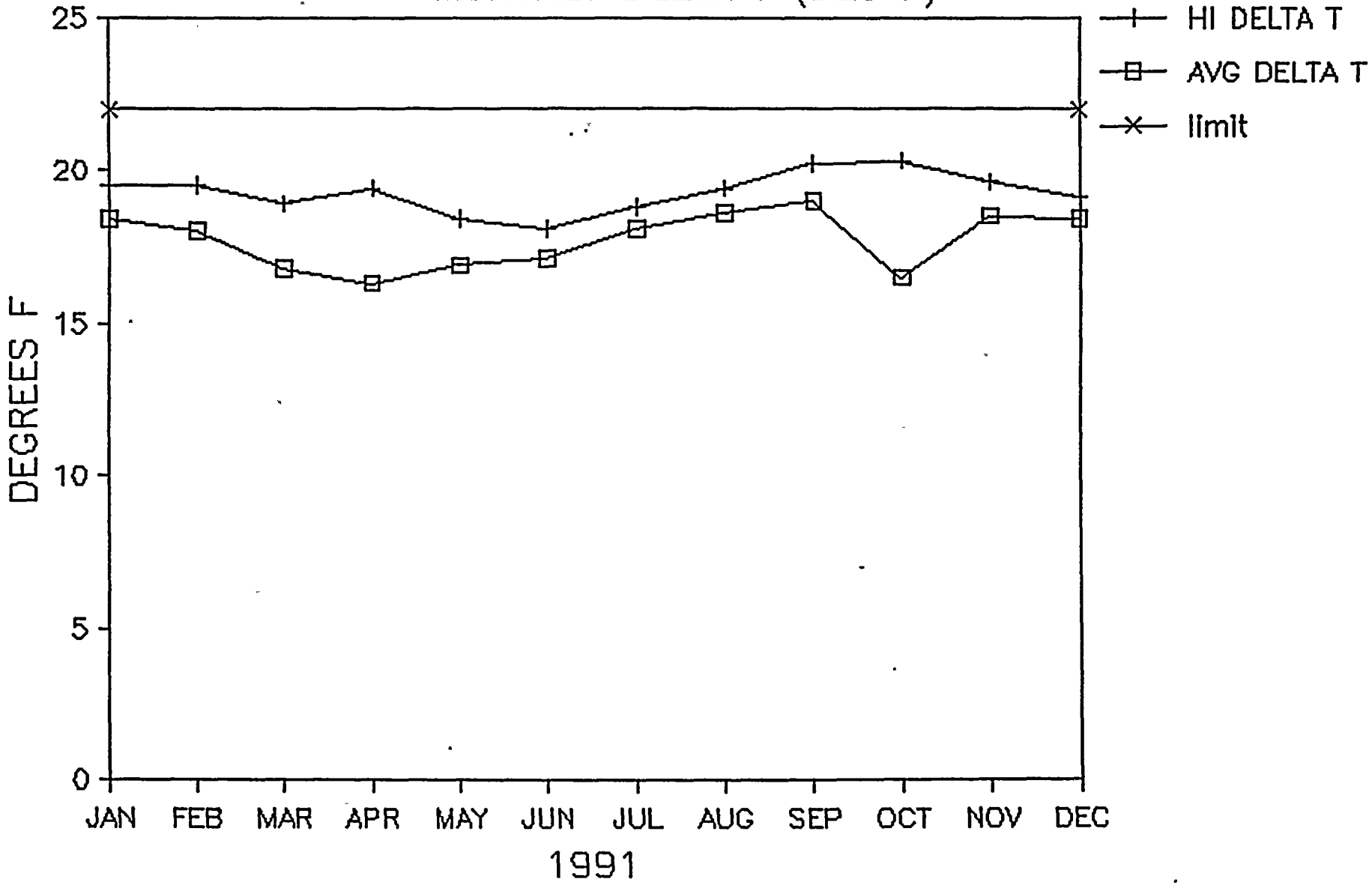
TEMPERATURE (DEG F)

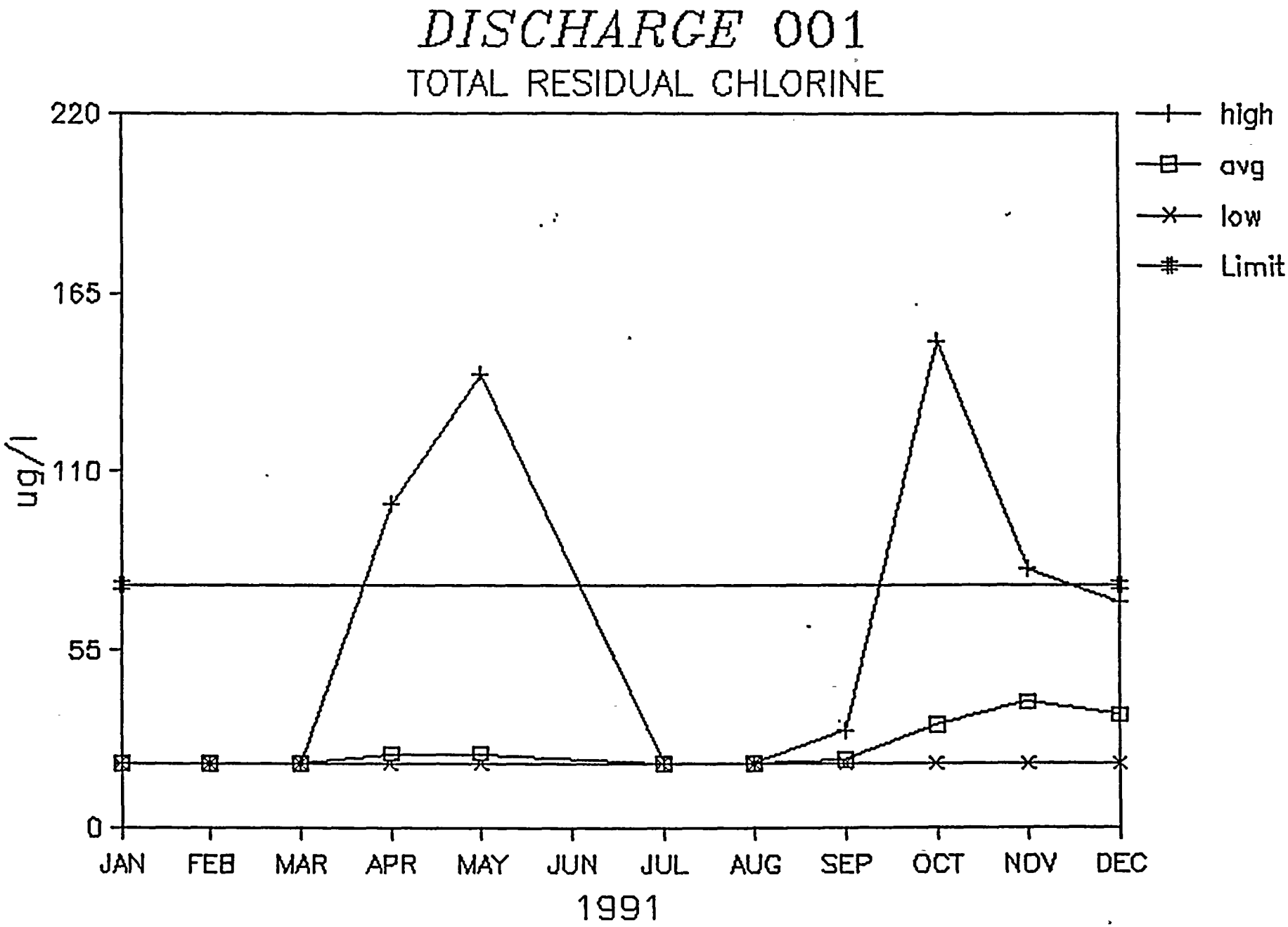


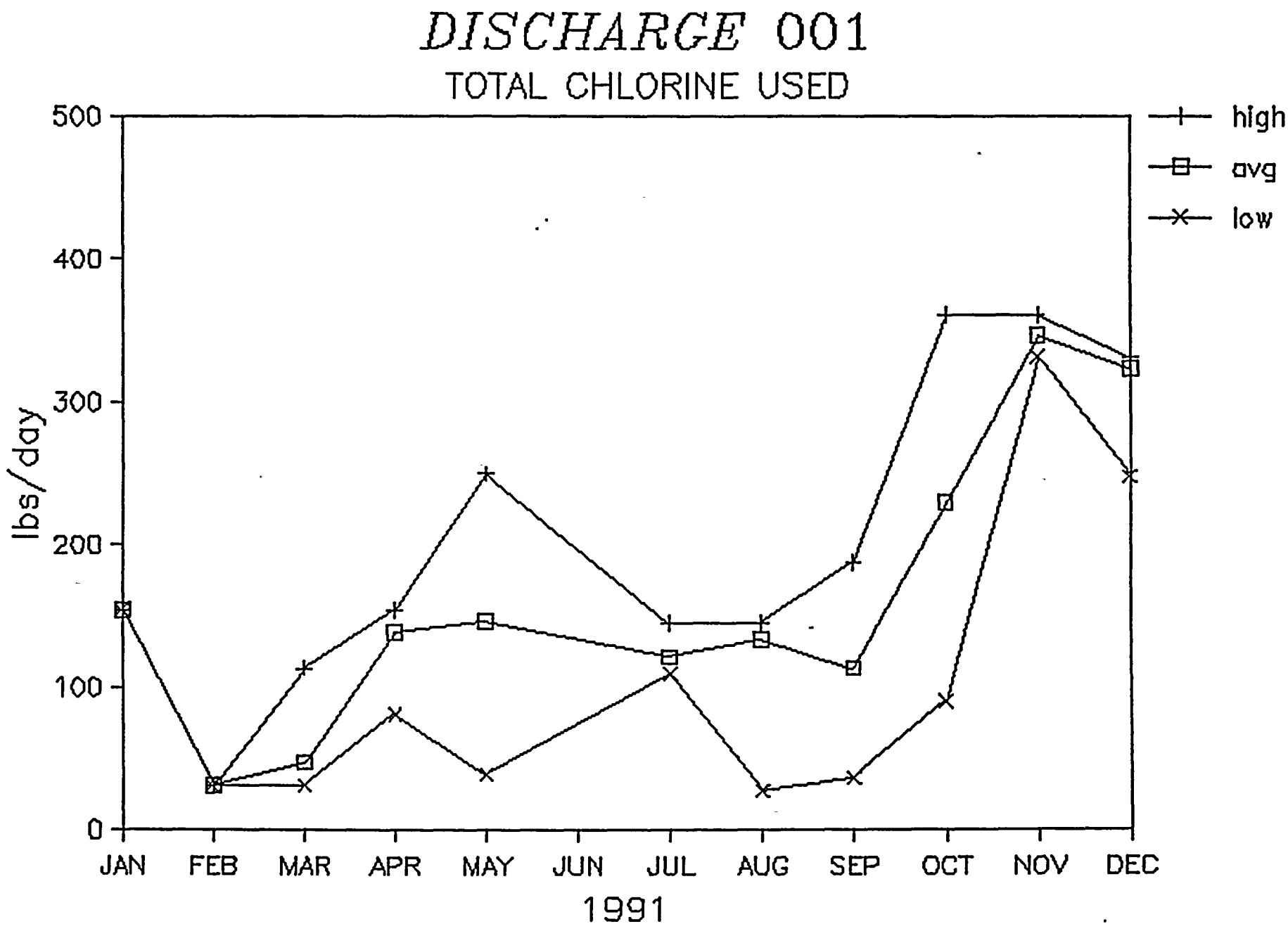

DISCHARGE 001 EFFLUENT
FLOW (MGD)
MILLION GALLONS PER DAY
3000
2500
2000
1500
1000
500
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1991
high
avg
low
limit

# DISCHARGE 001 EFFLUENT

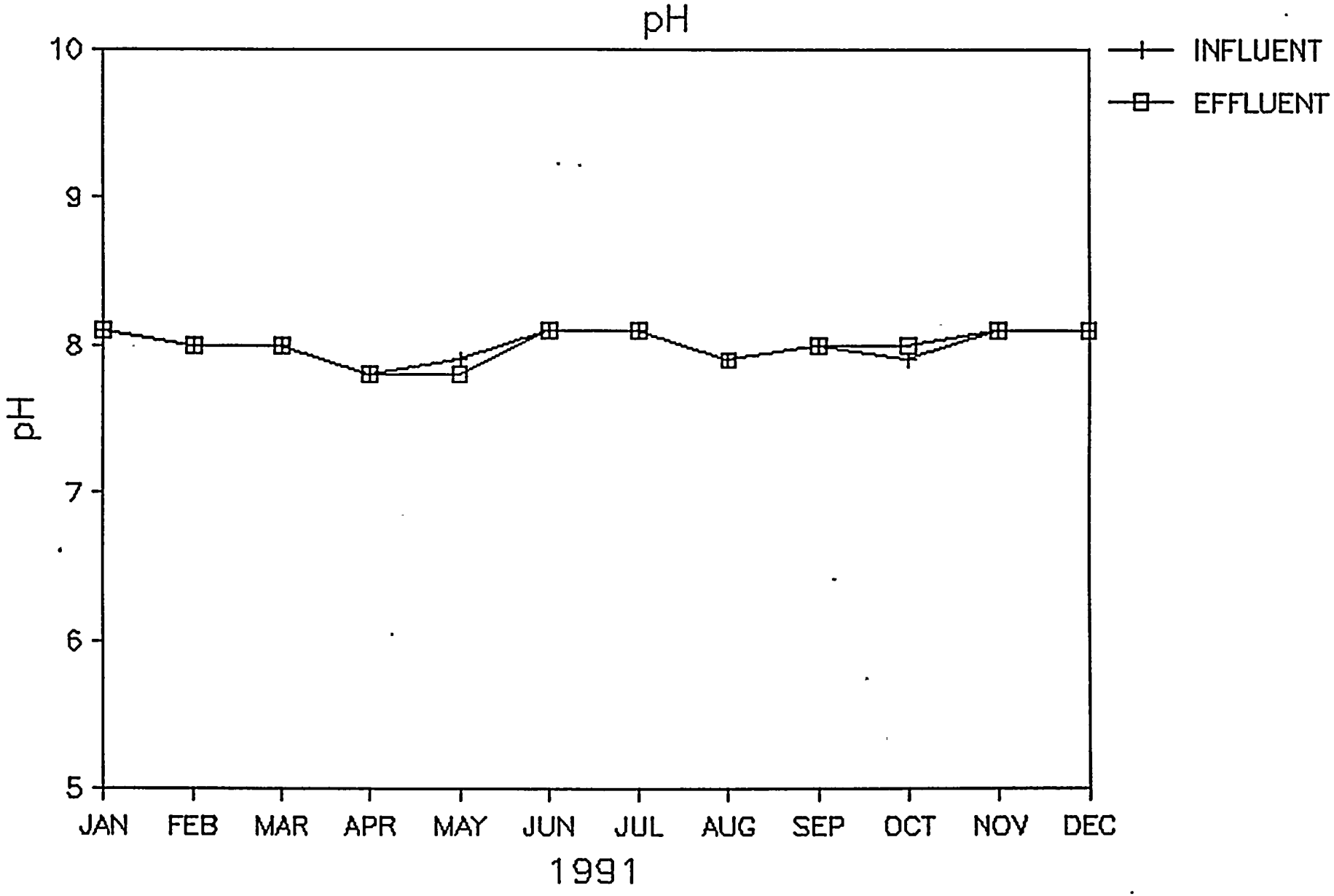
MONTHLY DELTA T (DEG F)

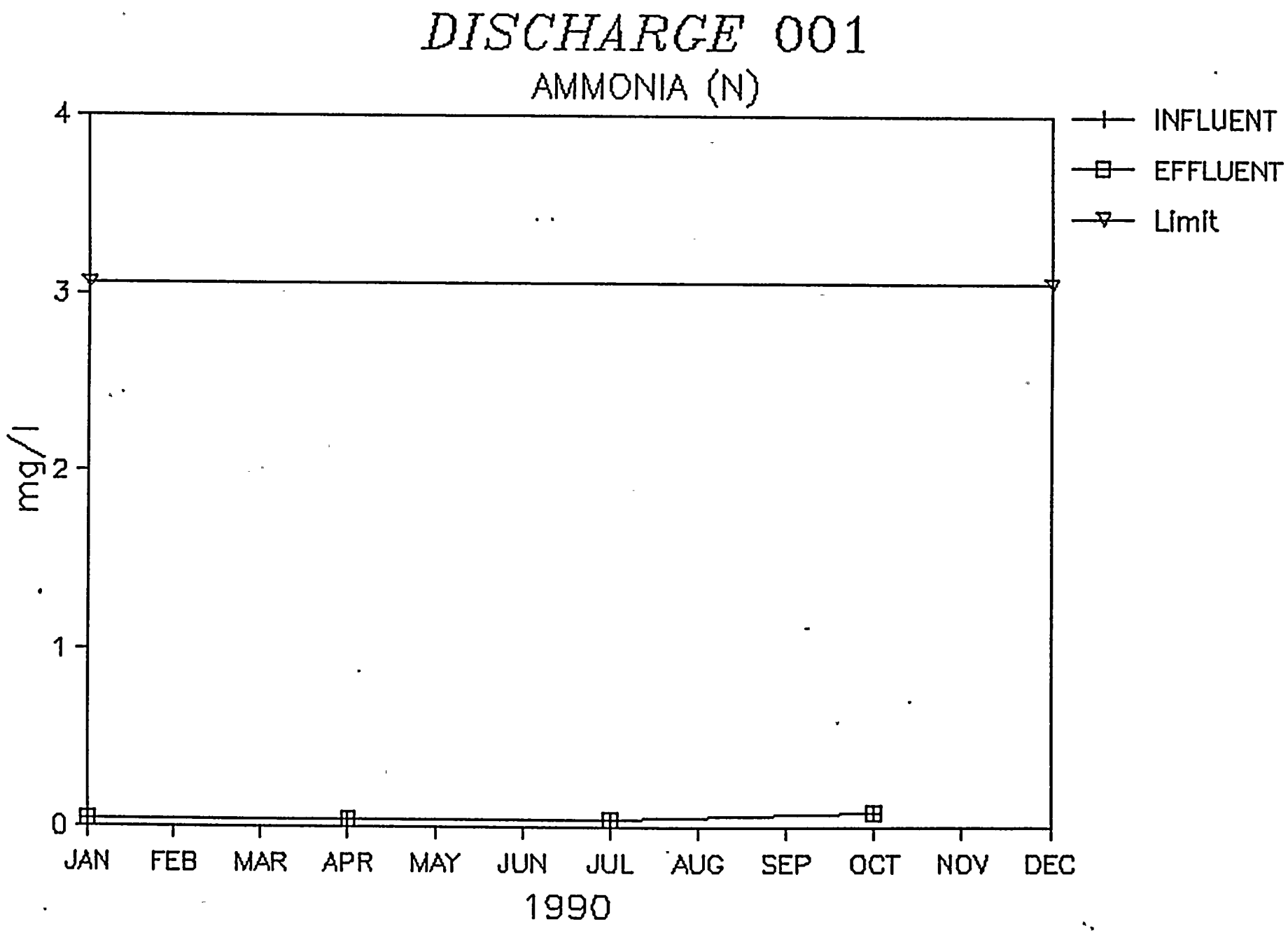


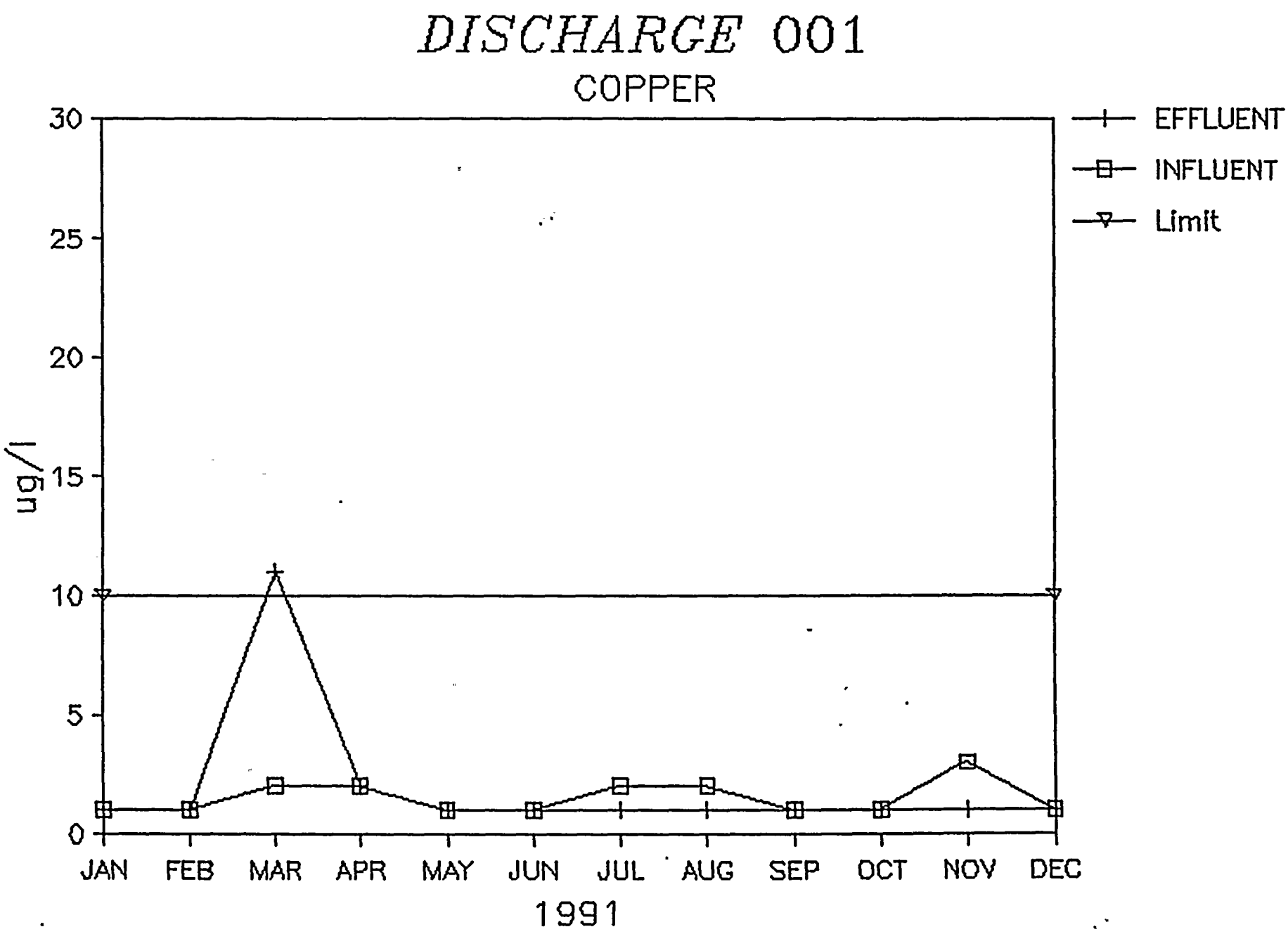

DISCHARGE 001
TOTAL RESIDUAL CHLORINE
220
165
110
55
0
ug/l
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1991
high
avg
low
Limit


DISCHARGE 001
TOTAL CHLORINE USED
500
400
300
200
100
0
lbs/day
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1991
high
avg
low

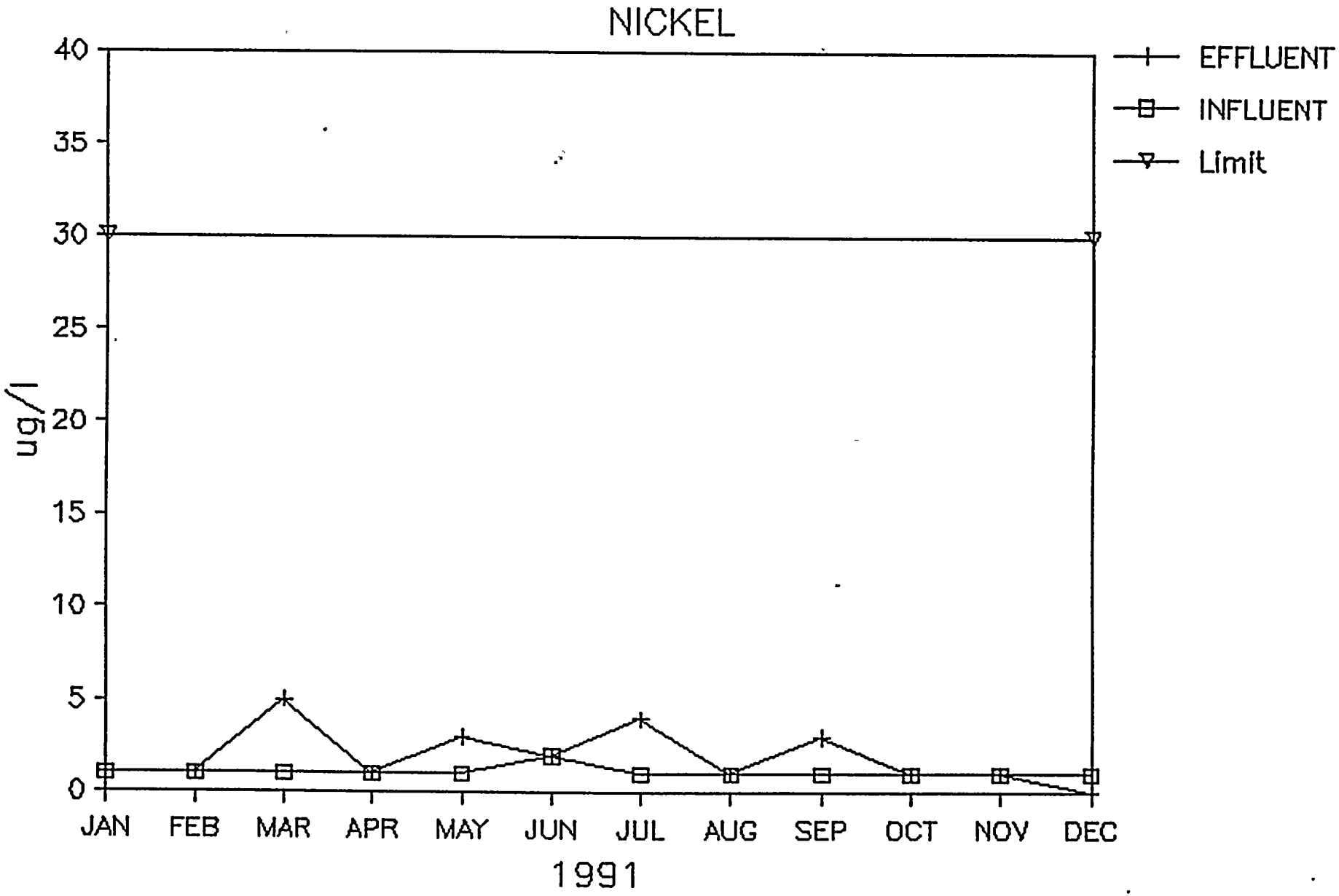
# DISCHARGE 001

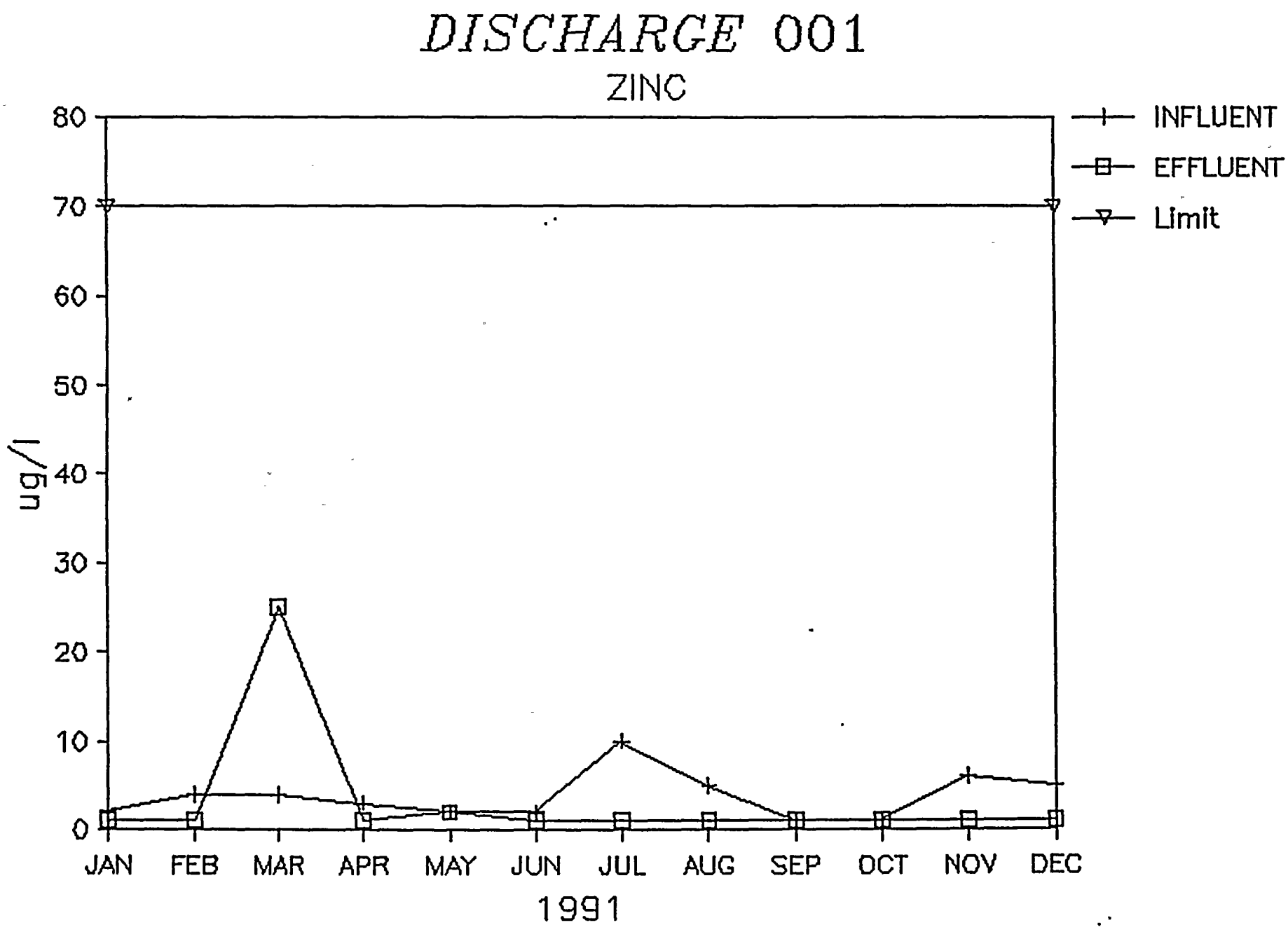



DISCHARGE 001
AMMONIA (N)
INFLUENT
EFFLUENT
Limit
mg/l
4
3
2
1
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1990


DISCHARGE 001
COPPER
EFFLUENT
INFLUENT
Limit
ug/l
30
25
20
15
10
5
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1991

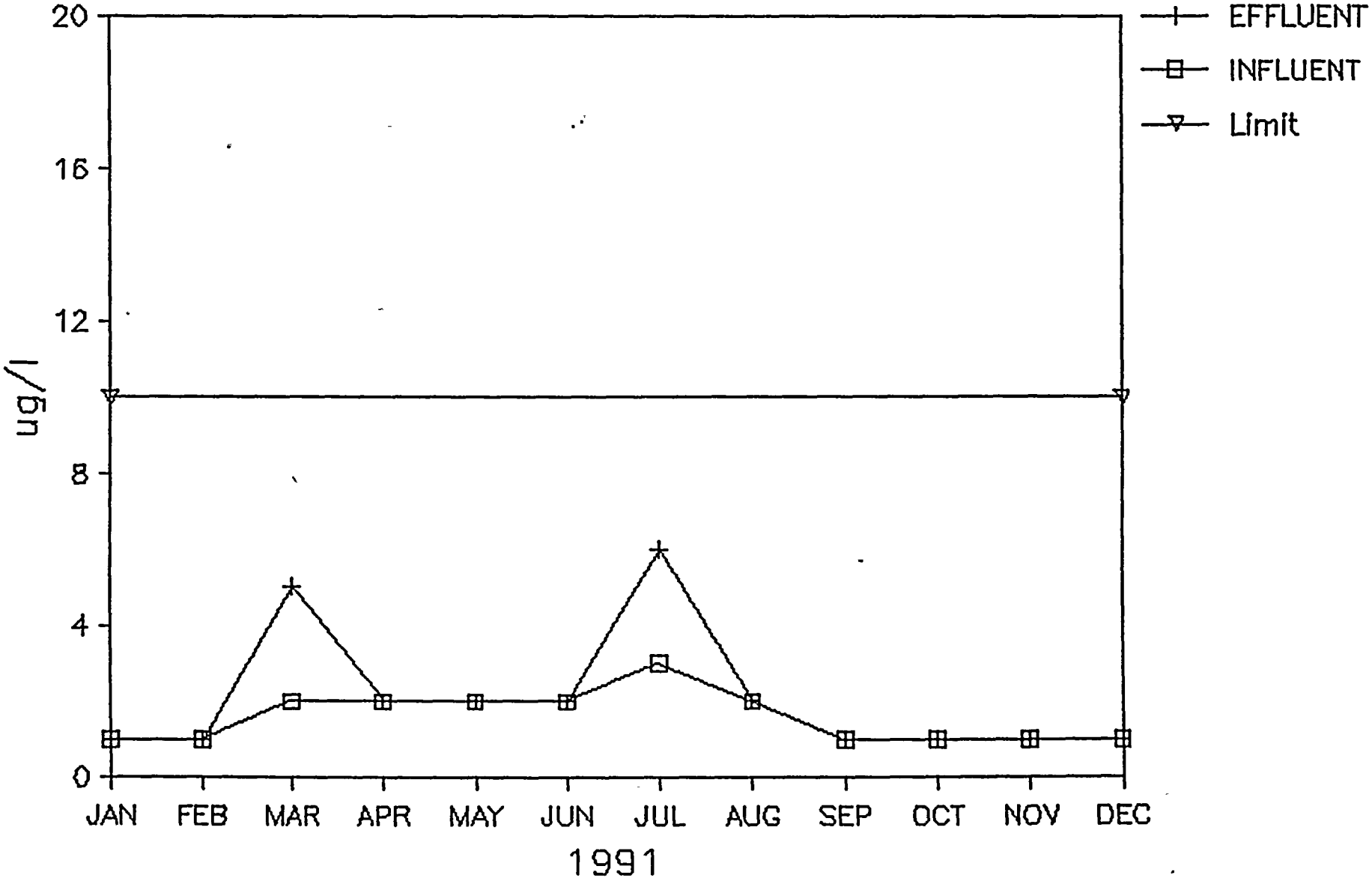
# DISCHARGE 001




DISCHARGE 001
ZINC
80
70
60
50
40
30
20
10
0
ug/l
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1991
INFLUENT
EFFLUENT
Limit

# DISCHARGE 001

CHROMIUM



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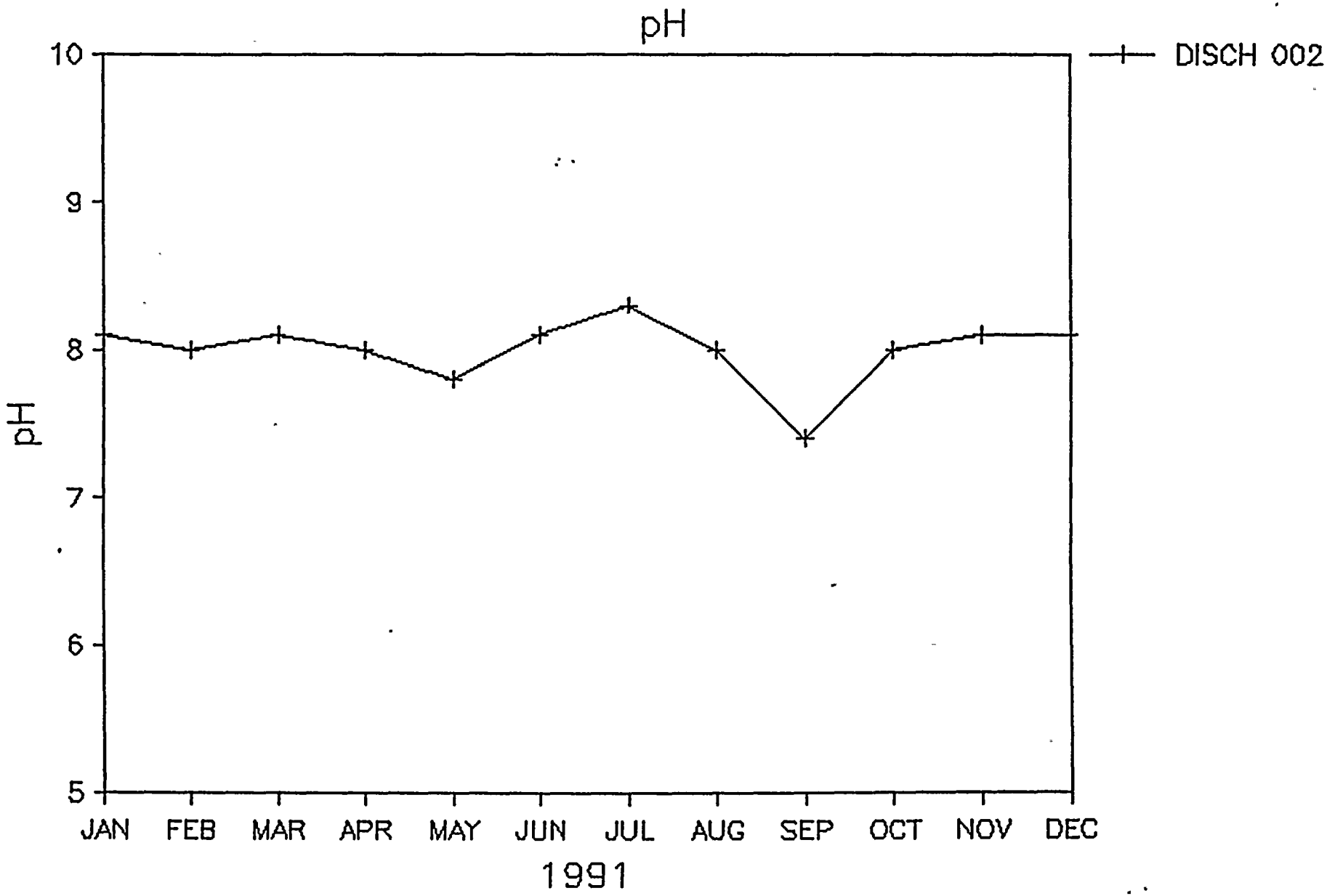

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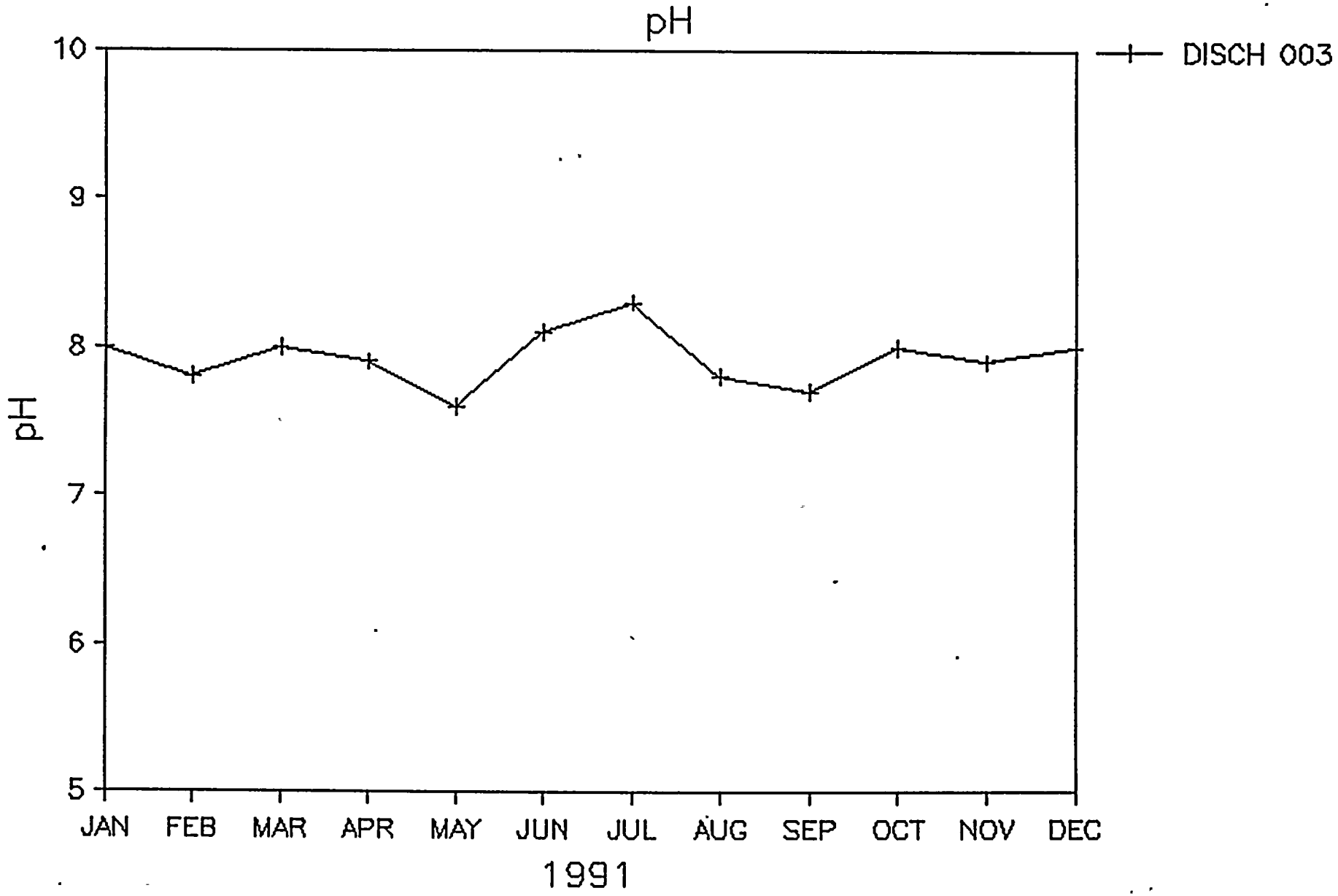

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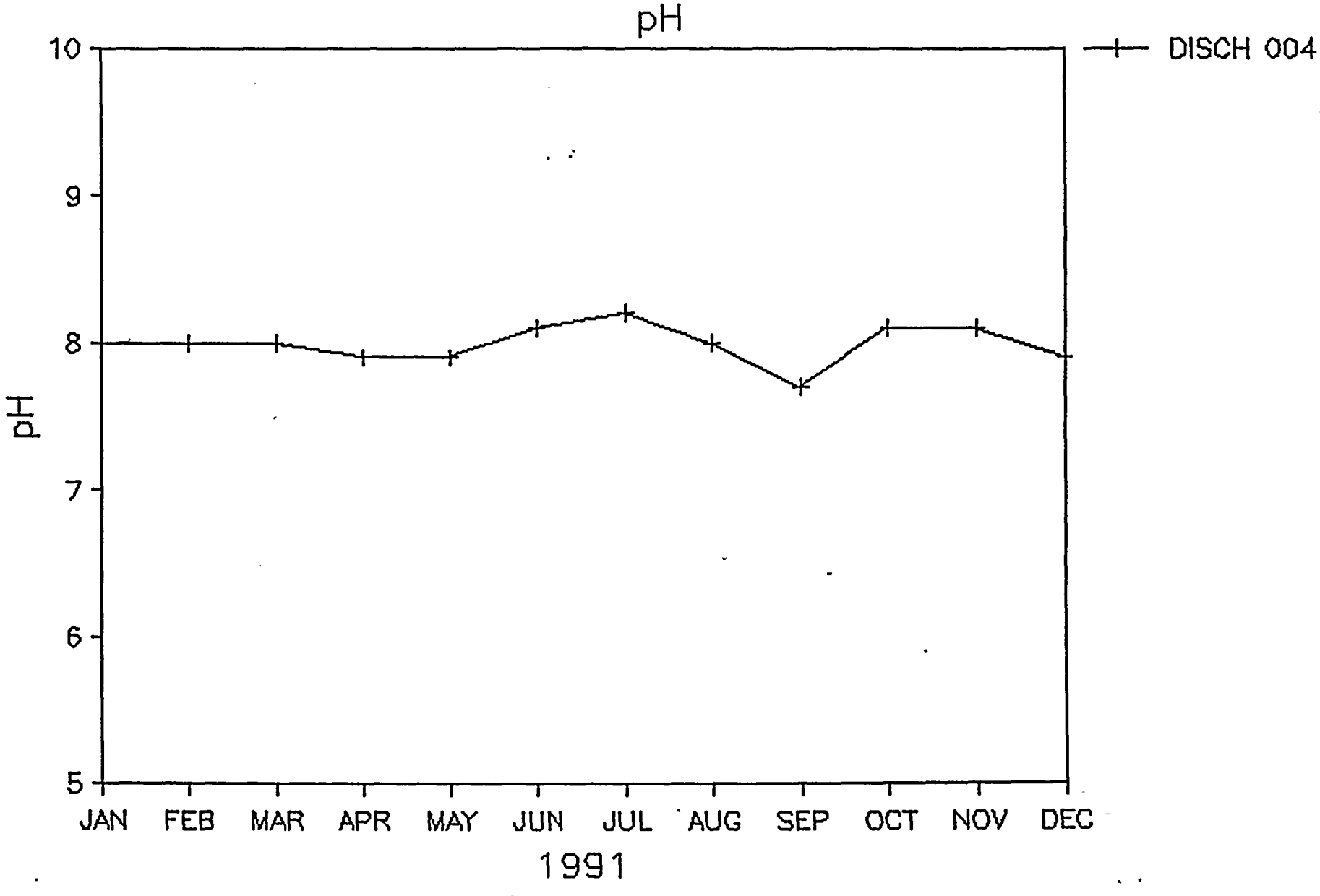
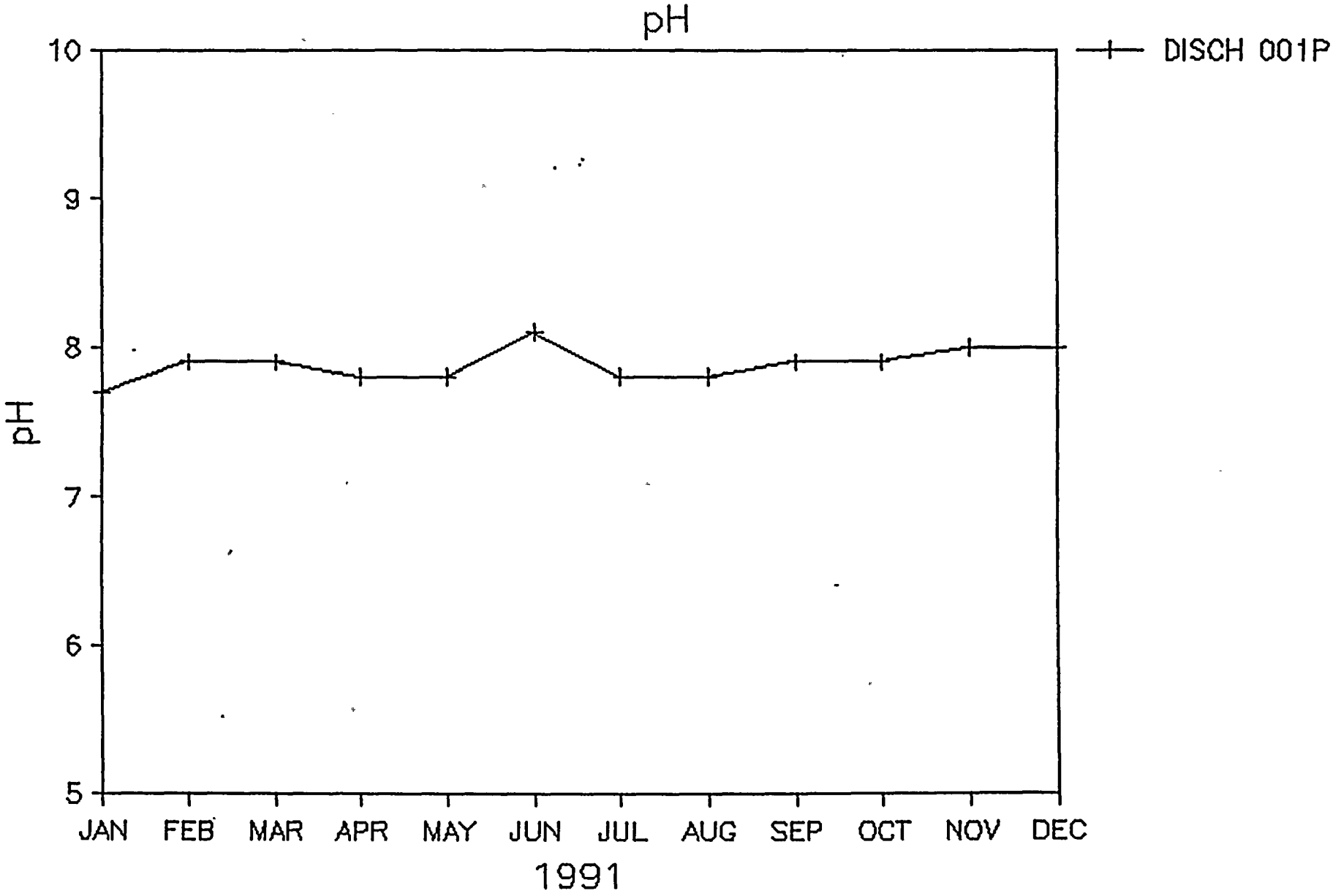
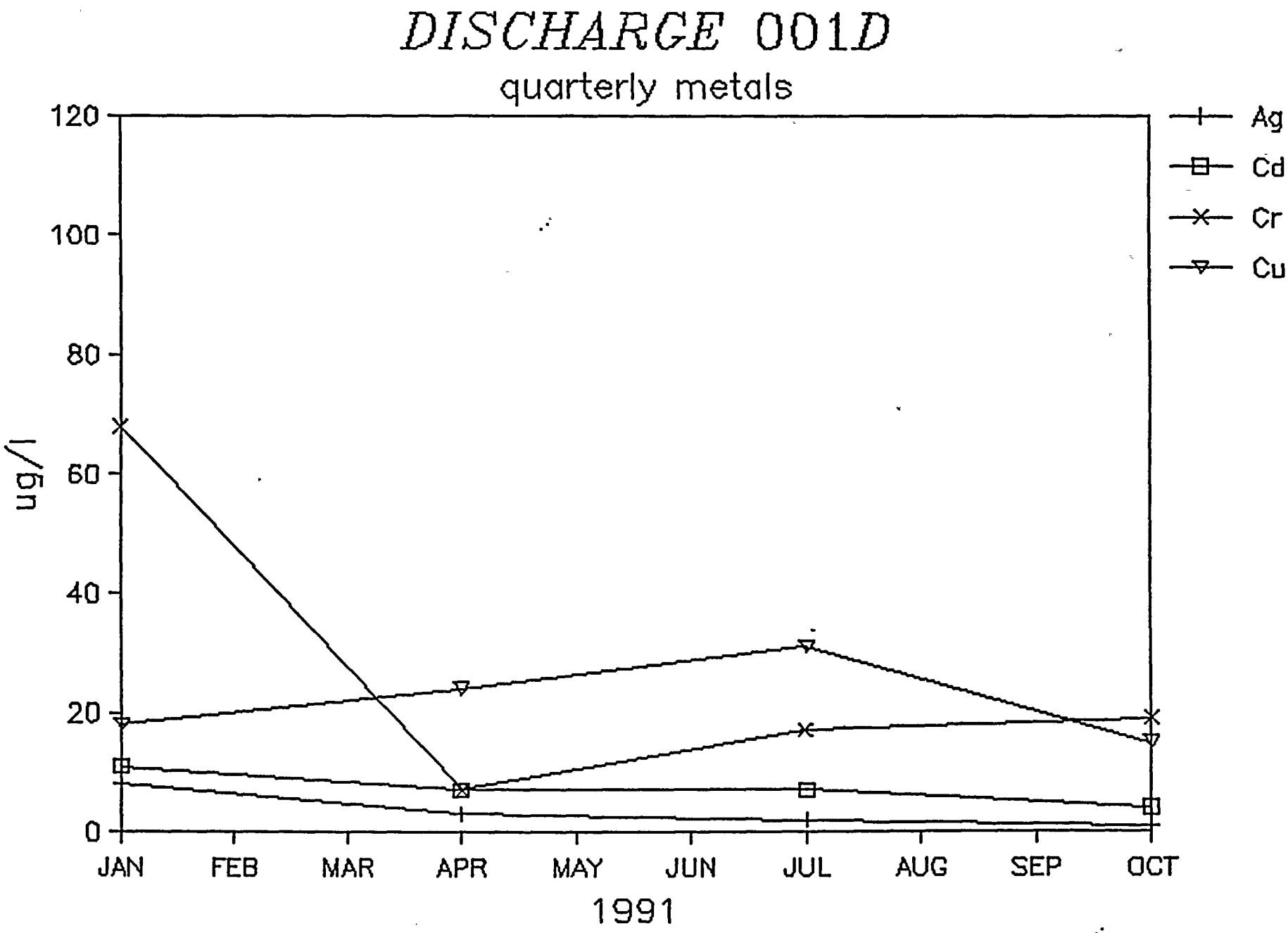
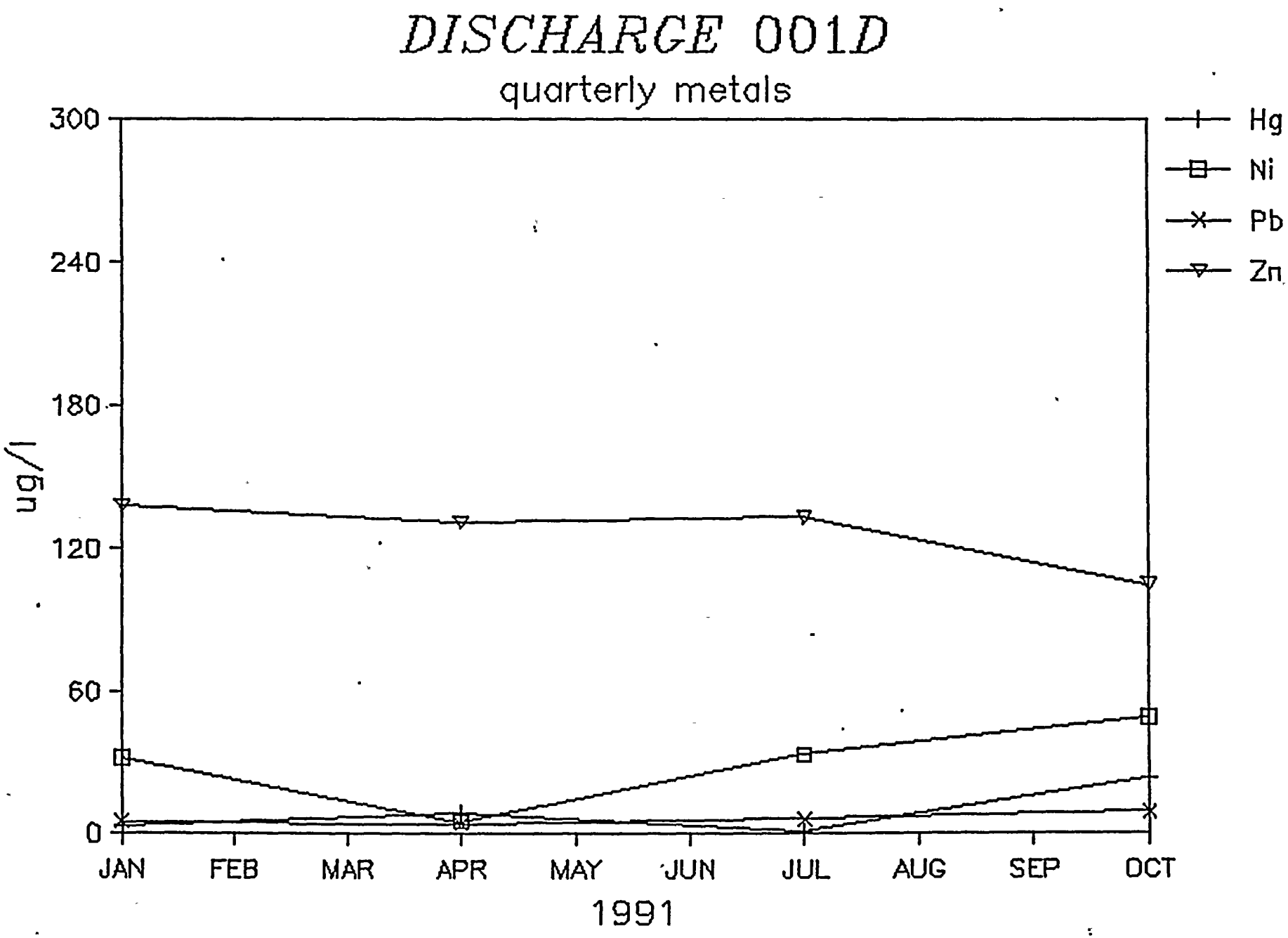
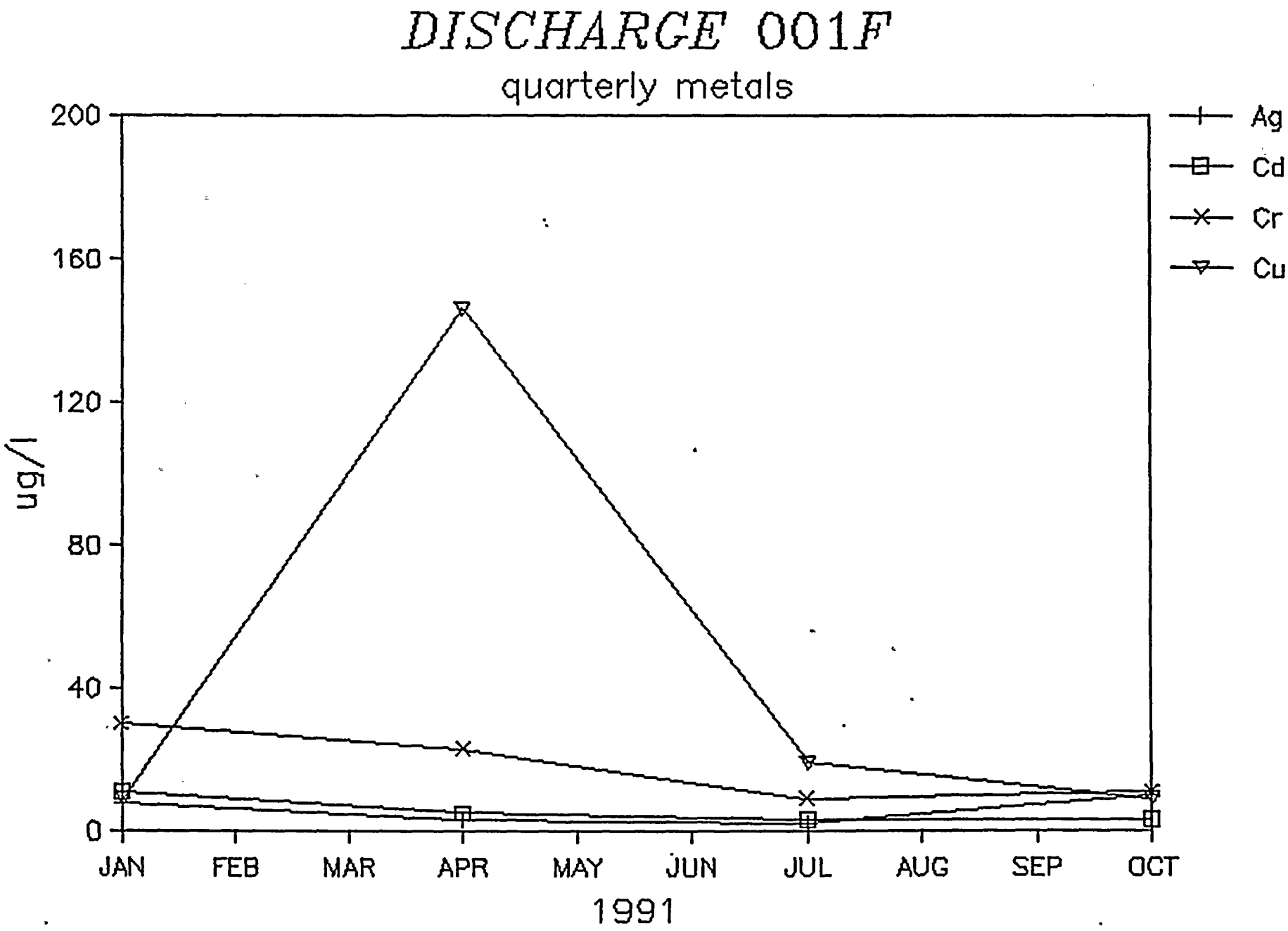


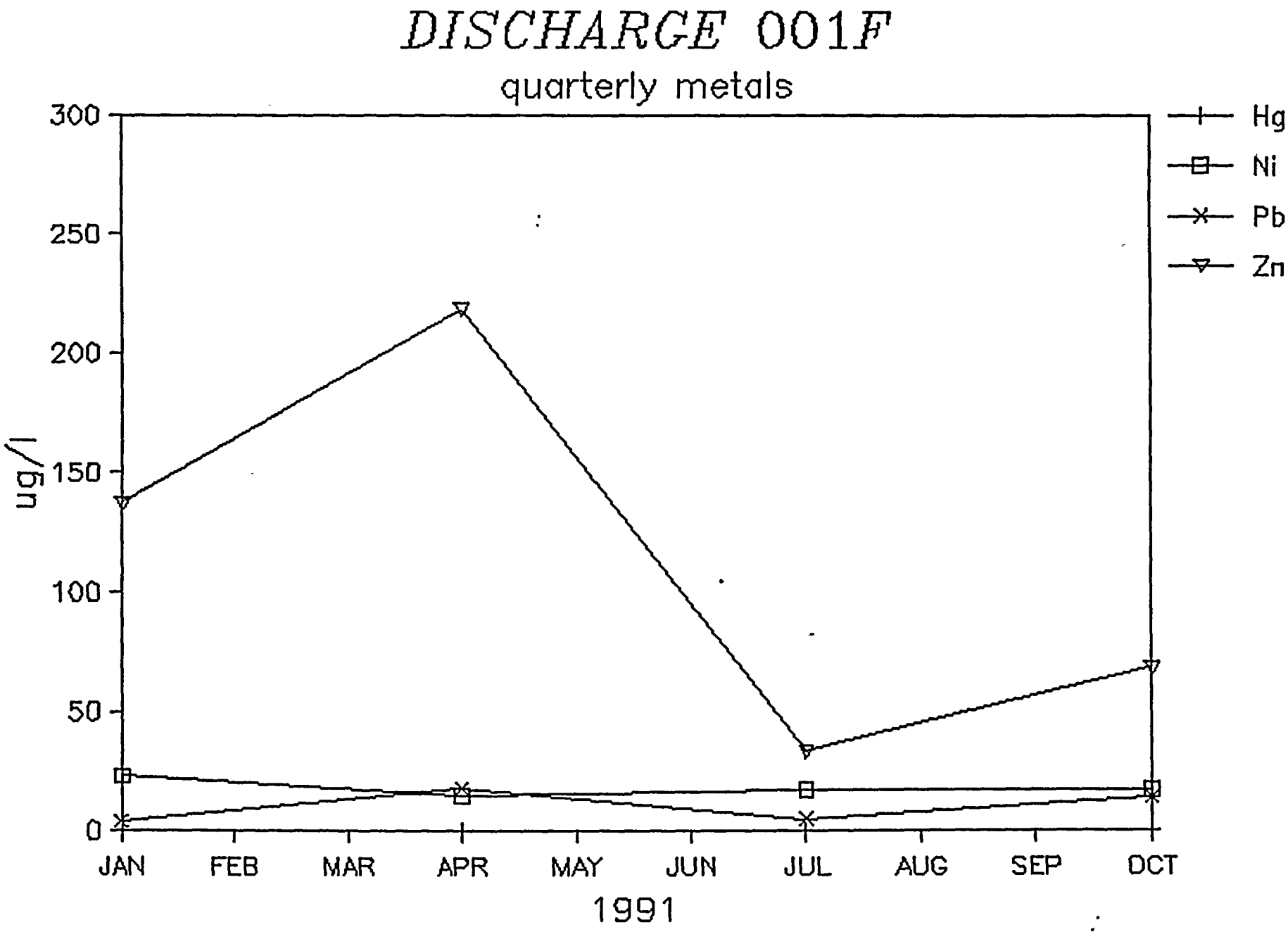
# DISCHARGE 001P

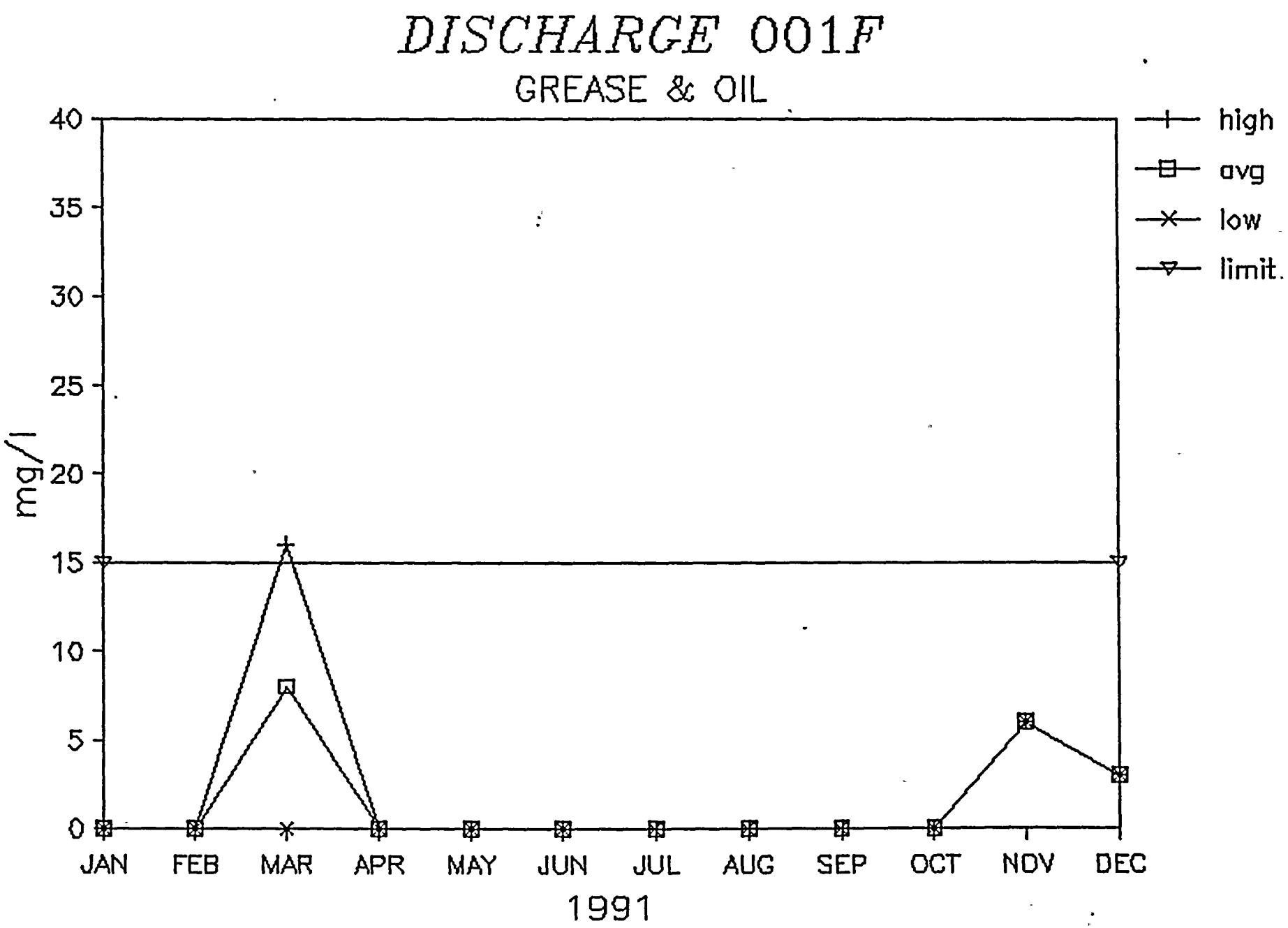


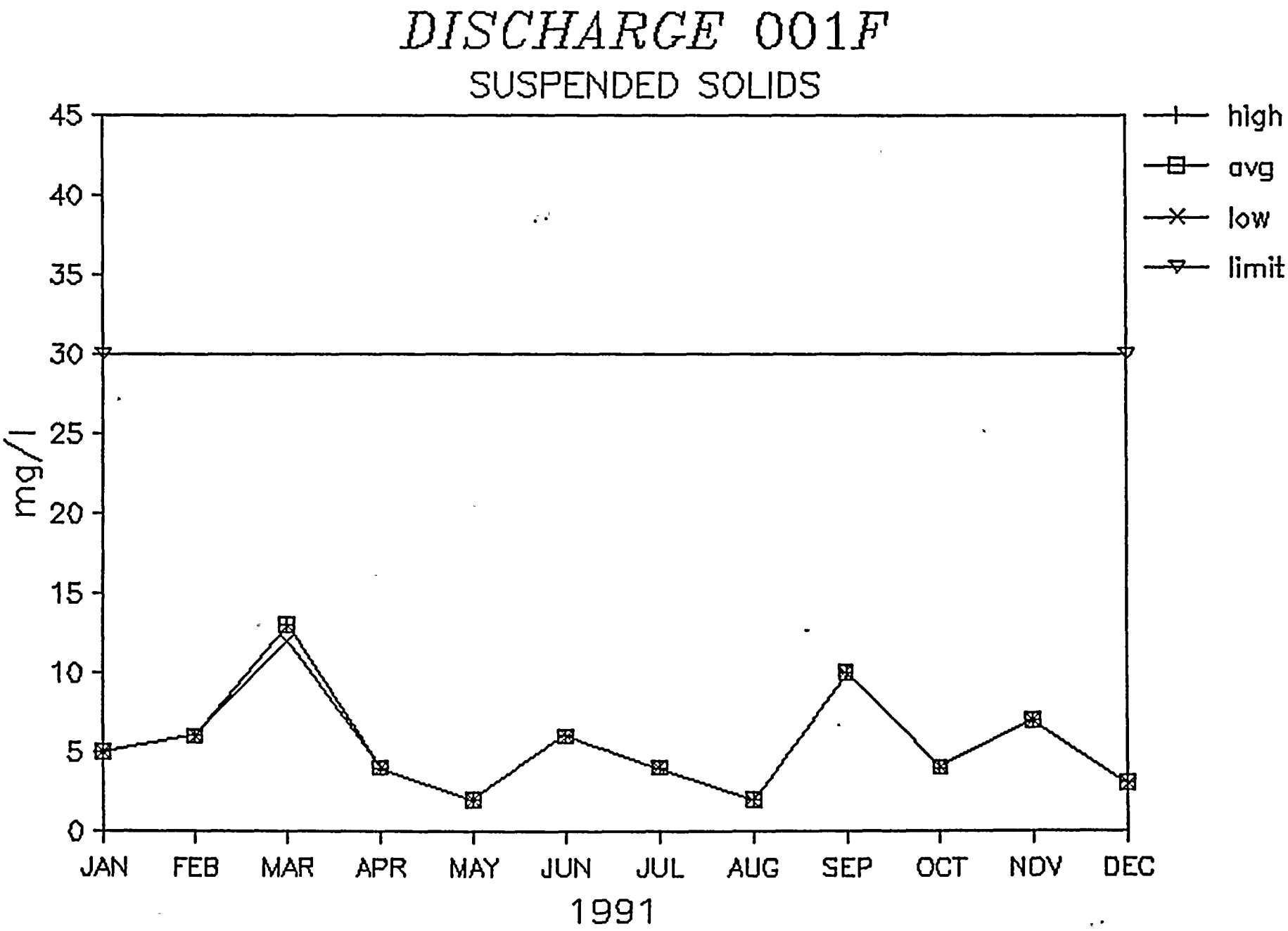

DISCHARGE 001D
quarterly metals
120
100
80
60
40
20
0
ug/l
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
1991
Ag
Cd
Cr
Cu

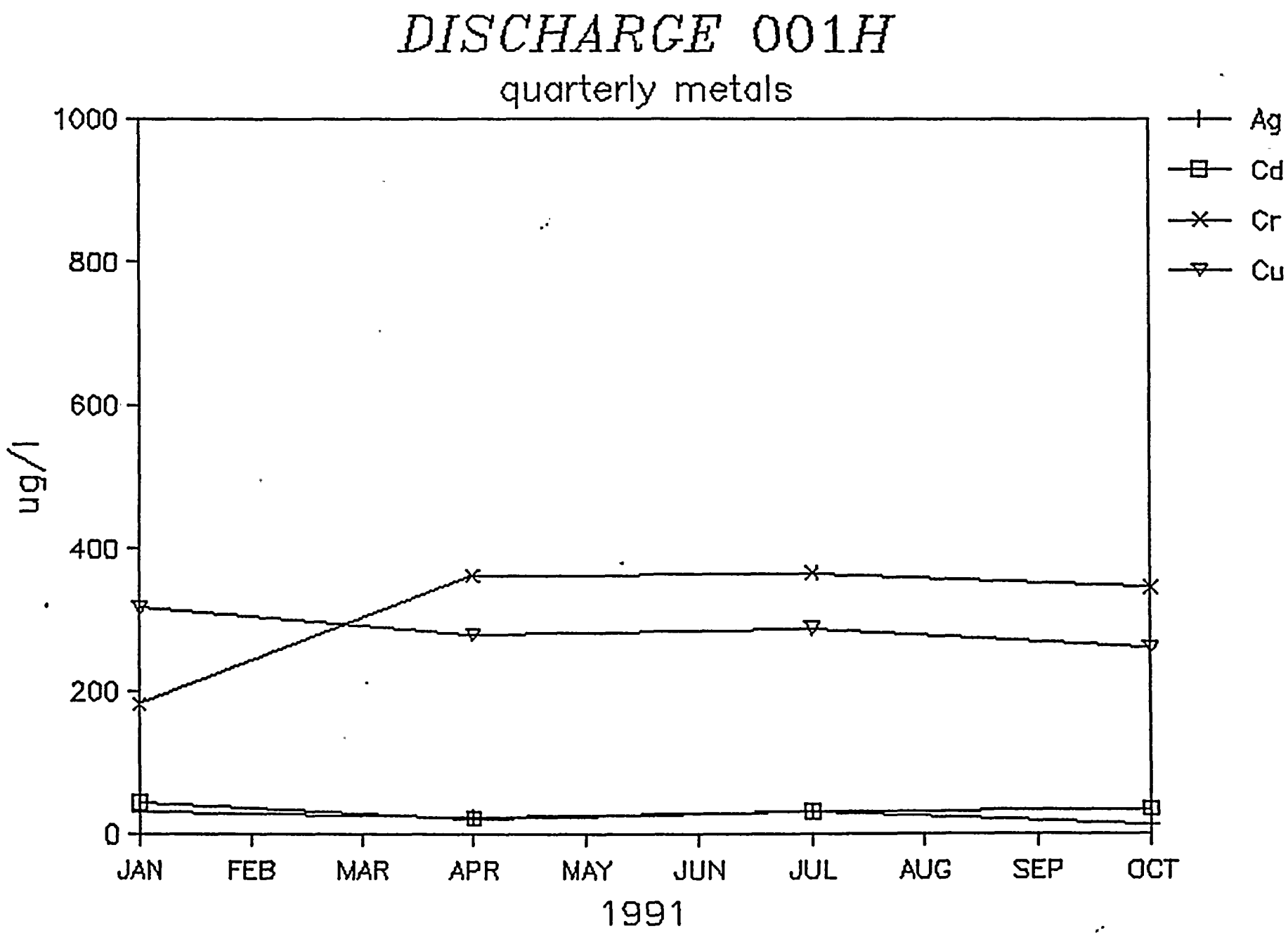

DISCHARGE 001D
quarterly metals
300
240
180
120
60
0
ug/l
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
1991
Hg
Ni
Pb
Zn

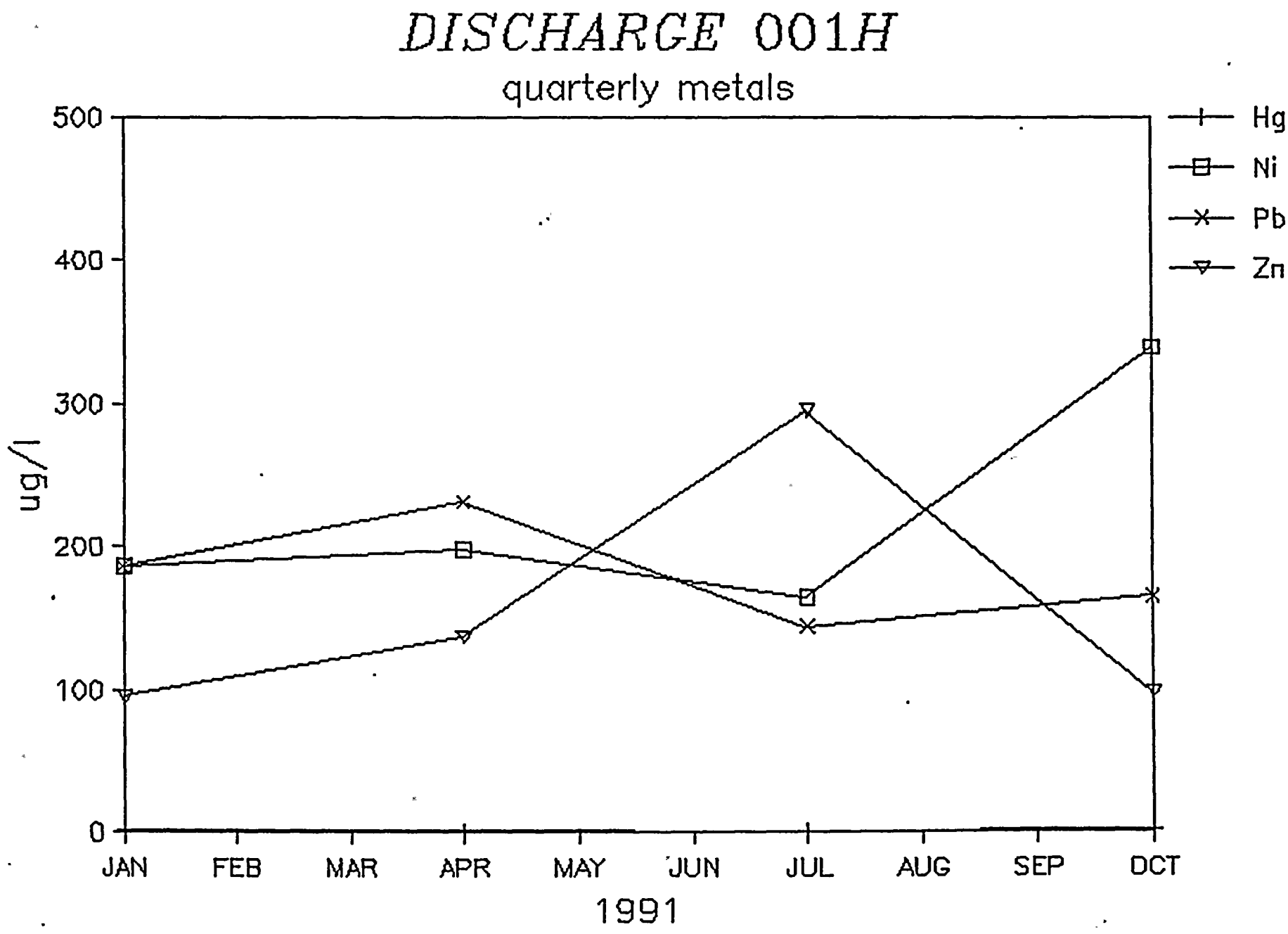

DISCHARGE 001F
quarterly metals
200
160
120
80
40
0
ug/l
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
1991
Ag
Cd
Cr
Cu

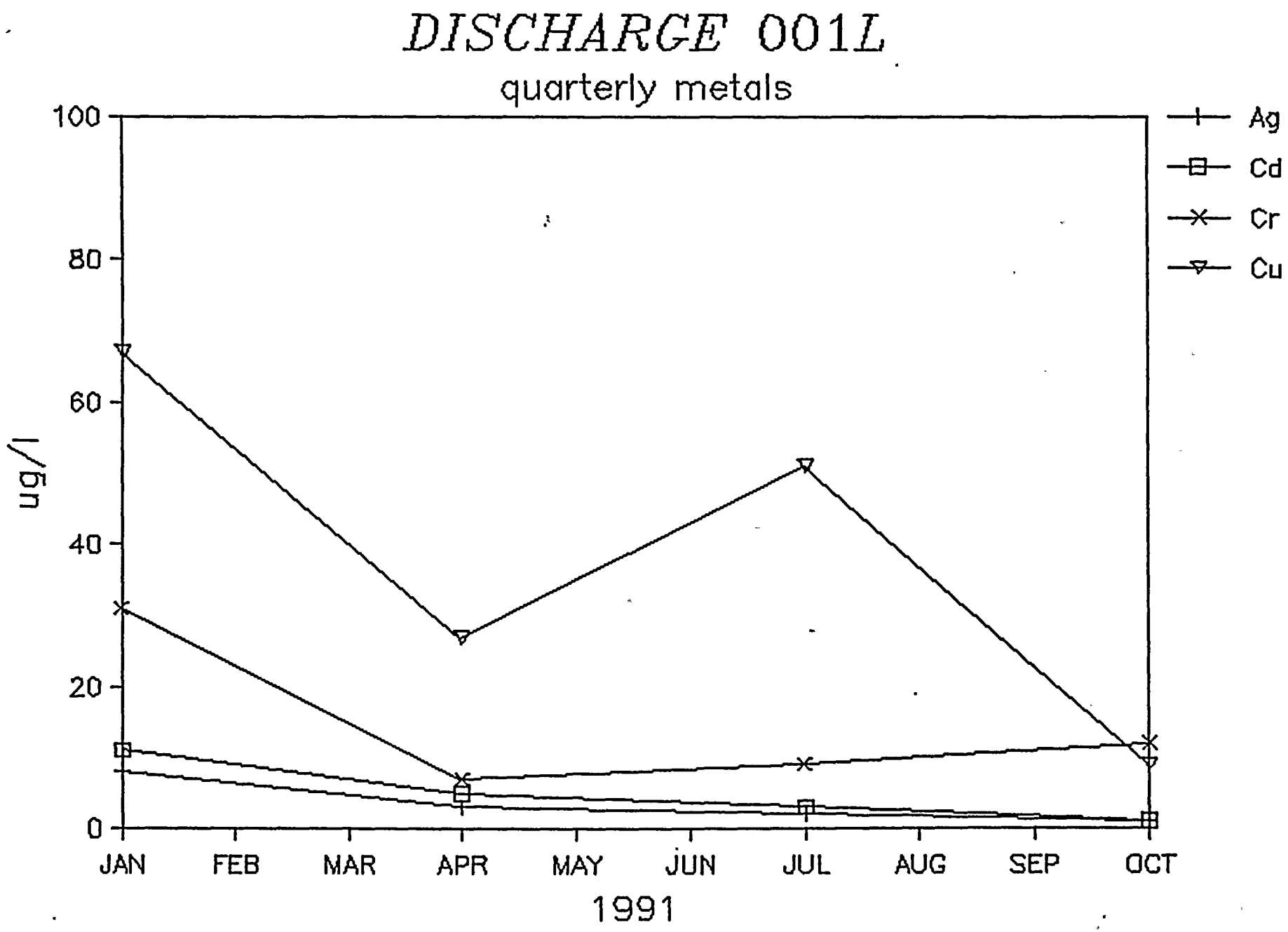

DISCHARGE 001F
quarterly metals
300
250
200
150
100
50
0
ug/l
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
1991
Hg
Ni
Pb
Zn

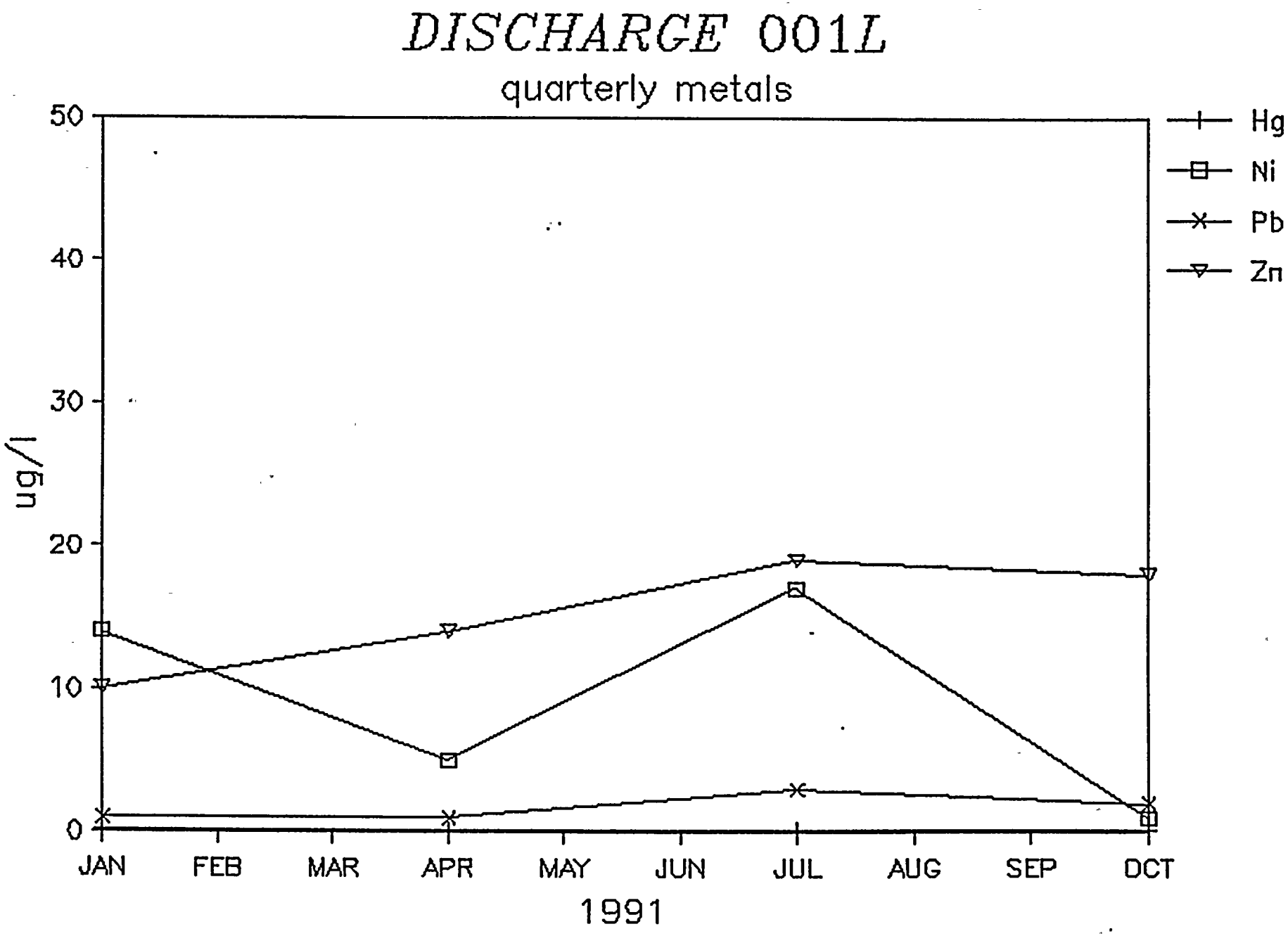

DISCHARGE 001F
GREASE & OIL
mg/l
40
35
30
25
20
15
10
5
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1991
high
avg
low
limit.


DISCHARGE 001F
SUSPENDED SOLIDS
mg/l
45
40
35
30
25
20
15
10
5
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1991
high
avg
low
limit


DISCHARGE 001H
quarterly metals
1000
800
600
400
200
0
ug/l
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
1991
Ag
Cd
Cr
Cu

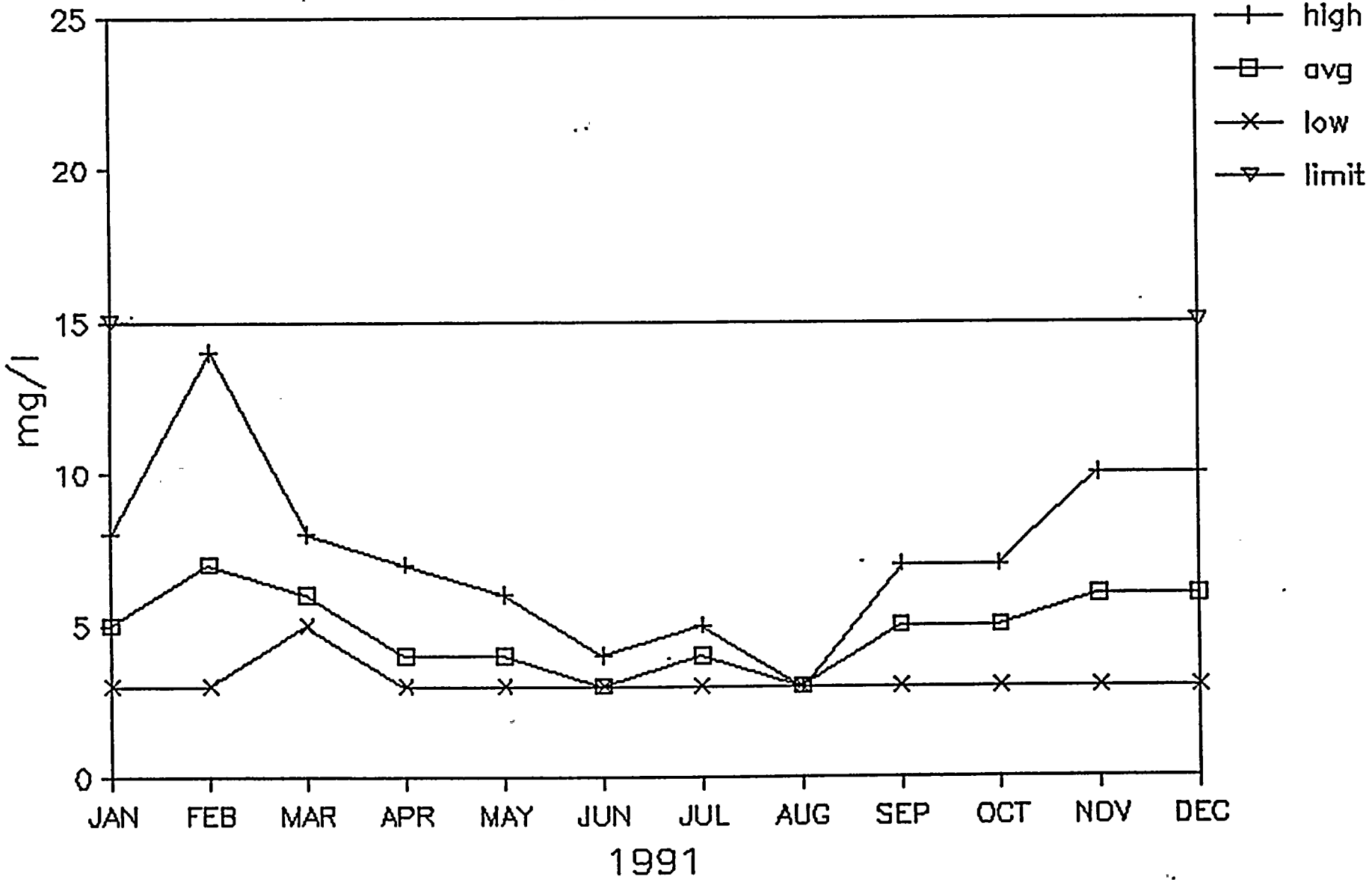

DISCHARGE 001H
quarterly metals
500
400
300
200
100
0
µg/l
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
1991
Hg
Ni
Pb
Zn

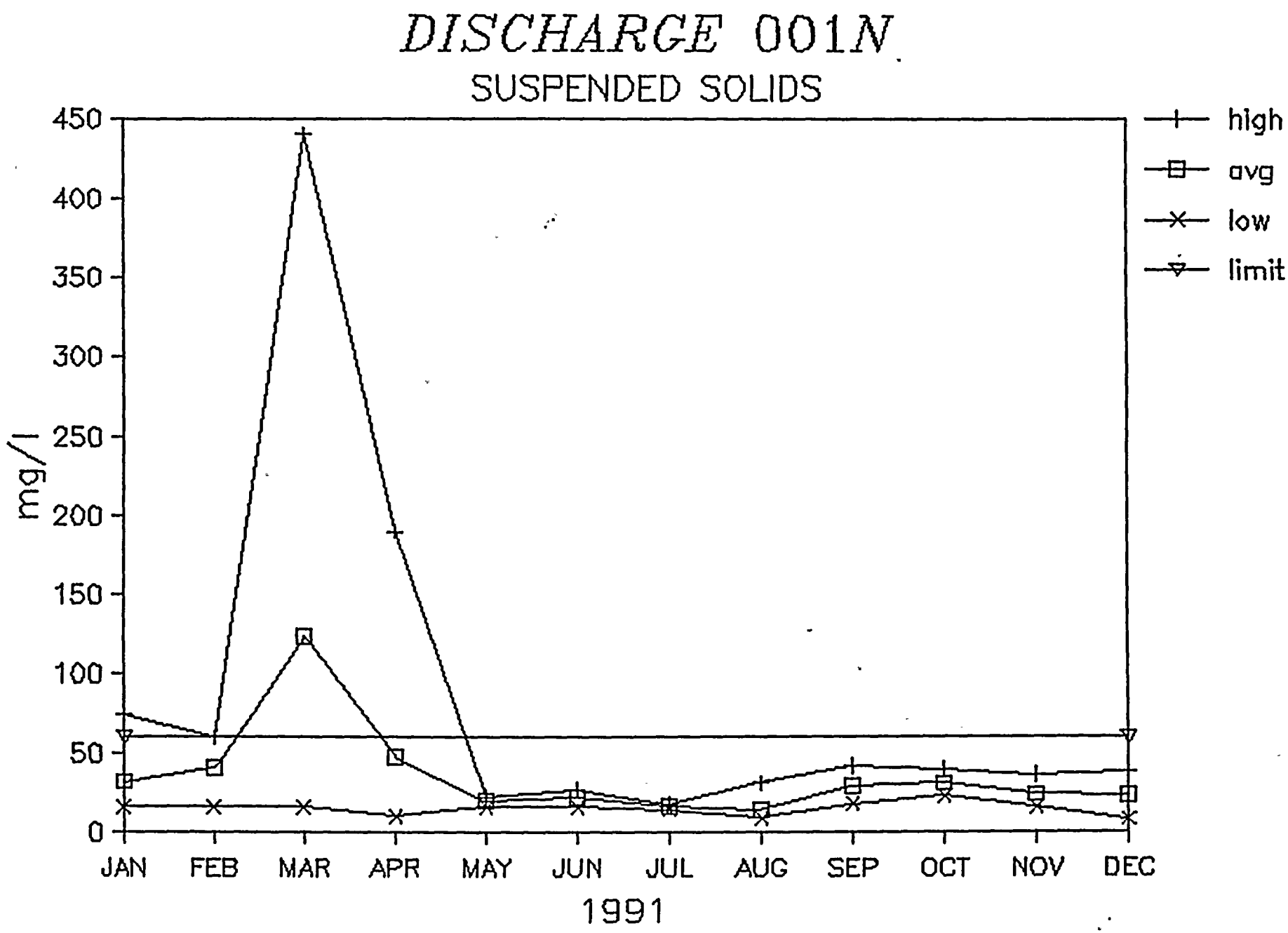

DISCHARGE 001L
quarterly metals
100
80
60
40
20
0
ug/l
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
1991
Ag
Cd
Cr
Cu


DISCHARGE 001L
quarterly metals
50
40
30
20
10
0
ug/l
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
1991
Hg
Ni
Pb
Zn

# DISCHARGE 001N

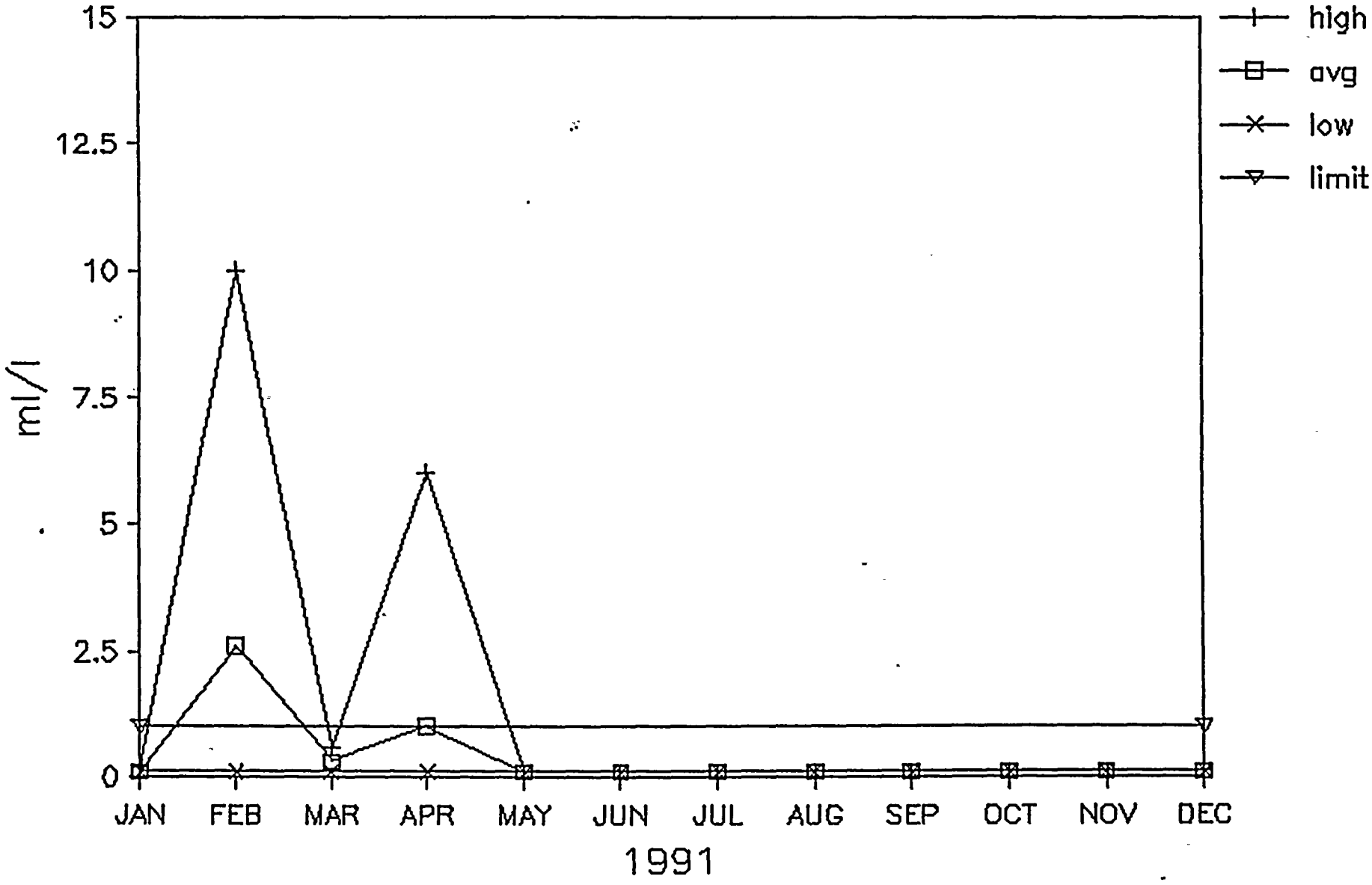
GREASE & OIL




DISCHARGE 001N
SUSPENDED SOLIDS
mg/l
450
400
350
300
250
200
150
100
50
0
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC
1991
high
avg
low
limit

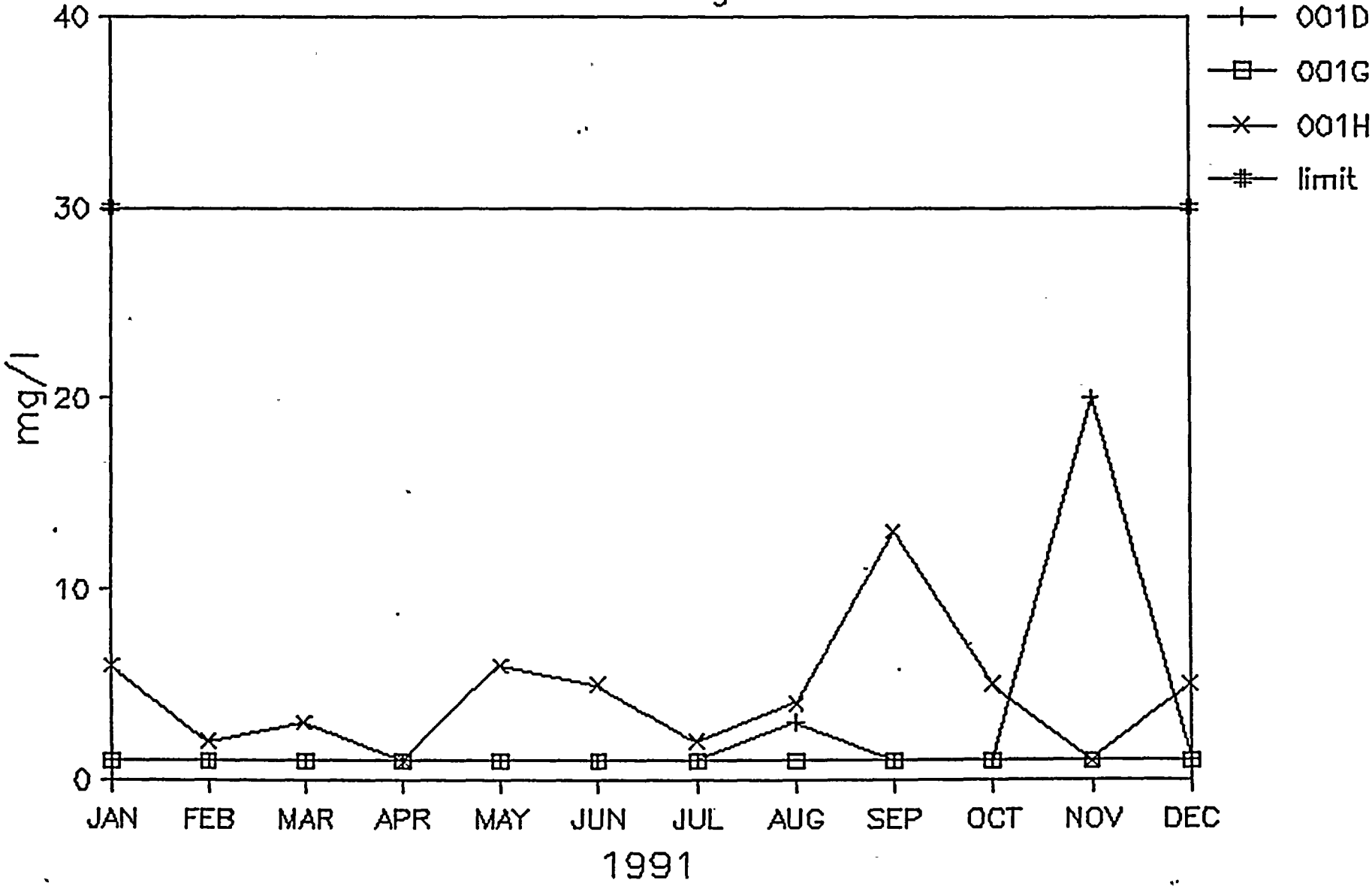
# DISCHARGE 001N

## SETTLEABLE SOLIDS



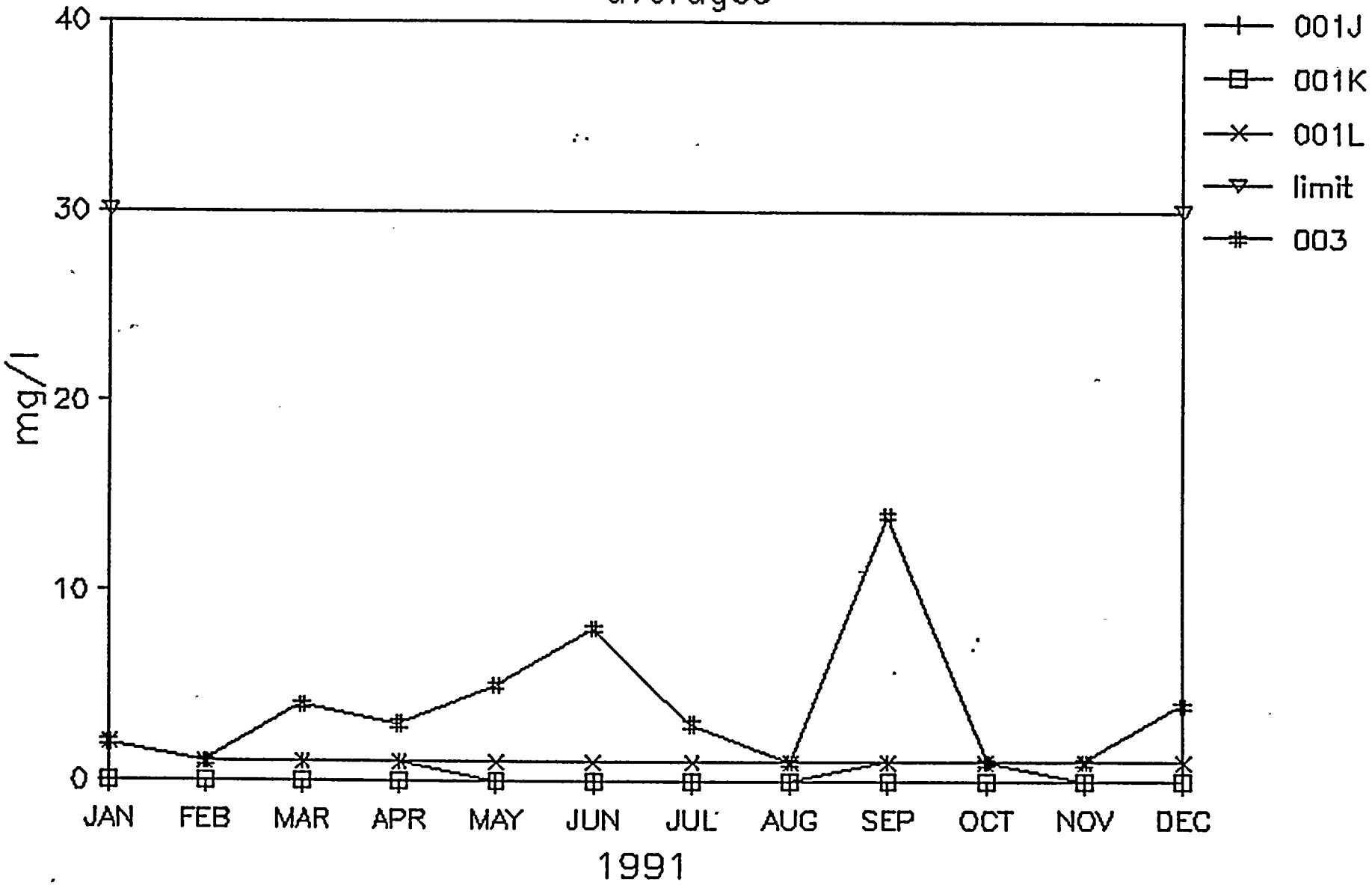
# MONTHLY SUSPENDED SOLIDS

averages



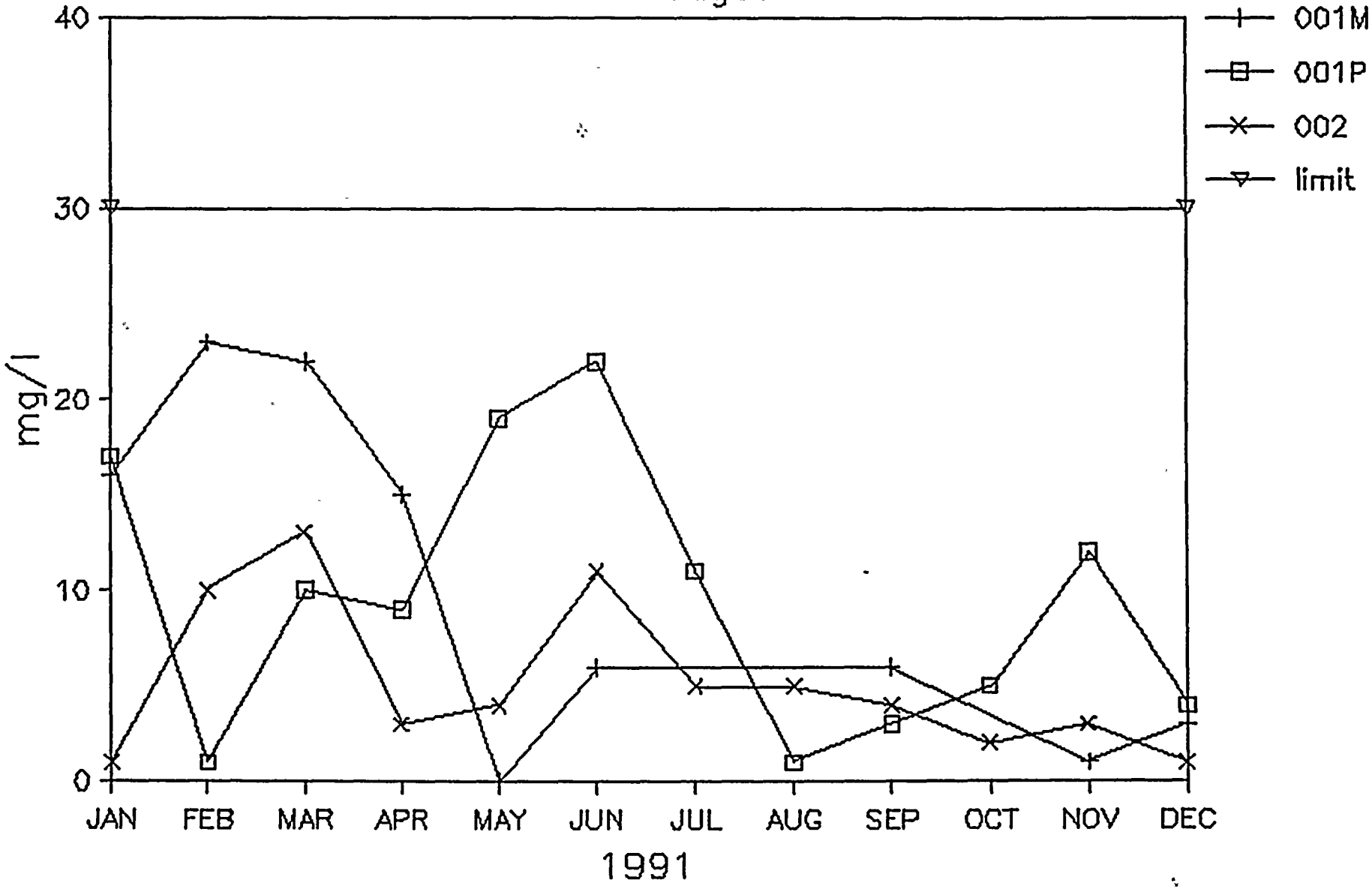
# MONTHLY SUSPENDED SOLIDS

averages



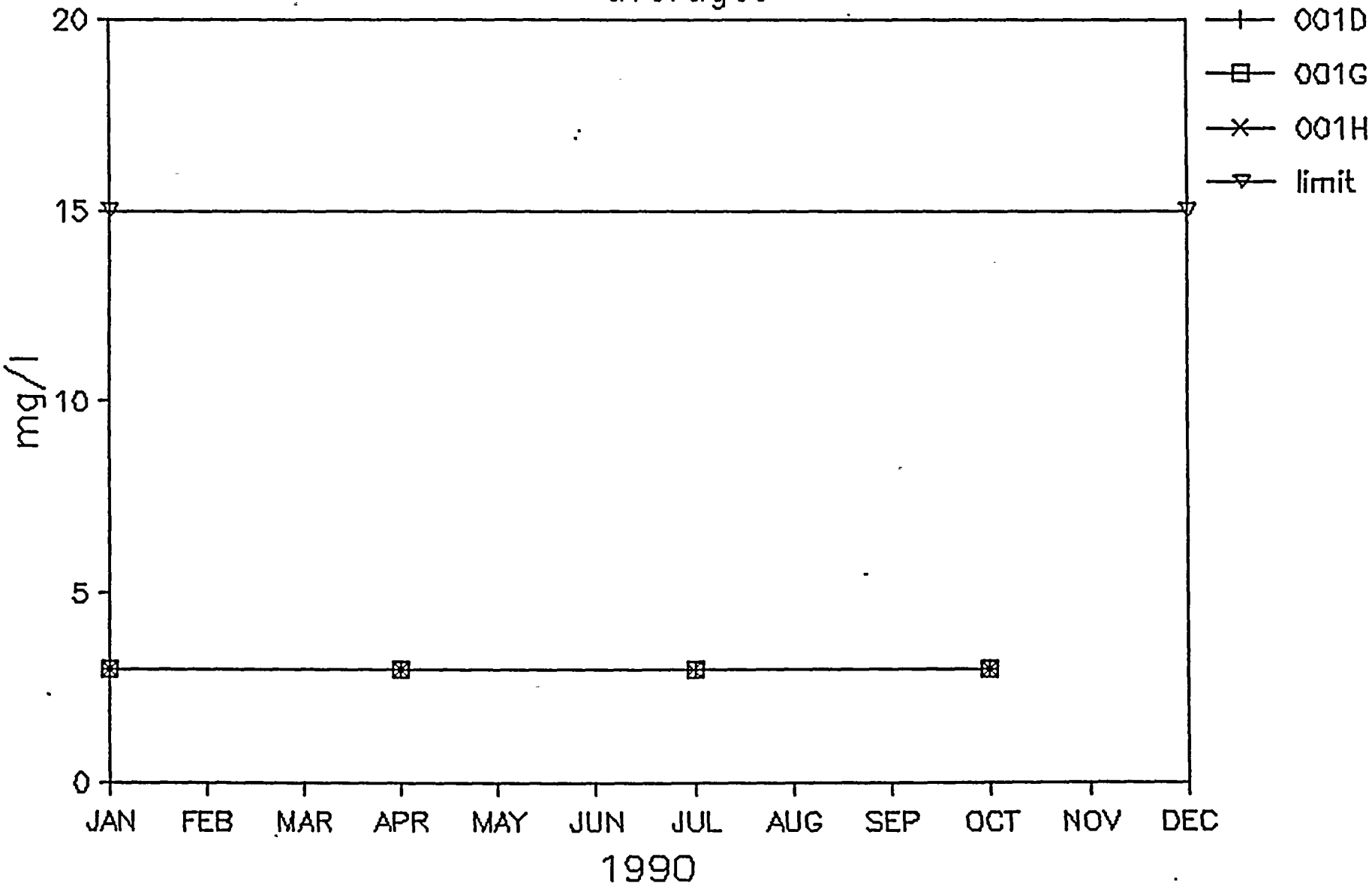
# MONTHLY SUSPENDED SOLIDS

averages



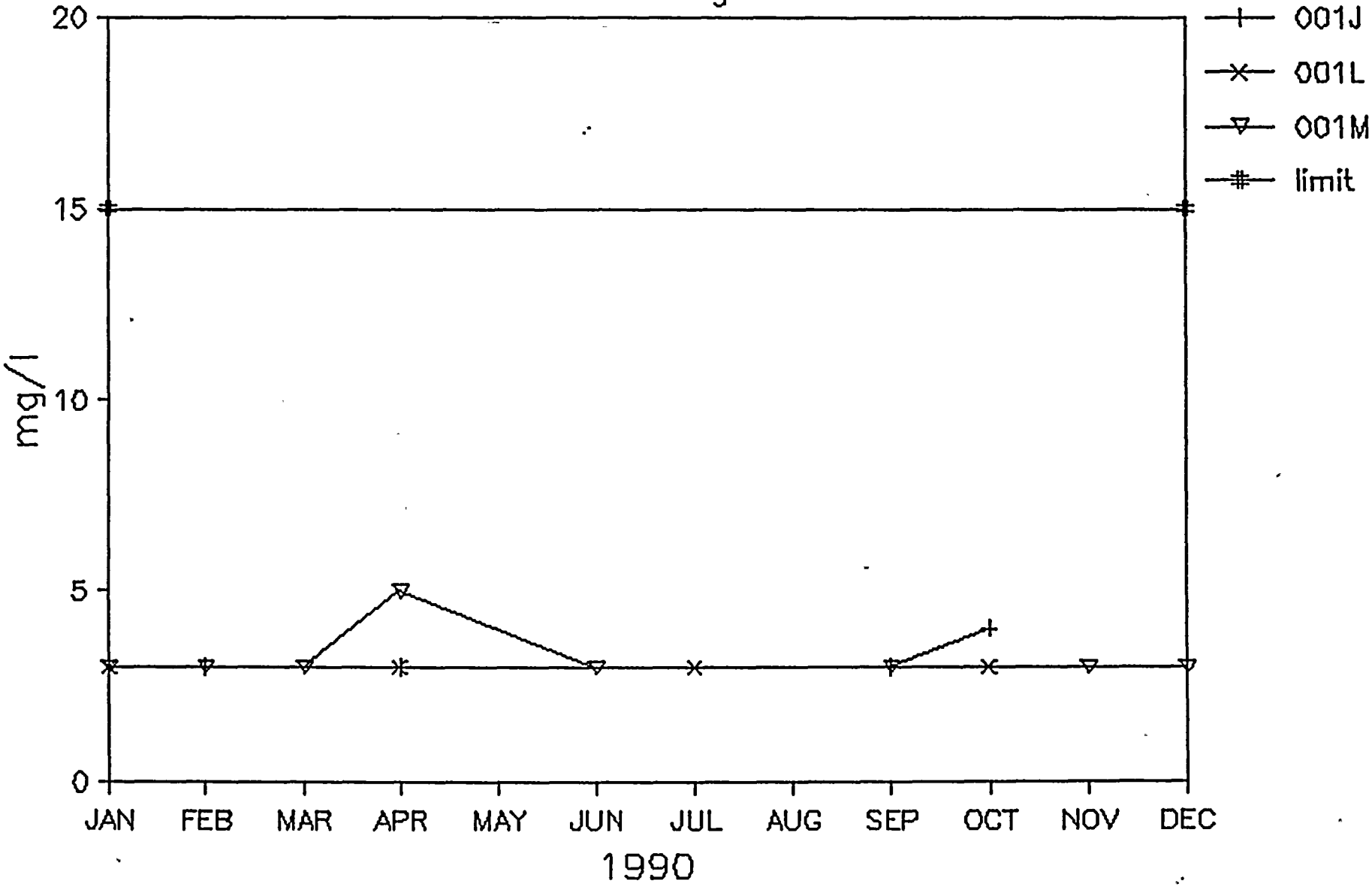
# QUARTERLY GREASE & OIL

averages



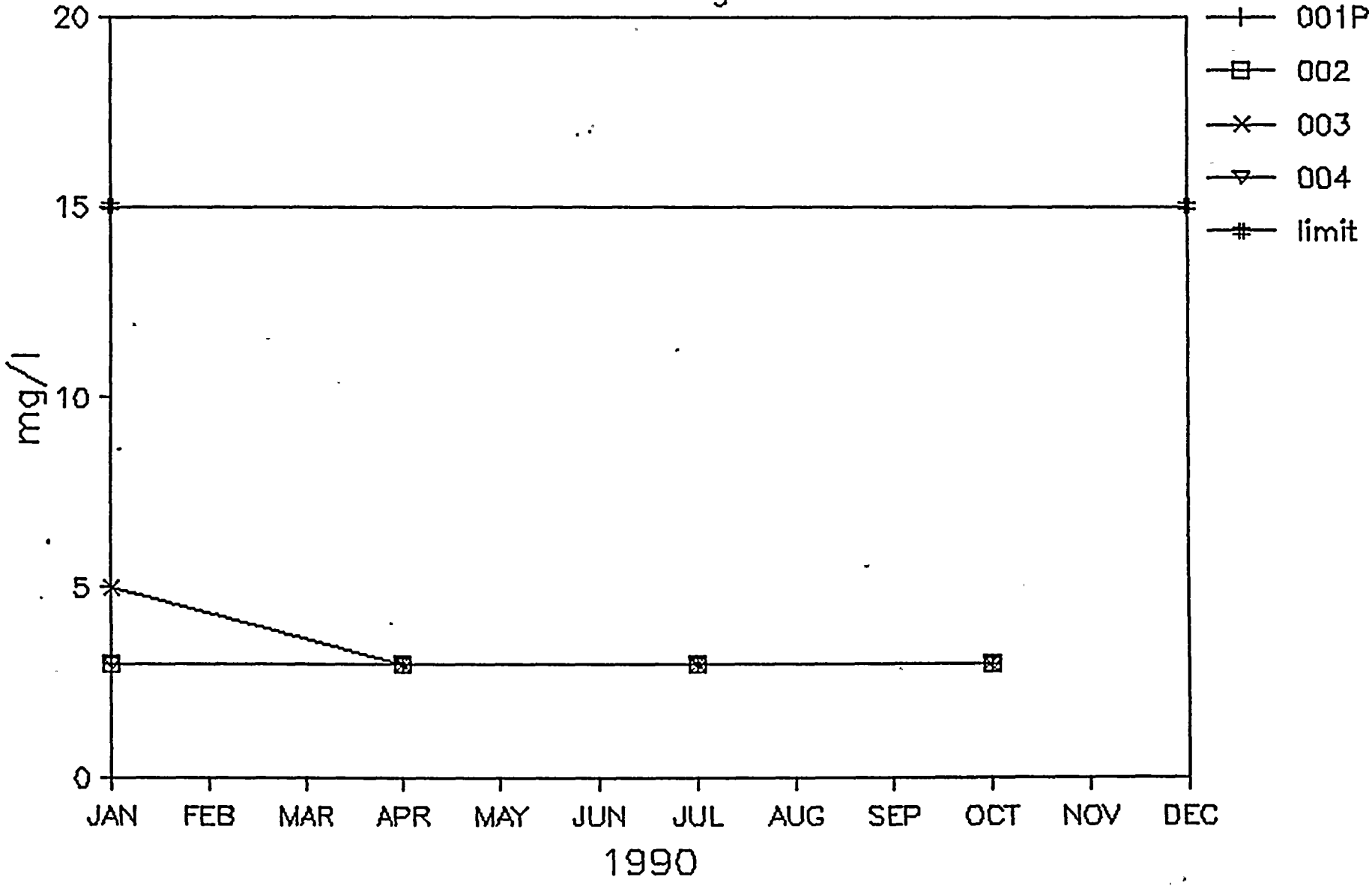
# QUARTERLY GREASE & OIL

averages



# QUARTERLY GREASE & OIL

averages



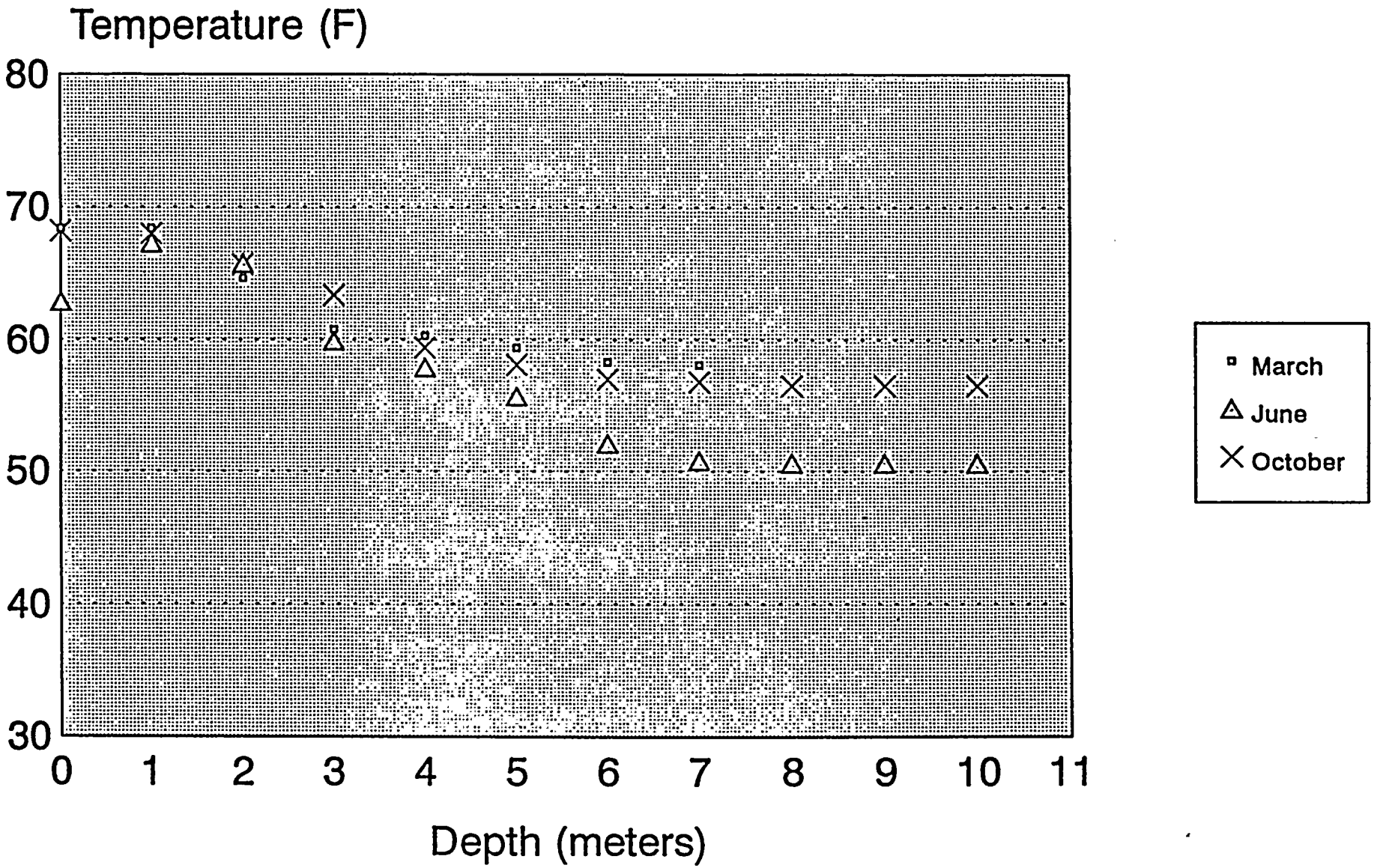
# APPENDIX 3

## Graphical Summaries of Stratified Water Temperature Measurements of the Receiving Water

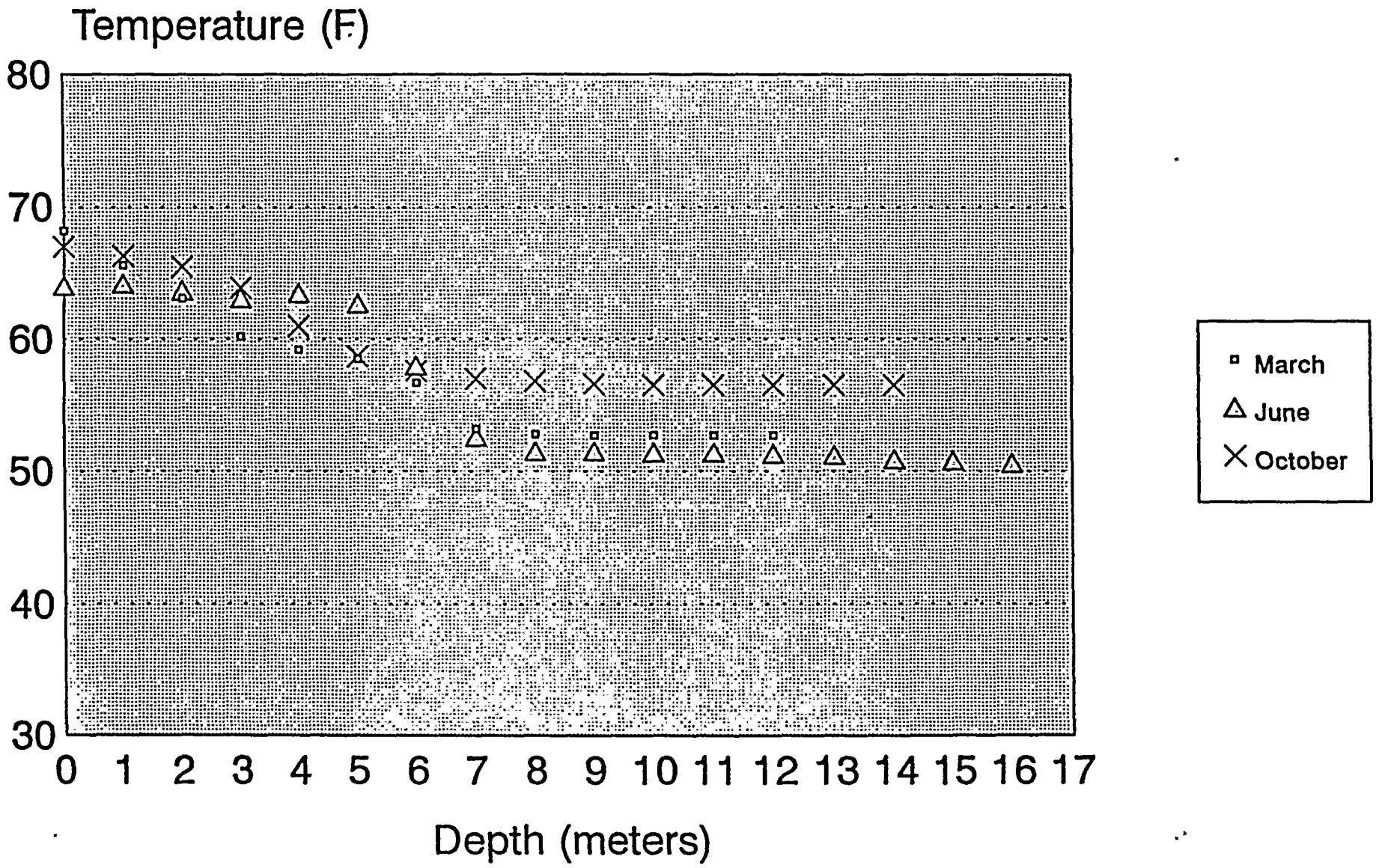
APPENDIX 3

TABLE OF CONTENTS

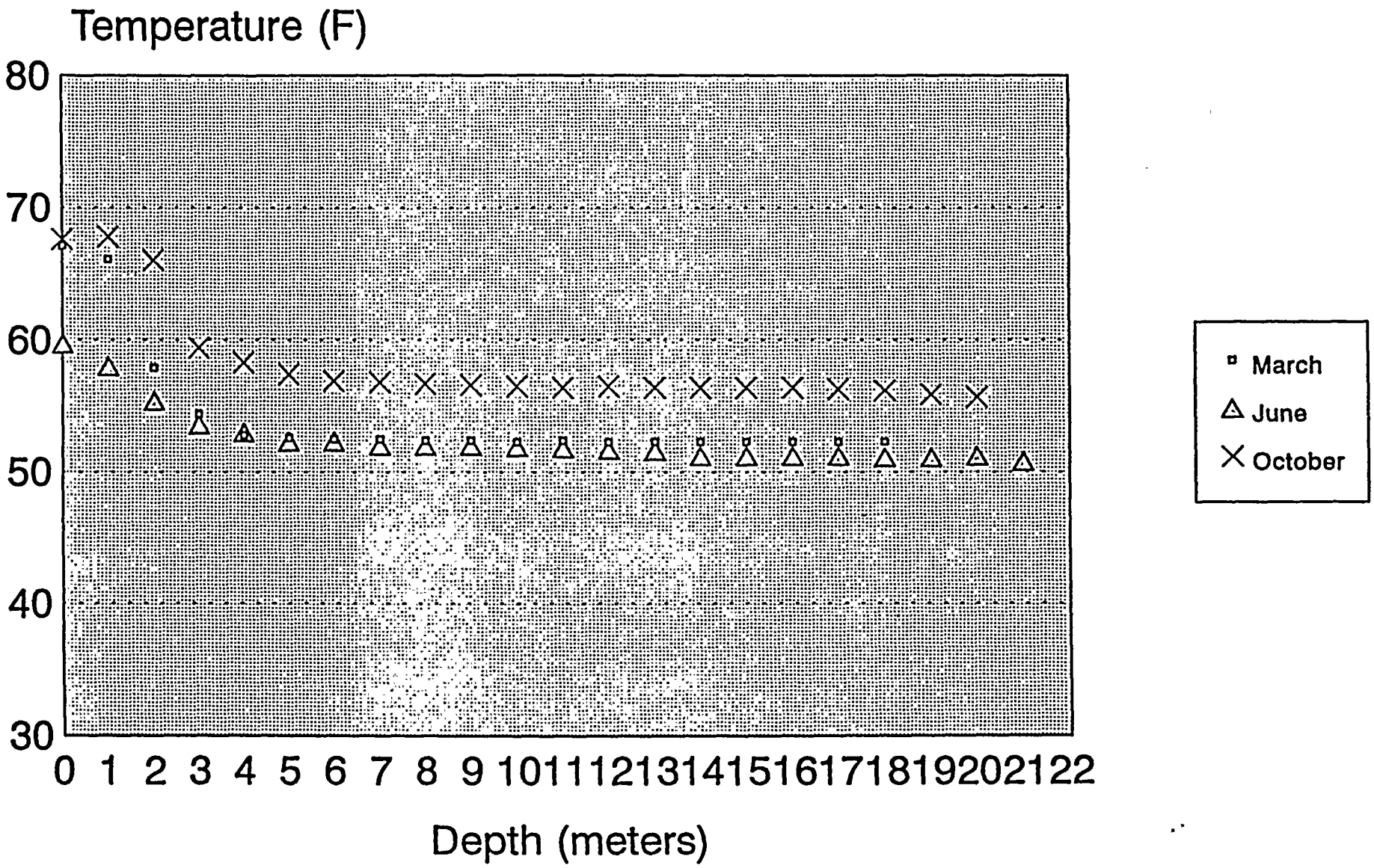
# Stratified Water Temperatures
## Station 10



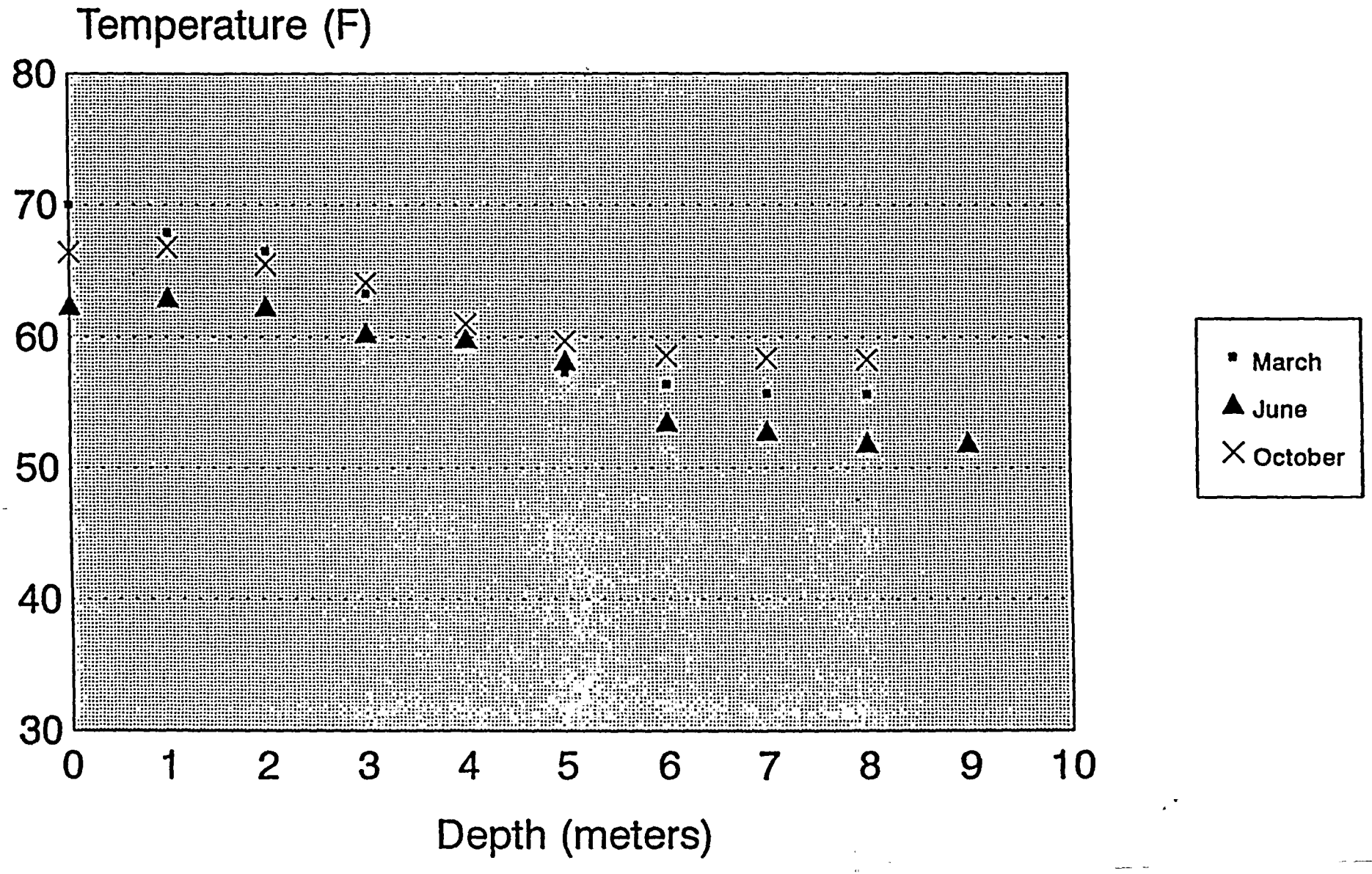
# Stratified Water Temperatures
## Station 11



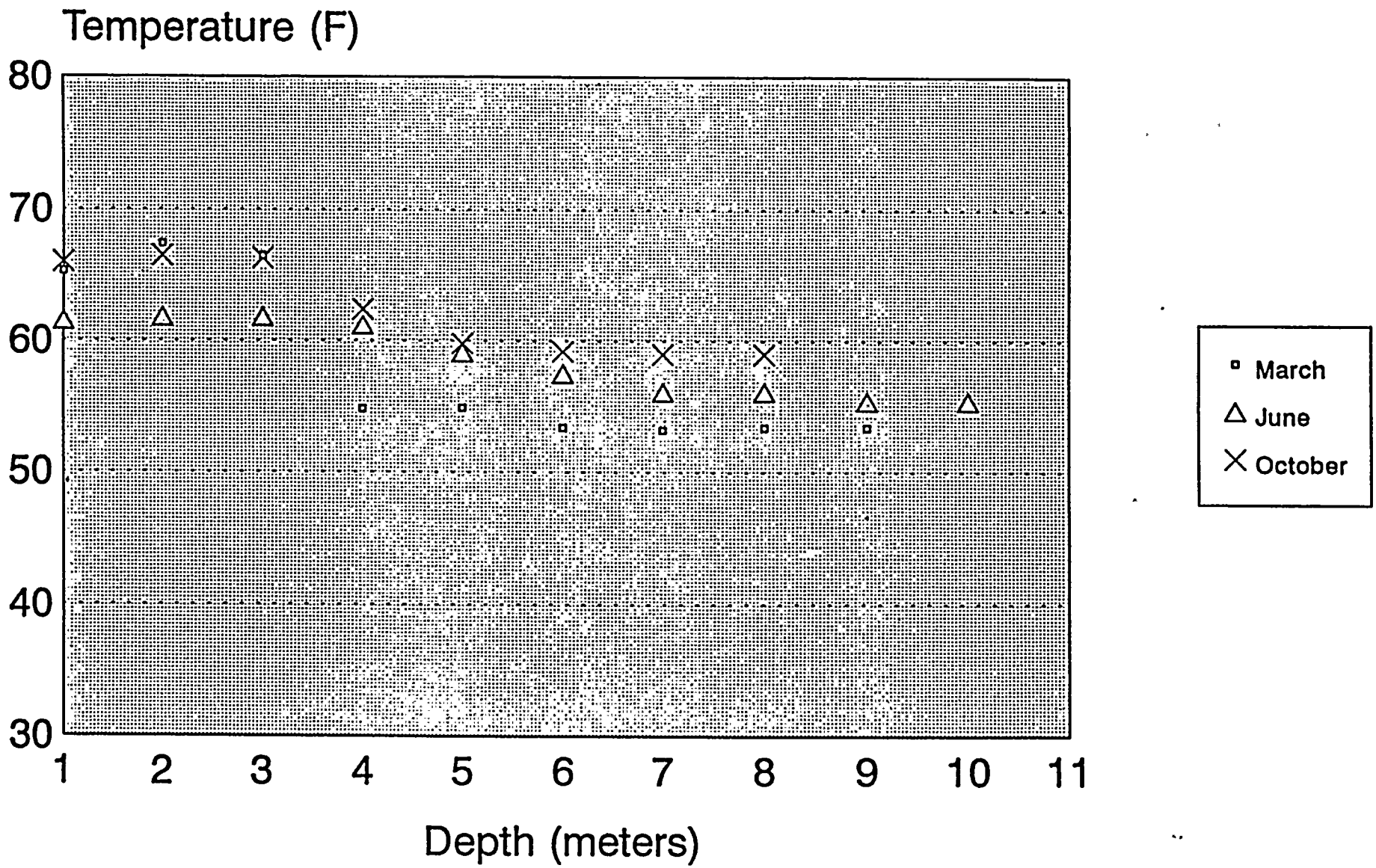
# Stratified Water Temperatures
## Station 12



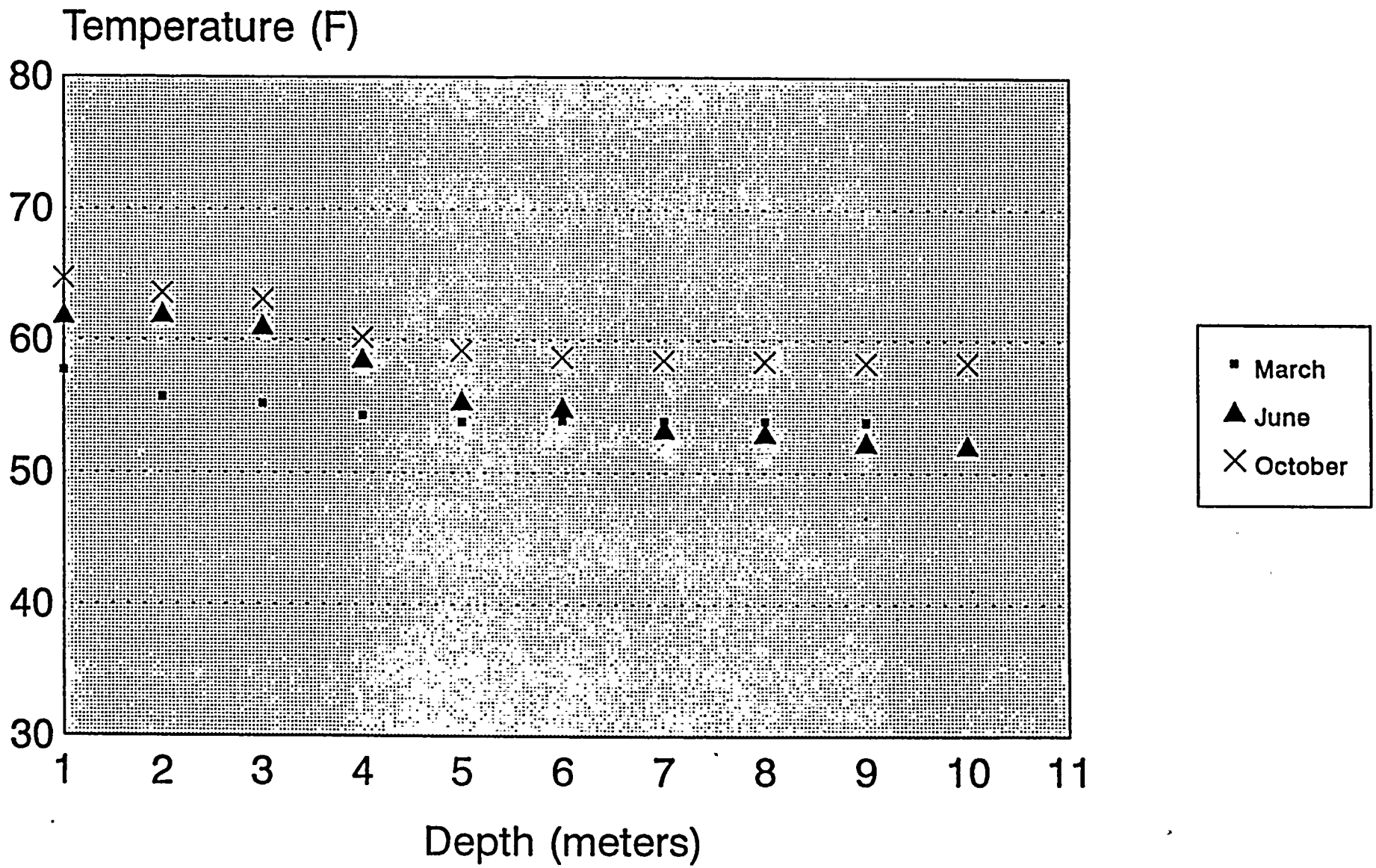
# Stratified Water Temperatures
## Station 13



# Stratified Water Temperatures
## Station 14



# Stratified Water Temperatures
## Station 15



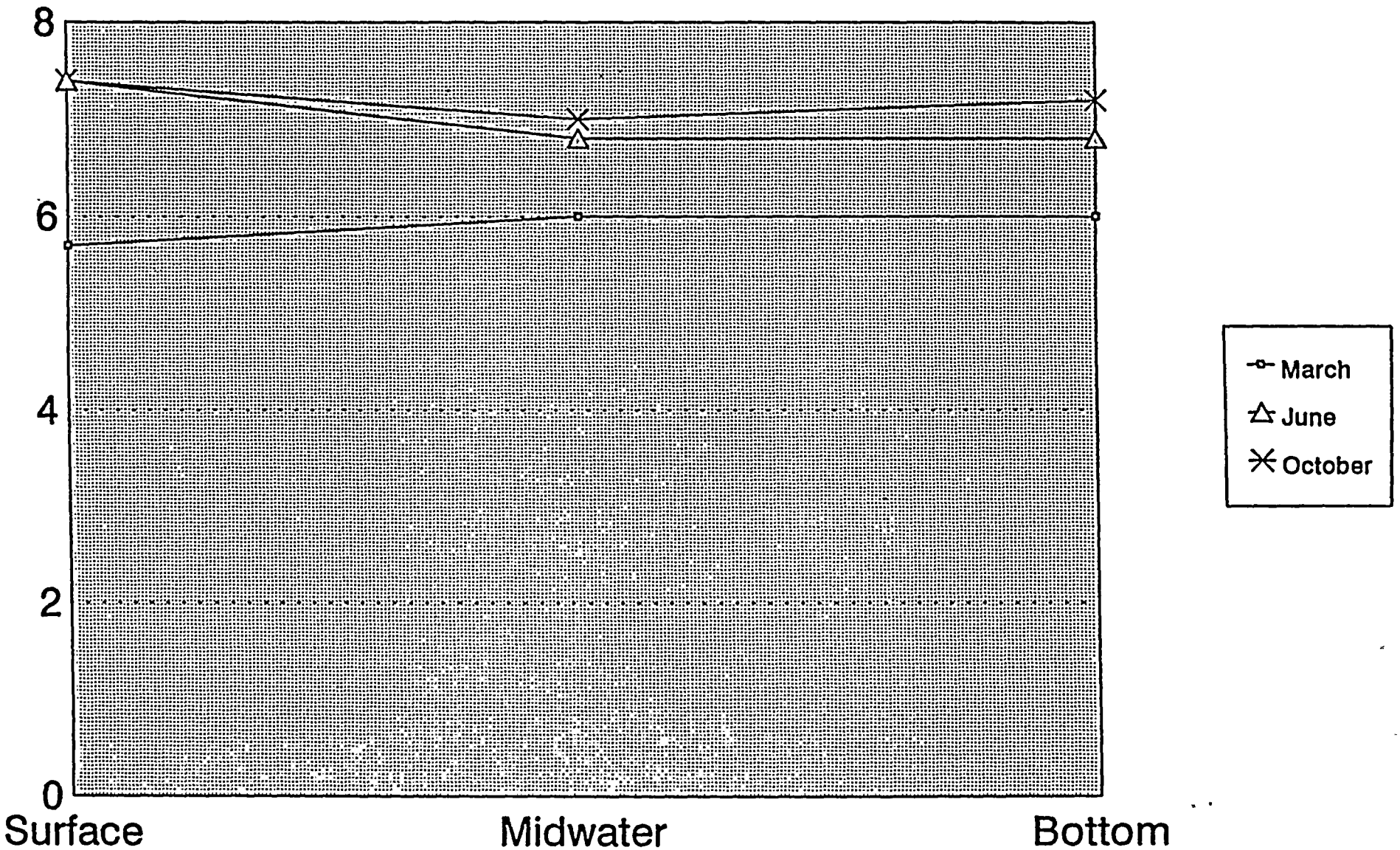
# APPENDIX 4

## Graphical Summeries of Dissolved Oxygen Determinations and pH Measurements of the Receiving Water

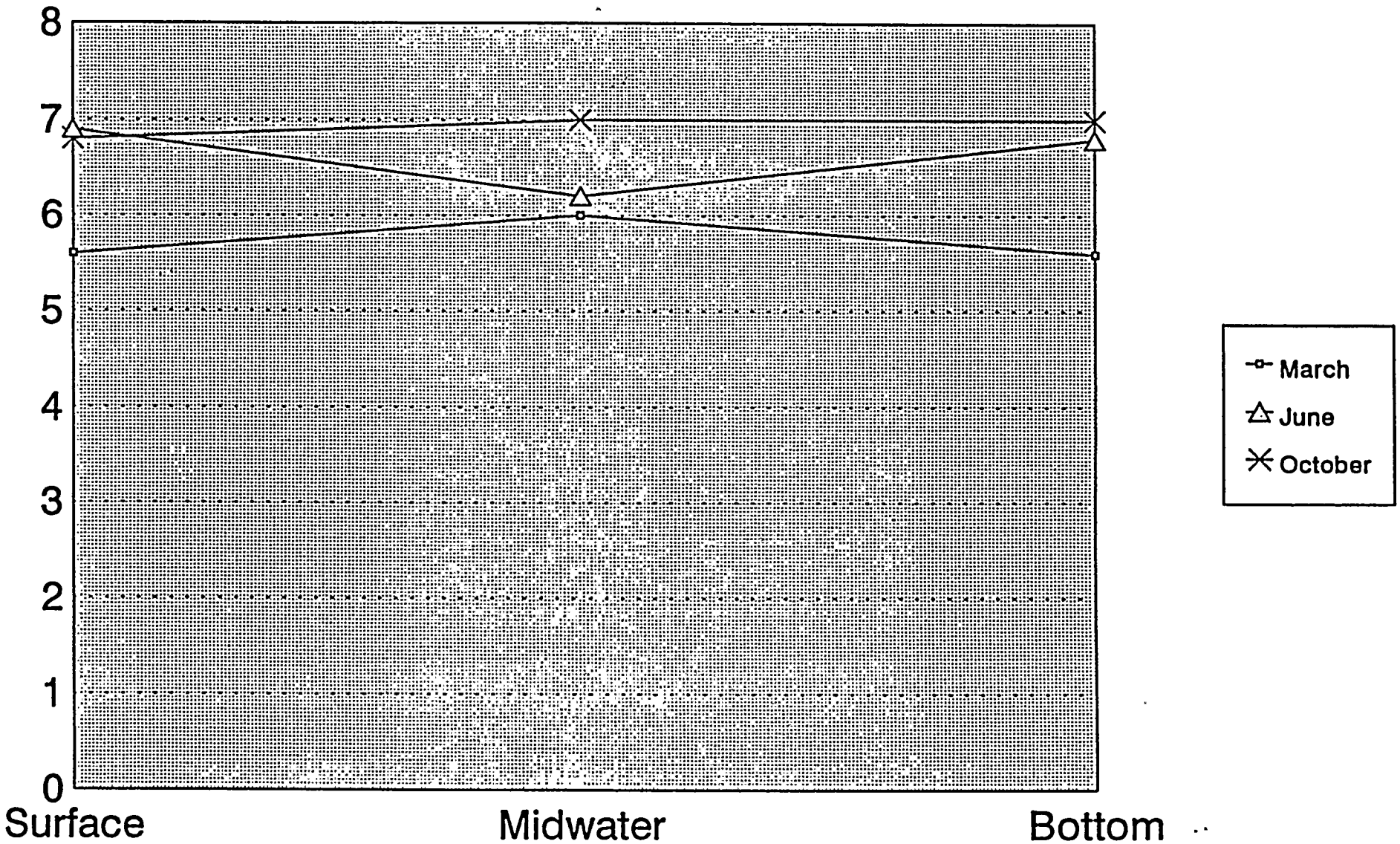
APPENDIX 4

TABLE OF CONTENTS

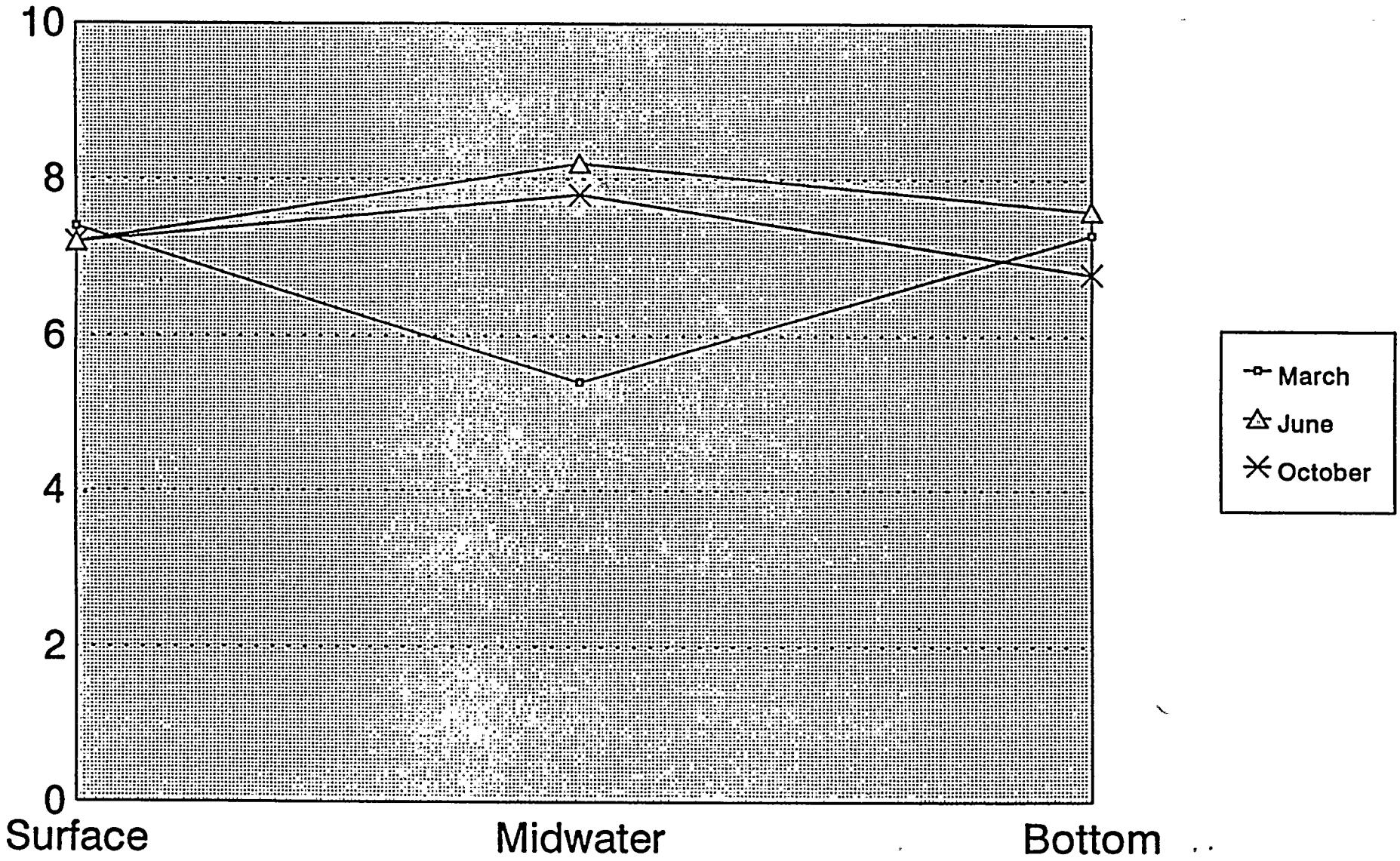
# Dissolved Oxygen Determinations
## Station 10



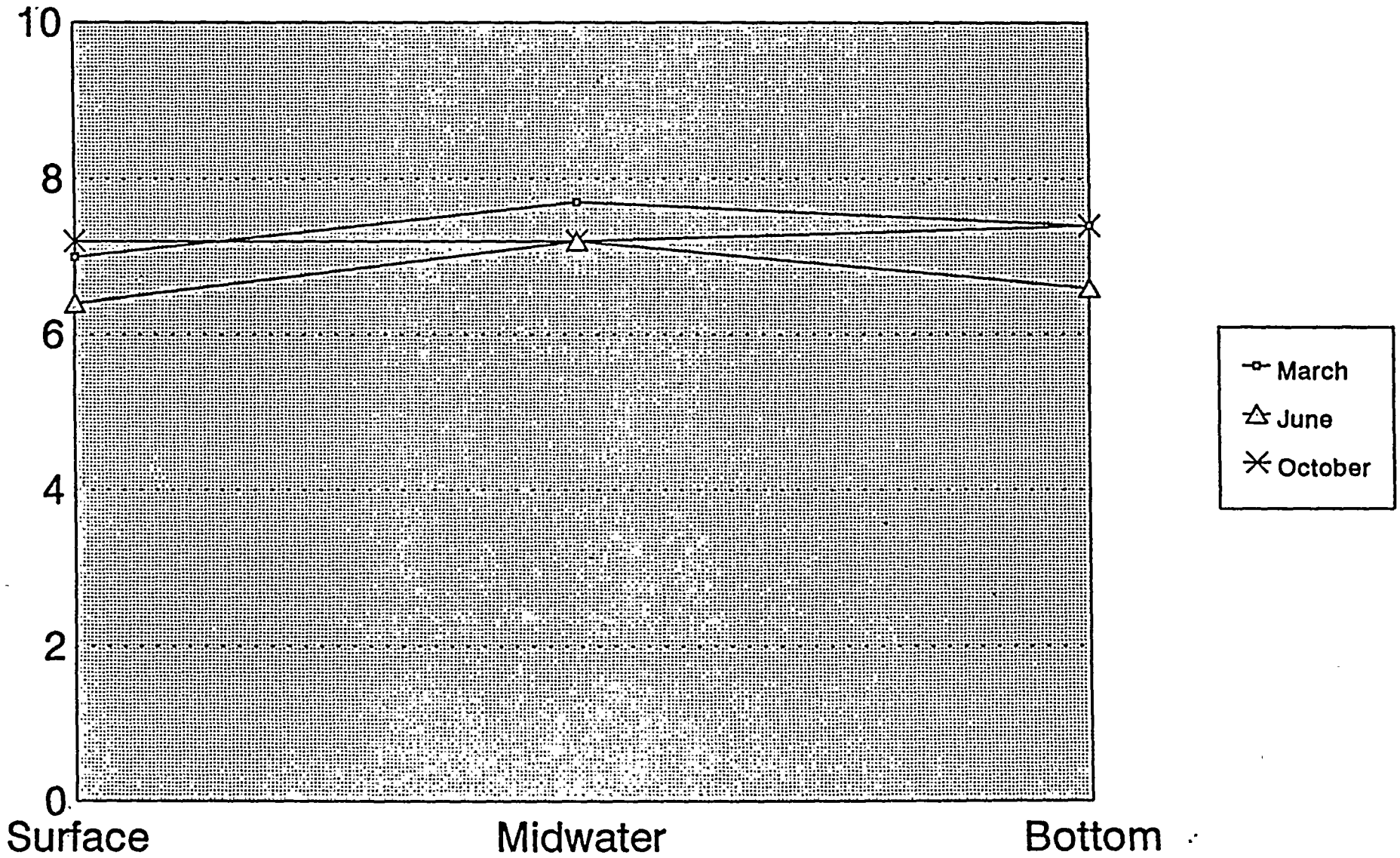
# Dissolved Oxygen Determinations
## Station 11



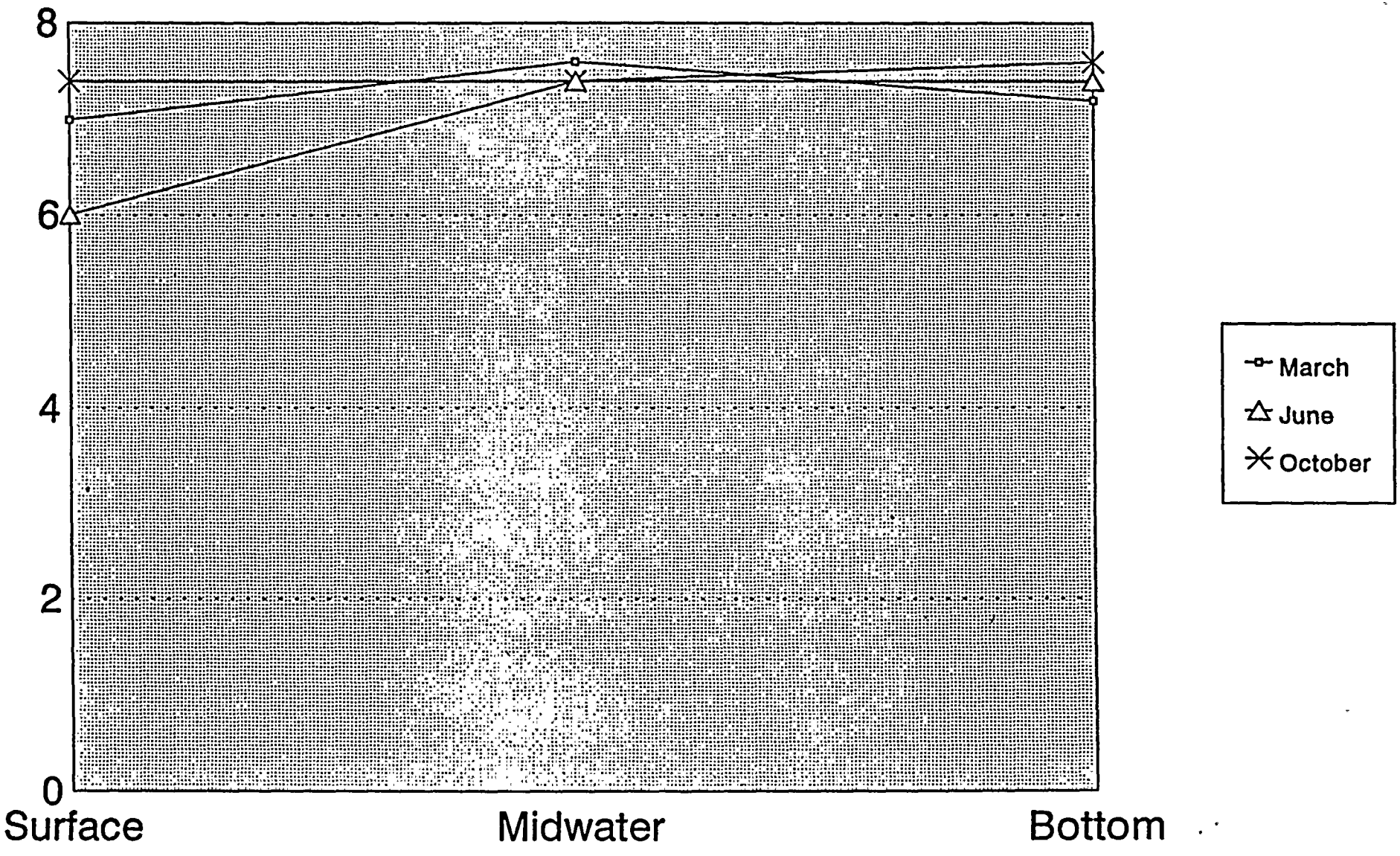
# Dissolved Oxygen Determinations
## Station 12



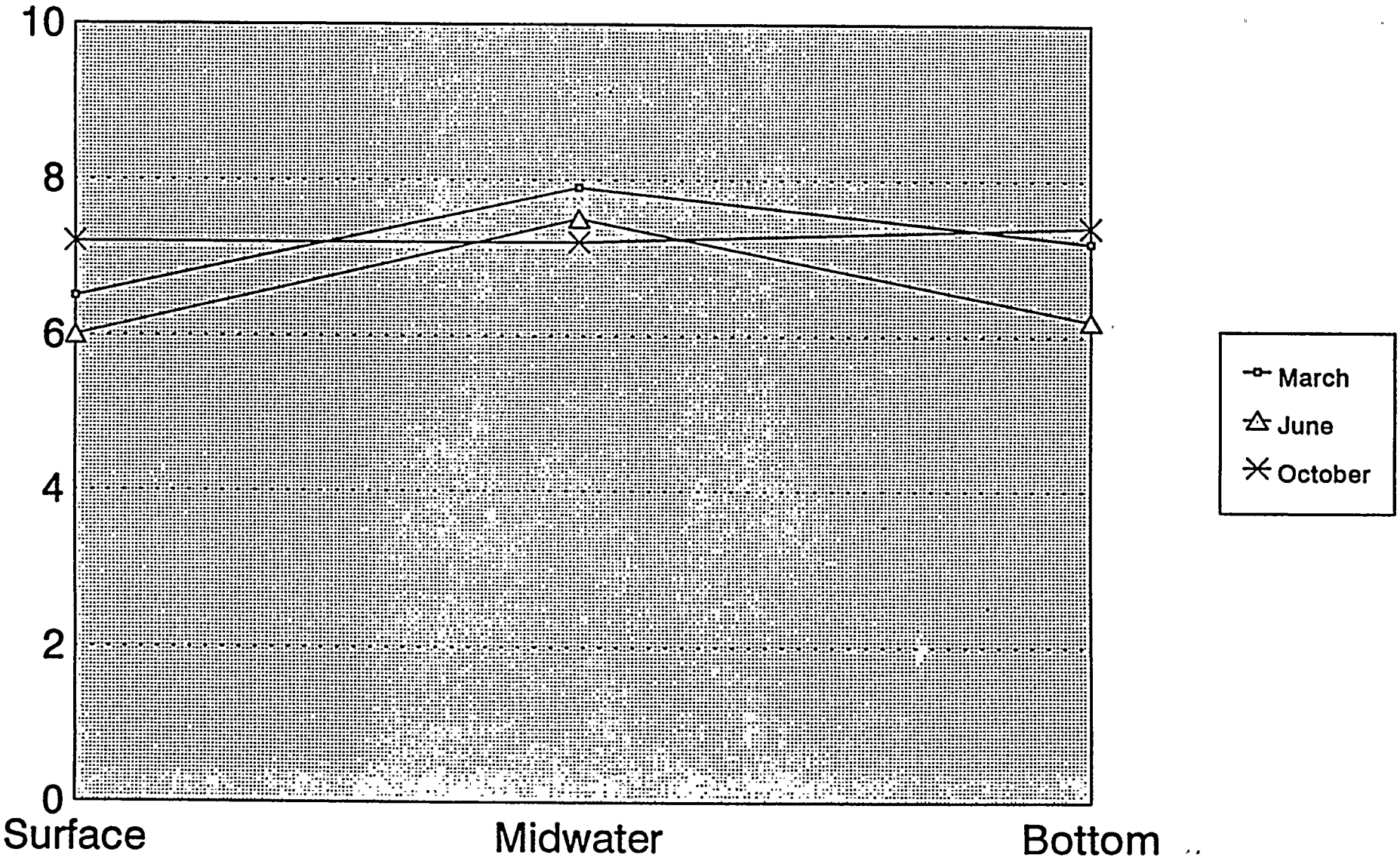
# Dissolved Oxygen Determinations
## Station 13



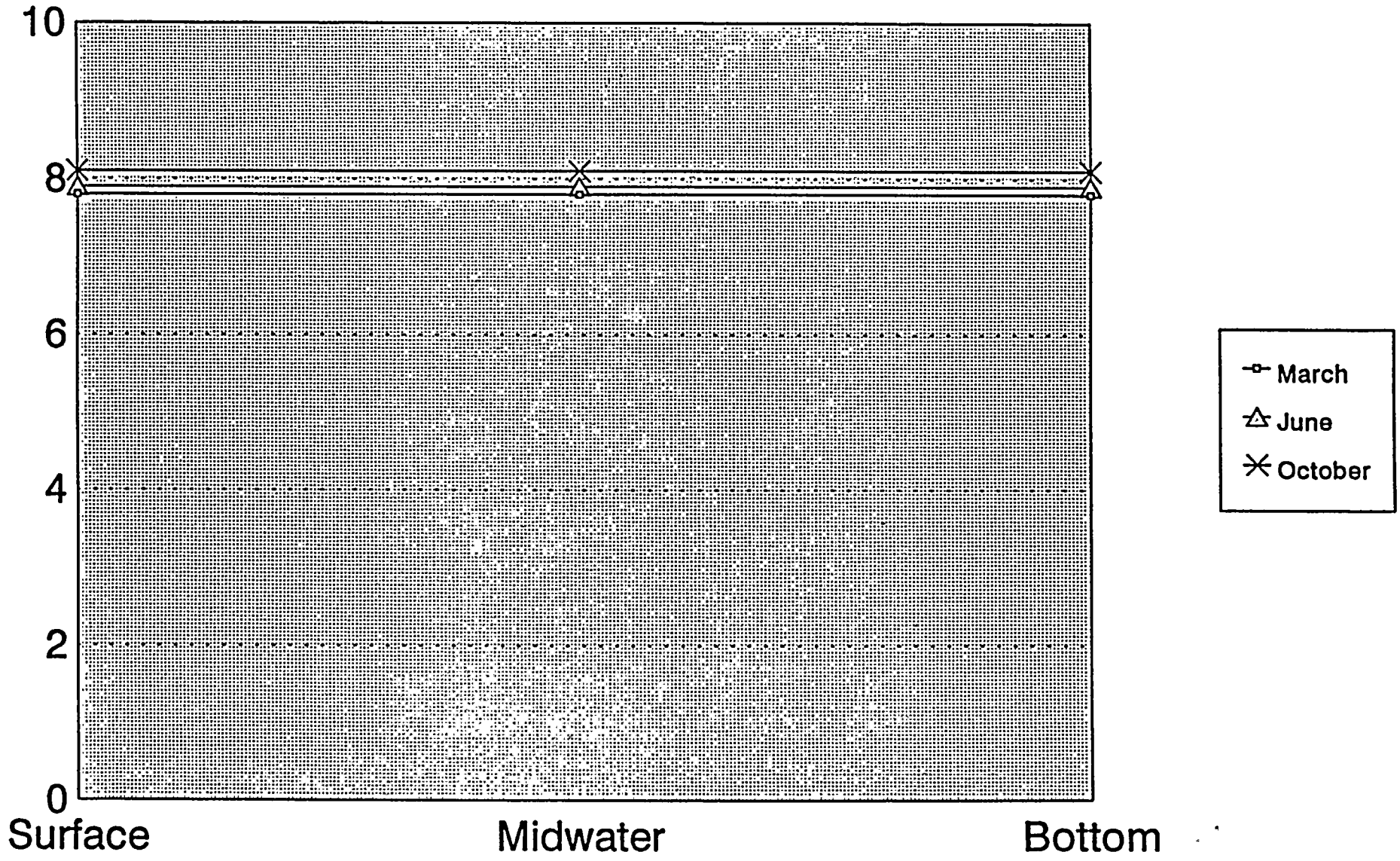
# Dissolved Oxygen Determinations
## Station 14



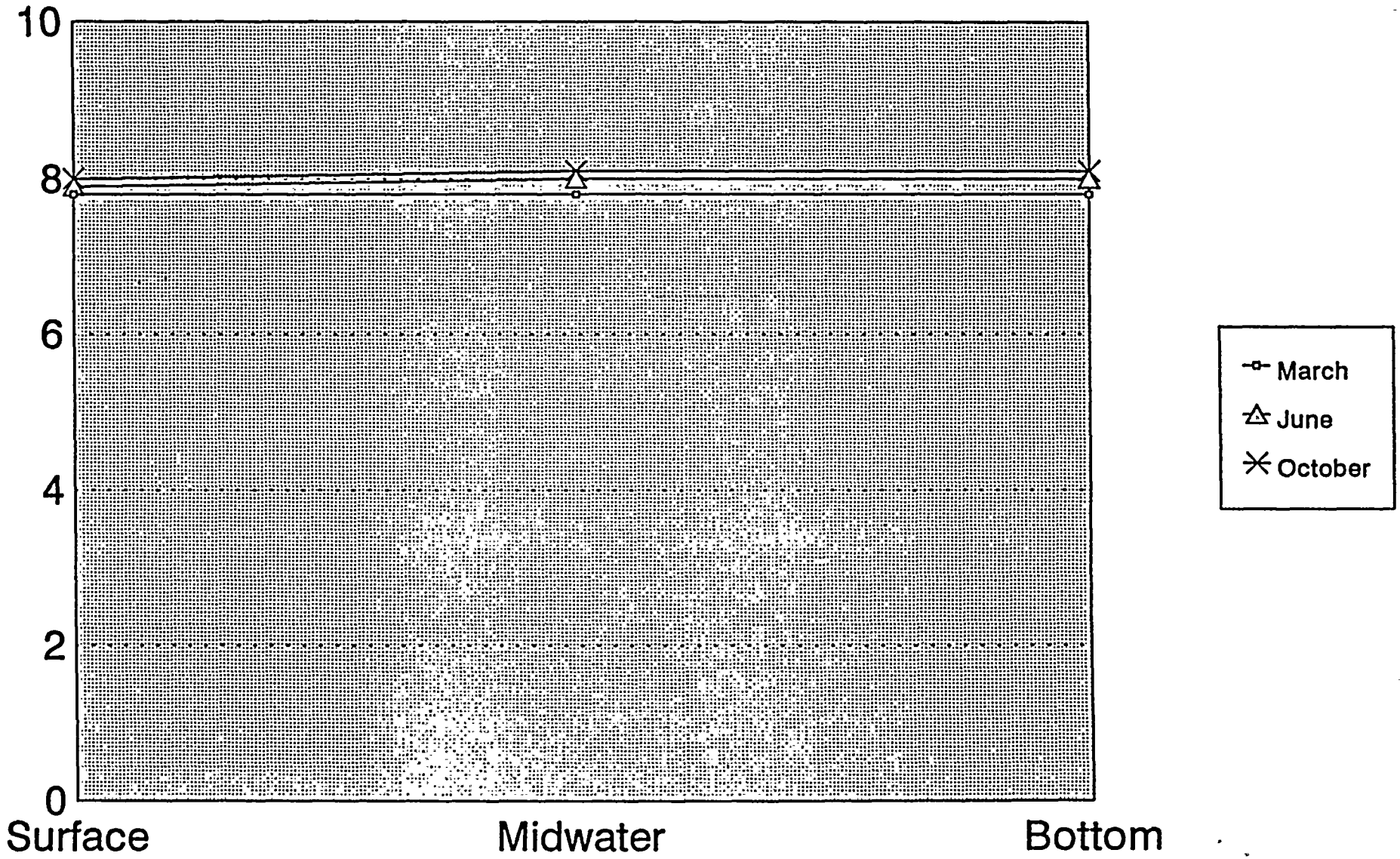
# Dissolved Oxygen Determinations
## Station 15



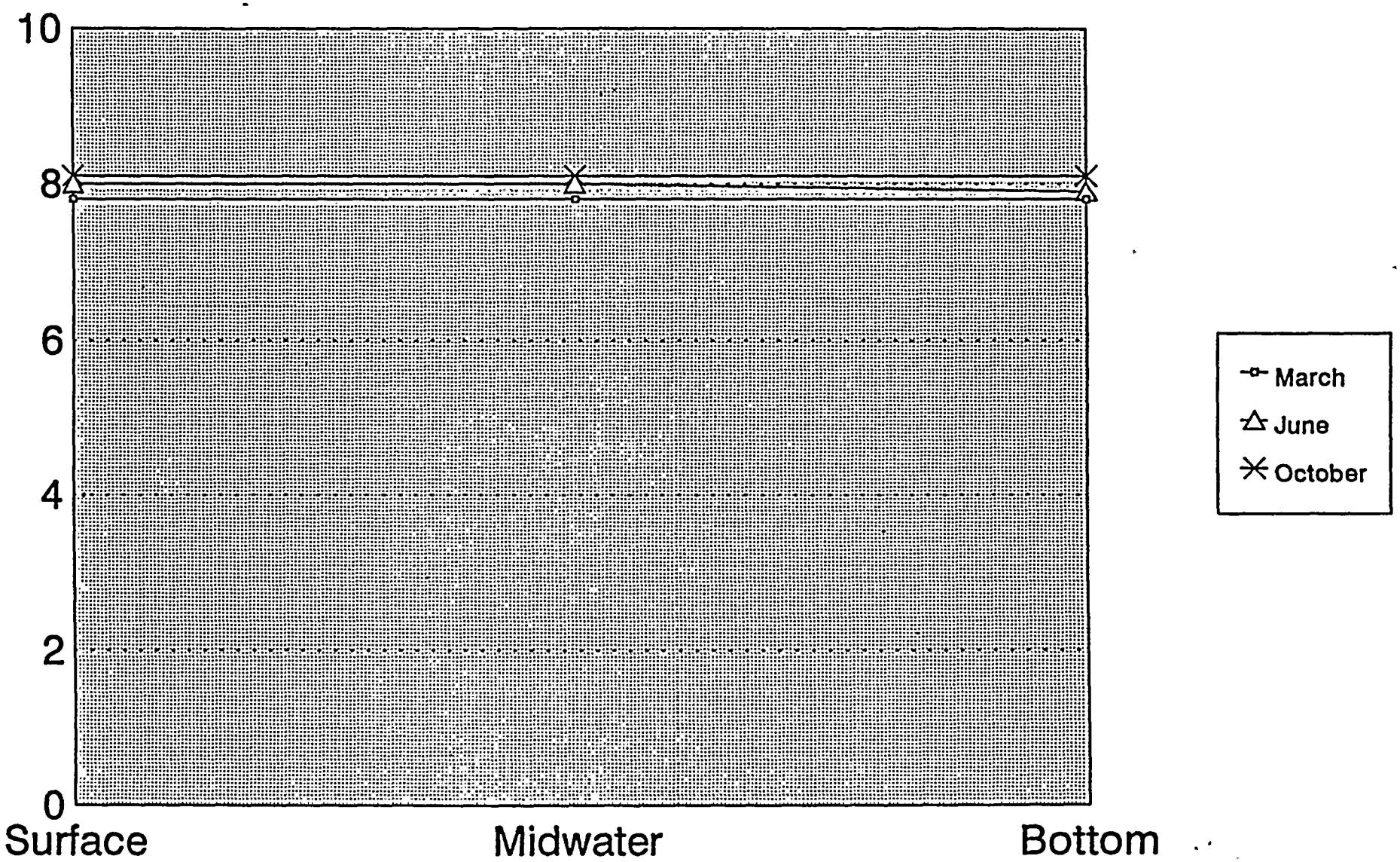
# pH Measurements
## Station 10



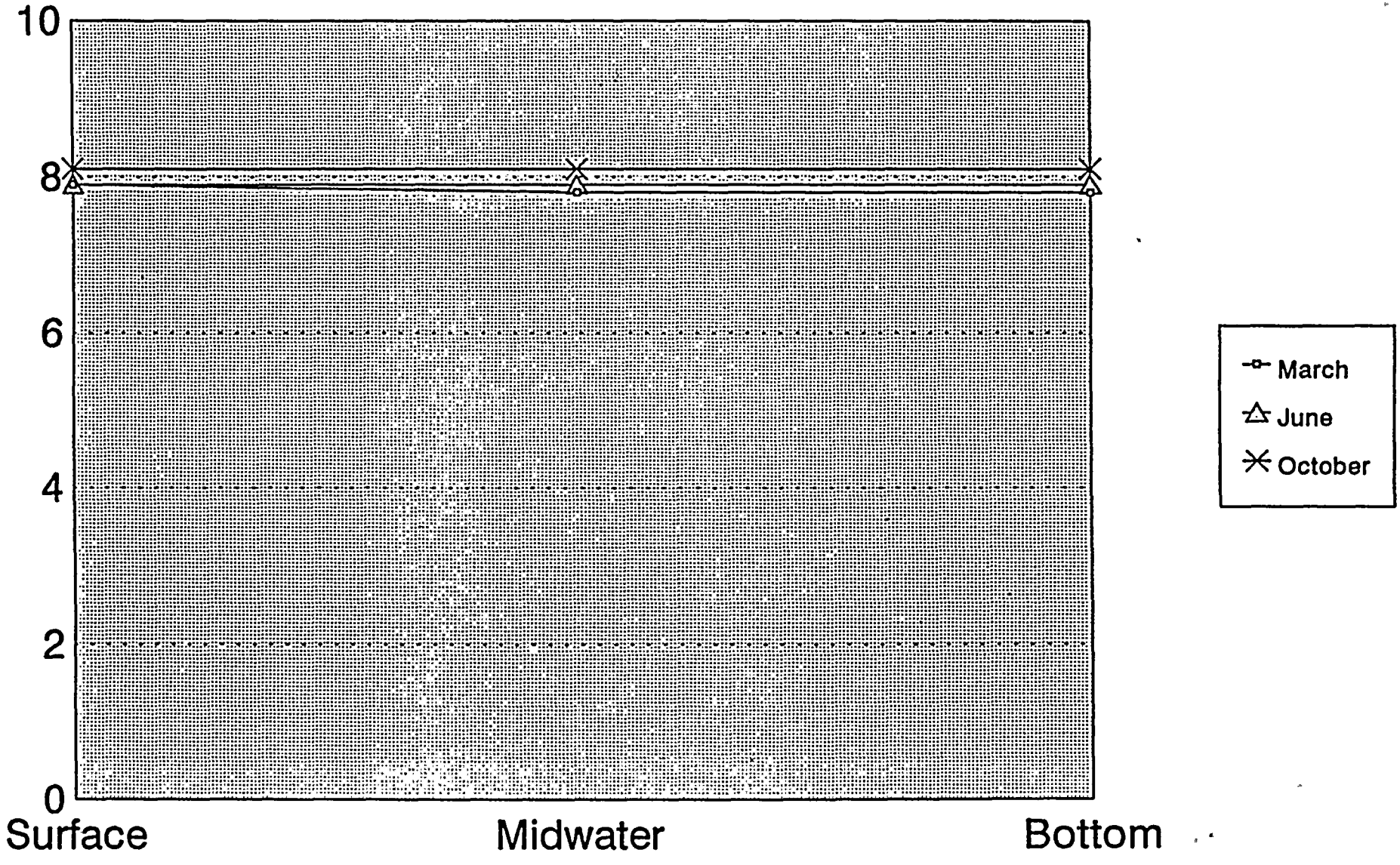
# pH Measurements
## Station 11



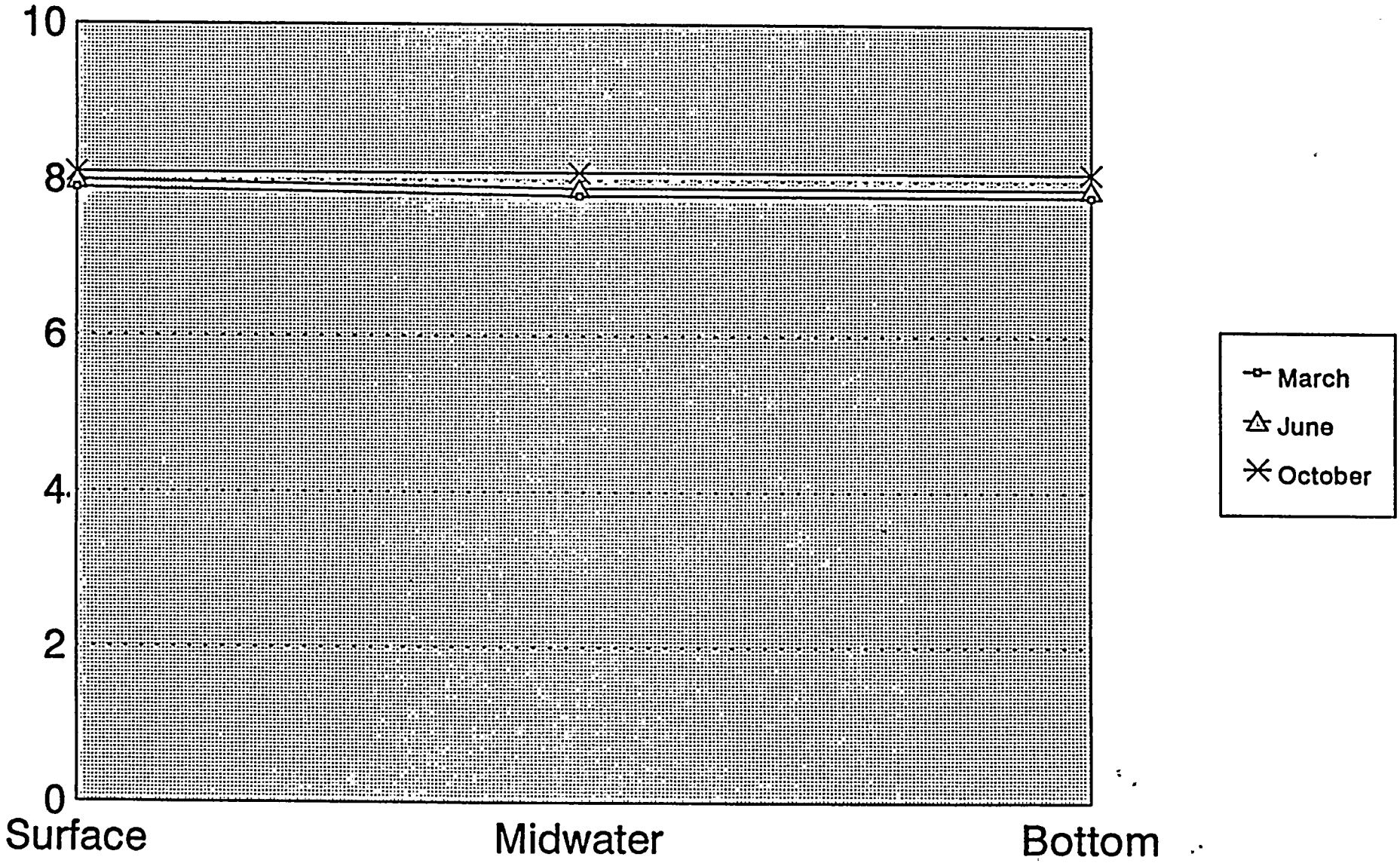
# pH Measurements
## Station 12



# pH Measurements
## Station 13



# pH Measurements
## Station 14



# pH Measurements
## Station 15