40-8968

HRI, INC.

(A Subsidiary of Uranium Resources, Inc.)

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November 29, 1993

Mr. Joel Grimm
U.S. Nuclear Regulatory Commission
Uranium Field Recovery Office, Region IV
P.O. Box 25325
Denver, Colorado 80225

Dear Mr. Grimm:

Recently, HRI obtained the results of a uranium in-situ leaching pilot that was conducted on Section 13, two miles west of the proposed HRI Churchrock location, by Teton, a subsidiary of United Nuclear. This pilot was conducted using the same leach solution which is being proposed by HRI at Churchrock within the same interval of the Westwater Canyon Member of the Morrison Formation that HRI has proposed for ISL.

It is important to note that Teton's restoration was successfully completed in three pore volumes; less than the four which is currently forecasted by HRI. In general, all parameters were restored to levels consistent with baseline with the exception of selenium. We do not consider selenium a factor at the Churchrock property because it is absent in HRI's core leach results, and from water samples taken from conventional workings (see attached sheets), at the Churchrock property, where the ground water and formation was subject to extensive oxidation during underground mining. In other words, at Churchrock, selenium is not present.

We feel this information is useful backup for HRI's assumption that restoration will be achieved after four pore volumes of circulation, be it R/O or ground water sweep.

Please feel free to contact me with any questions pertaining to this matter.

Yours very truly,

Mark S. Pelizza
Environmental Manager

MSP/dlg
Encl.

DF02

94-0098

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THE TETON IN-SITU PILOT SUMMARY REPORT

A pilot test was conducted at HRI's Churchrock/Mancos property by UNC/TETON from June 6 to June 21, 1980. The purpose of the test was to determine if the roll front mineralization in Westwater Canyon (Morrison Formation) sands is amenable to in-situ procedures using a sodium bicarbonate/hydrogen peroxide lixiviant, and to determine successful restoration following the test.

Figure 1 is a location map of the test area. Geologically, the test was conducted within the mineralized Westwater Canyon member of the Jurassic Morrison Formation. The target ore is an extension of the Section 8 and 17 uranium orebody.

Samples were collected before, during, and after the test to; (1) augment baseline data, (2) monitor injected and recovered solutions, and (3) establish chemical restoration of the affected aquifer.

All samples were shipped to Teton's Casper-based laboratory for complete analysis, as well as to confirm field observations. For environmental samples, duplicate splits were sent to independent laboratories.

TEST PROCEDURE

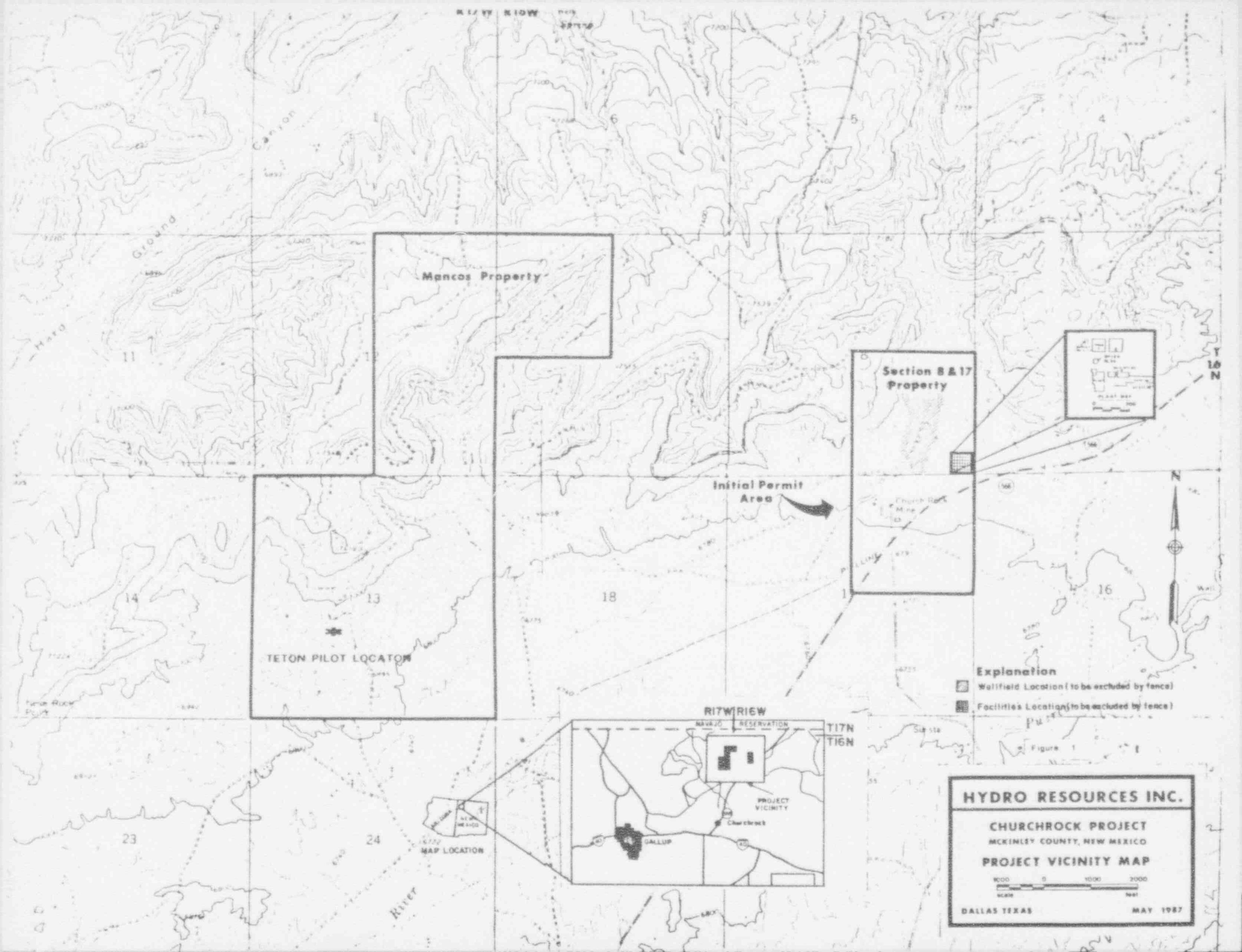
To prepare the lixiviant solution for injection, 4,500 gallons of ground water were pumped from well #406 into a holding tank. The baseline sample was collect onstream at this time (Well #608, 6/11/80).

Sufficient $NaHCO_3$ was added to bring the concentration to 1.0 g/liter, and this resulted in pH = 9.

This solution was injected into well #405 at a rate of 7.5 gal./min. Hydrogen peroxide was metered through a "T" connector into the lixiviant discharge pipe, yielding an average concentration of 0.75 g/liter. A total of 4,500 gallons of lixiviant solution was injected.

The lixiviant solution remained in the aquifer for five days.

94-0098


R17W R16W
Hard Ground Canyon
Mancos Property
Section 8 & 17 Property
Initial Permit Area
Church Rock Mine
TETON PILOT LOCATOR
Explanation
Wellfield Location (to be excluded by fence)
Facilities Location (to be excluded by fence)
R17W R16W
NAVAJO RESERVATION
T17N
T16N
PROJECT VICINITY
Churchrock
GALLUP
MAP LOCATION
River
N
Figure 1
HYDRO RESOURCES INC.
CHURCHROCK PROJECT
MCKINLEY COUNTY, NEW MEXICO
PROJECT VICINITY MAP
1000 0 1000 2000
scale feet
DALLAS TEXAS
MAY 1987

Recovery of the first pore volume by pumping was followed by filtration and ion exchange, using two plastic IX columns containing three cubic feet of IRA 430 strong-base resin.

Finally, two additional pore volumes were pumped from well #405 for aquifer restoration by ground water sweep.

RECOVERY CHEMISTRY

Table 1 includes analyses of; (1) baseline water quality, (2) the pregnant solution and (3) an onstream sample taken during recovery after three pore volumes were pumped. Additionally, Appendix A contains plots which show restoration progress for major ions throughout the three pore volumes of ground water sweep. Appendix B contains a group of figures which graphically depict the information from Table 1.

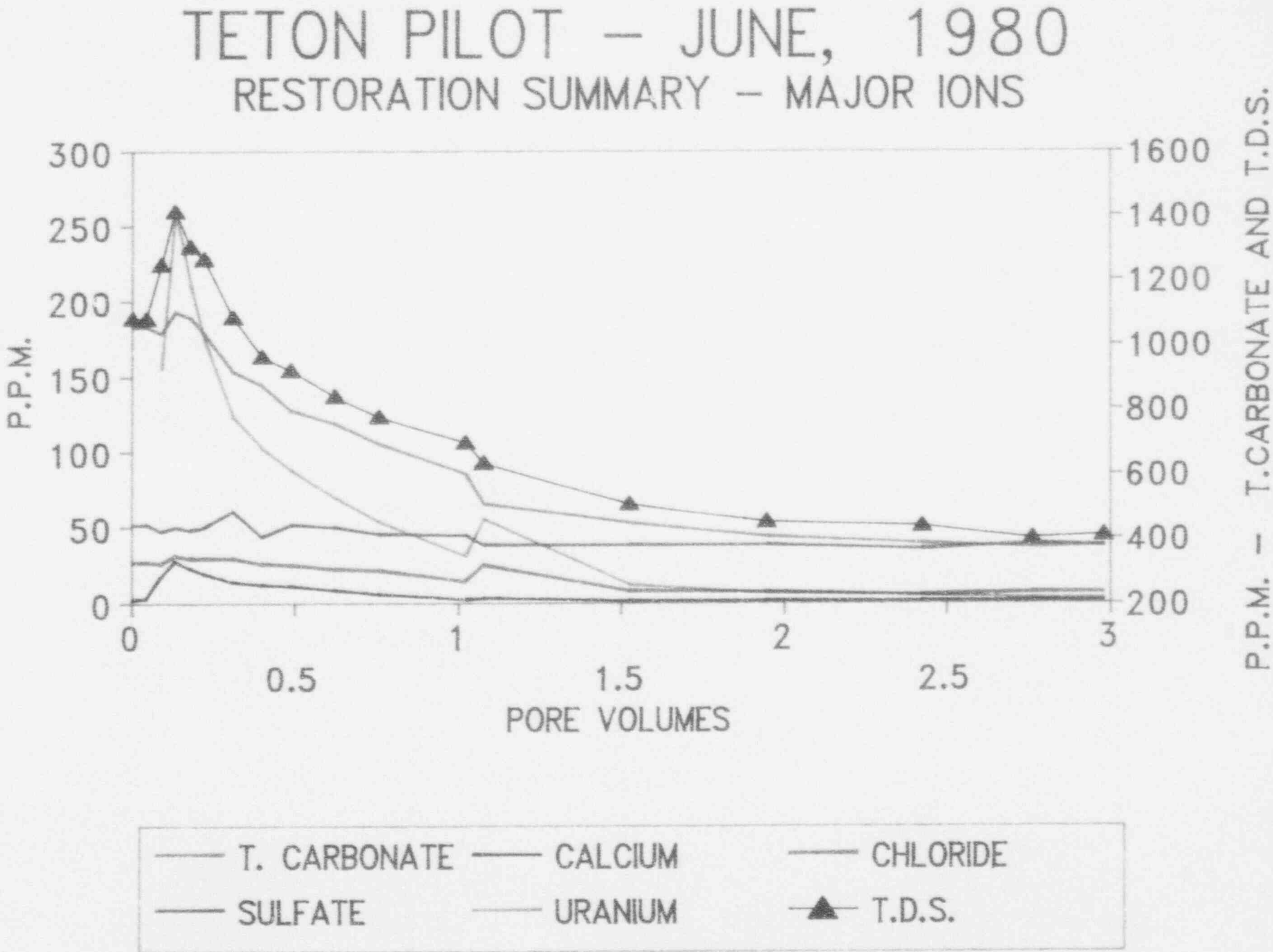
The results of the test show that the uranium mineral is subject to in-situ leaching with the ground water, $NaHCO_3$, H_2O_2 leaching solution. The restoration resulted in all parameters being restored to levels consistent with baseline and/or NM WQCC 3.103 standards, with the exception of selenium. The selenium levels, however, are not a concern at the Section 8 and 17 property because, there was no selenium elevated in the Section core studies or in Section 17 mine water samples. Selenium is simply not present in the OCR area.

Table 1

TETON PILOT - JUNE 1980
BEFORE, DURING AND AFTER LEACH
WATER QUALITY SUMMARY

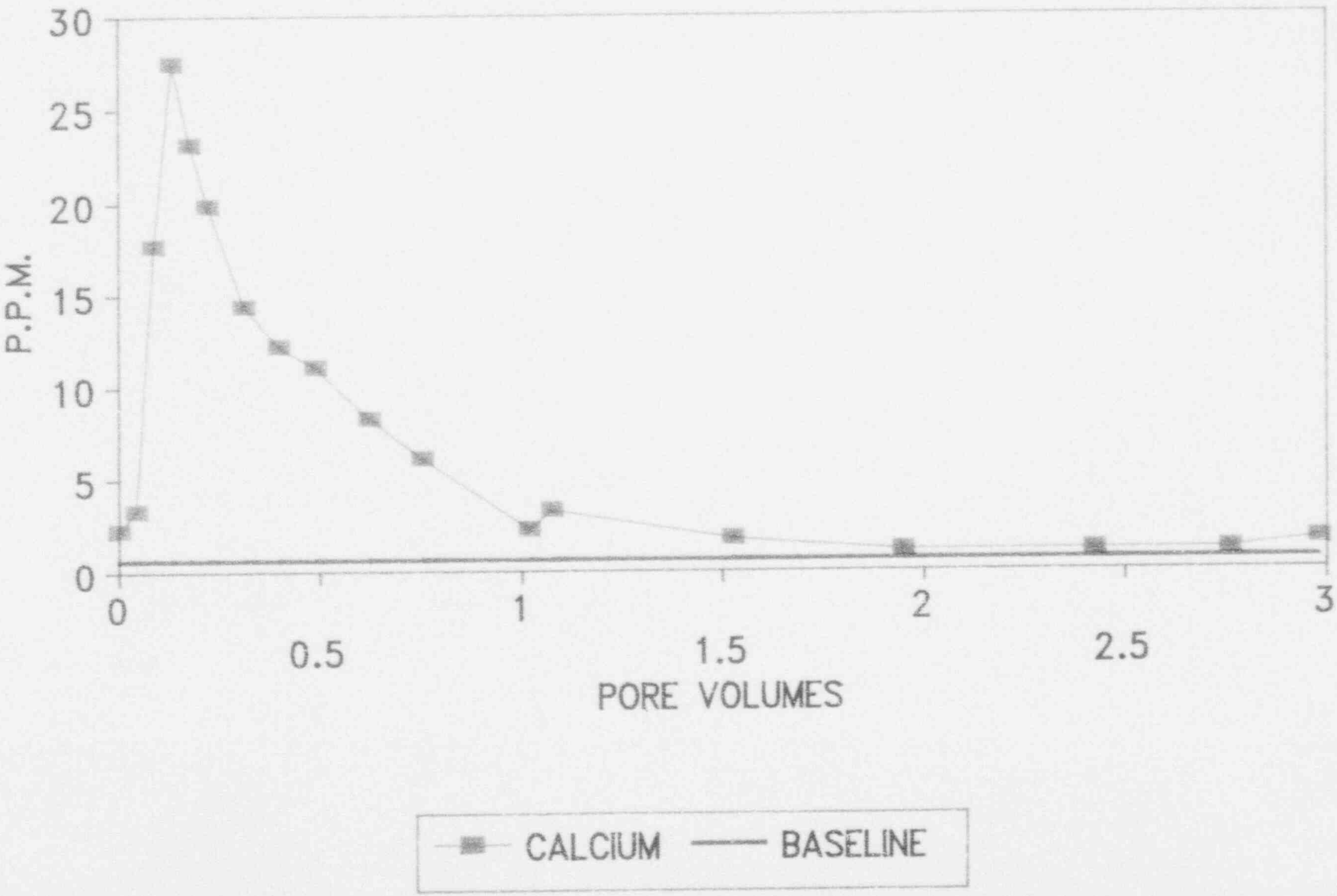
PARAMETER		BASELINE	PREG.LIX.	RESTORED	3-103 STD.
CALCIUM		0.6	9.4	1.1	
MAGNESIUM		0.00	2.70	0.00	
SODIUM		134	300	148	
POTASSIUM		2.50	3.80	2.2	
CARBONATE		41	73	56	
BICARB		277	798	313	
SULFATE		37	43	37	600
CHLORIDE		27.0	26.0	6.0	250.0
NITRATE		0.74	0.30	1.34	10.00
FLUORIDE		0.35	0.37	0.30	1.60
SILICA					
TDS(180)		442	976	426	1000
EC(25C)		630	1281	641	
ALK					
PH		9.20	8.90	9.20	
ARSENIC		0.017	0.830	0.032	0.100
BARIUM		0.16	0.44	0.07	1.00
CADMIUM		<.01	<.01	<.01	0.0100
CHROM.		<.05	<.05	<.05	0.05
COPPER		<.05	<.05	<.05	1.00
IRON		10.90	6.50	0.67	1.00
LEAD		<.05	<.05	<.05	0.050
MANGANESE		0.08	0.10	<.05	0.20
MERCURY		<.001	<.001	<.001	0.0020
MOLY.		<.05	<.05	<.05	
NICKEL		<.05	<.05	<.05	
SELENIUM		<.005	4.150	0.720	0.050
SILVER					0.05
URANIUM		0.120	84.000	2.700	5.00
VANADIUM		<.05	0.24	0.10	
ZINC		0.06	0.09	0.01	5.00
BORON		0.04	0.20	0.12	
AMMONIA		<.1	<.1	<.1	
RA226		3.9	132.9	8.5	30.0

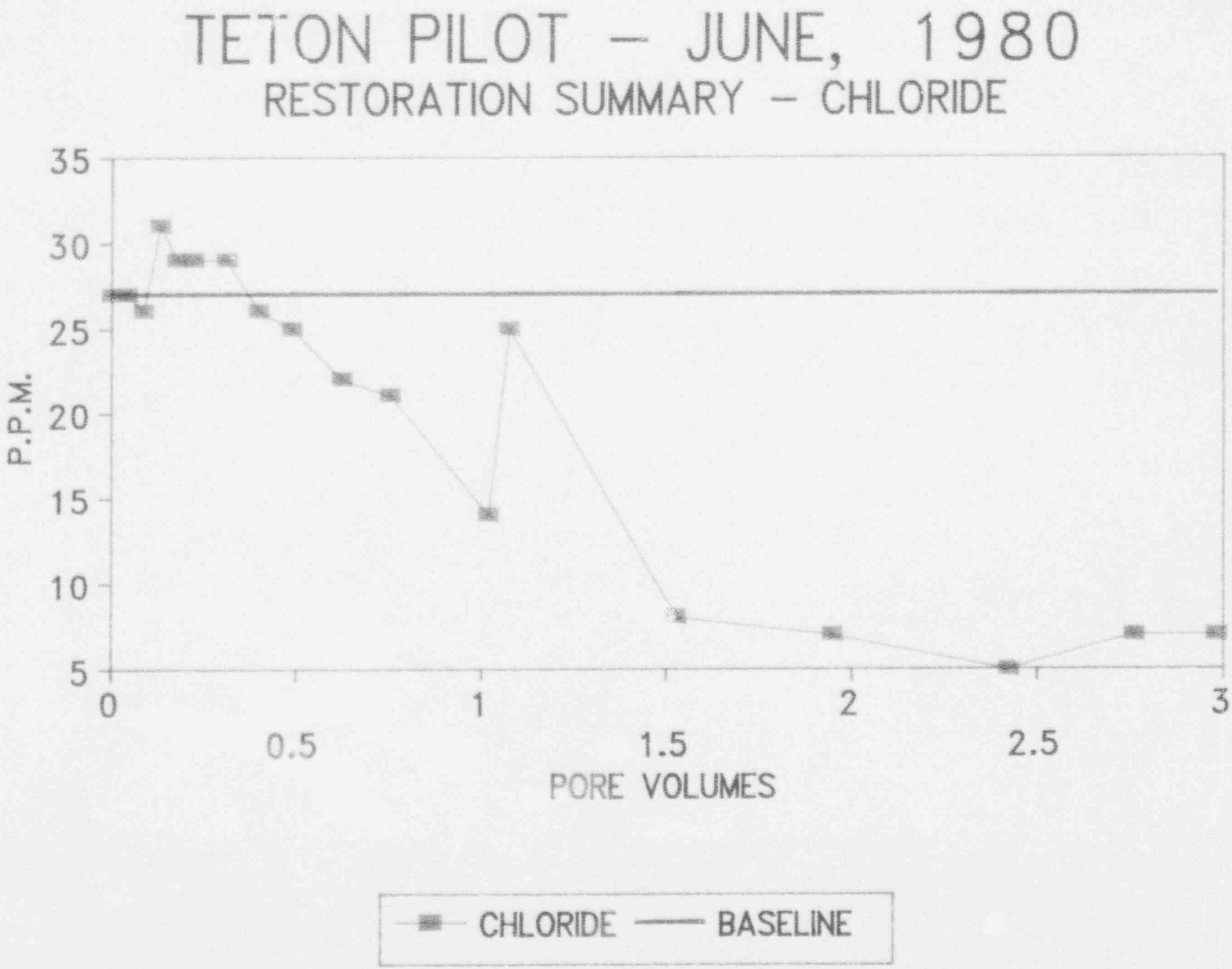
APPENDIX A


TETON PILOT - JUNE, 1980
RESTORATION SUMMARY - MAJOR IONS
P.P.M.
300
250
200
150
100
50
0
1600
1400
1200
1000
800
600
400
200
P.P.M. - T.CARBONATE AND T.D.S.
0
0.5
1
1.5
2
2.5
3
PORE VOLUMES
T. CARBONATE
CALCIUM
CHLORIDE
SULFATE
URANIUM
T.D.S.

TETON PILOT – JUNE, 1980

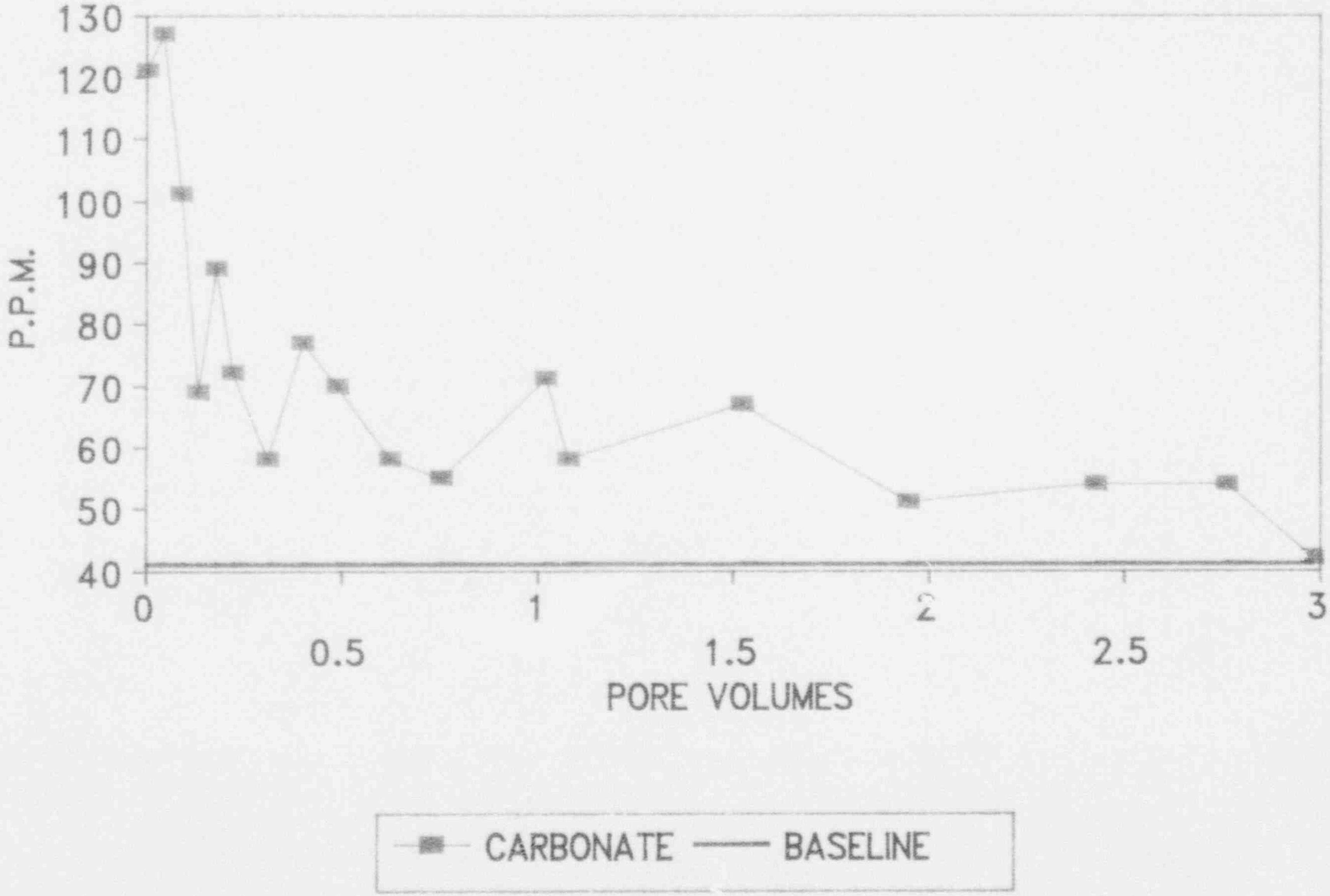
RESTORATION SUMMARY – CALCIUM



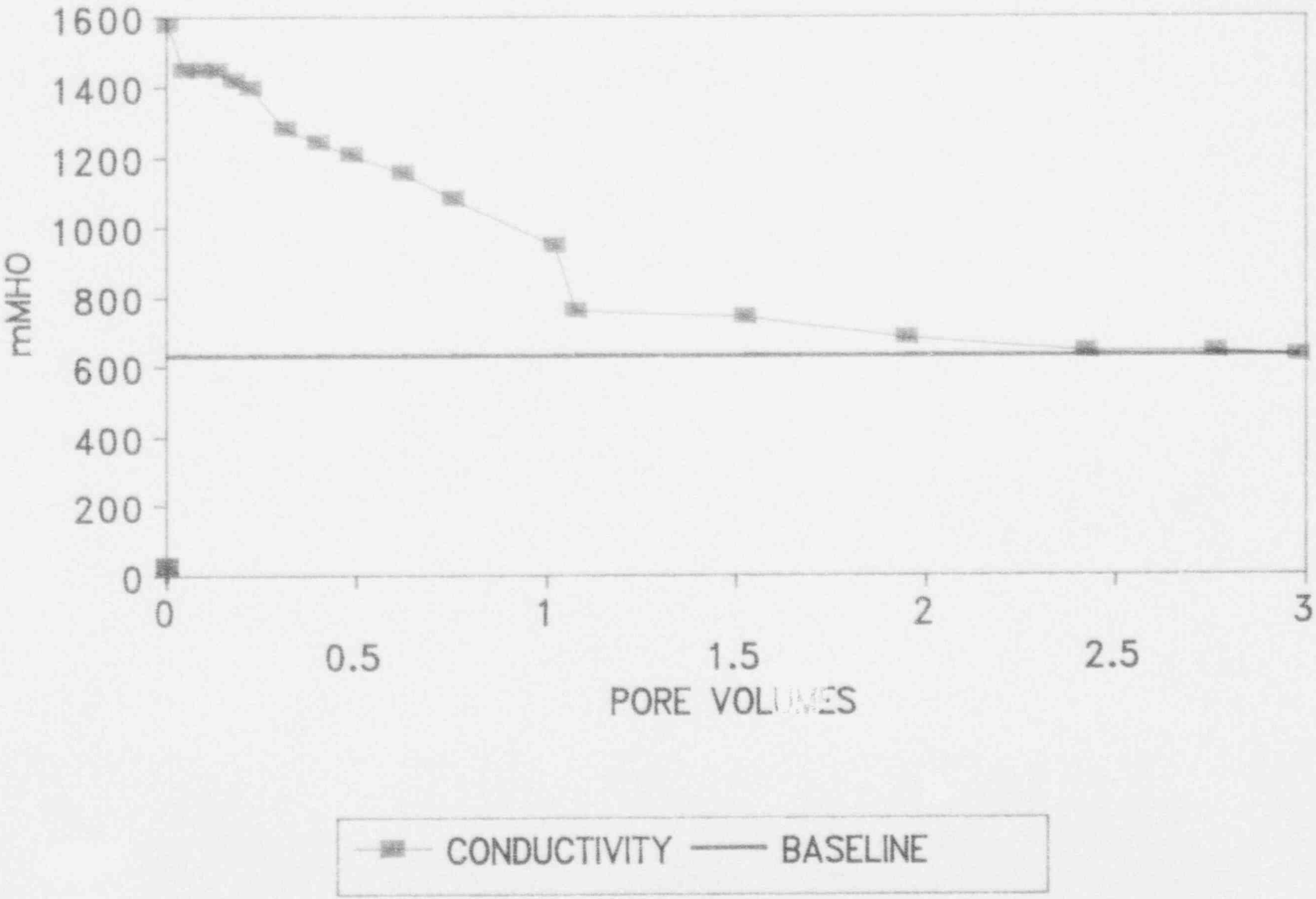

TETON PILOT - JUNE, 1980
RESTORATION SUMMARY - CHLORIDE
P.P.M.
35
30
25
20
15
10
5
0
0.5
1
1.5
2
2.5
3
PORE VOLUMES
CHLORIDE
BASELINE

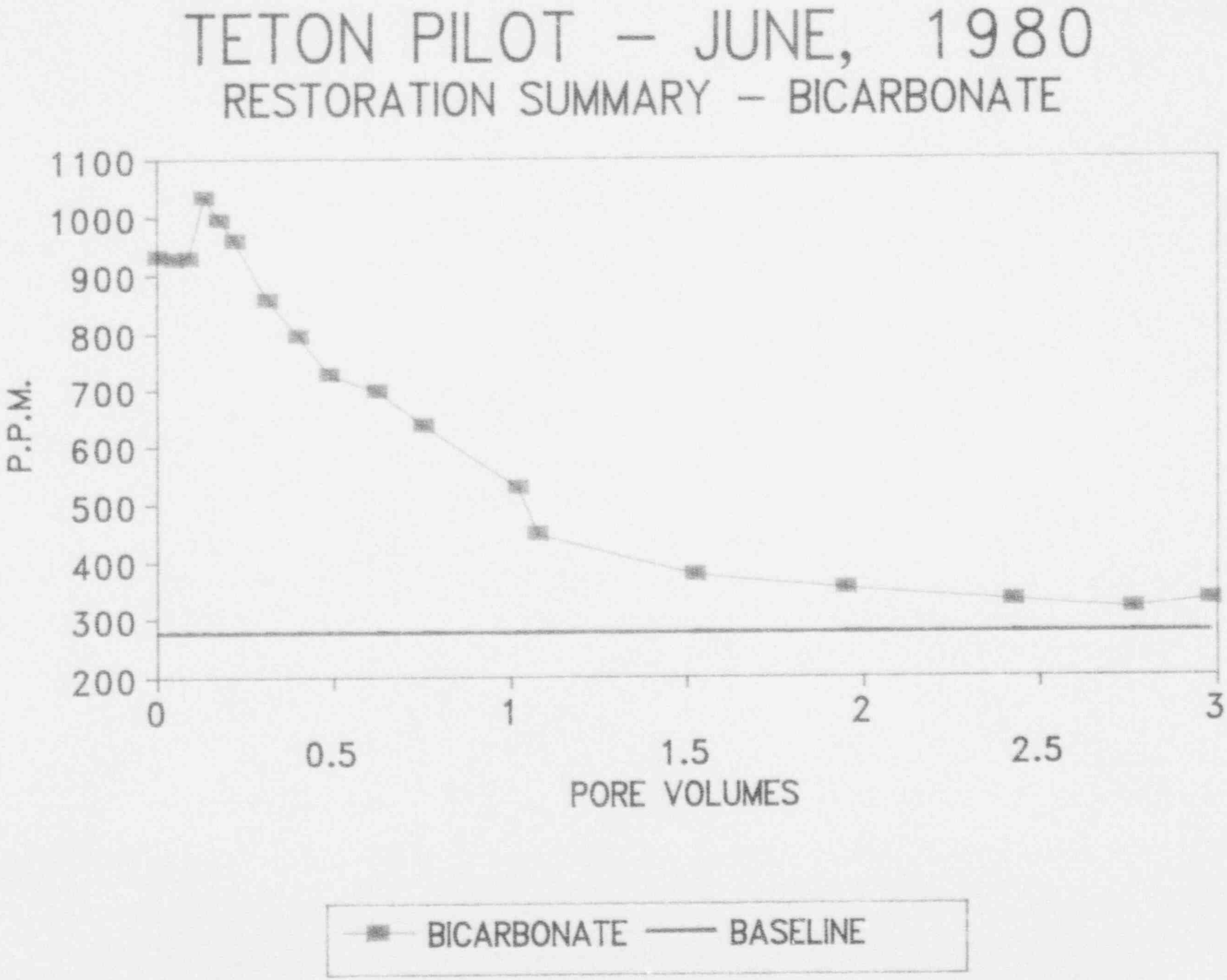
TETON PILOT – JUNE, 1980

RESTORATION SUMMARY – CARBONATE



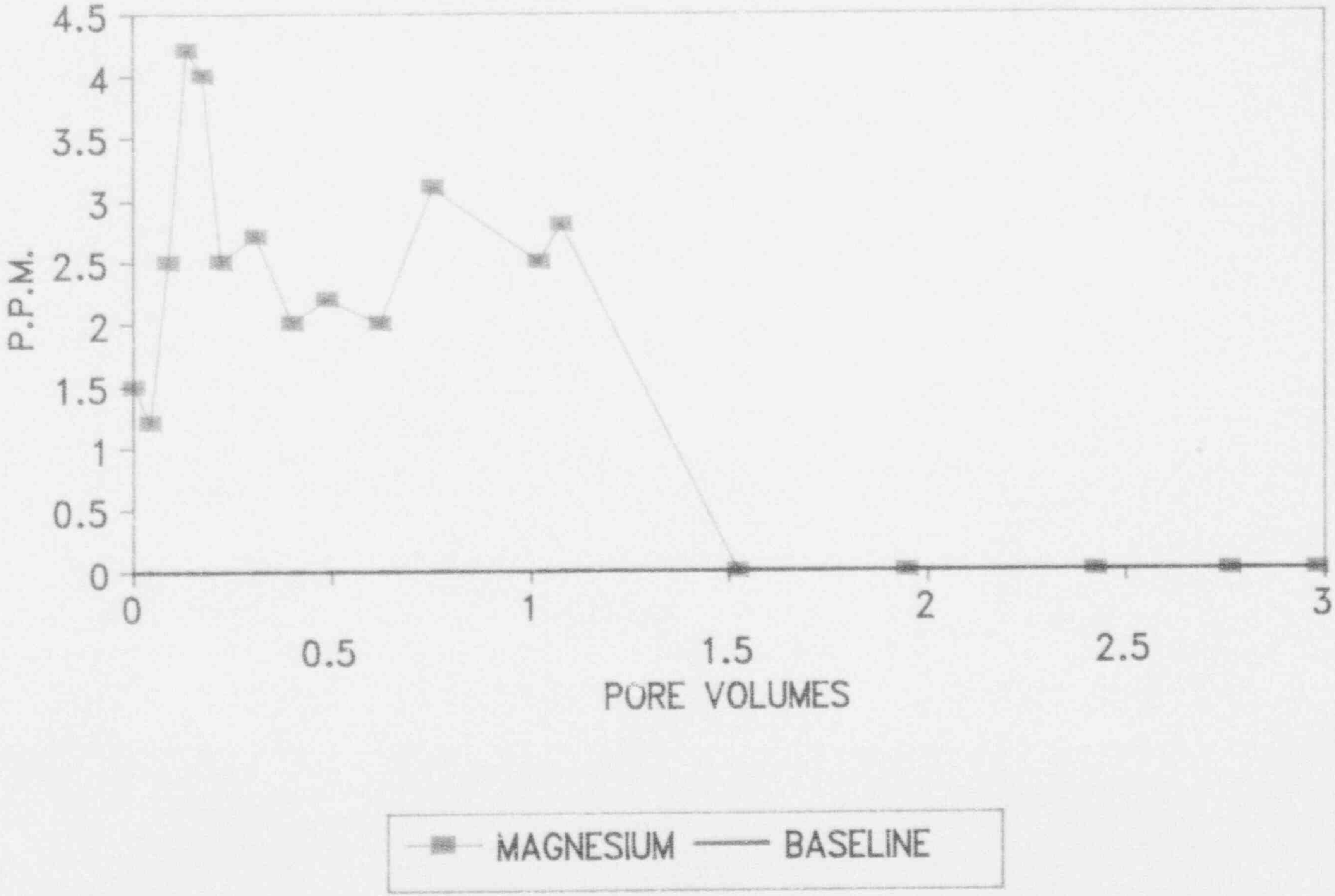
TETON PILOT – JUNE, 1980
RESTORATION SUMMARY – CONDUCTIVITY

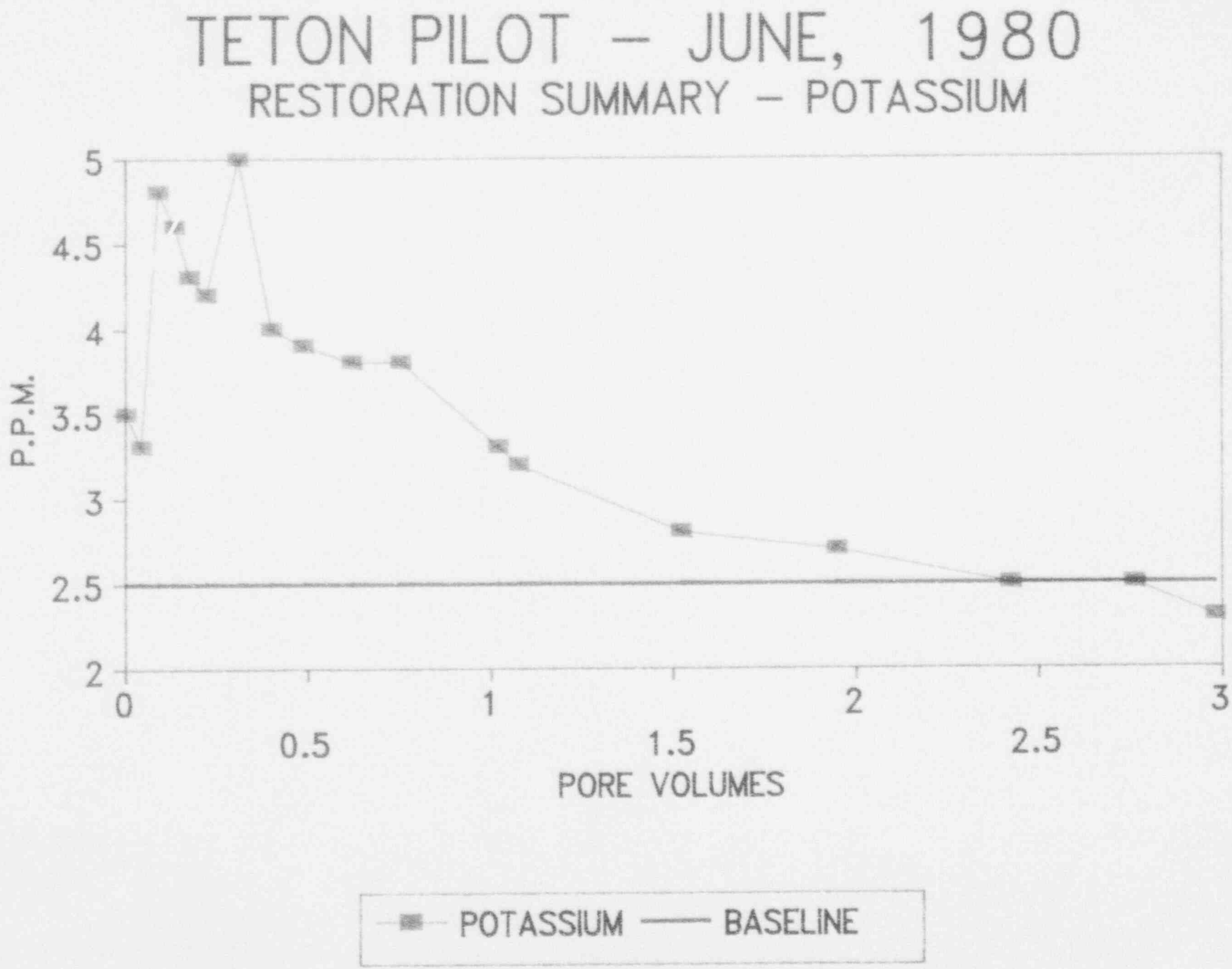



TETON PILOT - JUNE, 1980
RESTORATION SUMMARY - BICARBONATE
P.P.M.
1100
1000
900
800
700
600
500
400
300
200
0
0.5
1
1.5
2
2.5
3
PORE VOLUMES
BICARBONATE
BASELINE

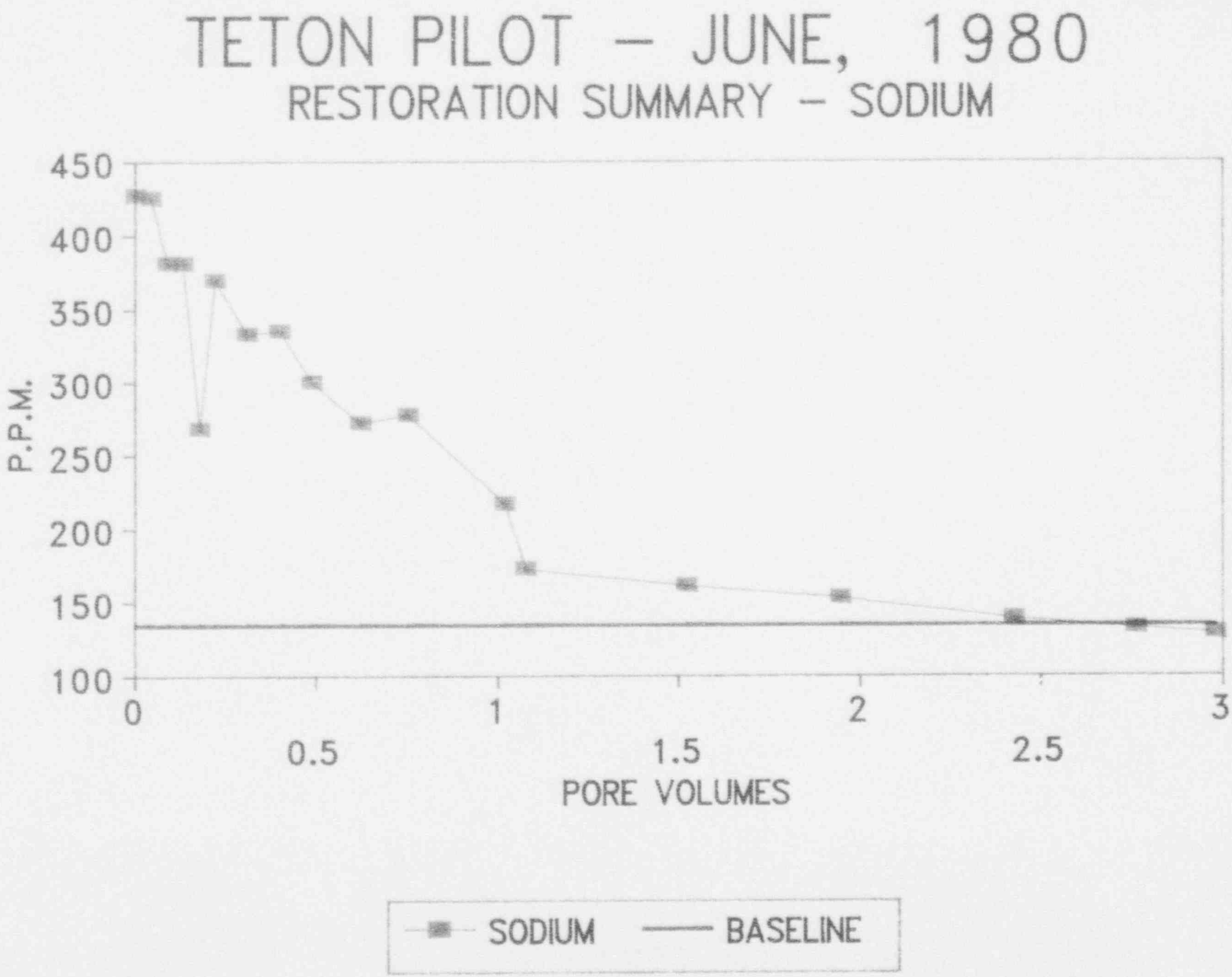
TETON PILOT – JUNE, 1980

RESTORATION SUMMARY – MAGNESIUM

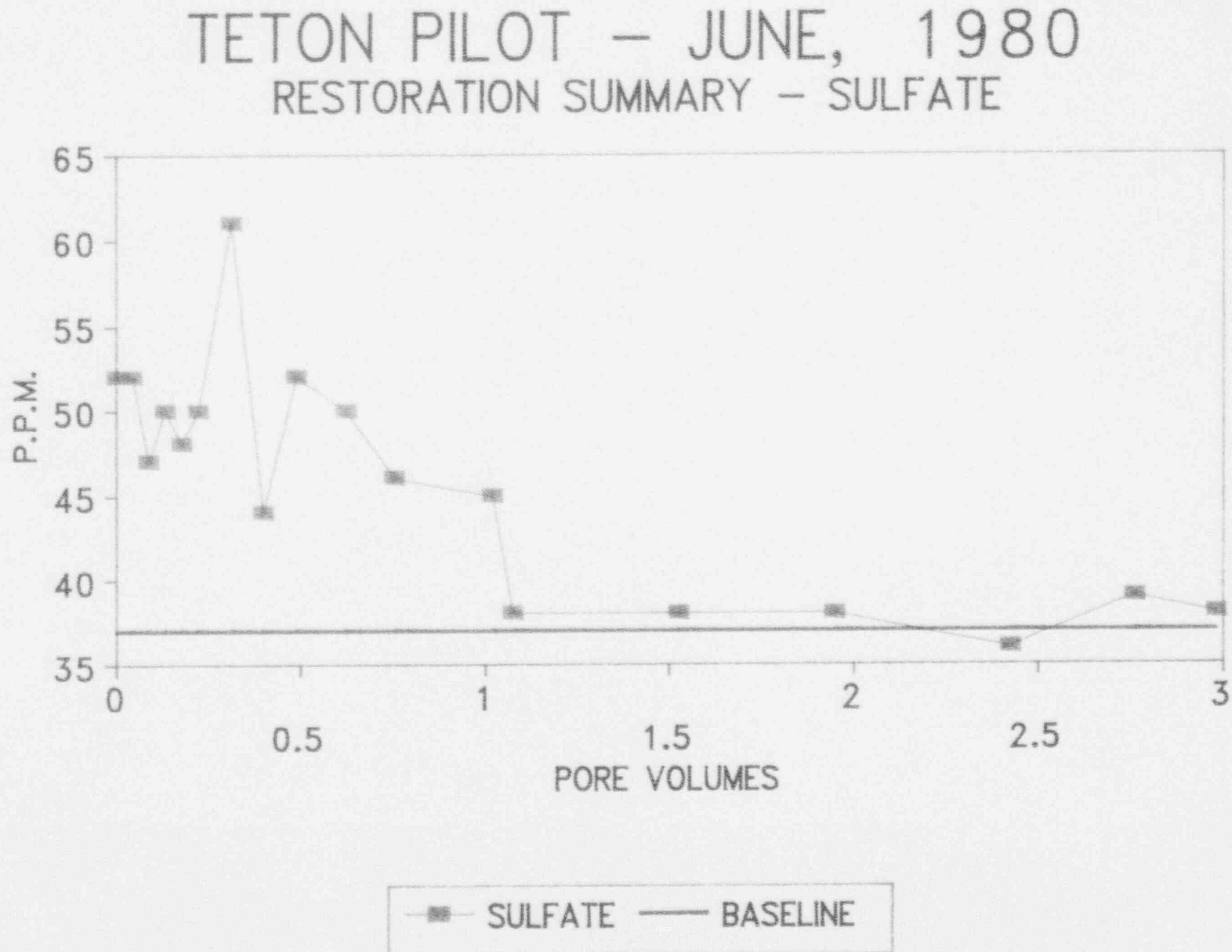


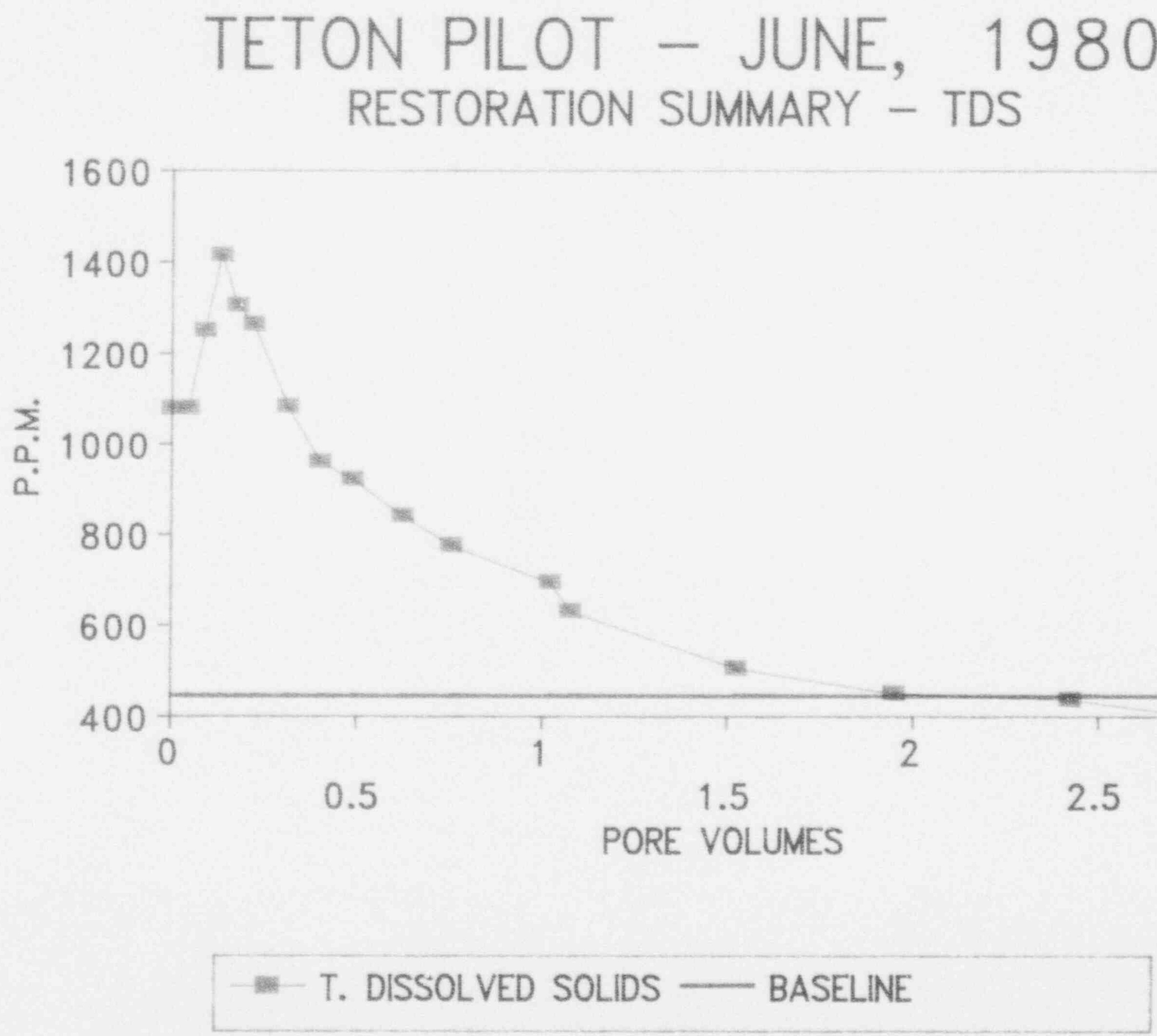


TETON PILOT – JUNE, 1980
RESTORATION SUMMARY – POTASSIUM
P.P.M.
5
4.5
4
3.5
3
2.5
2
0
0.5
1
1.5
2
2.5
3
PORE VOLUMES
POTASSIUM
BASELINE

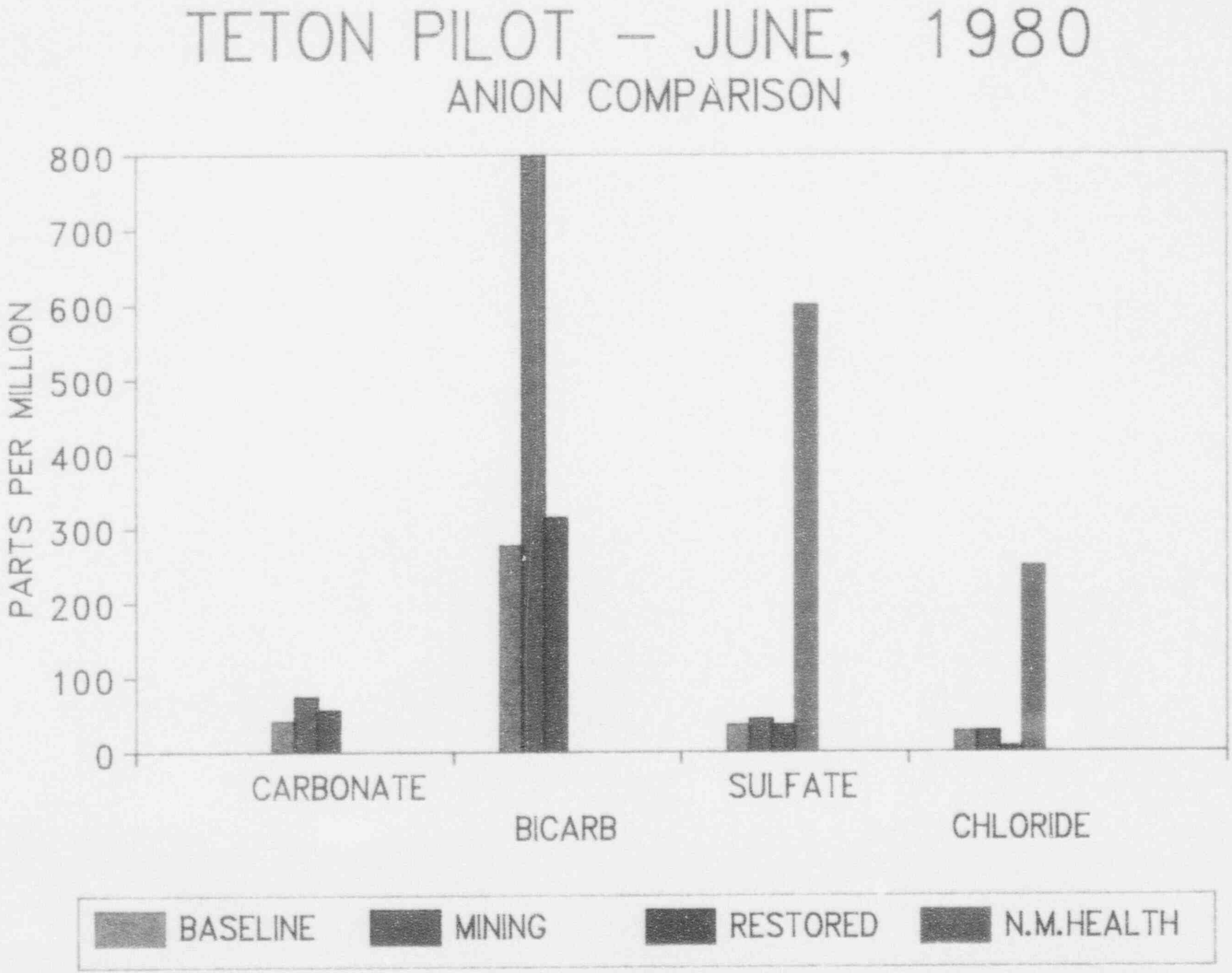


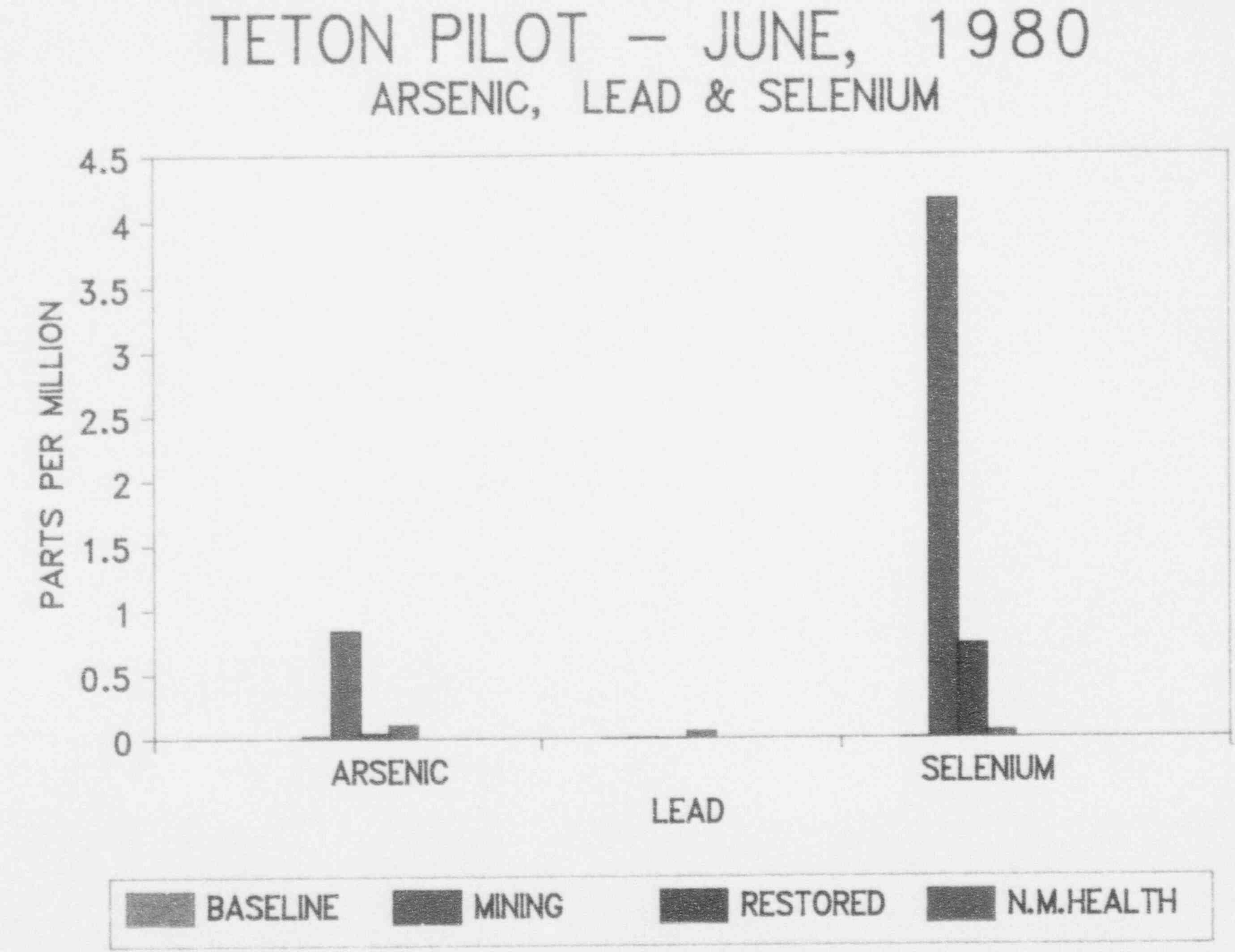
TETON PILOT – JUNE, 1980
RESTORATION SUMMARY – SODIUM
P.P.M.
450
400
350
300
250
200
150
100
0
0.5
1
1.5
2
2.5
3
PORE VOLUMES
SODIUM
BASELINE


TETON PILOT – JUNE, 1980
RESTORATION SUMMARY – SULFATE
65
60
55
50
45
40
35
P.P.M.
0
0.5
1
1.5
2
2.5
3
PORE VOLUMES
SULFATE
BASELINE

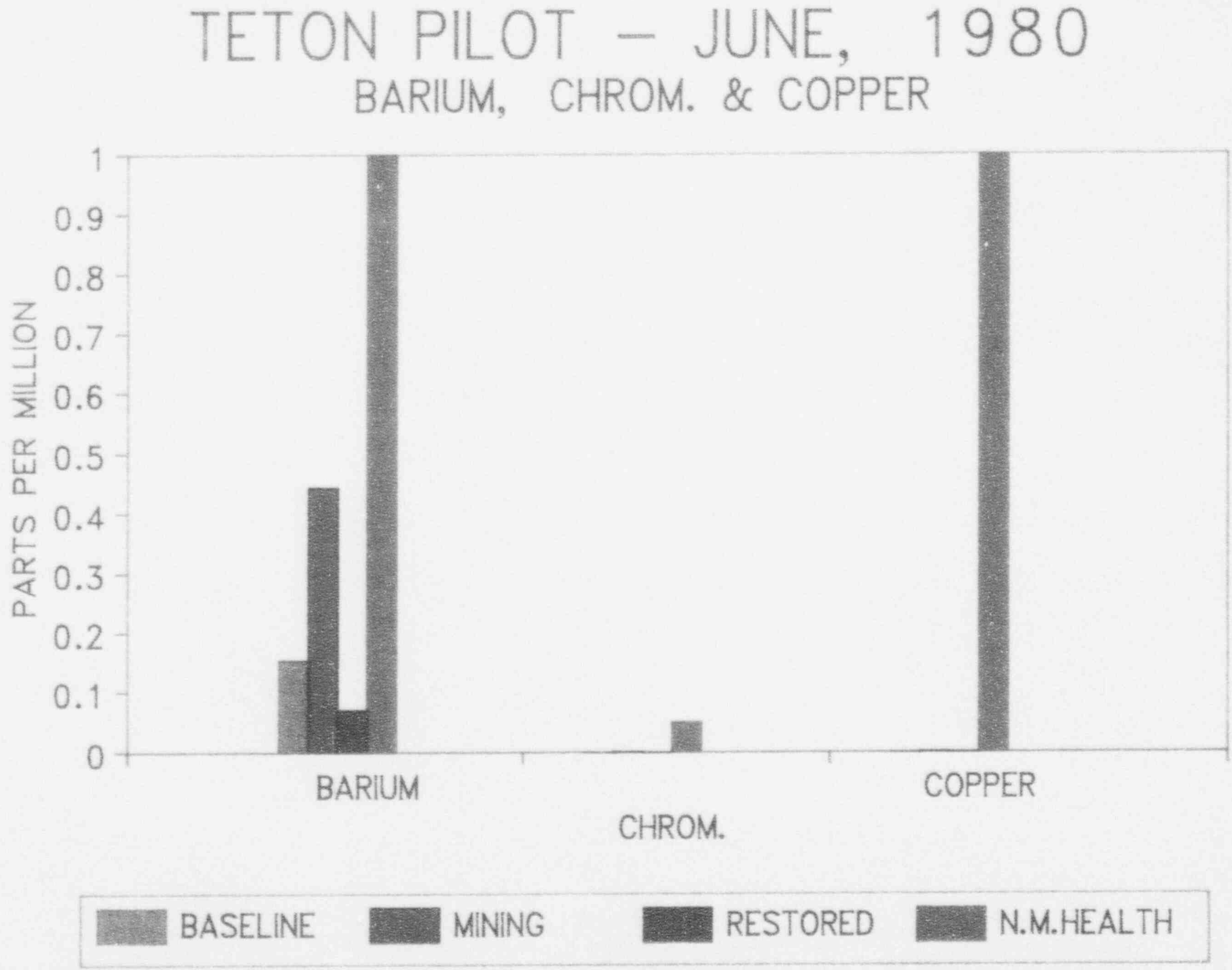

TETON PILOT – JUNE, 1980
RESTORATION SUMMARY – TDS
1600
1400
1200
1000
800
600
400
P.P.M.
0
0.5
1
1.5
2
2.5
3
PORE VOLUMES
T. DISSOLVED SOLIDS
BASELINE

APPENDIX B


TETON PILOT - JUNE, 1980
ANION COMPARISON
PARTS PER MILLION
800
700
600
500
400
300
200
100
0
CARBONATE
BICARB
SULFATE
CHLORIDE
BASELINE
MINING
RESTORED
N.M.HEALTH

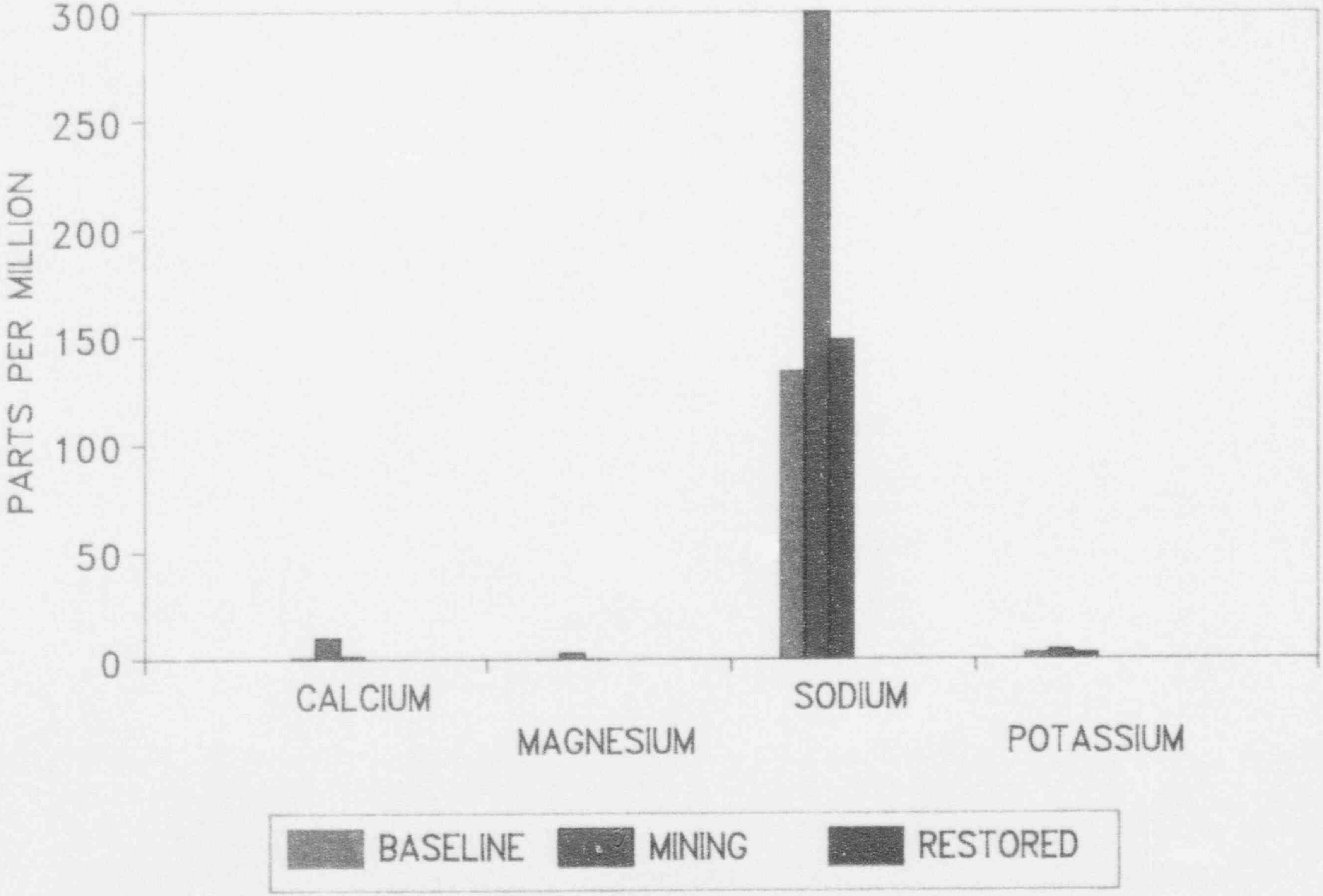


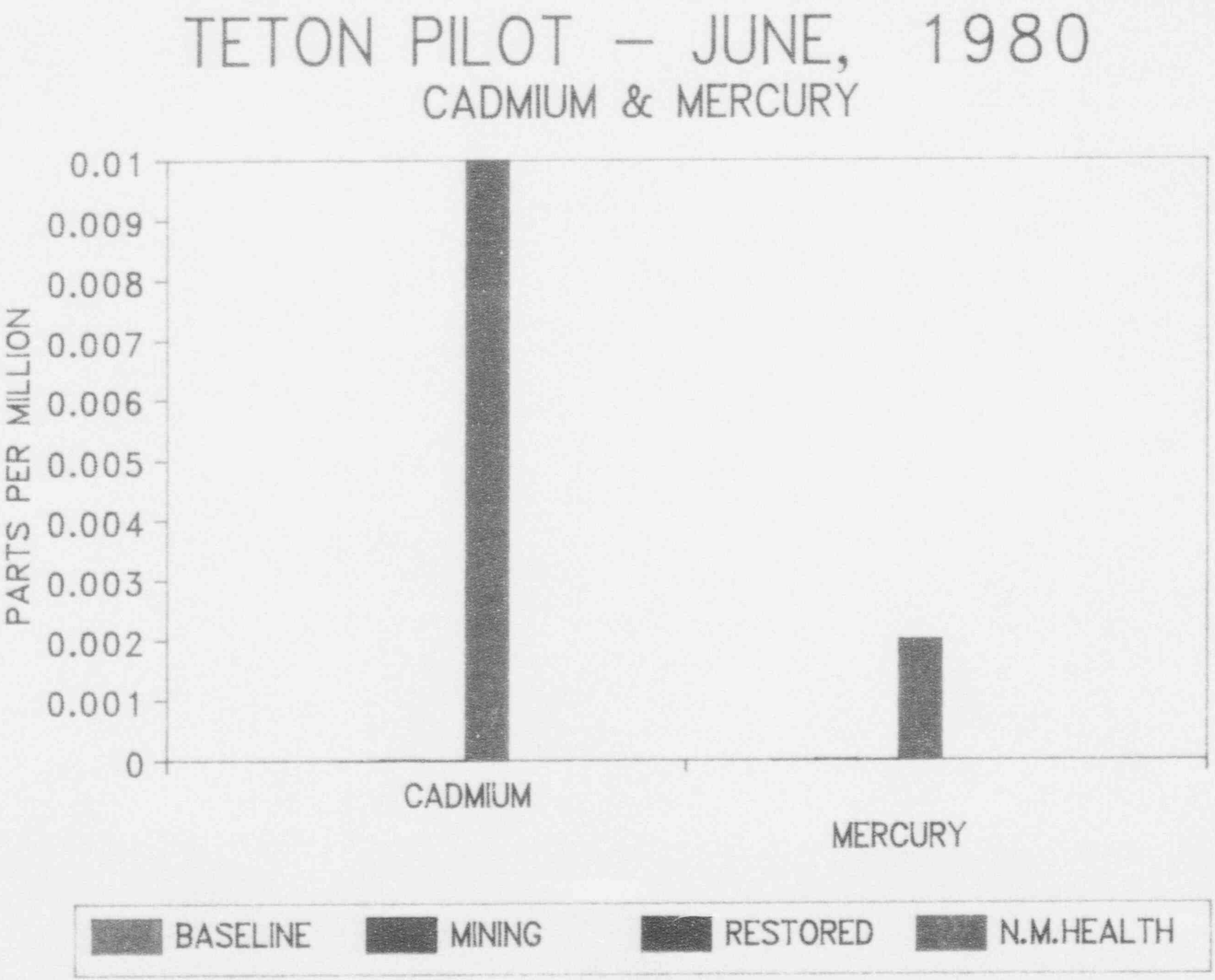
TETON PILOT – JUNE, 1980
ARSENIC, LEAD & SELENIUM
PARTS PER MILLION
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
ARSENIC
LEAD
SELENIUM
BASELINE
MINING
RESTORED
N.M.HEALTH


TETON PILOT – JUNE, 1980
BARIUM, CHROM. & COPPER
PARTS PER MILLION
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
BARIUM
CHROM.
COPPER
BASELINE
MINING
RESTORED
N.M.HEALTH

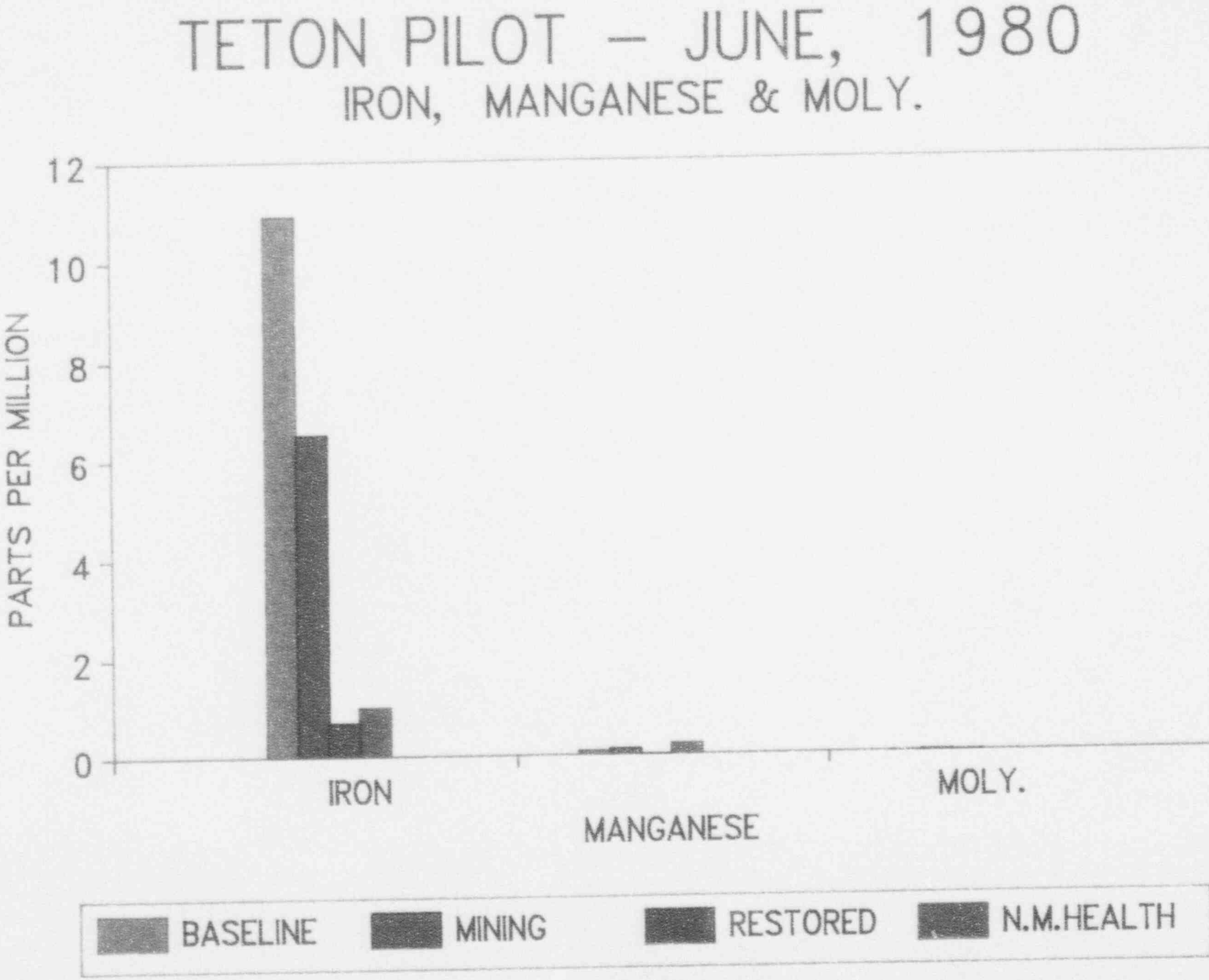
TETON PILOT — JUNE, 1980

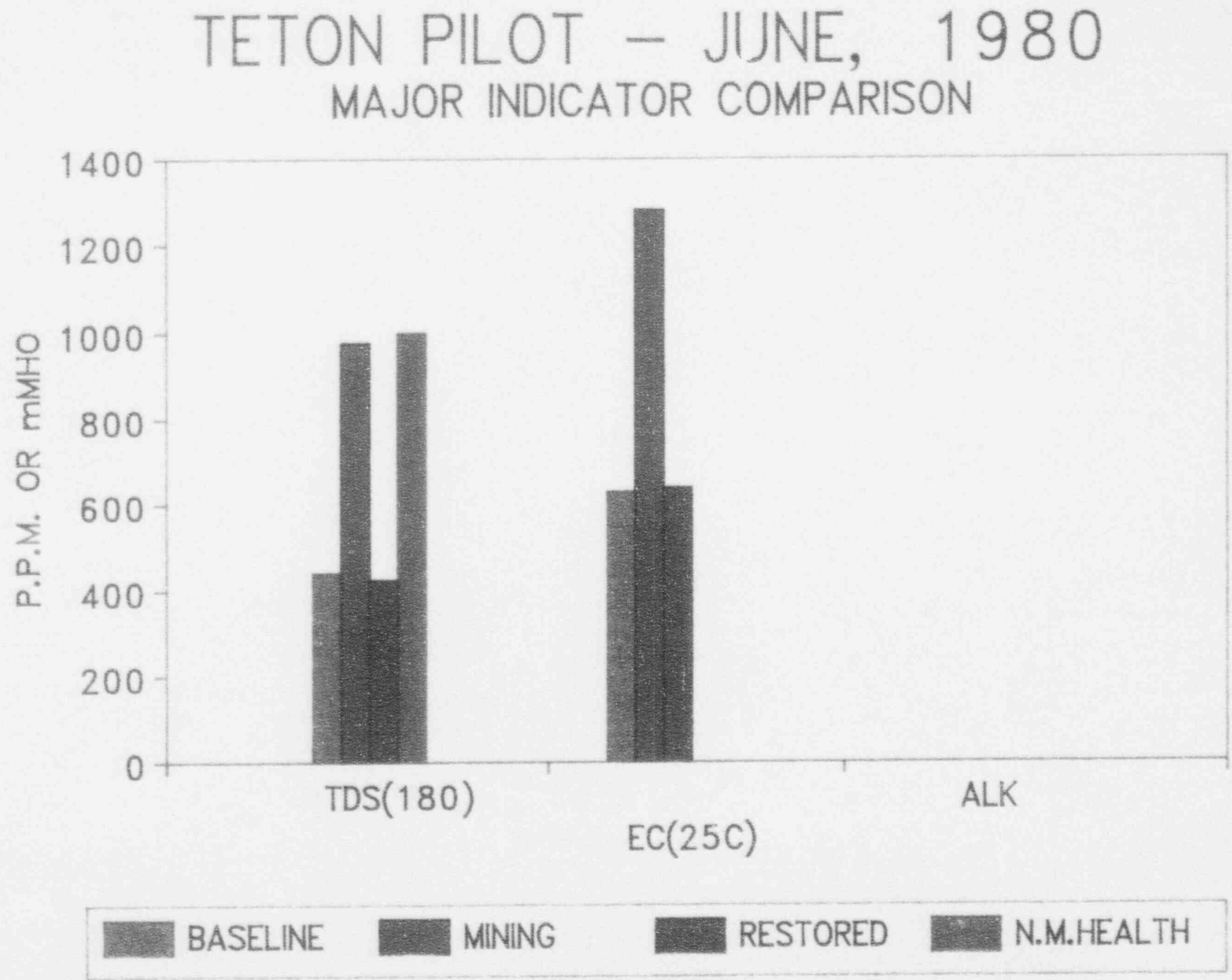
CATION COMPARISON

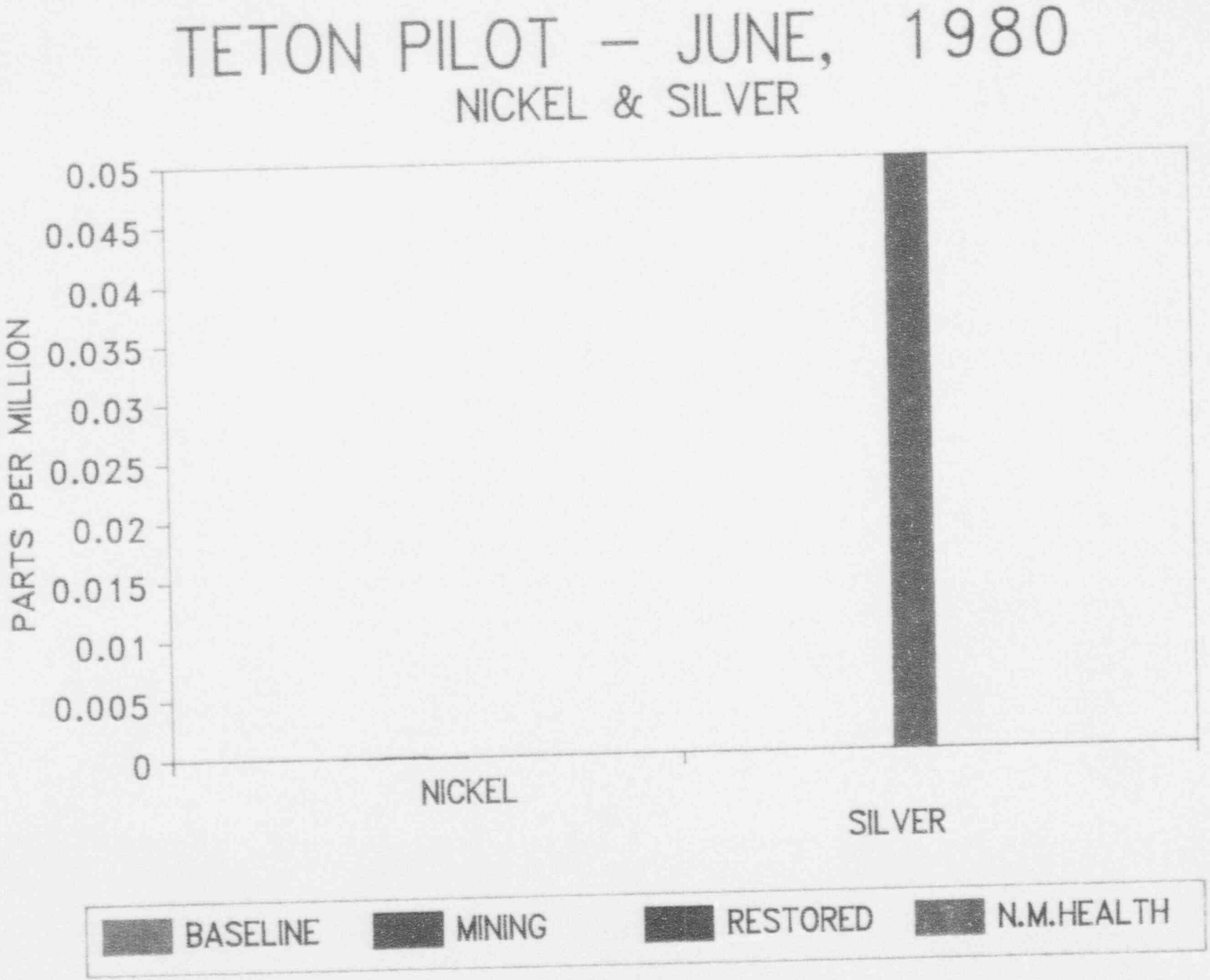




TETON PILOT – JUNE, 1980
CADMIUM & MERCURY
PARTS PER MILLION
0.01
0.009
0.008
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0
CADMIUM
MERCURY
BASELINE
MINING
RESTORED
N.M.HEALTH

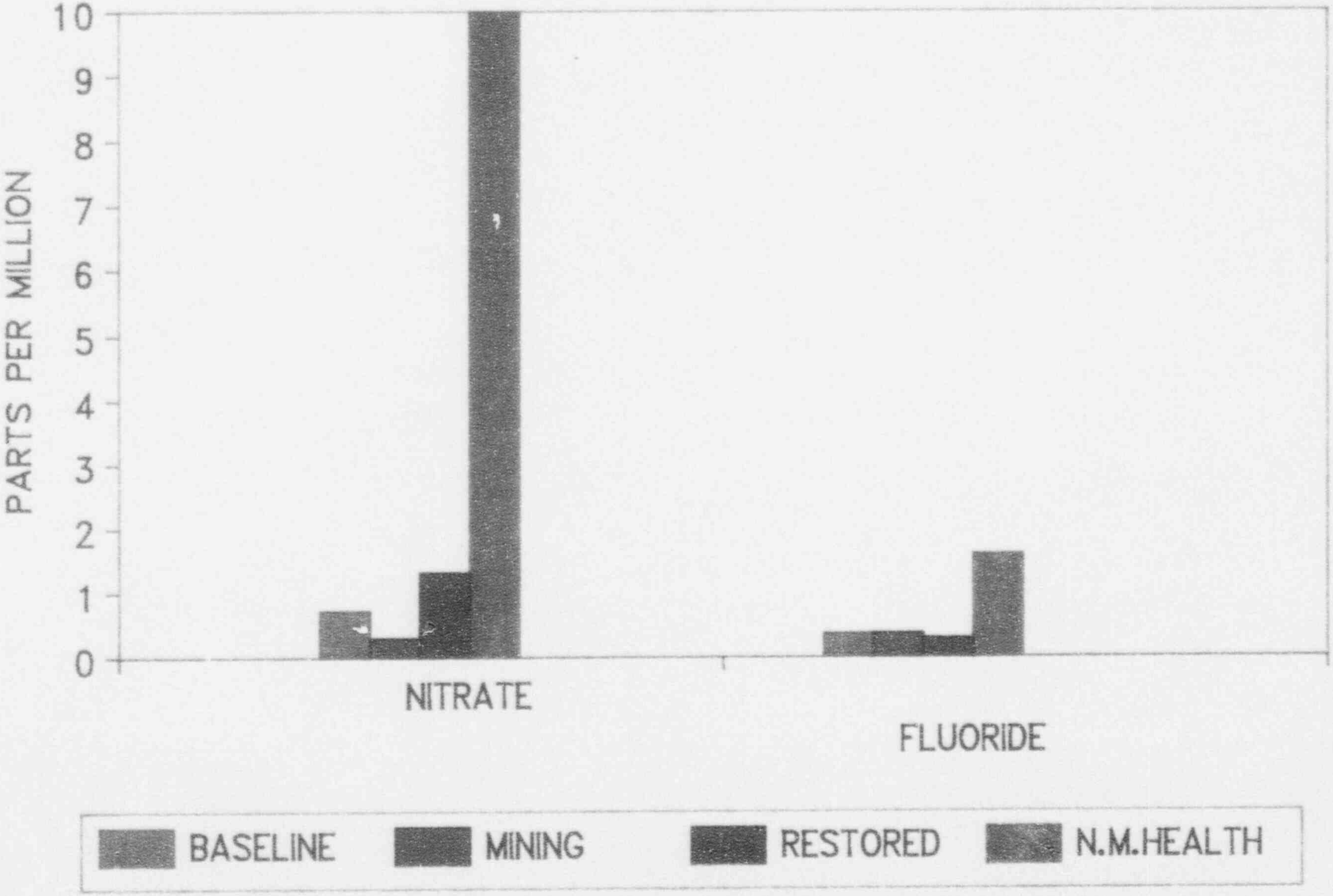

TETON PILOT – JUNE, 1980
IRON, MANGANESE & MOLY.
PARTS PER MILLION
0
2
4
6
8
10
12
IRON
MANGANESE
MOLY.
BASELINE
MINING
RESTORED
N.M.HEALTH

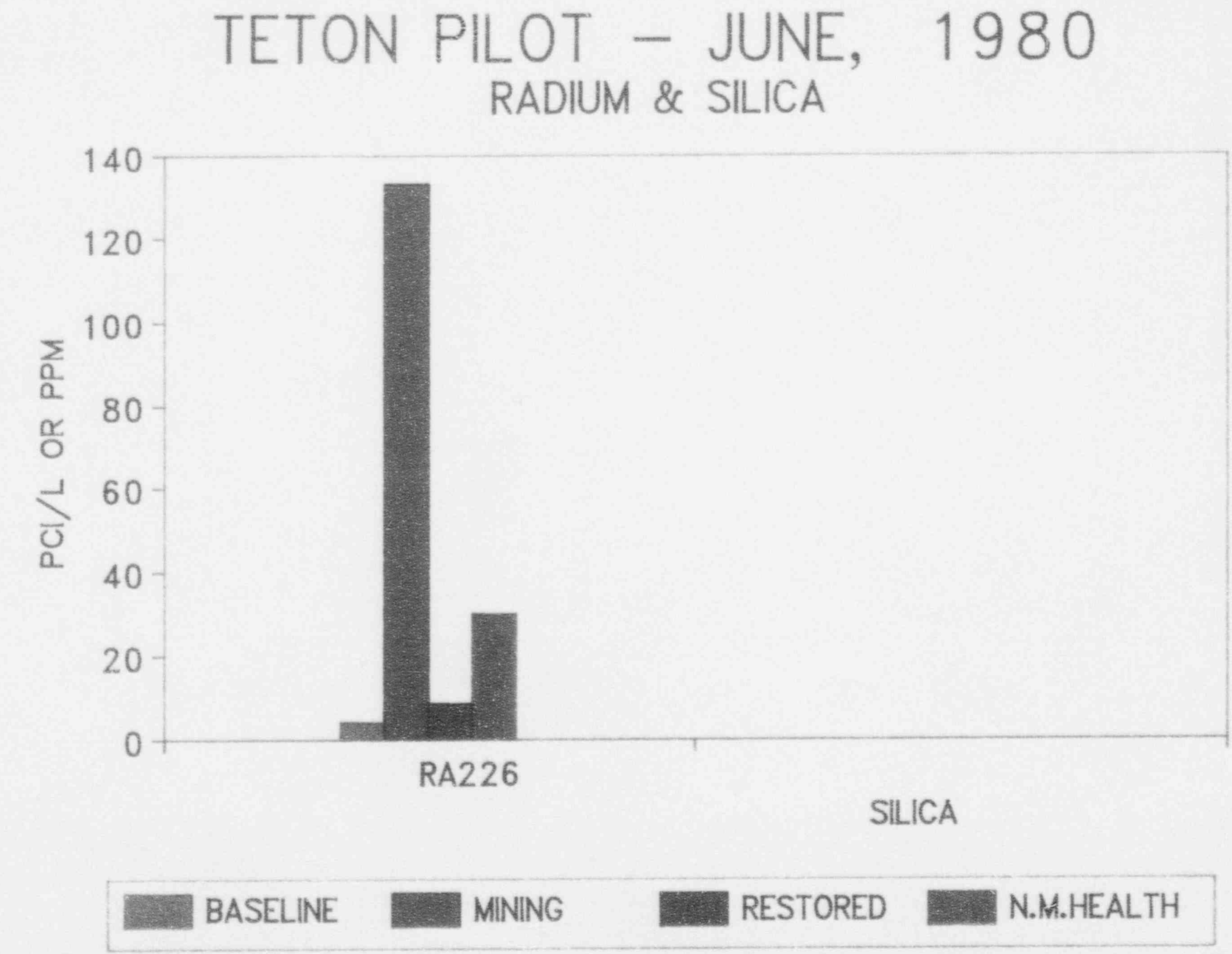

TETON PILOT – JUNE, 1980
MAJOR INDICATOR COMPARISON
P.P.M. OR mMHO
1400
1200
1000
800
600
400
200
0
TDS(180)
EC(25C)
ALK
BASELINE
MINING
RESTORED
N.M.HEALTH

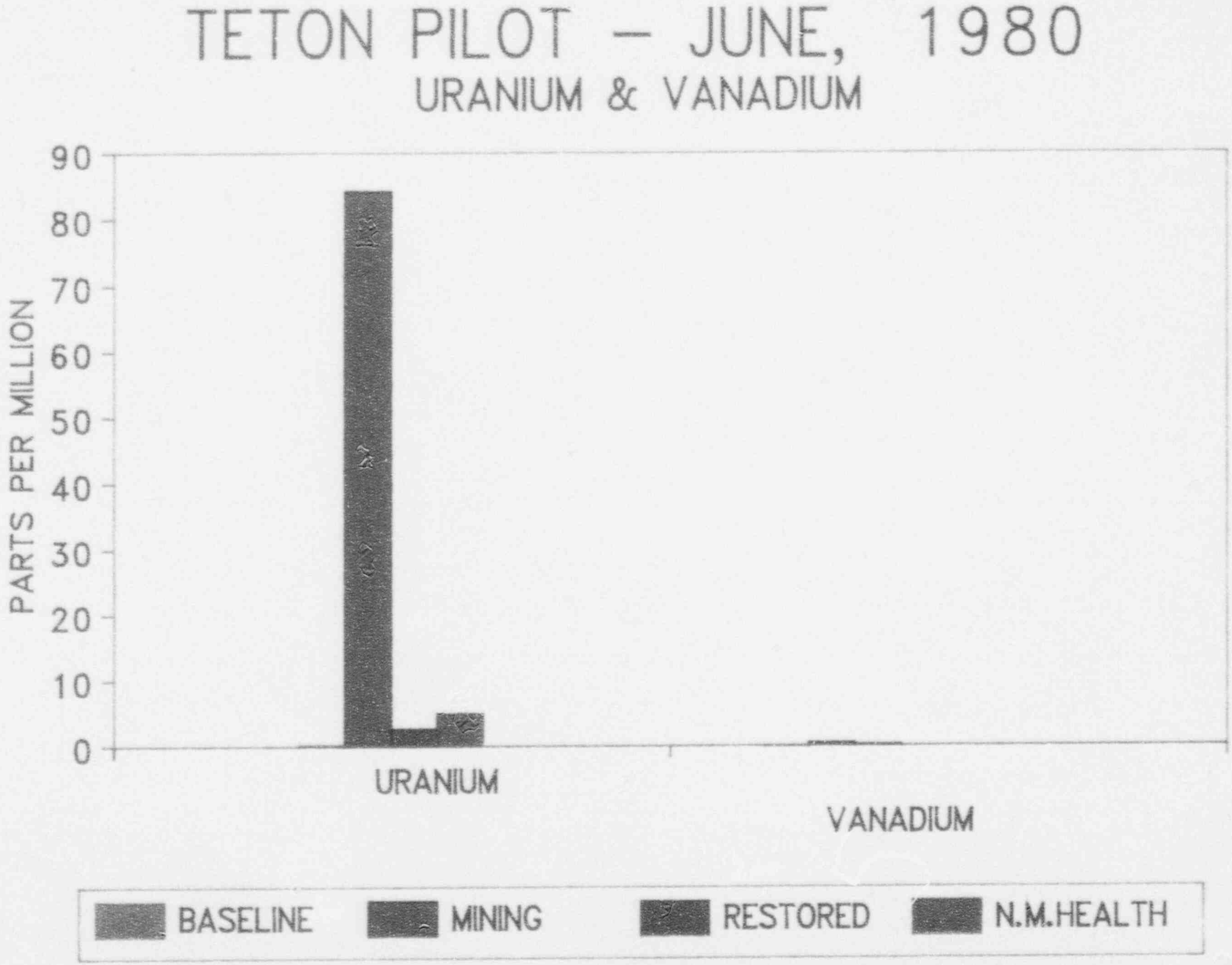

TETON PILOT – JUNE, 1980
NICKEL & SILVER
PARTS PER MILLION
0.05
0.045
0.04
0.035
0.03
0.025
0.02
0.015
0.01
0.005
0
NICKEL
SILVER
BASELINE
MINING
RESTORED
N.M.HEALTH

TETON PILOT – JUNE, 1980

NITRATE AND FLUORIDE COMPARISON



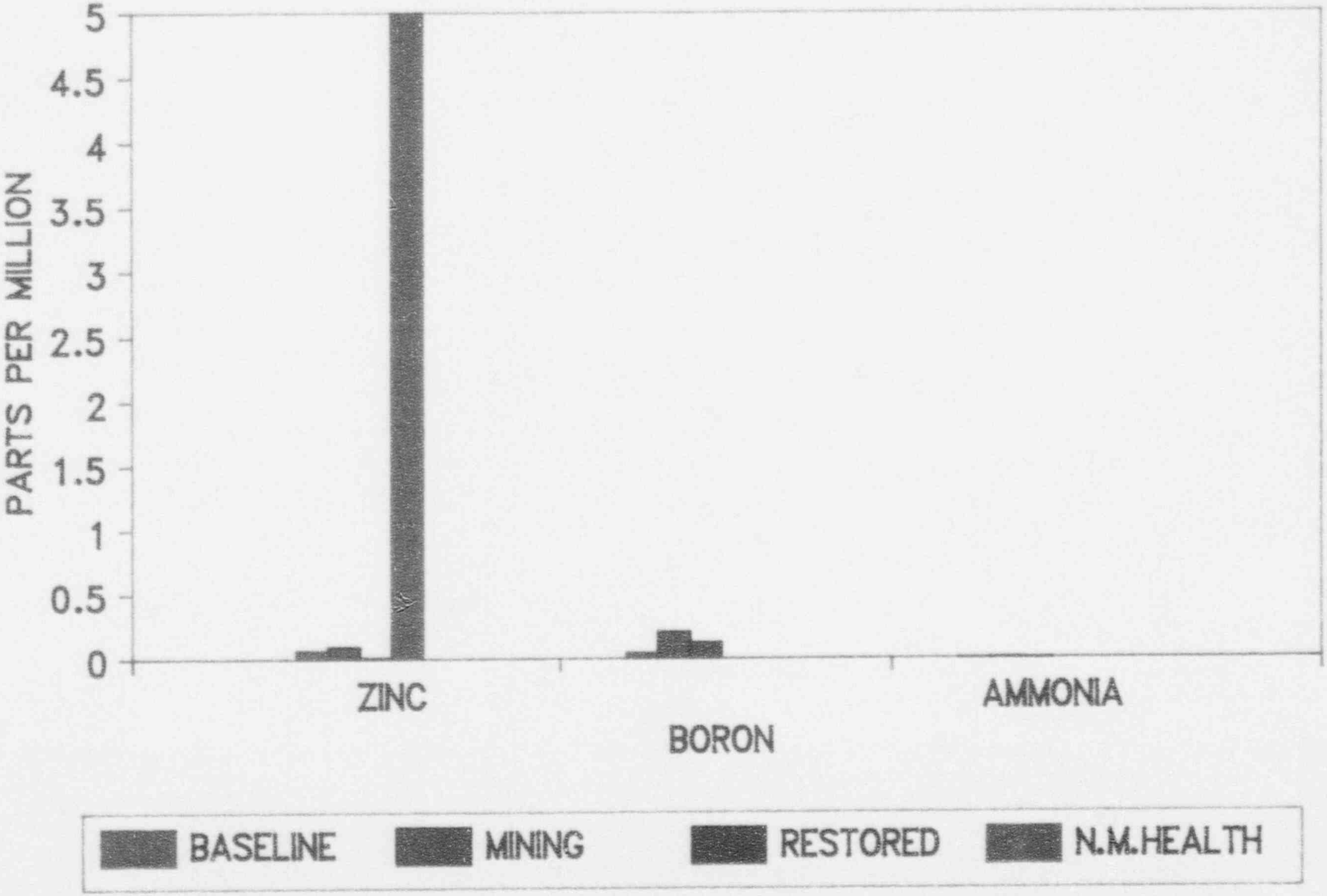

TETON PILOT - JUNE, 1980
RADIUM & SILICA
PCI/L OR PPM
140
120
100
80
60
40
20
0
RA226
SILICA
BASELINE
MINING
RESTORED
N.M.HEALTH



TETON PILOT - JUNE, 1980
URANIUM & VANADIUM
PARTS PER MILLION
0
10
20
30
40
50
60
70
80
90
URANIUM
VANADIUM
BASELINE
MINING
RESTORED
N.M.HEALTH

TETON PILOT – JUNE, 1980

ZINC, BORON & AMMONIA



OLD CHURCHROCK AND CHURCHROCK NORTH EAST WATER QUALITY
SAMPLES OBTAINED SEPTEMBER 1993 FROM CONVENTIONAL MINE WORKINGS

SAMPLE	MAIN	GRAVEL	VH1	VH2	NEVH1	NEVH2	NESH1	NEVH3	NEVH8	NEVH10
DATE	9-15	9-15	9-15	9-15	9-14	9-14	9-9	9-7	9-7	9-7
CALCIUM	44	4.3	45	44	46	32	48	47	24	33
MAGNESIUM	17	11	17	17	17	6.5	15	21	7.3	12
SODIUM	405	367	395	404	420	275	430	454	420	459
POTASSIUM	4.8	4.9	4.9	4.8	5.4	4.7	5.2	5.7	34.0	5.8
CARBONATE	0	44	0	0	0	0	0	0	11	0
BICARB	492	298	494	492	375	333	381	354	310	355
SULFATE	625	526	622	622	756	429	757	867	659	780
CHLORIDE	13	12	13	14	19	9	17	22	67	24
NITRATE	0.76	0.02	0.10	0.06	<.01	<.01	0.01	0.22	0.04	0.24
FLUORIDE	0.93	0.42	0.89	0.93	0.42	0.33	0.42	0.37	0.32	0.37
SILICA	10	1	8	9	11	10	11	13	11	11
TDS(180)	1,300	1,070	1,290	1,320	1,400	890	1,550	1,660	1,420	1,540
EC(25C)	2,000	1,730	1,990	1,990	2,100	1,400	2,120	2,290	2,050	2,160
ALK	403	318	405	403	307	273	312	290	272	291
PH	8.23	9.17	8.21	8.23	7.83	7.69	8.01	7.40	8.55	8.27
ARSENIC	0.001	<0.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001	<.001
BARIUM	0.01	<.01	<.01	<.01	0.02	0.02	0.02	0.01	0.02	0.03
CADMIUM	<.0001	<.0001	<.0001	<.0001	0.0002	<.0001	<.0001	<.0001	<.0001	<.0001
CHROM.	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
COPPER	<.01	<.01	<.01	<.01	<.01	<.01	0.01	0.01	0.01	0.01
IRON	0.01	0.01	<.01	0.01	<.01	<.01	0.01	0.01	0.01	0.01
LEAD	<.001	<.001	<.001	<.001	0.001	<.001	<.001	<.001	<.001	<.001
MANGANESE	0.16	0.02	0.18	0.18	0.31	0.17	0.1	0.33	0.01	0.06
MERCURY	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001	<.0001
MOLY.	0.01	0.01	0.01	0.01	0.03	0.01	0.04	0.02	0.02	0.03
NICKEL	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
SELENIUM	0.001	<.001	<.001	0.001	<.001	0.005	<.001	<.001	<.001	<.001
SILVER	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
URANIUM	3.07	0.041	3.550	3.41	1.630	1.510	2.82	0.846	0.434	1.34
VANADIUM	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01	<.01
ZINC	0.01	<.01	0.01	0.03	<.01	<.01	0.01	0.01	0.01	0.02
BORON	0.4	0.24	0.39	0.38	0.16	0.11	0.19	0.18	0.15	0.17
AMMONIA	0.03	0.13	0.10	0.06	0.22	0.25	0.29	0.21	0.36	1.1
RA226	55	7.4	47.0	44	4.4	20.0	5.2	3.2	8.4	2.4

EXPLANATION

MAIN - SECTION 17 OR OLD CHURCHROCK MINE MAIN SHAFT
GRAVEL - SECTION 17 OR OLD CHURCHROCK MINE GRAVEL SHAFT
VH1 - SECTION 17 OR OLD CHURCHROCK MINE VENT HOLE #1
VH2 - SECTION 17 OR OLD CHURCHROCK MINE VENT HOLE #2
NESH1 - NORTH EAST CHURCHROCK MINE MAIN SHAFT
NEVH1 - NORTH EAST CHURCHROCK MINE VENT HOLE #1
NEVH2 - NORTH EAST CHURCHROCK MINE VENT HOLE #2
NEVH3 - NORTH EAST CHURCHROCK MINE VENT HOLE #3
NEVH8 - NORTH EAST CHURCHROCK MINE VENT HOLE #8
NEVH10 - NORTH EAST CHURCHROCK MINE VENT HOLE #10

*** ALL UNITS ARE P.P.M. EXCEPT: EC mMHO; pH S.U.; RA 226 pCi/L