Met-Ed / GPU

Metropolitan Edison Company
Post Office Box 480
Middletown, Pennsylvania 17057

Writer's Direct Dial Number

December 23, 1981
LL2-81-0291

TMI Program Office
Attn: Mr. L. H. Barrett, Deputy Program Director
U. S. Nuclear Regulatory Commission
c/o Three Mile Island Nuclear Station
Middletown, Pennsylvania 17057

Dear Sir:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Containment Integrity Assessment Program

This is the seventh periodic report presenting results of our ongoing efforts to detect potential radioactive water leakage from the Containment Building. The status of the various portions of this program are discussed below.

Groundwater Monitoring

The following groundwater monitoring data is attached:

1. Individual computer graphs (Figure 1) of tritium concentrations for each monitoring station and the East Dike Catch Basin (EDCB) up to and including October 7, 1981. In order to make the graphic sections of the report more legible we have included only the 1981 data on tritium concentrations and water levels.

2. Individual computer graphs (Figure 2) indicating water levels within the monitoring stations up to and including October 7, 1981.

3. Computer tables (Tables 1 and 2) of gamma scan data up to and including November 4, 1981 for MW-2 (results for all other wells are through October 7, 1981).

4. A graph indicating gamma scan data from Monitoring Station MW-2 (Figure 3).

5. A composite drawing showing all monitoring locations with a graph of the tritium concentrations for each station.

Tritium concentrations for the reporting period of September 2, 1981 to October 7, 1981 remained within the range of values seen in previous samples. No sample was obtained from OW-10 on October 7, 1981 due to lack of sufficient water in the well.

Gamma results from all well samples (except MW-2) obtained on October 7, 1981 were less than LLD. The expedited MW-2 sample of November 4, 1981 showed a Cs-137 concentration of 35 ± 9.1 pCi/ℓ. No Cs-134 was detected in the sample. We have requested that the sample be reanalyzed. The results of this reanalysis will be reported in the next Containment Integrity Assessment Program Report. In addition, reanalysis of the October 7, 1981 MW-2 sample confirmed the Cs-137 and Cs-134 concentrations indicated in the last report.

Over the course of the last months, we have made three attempts to unblock OW-9. All of these attempts proved unsuccessful. However, we believe that the number of monitoring wells in the area of the BWST is sufficient and that the loss of OW-9 does not significantly affect our monitoring capability. We have, therefore, continued the monitoring program minus OW-9.

Also, the increase in ground water tritium levels that occurred in the vicinity of MW-4 over March and April of this year was investigated. The source of this increase was not discerned. Underground storm drain piping connects the BWST area to that surrounding MW-4, but there was not enough evidence to establish this possibility as the cause.

Cork Seal, Tendon Access Gallery and Containment Outer Wall Radiation Monitoring

Continued surveillance of the tendon gallery, cork seal and outer wall have shown no indication of containment leakage or significant changes.

Reactor Building Sump Water Level

Figure 4 presents sump level data for the period January 1, 1980 through November 22, 1981. Sump level measurements continue to correspond to predicted levels within the accuracy of the measuring technique. SDS processing continues to decrease the sump level.

Sincerely,

J. J. Barton
Acting Director, TMI-2

JJB:JJB:djb

Attachments

cc: Dr. B. J. Snyder, Program Director, TMI Program Office

LIST OF ATTACHMENTS

Figure 1	Graphs of Tritium Concentrations of Monitoring Station and East Dike Catch Basin samples versus Time (1981).
Figure 2	Graphs of Water Levels in Monitoring Stations versus Time (1981).
Figure 3	Gamma Scan Results for Monitoring Station MW-2 versus Time.
Figure 4	TMI Unit II Reactor Building Sump Level.
Table 1	Cesium-137 Concentrations of Monitoring Stations MW-1 to MW-8.
Table 2	Cesium-134 Concentrations of Monitoring Stations MW-1 to MW-8.
Drawing	*Groundwater Tritum Concentrations at Site Liquid Monitoring Stations*.

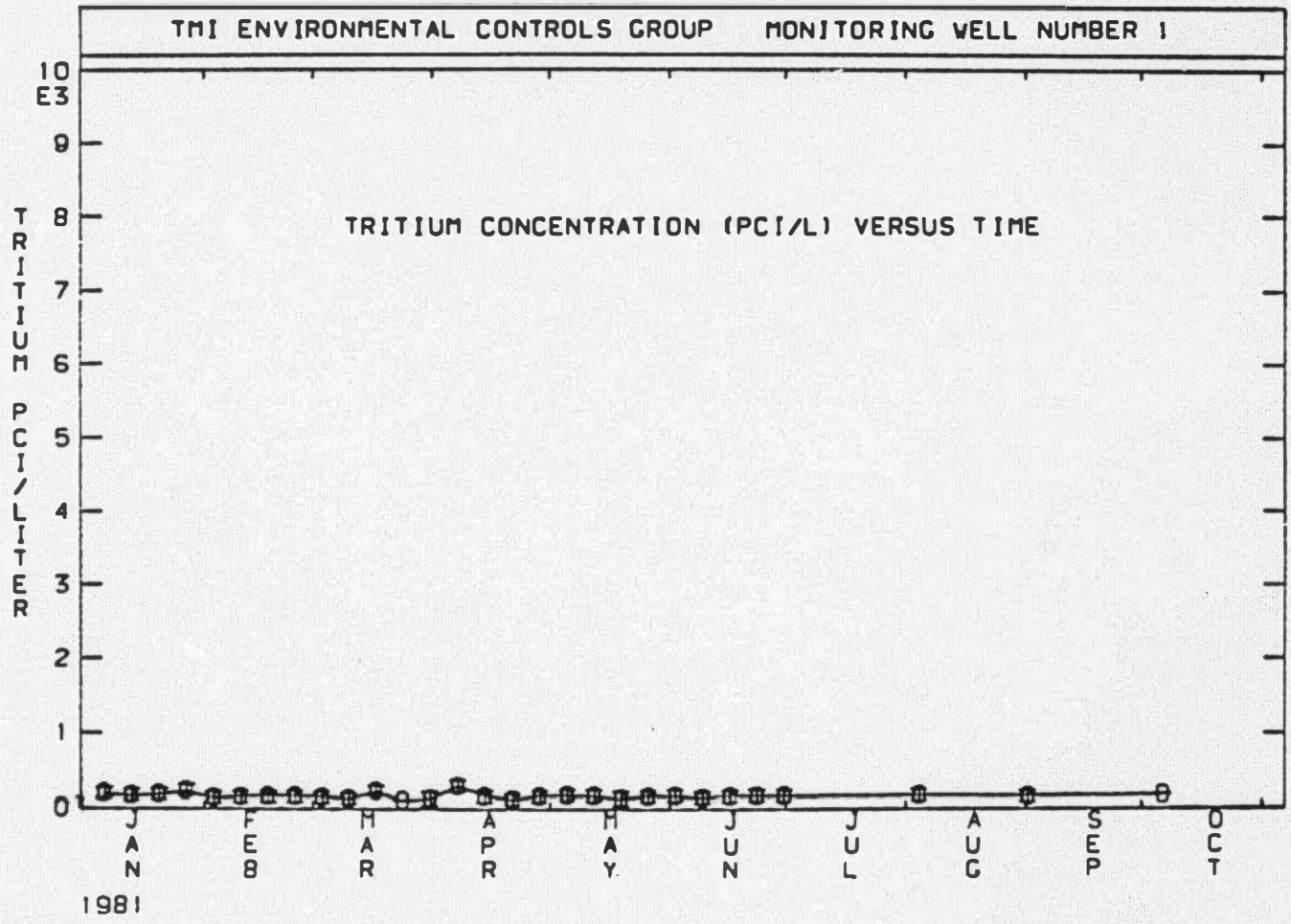

FIGURE 1, PAGE 1

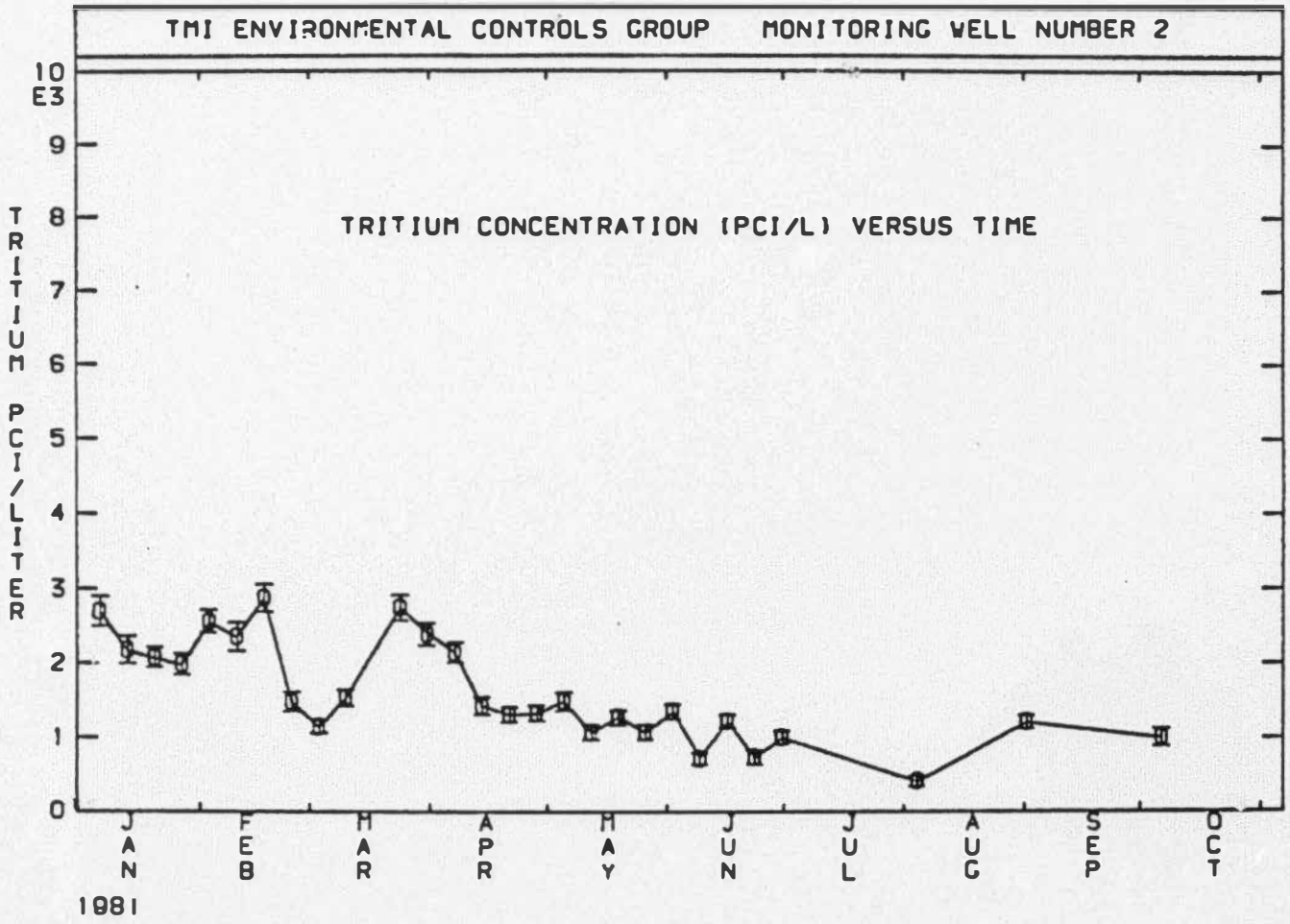

FIGURE 1, PAGE 2

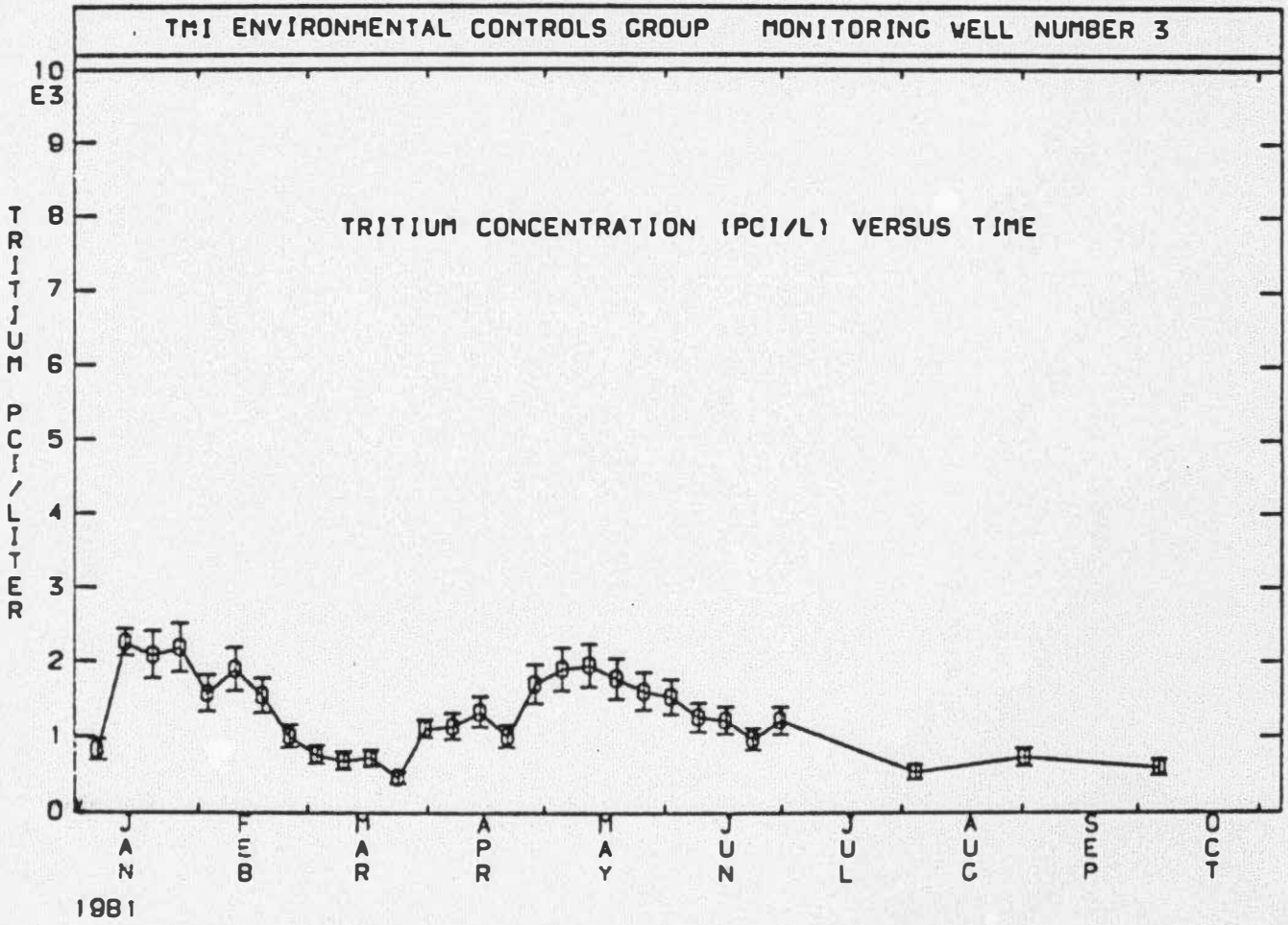

FIGURE 1, PAGE 3

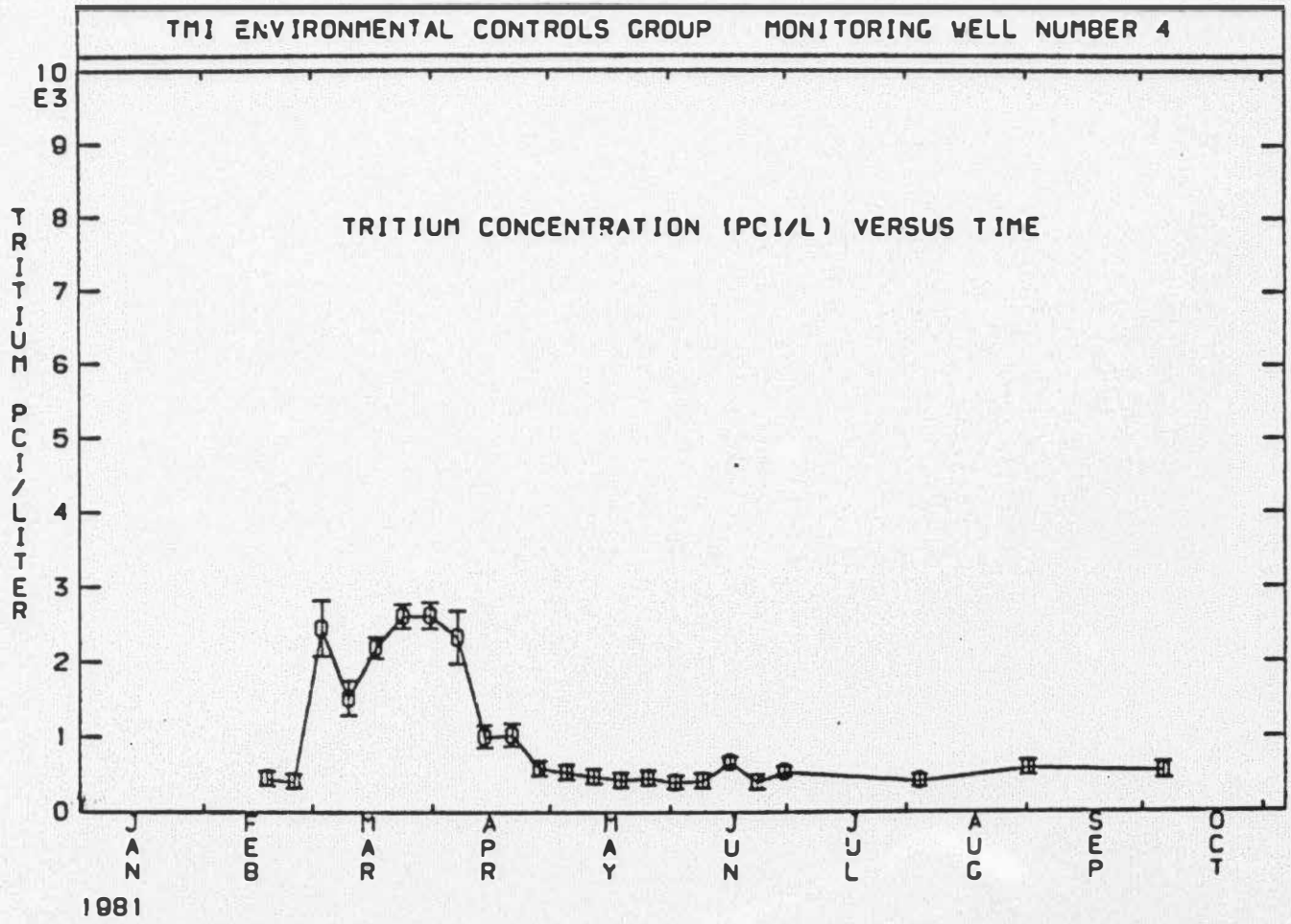

FIGURE 1, PAGE 4

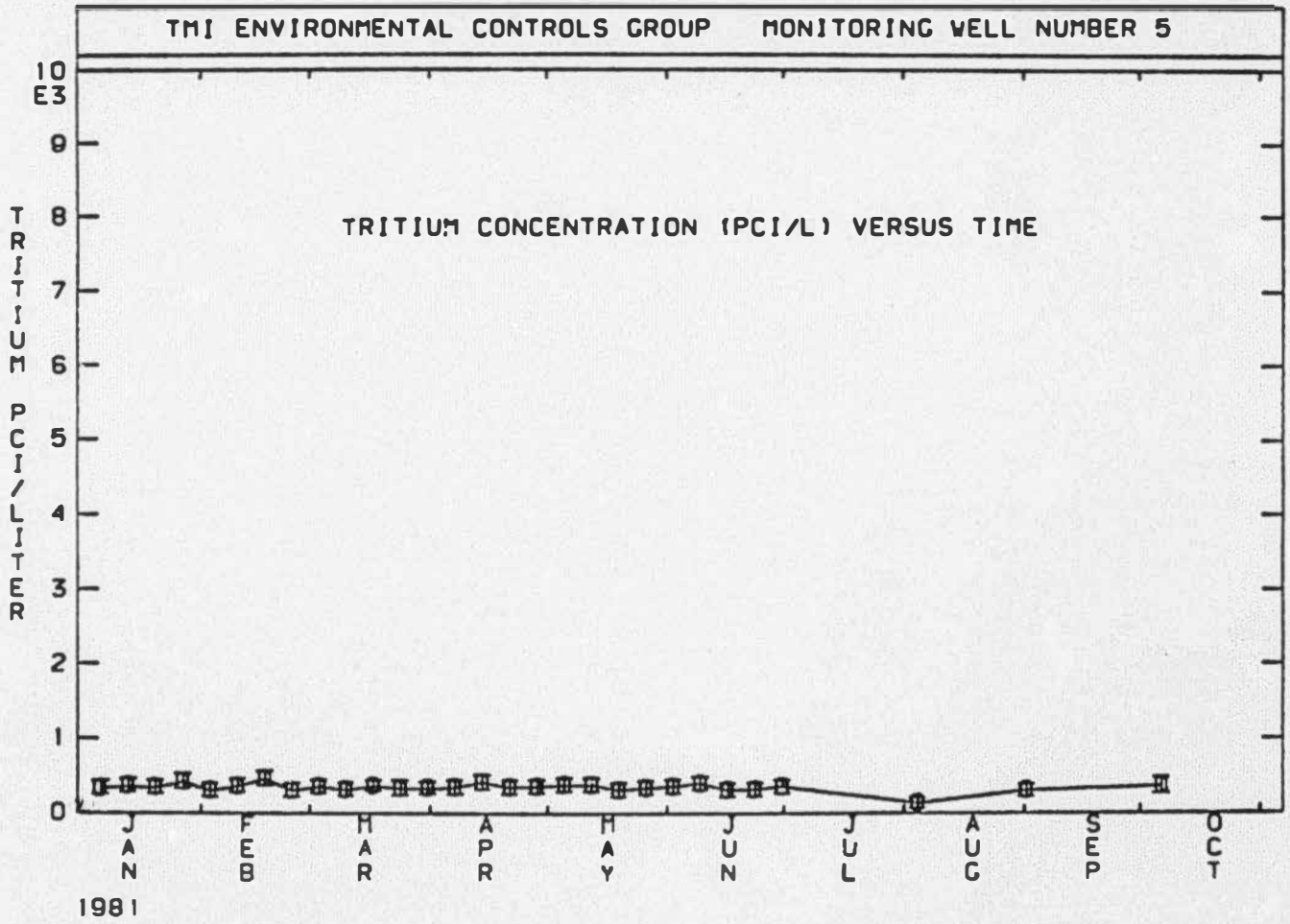

FIGURE 1, PAGE 5

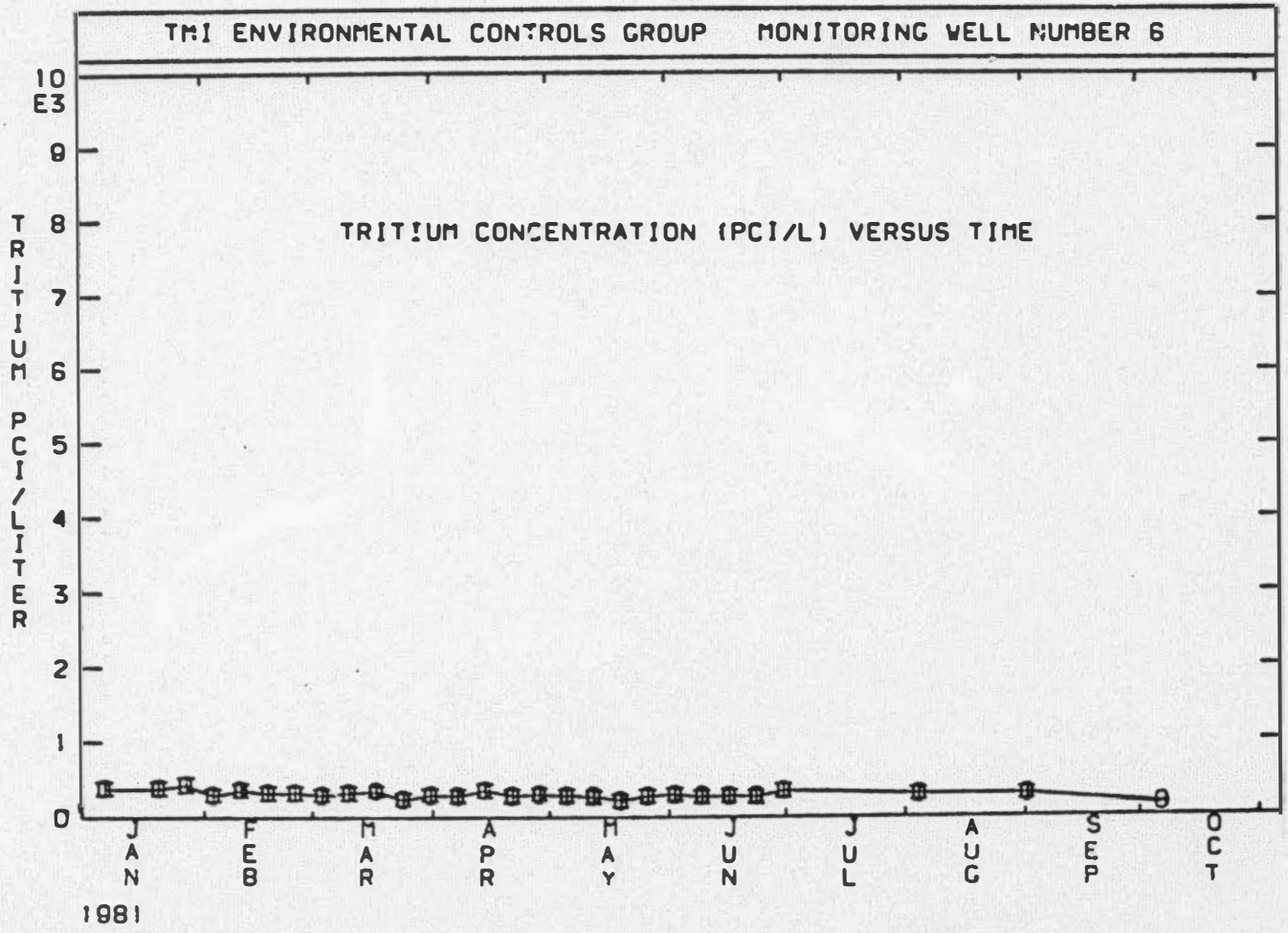

FIGURE 1, PAGE 6

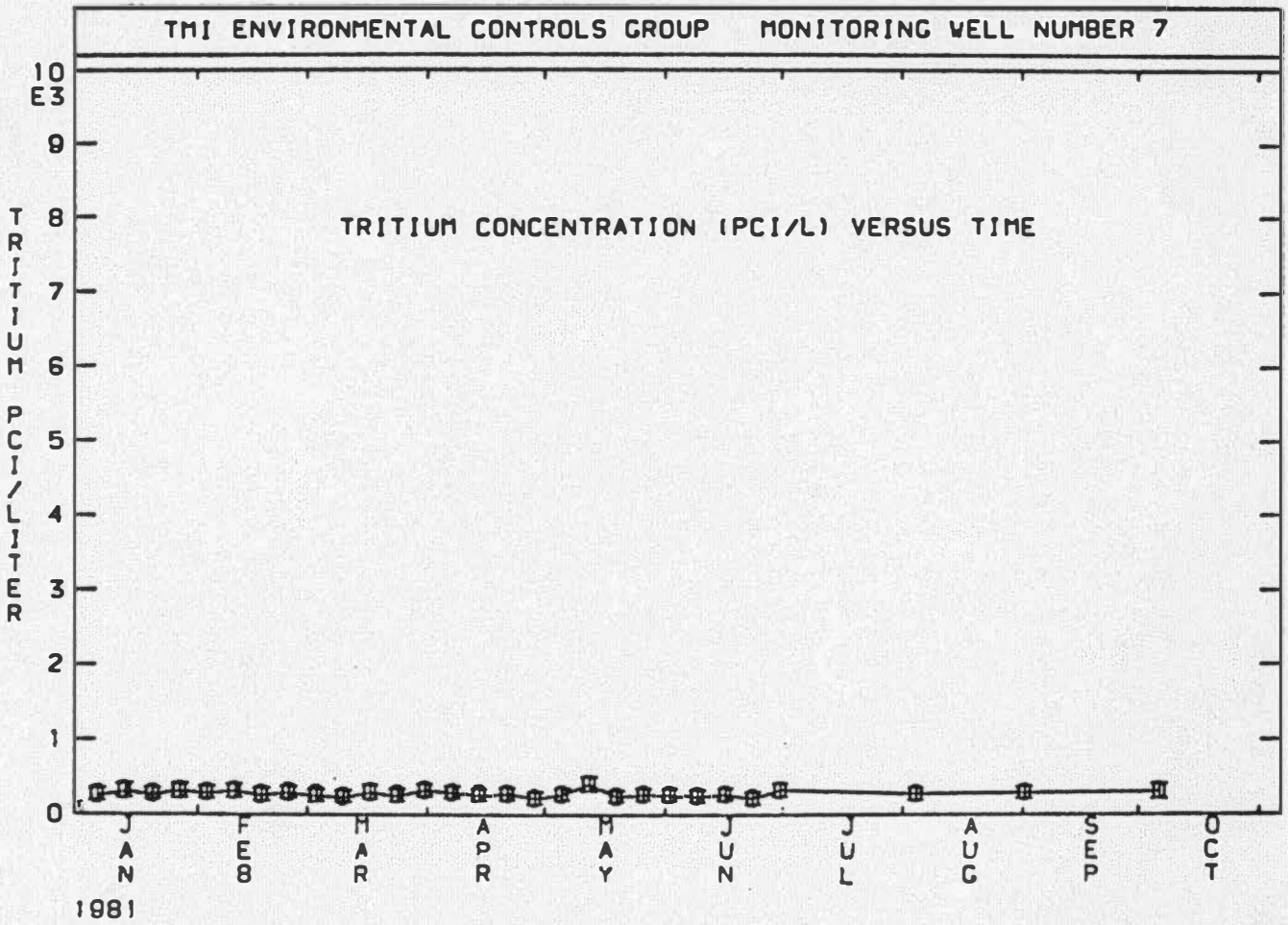

FIGURE 1, PAGE 7

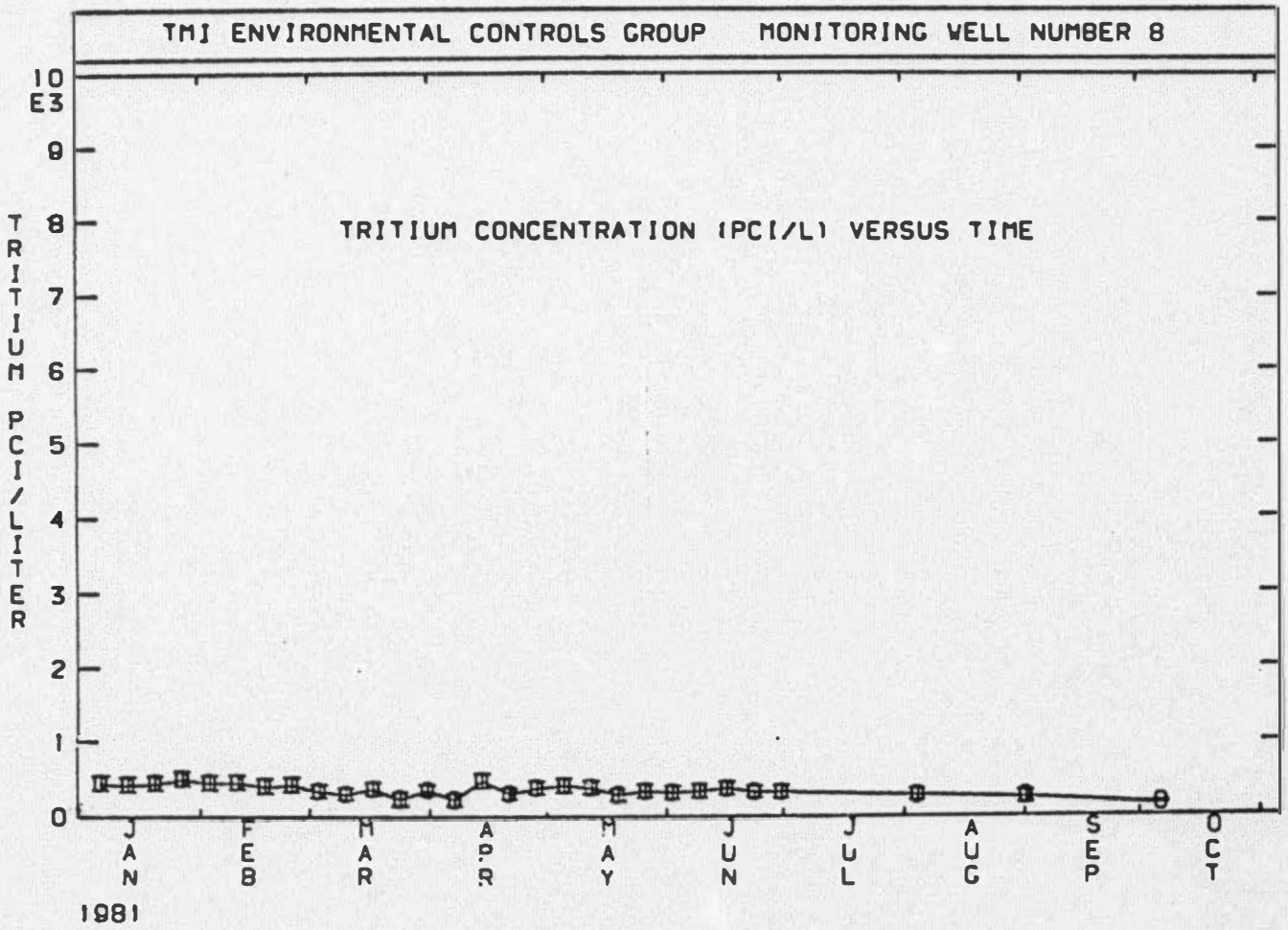

FIGURE 1, PAGE 8

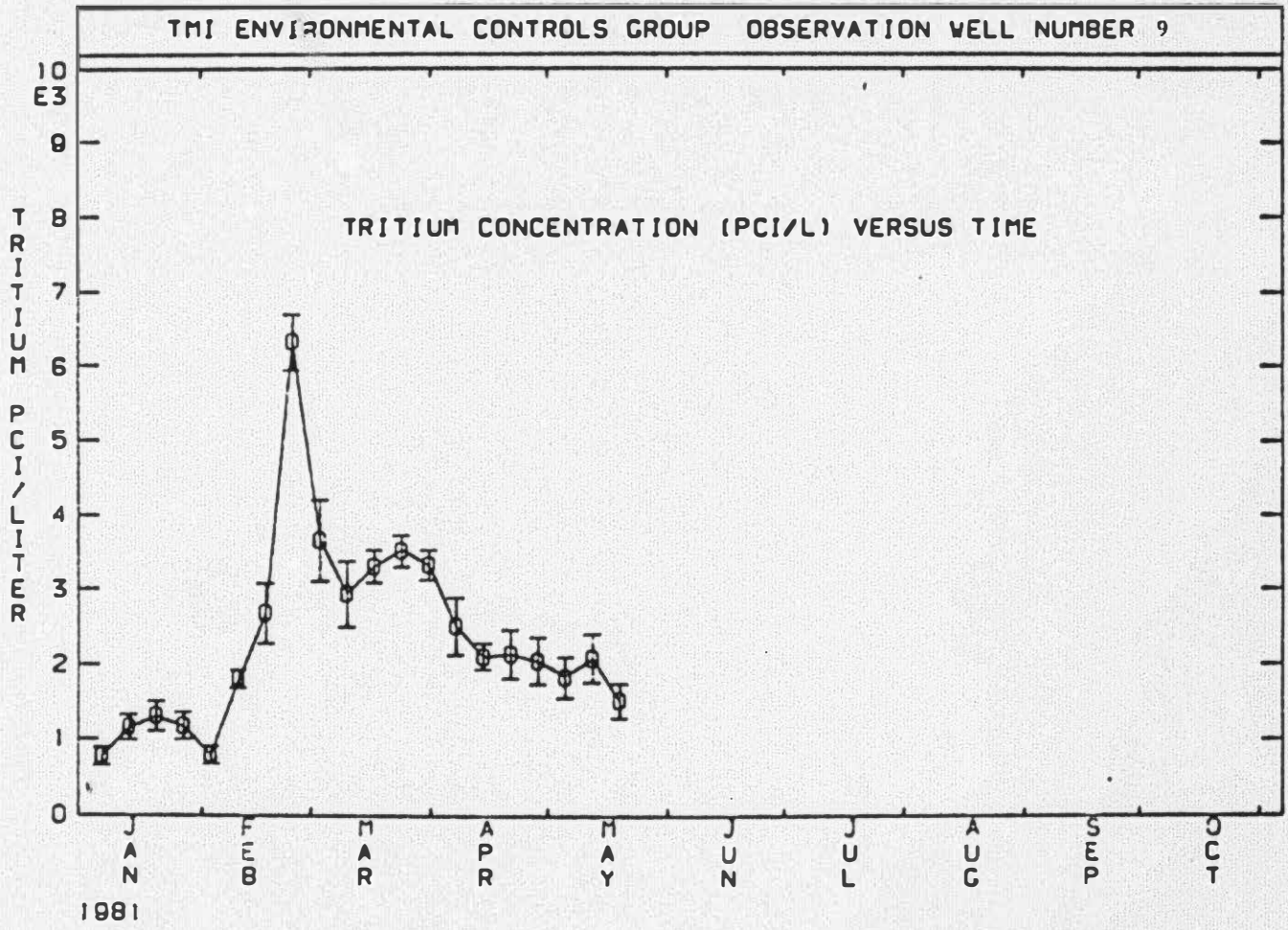

FIGURE 1, PAGE 9

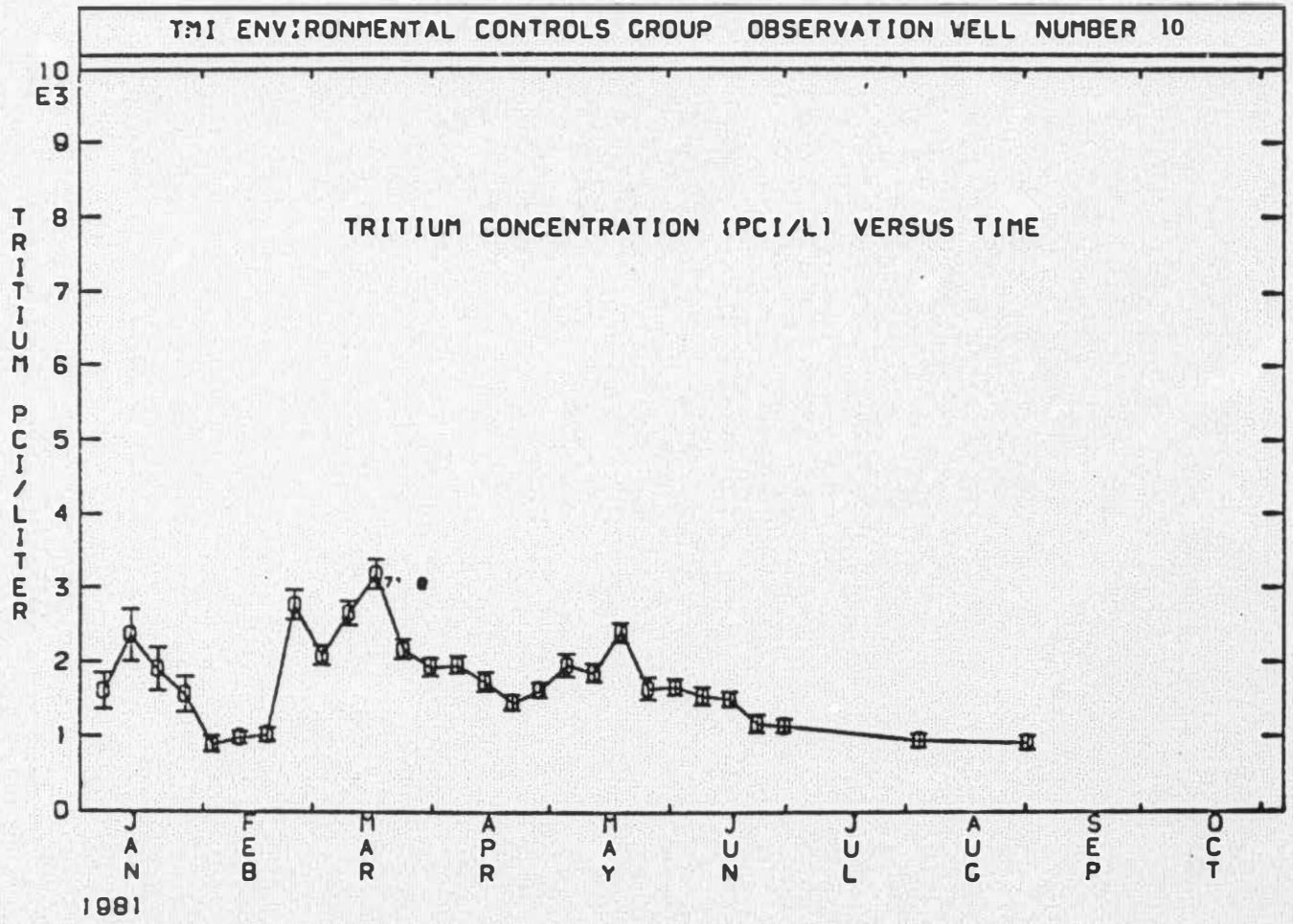

FIGURE 1. PAGE 10

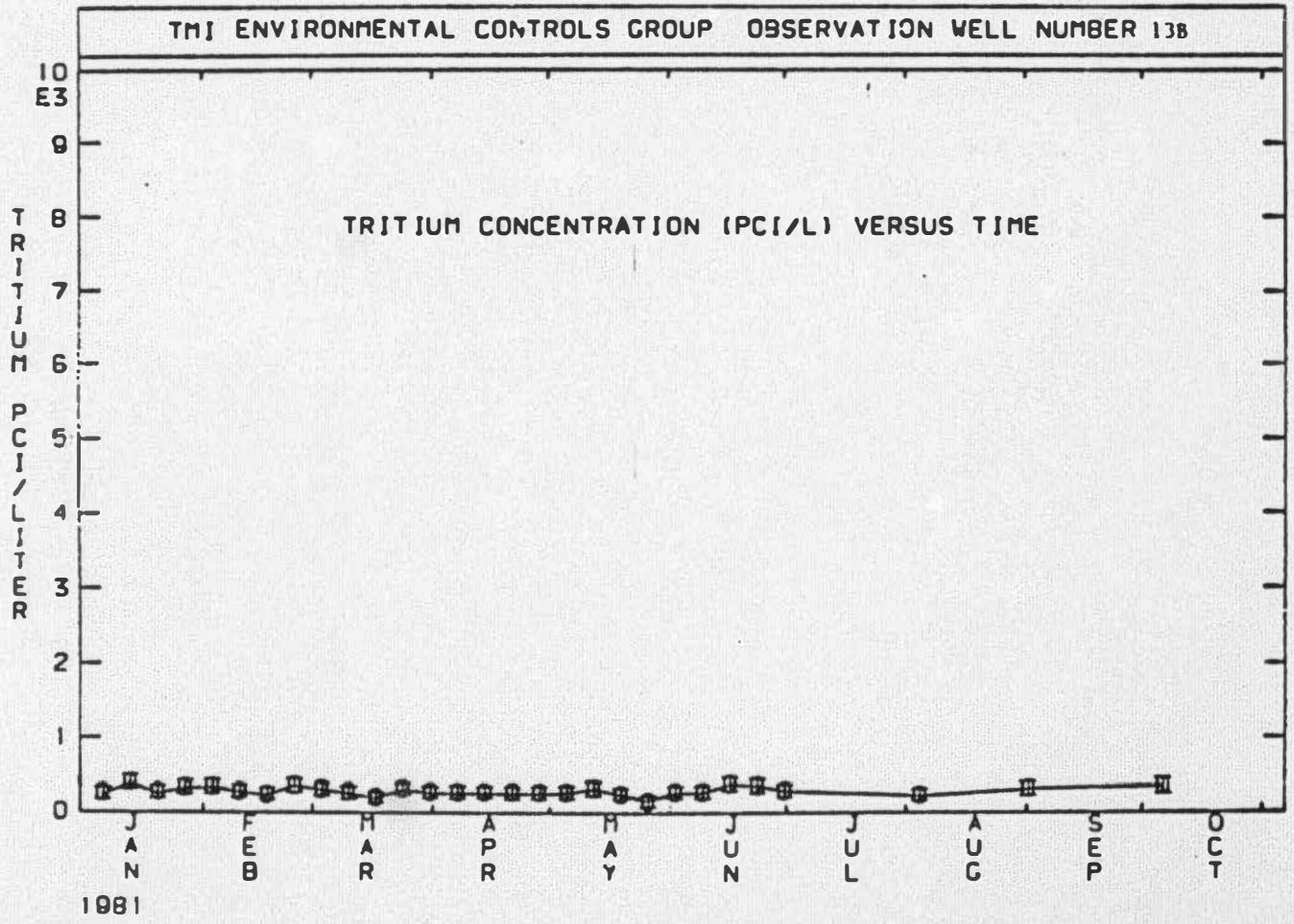

FIGURE 1, PAGE 11

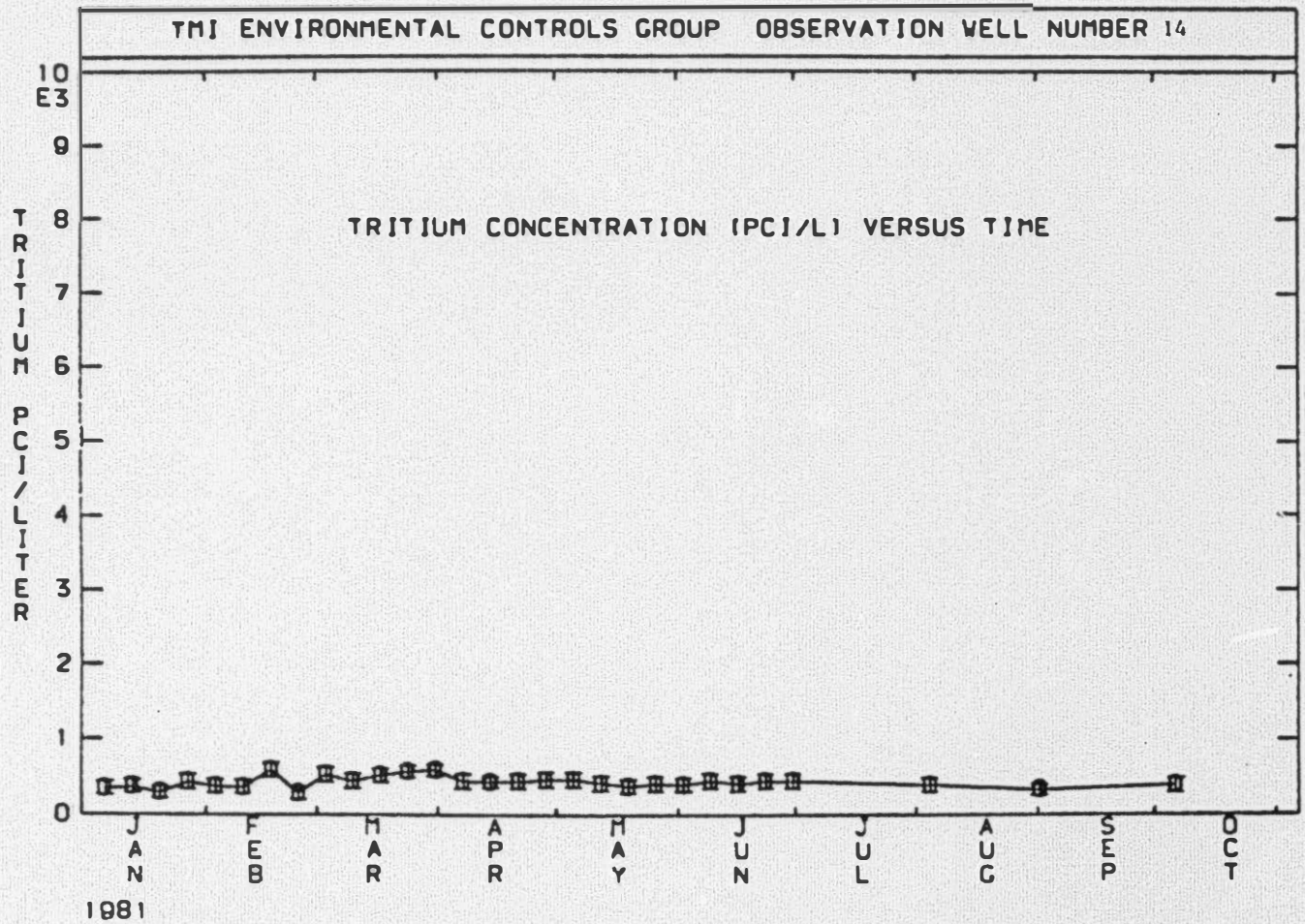

FIGURE 1, PAGE 12

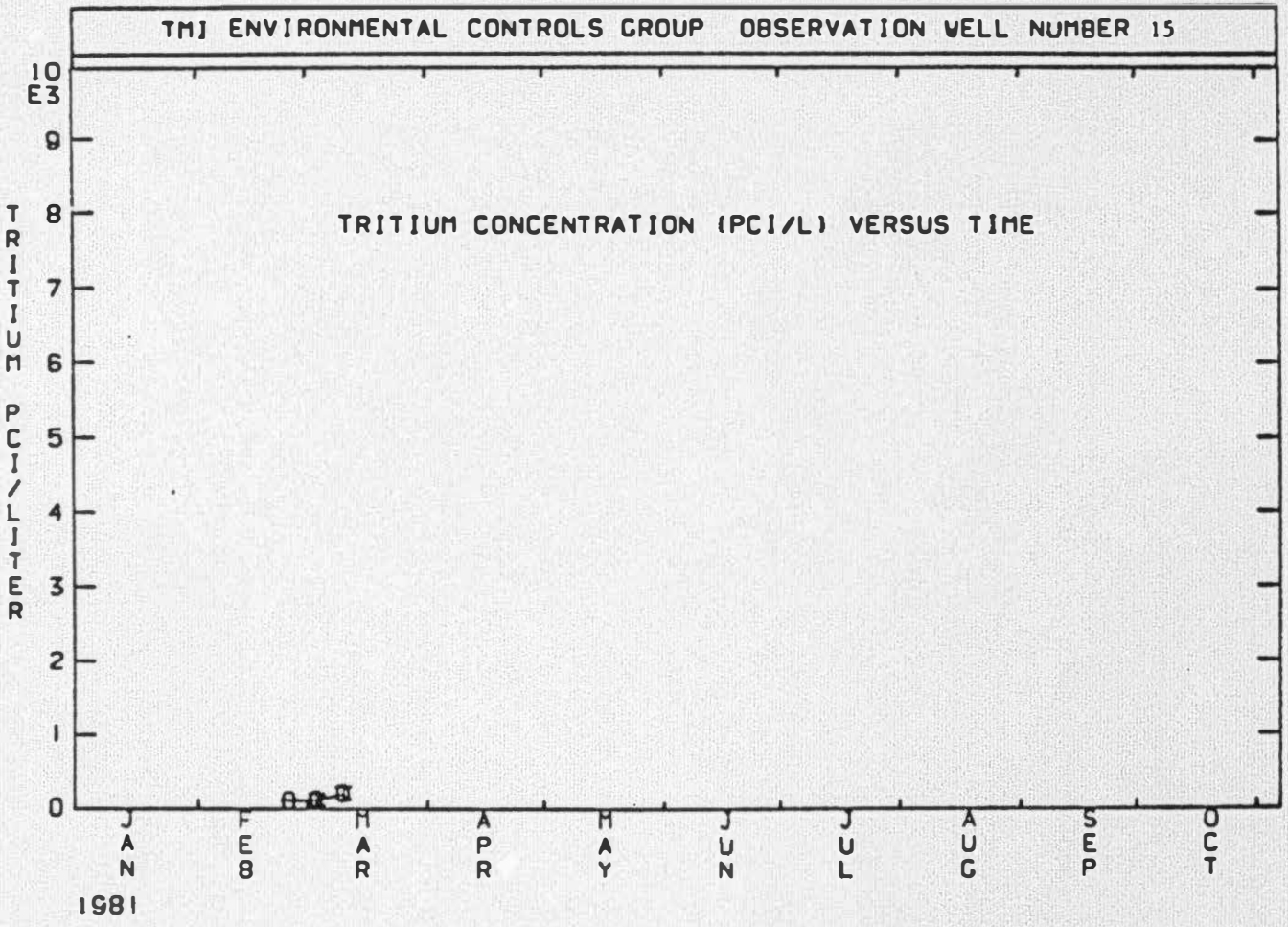

FIGURE 1, PAGE 13

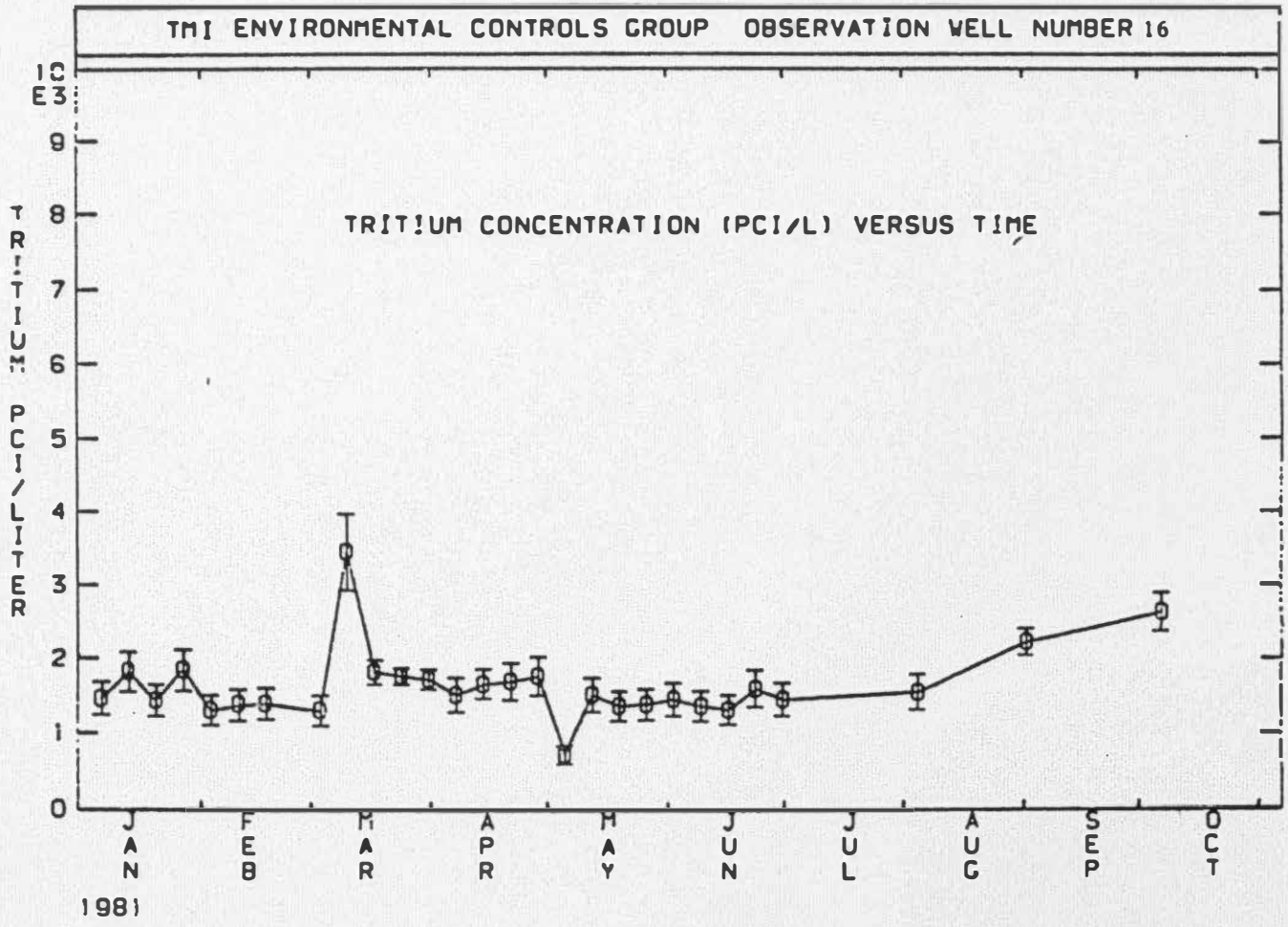

FIGURE 1, PAGE 14

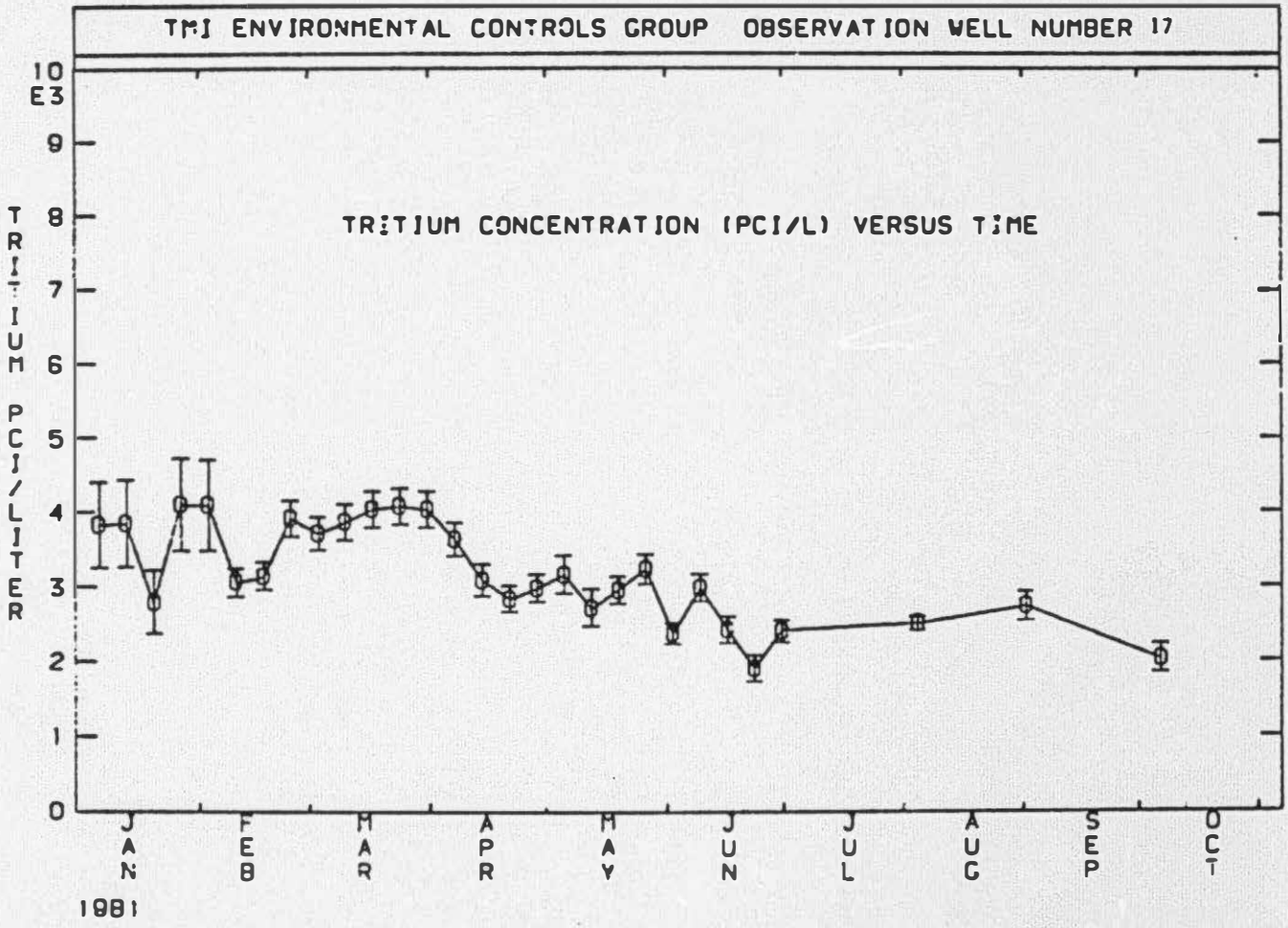

FIGURE 1, PAGE 15

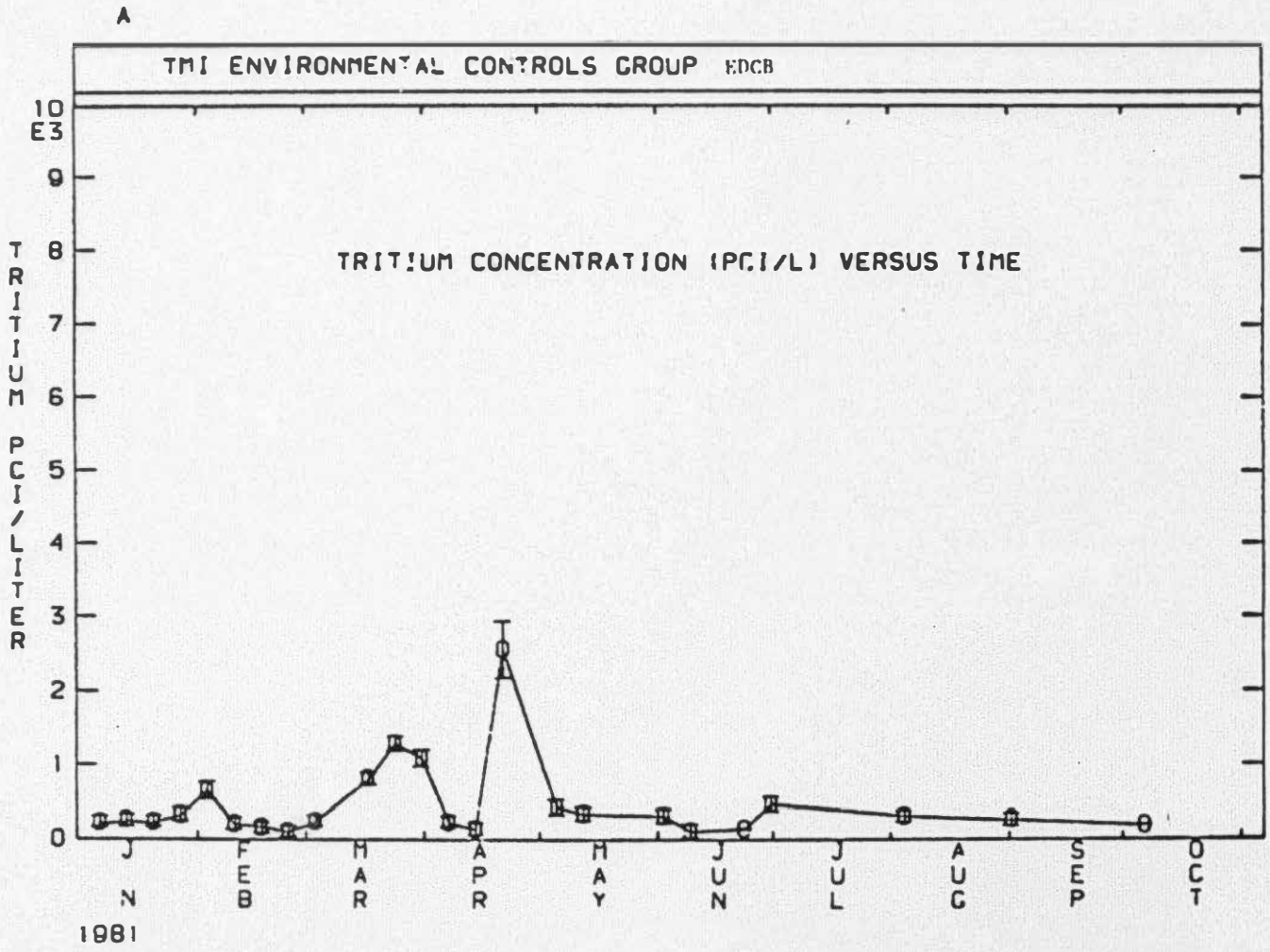

FIGURE 1, PAGE 16

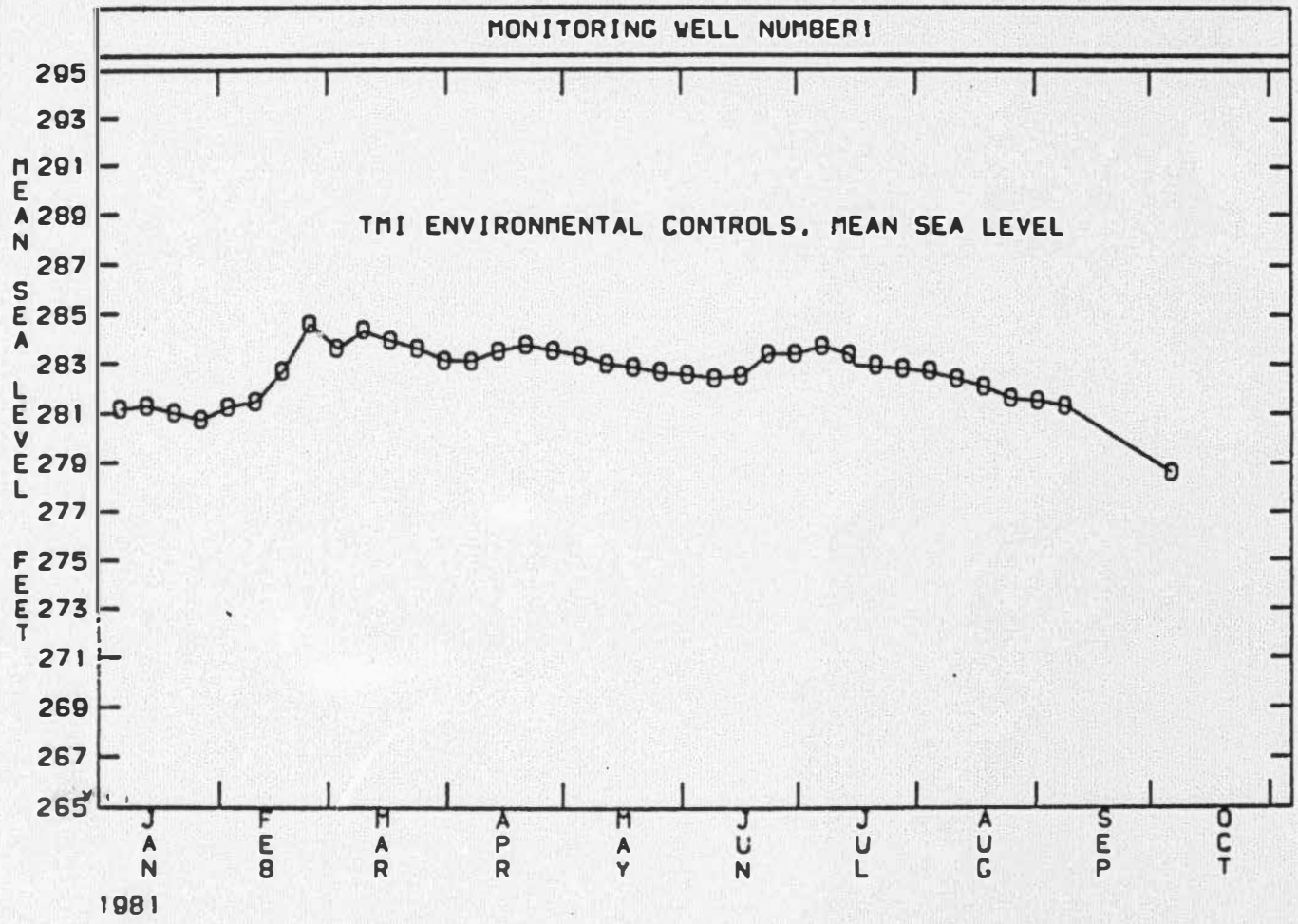

FIGURE 2, PAGE 1

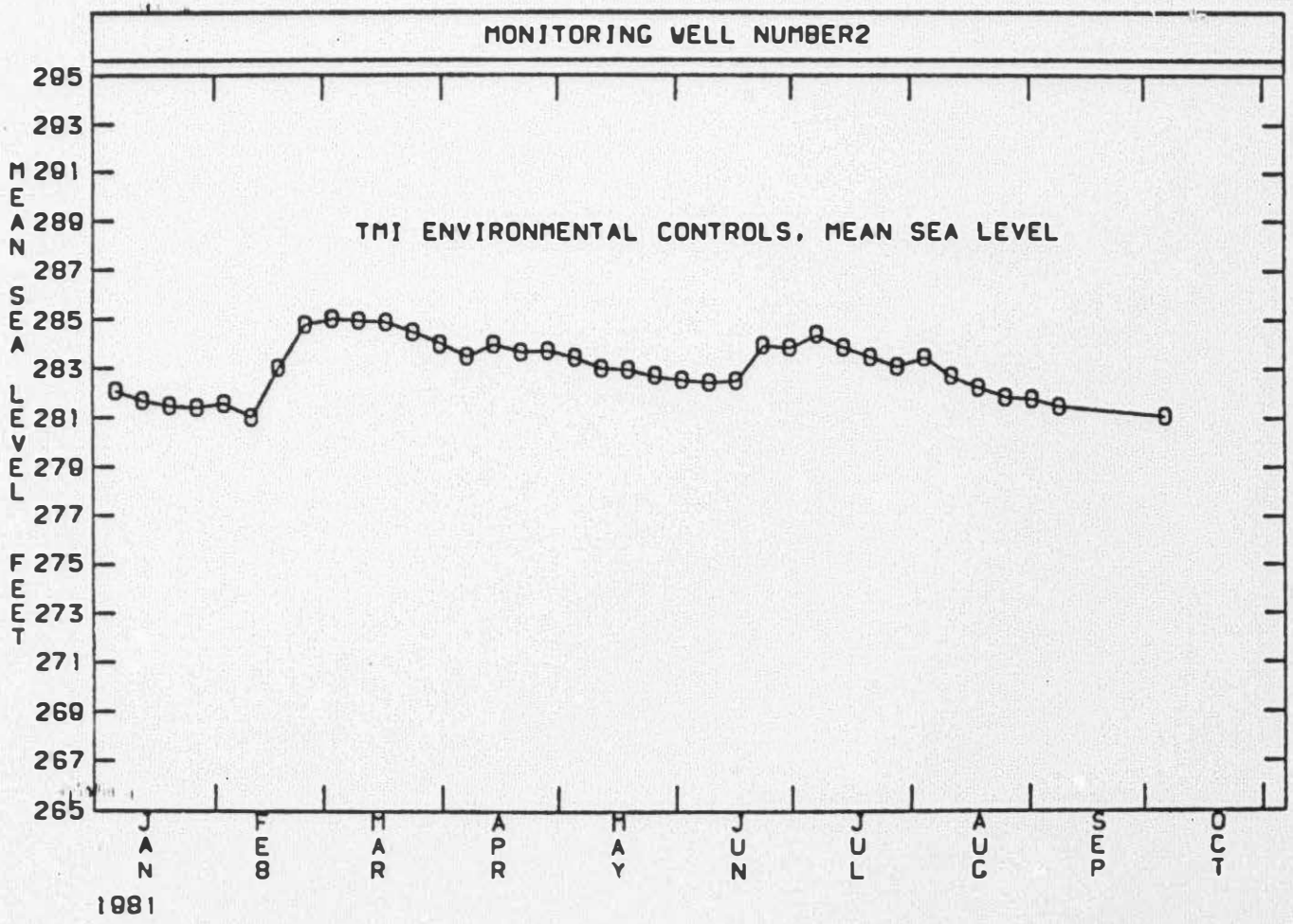

FIGURE 2, PAGE 2

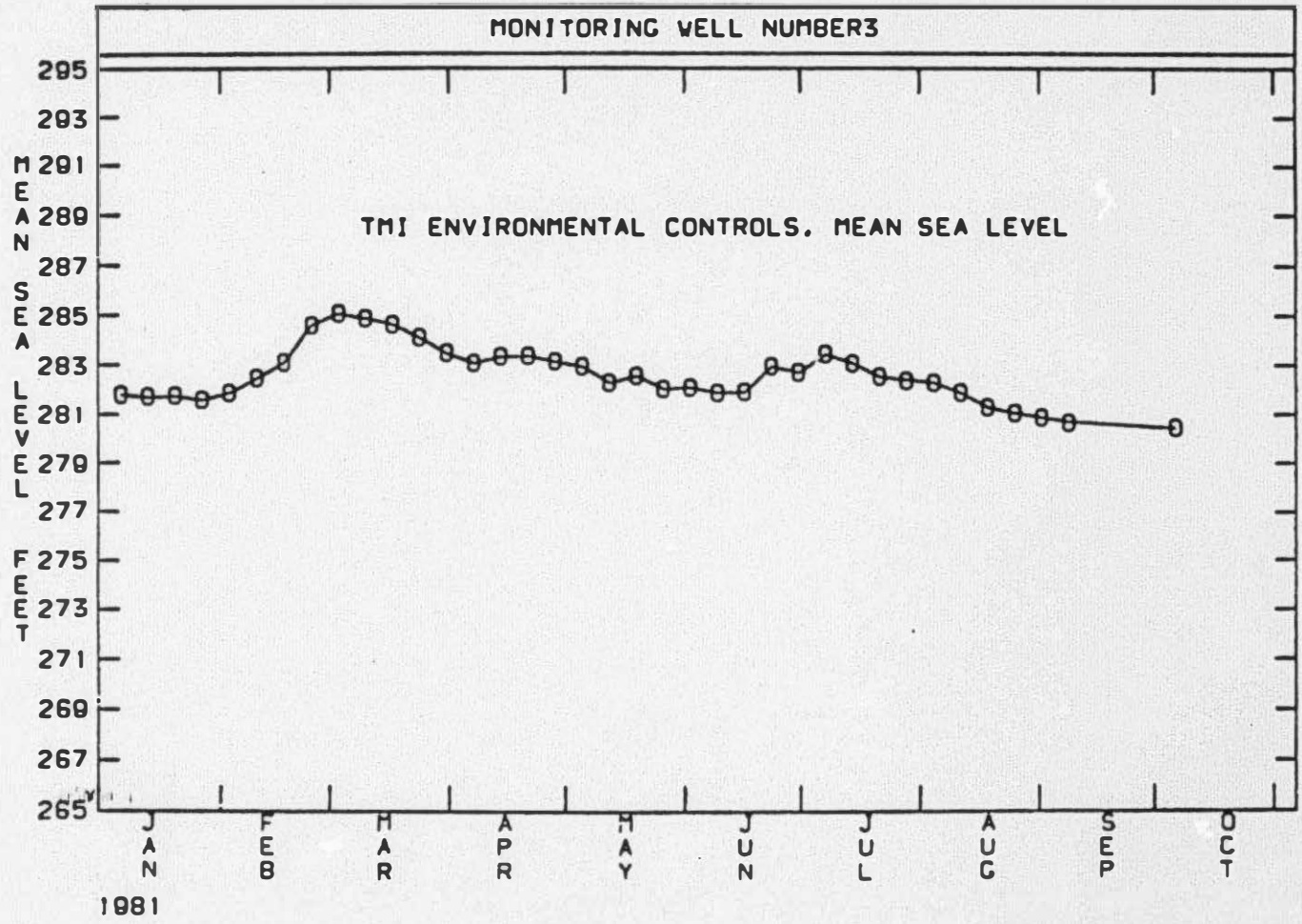

FIGURE 2. PAGE 3

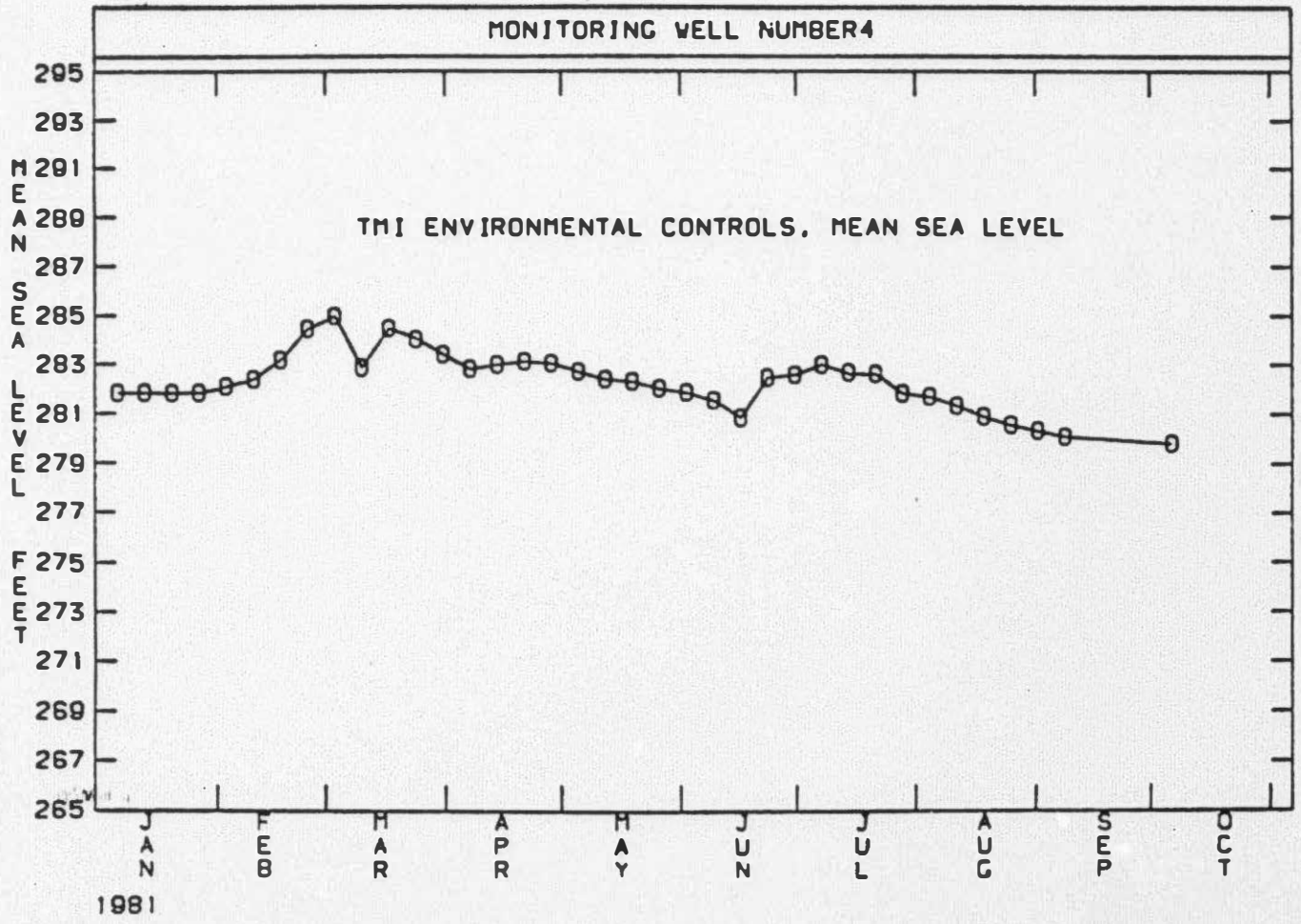

FIGURE 2, PAGE 4

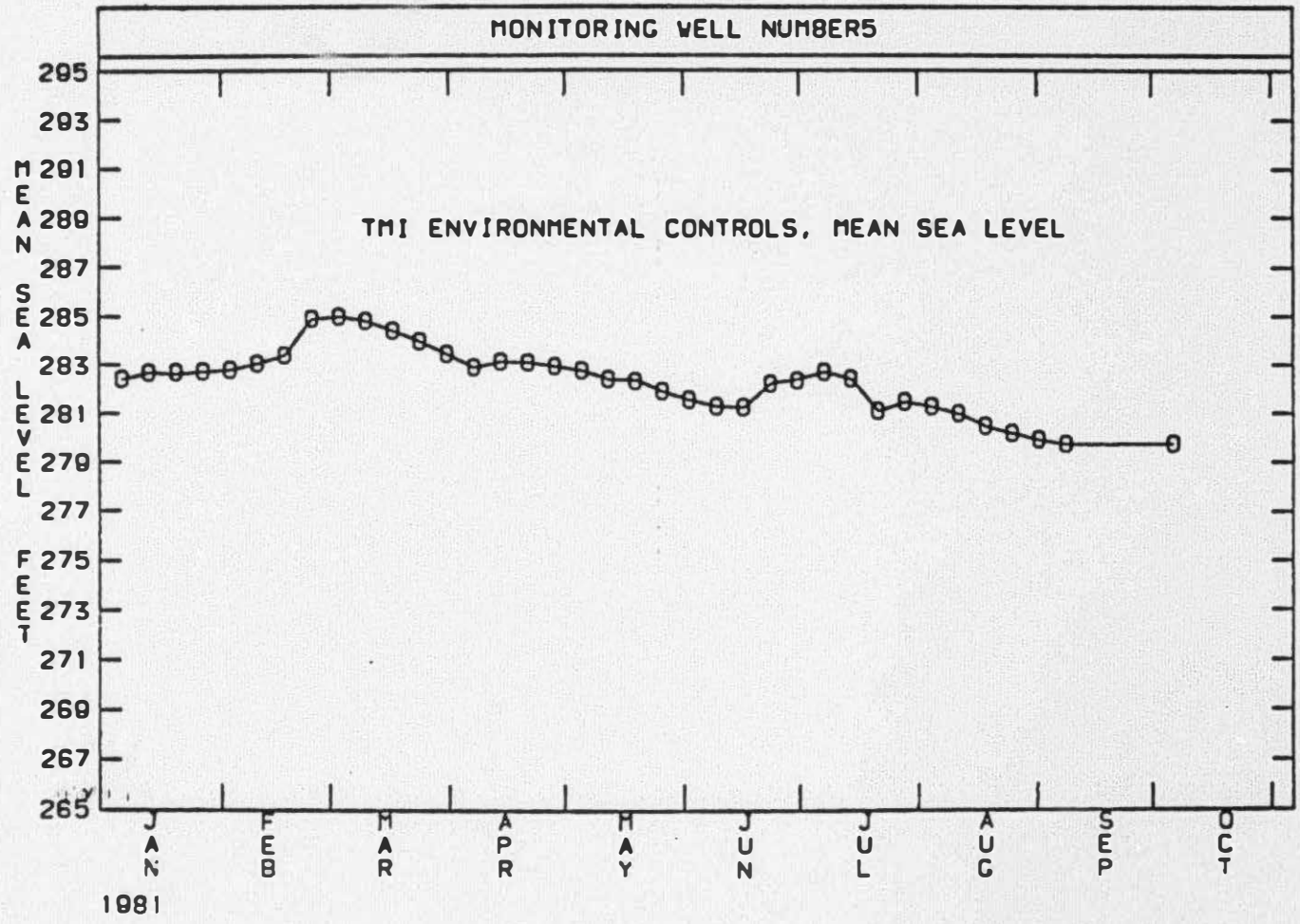

FIGURE 2, PAGE 5

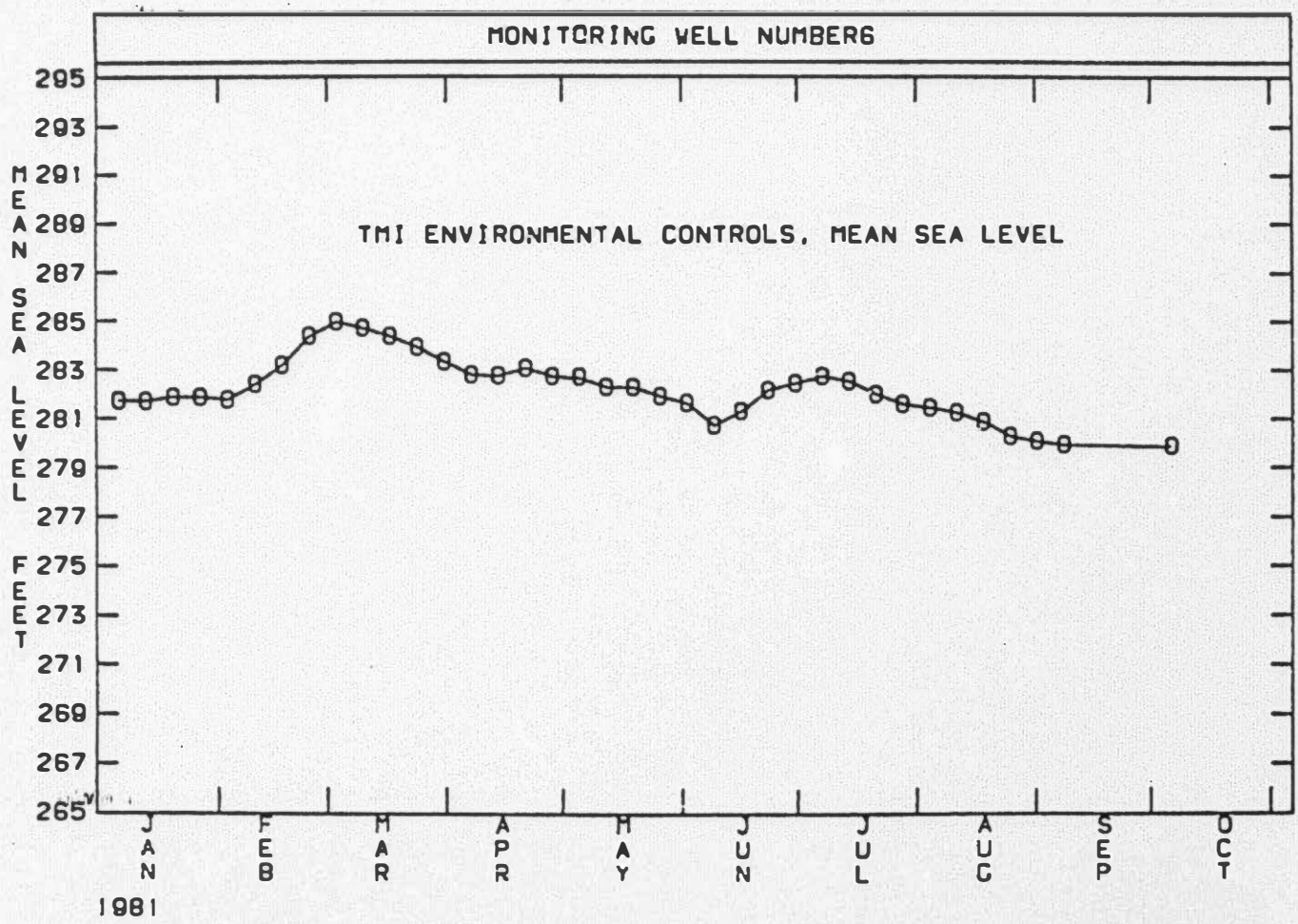

FIGURE 2, PAGE 6

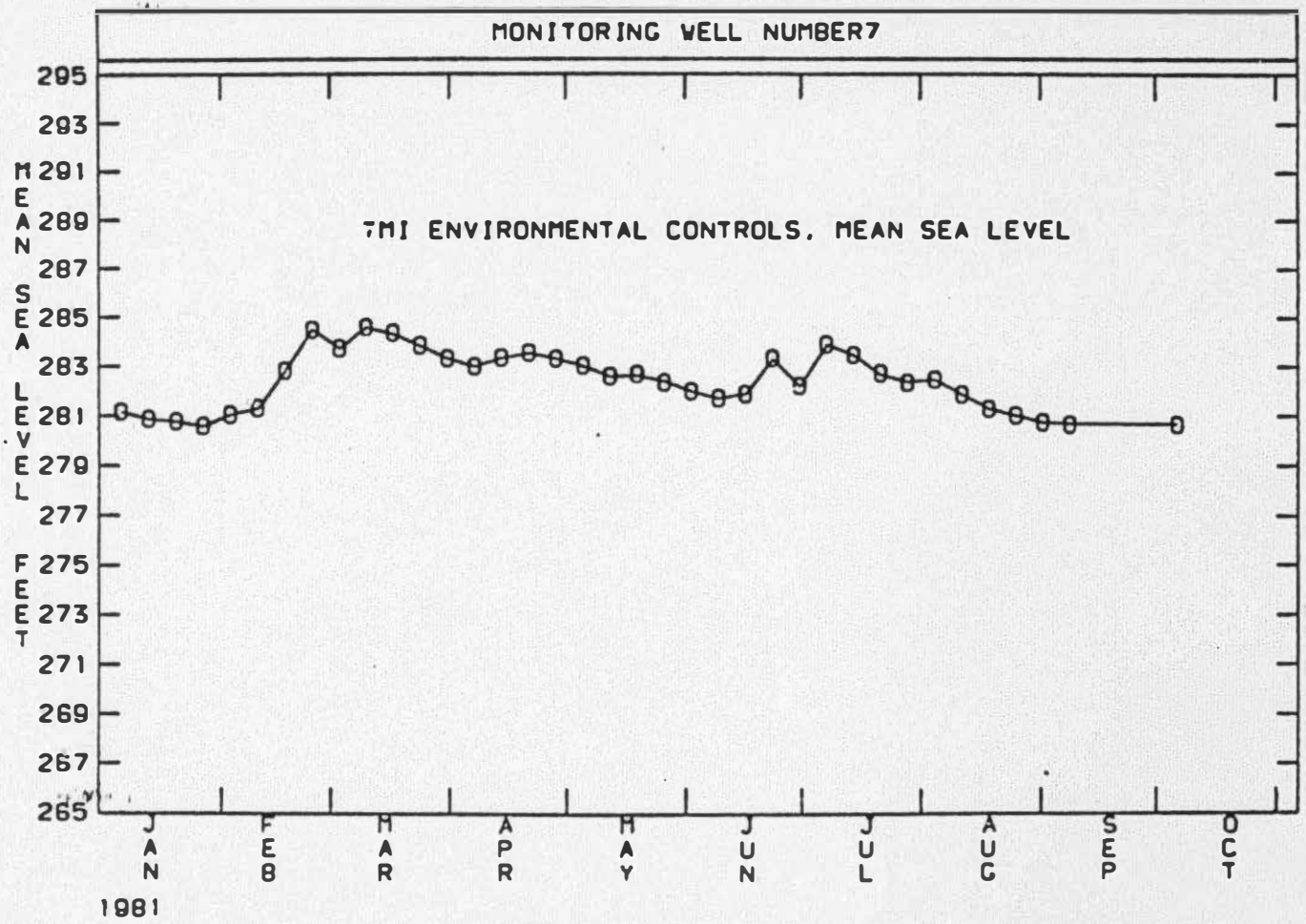

FIGURE 2, PAGE 7

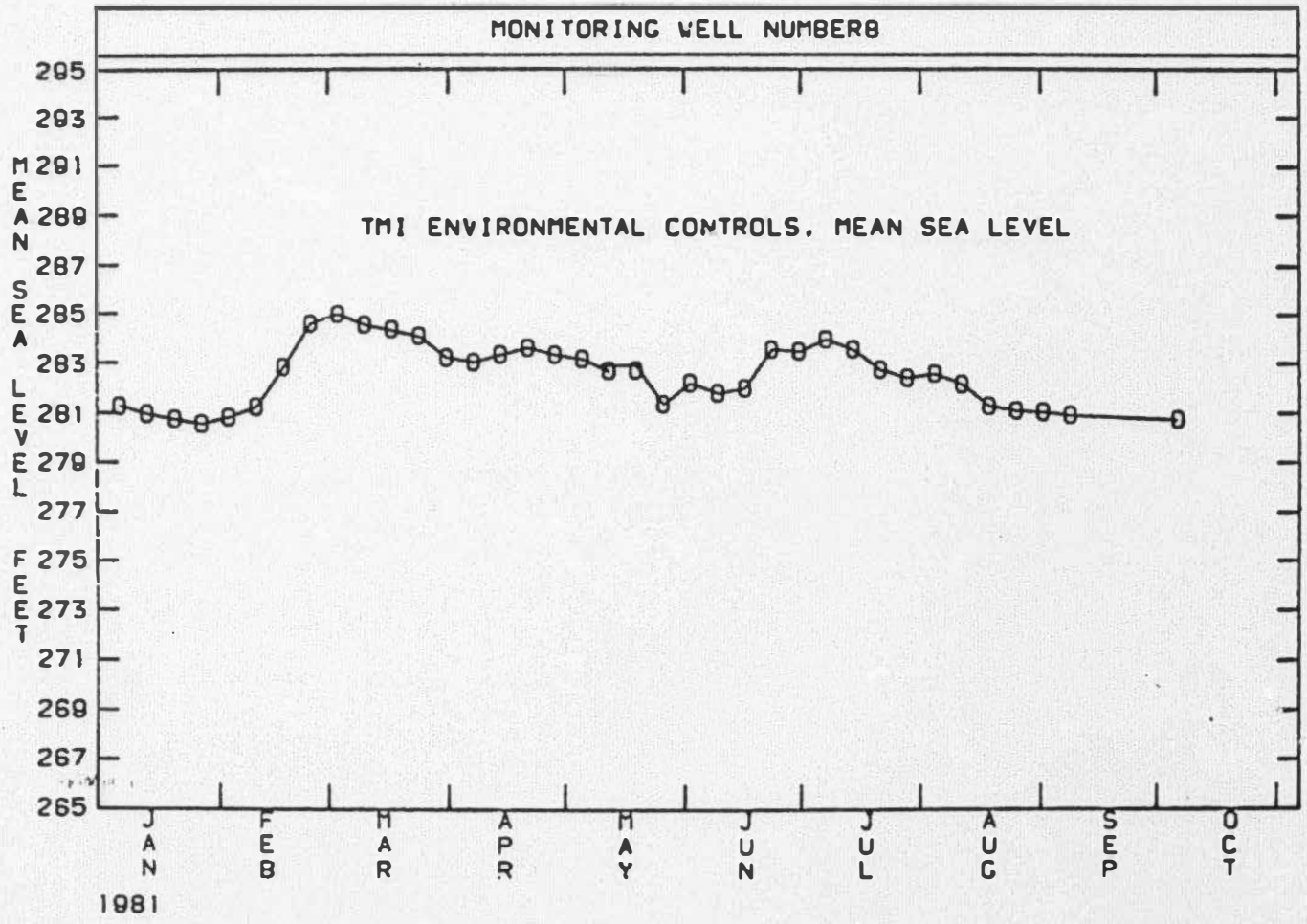

FIGURE 2, PAGE 8

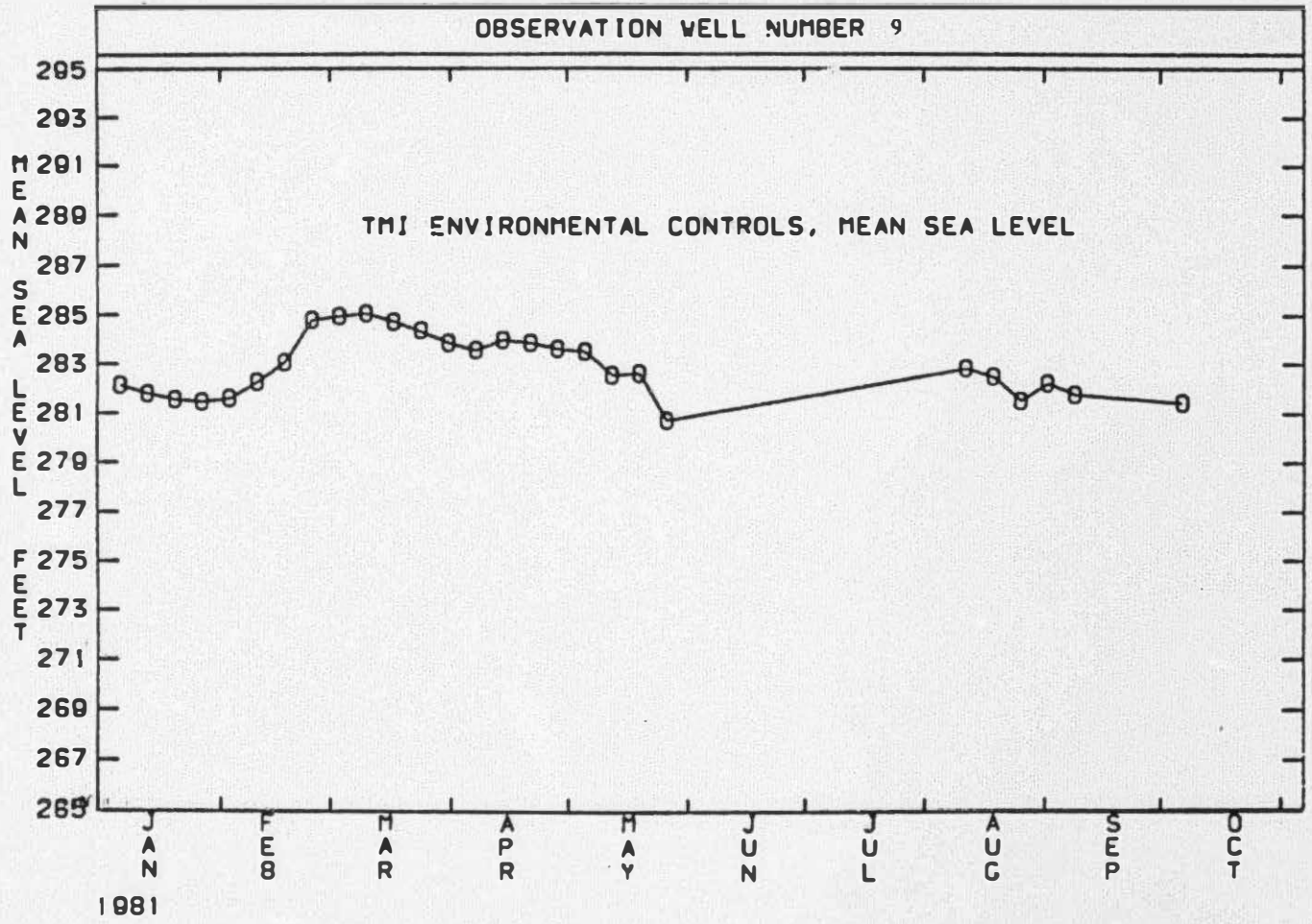

FIGURE 2, PAGE 9

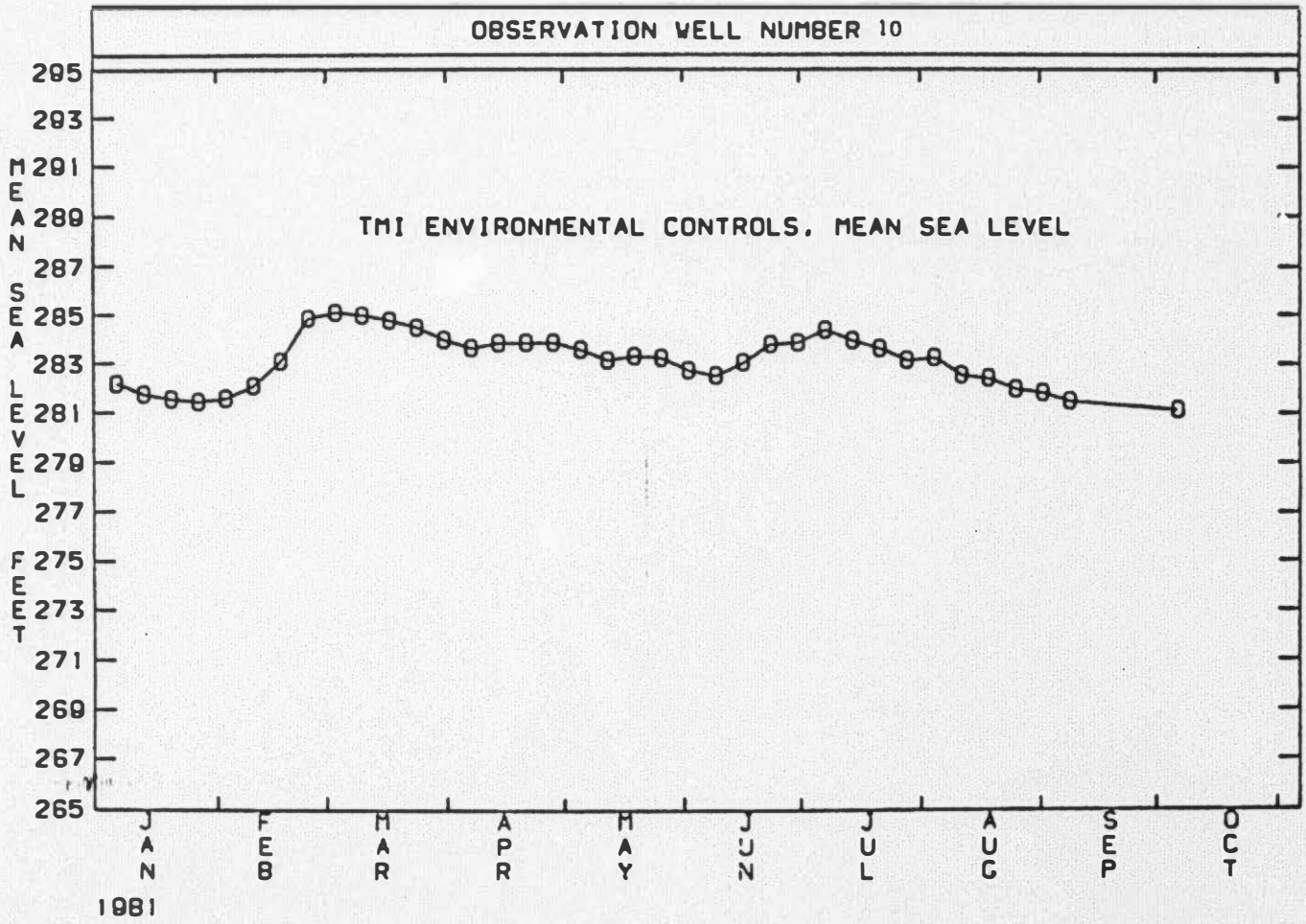

FIGURE 2, PAGE 10

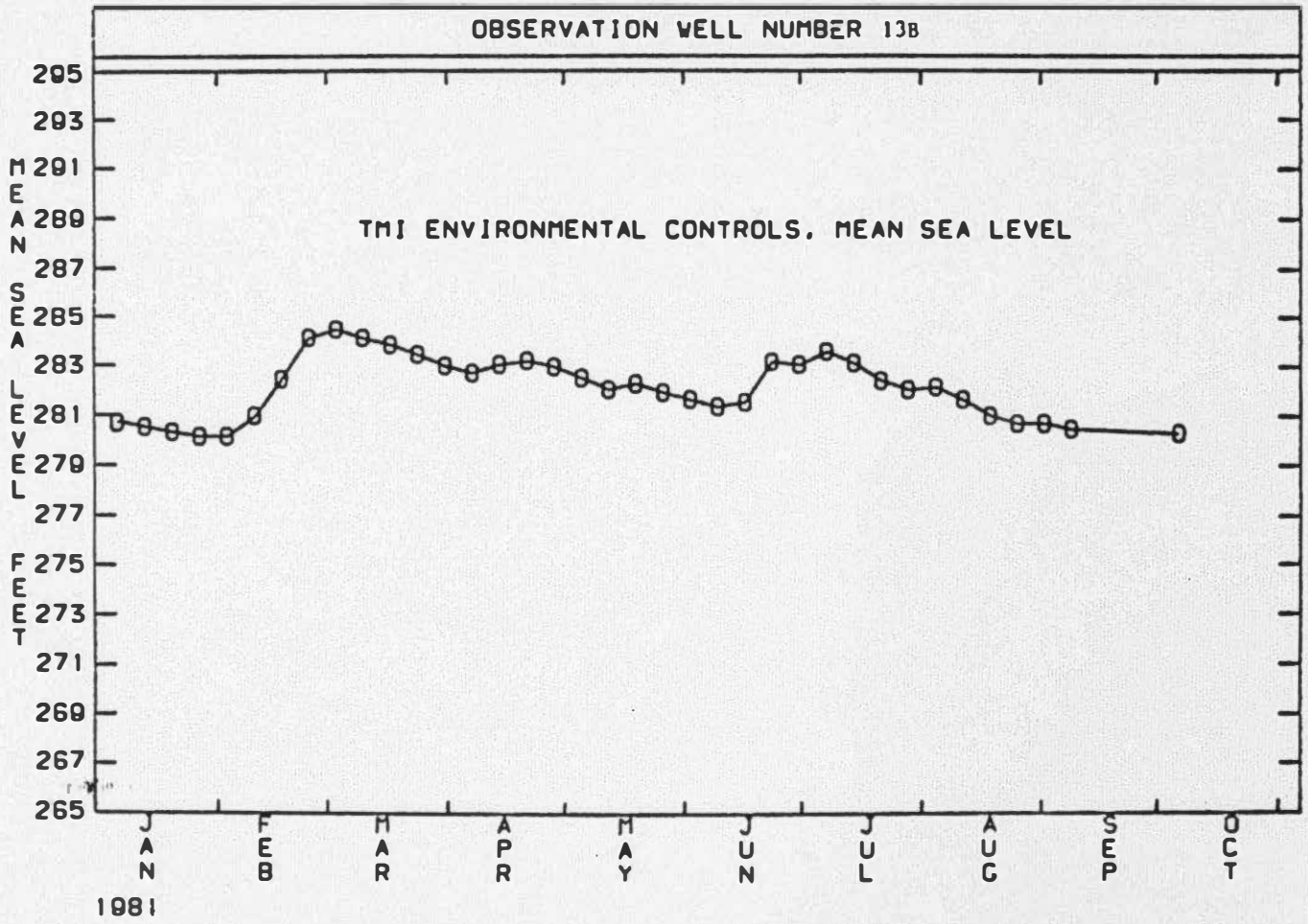

FIGURE 2, PAGE 11

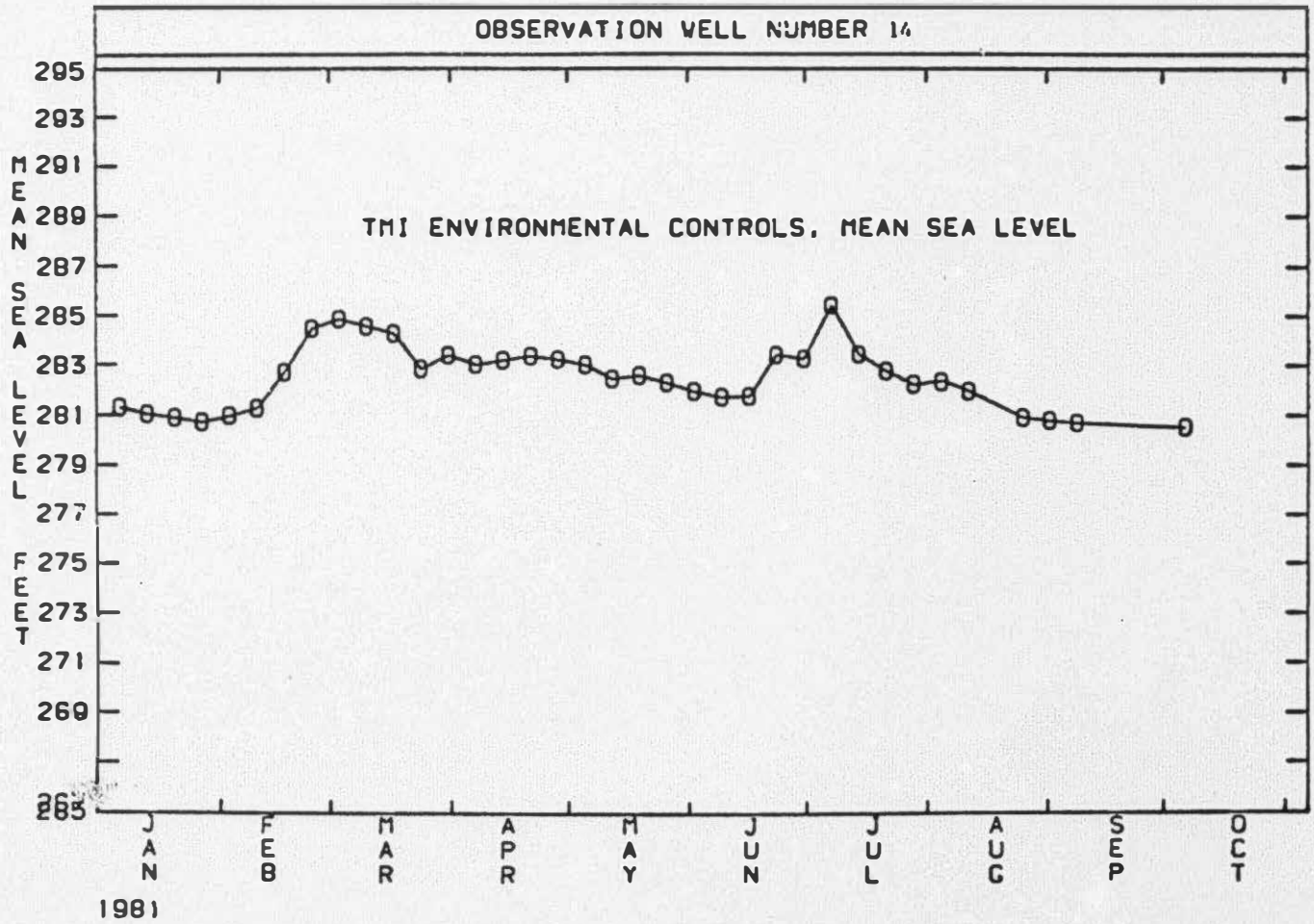

FIGURE 2, PAGE 12

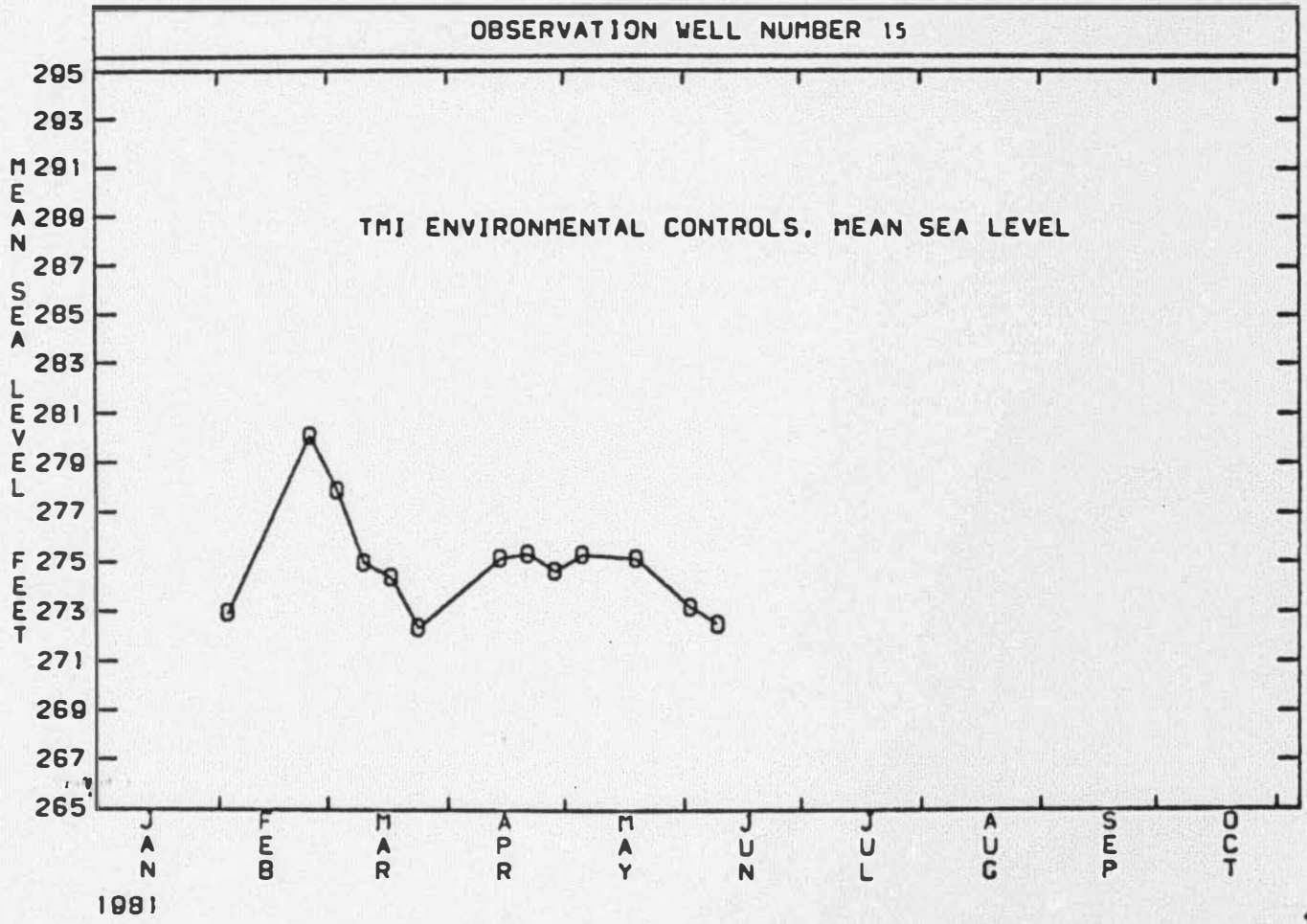

FIGURE 2, PAGE 13

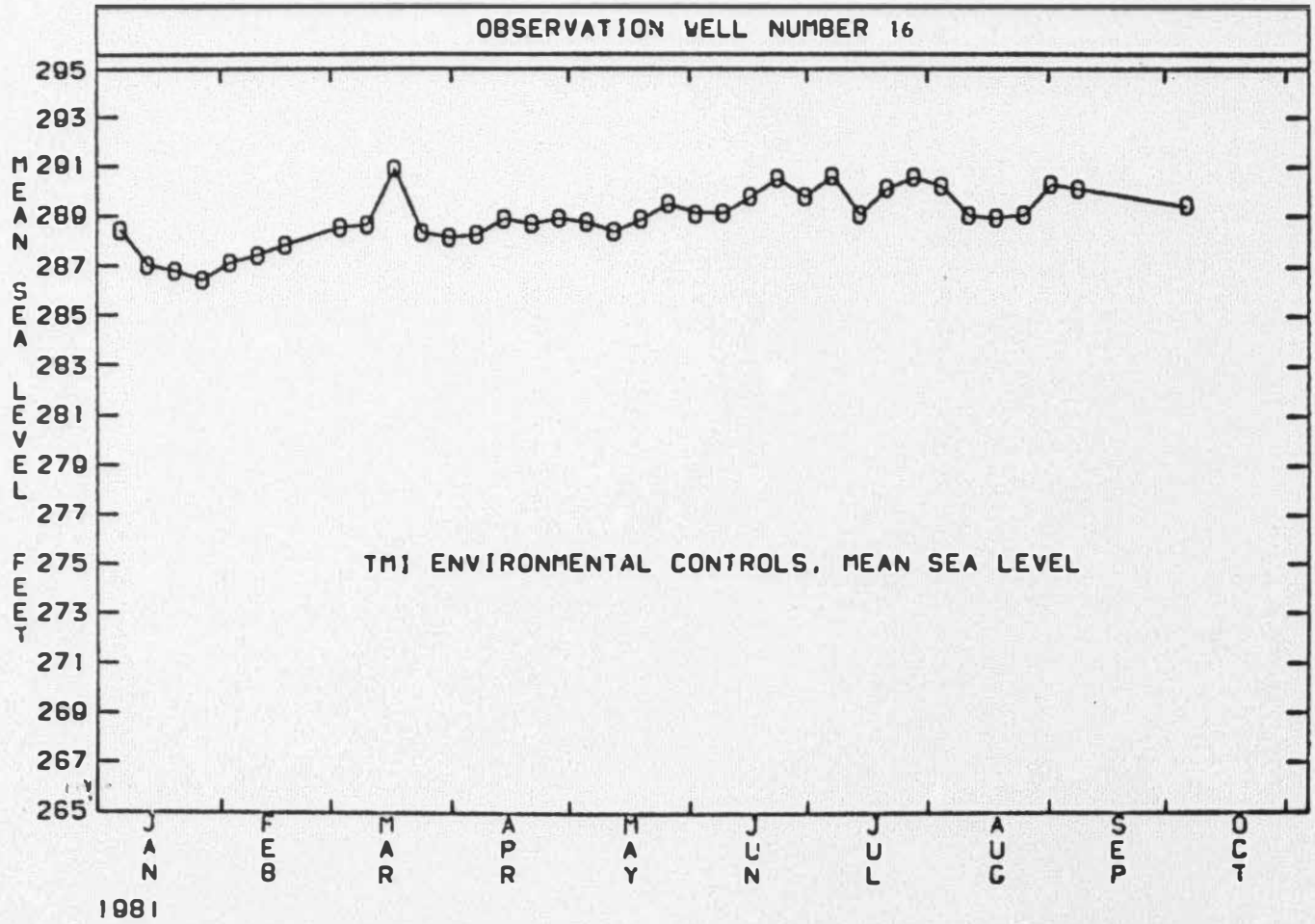

FIGURE 2. PAGE 14

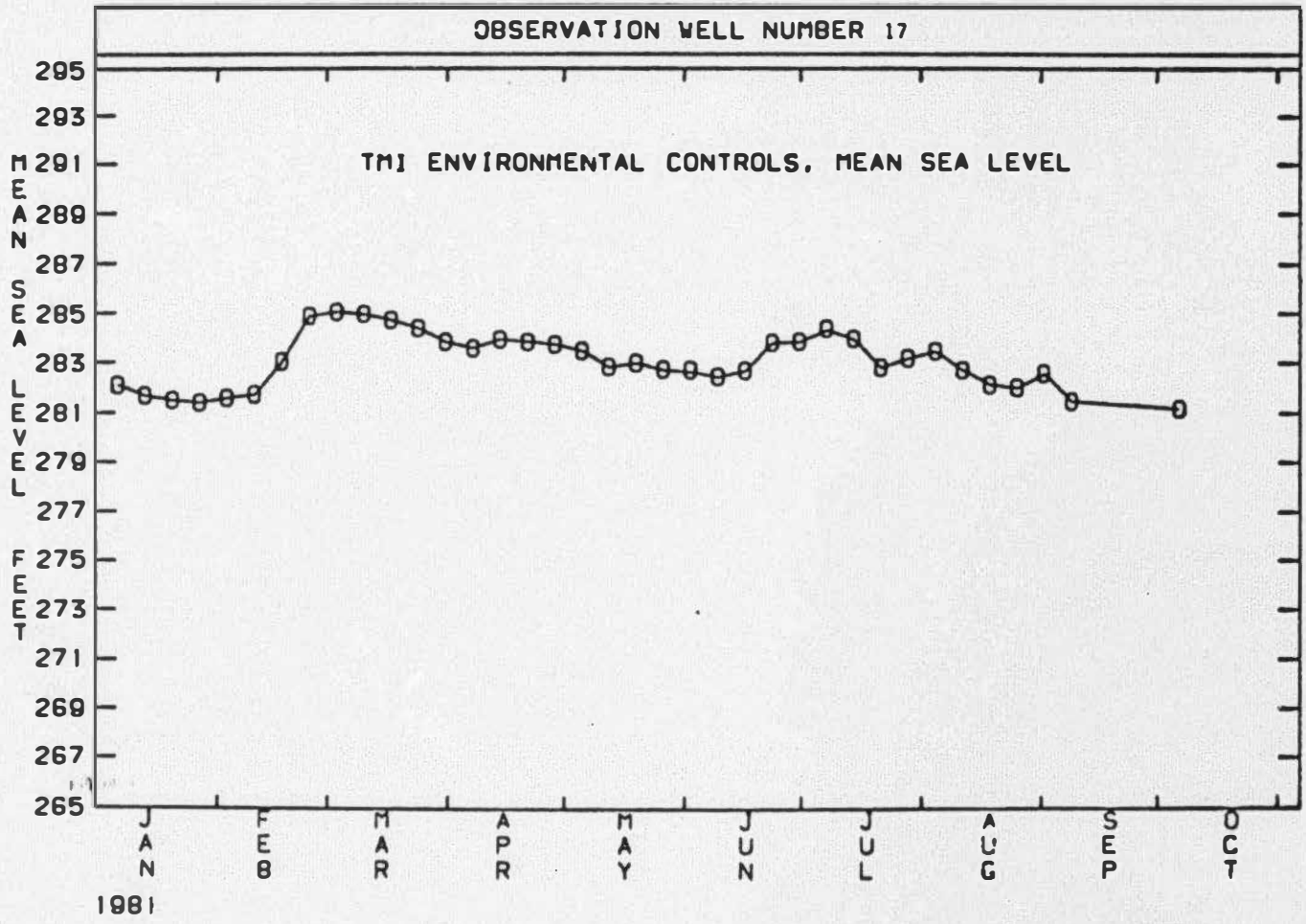

FIGURE 2, PAGE 15

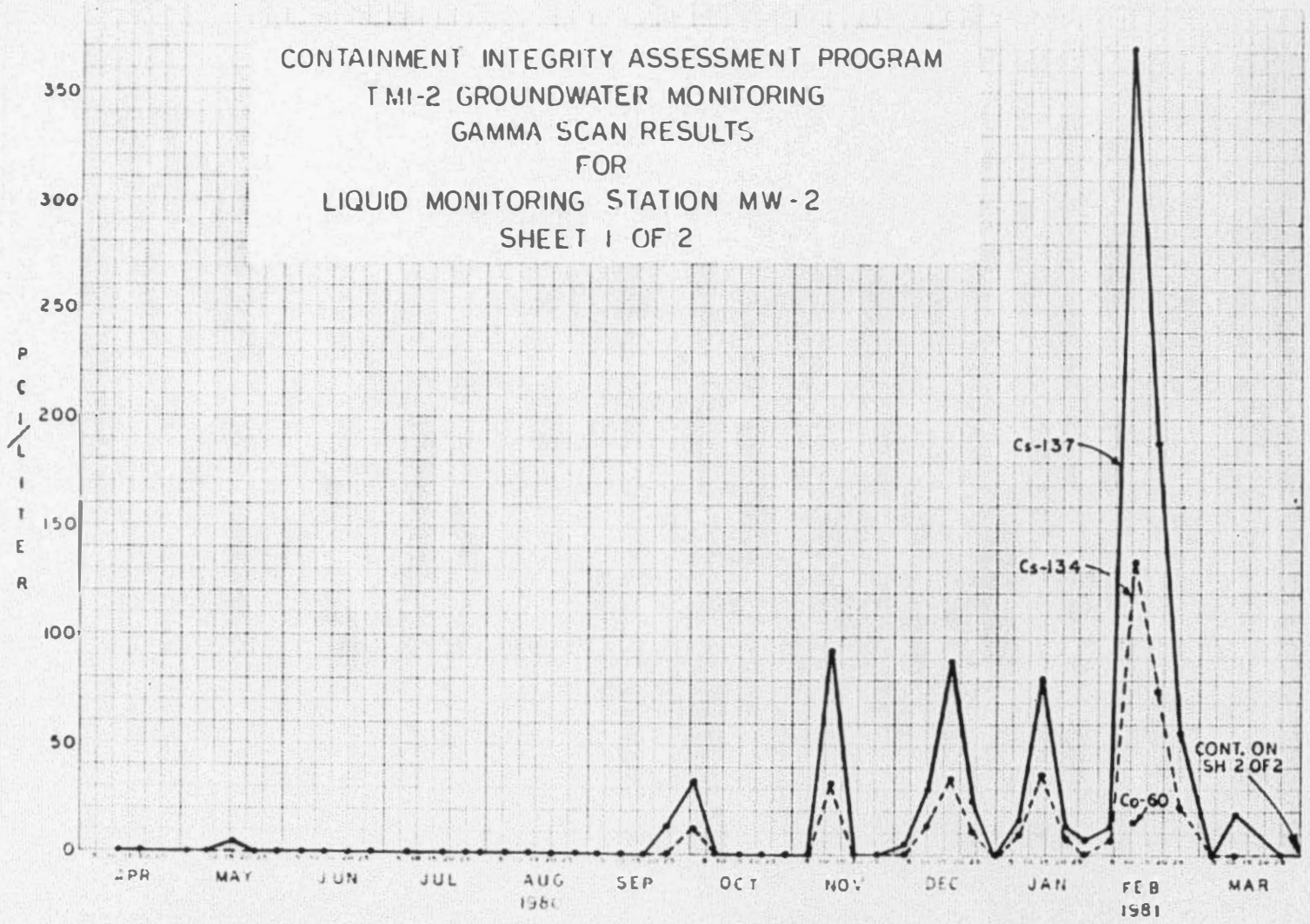

FIGURE 2, PAGE 1

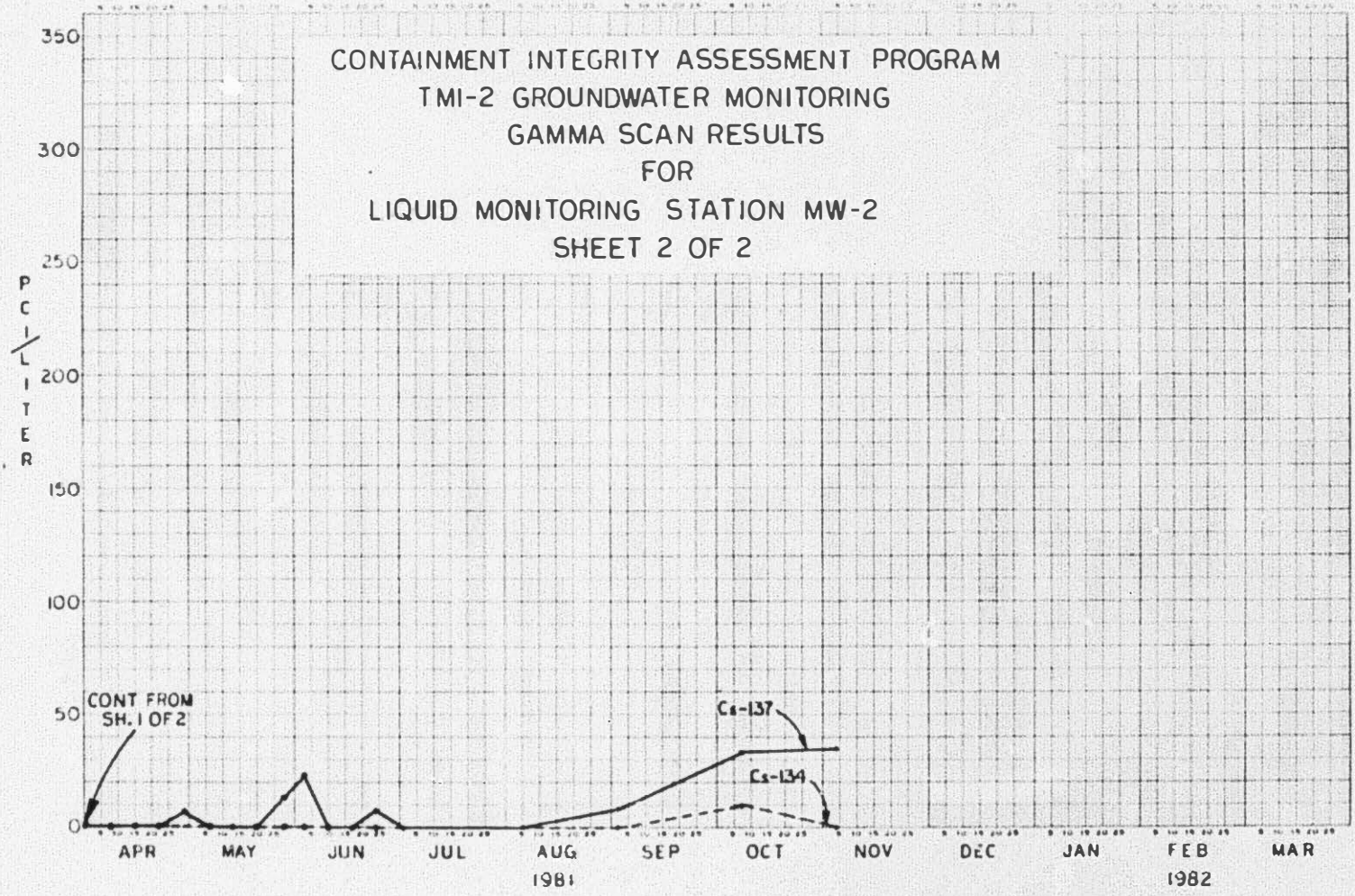

FIGURE 3, PAGE 2

TMI UNIT #2 REACTOR BUILDING SUMP LEVEL (1980)

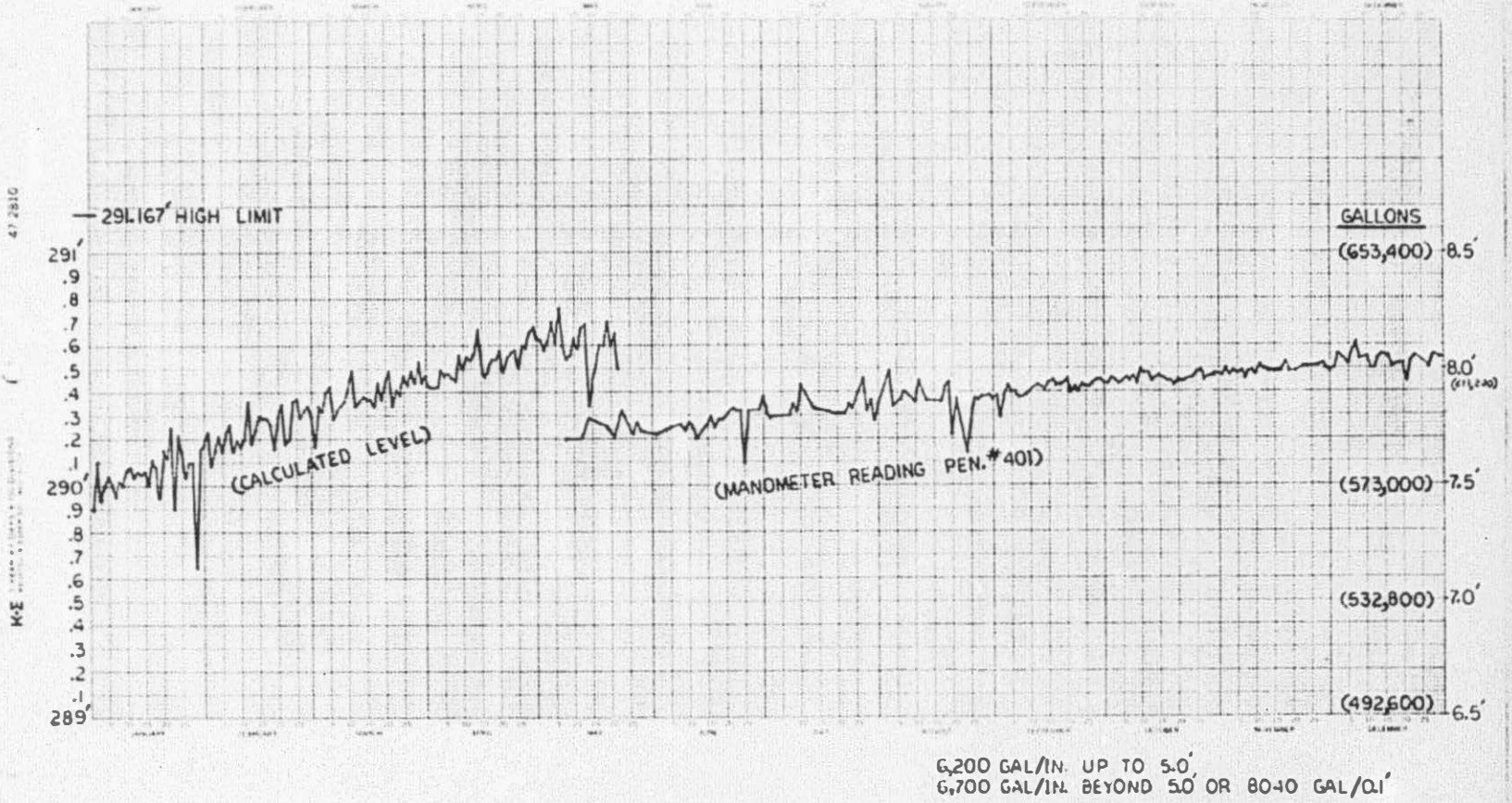

FIGURE 4, PAGE 1

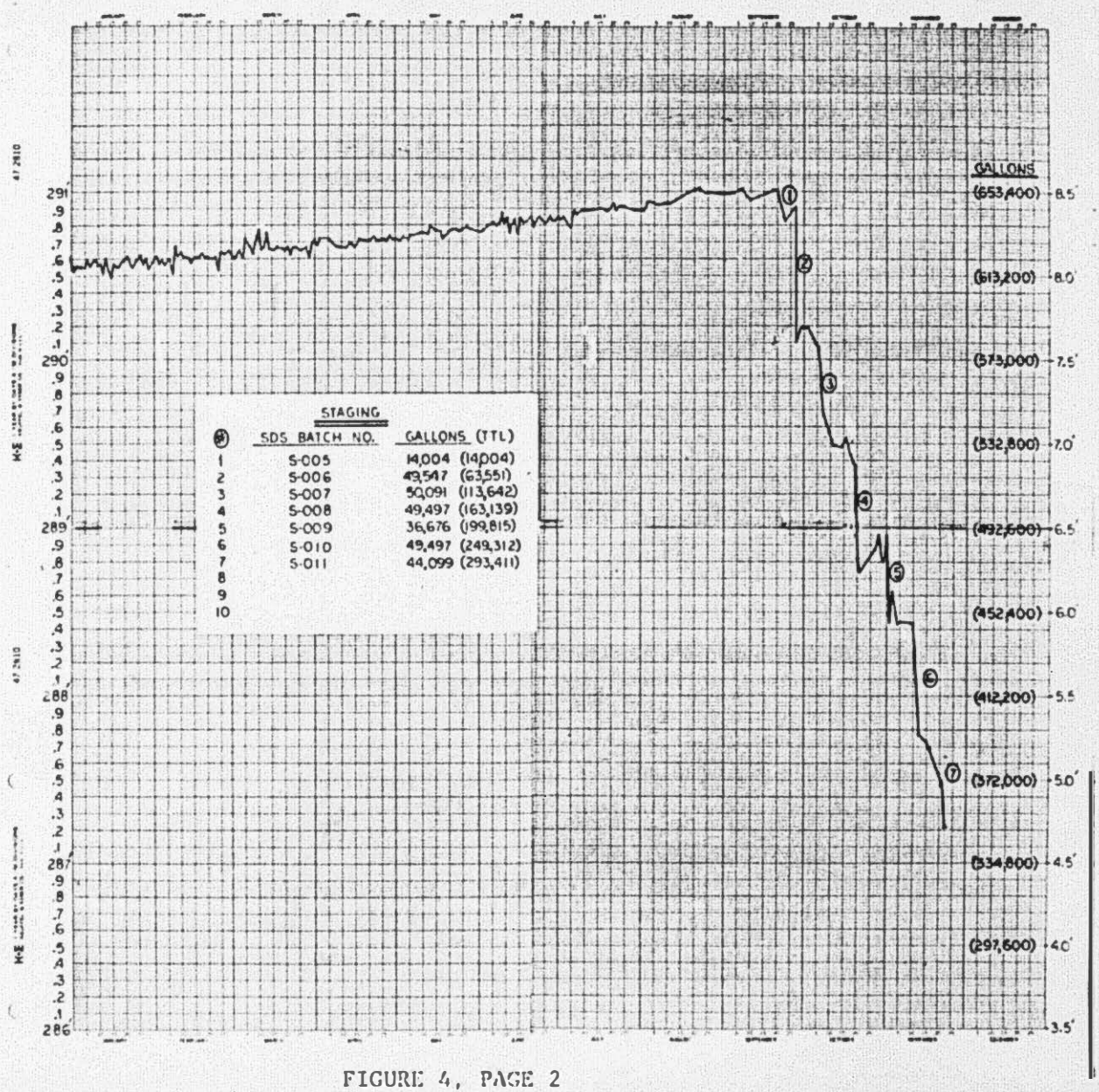

FIGURE 4, PAGE 2

REPORT NO 29 DATE, October 29, 1981
PAGE 1 OF 4

GPU ENVIRONMENTAL CONTROLS GROUP
CESIUM-137 CONCENTRATION (PCi/L)

DATE OF SAMPLE	M.V. 1		M.V. 2		M.V. 3		M.V. 4		M.V. 5		M.V. 6		M.V. 7		M.V. 8	
	CS-137	+/-	CS-137	+/-	CS-137	+/-	CS-137	+/-	CS-137	+/-	CS-137	+/-	CS-137	+/-	CS-137	+/-
February 25,1988			<													
March 28,1988			<													
April 2 ,1988			<													
April 2 ,1988			<													
April 8 ,1988			<													
April 11,1988			<													
April 12,1988			<		12.2	7										
April 13,1988			<													
April 14,1988			<													
April 15,1988			<													
April 16,1988			<													
April 17,1988			<													
April 18,1988			<													
April 19,1988			<													
May 2 ,1988			<													
May 8 ,1988			<													
May 16,1988			0.10	4.87												
May 23,1988			<													
May 30,1988	0.52	4.40	<													
June 6 ,1988			<													
June 13,1988			<													
June 20,1988			<													
June 27,1988			<													
July 7 ,1988			<													
July 18,1988			<													

TABLE 1, PAGE 1

CPL ENVIRONMENTAL CONTROLS GROUP
CESIUM-137 CONCENTRATION (PCi/L)

DATE OF SAMPLE	A.U. 1		A.U. 2		A.U. 3		A.U. 4		A.U. 5		A.U. 6		A.U. 7		A.U. 8	
	CS-137	+/-	CS-137	+/-	CS-137	+/-	CS-137	+/-	CS-137	+/-	CS-137	+/-	CS-137	+/-	CS-137	+/-
July 25,1980			<													
July 30,1980			<													
August 6 ,1980			<													
August 13,1980			<													
August 20,1980			<													
August 27,1980			<													
September 3 ,1980			<													
September 10,1980			<								14.8	8.8				
September 17,1980			<													
September 24,1980			13.4	6.0												
October 1 ,1980			34.9	6.2												
October 8 ,1980			<													
October 15,1980			<						14.2	2.8						
October 22,1980			<													
October 29,1980			<													
November 5 ,1980			<													
November 12,1980			84.7	8.5												
November 19,1980																
November 26,1980			<													
December 3 ,1980			<													
December 10,1980			5.9	3.0												
December 17,1980			30.2	4.8												
December 24,1980			28.1	5.8												
December 31,1980			34.1	6.9												
January 7 ,1981			<													
			18.9	5.9												

GPU ENVIRONMENTAL CONTROLS GROUP
CESIUM-137 CONCENTRATION (PCI/L)

DATE	M.V. 1		M.V. 2		M.V. 3		M.V. 4		M.V. 5		M.V. 6		M.V. 7		M.V. 8	
OF SAMPLE	CS-137	+/-1	CS-137	+/-1	CS-137	+/-1	CS-137	+/-1	CS-137	+/-1	CS-137	+/-1	CS-137	+/-1	CS-137	+/-1
January 14,1981			81.4	7.8												
January 21,1981			13.7	4.5												
January 28,1981			7.7	4.36												
February 4 ,1981			12.7	3.8												
February 11,1981			371	37												
February 18,1981			180	18.0												
February 25,1981			58.2	6.8												
March 4 ,1981			<													
March 11,1981			10.5	4.5												
March 18,1981			NO SAMPLE													
March 25,1981			<													
April 1 ,1981			<													
April 8 ,1981			<													
April 15,1981			<													
April 22,1981			<													
April 29,1981			7.68	4.45												
May 6 ,1981			<													
May 13,1981			<													
May 20,1981			<													
May 28,1981			12.87	4.11												
June 3 ,1981			22.4	4.3												
June 10,1981			<													
June 17,1981			<													
June 24,1981			7.68	3.71												
July 1 ,1981			<													

REPORT NO. 28 DATE: December 7, 1981

GPU ENVIRONMENTAL CONTROLS GROUP
CESIUM-137 CONCENTRATION (PCI/L)

DATE OF SAMPLE	M.W. 1		M.W. 2		M.W. 3		M.W. 4		M.W. 6		M.W. 8		M.W. 7		M.W. 8	
	CS-137	+/-2	CS-137	+/- 2	CS-137	+/-2	CS-137	+/- 2	CS-137	+/-2	CS-137	+/-2	CS-137	+/-2	CS-137	+/-2
August 5 ,1981			4													
September 2 ,1981			8.12	4.41			8.43	4.43								
October 7 ,1981			33	7.1												
November 4 ,1981			35	8.1												

GPU ENVIRONMENTAL CONTROLS GROUP
CESIUM-134 CONCENTRATION (PCi/L)

DATE OF SAMPLE	M.U. 1 CS-134	M.U. 1 +/-2	M.U. 2 CS-134	M.U. 2 +/-2	M.U. 3 CS-134	M.U. 3 +/-2	M.U. 4 CS-134	M.U. 4 +/-2	M.U. 5 CS-134	M.U. 5 +/-2	M.U. 6 CS-134	M.U. 6 +/-2	M.U. 7 CS-134	M.U. 7 +/-2	M.U. 8 CS-134	M.U. 8 +/-2
February 25,1988			<													
March 28,1988			<													
April 2 ,1988			<													
April 8 ,1988			<													
April 9 ,1988			<													
April 11,1988			<													
April 12,1988			<													
April 13,1988			<													
April 14,1988			<													
April 15,1988			<													
April 16,1988			<													
April 17,1988			<													
April 18,1988			<													
April 19,1988			<													
May 2 ,1988			<													
May 8 ,1988			<													
May 16,1988			<													
May 23,1988			<													
May 30,1988			<													
June 6 ,1988			<													
June 13,1988			<													
June 20,1988																
June 27,1988			<													
July 7 ,1988			<													
July 13,1988			<													

GPU ENVIRONMENTAL CONTROLS GROUP
CESIUM-134 CONCENTRATION (PCi/L)

DATE OF SAMPLE	M.U. 1		M.U. 2		M.U. 3		M.U. 4		M.U. 5		M.U. 6		M.U. 7		M.U. 8	
	Cs-134	+/-	Cs-134	+/-	Cs-134	+/-	Cs-134	+/-	Cs-134	+/-	Cs-134	+/-	Cs-134	+/-	Cs-134	+/-
July 25,1988			<													
July 30,1988			<													
August 6 ,1988			<													
August 13,1988			<													
August 20,1988			<													
August 27,1988			<													
September 3 ,1988			<													
September 10,1988			<													
September 17,1988			<													
September 24,1988			<													
October 1 ,1988			12.8	5.5												
October 8 ,1988			<													
October 15,1988			<													
October 22,1988			<													
October 29,1988			<													
November 5 ,1988			<													
November 12,1988			33	8.9												
November 19,1988			<													
November 26,1988			<													
December 3 ,1988			<													
December 10,1988			18.9	6.2												
December 17,1988			26	4.9												
December 24,1988			10.8	3.9												
December 31,1988			<													
January 7 ,1989			9.68	4.28												

GPU ENVIRONMENTAL CONTROLS GROUP
CESIUM-134 CONCENTRATION (PCI/L)

DATE OF SAMPLE	M.V. 1		M.V. 2		M.V. 3		M.V. 4		M.V. 5		M.V. 6		M.V. 7		M.V. 8	
	CS-134	+/-	CS-134	+/-	CS-134	+/-	CS-134	+/-	CS-134	+/-	CS-134	+/-	CS-134	+/-	CS-134	+/-
January 14,1981			38.6	5												
January 21,1981			7.71	3.62												
January 28,1981			<													
February 4 ,1981			6.2	3.87												
February 11,1981			134	13												
February 18,1981			75.0	7.6												
February 25,1981			21.8	4.1												
March 4 ,1981			<													
March 11,1981			<													
March 18,1981			NO SAMPLE													
March 25,1981			<													
April 1 ,1981			<													
April 8 ,1981			<													
April 15,1981			<													
April 22,1981			<													
April 29,1981			<													
May 6 ,1981			<													
May 13,1981			<													
May 20,1981			<													
May 28,1981			<													
June 3 ,1981			<													
June 10,1981			<													
June 17,1981			<													
June 24,1981			<													
July 1 ,1981			<													

REPORT NO. 26 DATE, December 7, 1981

EPU ENVIRONMENTAL CONTROLS GROUP
CESIUM-134 CONCENTRATION (PCI/L)

DATE OF SAMPLE	N.V. 1 CS-134	+/-σ	N.V. 2 CS-134	+/-σ	N.V. 3 CS-134	+/-σ	N.V. 4 CS-134	+/-σ	N.V. 5 CS-134	+/-σ	N.V. 6 CS-134	+/-σ	N.V. 7 CS-134	+/-σ	N.V. 8 CS-134	+/-σ
August 5 ,1981			<													
September 2 ,1981			<													
October 7 ,1981			0.7	1.0												
November 4 ,1981			<													

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