**The MAP3S Precipitation
Chemistry Network:
Sixth Periodic Summary Report (1982)**

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THE MAP3S PRECIPITATION CHEMISTRY NETWORK:
SIXTH PERIODIC SUMMARY REPORT (1982)

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ABSTRACT

This, the sixth in a series of summary reports, contains complete field and chemical data from the MAP3S Precipitation Chemistry Network for the year 1982. Included is an update on network status and a summary of the USGS blind sample analysis program and laboratory sample exchanges during 1982. The statistical summary is deferred to a forthcoming publication.

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PREFACE

This report contains a listing of precipitation chemistry data collected during the period 1982. It is the sixth of the planned annual summaries of the data collected by the MAP3S Precipitation Chemistry Network (PCN).

The primary objective of the project is to collect the concentration data and distribute them promptly; further analysis of the data and use of the data as an aid in precipitation chemistry research is generally left to the reader, but analyses and interesting applications of the results may appear in summary reports or in the open literature authored by the persons listed below.

Users of the data (and the corresponding computer data base managed by Brookhaven National Laboratory) are advised to study the data table legends and other information in this report prior to making extensive calculations and interpretations. Please inform the authors of any deletions of vital information or ambiguities.

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1.0 DATA FOR 1982

The results of the field data collection and chemical analyses of precipitation samples collected on the MAP3S/PCN during 1982 are listed in the following tables. The first shows data availability. Each row represents a date, which is the date of collection^a of one or more samples. The appearance of an "S" in a column indicates that a sample was collected on that date at the site heading the column.

The second table is the chronological list of field and chemistry data. Each row corresponds to a collection^a date and a site, and each column to a "species." Since there are 23 species this table is broken into three sub-tables, as described in the data tables legend, Appendix A.

Sample and predicted volumes should be used for comparison and weighting purposes only, and not for calculation of rainfall amounts. Collector areas vary from time to time; this information is provided in Table 5.

The third table lists the hourly precipitation amounts in cm for each site. Each row represents a day of the month listed at the top of the page and each column corresponds to one hour. The precipitation recorded is the amount that fell in the hour previous to the time listed in the column.

Site locations and data periods, and chemical analyses information are listed in Section 2. A complete description of procedures and quality control may be found in another report.⁽¹⁾ Data for periods previous to 1982 are listed in the first five summaries.^(2,3,4,5,6)

^aNot necessarily the date of precipitation occurrence.

Table 1. Samples Available

27

	White	Penn	Virginia	Illinois	Pennsylvania	Law	Oxford	Rock
1 Jan 1982	1	1	1	1	1	1	1	1
2 Jan 1982	1	1	1	1	1	1	1	1
3 Jan 1982	1	1	1	1	1	1	1	1
4 Jan 1982	1	1	1	1	1	1	1	1
5 Jan 1982	1	1	1	1	1	1	1	1
6 Jan 1982	1	1	1	1	1	1	1	1
7 Jan 1982	1	1	1	1	1	1	1	1
8 Jan 1982	1	1	1	1	1	1	1	1
9 Jan 1982	1	1	1	1	1	1	1	1
11 Jan 1982	1	1	1	1	1	1	1	1
12 Jan 1982	1	1	1	1	1	1	1	1
13 Jan 1982	1	1	1	1	1	1	1	1
14 Jan 1982	1	1	1	1	1	1	1	1
15 Jan 1982	1	1	1	1	1	1	1	1
17 Jan 1982	1	1	1	1	1	1	1	1
18 Jan 1982	1	1	1	1	1	1	1	1
20 Jan 1982	1	1	1	1	1	1	1	1
21 Jan 1982	1	1	1	1	1	1	1	1
22 Jan 1982	1	1	1	1	1	1	1	1
23 Jan 1982	1	1	1	1	1	1	1	1
24 Jan 1982	1	1	1	1	1	1	1	1
25 Jan 1982	1	1	1	1	1	1	1	1
26 Jan 1982	1	1	1	1	1	1	1	1
29 Jan 1982	1	1	1	1	1	1	1	1
1 Feb 1982	1	1	1	1	1	1	1	1
2 Feb 1982	1	1	1	1	1	1	1	1
3 Feb 1982	1	1	1	1	1	1	1	1
4 Feb 1982	1	1	1	1	1	1	1	1
5 Feb 1982	1	1	1	1	1	1	1	1
6 Feb 1982	1	1	1	1	1	1	1	1
9 Feb 1982	1	1	1	1	1	1	1	1
10 Feb 1982	1	1	1	1	1	1	1	1
13 Feb 1982	1	1	1	1	1	1	1	1
14 Feb 1982	1	1	1	1	1	1	1	1
15 Feb 1982	1	1	1	1	1	1	1	1
17 Feb 1982	1	1	1	1	1	1	1	1
18 Feb 1982	1	1	1	1	1	1	1	1
19 Feb 1982	1	1	1	1	1	1	1	1
20 Feb 1982	1	1	1	1	1	1	1	1
22 Feb 1982	1	1	1	1	1	1	1	1
23 Feb 1982	1	1	1	1	1	1	1	1
25 Feb 1982	1	1	1	1	1	1	1	1
26 Feb 1982	1	1	1	1	1	1	1	1
1 Mar 1982	1	1	1	1	1	1	1	1
2 Mar 1982	1	1	1	1	1	1	1	1
3 Mar 1982	1	1	1	1	1	1	1	1
4 Mar 1982	1	1	1	1	1	1	1	1
5 Mar 1982	1	1	1	1	1	1	1	1

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	White	Penn	Virginia	Illinois	Brookhaven	Lewis	Norfolk	Ridgely
8 Mar 1982	S	S	S	S	S	S	-	-
9 Mar 1982	-	-	S	-	S	-	-	S
10 Mar 1982	-	S	-	-	S	S	-	-
11 Mar 1982	-	-	-	-	S	-	-	-
12 Mar 1982	-	-	S	-	-	S	S	-
13 Mar 1982	-	-	-	S	-	-	S	-
14 Mar 1982	-	-	S	-	-	-	-	-
15 Mar 1982	S	S	-	-	S	-	-	-
16 Mar 1982	-	-	-	-	S	S	-	-
17 Mar 1982	-	-	-	-	-	-	-	-
18 Mar 1982	S	S	-	S	-	S	-	S
19 Mar 1982	S	-	-	-	-	-	-	-
21 Mar 1982	-	-	S	-	-	-	-	-
22 Mar 1982	S	S	-	-	-	S	S	-
23 Mar 1982	S	-	-	S	-	-	-	S
24 Mar 1982	-	-	-	-	S	-	-	-
25 Mar 1982	-	-	-	-	S	-	-	-
26 Mar 1982	-	S	-	S	-	S	-	S
27 Mar 1982	-	-	-	-	-	-	S	S
28 Mar 1982	-	-	S	-	-	-	-	-
29 Mar 1982	S	S	-	-	S	-	-	-
30 Mar 1982	-	-	-	-	S	-	-	-
31 Mar 1982	S	-	-	-	S	-	-	-
1 Apr 1982	S	S	S	S	S	S	S	S
2 Apr 1982	S	-	-	-	S	-	S	-
4 Apr 1982	-	-	-	-	-	-	-	-
5 Apr 1982	S	S	S	S	S	-	S	-
6 Apr 1982	-	-	-	S	S	-	-	S
7 Apr 1982	-	S	S	-	-	S	S	-
9 Apr 1982	S	-	-	S	-	-	S	-
10 Apr 1982	-	-	-	-	-	-	-	-
12 Apr 1982	S	S	S	-	S	-	S	-
13 Apr 1982	-	-	S	-	-	-	-	-
14 Apr 1982	S	S	S	-	-	-	-	-
16 Apr 1982	-	-	-	-	S	-	-	-
18 Apr 1982	-	S	S	-	-	S	S	-
19 Apr 1982	S	-	-	S	S	-	-	-
20 Apr 1982	-	-	-	-	S	-	-	S
21 Apr 1982	S	S	-	-	-	S	-	-
26 Apr 1982	-	-	-	-	S	-	S	-
27 Apr 1982	S	S	S	-	S	S	S	-
28 Apr 1982	-	-	S	S	-	S	-	S
1 May 1982	-	-	-	-	-	-	S	-
3 May 1982	S	-	-	-	-	-	-	-
7 May 1982	-	-	-	-	-	-	-	-
8 May 1982	-	-	-	-	-	-	-	-
9 May 1982	-	-	-	-	-	-	S	-
10 May 1982	S	S	-	-	-	-	-	-

SAMPLES AVAILABLE (CONT.)

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	W h i t e r c e	P e n s t a t e	V i r g i n i a	I l l i n o i	B r o o k h a v e	L e w e	O x f o r d	O k R i d g e
7 Jul 1982	-	-	-	-	-	-	-	-
8 Jul 1982	S	-	-	-	-	-	S	-
9 Jul 1982	-	-	-	-	-	-	-	S
10 Jul 1982	-	-	-	S	-	-	-	-
11 Jul 1982	-	-	-	-	-	-	-	-
12 Jul 1982	-	-	S	-	-	-	-	-
15 Jul 1982	-	S	-	-	-	-	-	-
16 Jul 1982	S	-	-	-	-	S	-	-
19 Jul 1982	S	S	S	S	S	-	S	-
20 Jul 1982	-	S	S	-	-	S	-	S
21 Jul 1982	-	-	-	-	-	S	-	-
22 Jul 1982	-	-	-	-	-	-	-	-
23 Jul 1982	S	-	-	-	S	-	-	-
24 Jul 1982	-	-	-	S	-	-	-	-
27 Jul 1982	-	-	-	-	-	-	-	-
28 Jul 1982	-	-	S	-	S	-	-	-
29 Jul 1982	S	S	S	S	-	S	-	-
31 Jul 1982	-	-	-	S	-	S	-	-
1 Aug 1982	S	-	-	-	-	-	-	-
3 Aug 1982	-	-	-	S	-	-	-	-
4 Aug 1982	S	S	-	-	-	-	-	-
5 Aug 1982	S	S	-	-	-	-	-	-
6 Aug 1982	-	-	-	-	-	-	-	-
7 Aug 1982	-	-	-	S	-	S	-	-
8 Aug 1982	-	-	S	S	-	-	S	-
9 Aug 1982	-	S	-	S	S	-	-	-
10 Aug 1982	S	-	S	S	S	S	-	S
11 Aug 1982	-	-	-	-	-	S	-	-
12 Aug 1982	-	-	S	S	-	S	-	-
14 Aug 1982	-	-	-	-	-	-	-	-
15 Aug 1982	-	-	-	S	-	-	-	-
16 Aug 1982	S	-	-	S	-	-	-	-
17 Aug 1982	-	S	-	S	-	-	-	-
18 Aug 1982	-	-	S	S	-	S	-	S
20 Aug 1982	S	-	-	-	-	-	-	-
21 Aug 1982	-	-	S	-	-	S	-	-
22 Aug 1982	-	S	-	-	-	-	-	-
23 Aug 1982	-	-	-	-	S	-	-	-
24 Aug 1982	S	S	S	-	S	-	-	-
25 Aug 1982	-	-	S	-	-	-	-	-
26 Aug 1982	S	-	-	-	-	-	-	-
27 Aug 1982	-	-	-	S	-	-	-	-
28 Aug 1982	S	-	-	S	-	-	-	-
29 Aug 1982	S	-	-	-	-	-	-	-
30 Aug 1982	-	-	-	-	-	-	-	-
31 Aug 1982	-	-	-	-	-	-	-	-
1 Sep 1982	-	-	-	-	-	-	-	-
2 Sep 1982	S	-	S	-	-	-	-	-

SAMPLES AVAILABLE (CONT.)

6/

	White Lake	Indian Lake	Pan Indian Lake	Indian Lake	Indian Lake	Indian Lake	Indian Lake	Indian Lake	Indian Lake
3 Sep 1982	S	S	S	S	S	S	S	S	S
7 Sep 1982	S	S	S	S	S	S	S	S	S
8 Sep 1982	-	-	S	-	S	-	-	-	-
13 Sep 1982	-	-	-	-	S	-	-	-	-
14 Sep 1982	-	-	-	-	S	-	-	-	-
15 Sep 1982	-	-	-	-	S	-	-	-	-
16 Sep 1982	S	S	S	-	-	-	-	-	S
17 Sep 1982	S	-	-	-	-	-	-	-	-
18 Sep 1982	S	-	-	-	S	-	-	-	-
20 Sep 1982	S	-	-	-	S	-	-	-	-
21 Sep 1982	-	-	-	-	S	-	-	-	S
22 Sep 1982	-	-	-	-	S	-	-	-	-
23 Sep 1982	-	S	-	-	S	-	-	-	-
24 Sep 1982	S	-	-	-	S	-	-	-	-
25 Sep 1982	-	-	-	-	-	-	-	-	-
27 Sep 1982	-	S	S	-	S	-	-	-	-
28 Sep 1982	S	-	S	-	-	-	-	-	S
29 Sep 1982	S	-	-	-	-	-	-	-	-
1 Oct 1982	-	-	-	-	-	-	-	-	-
2 Oct 1982	S	-	-	-	-	-	-	-	-
4 Oct 1982	-	-	-	-	S	-	-	-	-
5 Oct 1982	-	-	-	S	S	-	-	-	-
7 Oct 1982	-	-	-	-	-	-	-	-	-
8 Oct 1982	S	S	S	-	S	-	-	-	S
10 Oct 1982	S	-	-	-	S	-	-	-	-
11 Oct 1982	-	-	-	-	S	-	-	-	-
12 Oct 1982	-	S	S	S	-	-	-	-	S
13 Oct 1982	-	-	-	-	-	-	-	-	S
14 Oct 1982	S	-	S	-	-	-	-	-	-
15 Oct 1982	S	S	-	-	-	-	-	-	-
17 Oct 1982	-	-	S	-	-	-	-	-	-
18 Oct 1982	S	S	-	-	-	-	-	-	-
20 Oct 1982	-	-	-	-	S	-	-	-	-
21 Oct 1982	-	S	S	S	-	-	-	-	S
22 Oct 1982	S	S	-	-	-	-	-	-	-
26 Oct 1982	-	-	-	-	-	-	-	-	-
27 Oct 1982	-	-	-	-	-	-	-	-	-
29 Oct 1982	-	-	-	-	-	-	-	-	-
1 Nov 1982	S	S	-	-	-	-	-	-	-
2 Nov 1982	S	-	-	-	-	-	-	-	-
3 Nov 1982	-	-	-	-	-	-	-	-	-
4 Nov 1982	-	-	-	-	-	-	-	-	-
5 Nov 1982	S	S	S	-	-	-	-	-	S
10 Nov 1982	S	-	-	-	-	-	-	-	-
11 Nov 1982	-	-	-	-	-	-	-	-	-
12 Nov 1982	S	S	S	-	S	-	-	-	-
13 Nov 1982	-	-	S	-	-	-	-	-	-
14 Nov 1982	S	-	-	-	-	-	-	-	-

SAMPLES AVAILABLE (CONT.)

77

	W h i t e f e c	P h o t o g r a p h y	V i d e o	I l l u s t r a t i o n	R o c k h e v e n	L e w e	D i f f e r e n c e	O k e d i d
15 Nov 1982	S	S	-	-	S	S	-	S
16 Nov 1982	S	S	-	-	-	-	-	S
19 Nov 1982	-	-	-	-	S	-	-	S
20 Nov 1982	-	-	-	-	-	-	-	S
21 Nov 1982	-	-	-	S	-	-	-	S
22 Nov 1982	S	S	-	-	S	-	-	S
23 Nov 1982	S	-	S	-	S	-	-	S
24 Nov 1982	-	-	S	-	S	-	-	S
25 Nov 1982	S	-	-	-	-	-	-	-
27 Nov 1982	S	-	S	-	-	-	-	-
28 Nov 1982	-	-	-	-	-	-	-	-
29 Nov 1982	-	-	S	S	-	-	-	-
30 Nov 1982	S	S	S	-	-	-	-	-
2 Dec 1982	-	-	S	-	-	-	-	-
3 Dec 1982	S	-	-	S	S	-	-	-
4 Dec 1982	-	-	-	-	-	-	-	-
5 Dec 1982	S	-	-	-	-	-	-	-
6 Dec 1982	S	-	S	-	-	-	-	-
7 Dec 1982	S	S	S	-	-	-	-	-
8 Dec 1982	S	-	-	-	-	-	-	-
9 Dec 1982	S	-	-	-	-	-	-	-
10 Dec 1982	-	S	-	-	S	-	-	-
11 Dec 1982	-	-	-	-	-	-	-	-
13 Dec 1982	S	S	-	S	-	-	-	-
14 Dec 1982	-	-	-	-	S	-	-	-
16 Dec 1982	S	-	-	S	-	-	-	-
17 Dec 1982	-	S	S	-	-	-	-	-
19 Dec 1982	-	-	-	-	-	-	-	-
20 Dec 1982	-	-	S	S	-	-	-	-
21 Dec 1982	-	S	-	-	-	-	-	-
22 Dec 1982	S	-	-	-	-	-	-	-
23 Dec 1982	-	-	-	-	-	-	-	-
24 Dec 1982	-	-	S	-	-	-	-	-
25 Dec 1982	S	-	S	-	-	-	-	-
26 Dec 1982	-	-	S	-	-	-	-	-
27 Dec 1982	S	S	-	-	-	-	-	-
28 Dec 1982	S	-	S	S	-	-	-	-
29 Dec 1982	-	S	S	-	-	-	-	-
30 Dec 1982	S	-	-	-	-	-	-	-

R/

		T I M E	L I D	A R	S A M P	P P D	F I E L D	F I E L D	L A R	C O N D U C T
		R M V D	D P E N	D A T E	V O L	V O L	P H	P H	P H	U P H O /C M
		Z		MO,DA	ML	ML	C			
1 Jan 1982	Virginia	1730	10	1,11	2030.0	2020.0	16.	4.50	4.60	15.0
	Lewes	1600	NAP	1,14	980.0	1200.0	21.	4.85	4.95	17.0
	Oxford	1700	NAP	2,12	494.0	504.0	18.	3.68	4.49	15.0
2 Jan 1982	Penn State	2000	NAP	1,11	1236.0	700.0	25.	4.60	4.48	21.0
	Brookhaven	1700	10	1,07	1450.0	1350.0	26.	5.04	5.05	13.0
3 Jan 1982	Whitface	1930	NAP	1,19	157.0	180.0	17.	3.94	4.41	19.0
4 Jan 1982	Oxford	1630	NAP	2,12	1240.0	960.0	15.	3.70	4.50	16.0
	Oak Ridge	1930	17	1,12	5393.0	5040.0	22.	4.25	4.36	23.0
5 Jan 1982	Ithaca	1900	NAP	1,18	1060.0	1360.0	26.	4.57	4.58	14.0
	Penn State	2000	NAP	1,11	1405.0	1140.0	25.	4.70	4.60	15.0
	Virginia	1430	21	1,11	957.0	1010.0	21.	4.33	4.44	21.0
	Illinois	1700	NAP	3,30	1141.0	2065.0	25.	4.20	4.26	25.0
	Brookhaven	1600	16	1,07	3795.0	4370.0	26.	4.73	4.77	22.0
	Lewes	1530	NAP	1,14	1304.0	1610.0	19.	4.65	4.78	14.0
6 Jan 1982	Whitface	1630	NAP	1,19	1252.0	1333.0	15.	4.14	4.63	11.0
7 Jan 1982	Penn State	1800	NAP	2,22	175.0	136.0	25.	4.01	3.88	78.0
	Oxford	1700	NAP	19A	33.0	49.0	11.	3.31	18A	18A
	Oak Ridge	2000	2	2,17	136.0	150.0	22.	4.25	RPC	RPC
8 Jan 1982	Ithaca	1800	NAP	1,18	480.0	460.0	29.	4.24	4.27	27.0
	Brookhaven	1600	5	1,29	74.0	65.0	25.	3.75	18A	18A
9 Jan 1982	Penn State	1900	NAP	2,22	64.0	51.0	25.	4.40	4.30	35.0
	Oxford	2130	NAP	2,12	80.0	81.0	16.	3.63	4.37	25.0
11 Jan 1982	Whitface	1530	NAP	1,10	208.0	98.0	14.	3.68	4.09	40.0

NADIS PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I V E		I I D		A R P		S A M P		P R E D		F I E L D		F I F L O		L A B		C O N D U C T	
		P M V N		P E N		P A T F		V O L		V O L		P H T		P H		P H			
		Z				NO ₃ DA		ML		ML		C						UMHNO/CM	
12 Jan 1982	Illinois	1600		NAP		ISA		2.4		340.0		ISA		ISA		ISA		ISA	
13 Jan 1982	Illinois	1700		NAP		3.30		217.0		99.0		25.		4.34		4.40		19.0	
14 Jan 1982	Ithaca	1600		NAP		2.05		380.0		550.0		24.		4.36		4.37		21.0	
	Penn State	1830		NAP		2.22		291.0		154.0		25.		4.53		4.48		19.0	
	Brookhaven	1600				1.20		752.0		488.0		24.		4.64		4.56		13.0	
	Oxford	2300		NAP		2.12		195.0		240.0		17.		3.92		4.47		17.0	
15 Jan 1982	Whiteface	1530		NAP		2.09		282.0		65.0		18.		4.21		4.45		15.0	
	Virginia	1030		62		2.04		1130.0		1140.0		21.		4.54		4.54		12.0	
	Lewis	1930		MOF		2.05		1785.0		1450.0		18.		4.48		4.54		18.0	
	Dak Ridge	1930				2.17		650.0		880.0		19.		4.47		4.74		10.0	
17 Jan 1982	Brookhaven	1800				1.20		45.0		33.0		23.		3.88		ISA		ISA	
18 Jan 1982	Penn State	2130		NAP		2.22		277.0		154.0		25.		4.20		4.06		45.0	
	Illinois	1530		NAP		3.30		177.0		190.0		25.		4.58		4.85		13.0	
	Oxford	1800		NAP		2.12		75.0		98.0		19.		3.54		4.16		38.0	
20 Jan 1982	Virginia	1230		6		2.04		185.0		228.0		22.		3.98		4.06		41.0	
	Lewis	1900		MOF		2.05		68.0		NAP		20.		4.09		4.22		37.0	
21 Jan 1982	Penn State	1500		NAP		2.22		180.0		140.0		25.		4.11		4.14		40.0	
	Illinois	1630		2		3.30		259.0		180.0		25.		3.93		4.00		45.0	
	Oxford	1200		NAP		2.12		172.0		180.0		18.		3.92		4.37		20.0	
22 Jan 1982	Whiteface	1430		NAP		ISA		49.0		16.0		17.		3.95		ISA		ISA	
	Ithaca	1600		NAP		2.05		290.0		350.0		24.		4.29		4.27		26.0	
	Lewis	1530		MOF		2.05		464.0		NAP		23.		4.34		4.40		19.0	
23 Jan 1982	Illinois	1700		2		3.30		114.0		94.0		25.		4.03		4.11		39.0	

MAP33 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T M		I D		A R		S A M P		P R E D		F E L D		F E L D		L A R		C O N D U C T	
		R M V D		O P E N		D A T E		V O L		V O L		P H		P H		P H			
		Z				MO, PA		ML		ML		C						UMHO/CM	
23 Jan 1982	Oxford	1830		NAP		2.12		2580.0		2570.0		19.		4.10		4.38		20.0	
24 Jan 1982	Virginia	1000		4		2.04		565.0		1500.0		19.		3.68		3.73		86.0	
	Brookhaven	1800		1		2.09		2000.0		2740.0		25.		4.62		4.70		13.0	
25 Jan 1982	Whiteface	1530		NAP		2.09		278.0		309.0		18.		4.13		4.53		14.0	
	Ithaca	1400		NAP		2.05		1010.0		1590.0		23.		4.92		4.86		5.8	
	Lewes	1500		MOE		2.05		1230.0		1270.0		24.		4.41		4.50		24.0	
	Oak Ridge	1900		623		2.17		5520.0		4470.0		20.		4.15		4.31		29.0	
26 Jan 1982	Penn State	1900		NAP		2.22		3090.0		3360.0		25.		4.80		4.87		7.1	
	Illinois	1700		5		3.30		337.0		430.0		25.		4.18		4.25		28.0	
	Lewes	1500		MOE		18A		9.0		18A		24.		3.72		18A		18A	
29 Jan 1982	Whiteface	1500		NAP		18A		10.0		16.0		17.		4.05		18A		18A	
	Ithaca	1300		NAP		2.05		20.0		32.0		23.		3.94		3.94		54.0	
1 Feb 1982	Ithaca	1800		NAP		2.05		2250.0		2090.0		23.		4.22		4.18		30.0	
	Virginia	900		9		2.04		718.0		732.0		22.		4.40		4.56		22.0	
	Brookhaven	1800		4		2.09		2290.0		2440.0		24.		4.34		4.41		33.0	
	Lewes	1500		MOE		2.05		164.0		150.0		24.		5.10		5.41		12.0	
	Oxford	2200		NAP		2.12		4860.0		4600.0		19.		3.90		4.36		21.0	
	Oak Ridge	1530		5		2.17		990.0		990.0		NAP		4.80		4.91		7.3	
2 Feb 1982	Whiteface	1730		NAP		2.09		936.0		1580.0		16.		4.70		4.88		5.9	
	Penn State	2100		NAP		2.22		1400.0		1190.0		25.		4.28		4.08		43.0	
	Illinois	1730		4		3.30		3157.0		3310.0		25.		4.25		4.34		22.0	
3 Feb 1982	Lewes	1530		MOE		2.23		311.0		440.0		22.		4.29		4.40		30.0	
4 Feb 1982	Ithaca	1200		NAP		3.09		1020.0		1010.0		23.		4.61		4.59		11.0	

MAP3S PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E		L I D		A R R		S A M P		P R E D		F I E L D		F I E L D		L A R P H		C O N D U C T	
		R M V D		O P E N		O A T E		V O L		V O L		P H		P H		P H			
		Z		MO,DA		ML		ML		C								UMHO/CM	
4 Feb 1982	Penn State	2100		NAP	2.22	1680.0		1245.0		25.	4.95	4.64	14.0						
	Virginia	1800		P	3.09	3130.0		3060.0		22.	4.60	4.68	10.0						
	Brookhaven	1500		1	2.09	2190.0		2110.0		24.	4.49	4.50	25.0						
	Lewes	1500		MOF	194	24.0		32.0		21.	4.19	194	194						
	Oak Ridge	2130		19	3.09	1608.0		1590.0		20.	4.12	4.19	30.0						
5 Feb 1982	Whiteface	1600		NAP	3.05	570.0		570.0		18.	4.20	4.68	9.5						
	Oxford	1730		NAP	3.29	754.0		715.0		9.	3.84	4.21	28.0						
8 Feb 1982	Whiteface	2030		NAP	3.05	233.0		360.0		18.	3.71	4.09	37.0						
	Ithaca	1300		NAP	3.09	40.0		45.0		23.	3.67	RPC	RPC						
	Illinois	1700		3	ISA	51.0		110.0		ISA	ISA	194	194						
	Lewes	1930		MOE	2.23	82.0		98.0		21.	4.07	4.22	36.0						
	Oxford	1800		NAP	ISA	31.0		32.0		10.	3.96	ISA	ISA						
9 Feb 1982	Illinois	1600		2	ISA	10.0		80.0		25.	4.11	ISA	ISA						
	Oxford	2200		NAP	3.29	751.0		630.0		10.	4.38	4.63	10.0						
10 Feb 1982	Whiteface	1430		NAP	3.05	340.0		195.0		17.	4.29	4.35	23.0						
	Ithaca	1600		NAP	3.09	430.0		440.0		23.	4.11	4.12	36.0						
	Penn State	2100		NAP	2.22	592.0		410.0		25.	4.40	4.24	20.0						
	Virginia	1030		19	3.09	242.0		240.0		22.	3.77	3.84	66.0						
	Brookhaven	1500		24	3.05	432.0		780.0		26.	3.90	3.97	53.0						
	Lewes	1530		MOF	2.23	425.0		410.0		21.	3.95	4.09	41.0						
	Oak Ridge	1500		9	3.09	2090.0		1880.0		20.	4.26	4.35	23.0						
13 Feb 1982	Virginia	1100		11	3.09	335.0		370.0		18.	4.05	4.10	36.0						
14 Feb 1982	Lewes	2130		MOE	2.23	582.0		180.0		23.	4.33	4.41	21.0						

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T M E	L I D	A R P	S A M P	P P F D	F E L D	F I E L D	L A B	C O N D U C T
		R M V D	O P E N	D A T E	V O L	V O L	P H	P H	P H	UMHO/CM
		2		MO,DA	ML	ML	C			
15 Feb 1982	Whiteface	2000	NAP	ISA	4.0	325.0	ISA	ISA	ISA	ISA
	Ithaca	1400	NAP	3.09	230.0	230.0	23.	3.91	3.96	51.0
17 Feb 1982	Illinois	1600	7	3.30	641.0	700.0	25.	3.90	3.99	48.0
	Oak Ridge	2000	1A	3.09	3094.0	2850.0	20.	4.35	4.38	20.0
18 Feb 1982	Penn State	2230	NAP	3.15	1235.0	1210.0	25.	4.28	4.25	28.0
	Illinois	1530	2	3.30	147.0	170.0	25.	3.69	3.73	90.0
	Lewis	1530	MDE	2.23	1410.0	1430.0	16.	4.47	4.60	51.0
19 Feb 1982	Virginia	1800	40	3.09	2860.0	3280.0	23.	4.26	4.27	24.0
	Illinois	1530	2	3.30	289.0	290.0	25.	3.99	4.03	44.0
20 Feb 1982	Penn State	1700	NAP	3.15	612.0	380.0	25.	4.11	4.05	39.0
	Brookhaven	1700	14	3.05	718.0	630.0	26.	4.45	4.48	20.0
	Lewis	1900	3	3.18	495.0	540.0	20.	4.66	4.76	12.0
	Oxford	1430	NAP	3.29	879.0	845.0	10.	3.92	4.13	34.0
22 Feb 1982	Whiteface	1500	NAP	3.05	196.0	110.0	17.	3.81	4.07	39.0
	Ithaca	1800	NAP	3.09	1490.0	1500.0	23.	4.26	4.21	29.0
	Lewis	1800	6	3.18	395.0	470.0	21.	3.78	3.94	57.0
23 Feb 1982	Penn State	1700	NAP	3.15	306.0	170.0	25.	4.05	3.80	84.0
	Oak Ridge	1530	5	3.09	151.0	130.0	21.	3.90	3.98	58.0
25 Feb 1982	Ithaca	1200	NAP	3.09	340.0	350.0	23.	4.39	4.34	24.0
	Penn State	1800	NAP	3.15	186.0	120.0	25.	3.98	3.83	92.0
28 Feb 1982	Virginia	1430	13	3.09	1140.0	930.0	21.	4.92	4.87	5.6
	Lewis	2030	3	3.18	407.0	470.0	18.	5.14	5.15	5.7
1 Mar 1982	Whiteface	1530	NAP	3.30	80.0	33.0	17.	3.50	3.96	ISA

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		THERMAL INDEX								
		TEMPERATURE			WIND			PRECIPITATION		
		RM	DP	DA	VL	VL	PH	FLD	LAR	CND
		Z		MO,DA	ML	ML	C			UMHD/CM
2 Mar 1982	Illinois	1600	NAP	ISA	17.0	100.0	25.	5.54	ISA	ISA
	Brookhaven	1500	3	3.05	56.0	65.0	24.	4.01	ISA	ISA
	Oak Ridge	1600	24	3.09	1560.0	1480.0	21.	3.99	4.04	42.0
3 Mar 1982	Ithaca	1600	NAP	3.29	160.0	130.0	23.	4.24	4.27	37.0
	Illinois	1400	6	3.30	171.0	130.0	25.	4.12	4.20	49.0
4 Mar 1982	Whiteface	1600	NAP	ISA	12.0	49.0	17.	3.44	ISA	ISA
	Illinois	1430	4	3.30	1068.0	720.0	25.	4.01	4.07	45.0
5 Mar 1982	Ithaca	2100	NAP	3.29	170.0	180.0	23.	4.13	4.16	40.0
	Penn State	2000	NAP	3.15	545.0	460.0	25.	4.23	4.11	46.0
	Illinois	1400	2	ISA	5.0	ISA	ISA	ISA	ISA	ISA
	Brookhaven	1500	14	3.23	1068.0	1100.0	24.	4.06	4.14	43.0
	Lewis	1600	1	3.18	1461.0	1320.0	24.	4.36	4.43	25.0
	Oxford	1700	NAP	4.21	1199.0	1070.0	10.	3.83	4.10	41.0
8 Mar 1982	Whiteface	1530	NAP	3.30	1417.0	1280.0	18.	3.80	4.46	16.0
	Ithaca	1600	NAP	3.29	1100.0	1200.0	23.	4.16	4.18	32.0
	Penn State	1900	NAP	3.15	1193.0	890.0	25.	4.52	4.38	20.0
	Virginia	1230	9	4.06	1359.0	1340.0	22.	4.19	4.21	28.0
	Brookhaven	1600	9	3.23	1719.0	1660.0	26.	4.45	4.53	14.0
	Lewis	1630	4	3.18	2868.0	2990.0	24.	4.45	4.60	20.0
9 Mar 1982	Penn State	2000	NAP	3.15	618.0	205.0	25.	4.15	4.05	45.0
	Illinois	1400	1	ISA	6.6	ISA	25.	4.95	ISA	ISA
	Oak Ridge	1500	14	4.02	2987.0	2850.0	19.	4.34	4.34	21.0
10 Mar 1982	Whiteface	1830	NAP	ISA	55.0	33.0	15.	3.78	ISA	ISA

MAP39 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E	L I D	A P P	S A M P	P R F D	F I L D	F I E L D	L A B	C O N D U C T
		P R E C I P I T A T I O N	P H	P H	P H	P H	P H	P H	P H	U M P H O /C M
		7		MO,DA	ML	ML	C			
10 Mar 1982	Ithaca	1200	NAP	3.29	220.0	250.0	22.	3.98	4.00	51.0
	Illinois	1430	1	4.13	60.0	54.0	25.	3.84	3.91	68.0
	Brookhaven	1400	11	18A	38.0	16.0	26.	3.66	18A	18A
11 Mar 1982	Illinois	1400	4	4.13	207.0	163.0	25.	4.29	4.45	32.0
12 Mar 1982	Penn State	2200	NAP	4.15	303.0	188.0	25.	4.32	4.17	35.0
	Brookhaven	2100	5	3.23	147.0	195.0	24.	3.58	3.66	110.0
	Lewes	1900	1	3.18	148.0	146.0	21.	3.93	4.11	42.0
	Oxford	2100	NAP	4.21	1242.0	975.0	21.	4.23	4.24	29.0
13 Mar 1982	Virginia	800	1	4.06	278.0	228.0	24.	4.19	4.23	31.0
	Oxford	2400	NAP	4.21	830.0	550.0	20.	4.55	4.03	15.0
14 Mar 1982	Penn State	2100	NAP	4.15	313.0	170.0	25.	4.21	4.09	43.0
15 Mar 1982	Whiteface	1530	NAP	3.30	491.0	490.0	20.	3.85	4.02	45.0
	Ithaca	1300	NAP	3.29	190.0	160.0	22.	4.01	4.05	45.0
	Illinois	1400	15	4.13	1009.0	980.0	25.	4.62	4.53	18.0
	Brookhaven	1600	4	3.23	152.0	179.0	24.	3.66	3.78	96.0
16 Mar 1982	Illinois	1530	4	4.13	494.0	523.0	25.	4.11	4.14	39.0
17 Mar 1982	Penn State	1530	NAP	4.15	1207.0	750.0	25.	4.60	4.46	21.0
	Virginia	1230	18	4.06	977.0	1030.0	23.	4.12	4.21	30.0
	Lewes	2300	11	4.12	968.0	975.0	22.	4.57	4.67	18.0
	Oak Ridge	1630	18	4.02	2643.0	2520.0	20.	4.45	4.54	17.0
18 Mar 1982	Whiteface	2030	NAP	3.30	689.0	540.0	18.	4.12	4.55	14.0
	Ithaca	1700	NAP	3.29	1110.0	1090.0	22.	4.27	4.30	30.0
	Illinois	1530	1	4.13	1006.0	1080.0	25.	4.00	4.14	38.0

MAP33 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E	L I D	A R R	S A M P	P R E D	F I E L D	F I E L D	L A B	C O N D U C T
		R V D	O P E N	D A T E	V O L	V O L	P H	P H	P H	U M H O /C M
		Z		MO, DA	ML	ML	C			
18 Mar 1982	Brookhaven	1600	13	3.23	1379.0	1280.0	24.	4.42	4.47	17.0
	Oxford	1730	NAP	4.21	1563.0	1560.0	21.	4.10	4.37	22.0
19 Mar 1982	Whiteface	1430	NAP	3.30	91.0	33.0	18.	3.78	4.12	38.0
21 Mar 1982	Penn State	1900	NAP	4.15	738.0	580.0	25.	4.50	4.38	20.0
	Oxford	1630	NAP	4.21	1074.0	1330.0	17.	3.76	4.06	43.0
22 Mar 1982	Whiteface	1500	NAP	3.30	345.0	240.0	18.	3.72	4.03	44.0
	Ithaca	1200	NAP	3.29	35.0	32.0	21.	3.25	3.32	134
	Illinois	1630	NAP	4.13	157.0	NAP	25.	3.70	3.74	100.0
	Brookhaven	1400	12	4.06	139.0	211.0	24.	3.84	3.94	65.0
	Lewis	1530	2	ISA	19.0	33.0	22.	3.50	ISA	ISA
23 Mar 1982	Whiteface	1700	NAP	4.15	133.0	81.0	18.	3.84	4.24	30.0
	Virginia	1030	10	4.06	2911.0	2910.0	23.	4.11	4.14	36.0
	Oak Ridge	1500	7	4.02	2565.0	2600.0	18.	4.72	4.70	12.0
24 Mar 1982	Illinois	1400	1	ISA	73.0	81.0	25.	4.22	ISA	ISA
25 Mar 1982	Illinois	1530	NAP	4.13	635.0	624.0	25.	4.77	4.83	12.0
26 Mar 1982	Ithaca	2000	NAP	4.28	990.0	970.0	20.	4.10	4.12	36.0
	Virginia	1000	4	4.04	362.0	350.0	23.	3.88	3.93	40.0
	Brookhaven	1930	7	4.06	132.0	130.0	25.	3.87	3.98	55.0
	Oxford	2130	NAP	4.21	508.0	455.0	19.	3.73	3.93	58.0
	Oak Ridge	1600	3	4.02	140.0	114.0	21.	4.01	RPC	RPC
27 Mar 1982	Lewis	1700	1	4.12	60.0	81.0	17.	3.95	ISA	ISA
28 Mar 1982	Penn State	1430	NAP	4.15	1262.0	800.0	25.	4.08	4.02	53.0
29 Mar 1982	Whiteface	1600	NAP	4.15	553.0	618.0	19.	3.84	4.22	27.0

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		THERMAL DATA								
		TEMPERATURE			SOLAR RADIATION					
		TIME	LOCATION	AIR	SAF	PF	FI	FI	FI	CORRECTION
		PM	OPEN	NET	VL	VL	PH	PH	PH	UMHO/CM
		7		MO,DA	ML	ML	C			
29 Mar 1982	Ithaca	1400	NAP	4.28	150.0	150.0	20.	4.34	4.33	25.0
	Illinois	1600	3	ISA	2.7	ISA	25.	5.26	ISA	ISA
30 Mar 1982	Illinois	1400	3	ISA	9.8	ISA	25.	4.37	ISA	ISA
31 Mar 1982	Whiteface	1830	NAP	4.15	547.0	440.0	18.	4.18	4.64	9.8
	Illinois	1600	1	ISA	9.6	ISA	25.	6.69	ISA	ISA
	Oxford	2130	NAP	4.21	1646.0	1530.0	21.	4.38	4.66	18.0
1 Apr 1982	Whiteface	1630	NAP	MOE	MOE	650.0	MOE	MOE	MOE	MOE
	Ithaca	1300	NAP	4.28	1020.0	1055.0	20.	4.36	4.46	20.0
	Penn State	1600	NAP	4.15	304.0	222.0	25.	4.40	4.51	27.0
	Virginia	1030	2	ISA	93.0	65.0	23.	4.30	ISA	ISA
	Brookhaven	1430	13	4.06	618.0	666.0	24.	4.48	4.63	22.0
	Lowes	1530	4	4.12	595.0	520.0	21.	4.54	4.81	23.0
	Oak Ridge	1530	3	5.07	1808.0	1840.0	20.	4.52	4.56	16.0
2 Apr 1982	Whiteface	2100	NAP	ISA	79.0	16.0	20.	4.29	ISA	ISA
	Illinois	1500	1	ISA	1.1	ISA	ISA	ISA	ISA	ISA
4 Apr 1982	Brookhaven	1500	19	4.20	2551.0	2520.0	25.	4.50	4.62	24.0
	Lowes	2200	5	4.12	865.0	730.0	17.	6.37	5.52	23.0
5 Apr 1982	Whiteface	1700	NAP	4.15	1226.0	1190.0	20.	4.21	4.55	12.0
	Ithaca	1500	NAP	4.28	1210.0	1220.0	20.	4.38	4.40	20.0
	Penn State	1330	NAP	4.15	1422.0	970.0	25.	5.82	6.03	16.0
	Virginia	900	20	5.12	927.0	840.0	24.	4.00	4.10	42.0
	Illinois	1430	9	5.14	558.0	685.0	25.	6.61	6.42	13.0
	Oxford	1300	NAP	5.12	1376.0	1410.0	19.	4.19	4.53	16.0

NAPS PRECIPITATION CHEMISTRY DATA (CONT.)

17/

		T M	E L	A R	S A M P	P P E D	F I E L D	F I E L D	L A R	C O N D U C T
		R V D	O P E N	O A T E	V O L	V O L	P H	P H	P H	UMHO/CM
		Z		MO,DA	ML	ML	C			
6 Apr 1982	Virginia	1500	ISA	ISA	88.0	73.0	22.	4.06	ISA	ISA
	Illinois	1500	8	5.14	593.0	590.0	25.	4.50	4.57	18.0
	Oak Ridge	1530	12	5.07	515.0	420.0	20.	4.35	4.43	28.0
7 Apr 1982	Ithaca	1300	NAP	4.28	1255.0	1340.0	20.	4.76	4.73	8.6
	Penn State	1730	NAP	4.15	735.0	720.0	25.	4.45	4.26	25.0
	Brookhaven	1530	9	4.20	1003.0	1890.0	25.	4.41	4.45	21.0
	Lewes	1600	4	4.12	1237.0	1300.0	10.	4.33	4.53	24.0
	Oxford	1300	NAP	ISA	MDE	490.0	MDE	MDE	MDE	MDE
9 Apr 1982	Whitewater	1430	NAP	5.03	91.0	33.0	19.	4.95	ISA	ISA
	Virginia	1400	10	5.12	295.0	290.0	23.	4.58	4.60	11.0
	Illinois	1730	21	5.14	132.0	136.0	25.	4.05	4.06	45.0
10 Apr 1982	Lewes	2000	9	5.03	606.0	440.0	21.	4.48	4.58	15.0
	Oxford	1730	NAP	5.12	364.0	325.0	19.	3.82	4.22	33.0
12 Apr 1982	Whitewater	1900	NAP	5.03	300.0	210.0	19.	3.75	4.00	47.0
	Ithaca	1600	NAP	4.28	205.0	220.0	22.	3.98	3.90	62.0
	Penn State	1630	NAP	4.15	393.0	610.0	25.	4.20	4.11	36.0
	Illinois	1630	5	ISA	16.0	14.0	25.	3.98	ISA	ISA
	Oak Ridge	1530	7	5.07	904.0	885.0	21.	4.21	4.28	27.0
13 Apr 1982	Penn State	1630	NAP	ISA	30.0	17.0	25.	4.10	ISA	ISA
14 Apr 1982	Whitewater	1500	NAP	5.03	210.0	114.0	19.	3.88	4.01	49.0
	Ithaca	2000	NAP	4.28	70.0	100.0	23.	3.70	3.75	97.0
	Penn State	2200	NAP	ISA	5.0	17.0	ISA	ISA	ISA	ISA
	Brookhaven	1500	8	4.20	91.0	81.0	24.	3.87	4.12	71.0

MAP33 PRECIPITATION CHEMISTRY DATA (CONT.)

1A/

		T M E	L I D	A R R	S A M P	P F D	F T E L D	F I E L D	L A B	C O N D U C T
		P M V D	P E N	D A T E	V O L	V O L	P H	P H	P H	U M H O /C M
		7		MO,DA	ML	ML	C			
16 Apr 1982	Illinois	1700	2	5.14	379.0	340.0	25.	4.52	4.49	19.0
18 Apr 1982	Ithaca	2100	NAP	4.2A	510.0	500.0	23.	4.01	4.05	45.0
	Penn State	1900	NAP	5.20	104.0	85.0	25.	4.15	RPC	RPC
	Lewes	1700	4	5.03	1455.0	2160.0	1A.	4.82	5.03	7.2
	Oxford	2400	NAP	5.12	726.0	618.0	20.	3.80	4.31	27.0
19 Apr 1982	Whiteface	1530	NAP	5.03	2023.0	1760.0	20.	4.16	4.51	14.0
	Virginia	1230	5	5.12	637.0	730.0	23.	4.54	4.89	11.0
	Illinois	1700	4	5.14	944.0	1020.0	25.	4.66	4.66	16.0
	Brookhaven	200	3	5.04	1231.0	1220.0	24.	4.51	4.64	14.0
	Oak Ridge	1500	17	5.07	1380.0	1270.0	20.	4.85	4.54	17.0
20 Apr 1982	Illinois	1900	6	5.14	354.0	340.0	25.	4.24	4.32	28.0
21 Apr 1982	Whiteface	1430	NAP	5.03	418.0	290.0	19.	3.96	4.30	25.0
	Ithaca	2200	NAP	5.19	150.0	170.0	22.	4.04	4.09	45.0
	Lewes	1900	5	5.03	31.0	32.0	20.	3.34	18A	18A
	Oxford	1300	NAP	18A	26.0	32.0	1A.	3.57	18A	18A
26 Apr 1982	Illinois	1530	3	18A	17.0	18A	25.	4.34	18A	18A
27 Apr 1982	Whiteface	1500	NAP	5.20	155.0	130.0	19.	4.15	4.57	14.0
	Ithaca	2000	NAP	5.19	170.0	190.0	23.	4.34	4.43	17.0
	Penn State	1400	NAP	5.20	70.0	34.0	25.	5.71	18A	18A
	Illinois	1530	7	5.14	170.0	170.0	25.	4.49	5.03	45.0
	Brookhaven	1900	9	5.04	2247.0	2360.0	24.	4.86	4.88	11.0
	Lewes	1500	21	5.03	2356.0	2455.0	20.	4.96	4.96	8.2
	Oxford	1700	NAP	5.12	782.0	634.0	20.	4.06	4.51	14.0

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		T N E	L I D	A R R	S A M P	P F D	F T E L D	F T E L D	L A R	C O N D U C T
		R M V D	O P F N	O A T F	V O L	V O L	P H	P H	P H	U M H D /C M
		2		MO,DA	HL	ML	C			
28 Apr 1982	Penn State	1400	NAP	5.20	122.0	MDE	25.	3.82	3.61	130.0
	Virginia	1630	A	5.12	2225.0	2600.0	23.	4.30	4.37	19.0
	Brookhaven	1900	12	5.04	770.0	780.0	24.	3.84	3.94	58.0
	Lewes	2400	31	5.03	245.0	423.0	18.	3.45	4.01	56.0
	Oak Ridge	1530	49	5.07	1672.0	1610.0	20.	4.21	4.30	24.0
1 May 1982	Oxford	2230	NAP	ISA	5.0	16.0	ISA	ISA	ISA	ISA
3 May 1982	Whiteface	1500	NAP	5.20	120.0	81.0	19.	3.61	3.74	115.0
7 May 1982	Illinois	1500	10	5.14	596.0	560.0	25.	4.87	4.62	13.0
8 May 1982	Oxford	2030	14	6.11	3079.0	2760.0	25.	4.08	4.07	19.0
	Oak Ridge	1800	5	6.07	MDE	975.0	21.	4.35	4.37	20.0
9 May 1982	Penn State	1500	NAP	5.20	1258.0	450.0	25.	3.99	3.84	82.0
	Lewes	1800	14	6.07	412.0	420.0	18.	3.71	3.84	79.0
	Oxford	2200	2	ISA	26.0	32.0	25.	4.14	ISA	194
10 May 1982	Whiteface	1630	NAP	5.20	1617.0	790.0	20.	4.38	4.46	16.0
	Ithaca	1200	NAP	5.19	1125.0	1150.0	23.	4.01	4.08	41.0
13 May 1982	Penn State	2000	NAP	ISA	23.0	51.0	25.	3.60	ISA	ISA
	Lewes	1900	3	6.07	59.0	65.0	19.	3.17	ISA	ISA
17 May 1982	Ithaca	1400	NAP	6.04	30.0	51.0	24.	3.80	3.84	194
	Illinois	2000	3	6.08	374.0	390.0	25.	4.16	4.19	36.0
18 May 1982	Penn State	1330	NAP	5.20	528.0	440.0	25.	4.09	4.05	54.0
20 May 1982	Whiteface	1400	NAP	6.01	898.0	890.0	23.	3.90	4.06	44.0
	Penn State	1400	NAP	6.21	116.0	85.0	25.	3.70	3.67	140.0
	Virginia	1330	5	6.03	355.0	290.0	25.	3.99	4.10	40.0

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		T I M	L I D	A P R	S A M	P P F	F I L	F I L	C O N	
		M V D	N P E	N A T E	V O L	V O L	P H	P H	P H	U C T
		Z		MO, DA	ML	ML	C			LIKHO/CM
20 May 1982	Lewes	1430	R	6.07	101.0	130.0	19.	4.06	4.16	37.0
	Oxford	1530	Z	ISA	10.0	16.0	20.	3.82	ISA	ISA
21 May 1982	Whiteface	1330	NAP	6.01	711.0	680.0	21.	4.44	4.56	14.0
	Ithaca	1200	NAP	6.04	560.0	610.0	23.	3.76	3.81	78.0
	Penn State	1300	NAP	6.21	346.0	270.0	25.	4.10	4.10	55.0
	Illinois	1500	A	6.08	1360.0	1360.0	25.	4.12	4.29	32.0
	Brookhaven	1400	1	5.28	105.0	114.0	22.	3.88	3.93	74.0
	Oxford	1730	5	6.11	1020.0	1380.0	20.	3.97	4.37	25.0
22 May 1982	Oxford	1300	0	6.11	604.0	620.0	20.	3.80	4.16	42.0
23 May 1982	Lewes	1800	MOE	6.07	240.0	280.0	19.	3.80	3.95	63.0
	Oak Ridge	1700	50	6.07	1083.0	1090.0	23.	4.20	4.28	27.0
24 May 1982	Ithaca	1300	NAP	6.04	1870.0	1900.0	23.	3.84	3.94	55.0
	Brookhaven	1830	34	5.28	1318.0	1280.0	25.	4.35	4.38	20.0
	Lewes	1800	MOE	6.07	97.0	114.0	19.	4.30	4.64	21.0
25 May 1982	Whiteface	1600	NAP	6.01	379.0	340.0	19.	4.00	4.42	17.0
	Penn State	1300	NAP	6.21	2316.0	2180.0	25.	4.20	4.20	35.0
	Brookhaven	1730	3	5.28	622.0	550.0	25.	3.57	3.64	110.0
	Lewes	2000	MOE	ISA	20.0	32.0	19.	4.31	ISA	ISA
26 May 1982	Virginia	1700	15	6.03	854.0	820.0	23.	3.84	3.93	64.0
27 May 1982	Illinois	1630	5	6.08	957.0	970.0	25.	4.53	4.70	11.0
	Oxford	1600	1	6.11	1995.0	1930.0	20.	3.76	4.33	28.0
	Oak Ridge	1600	6	6.07	389.0	360.0	22.	4.25	4.29	25.0
28 May 1982	Penn State	1900	NAP	6.21	1771.0	1600.0	25.	4.06	4.44	17.0

MAPIS PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E		L I D		A P R		S A M P		P R E D		F I F L D		F I E L D		L A B		C O N D U C T	
		R M V D		N P E N		D A T E		V O L		V O L		P H		P H		P H			
		Z				MO.DA		ML		ML		C						UMHO/CM	
28 May 1982	Illinois	1430		4		ISA		1.3		14.0		ISA		ISA		ISA		ISA	
	Oxford	2100		4		6.11		184.0		180.0		20.		3.53		3.96		63.0	
	Oak Ridge	1530		6		6.07		757.0		750.0		22.		4.20		4.16		32.0	
29 May 1982	Virginia	MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE		MDE	
	Brookhaven	1830		7		6.10		848.0		780.0		22.		4.25		4.41		22.0	
	Lewis	2400		MDE		6.07		723.0		550.0		19.		4.27		4.34		23.0	
30 May 1982	Whiteface	1130		NAP		6.17		64.0		65.0		20.		4.09		4.35		ISA	
31 May 1982	Virginia	1300		MDE		6.03		1403.0		1500.0		25.		4.09		4.25		28.0	
	Lewis	1800		8		6.07		51.0		65.0		19.		3.67		3.84		ISA	
	Oxford	1700		12		6.11		1440.0		1590.0		23.		3.87		4.28		29.0	
1 Jun 1982	Whiteface	1330		NAP		6.17		70.0		65.0		20.		4.30		4.66		ISA	
	Ithaca	1200		NAP		6.04		1325.0		1410.0		22.		4.04		4.08		39.0	
	Penn State	1600		NAP		6.21		1262.0		1230.0		25.		4.18		4.15		36.0	
	Illinois	2000		14		6.08		3332.0		2750.0		25.		4.39		4.47		19.0	
	Oak Ridge	1700		7		7.09		1706.0		1630.0		21.		4.39		4.34		25.0	
2 Jun 1982	Whiteface	1800		NAP		6.17		2447.0		2170.0		18.		4.32		4.55		14.0	
	Ithaca	1200		NAP		6.23		900.0		920.0		22.		4.36		4.35		18.0	
	Penn State	1400		NAP		6.21		116.0		85.0		25.		3.99		3.89		75.0	
	Brookhaven	1430		6		6.10		3304.0		2960.0		22.		5.01		4.84		4.5	
	Lewis	1700		8		6.07		30.0		49.0		19.		4.15		ISA		ISA	
	Oxford	30		4		7.16		926.0		830.0		21.		4.08		4.44		17.0	
3 Jun 1982	Illinois	1500		5		ISA		ISA		27.0		194		194		194		194	
4 Jun 1982	Ithaca	1400		NAP		6.23		480.0		510.0		24.		3.86		3.96		55.0	

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

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		TIME		PRECIP		SAMP		FIELD		FIELD		CONDUCT	
		P	V	P	D	V	D	P	H	P	H	UMHO/CM	
		?			MP,DA	ML	ML		C				
4 Jun 1982	Penn State	1900		NAP	6.21	561.0	440.0	25.	4.10	3.93		60.0	
	Oak Ridge	2200		3	7.09	767.0	780.0	23.	4.10	4.07		44.0	
5 Jun 1982	Lewes	2300		37	7.01	2991.0	3070.0	18.	4.38	4.50		22.0	
	Oxford	1230		4	7.16	227.0	210.0	20.	3.72	4.04		45.0	
6 Jun 1982	Brookhaven	2300		12	6.10	7734.0	6925.0	20.	4.80	4.86		7.3	
7 Jun 1982	Whiteface	1300		NAP	6.17	2442.0	2150.0	20.	4.65	4.83		7.8	
	Ithaca	1200		NAP	6.23	3315.0	3530.0	24.	4.78	4.82		6.8	
	Penn State	1730		NAP	6.21	3784.0	3730.0	25.	4.65	4.43		17.0	
8 Jun 1982	Whiteface	1500		NAP	18A	18A	18A	18A	18A	18A		18A	
	Illinois	1430		7	7.09	332.0	340.0	25.	3.85	3.91		80.0	
	Lewes	1430		MOE	MOE	MOE	MOE	MOE	MOE	MOE		MOE	
	Oxford	1530		8	7.16	3443.0	2680.0	22.	3.77	4.12		37.0	
	Oak Ridge	2000		5	7.09	235.0	240.0	23.	4.50	4.54		17.0	
9 Jun 1982	Illinois	2100		54	7.09	207.0	240.0	25.	3.80	3.92		73.0	
10 Jun 1982	Oxford	1800		2	7.16	185.0	195.0	22.	3.85	3.98		61.0	
	Oak Ridge	2000		3	7.09	241.0	260.0	24.	4.20	4.42		25.0	
11 Jun 1982	Penn State	1800		NAP	6.21	1576.0	1430.0	25.	4.13	4.22		33.0	
12 Jun 1982	Oxford	1700		5	18A	23.0	50.0	22.	3.68	18A		18A	
14 Jun 1982	Ithaca	1500		NAP	6.23	185.0	220.0	24.	3.48	3.65		130.0	
	Penn State	1400		NAP	6.21	1493.0	MOE	25.	4.09	4.15		30.0	
	Illinois	1700		26	7.09	68.0	90.0	25.	4.04	4.11		77.0	
	Brookhaven	1500		27	7.06	1916.0	1840.0	24.	4.24	4.26		24.0	
	Lewes	1430		8	7.01	1661.0	1480.0	20.	4.11	4.24		36.0	

MAP3S PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E		L I D		A R R		S A M P		F P E D		F I E L D		F I E L D		L A R		C O N D U C T	
		R M V D		P F N		D A T E		V O L		V O L		P H		P H		P H			
		Z				MO.DA		ML		ML		C						UMHO/CM	
14 Jun 1982	Oak Ridge	1700		5		7.09		245.0		200.0		23.		3.9A		4.02		53.0	
15 Jun 1982	Illinois	1400		1		7.09		157.0		180.0		25.		4.29		4.33		29.0	
16 Jun 1982	Whiteface	2000		NAP		7.07		289.0		210.0		21.		3.78		3.90		60.0	
	Illinois	1800		9		7.09		1277.0		1330.0		25.		4.11		4.18		39.0	
	Oak Ridge	1700		3		7.09		492.0		500.0		21.		4.00		4.09		46.0	
17 Jun 1982	Ithaca	1400		NAP		6.23		3770.0		3670.0		24.		4.27		4.32		22.0	
	Penn State	1430		NAP		7.07		728.0		785.0		25.		3.99		4.00		46.0	
	Brookhaven	1400		2		7.06		1189.0		1120.0		24.		4.04		4.16		36.0	
	Oxford	1900		18		7.16		1517.0		1190.0		22.		3.82		4.27		32.0	
18 Jun 1982	Lewes	1430		4		7.01		521.0		600.0		20.		4.07		4.31		29.0	
	Oak Ridge	1600		6		7.09		546.0		570.0		21.		4.06		4.55		15.0	
19 Jun 1982	Brookhaven	2300		2		7.06		250.0		180.0		23.		4.59		4.76		8.7	
	Lewes	1600		2		7.01		118.0		130.0		20.		5.80		5.58		5.8	
20 Jun 1982	Penn State	1730		NAP		7.07		120.0		119.0		25.		3.99		3.90		62.0	
	Oxford	1300		2		7.16		111.0		70.0		21.		3.55		3.82		95.0	
21 Jun 1982	Whiteface	1700		NAP		7.07		446.0		406.0		19.		3.81		3.83		62.0	
	Ithaca	1200		NAP		7.15		170.0		180.0		24.		3.48		3.58		120.0	
	Penn State	1900		NAP		7.07		151.0		170.0		25.		3.89		3.91		63.0	
	Illinois	1700		18		7.09		2150.0		2130.0		25.		4.04		4.09		44.0	
	Oxford	1300		2		7.16		53.0		34.0		21.		3.67		1.8A		1.8A	
22 Jun 1982	Whiteface	1300		NAP		7.07		422.0		340.0		19.		4.33		4.46		14.0	
	Illinois	1700		1		7.09		71.0		100.0		25.		5.78		6.28		20.0	
	Oak Ridge	1600		1		7.09		360.0		360.0		21.		4.30		4.50		20.0	

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		T I U E	L I D	A R R	S A M	P P D	F I L D	F I L D	L A R	C O N D U C T I V
		R M V O	P E N	D A T E	V O L	V O L	P H	P H	P H	U M H O /C M
		Z		MO,DA	ML	ML	C			
23 Jun 1982	Ithaca	1200	NAP	7.15	680.0	670.0	24.	3.94	4.04	49.0
	Penn State	1330	NAP	7.07	327.0	307.0	25.	4.47	3.97	57.0
	Brookhaven	1300	2	7.06	178.0	160.0	23.	3.65	3.70	100.0
24 Jun 1982	Whiteface	1300	NAP	7.07	1492.0	1460.0	19.	4.36	4.41	22.0
	Oxford	1600	1	7.16	965.0	590.0	23.	4.53	4.66	18.0
27 Jun 1982	Brookhaven	1630	1	7.06	58.0	49.0	24.	3.35	184	158
28 Jun 1982	Ithaca	1200	NAP	7.15	230.0	240.0	24.	3.91	3.98	58.0
	Penn State	1200	NAP	7.07	873.0	820.0	25.	3.78	3.63	110.0
	Illinois	1900	5	7.09	171.0	200.0	25.	4.27	4.27	27.0
	Oxford	1200	5	7.16	182.0	100.0	22.	3.91	3.96	59.0
	Oak Ridge	1630	3	7.09	559.0	553.0	22.	4.39	4.60	13.0
29 Jun 1982	Penn State	1600	NAP	7.07	219.0	205.0	25.	3.90	3.68	788
	Illinois	2000	1	7.09	273.0	270.0	25.	3.96	3.97	58.0
30 Jun 1982	Whiteface	1430	NAP	7.12	1130.0	860.0	18.	4.37	4.38	21.0
	Ithaca	1300	NAP	7.15	1570.0	1600.0	24.	4.29	4.35	22.0
	Penn State	1300	NAP	7.07	191.0	170.0	25.	4.19	3.88	64.0
	Illinois	1600	1	7.09	80.0	100.0	25.	5.80	5.95	18.0
	Brookhaven	1500	4	7.16	504.0	490.0	24.	4.36	4.44	20.0
	Lewis	1800	8	8.06	187.0	150.0	22.	4.01	4.17	37.0
	Oxford	1300	4	7.16	2715.0	1280.0	20.	4.36	4.38	22.0
	Oak Ridge	1530	5	7.09	633.0	620.0	22.	4.41	4.50	16.0
1 Jul 1982	Whiteface	1500	NAP	7.12	194.0	195.0	18.	4.87	5.27	5.1
	Virginia	1330	2	7.09	1481.0	1470.0	25.	4.04	4.18	38.8

MAP39 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E	L I D	A R R	S A M P	P P E D	F I E L D	F I E L D	L A R	C O N C E N T
		R M V D	O P F N	D A T E	V O L	V O L	P H	P H	P H	UMHO/CM
		Z		MO,DA	ML	ML	C			
1 Jul 1982	Lewes	1800	10	8.06	81.0	80.0	22.	3.72	19A	19A
2 Jul 1982	Illinois	1600	3	7.09	261.0	270.0	25.	3.80	3.87	72.0
3 Jul 1982	Whitewater	1500	NAP	7.12	424.0	410.0	18.	4.66	4.77	12.0
4 Jul 1982	Penn State	1230	NAP	8.13	959.0	1060.0	25.	4.13	4.26	35.0
	Lewes	1700	26	8.06	845.0	810.0	21.	4.18	4.28	30.0
	Oxford	1100	2	8.16	80.0	80.0	24.	4.77	5.22	9.8
5 Jul 1982	Virginia	2330	3	8.09	608.0	550.0	23.	3.60	3.66	110.0
	Brookhaven	1500	13	7.16	206.0	230.0	22.	4.00	4.17	33.0
6 Jul 1982	Illinois	1600	6	8.17	5605.0	5870.0	25.	4.55	4.55	16.0
	Oak Ridge	1700	1	8.12	111.0	1350.0	22.	4.05	4.01	58.0
7 Jul 1982	Illinois	1300	3	19A	79.0	100.0	25.	3.99	19A	19A
8 Jul 1982	Whitewater	1300	NAP	8.10	624.0	440.0	19.	3.43	4.21	37.0
	Ithaca	1200	NAP	7.15	125.0	130.0	24.	3.83	3.94	60.0
	Oxford	2300	12	8.16	415.0	880.0	24.	3.98	4.12	41.0
9 Jul 1982	Brookhaven	1500	2	7.16	76.0	65.0	25.	3.59	3.59	120.0
	Oak Ridge	2000	2	8.12	841.0	830.0	25.	3.64	3.73	100.0
10 Jul 1982	Virginia	1530	5	8.09	550.0	540.0	23.	4.08	4.22	32.0
11 Jul 1982	Oxford	1200	2	8.16	112.0	110.0	24.	3.82	3.89	68.0
12 Jul 1982	Penn State	1230	NAP	8.13	190.0	200.0	25.	4.04	4.00	60.0
	Illinois	1600	2	8.17	322.0	310.0	25.	4.02	4.03	52.0
15 Jul 1982	Ithaca	1200	NAP	8.19	471.0	470.0	22.	3.68	3.73	88.0
	Lewes	1500	12	8.06	44.0	100.0	21.	3.64	3.76	100.0
18 Jul 1982	Whitewater	2300	NAP	8.10	185.0	110.0	27.	3.75	3.79	93.0

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E	L I D	A P R	S A M P	P R E D	F E L D	F E L D	L A B	C O N D U C T
		R V D	D P E N	D A T E	V O L	V O L	P H	P H	P H	UMHO/CM
		Z		MO,DA	ML	ML	C			
19 Jul 1982	Whiteface	2300	NAP	ISA	2.0	ISA	ISA	ISA	ISA	ISA
	Ithaca	1400	NAP	8.19	377.0	370.0	23.	4.04	4.10	36.0
	Penn State	1230	NAP	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	1330	5	8.09	222.0	210.0	23.	4.28	4.56	19.0
	Illinois	1600	NAP	8.17	304.0	170.0	25.	4.01	4.01	59.0
	Oxford	1800	2	8.16	1309.0	1280.0	25.	4.08	4.27	29.0
20 Jul 1982	Ithaca	2000	NAP	8.19	572.0	560.0	24.	4.47	4.41	12.0
	Penn State	1530	NAP	8.13	1920.0	1940.0	25.	4.16	4.05	44.0
	Brookhaven	1300	7	8.06	595.0	570.0	21.	3.99	4.08	43.0
	Oak Ridge	1600	12	8.12	2833.0	2280.0	22.	4.35	4.34	28.0
21 Jul 1982	Lewis	2400	6	8.06	2253.0	2280.0	21.	4.11	4.19	37.0
22 Jul 1982	Illinois	1600	19	8.17	546.0	530.0	25.	3.84	3.88	70.0
23 Jul 1982	Whiteface	1800	NAP	ISA	35.0	20.0	25.	4.14	ISA	ISA
	Illinois	1600	3	ISA	19.0	20.0	25.	3.99	ISA	ISA
	Oxford	1900	3	8.16	811.0	810.0	24.	3.96	4.04	46.0
24 Jul 1982	Virginia	1130	1	8.09	2247.0	2210.0	23.	4.42	4.61	14.0
	Lewis	1600	8	8.06	1226.0	MDE	22.	3.93	4.06	50.0
27 Jul 1982	Oak Ridge	1600	2	8.12	1689.0	1500.0	22.	4.10	4.08	45.0
28 Jul 1982	Penn State	1330	NAP	8.13	1510.0	1360.0	25.	3.80	3.80	80.0
	Illinois	1600	2	8.17	374.0	370.0	25.	3.78	3.80	73.0
	Brookhaven	1800	5	8.06	2121.0	2020.0	25.	4.04	4.14	38.0
	Oxford	1600	9	8.16	457.0	470.0	22.	3.56	3.73	94.0
29 Jul 1982	Whiteface	1800	NAP	8.10	3848.0	3830.0	18.	4.75	4.91	6.8

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		T I M E	L I D	A P R	S A M	P P D	F I L D	F I E L D	L A R	C O N D U C T
		R M V D	O P E N	D A T E	V O L	V O L	P H	P H	P H	U M H O /C M
		7		MO,DA	ML	ML	C			
29 Jul 1982	Ithaca	1400	NAP	8.19	2650.0	2620.0	24.	4.20	4.19	29.0
	Penn State	1230	NAP	8.13	75.0	90.0	25.	3.78	3.73	99.0
	Virginia	1430	4	8.09	1894.0	1420.0	23.	4.03	4.15	39.0
	Lewis	1800	13	8.06	892.0	930.0	21.	3.80	3.99	54.0
31 Jul 1982	Virginia	1630	3	8.09	2996.0	2910.0	22.	8.05	4.21	35.0
	Brookhaven	2100	6	8.06	39.0	35.0	21.	3.61	19A	19A
	Lewis	1500	23	8.06	2374.0	2310.0	21.	4.40	4.88	23.0
1 Aug 1982	Whiteface	1700	NAP	8.10	731.0	720.0	20.	3.85	3.97	61.0
3 Aug 1982	Virginia	0	2	19A	19A	19A	19A	19A	19A	19A
	Dak Ridge	1600	NAP	8.12	2108.0	5450.0	23.	3.99	4.01	53.0
4 Aug 1982	Whiteface	1400	NAP	8.17	165.0	160.0	19.	4.01	5.14	19A
	Ithaca	1300	NAP	8.19	252.0	270.0	24.	4.06	4.04	50.0
5 Aug 1982	Whiteface	1530	NAP	8.17	419.0	390.0	22.	4.16	4.35	25.0
	Ithaca	2000	NAP	8.19	100.0	100.0	24.	4.04	4.04	44.0
	Oxford	1600	2	9.08	1219.0	1180.0	27.	4.17	4.51	19.0
6 Aug 1982	Illinois	1600	3	8.17	656.0	880.0	25.	3.78	3.82	74.0
7 Aug 1982	Virginia	1330	4	19A	19A	19A	19A	19A	19A	19A
	Lewis	1500	MOE	9.16	3841.0	4620.0	21.	3.92	4.70	9.9
8 Aug 1982	Penn State	1730	NAP	8.13	374.0	380.0	25.	4.15	3.95	63.0
	Virginia	1700	1	9.08	754.0	780.0	22.	3.99	4.11	39.0
	Oxford	1200	4	9.08	151.0	150.0	22.	3.33	3.51	140.0
9 Aug 1982	Ithaca	1200	NAP	8.19	360.0	360.0	20.	3.42	3.41	170.0
	Virginia	1300	1	19A	19A	19A	19A	19A	19A	19A

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E		L I D		A R R		S A M P		P R D		F I E L D		F I E L D		L A R		C O N D U C T	
		R M V D		D P E N		D A T E		V O L		V O L		P H		P H		P H			
		7				MO,DA		ML		ML		C						UMHO/CM	
9 Aug 1982	Illinois	1630		5		9,10		186.0		NAP		25.		3.78		3.84		68.0	
10 Aug 1982	Whitface	1730		NAP		8,17		1368.0		1270.0		22.		4.11		4.25		29.0	
	Penn State	1230		NAP		8,13		2590.0		2200.0		25.		3.92		4.02		48.0	
	Virginia	1330		3		ISA		ISA		ISA		ISA		ISA		ISA		ISA	
	Illinois	1630		3		9,10		283.0		305.0		25.		5.79		5.92		5.9	
	Brookhaven	1500		6		8,27		1384.0		1300.0		22.		4.48		4.62		13.0	
	Lewes	1500		10		9,16		2535.0		2860.0		23.		4.40		5.24		3.0	
	Oak Ridge	1630		MOE		9,10		3749.0		3740.0		22.		4.30		4.35		20.0	
11 Aug 1982	Lewes	1400		10		ISA		26.0		30.0		23.		3.48		ISA		ISA	
	Oxford	1600		10		9,08		602.0		620.0		21.		3.97		4.19		32.0	
12 Aug 1982	Penn State	1230		NAP		9,29		232.0		190.0		25.		4.40		RPC		RPC	
	Virginia	1500		2		9,08		2906.0		2860.0		23.		3.45		3.89		58.0	
	Brookhaven	1400		15		8,27		414.0		410.0		22.		3.60		3.68		94.0	
	Lewes	200		18		9,16		241.0		240.0		22.		3.75		3.86		69.0	
	Oak Ridge	1600		MOE		9,10		556.0		550.0		21.		4.11		4.07		39.0	
14 Aug 1982	Ithaca	1400		NAP		8,19		44.0		60.0		20.		3.68		3.66		110.0	
15 Aug 1982	Virginia	2100		2		9,08		1306.0		1280.0		23.		4.00		4.07		38.0	
16 Aug 1982	Whitface	1400		NAP		9,08		NAP		1510.0		18.		4.82		4.99		8.1	
	Virginia	2230		1		9,08		1700.0		1660.0		24.		4.02		4.18		32.0	
17 Aug 1982	Ithaca	2000		NAP		9,16		655.0		700.0		24.		4.22		4.29		26.0	
	Virginia	1600		2		9,08		414.0		620.0		24.		4.06		4.18		33.0	
	Oak Ridge	1700		MOE		9,10		259.0		260.0		21.		3.96		3.96		46.0	
18 Aug 1982	Penn State	1230		NAP		9,29		530.0		390.0		25.		3.93		RPC		RPC	

MAP39 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E		L I D		A R R		S A M P		P R E D		F I L D		F I E L D		L A R		C O N D U C T	
		P M V R		O P E N		D A T E		V O L		V O L		P H		P H		P H			
		Z				MO,DA		ML		ML		C						UMHO/CM	
18 Aug 1982	Virginia	1800		5		9.08		537.0		490.0		23.		3.47		3.50		140.0	
	Brinkhaven	1400		1		8.27		411.0		370.0		28.		3.70		3.85		45.0	
	Lewes	1500		39		9.16		252.0		280.0		23.		3.84		3.53		140.0	
	Oak Ridge	1600		MOE		9.14		1165.0		1190.0		21.		4.11		4.11		33.0	
20 Aug 1982	Whiteface	1300		NAP		9.08		733.0		700.0		22.		4.20		4.34		26.0	
21 Aug 1982	Penn State	1900		NAP		9.29		272.0		150.0		25.		3.92		3.74		53.0	
	Lewes	1700		MOE		9.16		49.0		40.0		23.		3.58		1.84		1.84	
22 Aug 1982	Ithaca	100		NAP		9.16		595.0		610.0		24.		3.93		3.97		52.0	
	Oxford	1530		A		9.08		850.0		490.0		21.		3.52		3.71		100.0	
23 Aug 1982	Illinois	1930		NAP		9.10		809.0		980.0		25.		4.40		4.37		39.0	
24 Aug 1982	Whiteface	1330		NAP		9.08		602.0		630.0		22.		3.92		4.05		42.0	
	Ithaca	1600		NAP		9.16		200.0		210.0		24.		3.70		3.67		92.0	
	Penn State	1600		NAP		9.29		130.0		MOE		25.		3.85		3.74		81.0	
	Brinkhaven	1400		7		8.27		3142.0		2730.0		25.		4.23		4.34		26.0	
	Lewes	1630		10		9.16		529.0		520.0		23.		3.95		4.05		43.0	
	Oak Ridge	1600		MOE		9.14		1601.0		1560.0		21.		4.14		4.33		24.0	
25 Aug 1982	Penn State	1600		NAP		9.29		1015.0		990.0		25.		4.09		4.20		28.0	
	Illinois	1600		NAP		9.10		802.0		815.0		25.		4.23		4.22		34.0	
	Lewes	2100		MOE		1.84		19.0		30.0		24.		3.75		1.84		1.84	
	Oxford	1100		7		9.08		299.0		310.0		21.		3.58		3.76		85.0	
26 Aug 1982	Whiteface	1330		NAP		9.08		2063.0		1790.0		22.		4.30		4.35		21.0	
	Ithaca	1200		NAP		9.16		510.0		525.0		24.		4.15		4.13		35.0	
	Brinkhaven	1400		8		9.30		435.0		440.0		23.		3.99		4.03		42.0	

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E	L I D	A R R	S A V P	P R E D	F I F L D	F I F L D	L A R	C O N D U C T
		P H V D	P H E N	D A T E	V O L	V O L	P H T	P H	P H	UMPH/CM
		7		MO,DA	ML	ML	C			
27 Aug 1982	Virginia	30	7	ISA	ISA	ISA	ISA	ISA	ISA	ISA
28 Aug 1982	Whiteface	300	NAP	9.08	196.0	160.0	18.	3.94	4.01	50.0
	Penn State	1430	NAP	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	1700	4	ISA	106.0	80.0	23.	3.76	ISA	ISA
	Oxford	1600	8	9.08	63.0	100.0	20.	3.56	3.79	80.0
29 Aug 1982	Whiteface	1530	NAP	9.29	439.0	390.0	21.	5.30	5.33	2.9
30 Aug 1982	Illinois	1930	1	9.10	207.0	230.0	25.	3.83	3.79	76.0
31 Aug 1982	Ithaca	1900	NAP	9.16	190.0	150.0	25.	3.56	3.56	130.0
	Oxford	1330	4	9.08	66.0	80.0	24.	3.42	3.59	130.0
	Oak Ridge	2000	13	9.14	634.0	620.0	21.	4.12	3.95	54.0
1 Sep 1982	Illinois	1710	23	9.10	1860.0	1930.0	25.	4.35	4.33	21.0
2 Sep 1982	Whiteface	1930	NAP	9.29	331.0	290.0	22.	4.15	3.95	47.0
	Penn State	1530	NAP	9.29	234.0	240.0	25.	3.80	3.80	70.0
	Illinois	1600	3	9.10	236.0	210.0	25.	4.29	4.31	27.0
	Brookhaven	2100	16	9.30	1231.0	1240.0	24.	3.98	4.00	52.0
3 Sep 1982	Whiteface	1600	NAP	9.29	120.0	98.0	21.	4.30	4.29	24.0
	Ithaca	1300	NAP	9.16	708.0	740.0	24.	4.09	4.08	34.0
	Penn State	1430	NAP	9.29	523.0	MOF	25.	3.95	3.96	55.0
	Virginia	1800	2	MOF	134.0	110.0	25.	4.46	MOF	MOF
	Brookhaven	1400	3	ISA	39.0	50.0	24.	3.91	ISA	ISA
	Lewis	1900	MOF	ISA	19.0	30.0	24.	4.16	ISA	ISA
	Oxford	1700	9	10.05	247.0	290.0	21.	4.08	4.30	28.0
	Oak Ridge	1500	MOF	10.12	4818.0	4370.0	21.	4.26	4.31	21.0

MAP33 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T M E		L I D		A D R		S A M P		P R E D		F I E L D		F I E L D		L A R		C O N D U C T	
		R M V D		O P F N		D A T E		V O L		V O L		P H		P H		P H			
		Z				MO,DA		ML		ML		C						UMHMO/CM	
7 Sep 1982	Whiteface	1300		NAP		9.29		544.0		455.0		20.		3.93		3.93		53.0	
	Illinois	1600		70		ISA		31.0		184		25.		4.01		184		184	
8 Sep 1982	Penn State	1500		NAP		9.29		73.0		68.0		25.		4.12		4.17		45.0	
13 Sep 1982	Illinois	1600		15		10.19		328.0		310.0		25.		4.44		4.39		22.0	
14 Sep 1982	Illinois	1430		3		ISA		8.0		184		25.		4.23		184		184	
	Oak Ridge	1700		18		10.12		426.0		420.0		22.		4.28		4.22		26.0	
15 Sep 1982	Illinois	1600		1		10.19		110.0		160.0		25.		4.08		4.03		43.0	
16 Sep 1982	Whiteface	1500		NAP		9.29		1137.0		1010.0		21.		4.17		4.17		28.0	
	Ithaca	1800		NAP		10.18		806.0		830.0		24.		3.85		3.84		59.0	
	Penn State	1500		NAP		10.27		119.0		140.0		25.		3.63		3.62		120.0	
	Oak Ridge	2000		4		10.12		559.0		570.0		25.		4.07		4.09		34.0	
17 Sep 1982	Whiteface	1430		NAP		ISA		8.0		16.0		20.		3.77		184		184	
18 Sep 1982	Whiteface	2330		NAP		ISA		28.0		33.0		19.		3.83		184		184	
	Virginia	2100		9		ISA		184		184		184		184		184		184	
20 Sep 1982	Whiteface	1300		NAP		9.29		88.0		81.0		19.		5.20		5.63		3.7	
	Virginia	2000		3		10.12		501.0		490.0		25.		3.95		3.99		46.0	
	Illinois	1600		3		10.19		881.0		880.0		25.		4.15		4.05		39.0	
	Oxford	1600		3		ISA		16.0		33.0		21.		3.76		184		184	
21 Sep 1982	Brookhaven	1700		18		9.30		402.0		360.0		25.		3.99		4.00		49.0	
	Oxford	1400		1		10.05		24.0		100.0		18.		4.03		184		184	
	Oak Ridge	1700		6		10.12		93.0		80.0		21.		4.01		3.95		49.0	
22 Sep 1982	Virginia	1900		5		10.12		244.0		250.0		25.		3.73		3.78		76.0	
	Lewis	1500		47		11.03		827.0		810.0		22.		4.03		4.05		43.0	

MAP38 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E		L I O N		A R R		S A M P		P F E D		F I E L D		F I E L D		L A P		C O M D U C T	
		R M V D		D P E N		D A T E		V O L		V O L		P H		P H		P H			
		Z				MO,DA		ML		ML		C						UMHD/CM	
22 Sep 1982	Oxford	1700		1		10.05		27.0		110.0		19.		4.22		ISA		ISA	
23 Sep 1982	Ithaca	1900		NAP		10.18		2415.0		2430.0		25.		4.32		4.27		22.0	
	Virginia	2400		1		10.12		671.0		660.0		23.		4.26		4.32		22.0	
	Brookhaven	1500		22		9.30		165.0		180.0		25.		3.96		3.96		49.0	
	Oxford	2300		1		ISA		21.0		50.0		19.		4.10		ISA		ISA	
24 Sep 1982	Whiteface	1400		NAP		10.19		1411.0		1320.0		18.		5.25		4.05		6.7	
	Penn State	1500		NAP		10.27		971.0		840.0		25.		4.08		4.06		38.0	
	Illinois	1600		2		ISA		4.0		ISA		ISA		ISA		ISA		ISA	
25 Sep 1982	Oxford	1500		10		10.05		1120.0		1220.0		NAP		4.05		4.22		28.0	
27 Sep 1982	Ithaca	2000		NAP		10.18		1885.0		1910.0		25.		4.81		4.79		7.5	
	Penn State	1500		NAP		10.27		1476.0		1480.0		25.		4.30		4.30		22.0	
	Virginia	1400		7		10.12		2847.0		2820.0		21.		4.37		4.42		17.0	
	Illinois	2100		2		ISA		14.0		ISA		25.		5.60		ISA		ISA	
	Brookhaven	1800		14		10.29		424.0		440.0		24.		4.35		4.39		24.0	
	Lewis	1600		19		11.03		685.0		760.0		23.		4.66		4.66		27.0	
28 Sep 1982	Whiteface	1700		NAP		10.19		1249.0		1070.0		18.		4.78		4.67		8.2	
	Penn State	1500		NAP		ISA		ISA		ISA		ISA		ISA		ISA		ISA	
	Oxford	1700		NAP		10.05		1068.0		1090.0		21.		3.77		3.99		45.0	
	Oak Ridge	1700		9		10.12		1370.0		1330.0		20.		4.06		4.08		37.0	
29 Sep 1982	Whiteface	1500		NAP		10.19		102.0		65.0		18.		4.32		4.31		21.0	
1 Oct 1982	Lewis	1300		MOE		ISA		23.0		14.0		22.		3.98		ISA		ISA	
2 Oct 1982	Whiteface	2400		NAP		10.19		725.0		699.0		20.		3.98		4.02		45.0	
4 Oct 1982	Illinois	1630		1		ISA		35.0		ISA		5.		ISA		ISA		ISA	

MAP38 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T M E		L I D		A P R		S A W P		P R F D		F I E L D		F I E L D		L A B		C O N D U C T	
		R M V O		O P E N		D A T E		V O L		V O L		P H		P H		P H			
		Z				MO,DA		ML		ML		C						UMH0/CM	
5 Oct 1982	Penn State	1600		NAP		ISA		ISA		68.0		ISA		ISA		ISA		ISA	
	Virginia	2030		1		11.08		854.0		830.0		22.		3.68		3.72		84.0	
7 Oct 1982	Oxford	2200		5		11.08		715.0		620.0		23.		4.25		4.50		14.0	
8 Oct 1982	Whitface	1430		NAP		10.19		1906.0		1820.0		20.		4.36		4.39		18.0	
	Ithaca	1200		NAP		10.18		140.0		150.0		25.		3.88		3.88		67.0	
	Penn State	2030		NAP		10.27		124.0		120.0		25.		3.94		3.96		53.0	
	Illinois	1530		NAP		11.12		940.0		960.0		25.		4.88		4.75		12.0	
	Oak Ridge	1730		A		11.03		1059.0		1060.0		21.		4.35		4.29		21.0	
10 Oct 1982	Whitface	2400		NAP		10.19		54.0		49.0		18.		3.88		3.99		19A	
	Virginia	1800		7		11.08		410.0		380.0		22.		3.89		3.91		51.0	
	Brookhaven	200		6		10.29		356.0		NAP		23.		3.90		3.91		60.0	
	Oxford	15		A		11.08		NAP		260.0		24.		3.86		4.08		36.0	
11 Oct 1982	Illinois	1500		3		11.12		451.0		450.0		25.		4.55		4.44		20.0	
12 Oct 1982	Ithaca	1200		NAP		10.18		140.0		130.0		25.		NAP		3.85		60.0	
	Penn State	1530		NAP		10.27		234.0		340.0		25.		3.97		3.92		60.0	
	Virginia	1600		NAP		11.08		187.0		128.0		23.		4.04		4.19		30.0	
	Oak Ridge	1600		A		11.03		208.0		160.0		20.		4.38		4.31		23.0	
13 Oct 1982	Oxford	1500		2		ISA		ISA		ISA		ISA		ISA		ISA		19A	
	Oak Ridge	2030		A		11.03		2416.0		2360.0		18.		4.40		4.28		21.0	
14 Oct 1982	Whitface	1400		NAP		10.19		105.0		98.0		19.		3.73		3.76		79.0	
	Penn State	1800		NAP		10.27		501.0		560.0		25.		4.02		3.98		43.0	
	Virginia	1530		A		11.08		1401.0		1340.0		23.		4.20		4.33		20.0	
	Brookhaven	1400		15		10.29		278.0		310.0		24.		3.95		3.95		50.0	

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E		L I D		A R R		S A M P		P R E D		F I E L D		F I E L D		L A R		C O N D U C T	
		R M V D		O P E N		D A T E		V O L		V O L		P H		P H		P H			
		7				MO,DA		ML		ML		C						UMHD/CM	
15 Oct 1982	Whiteface	2000		NAP		11.09		679.0		650.0		18.		4.71		4.66		9.8	
	Ithaca	2000		NAP		11.17		310.0		310.0		25.		4.25		4.17		30.0	
17 Oct 1982	Penn State	1330		NAP		10.27		227.0		220.0		25.		4.30		4.26		27.0	
	Lewis	1830		NAP		11.03		351.0		490.0		18.		4.33		4.41		20.0	
18 Oct 1982	Whiteface	1430		NAP		11.09		156.0		150.0		18.		4.80		4.87		7.1	
	Ithaca	1400		NAP		11.17		490.0		470.0		25.		4.89		4.86		7.4	
20 Oct 1982	Illinois	1500		NAP		11.12		1871.0		1840.0		25.		4.41		4.34		21.0	
	Oxford	2200		2		11.08		436.0		340.0		15.		4.12		4.05		18.0	
21 Oct 1982	Ithaca	2100		NAP		11.17		269.0		240.0		25.		4.48		4.47		18.0	
	Penn State	1730		NAP		10.27		493.0		450.0		25.		4.62		4.84		13.0	
	Virginia	1930		3		11.08		286.0		240.0		22.		4.34		4.39		18.0	
	Brookhaven	1400		5		10.29		215.0		195.0		24.		4.63		4.69		12.0	
	Lewis	1530		MOE		11.03		337.0		260.0		23.		4.30		4.35		25.0	
	Gay Ridge	1630		7		11.03		288.0		240.0		20.		4.05		4.03		43.0	
22 Oct 1982	Whiteface	1500		NAP		11.09		134.0		98.0		18.		4.32		4.28		25.0	
26 Oct 1982	Virginia	2030		MOE		11.08		MOE		MOE		22.		4.67		4.72		12.0	
	Brookhaven	1500		17		10.29		2607.0		2550.0		23.		4.68		4.65		20.0	
27 Oct 1982	Lewis	1600		MOE		11.03		3144.0		3450.0		20.		4.92		4.89		64.0	
29 Oct 1982	Illinois	1600		NAP		11.12		158.0		140.0		25.		4.67		4.51		17.0	
1 Nov 1982	Whiteface	1530		NAP		11.09		467.0		410.0		18.		4.17		4.09		34.0	
	Ithaca	1400		NAP		11.17		284.0		330.0		25.		4.07		4.05		35.0	
	Oxford	1530		1		11.08		254.0		240.0		22.		3.52		3.47		62.0	
2 Nov 1982	Whiteface	1900		NAP		11.09		745.0		585.0		19.		4.10		4.11		33.0	

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E		L I D		A R R		S A M P		P R E D		F I L D		F I E L D		C O N D U C T	
		R M V D		O P E N		D A T E		V O L		V O L		P H		P H		P H	
		Z		MO, DA		ML		ML		C		UMHO/CM					
2 Nov 1982	Illinois	1400		11	11.12	2460.0		2370.0		25.		4.46		4.40		21.0	
	Oxford	1530		1	18A	6.5		18A		18A		18A		18A		18A	
3 Nov 1982	Illinois	1600		1	12.10	186.0		163.0		25.		4.38		4.32		27.0	
4 Nov 1982	Oxford	1530		5	12.07	541.0		550.0		11.		3.92		4.26		26.0	
	Oak Ridge	1900		10	12.14	4147.0		3660.0		10.		4.51		4.50		14.0	
5 Nov 1982	Whiteface	1930		NAP	11.24	3205.0		2910.0		19.		4.68		4.62		9.1	
	Ithaca	1300		NAP	11.17	2612.0		2600.0		26.		4.38		4.27		21.0	
	Penn State	1330		NAP	12.09	1486.0		1245.0		25.		4.30		4.30		21.0	
	Virginia	1700		8	12.14	573.0		520.0		21.		4.47		4.53		17.0	
	Brookhaven	1500		22	11.19	1337.0		1450.0		20.		4.93		4.89		11.0	
	Lewis	1800		NAP	12.14	663.0		670.0		21.		4.54		4.56		16.0	
10 Nov 1982	Whiteface	1400		NAP	18A	18A		18A		18A		18A		18A		18A	
11 Nov 1982	Oxford	2300		1	12.07	273.0		260.0		19.		3.56		3.94		54.0	
12 Nov 1982	Whiteface	1330		NAP	11.24	169.0		98.0		19.		4.37		4.32		20.0	
	Ithaca	1300		NAP	11.17	310.0		340.0		26.		4.17		4.09		34.0	
	Penn State	1330		NAP	12.09	118.0		102.0		25.		3.82		3.97		50.0	
	Illinois	1500		15	12.10	1062.0		1130.0		25.		5.56		5.83		12.0	
	Oxford	1800		6	12.07	1195.0		1200.0		16.		4.16		4.67		11.0	
13 Nov 1982	Penn State	1630		NAP	12.09	532.0		400.0		25.		4.74		4.78		17.0	
	Virginia	2100		11	12.14	133.0		96.0		20.		4.62		4.73		22.0	
	Lewis	1400		NAP	12.14	2394.0		2390.0		20.		4.65		4.72		35.0	
14 Nov 1982	Whiteface	1700		NAP	11.24	776.0		700.0		19.		4.68		4.20		27.0	
	Brookhaven	30		5	11.19	2121.0		2110.0		24.		4.77		4.76		19.0	

MAPSS PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E		L I D		A R R		S A M P		P E D		F I E L D		F I E L D		L A B		C O N D U C T	
		R M V D		O P E N		O A T E		V O L		V O L		P H		P H		P H			
		7				MO,DA		ML		ML		C						UMHD/CM	
15 Nov 1982	Ithaca	1300		NAP		12.03		405.0		420.0		26.		4.48		4.49		19.0	
	Brookhaven	1700		6		11.19		469.0		460.0		24.		4.25		4.34		2.0	
	Lewis	1500		NAP		12.14		1590.0		1500.0		18.		4.41		4.53		17.0	
	Oak Ridge	1530		3		12.14		1494.0		1460.0		20.		4.57		4.64		13.0	
16 Nov 1982	Whiteface	1400		NAP		12.14		50.0		50.0		19.		4.65		19A		19A	
19 Nov 1982	Illinois	1630		7		12.10		34.0		34.0		25.		4.00		3.93		61.0	
	Oak Ridge	1430		12		12.14		1856.0		1870.0		19.		4.02		4.06		42.0	
20 Nov 1982	Oxford	2100		9		12.07		774.0		780.0		18.		4.50		4.44		16.0	
21 Nov 1982	Virginia	2200		12		12.14		148.0		195.0		21.		3.60		3.61		164.0	
22 Nov 1982	Whiteface	1400		NAP		12.14		204.0		80.0		19.		4.55		4.49		15.0	
	Ithaca	1400		NAP		12.03		845.0		1120.0		26.		4.18		4.12		29.0	
	Illinois	2000		5		12.10		2059.0		2110.0		25.		4.99		4.44		18.0	
	Oxford	1500		16		12.07		3585.0		2540.0		16.		WDE		4.48		15.0	
23 Nov 1982	Whiteface	1330		NAP		12.14		634.0		420.0		19.		4.46		4.35		19.0	
	Penn State	1600		NAP		12.09		1629.0		1280.0		25.		4.21		4.05		43.0	
	Illinois	1500		4		12.10		600.0		258.0		25.		4.29		4.27		27.0	
24 Nov 1982	Ithaca	1900		NAP		12.03		545.0		520.0		25.		4.07		4.03		36.0	
	Penn State	1400		NAP		12.09		177.0		140.0		25.		4.03		3.98		53.0	
	Illinois	2000		1		12.10		59.0		41.0		25.		4.16		4.10		57.0	
	Brookhaven	1900		7		12.17		80.0		98.0		24.		3.92		3.88		61.0	
	Lewis	1700		NAP		13A		33.0		49.0		20.		3.84		18A		18A	
	Oxford	1700		12		12.07		915.0		1060.0		11.		4.26		4.18		28.0	
	Oak Ridge	1400		18		12.14		1710.0		1670.0		20.		4.49		4.40		19.0	

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		T I M E	L I D	A R R	S A M P	P R E D	F I E L D	F I E L D	L A B	C O N D U C T
		R M V D	D P F N	D A T E	V O L	V O L	P H	P H	P H	UMHD/CM
		Z		MO,DA	ML	ML	C			
25 Nov 1982	Whiteface	2400	NAP	12,14	545.0	290.0	20.	4.31	4.27	24.0
27 Nov 1982	Whiteface	2000	NAP	12,14	154.0	65.0	18.	4.52	4.43	19.0
	Penn State	1300	NAP	12,09	91.0	51.0	25.	4.61	4.44	21.0
	Brookhaven	1600	1	194	22.0	16.0	24.	5.52	19A	19A
	Oxford	2200	11	12,07	405.0	360.0	12.	4.50	4.44	15.0
28 Nov 1982	Oxford	2100	2	12,07	1205.0	1090.0	17.	MOF	4.44	15.0
29 Nov 1982	Penn State	1300	NAP	12,09	1530.0	1070.0	25.	4.55	4.66	9.4
	Virginia	2130	5	12,14	2492.0	2380.0	21.	4.48	4.47	16.0
	Illinois	1830	11	12,10	1698.0	1870.0	25.	4.53	4.41	16.0
	Brookhaven	1600	7	12,17	2032.0	2110.0	24.	4.98	5.57	1.7
	Lewis	1400	NAP	12,14	2567.0	2520.0	21.	4.63	4.66	12.0
	Oxford	1530	1	12,07	96.0	81.0	14.	MOF	19A	19A
30 Nov 1982	Whiteface	1400	NAP	12,14	594.0	330.0	18.	4.59	4.55	13.0
	Ithaca	1300	NAP	12,03	860.0	830.0	25.	4.51	4.45	14.0
	Penn State	1530	NAP	12,09	59.0	34.0	25.	3.99	19A	19A
	Oak Ridge	1530	29	12,14	1933.0	1950.0	14.	4.15	4.17	31.0
2 Dec 1982	Penn State	1400	NAP	19A	12.0	19A	25.	3.92	19A	19A
	Illinois	1330	1	12,10	27.5	19A	25.	4.42	4.36	31.0
	Brookhaven	1600	4	12,17	339.0	325.0	24.	4.47	4.55	12.0
	Oxford	1500	2	1,04	MOE	65.0	MOE	MOE	MOE	MOE
	Oak Ridge	1430	6	1,10	4442.0	4310.0	18.	4.80	4.76	6.8
3 Dec 1982	Whiteface	1300	NAP	12,14	87.0	50.0	18.	4.30	4.22	29.0
	Virginia	2130	10	12,14	923.0	890.0	21.	4.40	4.42	17.0

MAP33 PRECIPITATION CHEMISTRY DATA (CONT.)

3A/

		T M F	L I D	A P R	S A M P	P R F D	F I E L D	F I E L D	L A B	C O N D U C T
		R M V D	D P E N	D A T E	V O L	V O L	P H	P H	P H	U M H D /C M
		7		MO,DA	ML	ML	C			
3 Dec 1982	Illinois	1330	10	1.12	1323.0	1420.0	25.	4.53	4.46	15.0
	Lewis	1500	NAP	12.14	759.0	800.0	20.	4.15	4.27	25.0
	Oxford	2200	1	1.06	185.0	195.0	10.	4.49	4.29	24.0
4 Dec 1982	Oxford	2130	1	ISA	19.0	33.0	HDE	HDF	ISA	ISA
5 Dec 1982	Whiteface	1430	NAP	12.28	297.0	293.0	18.	4.29	4.18	23.0
	Oxford	2230	7	1.06	172.0	195.0	10.	4.89	4.81	9.7
6 Dec 1982	Whiteface	2000	NAP	12.28	461.0	360.0	18.	4.21	4.11	27.0
	Penn State	1630	NAP	1.06	527.0	400.0	25.	4.32	4.37	18.0
	Illinois	1700	15	1.12	1769.0	1850.0	25.	4.48	4.39	16.0
	Lewis	1800	NAP	12.14	1077.0	1060.0	22.	4.77	4.73	9.7
	Oxford	1500	2	1.06	113.0	114.0	12.	4.36	4.24	27.0
	Gay Ridge	1500	10	1.10	1471.0	1430.0	19.	4.88	5.01	4.8
7 Dec 1982	Whiteface	1400	NAP	ISA	3.0	ISA	ISA	ISA	ISA	ISA
	Ithaca	1300	NAP	1.06	270.0	260.0	25.	4.34	4.25	22.0
	Penn State	1430	NAP	ISA	16.0	ISA	25.	3.97	ISA	ISA
	Brookhaven	1500	12	12.17	492.0	500.0	24.	4.66	4.77	20.0
	Oxford	2200	2	ISA	16.0	16.0	HDE	HDE	ISA	ISA
8 Dec 1982	Whiteface	1330	NAP	ISA	4.0	ISA	ISA	ISA	ISA	ISA
9 Dec 1982	Whiteface	1400	NAP	12.28	447.0	180.0	20.	4.21	4.09	29.0
	Illinois	1700	7	ISA	2.8	ISA	ISA	ISA	ISA	ISA
10 Dec 1982	Ithaca	1400	NAP	1.06	450.0	650.0	27.	4.37	4.28	20.0
	Illinois	1700	2	1.12	407.0	190.0	25.	4.39	4.26	22.0
11 Dec 1982	Oxford	2000	12	1.06	101.0	114.0	11.	4.26	4.20	26.0

MAP3S PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E	L I D	A R P	S A M P	P R F D	F I E L D	F I E L D	L A R P H	C O N D U C T
		R M V D	O P E N	D A T E	V O L	V O L	P H	P H	P H	U M H O /C M
		Z		MO,DA	ML	ML	C			
13 Dec 1982	Whiteface	1400	NAP	12.28	180.0	65.0	19.	4.24	4.14	29.0
	Ithaca	1300	NAP	1.06	210.0	260.0	25.	4.19	4.08	30.0
	Virginia	1630	0	1.12	1692.0	471.0	21.	4.41	4.41	16.0
	Brookhaven	1500	23	12.17	138.0	130.0	23.	4.08	4.03	43.0
	Lewes	1530	NAP	1.17	1027.0	630.0	17.	4.16	4.31	27.0
	Oak Ridge	1800	235	1.10	2217.0	2330.0	19.	4.43	4.39	17.0
14 Dec 1982	Penn State	1430	NAP	15A	6.0	18A	18A	18A	18A	18A
	Illinois	1430	1	1.12	178.0	150.0	25.	4.68	4.64	11.0
16 Dec 1982	Whiteface	2000	NAP	12.28	1311.0	780.0	19.	4.72	4.59	8.7
	Virginia	2200	3	1.12	2142.0	2890.0	21.	4.61	4.59	12.0
	Oxford	1500	6	1.06	1717.0	1690.0	12.	4.62	4.39	15.0
	Oak Ridge	1430	10	1.10	1457.0	1410.0	17.	4.53	4.47	14.0
17 Dec 1982	Ithaca	1300	NAP	1.06	685.0	690.0	24.	4.45	4.34	15.0
	Penn State	1530	NAP	1.06	1258.0	1010.0	25.	4.33	4.35	15.0
	Brookhaven	2100	0	1.06	1120.0	1300.0	25.	5.19	5.28	14.0
	Lewes	1500	NAP	1.17	600.0	600.0	19.	5.54	5.65	12.0
19 Dec 1982	Oxford	1800	5	1.06	306.0	309.0	15.	4.17	4.10	32.0
20 Dec 1982	Penn State	1530	NAP	1.06	315.0	260.0	25.	4.11	4.07	28.0
	Virginia	2230	3	1.12	176.0	160.0	20.	4.29	4.27	22.0
	Illinois	1430	3	1.12	48.0	34.0	25.	4.90	4.90	14.0
	Brookhaven	2000	0	1.06	323.0	310.0	25.	4.34	4.91	5.2
	Oxford	1500	7	18A	27.0	16.0	12.	5.30	18A	18A
21 Dec 1982	Ithaca	2200	NAP	1.06	770.0	830.0	23.	4.26	4.14	23.0

MAP39 PRECIPITATION CHEMISTRY DATA (CONT.)

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		T I M E		L I D		P R P		S A M P		P R E D		F I E L D		F I E L D		L A R		C O N D U C T	
		P M V D		D P E N		D A T E		V O L		V O L		P H		P H		P H			
		Z				MO,DA		ML		ML		C						UMHO/CM	
21 Dec 1982	Oak Ridge	1600		A		1.10		302.0		290.0		20.		3.90		3.83		63.0	
22 Dec 1982	Whiteface	1300		NAP		1.17		247.0		240.0		19.		4.12		4.04		35.0	
23 Dec 1982	Oxford	2000		7		1.06		211.0		160.0		16.		4.08		3.97		43.0	
24 Dec 1982	Ithaca	1600		NAP		1.06		425.0		420.0		22.		4.38		4.28		20.0	
	Penn State	1400		NAP		1.06		242.0		140.0		25.		4.16		3.92		41.0	
	Illinois	1730		3		1.12		1399.0		1445.0		25.		4.60		4.59		12.0	
	Brookhaven	1500		18		1.06		201.0		210.0		24.		4.00		3.88		48.0	
25 Dec 1982	Whiteface	2400		NAP		1.17		102.0		210.0		20.		4.26		4.19		25.0	
	Penn State	1300		NAP		1.06		41.0		36.0		25.		4.59		194		194	
26 Dec 1982	Penn State	1700		NAP		1.06		34.0		17.0		25.		4.28		194		194	
	Brookhaven	1900		2		194		194		194		194		194		194		194	
27 Dec 1982	Whiteface	1400		NAP		194		MOE		MOE		MOE		MOE		MOE		MOE	
	Ithaca	1600		NAP		1.06		320.0		310.0		24.		4.19		4.08		30.0	
28 Dec 1982	Whiteface	1530		NAP		1.17		212.0		211.0		20.		4.65		4.58		9.3	
	Penn State	1300		NAP		1.06		244.0		150.0		25.		4.38		4.27		18.0	
	Virginia	2030		8		194		68.0		32.0		26.		3.91		194		194	
	Oxford	1400		31		1.06		3675.0		3920.0		18.		4.71		4.47		13.0	
29 Dec 1982	Ithaca	1900		NAP		1.06		215.0		200.0		24.		4.25		4.16		20.0	
	Penn State	1300		NAP		1.06		33.0		34.0		25.		4.17		194		194	
	Oak Ridge	1530		22		1.10		2160.0		2110.0		17.		4.42		4.38		20.0	
30 Dec 1982	Whiteface	2000		NAP		1.17		43.0		30.0		20.		4.13		194		194	
	Brookhaven	1500		6		1.06		198.0		230.0		24.		4.31		4.21		23.0	
	Lanes	1900		NAP		1.17		671.0		520.0		16.		4.19		4.20		25.0	

MISSING DATA CODES:

NSC	MEANS	NO SAMPLE COLLECTED
TSA	MEANS	INSUFFICIENT SAMPLE FOR ANALYSIS
NAP	MEANS	NO ANALYSIS PERFORMED
MOE	MEANS	MALEFUNCTION OR OPERATOR ERROR
RPC	MEANS	REJECTED - PROBABLE CONTAMINATION

		(S O 2)	(S O 4 =	(N O 2 =	(N O 3 =	(C L =	(P O 4 =
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
1 Jan 1982	Virginia	4.2	6.9	0.28	13.0	9.00	<0.20
	Lewes	<0.2	9.4	0.17	4.4	100.00	<0.20
	Oxford	4.8	13.0	0.09	7.5	2.20	<0.20
2 Jan 1982	Penn State	2.7	7.6	0.10	21.0	6.10	<0.20
	Brookhaven	0.5	6.2	0.07	2.0	49.00	<0.20
3 Jan 1982	Whiteface	0.4	15.0	0.12	20.0	2.10	<0.20
4 Jan 1982	Oxford	9.1	15.0	0.12	12.0	2.90	<0.20
	Oak Ridge	<0.2	28.0	0.11	61.0	7.20	<0.20
5 Jan 1982	Ithaca	3.0	10.0	0.16	16.0	1.90	<0.20
	Penn State	7.3	11.0	0.28	11.0	2.60	<0.20
	Virginia	2.0	12.0	0.29	14.0	2.70	<0.20
	Illinois	NDE	23.0	0.07	14.0	2.90	<0.20
	Brookhaven	<0.2	10.0	0.08	5.5	78.00	<0.20
	Lewes	<0.2	12.0	<0.10	6.6	49.00	<0.20
6 Jan 1982	Whiteface	0.8	6.4	0.13	13.0	1.10	<0.20
7 Jan 1982	Penn State	7.5	62.0	0.58	100.0	40.00	<0.20
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	RPC	RPC	RPC	RPC	RPC	RPC
8 Jan 1982	Ithaca	2.2	14.0	0.10	48.0	3.70	<0.20
	Brookhaven	2.4	ISA	ISA	ISA	ISA	ISA
9 Jan 1982	Penn State	1.4	26.0	0.18	77.0	27.00	<0.20
	Oxford	<0.2	5.3	0.27	74.0	4.00	<0.20
11 Jan 1982	Whiteface	<0.2	16.0	0.14	83.0	4.30	<0.20

		(S O 2)	(S O 4 =)	(N O 2 =)	(N O 3 =)	(C L =)	(P O 4 =)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
12 Jan 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
13 Jan 1982	Illinois	MDE	8.4	0.29	36.0	7.40	<0.20
14 Jan 1982	Ithaca	<0.2	5.3	0.06	39.0	15.00	<0.20
	Penn State	0.6	9.0	0.21	40.0	7.90	<0.20
	Brookhaven	3.8	8.6	0.15	11.0	18.00	<0.20
	Oxford	<0.2	6.0	0.18	25.0	11.00	<0.20
15 Jan 1982	Whiteface	<0.2	2.7	<0.10	25.0	5.40	<0.20
	Virginia	<0.2	3.2	0.17	23.0	4.30	<0.20
	Lewis	0.9	14.0	0.07	17.0	39.00	<0.20
	Oak Ridge	0.7	7.6	0.09	17.0	3.90	<0.20
17 Jan 1982	Brookhaven	2.0	ISA	ISA	ISA	ISA	ISA
18 Jan 1982	Penn State	<0.2	19.0	0.07	91.0	11.00	<0.20
	Illinois	MDE	11.0	0.23	21.0	6.00	<0.20
	Oxford	<0.2	16.0	0.10	79.0	9.10	<0.20
20 Jan 1982	Virginia	5.4	30.0	0.34	43.0	12.00	<0.20
	Lewis	ISA	25.0	0.35	62.0	51.00	<0.20
21 Jan 1982	Penn State	1.6	29.0	0.30	65.0	11.00	<0.20
	Illinois	MDE	34.0	<0.10	58.0	7.80	<0.20
	Oxford	5.1	16.0	0.13	11.0	3.90	<0.20
22 Jan 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Ithaca	<0.2	17.0	0.18	41.0	12.00	<0.20
	Lewis	<0.2	5.8	0.10	37.0	14.00	<0.20
23 Jan 1982	Illinois	MDE	33.0	0.27	48.0	7.60	<0.20

		(S) SO ₂	(S) SO ₄	(N) NO ₂	(N) NO ₃	(C) CL	(P) PO ₄
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
23 Jan 1982	Oxford	4.7	16.0	0.11	11.0	3.90	<0.20
24 Jan 1982	Virginia	9.7	59.0	0.21	140.0	8.60	<0.20
	Brookhaven	<0.2	11.0	0.08	4.0	27.00	<0.20
25 Jan 1982	Whiteface	<0.2	11.0	<0.10	14.0	2.20	<0.20
	Ithaca	<0.2	3.8	<0.10	7.3	3.70	<0.20
	Lewes	<0.2	19.0	0.09	12.0	66.00	<0.20
	Oak Ridge	2.0	29.0	0.26	23.0	16.00	<0.20
26 Jan 1982	Penn State	<0.2	5.4	0.10	8.9	4.40	<0.20
	Illinois	NDP	29.0	0.21	17.0	3.70	<0.20
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA
29 Jan 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Ithaca	ISA	36.0	0.28	98.0	39.00	<0.20
1 Feb 1982	Ithaca	7.5	23.0	0.18	33.0	6.40	<0.20
	Virginia	<0.2	23.0	0.27	17.0	64.00	<0.20
	Brookhaven	<0.2	25.0	0.07	13.0	110.00	<0.20
	Lewes	<0.2	2.8	0.30	0.7	59.00	<0.20
	Oxford	10.0	22.0	0.11	13.0	5.50	<0.20
	Oak Ridge	<0.2	9.8	0.11	6.0	3.40	<0.20
2 Feb 1982	Whiteface	<0.2	3.9	<0.10	5.3	1.30	<0.20
	Penn State	0.1	39.0	0.18	34.0	12.00	<0.20
	Illinois	3.4	22.0	0.13	17.0	3.70	<0.20
3 Feb 1982	Lewes	<0.2	21.0	<0.10	17.0	93.00	<0.20
4 Feb 1982	Ithaca	3.5	7.4	0.20	7.7	7.30	<0.20

		(S O 2)	(S O 4 =	(N O 2 =	(N O 3 =	(C L =	(P O 4 =
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
4 Feb 1982	Penn State	11.0	16.0	<0.10	12.0	2.60	<0.20
	Virginia	<0.2	8.7	0.20	8.7	2.50	<0.20
	Brookhaven	<0.2	16.0	<0.10	5.5	76.00	<0.20
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	2.4	32.0	0.13	5.8	4.50	<0.20
5 Feb 1982	Whiteface	<0.2	6.1	<0.10	6.8	<1.00	<0.20
	Oxford	6.3	24.0	0.14	25.0	4.40	<0.20
8 Feb 1982	Whiteface	<0.2	15.0	<0.10	52.0	2.90	<0.20
	Ithaca	RPC	RPC	RPC	RPC	RPC	RPC
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Lewes	3.5	31.0	0.09	29.0	11.00	<0.20
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
9 Feb 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	3.8	0.12	18.0	2.90	<0.20
10 Feb 1982	Whiteface	<0.2	5.2	<0.10	38.0	5.50	<0.20
	Ithaca	<0.2	19.0	0.17	62.0	7.00	<0.20
	Penn State	<0.2	12.0	0.24	56.0	6.10	<0.20
	Virginia	<0.2	67.0	0.33	59.0	7.50	<0.20
	Brookhaven	5.8	26.0	0.29	62.0	14.00	<0.20
	Lewes	0.3	28.0	0.21	29.0	16.00	<0.20
	Oak Ridge	<0.2	22.0	0.16	13.0	3.70	<0.20
13 Feb 1982	Virginia	<0.2	10.0	0.20	78.0	3.50	<0.20
14 Feb 1982	Lewes	<0.2	4.2	0.14	32.0	22.00	<0.20

		(S O 2)	(S O 4 -)	(N O 2 -)	(N O 3 -)	(C L -)	(P O 4 -)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
15 Feb 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Ithaca	<0.2	11.0	0.12	110.0	18.00	<0.20
17 Feb 1982	Illinois	0.6	44.0	0.30	41.0	2.40	<0.20
	Oak Ridge	<0.2	17.0	0.18	11.0	3.90	<0.20
18 Feb 1982	Penn State	<0.2	16.0	0.13	45.0	9.00	<0.20
	Illinois	2.9	60.0	0.42	130.0	6.80	<0.20
	Lewis	<0.2	19.0	0.07	11.0	360.00	<0.20
19 Feb 1982	Virginia	2.8	21.0	0.22	22.0	2.50	<0.20
	Illinois	0.9	36.0	0.11	51.0	2.40	<0.20
20 Feb 1982	Penn State	0.5	32.0	0.12	42.0	5.40	<0.20
	Brookhaven	3.7	12.0	0.26	14.0	38.00	<0.20
	Lewis	<0.2	10.0	0.18	5.2	28.00	<0.20
	Oxford	6.8	59.0	<0.10	23.0	6.10	<0.20
22 Feb 1982	Whiteface	<0.2	23.0	<0.10	38.0	3.80	<0.20
	Ithaca	<0.2	24.0	0.11	36.0	4.20	<0.20
	Lewis	2.5	39.0	0.34	93.0	11.00	<0.20
23 Feb 1982	Penn State	7.9	63.0	0.35	130.0	22.00	<0.20
	Oak Ridge	0.5	52.0	0.40	64.0	12.00	<0.20
25 Feb 1982	Ithaca	<0.2	21.0	0.09	35.0	9.80	<0.20
	Penn State	<0.2	100.0	1.00	150.0	15.00	<0.20
28 Feb 1982	Virginia	<0.2	2.9	0.08	8.2	<0.60	<0.20
	Lewis	<0.2	2.1	0.07	3.1	10.00	<0.20
1 Mar 1982	Whiteface	0.3	42.0	ISA	92.0	10.00	<0.20

		(S O 2)	(S O 4 =	(N O 2 =	(N O 3 =	(C L =	(P O 4 =
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
2 Mar 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	0.5	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	1.0	42.0	0.20	11.0	8.60	<0.20
3 Mar 1982	Ithaca	0.5	95.0	0.47	93.0	27.00	<0.20
	Illinois	0.6	66.0	0.77	85.0	6.20	<0.20
4 Mar 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	2.5	45.0	0.41	55.0	4.60	<0.20
5 Mar 1982	Ithaca	0.4	46.0	0.14	66.0	12.00	<0.20
	Penn State	1.2	44.0	0.14	74.0	11.00	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	<0.2	44.0	0.19	21.0	57.00	<0.20
	Lewis	<0.2	22.0	0.11	15.0	44.00	<0.20
	Oxford	6.6	43.0	0.38	43.0	6.50	<0.20
8 Mar 1982	Whiteface	<0.2	12.0	<0.10	10.0	<2.00	<0.20
	Ithaca	<0.2	20.0	0.11	33.0	3.70	<0.20
	Penn State	<0.2	14.0	0.12	24.0	4.70	<0.20
	Virginia	13.0	25.0	0.09	23.0	2.00	<0.20
	Brookhaven	0.3	13.0	0.17	8.5	2.80	<0.20
	Lewis	<0.2	19.0	0.09	11.0	50.00	<0.20
9 Mar 1982	Penn State	0.3	14.0	0.14	80.0	8.30	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	3.2	21.0	0.18	15.0	3.70	<0.20
10 Mar 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA

MAPS9 PRECIPITATION CHEMISTRY DATA (CONT.)

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		(S N 2)	(S N 4 =	(N N 2 =	(N N 3 =	(C L =	(P N 4 =
		UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L
10 Mar 1982	Ithaca	<0.2	13.0	0.21	87.0	11.00	<0.20
	Illinois	ISA	59.0	0.74	110.0	26.00	<0.20
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA
11 Mar 1982	Illinois	0.3	46.0	0.34	68.0	7.90	<0.20
12 Mar 1982	Penn State	1.7	26.0	0.35	48.0	8.40	<0.20
	Brookhaven	0.4	99.0	0.26	110.0	27.00	<0.20
	Lewis	<0.2	45.0	0.14	58.0	22.00	<0.20
	Oxford	4.0	33.0	0.26	21.0	5.20	<0.20
13 Mar 1982	Virginia	<0.2	32.0	0.44	39.0	6.90	<0.20
	Oxford	<0.2	21.0	0.11	9.8	4.20	<0.20
14 Mar 1982	Penn State	0.3	45.0	0.29	45.0	11.00	<0.20
15 Mar 1982	Whiteface	0.6	32.0	0.17	49.0	4.50	<0.20
	Ithaca	1.3	33.0	0.37	33.0	6.70	<0.20
	Illinois	0.3	26.0	0.19	21.0	2.80	<0.20
	Brookhaven	<0.2	100.0	0.24	100.0	75.00	<0.20
16 Mar 1982	Illinois	1.0	44.0	0.22	37.0	7.90	<0.20
17 Mar 1982	Penn State	1.8	24.0	0.20	28.0	3.50	<0.20
	Virginia	<0.2	25.0	0.18	34.0	6.50	<0.20
	Lewis	<0.2	14.0	0.07	13.0	52.00	<0.20
	Oak Ridge	<0.2	24.0	0.18	14.0	6.60	<0.20
18 Mar 1982	Whiteface	<0.2	12.0	0.26	10.0	<2.00	<0.20
	Ithaca	1.9	30.0	0.29	32.0	4.00	<0.20
	Illinois	<0.2	45.0	0.07	30.0	4.80	<0.20

MAPIS PRECIPITATION CHEMISTRY DATA (CONT.)

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		(S O 2)	(S O 4 -)	(N O 2 -)	(N O 3 -)	(C L -)	(P O 4 -)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
18 Mar 1982	Brookhaven	<0.2	17.0	0.19	15.0	4.30	<0.20
	Oxford	<0.2	21.0	0.14	18.0	8.00	<0.20
19 Mar 1982	Whiteface	<0.2	27.0	0.44	55.0	19.00	<0.20
21 Mar 1982	Penn State	7.9	20.0	0.26	27.0	5.40	<0.20
	Oxford	3.4	56.0	0.25	48.0	7.10	<0.20
22 Mar 1982	Whiteface	<0.2	44.0	0.13	31.0	2.50	<0.20
	Ithaca	18A	220.0	18A	280.0	24.00	<0.20
	Illinois	<0.2	130.0	0.07	98.0	22.00	<0.20
	Brookhaven	<0.2	78.0	0.20	59.0	31.00	<0.20
	Lewis	18A	18A	18A	18A	18A	18A
23 Mar 1982	Whiteface	<0.2	26.0	0.19	41.0	4.20	<0.20
	Virginia	2.9	32.0	0.26	38.0	5.30	<0.20
	Oak Ridge	<0.2	15.0	0.11	9.0	5.20	<0.20
24 Mar 1982	Illinois	18A	18A	18A	18A	18A	18A
25 Mar 1982	Illinois	0.3	19.0	0.26	28.0	12.00	<0.20
26 Mar 1982	Ithaca	0.7	24.0	0.18	50.0	5.90	<0.20
	Virginia	<0.2	48.0	0.36	44.0	7.40	<0.20
	Brookhaven	0.3	60.0	0.15	59.0	20.00	<0.20
	Oxford	0.9	49.0	0.23	110.0	7.60	<0.20
	Oak Ridge	RPC	RPC	RPC	RPC	RPC	RPC
27 Mar 1982	Lewis	0.3	53.0	18A	63.0	94.00	<0.20
28 Mar 1982	Penn State	0.9	46.0	0.42	89.0	6.90	<0.20
29 Mar 1982	Whiteface	<0.2	22.0	<0.10	28.0	3.20	<0.20

		(S O 2)	(S O 4 -)	(N O 2 -)	(N O 3 -)	(C L -)	(P O 4 -)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
29 Mar 1982	Ithaca	<0.2	22.0	<0.10	33.0	5.20	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
30 Mar 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
31 Mar 1982	Whiteface	1.4	8.0	0.14	6.4	2.00	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	31.0	0.22	23.0	11.00	<0.20
1 Apr 1982	Whiteface	MOE	MOE	MOE	MOE	MOE	MOE
	Ithaca	1.6	22.0	0.21	23.0	5.70	<0.20
	Penn State	1.6	42.0	0.33	40.0	10.00	<0.20
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	<0.2	19.0	0.11	18.0	61.00	<0.20
	Lewis	<0.2	29.0	0.27	23.0	60.00	<0.20
	Oak Ridge	<0.2	17.0	0.24	12.0	14.00	<0.20
2 Apr 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
4 Apr 1982	Brookhaven	<0.2	21.0	0.12	16.0	77.00	<0.20
	Lewis	<0.2	35.0	0.59	29.0	66.00	<0.20
5 Apr 1982	Whiteface	0.2	12.0	<0.10	9.3	1.90	<0.20
	Ithaca	0.2	25.0	<0.10	19.0	3.50	<0.20
	Penn State	0.8	32.0	0.64	28.0	11.00	<0.20
	Virginia	<0.2	53.0	0.44	44.0	20.00	<0.20
	Illinois	1.0	21.0	NAP	15.0	7.40	<0.20
	Oxford	<0.2	22.0	NAP	17.0	6.70	<0.20

		(S O 2)	(S O 2)	(N O 2)	(N O 3)	(C L)	(P 4)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
6 Apr 1982	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	3.1	29.0	NAP	15.0	7.30	<0.20
	Oak Ridge	<0.2	44.0	0.12	26.0	28.00	<0.20
7 Apr 1982	Ithaca	<0.2	3.8	<0.10	19.0	2.90	<0.20
	Penn State	0.3	15.0	0.14	43.0	5.60	<0.20
	Brookhaven	0.2	15.0	0.07	14.0	40.00	<0.20
	Lewes	<0.2	23.0	0.13	11.0	76.00	<0.20
	Oxford	NDE	NDE	NDE	NDE	NDE	NDE
9 Apr 1982	Whiteface	<0.2	ISA	ISA	ISA	ISA	ISA
	Virginia	<0.2	13.0	0.24	18.0	1.90	<0.20
	Illinois	ISA	39.0	0.30	69.0	7.30	<0.20
10 Apr 1982	Lewes	<0.2	12.0	0.18	10.0	24.00	<0.20
	Oxford	0.8	27.0	0.21	52.0	7.00	<0.20
12 Apr 1982	Whiteface	<0.2	40.0	<0.10	60.0	5.20	<0.20
	Ithaca	<0.2	44.0	0.31	100.0	14.00	<0.20
	Penn State	1.5	26.0	0.19	47.0	6.10	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	1.3	29.0	0.27	26.0	7.30	<0.20
13 Apr 1982	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
14 Apr 1982	Whiteface	<0.2	63.0	<0.10	40.0	3.60	<0.20
	Ithaca	ISA	110.0	0.19	130.0	22.00	<0.20
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	0.5	96.0	0.41	82.0	120.00	<0.20

		(S O 2)	(S O 4 =	(N O 2 =	(N O 3 =	(C L =	(P O 4 =
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
16 Apr 1982	Illinois	184	26.0	NAP	24.0	7.10	<0.20
18 Apr 1982	Ithaca	<0.2	51.0	0.17	42.0	12.00	<0.20
	Penn State	RPC	RPC	RPC	RPC	RPC	RPC
	Lewes	<0.2	8.3	0.21	6.4	13.00	<0.20
	Oxford	<0.2	60.0	NAP	22.0	9.00	<0.20
19 Apr 1982	Whiteface	<0.2	16.0	0.09	11.0	3.80	<0.20
	Virginia	<0.2	16.0	0.16	13.0	16.00	<0.20
	Illinois	<0.2	25.0	0.17	23.0	7.30	<0.20
	Brookhaven	<0.2	14.0	<0.10	9.5	19.00	<0.20
	Oak Ridge	<0.2	21.0	<0.10	15.0	4.80	<0.20
20 Apr 1982	Illinois	<0.2	41.0	NAP	19.0	4.30	<0.20
21 Apr 1982	Whiteface	<0.2	30.0	0.11	33.0	6.30	<0.20
	Ithaca	<0.2	51.0	0.09	63.0	6.50	<0.20
	Lewes	<0.2	ISA	ISA	ISA	ISA	ISA
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
26 Apr 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
27 Apr 1982	Whiteface	<0.1	11.0	<0.10	32.0	3.00	<0.20
	Ithaca	<0.2	15.0	NAP	20.0	1.50	<0.20
	Penn State	3.6	ISA	ISA	ISA	ISA	ISA
	Illinois	0.7	110.0	1.50	94.0	8.60	<0.20
	Brookhaven	<0.2	9.7	<0.10	3.7	47.00	<0.20
	Lewes	<0.2	5.4	<0.10	2.3	28.00	<0.20
	Oxford	<0.2	14.0	0.20	6.3	4.70	<0.20

		(S O 2)	(S O 4 =	(N O 2)	(N O 3)	(C L =	(P O 4 =
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
28 Apr 1982	Penn State	<0.1	150.0	0.27	87.0	7.30	<0.20
	Virginia	<0.2	17.0	0.52	16.0	5.90	<0.20
	Brockhaven	<0.2	41.0	0.37	76.0	11.00	<0.20
	Lewes	<0.2	54.0	<0.10	51.0	37.00	<0.20
	Oak Ridge	<0.2	27.0	<0.10	9.9	5.30	<0.20
1 May 1982	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
3 May 1982	Whiteface	<0.1	170.0	0.17	110.0	10.00	<0.20
7 May 1982	Illinois	<0.2	19.0	NAP	15.0	3.30	<0.20
8 May 1982	Oxford	<0.2	46.0	NAP	13.0	3.90	<0.20
	Oak Ridge	<0.2	26.0	NAP	12.0	0.00	<0.20
9 May 1982	Penn State	<0.2	100.0	NAP	67.0	5.70	<0.20
	Lewes	<0.2	87.0	0.56	71.0	19.00	<0.20
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
10 May 1982	Whiteface	<0.2	18.0	NAP	7.5	2.80	<0.20
	Ithaca	<0.2	69.0	0.24	28.0	2.00	<0.20
13 May 1982	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Lewes	<0.2	ISA	ISA	ISA	ISA	ISA
17 May 1982	Ithaca	ISA	150.0	ISA	73.0	8.70	<0.20
	Illinois	<0.2	41.0	NAP	34.0	12.00	<0.20
18 May 1982	Penn State	<0.2	83.0	NAP	46.0	5.60	<0.20
20 May 1982	Whiteface	<0.2	61.0	NAP	38.0	4.10	<0.20
	Penn State	<0.2	120.0	NAP	170.0	19.00	<0.20
	Virginia	<0.2	81.0	NAP	32.0	17.00	<0.20

		(S O 2)	(S O 4 =	(N O 2 =	(N O 3 =	(C L =	(P O 4 =
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
20 May 1982	Lewes	<0.2	42.0	NAP	35.0	11.00	<0.20
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
21 May 1982	Whitaface	<0.2	20.0	NAP	17.0	2.30	<0.20
	Ithaca	<0.2	76.0	0.15	71.0	6.40	<0.20
	Penn State	<0.2	67.0	0.12	80.0	12.00	<0.20
	Illinois	<0.2	54.0	0.53	33.0	5.80	<0.20
	Brookhaven	0.2	79.0	0.52	110.0	30.00	<0.20
	Oxford	<0.2	60.0	NAP	28.0	5.10	<0.20
22 May 1982	Oxford	<0.2	73.0	0.09	43.0	8.60	<0.20
23 May 1982	Lewes	<0.2	60.0	0.42	62.0	46.00	<0.20
	Oak Ridge	<0.2	38.0	0.09	28.0	6.30	<0.20
24 May 1982	Ithaca	<0.2	53.0	NAP	43.0	3.80	<0.20
	Brookhaven	<0.2	17.0	NAP	15.0	9.50	<0.20
	Lewes	<0.2	19.0	NAP	17.0	57.00	<0.20
25 May 1982	Whitaface	<0.2	19.0	0.21	13.0	4.30	<0.20
	Penn State	<0.2	72.0	NAP	36.0	8.70	<0.20
	Brookhaven	<0.2	100.0	0.55	70.0	7.50	<0.20
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA
26 May 1982	Virginia	0.4	68.0	<0.10	64.0	6.90	<0.20
27 May 1982	Illinois	<0.2	20.0	NAP	14.0	2.70	<0.20
	Oxford	<0.2	43.0	NAP	20.0	4.20	<0.20
	Oak Ridge	<0.2	32.0	NAP	25.0	4.20	<0.20
28 May 1982	Penn State	<0.2	10.0	NAP	18.0	4.00	<0.20

		(S O 2)	(S O 4)	(N O 2)	(N O 3)	(C L)	(P O 4)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
28 May 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	73.0	NAP	54.0	8.00	<0.20
	Oak Ridge	<0.2	30.0	NAP	27.0	6.40	<0.20
29 May 1982	Virginia	MOE	MOE	MOE	MOE	MOE	MOE
	Brookhaven	<0.2	50.0	0.17	15.0	8.60	<0.20
	Lewes	<0.2	21.0	NAP	21.0	13.00	<0.20
30 May 1982	Whiteface	<0.2	34.0	NAP	20.0	5.60	<0.20
31 May 1982	Virginia	<0.2	34.0	NAP	23.0	4.10	<0.20
	Lewes	ISA	61.0	0.42	95.0	13.00	<0.20
	Oxford	<0.2	34.0	NAP	26.0	7.40	<0.20
1 Jun 1982	Whiteface	<0.2	11.0	NAP	21.0	3.80	<0.20
	Ithaca	<0.2	38.0	NAP	29.0	3.20	<0.20
	Penn State	<0.2	40.0	NAP	30.0	3.20	<0.20
	Illinois	<0.2	21.0	NAP	17.0	2.80	<0.20
	Oak Ridge	<0.2	26.0	0.19	21.0	4.70	<0.40
2 Jun 1982	Whiteface	<0.2	14.0	NAP	9.3	1.30	<0.20
	Ithaca	<0.2	22.0	NAP	14.0	2.00	<0.20
	Penn State	0.7	87.0	0.08	62.0	8.40	<0.20
	Brookhaven	<0.2	10.0	NAP	0.5	3.30	<0.20
	Lewes	<0.2	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	20.0	NAP	15.0	2.50	<0.20
3 Jun 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
4 Jun 1982	Ithaca	<0.2	55.0	NAP	60.0	5.00	<0.20

		(S O 2)	(S O 4 =	(N O 2 =	(N O 3 =	(C L =	(P O 4 =
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
4 Jun 1982	Penn State	<0.2	81.0	NAP	50.0	6.70	<0.20
	Oak Ridge	<0.2	47.0	0.19	37.0	6.20	0.20
5 Jun 1982	Lewis	<0.2	17.0	NAP	18.0	68.00	<0.20
	Oxford	<0.2	46.0	NAP	51.0	5.30	<0.20
6 Jun 1982	Brookhaven	<0.2	7.2	NAP	3.9	7.40	<0.20
7 Jun 1982	Whitese	<0.2	8.8	<0.20	6.1	3.80	<0.20
	Ithaca	<0.2	7.4	0.15	6.7	3.60	<0.20
	Penn State	<0.2	18.0	NAP	17.0	7.40	<0.20
8 Jun 1982	Whitese	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	<0.2	110.0	0.49	100.0	12.00	<0.40
	Lewis	MOE	MOE	MOE	MOE	MOE	MOE
	Oxford	<0.2	49.0	NAP	27.0	3.60	<0.20
	Oak Ridge	<0.2	20.0	0.47	19.0	5.20	<0.20
9 Jun 1982	Illinois	<0.2	83.0	0.34	94.0	14.00	<0.40
10 Jun 1982	Oxford	<0.2	66.0	NAP	98.0	31.00	<0.20
	Oak Ridge	<0.2	25.0	0.40	42.0	14.00	<0.20
11 Jun 1982	Penn State	<0.2	39.0	0.20	23.0	5.40	<0.20
12 Jun 1982	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
14 Jun 1982	Ithaca	<0.2	160.0	0.38	97.0	12.00	<0.20
	Penn State	<0.2	40.0	NAP	25.0	6.00	<0.20
	Illinois	MOE	160.0	0.26	120.0	19.00	<0.40
	Brookhaven	<0.2	27.0	0.15	17.0	21.00	<0.40
	Lewis	<0.2	35.0	<0.10	32.0	75.00	<0.20

		(S O 2)	(S O 4 -)	(N O 2 -)	(N O 3 -)	(C L -)	(P O 4 -)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
14 Jun 1982	Oak Ridge	<0.2	63.0	0.25	54.0	8.00	<0.20
15 Jun 1982	Illinois	MOE	31.0	0.76	36.0	10.00	<0.40
14 Jun 1982	Whiteface	<0.2	68.0	<0.10	86.0	13.00	<0.40
	Illinois	<0.2	49.0	0.02	36.0	8.30	<0.40
	Oak Ridge	<0.2	58.0	0.18	41.0	6.30	<0.20
17 Jun 1982	Ithaca	2.7	24.0	NAP	15.0	4.10	<0.20
	Penn State	<0.2	58.0	0.47	35.0	6.50	<0.40
	Brookhaven	<0.2	47.0	0.54	33.0	10.00	<0.20
	Oxford	<0.2	38.0	NAP	28.0	5.50	<0.20
18 Jun 1982	Lewes	<0.2	38.0	NAP	32.0	12.00	<0.20
	Oak Ridge	<0.2	18.0	NAP	16.0	5.40	<0.20
19 Jun 1982	Brookhaven	<0.2	10.0	0.23	7.5	2.30	<0.40
	Lewes	<0.2	6.1	NAP	7.6	22.00	<0.20
20 Jun 1982	Penn State	1.1	78.0	0.30	36.0	46.00	0.36
	Oxford	<0.2	110.0	NAP	80.0	12.00	<0.20
21 Jun 1982	Whiteface	<0.2	83.0	0.31	72.0	5.80	<0.40
	Ithaca	0.3	160.0	NAP	110.0	13.00	<0.20
	Penn State	<0.2	86.0	0.02	68.0	11.00	0.72
	Illinois	<0.2	52.0	0.33	33.0	3.30	<0.40
	Oxford	<0.2	188	188	188	188	188
22 Jun 1982	Whiteface	<0.2	18.0	0.32	9.3	6.00	<0.40
	Illinois	MOE	37.0	1.60	36.0	13.00	<0.40
	Oak Ridge	<0.2	28.0	NAP	24.0	3.80	<0.20

		(S O ₂)	(S O ₄)	(N O ₂)	(N O ₃)	(C L)	(P O ₄)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
23 Jun 1982	Ithaca	<0.2	51.0	NAP	69.0	5.90	<0.20
	Penn State	0.3	73.0	0.31	75.0	14.00	<0.40
	Brookhaven	<0.2	120.0	0.82	130.0	24.00	<0.40
24 Jun 1982	Whiteface	<0.2	19.0	0.41	22.0	2.40	<0.40
	Oxford	<0.2	26.0	NAP	32.0	2.00	<0.20
27 Jun 1982	Brookhaven	<0.2	ISA	ISA	ISA	ISA	ISA
28 Jun 1982	Ithaca	<0.2	75.0	NAP	66.0	6.60	<0.20
	Penn State	<0.2	130.0	0.37	83.0	11.00	<0.40
	Illinois	MDE	21.0	<0.10	36.0	3.10	<0.40
	Oxford	<0.2	61.0	NAP	49.0	8.70	<0.20
	Oak Ridge	<0.2	13.0	NAP	15.0	3.80	<0.20
29 Jun 1982	Penn State	<0.2	130.0	0.24	91.0	25.00	1.00
	Illinois	MDE	67.0	0.24	49.0	3.50	<0.40
30 Jun 1982	Whiteface	<0.2	25.0	NAP	23.0	1.50	<0.20
	Ithaca	<0.2	25.0	NAP	19.0	2.60	<0.20
	Penn State	<0.2	81.0	0.25	52.0	11.00	<0.40
	Illinois	MDE	31.0	0.91	50.0	3.30	<0.40
	Brookhaven	<0.2	17.0	NAP	29.0	18.00	<0.20
	Lewis	<0.2	44.0	NAP	34.0	10.00	<0.20
	Oxford	<0.2	23.0	NAP	15.0	2.10	<0.20
	Oak Ridge	<0.2	18.0	NAP	18.0	2.50	<0.20
1 Jul 1982	Whiteface	<0.2	7.6	NAP	6.8	1.90	0.29
	Virginia	<0.2	40.0	0.12	19.0	4.80	<0.40

		(S) O 2)	(S) O 2)	(N) O 2)	(N) O 3)	(C) L)	(P) O 4)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
1 Jul 1982	Lewes	<0.2	19A	19A	19A	19A	19A
2 Jul 1982	Illinois	<0.2	82.0	0.39	55.0	13.00	<0.40
3 Jul 1982	Whiteface	<0.2	19.0	NAP	20.0	2.60	<0.20
4 Jul 1982	Penn State	1.1	46.0	NAP	32.0	4.40	1.50
	Lewes	<0.2	3A.0	NAP	20.0	15.00	<0.20
	Oxford	NDE	13.0	NAP	14.0	17.00	<0.40
5 Jul 1982	Virginia	<0.2	115.0	NAP	87.0	10.00	<0.20
	Brookhaven	<0.2	33.0	NAP	39.0	5.90	<0.20
6 Jul 1982	Illinois	<0.2	18.0	NAP	13.0	5.40	<0.20
	Oak Ridge	<0.2	71.0	NAP	39.0	5.10	<0.20
7 Jul 1982	Illinois	19A	19A	19A	19A	19A	19A
8 Jul 1982	Whiteface	<0.2	37.0	NAP	25.0	3.30	2.30
	Ithaca	<0.2	77.0	NAP	54.0	7.10	<0.20
	Oxford	<0.2	46.0	NAP	36.0	6.50	<0.40
9 Jul 1982	Brookhaven	<0.2	19A	NAP	97.0	11.00	<0.20
	Oak Ridge	<0.2	105.0	NAP	62.0	12.00	<0.20
10 Jul 1982	Virginia	<0.2	33.0	NAP	29.0	4.30	<0.20
11 Jul 1982	Oxford	<0.2	83.0	NAP	52.0	11.00	<0.40
12 Jul 1982	Penn State	<0.2	68.0	NAP	67.0	11.00	0.45
	Illinois	<0.2	56.0	NAP	42.0	7.60	<0.20
15 Jul 1982	Ithaca	<0.2	100.0	NAP	71.0	10.00	<0.20
	Lewes	19A	84.0	NAP	130.0	71.00	<0.20
18 Jul 1982	Whiteface	<0.2	110.0	NAP	58.0	9.30	<0.20

MAP33 PRECIPITATION CHEMISTRY DATA (CONT.)

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		(S)		(N)		(P)	
		(S)	(S)	(N)	(N)	(P)	(P)
		0	0	0	0	0	0
		2	4	2	3	1	4
		)	)	)	)	)	)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
19 Jul 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Ithaca	<0.2	42.0	NAP	18.0	2.50	<0.20
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	MNF	22.0	NAP	23.0	2.80	<0.20
	Illinois	<0.2	65.0	NAP	64.0	13.00	<0.20
	Oxford	<0.2	31.0	NAP	23.0	5.50	<0.40
20 Jul 1982	Ithaca	<0.2	17.0	NAP	16.0	2.00	<0.20
	Penn State	<0.2	48.0	NAP	27.0	4.00	<0.20
	Brookhaven	<0.2	36.0	NAP	49.0	7.60	<0.20
	Oak Ridge	<0.2	25.0	NAP	18.0	2.60	<0.20
21 Jul 1982	Lewes	<0.2	41.0	NAP	27.0	15.00	<0.20
22 Jul 1982	Illinois	<0.2	72.0	NAP	47.0	5.40	<0.20
23 Jul 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	2.2	48.0	NAP	26.0	3.60	<0.40
24 Jul 1982	Virginia	<0.2	14.0	NAP	12.0	17.00	<0.20
	Lewes	<0.2	61.0	NAP	36.0	8.30	<0.20
27 Jul 1982	Oak Ridge	<0.2	46.0	NAP	32.0	0.00	<0.20
28 Jul 1982	Penn State	<0.2	84.0	NAP	50.0	4.90	<0.20
	Illinois	MNF	100.0	NAP	35.0	4.50	<0.20
	Brookhaven	<0.2	38.0	NAP	31.0	11.00	<0.20
	Oxford	<0.2	100.0	NAP	56.0	6.60	<0.40
29 Jul 1982	Whiteface	<0.2	6.3	NAP	5.1	1.60	<0.20

		(S O 2)	(S O 4 =)	(N O 2)	(N O 3)	(C L =)	(P O 4 =)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
29 Jul 1982	Ithaca	<0.2	31.0	NAP	21.0	3.00	<0.20
	Penn State	<0.2	105.0	NAP	61.0	13.00	0.09
	Virginia	<0.2	48.0	NAP	19.0	1.50	<0.20
	Lewis	<0.2	56.0	NAP	40.0	6.80	<0.20
31 Jul 1982	Virginia	<0.2	34.0	NAP	30.0	3.50	<0.20
	Brookhaven	<0.2	1SA	1SA	1SA	1SA	1SA
	Lewis	<0.2	17.0	NAP	16.0	54.00	<0.20
1 Aug 1982	Whiteface	<0.2	66.0	NAP	42.0	4.10	<0.20
3 Aug 1982	Virginia	1SA	1SA	1SA	1SA	1SA	1SA
	Oak Ridge	<0.2	55.0	NAP	37.0	5.00	<0.20
4 Aug 1982	Whiteface	<0.2	1SA	1SA	1SA	1SA	1SA
	Ithaca	<0.2	60.0	NAP	56.0	4.90	<0.20
5 Aug 1982	Whiteface	0.2	25.0	NAP	21.0	2.50	<0.20
	Ithaca	NAP	48.0	NAP	46.0	7.10	<0.20
	Oxford	<0.2	24.0	NAP	22.0	4.60	<0.20
6 Aug 1982	Illinois	<0.2	88.0	NAP	54.0	12.00	<0.20
7 Aug 1982	Virginia	1SA	1SA	1SA	1SA	1SA	1SA
	Lewis	<0.2	8.5	NAP	3.3	4.00	<0.20
8 Aug 1982	Penn State	<0.2	77.0	NAP	42.0	5.20	0.26
	Virginia	<0.2	44.0	NAP	20.0	2.10	<0.20
	Oxford	<0.2	170.0	NAP	110.0	14.00	<0.20
9 Aug 1982	Ithaca	<0.2	200.0	NAP	110.0	11.00	<0.20
	Virginia	1SA	1SA	1SA	1SA	1SA	1SA

		(S O 2)	(S O 4 -)	(N O 2)	(N O 3)	(C L -)	(P O 4 -)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
9 Aug 1982	Illinois	<0.2	89.0	NAP	45.0	7.40	<0.20
10 Aug 1982	Whitewater	<0.2	29.0	NAP	19.0	1.90	<0.20
	Penn State	<0.2	52.0	NAP	23.0	3.20	<0.20
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	<0.2	11.0	NAP	9.1	2.50	<0.20
	Brookhaven	<0.2	13.0	NAP	14.0	9.90	<0.20
	Lewis	<0.2	1.9	NAP	1.3	1.10	<0.20
	Oak Ridge	<0.2	22.0	NAP	10.0	3.00	<0.20
11 Aug 1982	Lewis	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	36.0	NAP	33.0	2.60	<0.20
12 Aug 1982	Penn State	RPC	RPC	RPC	RPC	RPC	RPC
	Virginia	<0.2	60.0	NAP	49.0	3.30	<0.20
	Brookhaven	<0.2	94.0	NAP	69.0	8.40	<0.20
	Lewis	<0.2	46.0	NAP	62.0	69.00	<0.20
	Oak Ridge	<0.2	49.0	NAP	33.0	4.00	<0.20
14 Aug 1982	Ithaca	ISA	140.0	NAP	99.0	15.00	<0.20
15 Aug 1982	Virginia	<0.2	37.0	NAP	30.0	3.60	<0.20
16 Aug 1982	Whitewater	<0.2	8.7	NAP	17.0	2.10	<0.20
	Virginia	<0.2	36.0	NAP	22.0	2.50	<0.20
17 Aug 1982	Ithaca	<0.2	37.0	NAP	20.0	2.20	<0.20
	Virginia	<0.2	40.0	NAP	26.0	2.70	<0.20
	Oak Ridge	<0.2	44.0	NAP	44.0	8.00	<0.20
18 Aug 1982	Penn State	RPC	RPC	RPC	RPC	RPC	RPC

		(S O ₂)	(S O ₄)	(N O ₂)	(N O ₃)	(C L)	(P O ₄)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
18 Aug 1982	Virginia	<0.2	170.0	NAP	76.0	6.90	<0.20
	Brookhaven	<0.2	66.0	NAP	57.0	12.00	<0.20
	Lewis	<0.2	130.0	NAP	120.0	175.00	<0.20
	Oak Ridge	<0.2	32.0	NAP	22.0	5.20	<0.20
20 Aug 1982	Whiteface	<0.2	35.0	NAP	35.0	3.80	<0.20
21 Aug 1982	Penn State	0.6	58.0	NAP	42.0	9.50	5.80
	Lewis	<0.2	18A	18A	18A	18A	18A
22 Aug 1982	Ithaca	<0.2	60.0	NAP	36.0	3.00	<0.20
	Oxford	<0.2	160.0	NAP	73.0	7.70	<0.20
23 Aug 1982	Illinois	<0.2	79.0	NAP	47.0	4.60	<0.20
24 Aug 1982	Whiteface	<0.2	44.0	NAP	28.0	2.50	<0.20
	Ithaca	<0.2	120.0	NAP	30.0	3.00	<0.20
	Penn State	<0.2	110.0	NAP	38.0	6.50	<0.20
	Brookhaven	<0.2	27.0	NAP	14.0	28.00	<0.20
	Lewis	<0.2	50.0	NAP	25.0	17.00	<0.20
	Oak Ridge	<0.2	29.0	NAP	23.0	2.70	<0.20
25 Aug 1982	Penn State	1.4	28.0	NAP	18.0	2.20	1.30
	Illinois	<0.2	44.0	NAP	33.0	4.50	<0.20
	Lewis	18A	18A	18A	18A	18A	18A
	Oxford	<0.2	120.0	NAP	66.0	8.00	<0.20
26 Aug 1982	Whiteface	<0.2	22.0	NAP	14.0	1.40	<0.20
	Ithaca	<0.2	45.0	NAP	30.0	2.60	<0.20
	Brookhaven	<0.2	38.0	NAP	43.0	17.00	<0.20

MAP33 PRECIPITATION CHEMISTRY DATA (CONT.)

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		(S O ₂)	(S O ₄)	(N O ₂)	(N O ₃)	(C L)	(P O ₄)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
27 Aug 1982	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
28 Aug 1982	Whiteface	<0.2	58.0	NAP	39.0	2.90	<0.20
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	MOE	93.0	NAP	88.0	12.00	<0.20
29 Aug 1982	Whiteface	<0.2	2.1	NAP	3.4	1.30	<0.20
30 Aug 1982	Illinois	<0.2	85.0	NAP	67.0	7.70	<0.20
31 Aug 1982	Ithaca	MOE	170.0	NAP	100.0	8.70	<0.20
	Oxford	MOE	180.0	NAP	70.0	18.00	<0.20
	Oak Ridge	<0.2	57.0	NAP	84.0	33.00	<0.20
1 Sep 1982	Illinois	<0.2	76.0	NAP	17.0	1.90	<0.20
2 Sep 1982	Whiteface	<0.2	51.0	NAP	81.0	2.20	<0.20
	Penn State	0.7	69.0	NAP	51.0	6.60	<0.20
	Illinois	<0.2	35.0	NAP	36.0	3.10	<0.20
	Brookhaven	<0.2	51.0	NAP	49.0	69.00	<0.20
3 Sep 1982	Whiteface	<0.2	28.0	NAP	25.0	2.40	<0.20
	Ithaca	<0.2	40.0	NAP	39.0	2.90	<0.20
	Penn State	<0.2	69.0	NAP	56.0	6.10	<0.20
	Virginia	MOE	MOE	MOE	MOE	MOE	MOE
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA
	Lewis	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	32.0	NAP	42.0	3.30	<0.20
	Oak Ridge	<0.2	25.0	NAP	21.0	3.60	<0.20

		(S O 2)	(S O 4 =	(N O 2 =	(N O 3 =	(C L =	(P O 4 =
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
7 Sep 1982	Whiteface	<0.2	71.0	NAP	46.0	2.90	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
8 Sep 1982	Penn State	<0.2	50.0	NAP	66.0	30.00	3.00
13 Sep 1982	Illinois	MDE	31.0	NAP	25.0	6.50	<0.20
14 Sep 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	<0.2	27.0	NAP	25.0	6.80	<0.20
15 Sep 1982	Illinois	MDE	47.0	NAP	52.0	5.40	<0.20
16 Sep 1982	Whiteface	<0.2	31.0	NAP	24.0	1.80	<0.20
	Ithaca	0.6	63.0	NAP	62.0	6.50	<0.20
	Penn State	<0.3	150.0	NAP	120.0	15.00	<0.20
	Oak Ridge	<0.2	42.0	NAP	21.0	5.20	<0.20
17 Sep 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
18 Sep 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
20 Sep 1982	Whiteface	<0.2	5.1	NAP	5.0	1.60	<0.20
	Virginia	<0.2	50.0	NAP	47.0	11.00	<0.20
	Illinois	MDE	51.0	NAP	34.0	4.10	<0.20
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
21 Sep 1982	Brookhaven	<0.2	54.0	NAP	40.0	37.00	<0.20
	Oxford	3.4	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	<0.2	59.0	NAP	41.0	5.20	<0.20
22 Sep 1982	Virginia	NAP	71.0	NAP	95.0	11.00	<0.20
	Lowes	<0.3	40.0	NAP	36.0	60.00	<0.20

		(S O 2)	(S O 4 =)	(N O 2)	(N O 3 =)	(C L =)	(P O 4 =)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
22 Sep 1982	Oxford	<0.2	ISA	ISA	ISA	ISA	ISA
23 Sep 1982	Ithaca	<0.2	18.0	NAP	27.0	2.50	<0.20
	Virginia	<0.2	30.0	NAP	18.0	2.00	<0.20
	Brookhaven	<0.2	44.0	NAP	50.0	28.00	<0.20
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
24 Sep 1982	Whiteface	<0.2	5.5	NAP	6.1	0.54	<0.20
	Penn State	<0.3	33.0	NAP	52.0	3.10	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
25 Sep 1982	Oxford	7.4	33.0	NAP	29.0	3.40	<0.20
27 Sep 1982	Ithaca	<0.2	7.9	NAP	5.9	1.90	<0.20
	Penn State	0.5	23.0	NAP	22.0	2.00	<0.20
	Virginia	<0.2	19.0	NAP	11.0	2.30	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	<0.3	23.0	NAP	10.0	57.00	<0.20
	Lewis	<0.3	17.0	NAP	11.0	170.00	<0.20
28 Sep 1982	Whiteface	<0.2	9.4	NAP	4.4	1.60	<0.20
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	2.0	46.0	NAP	51.0	4.10	<0.20
	Oak Ridge	<0.2	43.0	NAP	32.0	3.50	<0.20
29 Sep 1982	Whiteface	<0.2	22.0	NAP	16.0	0.92	<0.20
1 Oct 1982	Lewis	ISA	ISA	ISA	ISA	ISA	ISA
2 Oct 1982	Whiteface	<0.2	58.0	NAP	25.0	3.20	<0.20
4 Oct 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA

		(S O 2)	(S O 4 =)	(N O 2 =)	(N O 3 =)	(C L =)	(P O 4 =)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
5 Oct 1982	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	<0.3	110.0	NAP	61.0	5.40	<0.20
7 Oct 1982	Oxford	3.4	20.0	NAP	12.0	4.60	<0.20
8 Oct 1982	Whiteface	<0.2	19.0	NAP	12.0	2.30	<0.20
	Ithaca	<0.2	86.0	NAP	70.0	7.60	<0.20
	Penn State	<0.3	64.0	NAP	56.0	7.50	<0.20
	Illinois	MOE	20.0	NAP	20.0	4.70	<0.20
	Oak Ridge	<0.3	21.0	NAP	19.0	3.70	<0.20
10 Oct 1982	Whiteface	<0.2	58.0	NAP	67.0	5.40	<0.20
	Virginia	MOE	53.0	NAP	51.0	4.40	<0.20
	Brookhaven	<0.3	57.0	NAP	78.0	40.00	<0.20
	Oxford	MOE	47.0	NAP	32.0	11.00	<0.20
11 Oct 1982	Illinois	MOE	30.0	NAP	23.0	7.20	<0.20
12 Oct 1982	Ithaca	<0.2	65.0	NAP	47.0	11.00	<0.20
	Penn State	<0.3	72.0	NAP	61.0	13.00	<0.20
	Virginia	<0.3	30.0	NAP	30.0	14.00	<0.20
	Oak Ridge	<0.3	26.0	NAP	23.0	8.00	<0.20
13 Oct 1982	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	4.0	21.0	NAP	12.0	4.10	<0.20
14 Oct 1982	Whiteface	<0.2	68.0	NAP	110.0	7.30	<0.20
	Penn State	2.9	29.0	NAP	59.0	5.80	<0.20
	Virginia	<0.3	16.0	NAP	24.0	3.00	<0.20
	Brookhaven	<0.3	44.0	NAP	67.0	72.00	<0.20

MAP39 PRECIPITATION CHEMISTRY DATA (CONT.)

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		(S)		(N)		(C)	
		O ₄		O ₂		O ₃	
		UMOL/L		UMOL/L		UMOL/L	
15 Oct 1982	Whiteface	<0.3	7.7	NAP	12.0	<0.60	<0.20
	Ithaca	0.8	29.0	NAP	42.0	5.30	<1.00
17 Oct 1982	Penn State	0.9	28.0	NAP	40.0	8.70	<2.00
	Lewis	<0.3	20.0	NAP	26.0	30.00	<0.20
18 Oct 1982	Whiteface	MDE	9.2	NAP	4.7	0.76	<0.20
	Ithaca	<0.2	8.9	NAP	11.0	2.80	<1.00
20 Oct 1982	Illinois	MDE	26.0	NAP	21.0	4.80	<0.20
	Oxford	<0.3	23.0	NAP	19.0	8.20	<0.20
21 Oct 1982	Ithaca	<0.2	19.0	NAP	30.0	18.00	<1.00
	Penn State	<0.3	20.0	NAP	23.0	17.00	<0.20
	Virginia	<0.3	14.0	NAP	25.0	12.00	<0.20
	Brookhaven	<0.3	9.0	NAP	19.0	25.00	<0.20
	Lewis	<0.3	21.0	NAP	25.0	40.00	<0.20
	Oak Ridge	<0.3	50.0	NAP	33.0	27.00	<0.20
22 Oct 1982	Whiteface	<0.3	28.0	NAP	32.0	8.70	<0.20
26 Oct 1982	Virginia	<0.3	9.6	NAP	9.4	28.00	<0.20
	Brookhaven	0.8	13.0	NAP	8.8	93.00	<0.20
27 Oct 1982	Lewis	<0.3	25.0	NAP	6.4	610.00	2.90
29 Oct 1982	Illinois	0.0	21.0	NAP	29.0	4.50	<0.20
1 Nov 1982	Whiteface	1.7	38.0	NAP	29.0	3.20	<0.20
	Ithaca	2.4	32.0	NAP	39.0	8.80	<1.00
	Oxford	<0.3	76.0	NAP	50.0	26.00	<0.40
2 Nov 1982	Whiteface	<0.3	35.0	NAP	29.0	3.60	<0.20

		(S O ₂)		(S O ₄)		(N O ₂)		(N O ₃)		(C L)		(P O ₄)	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
2 Nov 1982	Illinois	<0.2	28.0	NAP	21.0	7.10	<0.20						
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA						
3 Nov 1982	Illinois	<0.2	35.0	NAP	37.0	6.00	<0.20						
4 Nov 1982	Oxford	1.5	31.0	NAP	26.0	6.50	<0.20						
	Oak Ridge	0.7	12.0	NAP	9.2	2.80	<0.20						
5 Nov 1982	Whitewater	<0.2	7.8	NAP	10.0	2.90	<1.00						
	Ithaca	0.8	18.0	NAP	30.0	3.60	<1.00						
	Penn State	5.5	18.0	NAP	22.0	2.40	<0.20						
	Virginia	<0.2	16.0	NAP	15.0	12.00	<0.20						
	Brookhaven	<0.2	7.8	NAP	4.8	49.00	<1.00						
	Lewis	<0.2	10.0	NAP	8.0	32.00	<0.20						
10 Nov 1982	Whitewater	ISA	ISA	ISA	ISA	ISA	ISA						
11 Nov 1982	Oxford	0.6	76.0	NAP	40.0	18.00	<0.20						
12 Nov 1982	Whitewater	3.6	23.0	NAP	23.0	3.30	<1.00						
	Ithaca	4.4	31.0	NAP	43.0	30.00	<1.00						
	Penn State	1.1	79.0	NAP	100.0	29.00	<0.20						
	Illinois	<0.2	22.0	NAP	16.0	11.00	2.20						
	Oxford	<0.2	15.0	NAP	6.0	5.60	<0.20						
13 Nov 1982	Penn State	<0.2	25.0	NAP	24.0	20.00	<0.20						
	Virginia	<0.2	24.0	NAP	32.0	42.00	<0.20						
	Lewis	3.0	19.0	NAP	6.5	200.00	<0.20						
14 Nov 1982	Whitewater	<0.2	26.0	NAP	40.0	6.00	<1.00						
	Brookhaven	1.8	14.0	NAP	4.9	110.00	<1.00						

		(S O 2)	(S O 4)	(N O 2)	(N O 3)	(C L)	(P O 4)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
15 Nov 1982	Ithaca	<0.2	30.0	NAP	16.0	8.10	<1.00
	Brookhaven	<0.2	0.8	NAP	1.1	2.80	<1.00
	Lewes	3.5	10.0	NAP	13.0	39.00	<0.20
	Oak Ridge	<0.2	16.0	NAP	7.6	17.00	<0.20
16 Nov 1982	Whiteface	0.5	18A	18A	18A	18A	18A
19 Nov 1982	Illinois	18A	67.0	NAP	77.0	27.00	<0.20
	Oak Ridge	0.7	08.0	NAP	11.0	23.00	<0.20
20 Nov 1982	Oxford	1.3	18.0	NAP	17.0	3.70	<0.20
21 Nov 1982	Virginia	<0.2	130.0	NAP	120.0	460.00	<0.20
22 Nov 1982	Whiteface	<0.2	12.0	NAP	18.0	3.00	<0.20
	Ithaca	3.6	24.0	NAP	36.0	13.00	<0.20
	Illinois	0.5	22.0	NAP	15.0	2.80	<0.20
	Oxford	8.5	19.0	NAP	9.0	6.00	<0.20
23 Nov 1982	Whiteface	1.1	12.0	NAP	25.0	1.20	<0.20
	Penn State	<0.2	37.0	NAP	47.0	26.00	<0.20
	Illinois	1.9	30.0	NAP	29.0	4.50	<0.20
24 Nov 1982	Ithaca	2.2	27.0	NAP	48.0	4.20	<0.20
	Penn State	0.8	48.0	NAP	80.0	10.00	<0.20
	Illinois	18A	87.0	NAP	100.0	8.10	<0.20
	Brookhaven	<0.2	59.0	NAP	81.0	22.00	<0.20
	Lewes	18A	18A	18A	18A	18A	18A
	Oxford	10.0	30.0	NAP	22.0	5.40	<0.20
	Oak Ridge	<0.2	17.0	NAP	17.0	5.30	<0.20

MAP33 PRECIPITATION CHEMISTRY DATA (CONT.)

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		(S O 2)	(S O 4 =)	(N O 2)	(N O 3)	(C L =)	(P O 4 =)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
25 Nov 1982	Whiteface	1.0	20.0	NAP	24.0	2.00	<0.20
27 Nov 1982	Whiteface	<0.2	13.0	NAP	29.0	2.50	<0.20
	Penn State	25.0	31.0	NAP	15.0	8.60	<0.20
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	0.7	19.0	NAP	11.0	5.60	<0.20
28 Nov 1982	Oxford	13.0	23.0	NAP	8.6	3.00	<0.20
29 Nov 1982	Penn State	<0.2	8.7	NAP	7.0	3.60	<0.20
	Virginia	<0.2	13.0	NAP	14.0	7.40	<0.20
	Illinois	6.4	18.0	NAP	11.0	1.90	<0.20
	Brookhaven	<0.2	0.5	NAP	<0.3	3.70	<0.20
	Leves	<0.2	11.0	NAP	6.7	20.00	<0.20
	Oxford	2.6	ISA	ISA	ISA	ISA	ISA
30 Nov 1982	Whiteface	3.4	9.8	NAP	10.0	2.10	<0.20
	Ithaca	5.0	13.0	NAP	12.0	3.00	<0.20
	Penn State	3.2	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	<0.2	29.0	NAP	18.0	13.00	<0.20
2 Dec 1982	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	ISA	40.0	NAP	36.0	42.00	<0.20
	Brookhaven	1.1	10.0	NAP	16.0	7.00	<0.20
	Oxford	6.7	MOE	MOE	MOE	MOE	MOE
	Oak Ridge	0.6	6.5	NAP	1.8	1.90	<0.20
3 Dec 1982	Whiteface	<0.2	25.0	NAP	24.0	6.80	<0.20
	Virginia	<0.2	12.0	NAP	17.0	3.20	<0.20

		(S O 2)	(S N 4 -)	(N N 2 -)	(N N O 3 -)	(C L -)	(P N 4 -)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
3 Dec 1982	Illinois	2.8	16.0	NAP	11.0	11.00	<0.20
	Lewes	<0.2	22.0	NAP	17.0	14.00	<0.20
	Oxford	1.0	30.0	NAP	24.0	18.00	<0.20
4 Dec 1982	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
5 Dec 1982	Whitewater	0.4	20.0	NAP	32.0	3.70	<0.20
	Oxford	3.5	14.0	NAP	9.5	6.40	<0.20
6 Dec 1982	Whitewater	<0.2	27.0	NAP	26.0	6.40	<0.20
	Penn State	3.4	21.0	NAP	15.0	15.00	<0.50
	Illinois	2.0	2.5	NAP	17.0	16.00	<0.20
	Lewes	5.0	8.4	NAP	1.8	11.00	<0.20
	Oxford	3.1	26.0	NAP	34.0	7.50	0.27
	Oak Ridge	<0.2	0.3	NAP	2.1	2.70	<0.20
7 Dec 1982	Whitewater	ISA	ISA	ISA	ISA	ISA	ISA
	Ithaca	1.9	22.0	NAP	26.0	13.00	<0.50
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Reckhaven	<0.2	14.0	NAP	11.0	110.00	<0.20
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
8 Dec 1982	Whitewater	ISA	ISA	ISA	ISA	ISA	ISA
9 Dec 1982	Whitewater	<0.2	12.0	NAP	64.0	4.40	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
10 Dec 1982	Ithaca	<0.2	12.0	NAP	38.0	9.70	<0.50
	Illinois	0.5	3.3	NAP	13.0	28.00	<0.20
11 Dec 1982	Oxford	6.0	27.0	NAP	20.0	4.20	<0.20

		(S O 2)	(S O 4 -)	(N O 2 -)	(N O 3 -)	(C L -)	(P O 4 -)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
13 Dec 1982	Whiteface	<0.2	18.0	NAP	65.0	10.00	<0.20
	Ithaca	0.4	18.0	NAP	55.0	20.00	<0.50
	Virginia	<0.2	11.0	NAP	25.0	3.90	<0.20
	Brookhaven	2.6	22.0	NAP	78.0	60.00	<0.20
	Lawes	5.8	16.0	NAP	22.0	71.00	<0.20
	Oak Ridge	1.4	15.0	NAP	16.0	3.40	<0.20
14 Dec 1982	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	<0.2	13.0	NAP	12.0	3.60	<0.20
16 Dec 1982	Whiteface	2.8	5.9	NAP	8.7	2.70	<0.20
	Virginia	<0.2	9.8	NAP	12.0	17.00	<0.20
	Oxford	12.0	13.0	NAP	11.0	3.00	<0.20
	Oak Ridge	7.1	12.0	NAP	7.5	6.40	<0.20
17 Dec 1982	Ithaca	1.0	7.5	NAP	17.0	4.30	<0.50
	Penn State	3.6	9.1	NAP	18.0	4.20	<0.50
	Brookhaven	<0.2	6.6	NAP	2.1	89.00	<0.20
	Lawes	<0.2	9.0	NAP	2.9	67.00	<0.20
19 Dec 1982	Oxford	5.6	27.0	NAP	50.0	5.40	<0.20
20 Dec 1982	Penn State	0.3	9.5	NAP	59.0	4.70	<0.50
	Virginia	0.3	11.0	NAP	41.0	9.50	<0.20
	Illinois	ND	20.0	NAP	15.0	7.50	<0.20
	Brookhaven	<0.2	4.0	NAP	7.1	6.40	<0.50
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
21 Dec 1982	Ithaca	<0.2	9.6	NAP	50.0	5.30	<0.50

		(S O 2)	(S O 4 -)	(N O 2 -)	(N O 3 -)	(C L -)	(P O 4 -)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
21 Dec 1982	Oak Ridge	1.1	52.0	NAP	95.0	16.00	<0.20
22 Dec 1982	Whiteface	<0.2	15.0	NAP	61.0	3.20	<0.20
23 Dec 1982	Oxford	5.6	42.0	NAP	34.0	25.00	<0.20
24 Dec 1982	Ithaca	<0.2	12.0	NAP	26.0	5.00	<0.50
	Penn State	<0.2	37.0	NAP	46.0	11.00	<0.50
	Illinois	0.9	11.0	NAP	7.1	4.60	<0.20
	Brookhaven	<0.2	32.0	NAP	67.0	31.00	<0.50
25 Dec 1982	Whiteface	1.2	22.0	NAP	22.0	5.10	<0.20
	Penn State	<0.2	ISA	NAP	ISA	ISA	ISA
26 Dec 1982	Penn State	<0.2	ISA	ISA	ISA	ISA	ISA
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA
27 Dec 1982	Whiteface	MOE	MOE	MOE	MOE	MOE	MOE
	Ithaca	MOE	35.0	NAP	23.0	16.00	<0.50
28 Dec 1982	Whiteface	0.6	7.7	NAP	8.6	0.92	<0.20
	Penn State	<0.2	15.0	NAP	12.0	5.40	<0.50
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	4.8	13.0	NAP	6.5	4.50	<0.20
29 Dec 1982	Ithaca	MOE	23.0	NAP	22.0	7.90	<0.50
	Penn State	<0.2	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	<0.2	19.0	NAP	11.0	25.00	<0.20
30 Dec 1982	Whiteface	0.7	ISA	ISA	ISA	ISA	ISA
	Brookhaven	<0.2	21.0	NAP	23.0	17.00	<0.50
	Lewis	10.0	22.0	NAP	26.0	14.00	<0.20

MISSING DATA CODES:

NSE MEANS NO SAMPLE COLLECTED
ISA MEANS INSUFFICIENT SAMPLE FOR ANALYSIS
NAP MEANS NO ANALYSIS PERFORMED
MOE MEANS MALFUNCTION OR OPERATOR ERROR
RPC MEANS REJECTED - PROBABLE CONTAMINATION

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		(H) +	(NH) +	(NA) +	(K) +	(CA) +	(MG) +	(N) P	(AT) N
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L
1 Jan 1982	Virginia	25.1	4.5	6.80	<0.40	0.75	0.78	36.	39.
	Lewis	11.2	<1.0	90.00	0.81	1.80	6.70	123.	119.
	Oxford	32.0	2.7	0.58	<0.40	1.80	0.49	36.	40.
2 Jan 1982	Penn State	33.1	5.0	3.80	1.50	1.30	0.45	42.	47.
	Brookhaven	8.9	0.8	41.00	0.95	1.00	3.90	63.	62.
3 Jan 1982	Whitface	30.9	4.1	0.80	<0.40	0.95	<0.40	52.	46.
4 Jan 1982	Oxford	31.6	5.6	2.10	<0.40	1.30	<0.40	45.	42.
	Oak Ridge	43.7	1.7	1.60	<0.40	1.90	0.41	124.	52.
5 Jan 1982	Ithaca	26.3	43.0	1.70	<0.40	1.90	<0.40	38.	75.
	Penn State	25.1	2.0	3.30	0.62	1.00	<0.40	36.	33.
	Virginia	36.3	2.0	1.90	<0.40	0.80	<0.40	41.	42.
	Illinois	55.0	6.5	1.50	1.40	2.10	<0.40	63.	69.
	Brookhaven	17.0	3.5	71.00	1.20	1.90	6.50	112.	109.
	Lewis	16.6	8.6	41.00	1.30	1.20	3.30	80.	76.
6 Jan 1982	Whitface	23.4	39.0	0.64	<0.40	<0.50	<0.40	27.	63.
7 Jan 1982	Penn State	131.8	32.0	31.00	4.60	23.00	9.10	265.	256.
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	RPC	PPC	RPC	RPC	RPC	RPC	RPC	RPC
8 Jan 1982	Ithaca	53.7	54.0	2.70	<0.40	2.60	0.45	80.	117.
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
9 Jan 1982	Penn State	50.1	12.0	47.00	0.96	11.00	3.00	156.	138.
	Oxford	42.7	1.8	6.30	<0.40	11.00	3.80	89.	80.
11 Jan 1982	Whitface	81.3	25.0	1.60	1.20	1.70	<0.40	119.	112.

		C H		N H		C N		C K		C A		C M		A N I O N		C A T I O N	
		(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	(+)	S U M	S U M	S U M	S U M
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
12 Jan 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
13 Jan 1982	Illinois	39.8	9.1	1.30	<0.40	4.10	0.99	60.	60.								
14 Jan 1982	Ithaca	42.7	<0.6	4.70	<0.40	2.90	0.99	65.	55.								
	Penn State	33.1	2.9	4.10	0.60	7.50	1.90	70.	60.								
	Brookhaven	27.5	1.5	16.00	<0.40	0.67	2.10	46.	51.								
	Oxford	33.9	<0.6	6.70	0.42	2.60	0.82	48.	48.								
15 Jan 1982	Whiteface	35.5	<0.6	1.10	<0.40	<0.50	<0.40	36.	37.								
	Virginia	28.8	<0.6	1.40	<0.40	2.10	<0.40	34.	34.								
	Leves	28.8	<0.6	39.00	<0.40	1.70	4.50	84.	80.								
	Oak Ridge	18.2	0.6	2.10	<0.60	2.10	0.58	36.	26.								
17 Jan 1982	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
18 Jan 1982	Penn State	47.1	16.0	4.70	1.10	4.60	1.10	140.	120.								
	Illinois	22.4	4.7	2.30	<0.40	7.70	2.70	50.	50.								
	Oxford	69.2	17.0	8.40	<0.40	6.10	1.40	120.	110.								
20 Jan 1982	Virginia	47.1	8.1	9.90	<0.40	2.90	0.95	115.	113.								
	Leves	60.3	10.0	53.00	7.70	4.90	4.40	163.	150.								
21 Jan 1982	Penn State	72.4	14.0	7.40	1.30	10.00	1.50	134.	118.								
	Illinois	100.0	4.3	4.70	<0.60	5.10	3.30	134.	126.								
	Oxford	42.7	4.5	1.80	<0.40	0.50	<0.40	47.	50.								
22 Jan 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Ithaca	53.7	8.4	6.70	<0.40	1.90	0.66	87.	70.								
	Leves	39.8	<0.6	12.00	<0.40	0.65	1.30	63.	56.								
23 Jan 1982	Illinois	77.6	9.0	6.40	<0.40	3.70	2.50	122.	106.								

MAPSS PRECIPITATION CHEMISTRY DATA (CONT.)

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		(H ⁺)		(NH ₄ ⁺)		(NO ₃ ⁻)		(K ⁺)		(Ca ²⁺)		(Mg ²⁺)		ANION SUM		CATION SUM	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
23 Jan 1982	Oxford	41.7	0.4	1.40	<0.40	<0.50	<0.40	47.	47.								
24 Jan 1982	Virginia	146.2	34.0	5.60	0.91	1.90	0.70	267.	232.								
	Brookhaven	20.0	1.5	24.00	<0.40	0.85	2.80	53.	53.								
25 Jan 1982	Whiteface	29.5	0.6	1.40	<0.40	2.50	0.53	38.	38.								
	Ithaca	13.8	<0.6	1.60	<0.40	1.20	<0.40	19.	18.								
	Lewes	31.6	1.9	62.00	1.70	2.20	4.80	116.	115.								
	Oak Ridge	49.0	12.0	5.60	1.20	1.60	0.74	97.	72.								
26 Jan 1982	Penn State	13.5	1.5	1.40	<0.60	1.10	<0.40	24.	19.								
	Illinois	56.2	12.0	2.00	1.50	1.30	0.91	79.	76.								
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
29 Jan 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Ithaca	114.8	25.0	24.00	0.89	8.70	2.40	209.	187.								
1 Feb 1982	Ithaca	66.1	13.0	2.30	<0.40	1.00	0.45	86.	88.								
	Virginia	27.5	13.0	5.60	1.50	3.40	6.30	127.	67.								
	Brookhaven	38.9	1.9	110.00	0.60	3.40	12.00	173.	182.								
	Lewes	3.9	9.1	54.00	0.56	2.80	5.90	70.	85.								
	Oxford	43.7	5.4	2.80	<0.40	1.90	0.45	63.	57.								
	Oak Ridge	12.3	3.0	3.60	0.60	2.40	0.49	29.	25.								
2 Feb 1982	Whiteface	13.2	<0.6	0.71	<0.40	<0.50	<0.40	14.	14.								
	Penn State	43.2	15.0	7.00	<0.60	3.90	1.30	124.	116.								
	Illinois	45.7	8.8	2.50	<0.40	3.10	0.74	65.	65.								
3 Feb 1982	Lewes	39.8	4.4	81.00	1.20	2.40	9.20	152.	150.								
4 Feb 1982	Ithaca	25.7	1.5	1.30	<0.40	0.57	<0.40	30.	30.								

MAP33 PRECIPITATION CHEMISTRY DATA (CONT.)

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		(H +)	(H +)	(N +)	(K +)	(C + A +)	(M + G +)	A N I O N S U M	C A T I O N S U M
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L
4 Feb 1982	Penn State	22.9	1.4	1.80	<0.40	1.70	0.58	47.	31.
	Virginia	20.9	1.0	1.70	<0.40	0.62	<0.40	29.	25.
	Brookhaven	31.6	<0.6	76.00	<0.40	2.10	8.40	114.	129.
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	64.6	1.5	1.30	<1.00	1.30	<0.40	74.	70.
5 Feb 1982	Whiteface	20.9	0.7	1.80	<0.40	<0.50	<0.40	19.	23.
	Oxford	61.7	10.0	3.40	0.43	2.20	0.45	78.	85.
8 Feb 1982	Whiteface	81.3	5.4	1.90	<0.40	3.40	0.62	85.	97.
	Ithaca	RPC	RPC	RPC	RPC	RPC	RPC	RPC	RPC
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Lewes	60.3	20.0	29.00	<1.00	3.10	3.70	102.	123.
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
9 Feb 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	23.4	1.4	2.40	<0.40	0.67	<0.40	29.	29.
10 Feb 1982	Whiteface	44.7	1.9	5.30	<1.00	0.74	<0.40	54.	53.
	Ithaca	75.9	12.0	1.80	<0.40	2.00	0.58	107.	95.
	Penn State	57.5	5.2	3.70	<1.50	4.30	0.82	86.	77.
	Virginia	144.5	6.2	7.50	<0.40	5.20	1.10	201.	171.
	Brookhaven	107.2	15.0	11.00	1.40	4.10	2.10	128.	147.
	Lewes	81.3	4.7	13.00	<1.00	3.00	1.90	101.	109.
	Oak Ridge	44.7	10.0	2.30	<1.00	3.40	0.53	61.	65.
13 Feb 1982	Virginia	79.4	3.9	4.10	<0.40	1.20	<0.40	102.	90.
14 Feb 1982	Lewes	38.9	1.5	22.00	<1.00	1.10	2.80	63.	76.

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

MO/

		(H ⁺)		(NH ₄ ⁺)		(NO ₃ ⁻)		(K ⁺)		(Ca ²⁺)		(Mg ²⁺)		ANION SUM		CATION SUM	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
15 Feb 1982	Whiteface	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154	154
	Ithaca	109.6	3.1	4.80	0.69	2.70	0.70	150.	125.								
17 Feb 1982	Illinois	102.3	9.7	0.52	<0.40	1.60	<0.40	132.	116.								
	Oak Ridge	41.7	3.0	2.10	<1.00	1.60	0.41	49.	51.								
18 Feb 1982	Penn State	56.2	5.9	3.80	0.23	3.90	0.74	86.	76.								
	Illinois	186.2	32.0	2.30	0.81	11.00	2.00	257.	247.								
	Lewes	25.1	4.0	290.00	4.90	6.30	28.00	409.	393.								
19 Feb 1982	Virginia	43.7	8.1	1.20	<0.40	0.52	<0.40	67.	68.								
	Illinois	93.3	11.0	2.10	<0.40	2.90	0.78	126.	114.								
20 Feb 1982	Penn State	89.1	6.6	3.80	<0.40	1.00	0.45	112.	102.								
	Brookhaven	33.1	4.4	36.00	0.99	2.30	4.40	76.	88.								
	Lewes	17.0	2.6	23.00	0.83	1.40	3.00	53.	53.								
	Oxford	74.1	11.0	1.60	<0.40	1.20	<0.40	187.	89.								
22 Feb 1982	Whiteface	85.1	4.3	4.50	<1.00	1.10	0.66	88.	97.								
	Ithaca	61.7	11.0	1.10	<0.40	2.10	0.58	88.	79.								
	Lewes	114.8	38.0	6.30	1.60	2.80	1.20	182.	169.								
23 Feb 1982	Penn State	158.5	70.0	9.40	<1.00	4.80	1.20	278.	249.								
	Oak Ridge	104.7	41.0	14.00	<1.00	12.00	1.60	180.	187.								
25 Feb 1982	Ithaca	43.7	4.0	3.10	<0.40	11.00	1.80	87.	76.								
	Penn State	107.9	110.0	6.60	0.97	23.00	4.00	366.	319.								
28 Feb 1982	Virginia	13.5	<0.6	1.10	<0.40	<0.50	<0.40	14.	15.								
	Lewes	7.1	<0.6	8.20	1.30	1.20	1.10	17.	21.								
1 Mar 1982	Whiteface	109.6	45.0	8.00	3.00	11.00	3.00	186.	190.								

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Date	Location	CH ₄		C ₂ H ₆		C ₃ H ₈		C ₄ H ₁₀		C ₅ H ₁₂		C ₆ H ₁₄		C ₇ H ₁₆		C ₈ H ₁₈		C ₉ H ₂₀		C ₁₀ H ₂₂		C ₁₁ H ₂₄		C ₁₂ H ₂₆		C ₁₃ H ₂₈		C ₁₄ H ₃₀		C ₁₅ H ₃₂		C ₁₆ H ₃₄		C ₁₇ H ₃₆		C ₁₈ H ₃₈		C ₁₉ H ₄₀		C ₂₀ H ₄₂		C ₂₁ H ₄₄		C ₂₂ H ₄₆		C ₂₃ H ₄₈		C ₂₄ H ₅₀		C ₂₅ H ₅₂		C ₂₆ H ₅₄		C ₂₇ H ₅₆		C ₂₈ H ₅₈		C ₂₉ H ₆₀		C ₃₀ H ₆₂		C ₃₁ H ₆₄		C ₃₂ H ₆₆		C ₃₃ H ₆₈		C ₃₄ H ₇₀		C ₃₅ H ₇₂		C ₃₆ H ₇₄		C ₃₇ H ₇₆		C ₃₈ H ₇₈		C ₃₉ H ₈₀		C ₄₀ H ₈₂		C ₄₁ H ₈₄		C ₄₂ H ₈₆		C ₄₃ H ₈₈		C ₄₄ H ₉₀		C ₄₅ H ₉₂		C ₄₆ H ₉₄		C ₄₇ H ₉₆		C ₄₈ H ₉₈		C ₄₉ H ₁₀₀		C ₅₀ H ₁₀₂		C ₅₁ H ₁₀₄		C ₅₂ H ₁₀₆		C ₅₃ H ₁₀₈		C ₅₄ H ₁₁₀		C ₅₅ H ₁₁₂		C ₅₆ H ₁₁₄		C ₅₇ H ₁₁₆		C ₅₈ H ₁₁₈		C ₅₉ H ₁₂₀		C ₆₀ H ₁₂₂		C ₆₁ H ₁₂₄		C ₆₂ H ₁₂₆		C ₆₃ H ₁₂₈		C ₆₄ H ₁₃₀		C ₆₅ H ₁₃₂		C ₆₆ H ₁₃₄		C ₆₇ H ₁₃₆		C ₆₈ H ₁₃₈		C ₆₉ H ₁₄₀		C ₇₀ H ₁₄₂		C ₇₁ H ₁₄₄		C ₇₂ H ₁₄₆		C ₇₃ H ₁₄₈		C ₇₄ H ₁₅₀		C ₇₅ H ₁₅₂		C ₇₆ H ₁₅₄		C ₇₇ H ₁₅₆		C ₇₈ H ₁₅₈		C ₇₉ H ₁₆₀		C ₈₀ H ₁₆₂		C ₈₁ H ₁₆₄		C ₈₂ H ₁₆₆		C ₈₃ H ₁₆₈		C ₈₄ H ₁₇₀		C ₈₅ H ₁₇₂		C ₈₆ H ₁₇₄		C ₈₇ H ₁₇₆		C ₈₈ H ₁₇₈		C ₈₉ H ₁₈₀		C ₉₀ H ₁₈₂		C ₉₁ H ₁₈₄		C ₉₂ H ₁₈₆		C ₉₃ H ₁₈₈		C ₉₄ H ₁₉₀		C ₉₅ H ₁₉₂		C ₉₆ H ₁₉₄		C ₉₇ H ₁₉₆		C ₉₈ H ₁₉₈		C ₉₉ H ₂₀₀		C ₁₀₀ H ₂₀₂		C ₁₀₁ H ₂₀₄		C ₁₀₂ H ₂₀₆		C ₁₀₃ H ₂₀₈
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		(H +)	(N H 4 +)	(N A +)	(K +)	(C A +)	(M G +)	(N S U N S U M	(N S U M
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L
10 Mar 1982	Ithaca	100.0	13.0	3.10	0.44	5.50	1.40	124.	130.
	Illinois	123.0	65.0	8.60	<1.00	17.00	3.70	255.	238.
	Brookhaven	18A	18A	18A	18A	18A	18A	18A	18A
11 Mar 1982	Illinois	35.5	76.0	9.40	<1.00	13.00	3.40	168.	154.
12 Mar 1982	Penn State	67.6	14.0	9.00	0.82	3.90	0.86	109.	101.
	Brookhaven	218.8	56.0	20.00	2.30	3.10	3.30	335.	310.
	Lewis	77.6	30.0	27.00	3.20	3.50	2.70	170.	150.
	Oxford	57.5	22.0	4.70	<1.00	3.60	0.82	92.	93.
13 Mar 1982	Virginia	58.9	31.0	9.10	0.92	3.10	1.30	110.	109.
	Oxford	93.3	14.0	3.60	<1.00	7.00	1.30	56.	128.
14 Mar 1982	Penn State	81.3	21.0	8.70	1.90	10.00	2.10	146.	137.
15 Mar 1982	Whiteface	95.5	22.0	2.20	0.79	2.40	0.82	118.	127.
	Ithaca	89.1	13.0	3.50	0.53	3.00	1.10	106.	114.
	Illinois	29.5	25.0	2.60	0.54	5.00	1.30	76.	70.
	Brookhaven	182.0	61.0	70.00	3.10	9.90	10.00	375.	356.
16 Mar 1982	Illinois	72.4	29.0	6.80	<1.00	5.50	1.60	133.	122.
17 Mar 1982	Penn State	34.7	13.0	3.10	1.30	9.80	1.90	80.	75.
	Virginia	61.7	12.0	5.30	1.40	3.80	0.70	91.	89.
	Lewis	21.4	4.7	51.00	1.70	2.30	5.00	93.	93.
	Oak Ridge	28.8	11.0	6.90	1.20	7.90	1.70	69.	67.
18 Mar 1982	Whiteface	28.2	8.2	<0.50	<1.00	3.00	0.45	34.	43.
	Ithaca	50.1	14.0	3.50	1.40	15.00	3.00	96.	105.
	Illinois	72.4	23.0	3.70	1.20	5.70	1.10	125.	114.

MAP33 PRECIPITATION CHEMISTRY DATA (CONT.)

R3/

		ANION							CATION	
		(H +)	(N H 4 +)	(N A +)	(K +)	(C A +)	(M G +)		S U M	S U M
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L		UEQ/L	UEQ/L
18 Mar 1982	Brookhaven	33.9	6.7	3.00	0.45	4.30	1.10		53.	55.
	Oxford	42.7	12.0	5.80	<1.00	3.00	1.10		68.	69.
19 Mar 1982	Whiteface	75.9	18.0	12.00	1.40	7.60	1.70		128.	126.
21 Mar 1982	Penn State	41.7	6.7	2.90	0.89	3.70	0.70		73.	61.
	Oxford	47.1	33.0	5.20	<1.00	6.80	1.50		167.	142.
22 Mar 1982	Whiteface	93.3	19.0	0.80	<1.00	2.10	0.45		122.	118.
	Ithaca	478.6	110.0	4.70	2.60	9.90	2.10		744.	620.
	Illinois	182.0	83.0	21.00	2.20	18.00	4.60		380.	333.
	Brookhaven	114.8	28.0	35.00	2.40	18.00	6.00		246.	220.
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA		ISA	ISA
23 Mar 1982	Whiteface	57.5	25.0	0.10	<0.40	4.10	0.88		97.	96.
	Virginia	72.4	23.0	3.50	<1.00	2.30	0.58		108.	105.
	Oak Ridge	20.0	15.0	6.80	0.92	2.00	0.74		44.	48.
24 Mar 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA		ISA	ISA
25 Mar 1982	Illinois	14.8	32.0	1.10	<1.00	5.50	1.40		78.	62.
26 Mar 1982	Ithaca	75.9	20.0	1.70	<1.00	4.30	1.40		104.	109.
	Virginia	117.5	44.0	6.20	<1.00	3.60	1.10		188.	177.
	Brookhaven	104.7	44.0	22.00	1.60	5.40	3.00		199.	189.
	Oxford	117.5	47.0	4.80	<1.00	10.00	1.80		216.	193.
	Oak Ridge	RPC	RPC	RPC	RPC	RPC	RPC		RPC	RPC
27 Mar 1982	Lewes	ISA	28.0	90.00	9.70	11.00	14.00		263.	ISA
28 Mar 1982	Penn State	95.5	70.0	4.10	<2.00	7.50	1.40		188.	187.
29 Mar 1982	Whiteface	60.3	7.5	1.20	<0.40	2.00	0.53		75.	74.

		(H ⁺)		(NH ₄ ⁺)		(NO ₃ ⁻)		(K ⁺)		(Ca ²⁺)		(Mg ²⁺)		ANION		CATION	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
29 Mar 1982	Ithaca	46.8	15.0	1.80	<1.00	5.80	2.10	82.	79.								
	Illinois	19A	19A	19A	19A	19A	19A	19A	19A								
30 Mar 1982	Illinois	19A	19A	19A	19A	19A	19A	19A	19A								
31 Mar 1982	Whiteface	22.9	<0.6	2.50	<0.40	<0.50	<0.40	25.	25.								
	Illinois	19A	19A	19A	19A	19A	19A	19A	19A								
	Oxford	21.9	17.0	8.80	<1.00	14.00	2.90	96.	81.								
1 Apr 1982	Whiteface	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE								
	Ithaca	34.7	19.0	3.90	<1.00	4.10	1.20	73.	68.								
	Penn State	30.9	30.0	14.00	2.40	22.00	5.70	138.	133.								
	Virginia	19A	19A	19A	19A	19A	19A	19A	19A								
	Brookhaven	23.0	15.0	60.00	2.30	3.90	7.00	117.	123.								
	Lewes	15.5	40.0	55.00	3.40	7.80	6.90	141.	143.								
	Dak Ridge	27.5	6.2	10.00	<1.00	4.10	1.60	60.	59.								
2 Apr 1982	Whiteface	19A	19A	19A	19A	19A	19A	19A	19A								
	Illinois	19A	19A	19A	19A	19A	19A	19A	19A								
4 Apr 1982	Brookhaven	24.0	5.2	73.00	2.20	7.10	7.70	135.	134.								
	Lewes	3.0	23.0	61.00	12.00	27.00	12.00	166.	177.								
5 Apr 1982	Whiteface	28.2	<0.6	1.50	<0.40	2.50	<0.40	35.	35.								
	Ithaca	39.8	7.9	1.20	<1.00	8.00	1.20	73.	67.								
	Penn State	0.9	23.0	5.20	3.40	37.00	6.40	104.	119.								
	Virginia	72.4	35.0	19.00	<1.00	11.00	3.30	170.	155.								
	Illinois	0.4	13.0	3.30	3.10	41.00	0.60	64.	111.								
	Oxford	29.5	0.8	4.70	<1.00	6.70	1.10	48.	55.								

MAP3S PRECIPITATION CHEMISTRY DATA (CONT.)

85/

		C H +		C N H +		C N A +		C K +		C C A +		C H G +		C N S U P		C N S U M	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
6 Apr 1982	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	26.9	14.0	1.60	<1.00	13.00	1.90	80.	72.								
	Oak Ridge	37.2	12.0	29.00	1.80	22.00	5.10	102.	130.								
7 Apr 1982	Ithaca	18.6	0.6	0.86	<1.00	3.00	0.49	30.	27.								
	Penn State	55.0	5.6	1.30	<0.40	3.40	0.99	79.	71.								
	Brookhaven	35.5	2.4	35.00	<0.40	1.40	3.60	84.	83.								
	Lewis	29.5	8.8	65.00	2.00	3.80	7.40	133.	128.								
	Oxford	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE								
9 Apr 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Virginia	25.1	3.1	2.90	<1.00	2.50	<0.40	46.	36.								
	Illinois	87.1	21.0	2.90	<1.00	10.00	1.20	155.	133.								
10 Apr 1982	Lewis	26.3	2.1	18.00	<0.40	2.10	2.20	58.	55.								
	Oxford	60.3	18.0	4.20	<1.00	9.30	1.80	113.	105.								
12 Apr 1982	Whiteface	100.0	27.0	2.30	<1.00	1.30	0.49	149.	133.								
	Ithaca	125.9	50.0	3.70	<1.00	8.50	2.20	206.	201.								
	Penn State	77.6	5.3	1.80	<0.40	5.70	1.50	105.	99.								
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Oak Ridge	52.5	2.0	4.20	0.57	6.60	1.90	92.	77.								
13 Apr 1982	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
14 Apr 1982	Whiteface	97.7	47.0	4.90	<1.00	5.80	1.20	170.	164.								
	Ithaca	177.8	69.0	5.70	<1.00	37.00	7.60	372.	342.								
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Brookhaven	75.9	94.0	96.00	11.00	30.00	16.00	398.	369.								

MAP38 PRECIPITATION CHEMISTRY DATA (CONT.)

86/

		(H +)	(N H 4 +)	(N A +)	(K +)	(C A +)	(M G +)	A N I D N S U M	C A T I D N S U M
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L
16 Apr 1982	Illinois	32.4	21.0	2.20	<1.00	10.00	1.20	83.	78.
18 Apr 1982	Ithaca	89.1	33.0	5.10	<1.00	7.90	2.10	156.	147.
	Penn State	RPC	RPC	RPC	RPC	RPC	RPC	RPC	RPC
	Lewes	9.3	11.0	9.60	<1.00	2.00	1.10	36.	36.
	Oxford	49.0	20.0	5.20	<1.00	6.30	1.20	151.	89.
19 Apr 1982	Whiteface	30.9	5.7	1.90	<1.00	0.80	<0.40	47.	40.
	Virginia	12.9	17.0	15.00	4.00	3.50	1.50	61.	59.
	Illinois	21.9	20.0	5.60	<1.00	10.00	2.80	80.	73.
	Brookhaven	22.9	6.2	17.00	0.41	2.40	2.10	57.	56.
	Oak Ridge	28.8	13.0	5.50	2.60	3.30	1.00	62.	59.
20 Apr 1982	Illinois	47.9	33.0	1.60	<1.00	6.30	1.20	105.	97.
21 Apr 1982	Whiteface	50.1	10.0	4.80	<0.40	3.10	0.66	99.	72.
	Ithaca	41.3	34.0	3.70	<1.00	15.00	3.50	172.	156.
	Lewes	18A	18A	18A	18A	18A	18A	18A	18A
	Oxford	18A	18A	18A	18A	18A	18A	18A	18A
26 Apr 1982	Illinois	18A	18A	18A	18A	18A	18A	18A	18A
27 Apr 1982	Whiteface	26.0	1.4	12.00	<0.40	5.30	1.30	57.	54.
	Ithaca	37.2	8.2	5.80	1.40	1.00	<0.40	52.	55.
	Penn State	18A	18A	18A	18A	18A	18A	18A	18A
	Illinois	9.3	210.0	16.00	<1.00	22.00	5.60	324.	291.
	Brookhaven	13.2	1.0	36.00	0.53	1.80	4.10	65.	62.
	Lewes	11.0	0.6	25.00	<0.40	1.00	2.60	41.	44.
	Oxford	30.9	<0.6	3.30	<0.40	1.10	<0.40	39.	36.

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

57/

		(H ⁺)		(NH ₄ ⁺)		(NO ₃ ⁻)		(K ⁺)		(Ca ²⁺)		(Mg ²⁺)		ANION SUP		CATION SUP	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
25 Apr 1982	Penn State	245.5	79.0	9.60	<1.00	6.50	2.00	395.	357.								
	Virginia	42.7	3.3	1.80	<0.40	1.00	<0.40	56.	50.								
	Brookhaven	114.8	19.0	7.00	<1.00	1.80	1.10	169.	147.								
	Lewis	97.7	50.0	33.00	<1.00	2.00	3.50	196.	192.								
	Oak Ridge	50.1	<1.0	3.40	0.57	3.10	0.62	69.	62.								
1 May 1982	Oxford	18A	18A	18A	18A	18A	18A	18A	18A								
3 May 1982	Whitface	182.0	120.0	9.80	9.40	36.00	11.00	460.	415.								
7 May 1982	Illinois	24.0	11.0	2.60	1.20	6.60	1.50	56.	55.								
8 May 1982	Oxford	33.9	11.0	2.60	<1.00	1.10	<0.40	109.	50.								
	Oak Ridge	42.7	6.5	6.80	1.70	2.00	0.53	68.	63.								
9 May 1982	Penn State	144.5	64.0	2.50	<1.00	15.00	2.90	273.	267.								
	Lewis	144.5	55.0	20.00	<2.00	6.70	2.80	265.	239.								
	Oxford	18A	18A	18A	18A	18A	18A	18A	18A								
10 May 1982	Whitface	34.7	5.1	0.50	0.48	1.20	<0.40	46.	43.								
	Ithaca	83.2	24.0	1.00	<1.00	2.20	0.49	128.	114.								
13 May 1982	Penn State	18A	18A	18A	18A	18A	18A	18A	18A								
	Lewis	19A	18A	18A	18A	18A	18A	18A	18A								
17 May 1982	Ithaca	138.0	89.0	5.00	8.40	42.00	13.00	382.	359.								
	Illinois	64.6	26.0	8.20	<1.00	11.00	3.70	130.	128.								
18 May 1982	Penn State	89.1	72.0	3.50	<1.00	22.00	3.80	218.	216.								
20 May 1982	Whitface	87.1	42.0	3.40	3.10	5.20	1.60	164.	149.								
	Penn State	213.8	63.0	15.00	1.20	30.00	6.60	569.	366.								
	Virginia	79.4	32.0	7.70	<1.00	6.70	1.90	131.	136.								

MAP38 PRECIPITATION CHEMISTRY DATA (CONT.)

8A/

		(H +)	(N H +)	(N A +)	(K +)	(C A +)	(M G +)	(A N I O N S U M)	(C A T I O N S U M)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L
20 May 1982	Lewes	69.2	27.0	17.00	2.40	4.20	1.70	130.	127.
	Oxford	18A	18A	18A	18A	18A	18A	18A	18A
21 May 1982	Whitaface	27.5	13.0	2.20	<1.00	3.70	0.62	59.	51.
	Ithaca	159.9	31.0	1.70	<1.00	6.10	1.60	230.	203.
	Penn State	79.4	45.0	0.90	1.20	17.00	3.70	226.	172.
	Illinois	51.3	28.0	2.90	<1.00	8.70	2.10	147.	100.
	Brookhaven	117.5	91.0	30.00	9.90	25.00	6.70	299.	312.
	Oxford	42.7	16.0	1.60	<1.00	3.60	0.95	153.	69.
22 May 1982	Oxford	69.2	17.0	5.10	<1.00	6.20	1.70	198.	107.
23 May 1982	Lewes	112.2	38.0	47.00	1.60	4.60	4.60	228.	217.
	Oak Ridge	52.5	23.0	3.10	2.70	7.60	1.80	110.	100.
24 May 1982	Ithaca	114.8	23.0	0.90	<1.00	NAP	NAP	153.	NAP
	Brookhaven	41.7	10.0	8.40	<1.00	1.00	0.99	59.	64.
	Lewes	22.9	12.0	65.00	1.20	3.40	5.60	112.	119.
25 May 1982	Whitaface	38.0	2.9	4.80	<1.00	1.00	<0.40	56.	48.
	Penn State	57.5	25.0	1.80	<1.00	1.00	0.45	125.	89.
	Brookhaven	229.1	18.0	2.20	<1.00	2.70	1.10	282.	257.
	Lewes	18A	18A	18A	18A	18A	18A	18A	18A
26 May 1982	Vincennes	117.5	57.0	6.10	<1.00	3.60	0.95	207.	190.
27 May 1982	Illinois	18.2	12.0	0.53	<1.00	3.30	0.82	57.	39.
	Oxford	46.8	19.0	1.10	<1.00	2.10	0.53	110.	72.
	Oak Ridge	51.3	17.0	8.30	<1.00	2.70	0.70	93.	83.
28 May 1982	Penn State	36.3	16.0	1.50	0.8A	1.30	<0.40	60.	57.

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

A9/

		(H ⁺)		(NH ₄ ⁺)		(NA ⁺)		(K ⁺)		(CA ⁺⁺)		(MG ⁺⁺)		ANION		CATION	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
28 May 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	109.6	22.0	9.70	<1.00	10.00	2.20	208.	166.								
	Oak Ridge	69.2	20.0	3.80	<1.00	5.10	1.00	93.	105.								
29 May 1982	Virginia	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE
	Brookhaven	38.9	6.3	4.00	<1.00	0.65	0.53	124.	52.								
	Lewis	45.7	19.0	9.20	<1.00	0.95	1.10	76.	78.								
30 May 1982	Whiteface	44.7	11.0	15.00	<1.00	ISA	ISA	94.	ISA								
31 May 1982	Virginia	56.2	16.0	3.00	1.50	1.80	0.62	95.	82.								
	Lewis	144.5	37.0	12.00	0.78	4.10	2.00	230.	207.								
	Oxford	52.5	16.0	4.50	1.60	3.00	0.78	101.	82.								
1 Jun 1982	Whiteface	21.9	2.2	20.00	1.70	0.77	<0.40	47.	47.								
	Ithaca	83.2	14.0	2.20	0.47	0.82	<0.40	108.	101.								
	Penn State	70.8	14.0	8.90	0.88	1.00	<0.40	113.	101.								
	Illinois	33.9	12.0	2.00	1.50	1.10	<0.40	62.	52.								
	Oak Ridge	45.7	16.0	5.90	1.10	3.50	0.58	78.	77.								
2 Jun 1982	Whiteface	28.2	7.0	2.30	<1.00	<0.50	<0.40	39.	37.								
	Ithaca	44.7	7.9	1.40	0.56	<0.50	0.70	60.	56.								
	Penn State	128.8	17.0	10.00	1.70	5.20	1.20	244.	174.								
	Brookhaven	14.5	1.1	1.50	<1.00	<0.50	<0.40	24.	17.								
	Lewis	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Oxford	36.3	7.1	3.70	<1.00	0.55	<0.40	58.	48.								
3 Jun 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
4 Jun 1982	Ithaca	109.6	21.0	1.40	1.00	3.40	<0.40	172.	140.								

		(H ⁺)		(NH ₄ ⁺)		(NO ₃ ⁻)		(K ⁺)		(Ca ²⁺)		(Mg ²⁺)		ANION SUM		CATION SUM	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
4 Jun 1982	Penn State	117.5	46.0	14.00	4.10	9.10	1.20	219.	202.								
	Oak Ridge	85.1	22.0	4.60	<1.00	4.40	0.91	138.	122.								
5 Jun 1982	Lewis	31.6	6.8	62.00	2.40	3.20	5.90	120.	121.								
	Oxford	91.2	2.1	6.90	<1.00	6.30	2.20	148.	117.								
6 Jun 1982	Brookhaven	13.8	2.3	4.00	<1.00	<0.50	0.49	26.	21.								
7 Jun 1982	Whiteface	14.8	5.3	0.91	<1.00	0.65	<0.40	28.	22.								
	Ithaca	15.1	6.1	2.20	0.75	0.57	<0.40	25.	25.								
	Penn State	37.2	5.8	4.80	3.10	1.10	<0.40	60.	53.								
8 Jun 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Illinois	123.0	75.0	8.30	<1.00	29.00	4.10	332.	273.								
	Lewis	MDE	MDE	MDE	MDE	MDE	MDE	MDE	MDE								
	Oxford	75.9	28.0	1.90	<1.00	3.60	0.49	129.	114.								
	Oak Ridge	28.8	13.0	12.00	<1.00	3.30	<0.40	65.	60.								
9 Jun 1982	Illinois	120.2	69.0	8.70	2.90	19.00	2.90	278.	244.								
10 Jun 1982	Oxford	104.7	72.0	14.00	12.00	13.00	3.50	261.	236.								
	Oak Ridge	38.0	21.0	9.50	5.90	11.00	1.20	106.	99.								
11 Jun 1982	Penn State	60.3	19.0	2.30	0.88	1.50	<0.40	107.	85.								
12 Jun 1982	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
14 Jun 1982	Ithaca	223.9	50.0	3.60	3.90	7.10	1.80	429.	299.								
	Penn State	70.8	25.0	4.30	1.70	1.60	0.49	131.	106.								
	Illinois	77.6	71.0	34.00	8.60	80.00	10.00	459.	371.								
	Brookhaven	55.0	6.9	18.00	<1.00	1.20	1.60	92.	85.								
	Lewis	57.5	15.0	67.00	0.53	3.10	6.60	177.	159.								

		H ⁺		NH ₄ ⁺		NO ₃ ⁻		K ⁺		Ca ²⁺		Mg ²⁺		ANION		CATION	
		(H ⁺)	(NH ₄ ⁺)	(NO ₃ ⁻)	(K ⁺)	(Ca ²⁺)	(Mg ²⁺)	(ANION)	(CATION)	(Ca ²⁺)	(Mg ²⁺)	(ANION)	(CATION)	(ANION)	(CATION)	(ANION)	(CATION)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
14 Jun 1982	Oak Ridge	95.5	29.0	12.00	<1.00	8.90	2.10	188.	158.								
15 Jun 1982	Illinois	46.8	25.0	8.00	2.20	9.40	1.60	109.	104.								
16 Jun 1982	Whiteface	125.9	28.0	5.50	2.20	11.00	2.10	235.	188.								
	Illinois	66.1	34.0	7.70	<1.00	9.60	2.00	143.	131.								
	Oak Ridge	81.3	52.0	5.10	<1.00	6.50	1.10	163.	154.								
17 Jun 1982	Ithaca	47.9	8.0	0.43	<0.40	<0.50	<0.40	67.	56.								
	Penn State	100.0	17.0	2.80	<1.00	6.00	1.50	158.	135.								
	Brookhaven	69.2	31.0	9.30	<1.00	1.80	1.10	138.	115.								
	Oxford	53.7	21.0	3.60	1.90	5.40	1.60	110.	90.								
18 Jun 1982	Lewes	49.0	36.0	11.00	<1.00	2.20	1.20	120.	103.								
	Oak Ridge	28.2	7.1	4.70	<1.00	4.20	0.53	57.	89.								
19 Jun 1982	Brookhaven	17.4	2.1	7.80	<0.40	<0.50	<0.40	30.	27.								
	Lewes	7.6	2.0	41.00	4.20	2.10	1.60	42.	57.								
20 Jun 1982	Penn State	125.9	36.0	22.00	3.30	4.40	0.99	239.	198.								
	Oxford	151.4	93.0	4.70	<1.00	17.00	2.80	316.	289.								
21 Jun 1982	Whiteface	147.9	41.0	1.10	<1.00	2.70	0.70	244.	197.								
	Ithaca	263.0	55.0	1.60	<1.00	8.90	2.30	403.	302.								
	Penn State	123.0	71.0	25.00	16.00	4.30	1.60	254.	255.								
	Illinois	81.3	34.0	0.99	<1.00	7.00	0.99	141.	132.								
	Oxford	184	184	184	184	184	184	184	184								
22 Jun 1982	Whiteface	21.9	14.0	3.50	2.20	0.75	<0.40	52.	43.								
	Illinois	0.5	90.0	1.80	<1.00	33.00	4.50	125.	171.								
	Oak Ridge	31.6	28.0	3.90	<1.00	5.90	<0.40	80.	75.								

		(H +)	(N H +)	(N A +)	(K +)	(C A +)	(M G +)	(S O 4 +)	(S U +)
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L
23 Jun 1982	Ithaca	91.2	42.0	1.40	<1.00	6.60	1.90	177.	152.
	Penn State	107.2	39.0	0.60	<1.00	17.00	4.40	235.	198.
	Brookhaven	199.5	66.0	19.00	1.90	11.00	2.80	395.	314.
24 Jun 1982	Whiteface	38.9	15.0	1.00	<1.00	0.82	<0.40	63.	57.
	Oxford	21.9	41.0	0.77	<1.00	7.80	2.20	86.	84.
27 Jun 1982	Brookhaven	18A	18A	18A	18A	18A	18A	18A	18A
28 Jun 1982	Ithaca	104.7	53.0	2.70	<0.50	11.00	3.40	223.	189.
	Penn State	234.4	49.0	4.30	<1.00	7.00	1.20	354.	304.
	Illinois	53.7	7.0	0.79	<0.40	2.50	1.10	83.	69.
	Oxford	109.6	9.7	3.80	1.30	5.70	1.60	140.	139.
	Oak Ridge	25.1	11.0	2.40	<1.00	0.97	0.53	45.	42.
29 Jun 1982	Penn State	208.9	51.0	14.00	<1.00	12.00	1.80	379.	302.
	Illinois	197.2	31.0	0.63	<1.00	6.80	2.20	187.	157.
30 Jun 1982	Whiteface	41.7	16.0	2.30	<1.00	0.87	<0.40	75.	62.
	Ithaca	44.7	13.0	1.20	<0.50	<0.50	<0.40	72.	59.
	Penn State	131.8	31.0	15.00	<1.00	2.80	<0.40	225.	183.
	Illinois	1.1	82.0	0.90	<1.00	20.00	7.90	116.	130.
	Brookhaven	36.3	7.9	19.00	<0.40	1.40	1.70	81.	69.
	Leaves	67.6	22.0	6.90	<1.00	5.00	2.10	132.	111.
	Oxford	41.7	9.2	0.94	<0.40	0.75	<0.40	63.	53.
	Oak Ridge	31.6	12.0	1.40	<1.00	1.60	0.45	57.	49.
1 Jul 1982	Whiteface	5.4	9.9	6.70	<1.00	4.80	0.78	25.	33.
	Virginia	66.1	33.0	1.80	<1.00	1.30	<0.40	122.	103.

		C H +		N H +		N A +		K +		C A +		N G +		C A T I O N S U M		C A T I O N S U M	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
1 Jul 1982	Lewis	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
2 Jul 1982	Illinois	134.9	19.0	8.40	<1.00	10.00	3.10	232.	188.								
3 Jul 1982	Whiteface	17.0	21.0	4.30	<1.00	8.00	1.70	61.	62.								
4 Jul 1982	Penn State	55.0	47.0	3.30	6.90	2.10	1.20	133.	119.								
	Lewis	52.5	27.0	11.00	<1.00	2.81	1.50	111.	99.								
	Oxford	6.0	7.4	14.00	11.00	6.80	1.10	57.	54.								
5 Jul 1982	Virginia	218.8	44.0	4.30	<1.00	2.40	0.82	327.	274.								
	Brookhaven	47.6	0.9	12.00	<0.40	2.30	1.00	111.	87.								
6 Jul 1982	Illinois	28.2	6.5	3.60	<0.40	3.60	1.10	55.	48.								
	Oak Ridge	97.7	34.0	25.00	<2.00	5.30	0.70	186.	169.								
7 Jul 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
8 Jul 1982	Whiteface	61.7	18.0	6.20	<1.00	3.50	0.70	109.	94.								
	Ithaca	114.8	29.0	3.60	<1.00	12.00	2.90	215.	177.								
	Oxford	75.9	29.0	6.20	<0.40	9.90	2.00	135.	135.								
9 Jul 1982	Brookhaven	257.0	37.0	22.00	<1.00	4.50	1.80	194	337.								
	Oak Ridge	186.2	28.0	4.40	<1.00	6.20	1.20	284.	233.								
10 Jul 1982	Virginia	60.3	12.0	3.30	<1.00	2.70	0.49	99.	82.								
11 Jul 1982	Oxford	128.8	40.5	21.00	<0.40	5.90	1.60	229.	165.								
12 Jul 1982	Penn State	100.0	49.0	10.00	4.10	14.00	3.00	215.	197.								
	Illinois	93.3	30.0	4.90	<1.00	6.10	1.90	162.	144.								
15 Jul 1982	Ithaca	146.2	40.0	6.50	<1.00	7.80	1.70	281.	252.								
	Lewis	173.8	21.0	62.00	4.20	5.30	7.50	369.	287.								
18 Jul 1982	Whiteface	162.2	31.0	19.00	<1.00	3.80	1.10	287.	222.								

		H ⁺		NH ₄ ⁺		NO ₃ ⁻		K ⁺		Ca ²⁺		Mg ²⁺		ANION SUM		CATION SUM	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
19 Jul 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Ithaca	79.4	7.8	1.50	<0.40	2.20	0.66	105.	94.								
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	27.5	15.0	10.00	<1.00	2.70	0.66	70.	59.								
	Illinois	97.7	31.0	7.80	<1.00	17.00	4.10	207.	179.								
	Oxford	53.7	13.0	3.00	<0.40	3.80	0.62	91.	78.								
20 Jul 1982	Ithaca	38.9	5.5	0.74	<0.40	1.20	<0.40	52.	48.								
	Penn State	89.1	13.0	1.60	<0.40	1.90	<0.40	127.	108.								
	Brookhaven	83.2	11.0	4.50	<1.00	0.82	0.58	129.	102.								
	Oak Ridge	45.7	8.1	2.00	<1.00	2.30	0.62	71.	62.								
21 Jul 1982	Lewis	64.6	27.0	17.00	8.60	1.30	1.10	124.	122.								
22 Jul 1982	Illinois	131.8	17.0	1.40	<1.00	4.50	1.30	196.	162.								
23 Jul 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	91.2	15.0	3.80	<0.40	1.40	0.62	126.	114.								
24 Jul 1982	Virginia	24.5	6.5	1.20	<1.00	0.50	<0.40	57.	35.								
	Lewis	87.1	43.0	3.80	<1.00	2.20	0.91	166.	180.								
27 Jul 1982	Oak Ridge	83.2	17.0	3.60	<1.00	0.50	1.10	125.	115.								
28 Jul 1982	Penn State	158.5	24.0	0.88	<0.40	4.30	0.62	222.	193.								
	Illinois	158.5	33.0	1.50	<1.00	8.00	1.50	240.	212.								
	Brookhaven	72.4	18.0	8.50	<1.00	1.10	1.10	118.	103.								
	Oxford	186.2	29.0	4.20	<1.00	5.10	1.10	263.	232.								
29 Jul 1982	Whiteface	12.3	2.9	0.78	<1.00	<0.50	<0.40	19.	16.								

		(H ⁺)		(NH ₄ ⁺)		(NO ₃ ⁻)		(K ⁺)		(Ca ²⁺)		(Mg ²⁺)		ANION SUM		CATION SUM	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
29 Jul 1982	Ithaca	69.6	10.0	1.10	<0.00	1.00	<0.40	86.	78.								
	Penn State	186.2	30.0	7.60	2.50	12.00	2.30	285.	255.								
	Virginia	70.8	16.0	3.40	<1.00	1.80	0.53	117.	95.								
	Lewes	102.3	25.0	1.90	<1.00	1.70	0.66	159.	134.								
31 Jul 1982	Virginia	61.7	16.0	1.90	<1.00	0.50	<0.40	102.	81.								
	Brookhaven	18A	18A	18A	18A	18A	18A	18A	18A								
	Lewes	33.1	5.3	41.00	<1.00	1.40	3.20	109.	89.								
1 Aug 1982	Whiteface	107.2	28.0	1.20	<1.00	3.20	0.70	178.	144.								
3 Aug 1982	Virginia	18A	18A	18A	18A	18A	18A	18A	18A								
	Oak Ridge	97.7	28.0	3.40	<1.00	2.00	0.85	152.	134.								
4 Aug 1982	Whiteface	7.2	18A	18A	18A	18A	18A	18A	18A								
	Ithaca	91.2	61.0	1.20	<1.00	12.00	3.20	181.	184.								
5 Aug 1982	Whiteface	44.7	15.0	4.40	<1.00	2.10	0.49	74.	69.								
	Ithaca	91.2	17.0	19.00	<2.00	4.80	1.20	149.	139.								
	Oxford	30.9	16.0	4.80	<1.00	7.20	1.40	75.	69.								
6 Aug 1982	Illinois	151.4	29.0	8.80	<1.00	12.00	2.80	242.	219.								
7 Aug 1982	Virginia	18A	18A	18A	18A	18A	18A	18A	18A								
	Lewes	20.0	6.6	2.10	<1.00	<0.50	<0.40	24.	29.								
8 Aug 1982	Penn State	112.2	49.0	16.00	<1.00	8.00	1.60	202.	196.								
	Virginia	77.6	23.0	2.30	<1.00	0.75	<0.40	114.	104.								
	Oxford	309.0	28.0	18.00	<1.00	8.10	1.60	444.	374.								
9 Aug 1982	Ithaca	359.0	34.0	3.20	<1.00	2.90	0.62	521.	435.								
	Virginia	18A	18A	18A	18A	18A	18A	18A	18A								

		C H +		N H +		N A +		K +		C A +		M G +		A N I O N S U M		C A T I O N S U M	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
9 Aug 1982	Illinois	104.5	19.0	2.30	<1.00	3.80	1.80	230.	177.								
10 Aug 1982	Whiteface	56.2	11.0	2.60	<0.40	1.00	0.41	79.	73.								
	Penn State	95.5	17.0	10.00	<1.00	1.60	<0.00	130.	126.								
	Virginia	13A	13A	13A	13A	13A	13A	13A	13A								
	Illinois	1.2	16.0	0.60	<1.00	7.20	3.30	34.	39.								
	Brookhaven	24.0	5.4	9.50	<1.00	0.75	1.30	50.	43.								
	Lewis	5.8	2.5	0.45	<0.20	<0.50	<0.00	6.	9.								
	Oak Ridge	44.7	7.0	0.96	<1.00	0.50	<0.00	57.	54.								
11 Aug 1982	Lewis	13A	13A	13A	13A	13A	13A	13A	13A								
	Oxford	64.6	22.0	4.50	<1.00	3.50	1.40	108.	101.								
12 Aug 1982	Penn State	RPC	RPC	RPC	RPC	RPC	RPC	RPC	RPC								
	Virginia	128.8	37.0	1.70	<1.00	2.70	0.49	172.	174.								
	Brookhaven	208.9	25.0	8.20	<1.00	2.60	1.10	265.	250.								
	Lewis	138.0	30.0	66.00	<1.00	2.00	5.00	223.	250.								
	Oak Ridge	85.1	27.0	2.80	<1.00	4.10	0.66	135.	124.								
14 Aug 1982	Ithaca	218.8	61.0	3.20	<1.00	20.00	6.70	394.	336.								
15 Aug 1982	Virginia	85.1	18.0	1.60	<1.00	1.30	<0.40	108.	107.								
16 Aug 1982	Whiteface	10.2	11.0	0.86	<1.00	5.70	0.86	37.	35.								
	Virginia	66.1	30.0	0.94	<1.00	1.00	<0.40	97.	99.								
17 Aug 1982	Ithaca	51.3	31.0	0.50	<2.00	3.40	0.82	96.	91.								
	Virginia	66.1	28.0	0.94	<1.00	3.20	0.49	109.	102.								
	Oak Ridge	109.6	1.5	8.80	<1.00	2.30	0.62	181.	126.								
18 Aug 1982	Penn State	RPC	RPC	RPC	RPC	RPC	RPC	RPC	RPC								

		(H +)	(N H 4 +)	(N A +)	(K +)	(C A +)	(M G +)	A N I O N S U M	C A T I O N S U M
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L
18 Aug 1982	Virginia	316.2	35.0	0.81	<1.00	5.20	1.10	423.	365.
	Brookhaven	141.3	31.0	13.00	<1.00	2.50	1.40	201.	193.
	Lewes	295.1	33.0	140.00	<1.00	12.00	15.00	554.	522.
	Oak Ridge	77.6	5.6	1.70	<1.00	2.10	0.53	91.	90.
20 Aug 1982	Whiteface	45.7	31.0	0.73	<3.00	8.40	2.80	109.	100.
21 Aug 1982	Penn State	114.8	22.0	1.50	<1.00	12.00	4.20	185.	171.
	Lewes	184	184	184	184	184	184	184	184
22 Aug 1982	Ithaca	107.2	47.0	0.52	<2.00	3.50	1.20	159.	164.
	Oxford	195.0	89.0	7.60	<1.00	21.00	2.80	401.	339.
23 Aug 1982	Illinois	42.7	11.0	0.81	<1.00	15.00	3.90	210.	92.
24 Aug 1982	Whiteface	89.1	15.0	0.64	<1.50	1.00	<0.40	119.	107.
	Ithaca	213.8	27.0	<0.50	<2.00	2.10	<0.40	273.	245.
	Penn State	182.0	44.0	2.00	<1.00	11.00	2.40	265.	255.
	Brookhaven	45.7	15.0	27.00	<1.00	1.10	2.60	96.	95.
	Lewes	89.1	31.0	11.00	<1.00	1.70	1.40	102.	137.
	Oak Ridge	46.8	30.0	1.40	<1.00	4.90	0.66	84.	89.
25 Aug 1982	Penn State	63.1	11.0	0.87	<1.00	3.70	0.95	80.	84.
	Illinois	60.3	40.0	2.30	<1.00	8.10	1.40	126.	122.
	Lewes	184	184	184	184	184	184	184	184
	Oxford	173.8	48.0	10.00	<1.00	13.00	2.30	314.	262.
26 Aug 1982	Whiteface	44.7	7.2	0.43	<1.00	0.55	<0.40	59.	53.
	Ithaca	74.1	29.0	<0.50	<2.00	2.00	0.41	123.	104.
	Brookhaven	93.3	10.0	18.00	<2.00	1.70	1.40	134.	128.

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

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		(H +)	(N H +)	(N A +)	(K +)	(C A +)	(M G +)	A N I O N S U M	C A T I O N S U M
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L
27 Aug 1982	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
28 Aug 1982	Whitewater	97.7	36.0	0.60	<1.00	3.60	0.95	158.	143.
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	162.2	32.0	10.00	<1.00	15.00	3.50	286.	241.
29 Aug 1982	Whitewater	4.7	4.4	3.30	<2.00	0.75	<0.40	9.	14.
30 Aug 1982	Illinois	162.2	21.0	3.70	<1.00	8.70	2.80	245.	210.
31 Aug 1982	Ithaca	275.4	84.0	1.20	<2.00	16.00	4.90	449.	402.
	Oxford	257.0	69.0	9.30	NAP	12.00	2.10	408.	364.
	Oak Ridge	112.2	22.0	36.00	<1.00	5.90	4.30	191.	191.
1 Sep 1982	Illinois	46.8	10.0	0.80	<1.00	2.30	0.58	71.	63.
2 Sep 1982	Whitewater	112.2	18.0	1.80	<2.00	2.10	0.45	145.	137.
	Penn State	158.5	29.0	1.70	<1.00	11.00	2.00	196.	215.
	Illinois	49.0	32.0	1.90	<1.00	7.70	1.80	109.	102.
	Brookhaven	100.0	26.0	66.00	<2.00	3.30	7.10	220.	213.
3 Sep 1982	Whitewater	51.3	16.0	2.10	<2.00	2.80	1.10	83.	77.
	Ithaca	83.2	18.0	0.61	<2.00	2.30	0.74	122.	108.
	Penn State	109.6	28.0	1.50	<1.00	23.00	3.70	200.	193.
	Virginia	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Lewis	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	50.1	35.0	2.00	<1.00	11.00	3.20	109.	116.
	Oak Ridge	49.0	17.0	3.00	<1.00	1.80	0.45	75.	73.

		(H ⁺)		(NH ₄ ⁺)		(MA ⁺)		(K ⁺)		(CA ⁺)		(MG ⁺)		ANION		CATION	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
7 Sep 1982	Whiteface	117.5	50.0	1.40	<2.00	5.00	1.20	191.	181.								
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
8 Sep 1982	Penn State	67.6	28.0	29.00	16.00	29.00	5.80	205.	210.								
13 Sep 1982	Illinois	40.7	24.0	2.20	<2.00	5.50	2.10	94.	82.								
14 Sep 1982	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Oak Ridge	60.3	9.9	8.50	<1.00	2.60	0.74	86.	85.								
15 Sep 1982	Illinois	93.3	18.0	2.80	<7.00	5.70	2.30	151.	130.								
16 Sep 1982	Whiteface	67.6	14.0	0.97	<2.00	1.00	<0.40	88.	85.								
	Ithaca	144.5	20.0	2.70	<0.40	4.20	0.82	195.	177.								
	Penn State	239.9	53.0	4.00	8.30	24.00	5.30	435.	364.								
	Oak Ridge	81.3	11.0	3.60	<1.00	2.60	0.66	110.	102.								
17 Sep 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
18 Sep 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
20 Sep 1982	Whiteface	2.3	6.1	16.00	<2.00	1.20	<0.40	17.	27.								
	Virginia	102.3	36.0	8.40	<0.40	1.40	0.74	158.	151.								
	Illinois	89.1	26.0	2.10	<1.00	4.40	1.00	140.	128.								
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
21 Sep 1982	Brookhaven	100.0	24.0	32.00	<2.00	3.30	5.10	185.	173.								
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Oak Ridge	112.2	7.9	7.60	<1.00	6.50	1.50	164.	144.								
22 Sep 1982	Virginia	166.0	62.0	11.00	<2.50	0.75	0.53	248.	242.								
	Lowes	89.1	15.0	53.00	<1.50	2.50	5.80	180.	174.								

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[illegible]

		H ⁺		NH ₄ ⁺		NO ₃ ⁻		K ⁺		Ca ²⁺		Mg ²⁺		ANION		CATION	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
5 Oct 1982	Penn State	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184	184
	Virginia	190.5	58.0	3.30	<2.00	3.80	0.66	286.	261.								
7 Oct 1982	Oxford	31.6	15.0	6.10	<1.00	0.87	<0.40	57.	54.								
8 Oct 1982	Whiteface	40.7	9.5	1.20	1.70	<0.50	<0.40	52.	53.								
	Ithaca	131.8	67.0	24.00	<2.00	8.40	2.10	250.	244.								
	Penn State	109.6	22.0	29.00	<1.00	8.50	1.90	192.	181.								
	Illinois	17.8	18.0	3.20	<2.00	7.50	1.50	65.	57.								
	Oak Ridge	51.3	7.9	2.90	<1.50	0.87	<0.40	65.	64.								
10 Oct 1982	Whiteface	102.3	56.0	4.50	<3.00	3.20	0.53	188.	170.								
	Virginia	123.0	20.0	3.80	<2.00	3.50	0.70	161.	155.								
	Brookhaven	123.0	35.0	46.00	12.00	5.30	2.60	232.	232.								
	Oxford	83.2	30.0	9.40	<1.00	2.80	0.82	137.	130.								
11 Oct 1982	Illinois	36.3	18.0	4.00	<1.70	12.00	1.70	90.	86.								
12 Oct 1982	Ithaca	141.3	16.0	6.00	<0.60	7.80	1.40	188.	182.								
	Penn State	120.2	42.0	21.00	<1.00	5.20	1.30	218.	196.								
	Virginia	64.6	12.0	16.00	<2.00	0.92	1.30	104.	97.								
	Oak Ridge	49.0	18.0	7.60	<1.50	3.20	0.66	83.	82.								
13 Oct 1982	Oxford	184	184	184	184	184	184	184	184								
	Oak Ridge	52.5	1.4	0.55	<0.50	1.70	<0.40	58.	58.								
14 Oct 1982	Whiteface	173.8	53.0	0.90	<3.00	4.80	1.00	253.	239.								
	Penn State	102.7	10.0	0.41	<1.00	3.70	0.49	123.	124.								
	Virginia	86.8	5.7	0.86	<2.00	<0.50	<0.40	59.	53.								
	Brookhaven	112.2	15.0	19.00	<3.00	3.20	7.30	227.	227.								

		H		NH ₄ ⁺		NO ₃ ⁻		K ⁺		Ca ²⁺		Mg ²⁺		Sulfate		Sum	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UMOL/L	UEQ/L
15 Oct 1982	Whiteface	21.9	3.8	0.42	<0.60	0.75	<0.40	27.	28.								
	Ithaca	67.6	24.0	1.30	<1.00	4.50	1.00	105.	104.								
17 Oct 1982	Penn State	55.0	27.0	2.90	<1.00	7.70	1.50	105.	103.								
	Lewes	38.9	6.1	39.00	<0.50	1.90	2.50	96.	93.								
18 Oct 1982	Whiteface	13.5	6.6	0.92	<0.70	1.00	<0.40	24.	23.								
	Ithaca	13.8	9.5	0.36	<1.00	3.20	0.86	32.	32.								
20 Oct 1982	Illinois	45.7	13.0	2.90	<1.20	5.50	0.92	78.	74.								
	Oxford	35.5	15.0	9.70	<1.00	4.50	1.60	73.	72.								
21 Oct 1982	Ithaca	33.9	18.0	19.00	<1.00	6.50	2.30	86.	88.								
	Penn State	14.5	20.0	19.00	<1.00	12.00	3.00	80.	83.								
	Virginia	40.7	3.3	19.00	<0.50	2.00	1.40	65.	61.								
	Brookhaven	20.4	3.5	26.00	<1.50	1.70	3.00	63.	59.								
	Lewes	44.7	20.0	34.00	<1.00	2.30	3.50	107.	110.								
	Oak Ridge	93.3	29.0	21.00	<1.50	6.40	2.80	160.	162.								
22 Oct 1982	Whiteface	52.5	18.0	4.60	2.60	6.80	2.10	97.	95.								
26 Oct 1982	Virginia	19.1	1.7	25.00	0.86	1.70	2.70	57.	55.								
	Brookhaven	22.4	4.5	80.00	<5.00	2.20	7.80	128.	127.								
27 Oct 1982	Lewes	12.9	<1.5	390.00	4.40	8.60	37.00	675.	498.								
29 Oct 1982	Illinois	30.9	13.0	2.50	<1.00	12.00	2.10	76.	75.								
1 Nov 1982	Whiteface	81.3	25.0	1.20	<0.60	0.95	<0.40	108.	109.								
	Ithaca	89.1	7.9	5.00	<1.00	3.50	0.91	112.	111.								
	Oxford	134.9	28.0	27.00	0.70	9.60	3.70	228.	217.								
2 Nov 1982	Whiteface	77.6	22.0	2.90	<1.20	1.10	<0.40	103.	105.								

		H ⁺		NH ₄ ⁺		NO ₃ ⁻		K ⁺		Ca ²⁺		Mg ²⁺		ANION SUM		CATION SUM	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
2 Nov 1982	Illinois	39.8	27.0	9.10	<1.00	5.60	1.10	84.	89.								
	Oxford	18A	18A	18A	18A	18A	18A	18A	18A								
3 Nov 1982	Illinois	47.9	40.0	2.90	<0.50	5.00	1.20	113.	103.								
4 Nov 1982	Oxford	55.0	23.0	5.20	<0.90	5.00	1.70	95.	97.								
	Oak Ridge	31.6	1.9	1.40	<0.50	<0.50	<0.40	36.	35.								
5 Nov 1982	Whiteface	24.0	2.4	0.84	<1.00	0.50	<0.40	29.	28.								
	Ithaca	53.7	12.0	1.90	<1.00	1.00	<0.40	70.	70.								
	Penn State	50.1	5.8	2.20	<0.50	2.20	0.53	60.	64.								
	Virginia	29.5	5.0	2.40	3.10	4.90	1.50	59.	59.								
	Brookhaven	12.9	2.4	45.00	<1.00	1.20	3.90	69.	70.								
	Lewis	27.5	6.0	20.00	0.57	0.75	2.20	60.	60.								
10 Nov 1982	Whiteface	18A	18A	18A	18A	18A	18A	18A	18A								
11 Nov 1982	Oxford	114.8	32.0	17.00	2.90	17.00	3.00	210.	208.								
12 Nov 1982	Whiteface	47.9	10.0	6.90	<1.00	4.20	<0.40	72.	73.								
	Ithaca	81.3	17.0	5.30	<1.00	6.30	1.20	135.	119.								
	Penn State	107.7	42.0	26.00	<2.50	26.00	6.40	207.	240.								
	Illinois	1.5	53.0	2.20	5.20	4.20	1.90	78.	80.								
	Oxford	21.4	10.0	4.60	1.10	2.10	0.78	62.	43.								
13 Nov 1982	Penn State	16.6	23.0	20.00	1.20	13.00	4.10	94.	95.								
	Virginia	18.6	14.0	40.00	1.10	12.00	5.10	122.	108.								
	Lewis	19.1	5.4	200.00	4.90	4.30	17.00	285.	272.								
14 Nov 1982	Whiteface	63.1	12.0	6.40	<1.00	4.20	0.91	98.	92.								
	Brookhaven	17.4	1.7	98.00	0.77	3.90	2.90	103.	103.								

		(H)		(NH ₄ ⁺)		(NO ₃ ⁻)		(K)		(Ca ²⁺)		(Mg ²⁺)		(Sulfate)		(Nitrate)	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
15 Nov 1982	Ithaca	32.4	20.0	13.00	<1.00	9.40	2.50	84.	89.								
	Brookhaven	4.6	0.9	0.81	<1.00	<0.50	<0.40	5.	6.								
	Lewes	29.5	2.0	33.00	0.54	1.20	3.20	72.	74.								
	Oak Ridge	22.7	5.5	12.00	1.20	2.40	1.80	52.	50.								
16 Nov 1982	Whiteface	19A	19A	19A	19A	19A	19A	19A	19A								
19 Nov 1982	Illinois	117.5	54.0	3.00	<0.50	11.00	3.00	238.	202.								
	Oak Ridge	87.1	1.8	13.00	<0.40	5.20	1.90	130.	116.								
20 Nov 1982	Oxford	36.3	12.0	3.70	<1.00	2.50	0.85	57.	58.								
21 Nov 1982	Virginia	245.5	57.0	390.00	9.10	21.00	34.00	840.	812.								
22 Nov 1982	Whiteface	32.4	<0.6	6.40	<0.40	2.10	<0.40	45.	43.								
	Ithaca	75.9	7.0	4.10	<1.00	0.75	0.66	97.	90.								
	Illinois	36.3	17.0	0.56	<0.50	1.70	<0.40	62.	57.								
	Oxford	33.1	6.1	5.00	2.30	0.75	0.45	53.	49.								
23 Nov 1982	Whiteface	44.7	1.0	2.10	<0.40	0.60	<0.40	50.	49.								
	Penn State	89.1	26.0	22.00	<0.50	1.70	2.20	147.	105.								
	Illinois	53.7	16.0	14.00	<0.50	2.60	0.85	94.	90.								
24 Nov 1982	Ithaca	93.3	12.0	1.00	<1.00	<0.50	<0.40	106.	106.								
	Penn State	104.7	54.0	11.00	<1.00	5.70	1.70	186.	185.								
	Illinois	79.2	72.0	4.00	<0.50	41.00	11.00	282.	259.								
	Brookhaven	131.8	22.0	74.00	3.20	15.00	8.80	281.	279.								
	Lewes	19A	19A	19A	19A	19A	19A	19A	19A								
	Oxford	66.1	21.0	2.50	1.90	1.50	<0.40	95.	94.								
	Oak Ridge	39.8	8.6	5.20	<0.40	0.87	<0.40	56.	55.								

MAP39 PRECIPITATION CHEMISTRY DATA (CONT.)

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		(H ⁺)	(NH ₄ ⁺)	(NA ⁺)	(K ⁺)	(Ca ⁺⁺)	(Mg ⁺⁺)	ANION SUP	CATION SUP
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L
25 Nov 1982	Whiteface	53.7	5.1	3.10	<0.40	1.90	<0.40	66.	66.
27 Nov 1982	Whiteface	37.2	7.0	2.90	<0.40	3.70	0.70	58.	56.
	Penn State	36.3	6.4	37.00	1.00	2.10	0.53	86.	86.
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	33.1	6.3	4.70	<1.00	2.50	1.20	55.	52.
28 Nov 1982	Oxford	36.3	7.0	1.30	0.92	0.50	<0.40	58.	47.
29 Nov 1982	Penn State	21.9	2.3	1.20	<0.50	0.60	<0.40	28.	27.
	Virginia	33.9	2.3	3.10	<0.40	<0.50	<0.40	47.	39.
	Illinois	38.9	2.2	<0.50	<0.50	0.57	<0.40	49.	42.
	Brookhaven	2.7	0.5	0.82	<0.40	<0.50	<0.40	5.	4.
	Lewis	21.9	5.0	16.00	<0.50	<0.50	1.60	49.	46.
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
30 Nov 1982	Whiteface	28.2	0.6	1.80	<0.40	1.00	<0.40	32.	33.
	Ithaca	35.5	2.5	8.00	1.10	<0.50	<0.40	41.	47.
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	67.6	4.3	6.20	<0.40	2.50	0.74	89.	85.
2 Dec 1982	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	43.7	26.0	30.00	1.10	6.90	5.10	158.	125.
	Brookhaven	28.2	3.1	4.90	<0.40	1.00	0.49	43.	39.
	Oxford	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE
	Oak Ridge	17.4	0.7	1.00	<1.00	<0.50	<0.40	17.	19.
3 Dec 1982	Whiteface	60.3	2.0	16.00	<0.40	3.30	0.45	81.	86.
	Virginia	38.0	4.0	5.60	0.43	<0.50	<0.40	44.	48.

		H		NH ₄ ⁺		NO ₃ ⁻		K ⁺		Ca ²⁺		Mg ²⁺		ANION SUM		CATION SUM	
		(H ⁺)		(NH ₄ ⁺)		(NO ₃ ⁻)		(K ⁺)		(Ca ²⁺)		(Mg ²⁺)		UMOL/L		UMOL/L	
		UMOL/L		UMOL/L		UMOL/L		UMOL/L		UMOL/L		UMOL/L		UMOL/L		UMOL/L	
3 Dec 1982	Illinois	34.7		7.0		8.60		<1.00		1.60		1.30		54.		56.	
	Lewis	53.7		4.8		13.00		<0.40		0.62		0.91		75.		75.	
	Oxford	51.3		26.0		23.00		<1.00		2.20		1.70		102.		108.	
4 Dec 1982	Oxford	ISA		ISA		ISA		ISA		ISA		ISA		ISA		ISA	
5 Dec 1982	Whiteface	66.1		4.9		2.00		0.43		1.90		0.41		76.		78.	
	Oxford	15.5		17.0		8.90		<1.00		1.60		<0.40		44.		45.	
6 Dec 1982	Whiteface	77.6		9.0		4.50		<1.00		1.10		0.41		87.		90.	
	Penn State	42.7		13.0		15.00		<1.00		2.10		1.20		72.		77.	
	Illinois	40.7		7.7		0.93		<1.00		0.82		<0.40		38.		51.	
	Lewis	18.6		2.9		5.60		<0.40		<0.50		0.62		30.		28.	
	Oxford	57.5		24.0		18.00		5.10		5.00		0.74		98.		116.	
	Oak Ridge	9.8		1.4		3.60		<1.00		<0.50		<0.40		13.		15.	
7 Dec 1982	Whiteface	ISA		ISA		ISA		ISA		ISA		ISA		ISA		ISA	
	Ithaca	56.2		18.0		9.40		<1.00		1.40		0.99		83.		88.	
	Penn State	ISA		ISA		ISA		ISA		ISA		ISA		ISA		ISA	
	Brookhaven	17.0		5.5		91.00		1.70		3.30		4.30		149.		160.	
	Oxford	ISA		ISA		ISA		ISA		ISA		ISA		ISA		ISA	
8 Dec 1982	Whiteface	ISA		ISA		ISA		ISA		ISA		ISA		ISA		ISA	
9 Dec 1982	Whiteface	81.3		16.0		0.37		<0.40		1.10		<0.40		93.		100.	
	Illinois	ISA		ISA		ISA		ISA		ISA		ISA		ISA		ISA	
10 Dec 1982	Ithaca	52.5		11.0		1.20		<1.00		3.10		0.58		72.		72.	
	Illinois	55.0		4.1		0.69		<1.00		2.30		0.45		48.		65.	
11 Dec 1982	Oxford	63.1		14.0		11.00		<1.00		5.20		0.58		87.		100.	

MAP3S PRECIPITATION CHEMISTRY DATA (CONT.)

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		(H ⁺)		(NH ₄ ⁺)		(NO ₃ ⁻)		(K ⁺)		(Ca ²⁺)		(Mg ²⁺)		ANION SUM		CATION SUM	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
13 Dec 1982	Whiteface	72.4	24.0	4.80	<1.00	3.70	0.49	107.	110.								
	Ithaca	83.2	23.0	5.80	<1.00	4.40	0.62	111.	122.								
	Virginia	38.9	8.1	2.70	<1.00	1.00	<0.40	51.	52.								
	Brookhaven	93.3	11.0	57.00	5.90	5.60	5.60	182.	190.								
	Lewes	49.0	6.6	62.00	0.97	2.00	6.10	125.	135.								
	Oak Ridge	40.7	3.2	1.90	<1.00	1.90	<0.40	49.	50.								
14 Dec 1982	Penn State	19A	19A	19A	19A	19A	19A	19A	19A								
	Illinois	22.9	13.0	1.00	<0.50	0.95	<0.40	42.	39.								
16 Dec 1982	Whiteface	25.7	0.6	0.29	<0.40	<0.50	<0.40	23.	27.								
	Virginia	25.7	4.1	13.00	<0.40	0.60	1.20	49.	46.								
	Oxford	40.7	3.8	2.50	<1.00	0.57	<0.40	40.	48.								
	Oak Ridge	33.9	2.3	6.30	<1.00	0.97	<0.40	38.	44.								
17 Dec 1982	Ithaca	45.7	2.3	1.30	<1.00	<0.50	<0.40	36.	49.								
	Penn State	44.7	2.9	1.40	<1.00	1.10	<0.40	40.	51.								
	Brookhaven	5.2	0.7	88.00	0.65	2.10	7.50	104.	114.								
	Lewes	2.2	6.8	56.00	0.75	10.00	5.50	88.	97.								
19 Dec 1982	Oxford	79.4	25.0	4.90	<1.00	8.00	0.66	113.	129.								
20 Dec 1982	Penn State	85.1	7.0	3.80	<1.00	2.20	0.45	87.	101.								
	Virginia	53.7	2.5	14.00	<1.00	1.30	0.45	73.	74.								
	Illinois	12.6	19.0	12.00	<1.00	13.00	3.70	63.	77.								
	Brookhaven	12.3	3.8	1.80	<1.00	0.55	<0.40	22.	19.								
	Oxford	19A	19A	19A	19A	19A	19A	19A	19A								
21 Dec 1982	Ithaca	69.2	6.5	2.70	<1.00	1.70	0.41	75.	83.								

MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

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		(H ⁺)		(NH ₄ ⁺)		(NO ₃ ⁻)		(K ⁺)		(Ca ²⁺)		(Mg ²⁺)		ANION		CATION	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
21 Dec 1982	Oak Ridge	147.9	56.0	12.00	<1.00	5.90	0.86	215.	229.								
22 Dec 1982	Whiteface	91.2	7.1	1.30	<1.00	1.10	<0.40	94.	102.								
23 Dec 1982	Oxford	107.2	23.0	27.00	<1.00	4.90	2.30	143.	172.								
24 Dec 1982	Ithaca	57.5	8.5	1.20	<1.00	0.80	<0.40	55.	69.								
	Penn State	120.2	14.0	4.60	<1.00	5.90	1.20	131.	157.								
	Illinois	25.7	1.4	2.70	0.83	<0.50	<0.40	34.	31.								
	Brookhaven	131.8	6.2	25.00	1.00	3.70	2.80	162.	177.								
25 Dec 1982	Whiteface	64.6	3.2	3.10	<1.00	2.00	<0.40	71.	75.								
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
26 Dec 1982	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
27 Dec 1982	Whiteface	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE								
	Ithaca	83.2	19.0	13.00	<1.00	3.30	1.40	109.	125.								
28 Dec 1982	Whiteface	26.3	0.9	1.30	<1.00	<0.50	<0.40	25.	29.								
	Penn State	53.7	7.0	2.00	<1.00	2.10	0.53	47.	68.								
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Oxford	33.9	6.1	3.80	<1.00	0.55	<0.40	37.	45.								
29 Dec 1982	Ithaca	69.2	2.4	17.00	<0.50	1.10	<0.40	76.	91.								
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Oak Ridge	41.7	5.4	23.00	<1.00	1.50	2.30	74.	78.								
30 Dec 1982	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Brookhaven	61.7	4.4	9.10	<1.00	5.80	2.00	82.	91.								
	Leves	63.1	16.0	11.00	0.94	2.00	1.50	84.	98.								

MISSING DATA CODES:

NSC	MEANS	NO SAMPLE COLLECTED
ISA	MEANS	INSUFFICIENT SAMPLE FOR ANALYSIS
NAP	MEANS	NO ANALYSIS PERFORMED
MOE	MEANS	MALFUNCTION OR OPERATOR ERROR
RPC	MEANS	REJECTED - PROBABLE CONTAMINATION

Table 3.

MAP38 Precipitation Chemistry Network Rain Gauge Data

WHITEFACE

JAN 1982

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Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	-	.05	.03	-	-	-
2	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	.05	.05	.05	.15	.10	-	-	-	-	-	.05	.03	.03	.08	.10
5	.13	-	-	.03	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	.03	.05	-	-	-	.03	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	.03	.03	.03	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.08	.08	.08	.10	-	-	-	.03	-	.03
24	-	-	-	-	-	.03	-	-	-	-	.03	-	-	-	.03	.03	.08	.10	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	.03	-	-	-	-	-
30	-	-	-	.05	.13	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

- T = Trace
- ML = Missing, precipitation likely
- MU = Missing, precipitation unlikely
- < > = Amount spans a period greater than one hour

MAP3S Precipitation Chemistry Network Rain Gauge Data

WHITEFACE

FEB 1982

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Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	.03	<	-	2.16	-	>	-	-	-	.03	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	.05	.05	.05	.03	-	.03	-	-	.03	.03	.03	.05	.10	.03	-
4	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	.05	.03	.10	.05	.03	.03	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	.05	.13	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	-	.05	.03	.05	.03	.03	.03	-	-	-
10	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.51
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	.05	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	.03
20	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

MAP3S Precipitation Chemistry Network Rain Gauge Data

WHITEFACE

MAR 1982

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Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	.03	.03	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.10	-	-
5	-	.03	-	-	-	-	-	.05	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	.04	.04	.05	.05	.03	.03	-	-	-	.03	.03	.04	.04	.03	.03	.10	.08	.15	.13	.10	.04
8	-	.03	.05	.05	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	.03	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	.10	.05	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.13	.03	-	-	-	-	-
14	-	-	-	-	-	.03	-	-	-	.03	.05	-	-	.03	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	.15	.03	.03	-	-	-	.05	.05	-	.03	.10	.08	.10	.05	.03	-	.03	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.04	.03	-	-	.03
22	-	-	-	-	-	-	-	-	.03	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-
23	-	.08	.03	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	.03	.03	.04	.10	.10	.08	-	.03	.03	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	<	-	.69	>	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
MI = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

NAP3S Precipitation Chemistry Network Rain Gauge Data

WHITEFACE

APR 1982

113

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	.05	.94	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.30	.36	.03	.10	.20
4	.05	-	.08	-	-	-	-	-	-	-	-	.03	-	-	-	.03	-	-	-	-	.03	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.15	.08	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-
14	.03	-	-	-	-	.03	.05	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.43	.28	.41
18	.74	.43	.18	.15	.08	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	.03	.08	.18	.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	.05	.13	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.04	.05	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	.05	.05	.03	.05	.08	.03	.08	.10	.08	.05	.15	.18	.20	.03	.05	.10	.15	.10	.20	.05	.08	.03	.03	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	.30	.15	-	-	-	-	-	-	-	-	-	.05	-	.70	.18	.33	.10	.30	.08	-
21	-	-	.03	.13	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.10	.03	.03	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	.23	.05	-	-	-	-	-	-	-	.03	.03	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	.03	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.05	.03
31	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount soaked a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	.13
2	.66	.33	.53	.74	.13	.44	.10	.03	.10	.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	.03	-	-	.03	.03	-	-	.03
6	.05	.08	.05	-	.04	.20	.16	.20	.23	.10	.10	.38	.28	.13	.03	-	.10	.10	.10	.10	.15	.08	.15	-
7	.13	.08	.03	.03	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	-
16	.05	.05	.13	-	-	-	-	.03	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.20
20	.10	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	.05	.03	.05	.03	.05	.03	-	-	.05	.05	.08	.30	.05	-
22	-	-	-	-	-	-	-	-	-	-	-	-	.30	.36	.38	.03	.05	.03	-	-	.10	.03	-	-
23	-	-	-	-	.03	-	.08	.13	.15	.23	.30	.08	.30	.36	.38	.03	.05	.03	-	-	-	-	-	-
24	-	-	-	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	.08	.18	.15	.13	.13	.20	.10	.10	.10	.05	.05	-	-
30	-	-	-	-	-	-	-	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	.28	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	.61	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	.05	-	.03	.10	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	T	-	-	-	-	-
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21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	.03	-	-	-	-	-	-	-	-	-	-	-	.15	.36	.97	1.32	.56	.13	-	-	-	-	.03	.05
29	.41	.01	.03	.38	.43	.05	.08	<	-	.03	-	-	>	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	.25	-	-	-	-	-	-	-	-	.86	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

MAP35 Precipitation Chemistry Network Rain Gauge Data

WHITEFACE

AUG 1982

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Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	.05	.13	-	-	-	-	-	-	-	.03	-	-	-
3	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	.50	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	.41	.36	.13	.50	.20	-	-	.13	.10	-	-	-	-	-	-	.03	-	-	-	-	-	-
10	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	1.19	.13	-	.03	-	-	-	.20	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	.20	.03	-	.05	.36	-	-	.03	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	.10	-	.63	.20	.03	.03	.05	.05	-	-	-	-	-	-	-	-	-	.05	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	.30	-	.46	.08	.05	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	.05	.08	.03	.05	.33	.38	.38	.15	.94	.25	.13	.03	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.10	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.18	.20	.23	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	.18	.10	.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	.08	-	-	-	-	-	-	.03	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.15	.15	.23
7	.10	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	.15	.08	.03	-	.03	-	.08	.15	.15	.10	.08	.23	.28	.10	-	-	.03	.03	-	-	.03
16	-	-	.03	-	-	-	-	.08	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	.03
19	-	-	.10	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	.08	.05	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	.01	.23	.48	.03	-	.10	.33	.08
24	.08	.05	-	-	-	-	-	.03	.03	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	.03	.08	.18	.28	.53	.23	.10	.03	-	.03	-	-	-	-	-	-
28	.05	.13	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	-	-	.05	-	-	.03
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.56	.30	.23	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	.53	.84	.53	.53	.03	.18	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	.03	-	-	.03	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	.03	.03	-	-
14	-	-	-	-	-	-	-	-	-	-	.03	.05	-	-	-	-	-	-	-	-	-	-	.08	.08
15	-	-	-	-	-	.03	-	-	.05	.20	.20	.03	-	.03	.18	.13	-	-	.03	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	.03	-	.03	-	.03	.03
17	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	.05	.05	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	.08	.10	.03	.10	.25	.03	.03	-	.03	-	-	-	-	-	-	-	-	-	-	-
2	-	.03	.20	.08	.34	.08	.03	.03	-	-	-	-	-	.04	.05	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.18	.18	.30	.54	.71
5	.79	.53	.25	.30	.23	.25	.10	.13	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	.05	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08
13	.03	.18	.51	.20	-	-	-	-	-	.03	-	-	-	-	.03	-	.05	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	.05	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-
22	-	.03	-	.03	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	.10	.23	.05	.03	.08	.03	.03	.05	.05	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	.03	.15	.08	-	.05	.05	.03	-	-	-	-	-	.03	-	-	.03	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	.03	-	-	.03	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	.03	.15	.03	-	-	-	-	-	-	-	-	.03	.03	-	-	-	.03	.10	.10	-	-	-	-
30	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP39 Precipitation Chemistry Network Rain Gauge Data

WHITEFACE

DEC 1982

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Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	.03	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	.15	.05	.08	.1A	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.10	.05	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	.25	.03	-	.03	-	-	-	.10	.10	.05	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	.05	.0A	.0A	.05	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	.03	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	.05	.0A	.10	.03	-	-	.1A	.0A	.0A	.1A	.1A	.0A	.0A	.05	.03	-	-	.03	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	.03	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	.03	-	.03
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	.05	.05	-	-	-	-	-	-	-	-	-	-	-	.03	.03	-	-
25	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	.03	.03	-	-	-	-	-	-
26	-	-	-	-	.10	.1A	.0A	.56	.15	-	-	-	-	-	-	-	-	-	.03	-	-	-	.03	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	.08	.0A	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03
30	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	.05	.10	.10	.10	.10	.10	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	.05	.10	.10	.10	.10	.10	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	.05	.25	.15	.20	.46	.25	.36	.61	.15	.20	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	.08	.08	.08	.08	.05	.08	.08	-	-	-	-	.05	.13	.15	.15	.10	.15	.41	.15	.15	.30	.38	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	.03	.05	-	.05	-	.05	-	-	.08	.08	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	.20	.46	.46	.25	-	-	-	-	-	-	-	.20	-	-	-	-	22.6	22.6	22.6	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	11.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	.10	.15	.15	.10	-	-	.10	-	.10	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.10	.05	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	.05	-	-	-	.05	.05	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	.20	.25	-	.08	-	-	.20	.38	.15	-	.08	.08	.08	-	-	-	.08	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	.08	-	-	-	-	.08	.08	-	-	-	.15	.15	.08	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.18	.18	-	.18	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spent a period greater than one hour

MAP35 Precipitation Chemistry Network Rain Gauge Data

ITHACA

MAR 1982

124

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.15	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.66	.10	.10	-
7	-	-	-	.15	-	-	-	.10	.13	-	.10	.15	-	.10	.05	-	-	-	-	.05	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.30	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	.15	.13	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.28	.08	-	-	-	-
17	-	.08	.41	-	.08	-	-	-	-	-	-	.33	.13	.13	.13	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.25
26	.20	-	.36	-	.36	.25	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	-
27	-	-	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	.03	.03	.05	-	.03	-	-	-	-	-	-	-	-	-	1.50	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

HAP3S Precipitation Chemistry Network Rain Gauge Data

ITHACA

APR 1982

125

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	.05	-	.15	.15	.10	.05	.15	.56	.08	-	-	-	.20	.41	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	.25	.36	-	-	-	.74	.41	.10	.10	.13	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	.10	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.30	-	-	.25	.15	-	-	.08
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	.15	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.18	.05	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	.05	.08	.08	.10	.15	.05	-	.20	.38	.30	.08	.23	-	.05
9	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.25	-	-	.10	-	.20	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.05	.46	-	-	-	-	-	-
20	.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.46	-	.10	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	.10	.05	.10	.23	.10	.05	.05	.33	.05	-	.05	-	-
23	-	-	-	-	.08	.05	.10	.05	.20	-	-	-	-	.10	.20	.76	-	-	-	-	-	.10	-	-
24	.05	-	-	-	-	-	.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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28	-	-	-	-	-	-	-	-	.05	-	.03	.20	-	-	-	.15	.05	1.19	-	-	-	-	-	-
29	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	.08	-	.13	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

ITHACA

JUN 1982

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Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.64
2	.51	.15	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.23	-	.10	-	.05
4	.15	-	-	-	-	.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	.53
5	.41	.05	-	.13	.25	.23	.20	.20	.56	.61	.51	.77	.51	.15	-	-	-	-	-	.05	.05	-	.05	.05
6	-	-	-	.05	-	-	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.05
11	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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16	-	-	-	-	-	-	-	-	-	-	-	.13	-	.20	.51	.20	.16	.46	.13	.10	-	.05	-	.05
17	-	-	-	.63	1.27	1.27	.51	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.04	.04	-	-	-
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21	-	-	-	.08	.05	-	-	-	-	-	-	-	-	-	-	-	-	.10	.05	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.25	-	.53	.08	-	.03	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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29	-	-	-	-	-	-	-	-	.15	.56	.13	.10	.20	.51	.84	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
M - Missing, precipitation likely
M() - Missing, precipitation unlikely
< > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	.05	.41	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.23
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.74	-	-
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27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP3S Precipitation Chemistry Network Rain Gauge Data

ITHACA

AUG 1982

129

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.41	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	-	-	-	.08
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	.03	-	.05	.13	-	.08	.15	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	.94	-	.15	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	.36	-	-	-	-	-	.56	-	.03	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.33	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	.05	-	-	-	-	-	.10	-	.05	-	.10	-	.05	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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31	-	-	-	-	-	-	-	-	-	-	-	-	-	.23	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.25	-	-	-	-
3	-	-	-	.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

	TIME (Z)																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	.05	-
15	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	.05	-	.10	.05	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	.10	-	-	-	-	-
17	-	.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.38	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	.10	.08	.10	.08	.05	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	.10	.10	.36	.10	.15	.46	.25	.15	-	-	.15	.25	.51	.46	.25	.20	.30	-	.05	.05
6	.05	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	.30	-	-	-	-	-	-	.05	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	.46	.05	-	-
13	-	-	-	-	-	.05	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.23	.36	-
21	-	-	.23	-	-	-	-	-	-	-	.05	.08	-	-	.08	.05	-	-	-	-	.05	.08	-	-
22	-	-	-	-	-	.36	.20	-	-	-	-	-	-	-	.08	.05	-	-	.20	-	-	-	-	-
23	.20	.10	-	-	-	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.46	.30	.23	.08	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.15	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

MAP33 Precipitation Chemistry Network Rain Gauge Data

ITHACA

DEC 1982

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	.10	.10	.05	.20	-	.54	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	-	-	-	-	-	-	-
13	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	.13	-	-	.80	-	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	1.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	.66	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.30	.05	-	-	-	-	-	-
26	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	.08	.05	.08	.03	.05	.03	.05	.03	.08	.05	.05	.10	.10	.03	.03	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	.05	.03	.03	.28	.61	.33	.18	.15	.05	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	.15	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.03	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.05	.05	.03	.03	-	.03	.03	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	.05	.08	.03	-	-	.08	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	.03	.08	.03	.03	.05	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	.03	.13	.10	.13	.23	.03	.15	.30	.38	.03	.30	.51	.38	.25	.30	.28	.18	.13	.13	.13	.03	.05
24	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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30	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	.13	.05	-	-	-	-	.03	.03	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.25	.36	.30	.13	.10

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	.05	.03	-	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	.23	.10	.10	.20	.13	.10	-	-	.13	.28	.28	.25	.05	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	.03	.30	.23	-	-	.05	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	.05	.03	-	-	-	-	-	-	-	-	-	-	-	-
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15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	.03	-	-	-	-	-	-	.03	.08	.15	.15	.13	.18	.25	.20	.15	.13	.17	.08	.03
18	-	-	-	.03	.10	.03	.03	-	-	.03	.08	.18	.03	.05	-	-	-	-	-	-	-	-	-	.03
19	-	.03	-	-	-	-	-	-	-	.03	.08	.18	.03	.05	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.10	.05	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	.08	-	.03	-	.05	-	-	-	-	-	-	-
25	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	.03	-	.10	.05	.05	.10
3	-	.10	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.10	.08	-	-	-	-	-
5	-	-	.08	.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.05	.05
7	-	-	-	-	-	-	-	-	-	-	.15	.15	.23	.23	.15	.05	.13	.08	-	.03	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	.03	-	-	.05	.03	.03	.10	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	.15	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	.13	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.43	.53	.10	.05	-	-	-
17	-	-	.30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	.61	.25	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.25	.23
26	.10	-	-	.05	.20	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	.03	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	.20	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP3S Precipitation Chemistry Network Rain Gauge Data

PENN STATE

APR 1982

137

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	.03	.10	.10	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	.08	.20	.28	.25	.03	.03	-	.05	.38	.15	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	.18	.05	.08	.08	.05	.23	.18	.03	.03	.13	.05	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	.05	.05	.08	.15	.25	.20	.10	.01	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	.03	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	.05	-
18	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	ML	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

	TIME (Z)																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.08	-
8	-	-	-	-	-	-	-	.13	.18	.18	.38	-	-	.05	.03	.13	.03	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	.08	-	MU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	MU	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	MU	-	-	-	-	-	-	-	-	-	-	MU	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	.76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.30	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	.05	.58	.10	.36	.03	.03	-	-	-	-	-	-	-	-
23	-	-	-	-	-	.25	.53	.13	-	-	.23	.48	.03	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	.05	-	.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	.05	.03	-	.03	-	-	-	-	-	-	-	-	-	-	.05	1.09	1.19	.05	.30	-	-	-	-
29	-	-	1.14	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.20	-	.10	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	.10	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	.30	.13	.05	-	.03	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	.08	.28	.10	.10	.20	.18	.18	.05	.58	.66	.79	.51	.58	.08	.03	.20	-	.13	.10	.03	-
6	-	-	-	-	-	-	-	-	.03	-	-	-	.03	.25	.15	.10	-	-	.05	.03	-	.05	.03	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	.18	.46	.51	.58	-	-	.03	.05	.30	.03	-	-
11	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	ML	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	.03	.05	-	-	-	-	-	-	-
17	.76	.25	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	.08	-	.15	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-
23	.20	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.46	.08
28	-	-	-	-	.15	.53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.18	-	-
29	-	-	-	-	-	-	-	-	.05	.08	-	-	-	-	-	-	-	.10	.10	-	-	.03	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	.05	.33	.10	.25	.23	.10	.20	.08	.13	.10	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	.08	.20	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	1.17	1.65	.05	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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28	-	-	-	.69	.30	.10	.05	.03	.38	.02	-	.03	-	-	-	-	.10	-	-	.03	-	-	-	-
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31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP35 Precipitation Chemistry Network Rain Gauge Data

PENN STATE

AUG 1982

141

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	.03	.53	-	-	-	-	-	-	-	-	.10	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.02	2.03	.13	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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DATA CODES:

- T - Trace
- ML - Missing, precipitation likely
- MU - Missing, precipitation unlikely
- < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	.03	.03	.30	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.04	-	.04	.25	-
3	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	.05	.03	-	-	.03	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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23	-	-	-	.04	-	.03	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-
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26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.03	-
27	.25	.23	.13	.24	.33	.54	.05	.04	.05	.10	.03	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	-	-
8	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	.28	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	.05	.08	.13	.08	-	.10	.10	.05	.13	.13	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.13	-
16	-	.03	-	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	.05	-	-	.03	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	.46	-
21	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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4	-	-	-	-	-	-	.13	.07	.15	.05	.05	-	-	.20	.15	.10	.15	.20	.13	.15	.03	.18	.08	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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21	.03	.10	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.25	.08	-	-	.03	-	.03
22	-	-	-	-	-	-	-	-	-	.08	.10	.15	.13	.05	.17	.20	.05	-	.08	-	-	.03	.03	.03
23	-	.03	.03	-	-	-	-	-	-	-	-	-	-	.13	-	-	-	-	-	-	.03	.03	.03	.08
24	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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6	.05	-	.53	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	.08	.08	-	-	.30	.56	.10	.10	.08	.08	.03	-	.03	-	-	-	-	-	-	-	-	-	-	.08
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	-	-	-	-	.08	.05
20	.05	-	.03	.03	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	.03	.03	-	-	-	-	-	-	.05	-	-	-	-	-	-	-
24	-	.03	.03	-	-	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.05	.08	.05	.03	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-
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31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	.18	.30	.23	.18	.15	.23	.05	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	.05	.08	.05	.10	.08	-	-	-	.03	-	.05	.03	.03	-	-	-	-	.03
4	.18	.05	.03	-	.05	.03	.20	.03	-	.13	.23	.05	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	.03	-	.03	-	.03	-	-	-	-	.05	.08	.10	.13	.13	.15	.10	.10	.10	.03	.03
14	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.13	.10	.10	.10	.10	.05	.05	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	.03	.05	-	.03	-	-	.03	.03	.05	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	.20	.13	.23	.20	.05	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	.05	.10	.10	.03	.05	.03	.05	.05	.05	.08	.13	.08	.08	.05	.20	.10	.08	.05	.05	.05	.05	.03	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	.05	.05	-	-	-	-	.05	.38	.13

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	.03	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	.25
3	.36	.46	.20	.15	.05	.05	.13	.10	.30	.03	.33	.58	.20	.08	.43	.48	.08	.15	.20	.10	.05	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	.03	-	.10	.13	.05	-	.03	.08	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	.08	.08	.08	.10	.05	.15	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	.10	.05	-	-	-	-	-	-	-	-	-	-	-	.03	.08	-	.03	.08	.10	.13	.13	.10
17	.13	.05	.03	.23	.08	.05	.15	.05	.08	.15	.10	.08	.18	.46	.18	.25	.23	.34	.28	.28	.10	.08	.08	.05
18	-	.05	.05	.05	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	.03	-	-	-	-	.18	.23	.25	.25	.25	.10	.23	.03	-	.25	.20	.08	-	-	-
7	-	-	-	-	.03	-	-	-	-	.18	.23	.25	.25	.25	.10	.23	.03	-	.25	.20	.08	-	-	-
8	-	-	-	-	.03	-	-	-	-	.18	.23	.25	.25	.25	.10	.23	.03	-	.25	.20	.08	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	.23	.18	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	-	-	.03	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	.15	.20	-	.13	.13	.03	.05	.10	.03	-	.03	-	.03	.05	.03
16	.03	.03	.03	-	.03	-	.03	-	-	.03	-	.03	.03	.03	.36	.05	.05	.03	.10	.03	-	.03	.05	.03
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	.05	.28	.46	.13	.10	-	.63	.51	.76	.48	.18	-	.08	-	-	-	.08	.13	.15	-	-
21	-	-	-	-	-	-	.60	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	.46	.03	.03	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	.10	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

NAP38 Precipitation Chemistry Network Rain Gauge Data

VIRGINIA

APR 1982

149

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	.03	.23	.1A	.05	.05	-	.0A	.18	.23	.1A	-	.30	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	.03	.05	.23	.1A	-	.05	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	.05	-	.05	-	-	-	-	.03	-	-	-	-	-	.03	-	-	.10	.08	.30	-	.30	-	-	.03
7	-	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	.18	.18	.08	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	.0A	.06	.03	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	.0A	.0A	.08	.15	.13	.10	.30	.60	.56	.1A	.15	.05	.15	.05	-	.05	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	.46	.38	-	.08	.33	.1A	.13	.03	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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20	.03	.03	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	.15	.03
21	.03	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	.03	.05	.03
22	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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30	<	ML	>	<	-	-	-	ML	-	-	-	-	-	-	>	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP35 Precipitation Chemistry Network Rain Gauge Data

VIRGINIA

JUN 1982

151

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	MI	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	6.8A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MI	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	MI	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	.10	.15	.1A	.3A	.56	.2A	-	-	-	-	-	.05	.05	.0A	.10	.20	.05	-
11	.03	-	-	-	-	-	-	-	-	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.0A	-	.03	.05	.33	.25	.46	.36	.20	.13
13	.13	.15	.15	.10	.05	.20	.25	.51	.30	.0A	.25	.36	.1A	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	-
17	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.0A	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.2A	.03	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.03	-	-	.03	-	-	-
5	.05	.33	.13	.03	.08	.03	-	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.84	.03	-	-
10	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.36	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.19	1.71	.38	.13	-
24	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.03	.08	-	-	-
29	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	.84	.33	.81	1.78	.05	.05	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	.03	.05	.15	.30	.28	.03	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

VIRGINIA

AUG 1982

153

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	.05	-	-	-	-	-	.36	.10	.05	-	.03	-	-	-	.03	-	-	-
8	-	-	.03	-	-	-	-	.03	-	-	-	-	.03	-	-	-	.03	-	-	-	.03	.08	-	-
9	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.67	1.07	.03
12	.25	.30	.08	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	.30	.41	.61	.61	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	1.45	1.22	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.43
17	.58	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	.05	-	-	-	.05	.36	.13
18	.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.05	-	-
28	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

	TIME (Z)																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.18	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.23	-	-
16	-	-	-	.04	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	.36	.08	-	.20	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-
21	-	-	-	-	-	-	-	.04	.25	.03	-	-	-	.03	-	-	-	-	-	-	-	.97	-	-
22	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	.03	.10	.41	.20	.38	.30	.66	.38	.79	.33	.20	.03	.05
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	.05	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.24	.03	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.08	.33
10	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.08	.15	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	.20	.18	.15	.18	.13	.13	-	.15	.30	.23	.08	-	-	-	-	.05	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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21	-	-	-	-	.41	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	.05	.23	.15	.08	.03	.10	.18	.46	.38	.28	.20	.10	.38	.10	.08	.33	.18	.05	.15	.20	.13	.03
26	.15	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	.04	.04	.05	-	-	-	-	-	-	.10	.04	.13	.14	.03	.10	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	.03	-
13	.08	.03	.03	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-
21	.03	.03	.03	-	-	-	-	-	-	-	.03	.03	.03	-	.03	-	.03	-	-	-	.08	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	.03	.04	.05	.05	-	.05	.05	.09	.24	.30	.03	.05	.24	.03	.05	.13	.10
29	.10	.15	.13	.04	.44	.84	.36	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

VIRGINIA

DEC 1982

157

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	.25	.30	.10	.10	.03	.10	.18	.23	.03	-	-	-	-	-	-	-
2	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	.03	-	-	.03	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	2.60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	4.52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.03	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	.03	-	.03	-	.03	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

NO DATA AVAILABLE	SITE 50	ILLINOIS	JAN 1982
NO DATA AVAILABLE	SITE 50	ILLINOIS	FEB 1982
NO DATA AVAILABLE	SITE 50	ILLINOIS	MAR 1982
NO DATA AVAILABLE	SITE 50	ILLINOIS	APR 1982
NO DATA AVAILABLE	SITE 50	ILLINOIS	MAY 1982
NO DATA AVAILABLE	SITE 50	ILLINOIS	JUN 1982
NO DATA AVAILABLE	SITE 50	ILLINOIS	JUL 1982
NO DATA AVAILABLE	SITE 50	ILLINOIS	AUG 1982
NO DATA AVAILABLE	SITE 50	ILLINOIS	SEP 1982
NO DATA AVAILABLE	SITE 50	ILLINOIS	OCT 1982
NO DATA AVAILABLE	SITE 50	ILLINOIS	NOV 1982

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.36	.41
3	.30	.18	.23	.10	.08	.10	.05	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	.03	.03	.05	.10	.13	.10	.15	.05	.05	.05	.03	T	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	.43	.33	.18	.18	T	-	T	.08	.13	.23	.30	-	-	-	-	-	.13	-	-	-	-	.25	.25	.28
25	-	.25	.28	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.10	.18	.13	.28	.18	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

		TIME (Z)																						
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	.03	.03	.10	.05	.03	.15	.03	.03	.15	.38	.33	.20	.13	.20	.18	.23	.05	.08	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	.03	.03	.25	.25	.28	.69	.86	.61	.53	.71	.56	.53	.25	.25	.05	.30	.25	.33	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.10	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	.03	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.05	.03	.25	.13	.13	.03
14	.05	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.23	.23
15	.28	.25	.23	.25	.23	.15	.13	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	.03	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	.05	.03	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	.08	.28	.20	.10	.46	.18	.33	.61	.74	.30	.36	.58	.08	.03
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	-	.03	.03	.41	.20	.08

DATA CODES:

T - Trace
ML - Missing, precipitation likely
MU - Missing, precipitation unlikely
< > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	.23	.23	-	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	.28	.08	.15	.41	.25	.38	.20	.13	.28	.25	.30	.15	-	.05	.08	.05	-	-	-	-	-	-
4	-	-	.23	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	.03	.03	.03	-	-	-	.05	.05	.08	.08	-	-	.03
10	.08	-	-	.05	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.13	.13	.03	.13	.15	-	.03	-
20	-	.05	.13	.05	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

- T = trace
- ML = Missing, precipitation likely
- MU = Missing, precipitation unlikely
- < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	.03	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	.03	-	-	-
5	.20	.01	.13	.30	.05	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.20	.13	.30	.28	.15
7	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.10	.08	.08	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.15	.05	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	.10	.13	.41	.13	.51	.13	-	-	-	-	-	.05	-	.05	-	.13	.05	.08	.03	.20	.03	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.13	.03	.08	.05	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	-	-	-	-	-	-	-	-	-
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30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.41	.33	.03	.28

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	.03	.25	.13	.34	-	-
4	1.50	.74	.28	.61	.03	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	.03	.13	.28	.13	.25	.23	.13	.41	.53	.25	.15	-	.20	.13	.10	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	.38	.91	.15	.20	.18	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.25	.30	.71	-
27	.36	.86	.23	.48	.36	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	.08	.10	.41	.33	.05	-	-	.10	.03	-	.13	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	.03	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.08	.25	.38	.13	.46	.05
24	.18	-	-	-	-	-	-	-	.03	.03	-	.25	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	.33	.13	.25	.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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29	-	-	.13	.10	.15	.13	-	-	-	.08	.69	-	-	-	-	-	-	-	-	-	-	-	-	-
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31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	1.52	.89	.63	1.32	.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.04	.03	-
5	.28	.15	.13	.71	.10	.25	.25	.13	1.40	.25	.08	.41	1.78	2.29	1.02	.81	.89	.51	.63	.76	1.02	.51	1.78	1.65
6	1.14	.76	.10	.05	.23	.03	.03	.03	.03	-	.05	-	-	-	-	.25	.25	.46	.23	-	.04	.10	.08	-
7	.05	-	.08	-	.05	.03	.03	.03	.03	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	.05	.03	-	.03	.05	.05	.20	.10	.13	.15	.15	.15	.20	.10
14	.10	.13	-	.20	.13	.33	.05	.15	.20	.13	.05	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.27
17	.28	.43	.15	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.13	.10	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	.05	.10	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.38	-	.23	-	-	-	-	-	-
30	-	.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.15	.05	.04
4	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.66	.13	.10	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	.33	.86	.33	.05	.13	1.14	.24	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

BROOKHAVEN

AUG 1982

167

Hourly precipitation amounts (cm)

	TIME (Z)																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-
10	-	-	1.90	-	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	.03	-	-	-	-	-	-	.03	-	.13	.13	-	.08	-	-	-	-	-	.03	.03	.03	.13	-	.03
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	-	.51	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.63	1.27	1.65	1.17	-	-
25	-	-	-	-	-	-	-	-	-	-	-	.25	.43	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
ML - Missing, precipitation likely
MU - Missing, precipitation unlikely
< > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	.05	.56	.23	.28	.25	.36	.08	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	.13	.05	.03	.03	-	-	.05	.05	.05	-	.08	.08
21	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	.03	-	-	-	.03	.03	.03	-	.13	.05	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	.03	.13	.03	.13	-	.20	.05	-	-	.13	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	.05	-	-	-	.03	.18	-	.23	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	-	-	-	.03	-
14	.15	-	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	.08	.15	-	-	.08	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	.15	.05	.13	.15	.51	.30	.05	.20	.15	.05
26	.08	.20	-	.13	.08	-	.15	.61	.53	.28	.05	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP35 Precipitation Chemistry Network Rain Gauge Data

BROOKHAVEN

NOV 1982

170

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	-	-	.03	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.08	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	1.02	.08	.38	.13	.18	.05	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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13	-	-	-	-	-	.03	.15	.18	.53	.25	.36	.41	.53	.48	.25	.13	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	.15	.15	.13	.13	.05	.04	.05	-	-	-	-	-	-	-	-	-
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29	.05	-	.25	.15	.23	.43	.20	.28	.23	.41	.58	.33	.08	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
VU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	.13	.13	.13	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	.08	.20	.08	.33	.08	.05	.10	.03	.03	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	.03	.03	-	-	-	-	.08	.20	.23	.20	.13	.03	.03	-	.03	.10	.03	.03	.03	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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16	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.43	.63	.58	.20	.08	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	.03	-	.03	.03	-	-	-	-	.08	.08	.03	.05	.03	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.13	.05	-	.03	.10	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	<	-	.89	-	-	>	<	-	.91	-	-	>	.03	-	.03	.03	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	.13
4	-	-	<	-	.20	>	<	-	1.60	-	>	<	.36	>	.03	-	4.08	>	.03	-	-	-	.05	-
5	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-	.23	-	-	-	>
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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23	-	-	-	-	-	-	-	-	-	-	-	<	1.90	-	-	-	>	-	-	.08	-	-	-	-
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31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	-
3	<	.20	>	.08	-	-	.03	-	.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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9	-	-	-	-	-	-	-	-	-	-	-	-	.03	<.28	>	.03	-	.03	-	<.10	>	-	-	-
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17	.05	.03	.03	.03	-	-	-	-	-	-	-	-	-	-	-	.13	-	-	<	-	1.57	-	-	>
18	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	<	.61	-	>	-	-	-	-	-	-
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DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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7	-	-	<	-	2.11	-	-	>	.03	<	.23	>	-	-	-	-	-	-	-	-	-	-	-	-
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15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<	-	-
17	-	-	-	-	1.52	-	-	-	-	-	>	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<.05	>	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.13	.03	.03	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	<.61	>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<.20	>	.03	-	-	.03	-	.63	-
4	-	-	-	.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	<	-	-	-	2.01	-	-	>	.03	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	<.43	>	-	-	-	<.23	>	.03	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	.05	.34	<.25	>	-	-	<.18	>	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	<	3.38	-	>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<.05	>	-	-	-	-	-	-
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26	-	-	-	-	-	-	-	-	-	.03	-	-	<.20	>	<	-	-	2.67	-	-	-	>	<	-
27	.91	>	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.03	-	.03	-	-	-	-
28	-	-	-	-	-	.03	-	.03	<.13	>	<	.33	-	>	-	-	-	.03	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	.08	-	.03	<	.69	>	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<.08	>	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	-	-	-	-	-	-	-
9	-	-	<.53	>	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<.08	>	-	-	-	-
23	-	-	.03	-	.33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	.13	-	.05	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	<.05	>	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	.08	-	.03	<	.69	>	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<.08	>	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

HAP35 Precipitation Chemistry Network Rain Gauge Data

LEWES

JUN 1982

177

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	<	1.93	-	>	.53	.03	-	-	-	< 4.69	>	.05	.05	-	-	-	-	-	-
5	< .05	>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 1.47	>	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	<	-	1.50	-	>	< .05	>
14	<	.71	>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	.38	-	-	-	-	-	-	-	-	.56	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount over a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

LFKFS

JUL 1982

179

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.23	.97	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.56	1.93	<.13	>
21	.90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.51	.03	-	-
29	.81	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	1.07	-	.03	.51	-	-	-	< 1.80	-	>	-	-	.20	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 MI - Missing, precipitation likely
 MIJ - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	3.53	.03	.33	-	-	-	3.23	.10	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	< 4.09	>	-	-
10	-	<.33	>	.07	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	.05	.05	.28	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.04	.10	.05	.13	.05	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	.03	-	.03	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.18	-	.30	.03	-	.20	-	-
24	-	-	-	-	-	-	-	.03	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

LEWIS

SEP 1982

180

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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20	-	-	-	-	-	-	-	-	-	<	-	.91	>	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	.03	.03
22	-	-	.13	-	.04	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.04	.30	.08	-
27	.03	.03	.08	.04	.41	.10	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

LEWES

OCT 1982

181

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	<	-	-	-	-	-	-	-	-	-	.76	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	.38	.03	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	3.17	-	-	-	-	-	-	-	.51	-	-	-	-	-
26	-	-	-	1.70	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

MAP35 Precipitation Chemistry Network Rain Gauge Data

LEWIS

NOV 1982

182

Hourly precipitation amounts (cm)

	TIME (2)																							
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.18	.03
5	-	<.08	>	.25	<.51	>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	<	-	-	3.73	-	-	>	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	<	-	-	2.34	-	-	-	>	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	<.03	>	.03	.03	.03	.10	<	-	.61	>	-
29	-	<.18	>	<	.74	>	<	2.16	>	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	.15	<.30	>	-	.25	.33	.05	-	.03	.08	-	-
2	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	.08	-	<1.5	>	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.10	.05	.05	-	-	<	-	.71	-
12	>	.03	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	.71	>	.03	.18	.03	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	<.36	>	-	-	.03	-	.28	.10	.03	-	.03	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	.23	.23	-	-	-	-	-	.03	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	.05
4	.05	.05	.08	.30	.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	.03	.08	.03	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	.05	.05	.03	-	-	.05	-	-	.08	.05	.05	.03	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	.05	.05	.03	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-
21	-	-	.03	.10	.10	-	-	-	-	-	-	-	-	-	-	-	.08	.28	.23	.43	.28	.25	.05	.30
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	.25	.46	.28	.30	.18	.23	.23	.15	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	.05	.08	.13	.08	-	.03	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	.03	.05	.13	.05	-	-	-	.28	.18	.03	.20	.08	.05	.05	.03	.10	.23	.15	.28	-
31	.36	.15	.08	.25	.20	.28	.46	.36	.33	.01	.43	.48	.41	.36	.20	.18	.18	.08	-	.03	.05	.05	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

MAP3S Precipitation Chemistry Network Rain Gauge Data

OXFORD

FEB 1982

185

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	.03	.03	.10	.05	-	.03	-	.13	.10	.10	.05	.10	.08	.13	.13	.03	-	-
4	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	.03	.14	.20	.20	.20	.10	.05	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	.08	.13	.10	.10	.05	.15	.13	.05	-	.03	-	.03	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	.03	-	.25	.18	.15	.20
18	.15	.05	-	-	.03	.05	.03	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	.05	-	.03	-	-	-	-	-	-
20	-	-	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

- T - Trace
- ML - Missing, precipitation likely
- MU - Missing, precipitation unlikely
- < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	.08	.13	.05	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.05
3	.10	.13	.10	.08	.08	.05	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	.25	.28	.08	-	.10	.05	.05	.10	-	-	.10	-	.05	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	.33	.38	.23	.13	-	-	.46	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-
13	-	-	-	-	-	-	-	-	.51	.23	.08	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	.05	.28	.20	.25	-	.43	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	.38	.53	.15	-	-	-	-	-	-	-	-	-	-	.03	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	.03	-	-	-	-	-	-	-	.03	.03	.15	.23	.10	.10	.30	.15	-	-	-	-	-
20	-	.05	-	.05	.46	.18	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	.28	.05	.08	-	-	-	-	-	.08	.05	.08	.03	.03
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	.03	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.03	-
31	.03	.18	.23	.25	.15	.94	.18	-	-	-	-	-	-	-	-	-	.36	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	.51	.33	.15	.41	.53	.28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.18	.18	.13	.05
6	.08	.13	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03
9	.08	.05	.10	.03	.03	.08	.08	.03	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.43	-	-	-	-
17	-	-	-	-	-	-	-	.43	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03
26	.28	-	.03	.30	.33	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	.61	1.17	.46	.08	-	.15	.23	.41	.25	.03	.03	.05	.05	.03	-	-	.10	.30	.18	.18	.08	-	-	.15
9	-	.03	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	.05	-	.08	.05	-	-	-	-
21	-	.03	.51	.66	.30	.33	.15	-	-	-	-	-	-	-	-	-	-	-	.10	.23	.48	.10	.05	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	.20	2.79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.23	-	-	-	-
28	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	.23	-	-	-	-	.66	-	-	.48	.18	.33	-	-	.51	-	.03
30	.05	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	.25	.38	.48	.10	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.20	.03	.03	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.03	-	-	-	-
8	-	-	-	-	-	-	-	3.12	.81	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	.20	.08	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	-	-	-	-	-	-	-	.03	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-
16	.58	.10	-	-	-	.10	.38	-	.03	.03	-	-	-	-	-	.18	.30	.03	-	.05	-	-	-	-
17	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.89	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.22	.51	-	-	-	.15
29	-	-	-	-	-	-	-	-	-	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	.18
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	.13	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	.10	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	.63	.05	-	-	-	-	-	-	.56	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	-	-	-	-
11	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	-	-	-
19	-	-	-	-	-	-	-	-	.03	-	1.00	-	.56	.23	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	.60	.41	-	-	.13	.03	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.41	-	.05	-	-	.03
28	-	-	-	-	-	-	-	-	-	.13	.08	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.38	-	-	-	-	-	-	-
5	1.20	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	.03	.18	.03	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-
11	-	.08	.08	.08	.20	.05	.05	-	.18	.10	.10	.03	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.38	.23	.05	.03	-	-	-	-	.08	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.13	.15	.03	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	.03	-	-	-	-	-	.05	.05	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	-	-	-	.05	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	.03	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	.05	.05	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	.20	-	.03	-	-	.05
3	.03	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	.13	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	.03	.15	-	-	-	-	-	-	.08	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	.05	.08	.15	.13	.13	.20	.08	.05	.08	.03	-	-	-	-	-	-	-
25	-	.03	-	.18	.61	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	.03	.03	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	.03	.08	-	-	-	.15	.43	-	.30	.41	.08	-	.03	.03	.03	-	-	-	.03	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

OXFORD

OCT 1982

193

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	.03	-	-	.91	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	.03	.05	.03	-	-	.03	-	-	.03	-	-	-	-
10	-	-	-	.08	.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	.13	.15	.10	.08	.08	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.03	-

DATA CODES:

T - Trace
ML - Missing, precipitation likely
MU - Missing, precipitation unlikely
< > - Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	.08	.10	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.67	.10
3	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.03	.03	-	.03	.03	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	.05	.10	.08	.08	.10	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	.13	-	-	1.27	.38	.05	-	.05	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	.10	-	.08	.30	.13	.15	.08	.08	.13	-	-	.03	-	-	.03	.03	-	-	-	-	.15	.10	.07
21	-	-	.05	.36	.28	.51	.38	.23	.05	.05	-	-	-	-	-	-	-	.18	-	-	.08	.48	-	.03
22	.57	.44	.08	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.37	.05	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.03	.20	.30	.08	.03	.03	.13	-	-	.13
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	.03	-	.03	.03	.03	.03	.03	.05	.03	.15	.13	.03	.03	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	.08	.18	.05	.10	.30	.20	.30	.28	.15	-	-	-	-	-	-	-	-	-	-
29	-	.13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	.23	.08	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	.03	.05	.03	-	.08	.10	.03	-	-	-	-	-	.18
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	.03	.03	.05
11	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	.10	.05	-	-	-	.05	.03	.05	.03	.05	.20	.08	.10	.15	.10	.20	.38	.25	.18
16	.13	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03
19	.08	-	-	-	-	.03	.05	-	-	-	-	.13	.23	-	-	-	-	-	-	-	-	-	-	.03
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.15	.03	-	.03	.03	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05
25	.05	.03	-	-	-	-	-	-	-	-	-	-	-	.05	-	.03	.10	-	.25	.30	.69	.18	-	-
26	-	-	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	.08	.13	.20	.20	.44	.48	.66	.25	.15	.23	.18	.03	.03	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	.13	.63	.05	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

- T - Trace
- ML - Missing, precipitation likely
- UU - Missing, precipitation unlikely
- < > - Amount spans a period greater than one hour

Hourly precipitation amounts (in)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	.03	-	-	.03	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	.28	.33	.18	.03	.10	.53	.97	.33	.13	-	-	-	-	-	.08	.15	.05	.08	-	-	.05	.05	.05
4	.03	.03	.03	.20	.46	.79	.56	.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	.03	.05	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	.03	.15	.38	.20	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	ML	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1.37	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	ML	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	1.22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	.08	.18	.05	.66	.05	.03	.28	.18	.38	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	.08	.36	.23	.05	-	.10	.08	-	-	-	-	-	-	-
23	-	-	-	-	.03	-	-	-	.03	.15	.46	.66	.53	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.25	.71	.25	-	-	.13	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP35 Precipitation Chemistry Network Rain Gauge Data

DAK RIDGE

FEB 1982

197

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	.03	-	-	-	-	-	.03	.05	.03	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.23	.20	-	-	-	.03	.08	.33	.33
3	.28	.20	.05	.03	.05	.08	.20	.08	.03	-	-	-	-	-	-	-	-	.03	-	.10	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	.03	.10	.10	-	-	-	-	-	-	-	-	.03	.10	.03	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03
9	-	.03	-	-	-	.05	.03	-	.56	1.12	.41	.20	.03	-	-	-	-	-	-	-	-	-	.05	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.20	.03	-	-	.03
13	.05	.05	.05	.13	.15	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	.03	-	-	-	-	-	-	-	.05	.13	.34	.20	.34	.43	.64	.23	-	-	-	.03	.15	.28	.13
17	-	-	-	-	-	-	-	-	-	.13	.25	.08	-	-	-	-	-	-	-	-	-	-	.03	.08
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	.08	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.03	-	.05	.05	.03
27	.08	.08	.10	.15	.03	-	-	.03	.18	.23	.30	.25	.15	-	.20	.13	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

DAK RIDGE

MAR 1982

198

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	.03	-	-	-	-	.30	.05	.18	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	.03	.08	.10	.03	-	-	-	.03	.10	.20
7	.36	.33	.44	.08	.13	.23	.36	.25	.20	.05	.05	-	-	-	-	-	-	-	-	.28	.25	.03	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.03	.33	.25	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.15	.03	.03	-
15	-	-	-	-	-	-	-	-	-	-	.30	.86	.13	.36	.48	.28	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	.03	-	-	-	-	-	.10	-	-	-	-	-	-	-	.03	-	-	-
17	-	-	-	-	-	-	-	-	-	.05	.03	-	-	-	.10	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	1.65	.33	.36	.51	.28	.33	.05	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	.08	.25	.28	.20	.10	.10	.03	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	.33	.56	.38	.36	-	-	-	-	-	-	.03	.97	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

MAP3S Precipitation Chemistry Network Rain Gauge Data

OAK RIDGE

APR 1982

199

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	.03	-	-	-	-	-	-	-	.20	-	.25	.03	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	.03	.05	.10	-	-	-	-	-	-	-	-	-
6	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	.13	.33	.38	.15	.08	-	.03	-	.03	-	-	-	.05
9	.03	.03	.03	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	.13	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	.74	.56	.78	.08	.03	.03	-	-	-	-	.08	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.33	.25	.23	.10	.20	.15	-	.03
26	.03	.03	.13	.13	.03	.03	.05	.05	-	-	-	-	-	-	-	.05	.33	.25	.23	.10	.20	.15	-	.03
27	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	.08	-	.25	.15	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

DAK RIDGE

MAY 1982

200

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	.10	.08	.15	.69	.13	.05	.13	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	.08	1.02	.25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	.05	.10	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	.46	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	.10	.28	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	1.57	.10	.03	.15	.05
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	.05	-	-	-	-	-	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

MAP38 Precipitation Chemistry Network Rain Gauge Data

OAK RIDGE

JUN 1982

201

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	.36	-	-	.03	-	.05	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.25	.18	-	-	-	.63	-	-	-
5	-	-	-	-	.34	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.33	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.15	-	-	-	-	.03
13	-	-	-	-	-	-	-	-	.13	.03	-	-	-	-	-	-	.03	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	.63	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.03	-	-	.34
17	.25	-	-	-	-	-	-	-	.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	.56	.03	-	-	-	-	-	-	-	-	-	.20	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.61	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.30	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	.05	-	-	-	.20	.63	.56	.05	-	-	-	-	-	-	-	-	-	-	-	.03	.33	.05	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	.15	.76	.13	.18	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3.05	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	.38	.10	-	-	-	-	-	-	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.43	.05	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.66	.25	.10	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	.18	1.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.51	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	.05	-	-	-	-	-	-	.10	1.02	-	-	-	-	-	-	-	-	-	-
31	-	.03	-	-	-	.05	1.19	-	.03	-	-	.03	-	-	.41	.41	1.63	3.45	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-	-
9	-	-	-	-	.69	.63	-	-	-	.01	.15	1.12	.13	.15	-	-	-	-	-	2.31	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.63	.13	.03	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	.10	.10	.03	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	-	-	-	-	-	-	-	-	-
18	-	-	1.27	.28	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	.58	1.60	.03	.05	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	.08	.03	-	-	-
25	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	.03	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	.08	-	-	-	-	-	-	.03	.05	.20	.03	.03	.08	.10	.05	.15	.03	-	-	-	-	-	-	-

DATA CODES:

T = Trace
 ML = Missing, precipitation likely
 MU = Missing, precipitation unlikely
 < > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	.03	.03	-	-	-	-	-	-	-	-	-	-	-	.94	2.87
2	.10	.03	-	-	-	-	-	-	-	-	.18	.48	-	-	.56	.20	.06	.18	.13	.08	-	-	.30	.25
3	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	.03	.10	-	.36	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	.71	.33	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	.03	-	.05	.05	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	.03	-	-	-	-	-	-	-	.20	.33	.43	.18	.08	.05	.08	.05	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	.43	-	.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	.03	-	.05	.03	.05	.10	-	.43	.18	.05	-	.03	-	-	-	-	.03	.08	.10	.15	.13	.10	.03	.03
9	-	-	-	-	-	-	.08	.05	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	.08	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.08	.10	.08	-
13	.41	.25	.05	.15	.69	.23	.03	.13	.10	.48	.13	.10	.05	-	.03	-	-	.10	.08	-	-	-	-	-
14	-	-	.08	-	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	.03	-	-	-	-	-	-	-	-	.05	.08	.03	.15	.03
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 ML - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

MAP3S Precipitation Chemistry Network Rain Gauge Data

DAK RIDGE

NOV 1982

296

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	.97	1.78	.43	.53	.15	.08	-	-	.13	-	-	.13	.20	.25	.13	.38	-	.03	-
4	-	.05	.20	.18	.18	.23	.25	.10	.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.05	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.81	.89	.51	-	-	-	-	-
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	.05	.03	-	.05	.10	.18	.18	.18	.15	.13	.03	.03	.13
18	.05	.05	.10	.03	.08	.05	.03	-	-	-	-	.03	.03	.05	.13	.15	.25	.43	.03	.15	.03	-	.03	-
19	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
20	-	.03	-	-	-	.03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	.10	.23	.28	.15	.41	.30	.08	.10	.03	-	-	-	-	-	-	-	-	-	-	.15	-	.03	-
23	-	-	-	-	-	-	-	-	-	-	.03	.03	-	.03	-	-	-	-	-	-	-	-	-	-
24	-	-	.10	.10	-	.05	.20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27	.03	-	-	-	-	.03	-	-	-	-	-	-	.10	.05	.08	.10	.08	.10	.05	.13	.05	.03	.10	.03
28	-	-	-	.10	.05	.08	.08	-	.15	.05	-	-	-	-	-	.15	.05	-	.13	.05	.03	.10	.13	.08
29	.30	.36	.20	.15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T = Trace
ML = Missing, precipitation likely
MU = Missing, precipitation unlikely
< > = Amount spans a period greater than one hour

Hourly precipitation amounts (cm)

DAY	TIME (Z)																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	-	.05	.05	.0A	1.22	2.06	.30	.51	1.12	.25	.43	.25	.18	.05	.03	.05	.03	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	.56	.58	.03	.25	.13	.05	.18	.10	.20	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	.0A	.05	.03	.03	.05	.0A	.10	.05	.05	.0A	.25	.10	.05	.05	.03	.03	-	-	.05	.03	.18	.15	.03	.0A
12	.13	<	-	-	-	1.45	-	-	>	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.25
13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.20	.79
16	.30	.18	.23	.33	.08	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
19	-	-	-	-	-	-	.05	.20	.03	.03	.05	.03	-	-	.03	-	-	-	.03	.03	-	-	-	-
20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	-	-	-	-	-	-	.10	.2A	.15	.05	.10	-	-	-	-	-	-	-	-	-	-	-	-	-
24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25	.03	.03	-	.03	.03	-	-	-	-	.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-
26	-	-	-	-	-	-	-	.13	.0A	.10	.13	.05	.03	.05	.05	.05	.08	.05	-	-	-	-	-	-
27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	-	-	-	-	-	-	-	-	-	-	.3A	.51	.48	.13	.10	-	-	-	-	-	-	-	-	-
29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

DATA CODES:

T - Trace
 MI - Missing, precipitation likely
 MU - Missing, precipitation unlikely
 < > - Amount spans a period greater than one hour

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2.0 NETWORK BACKGROUND

Figure 1 shows the locations and names of the currently active MAP3S PCN sites. Table 4 lists locations, elevations and start date. Table 5 is a compilation of the collector types and areas used in the MAP3S/PCN from the beginning of the network. The reader and data user is strongly advised to consult the more detailed descriptions of network operations in the previous publications.¹⁻⁷

Table 4. Network Site Details^(a)

Site No.	Name	Location		Elevation (m, msl)	Date of First Sample Collected
		Longitude	Latitude		
1	WHITEFACE	73°, 51'	44°, 23'	604	October 11, 1976
2	ITHACA	76°, 43'	42°, 23'	503	October 26, 1976
3	PENN STATE	77°, 57'	40°, 47'	396	September 22, 1976
4	VIRGINIA	78°, 32'	38°, 2'	171	December 12, 1976
5	ILLINOIS	88°, 22'	40°, 3'	213	November 20, 1977
6	BROOKHAVEN	72°, 53'	40°, 52'	24	February 9, 1978
7	LEWES DE	75°, 0'	38°, 46'	0	March 1, 1978
8	OXFORD OH	84°, 44'	39°, 32'	283	October 1, 1978
9	OAK RIDGE TN	84°, 20'	35°, 55'	---	January 7, 1981

^(a)See Preface for cooperating institutions and personnel.

Table 6 is a list of current analytical techniques and sensitivities. The minimum detection limit as defined by the MAP3S/PCN is the lowest concentration of determinand that the given analytical method can reliably detect. This is a qualitative number only and generally represents the variability of the blank response. The quantitative limit of detection is the lowest concentration of determinand that can be quantitatively and reproducibly detected by the given method of analysis within a specific estimated error of analysis.

FIGURE 1. Locations of MAP3S Network Sites

Table 5. MAP3S/PCN Collector Type and Area Record Through May, 1983

<u>Site</u>	<u>Collector Type</u>	<u>Time Span^a</u>	<u>Collector Area, cm²</u>	<u>Time Span^a</u>
Whiteface-10	BNW ^b	10/11/76-12/9/79	490	10/11/76-12/9/79
	HASL ^c	12/10/79-5/83	640	12/10/79-5/83
Ithaca-20	BNW	10/26/76-11/19/79	490	10/26/76-11/19/79
	HASL	11/20/79-5/83	640	11/20/79-5/83
Penn State-30	BNW	9/22/76-12/18/79	490	9/22/76-12/18/79
	HASL	12/19/79-2/28/81	640	12/19/79-5/83
	ACM ^d	3/1/81-5/83		
Virginia-40	BNW	12/12/76-3/31/81	490	12/12/76-3/31/81
	ACM	4/1/81-5/83	640	4/1/81-5/83
Illinois-50	BNW	11/20/77-2/15/80	490	11/20/77-2/15/80
	HASL	2/16/80-1/4/82	325	2/16/80-1/4/82
	ACM	1/5/82-5/83	640	1/5/82-5/83
Brookhaven-60	BNW	2/9/78-2/23/81	490	2/9/78-2/23/81
	ACM	2/24/81-5/83	640	2/24/81-5/83
Lewes, OE-70	BNW	3/1/78-11/9/80	490	3/1/78-11/9/80
	ACM	11/10/80-5/83	640	11/10/80-5/83
Oxford, OH-80	BNW	10/1/78-11/23/80	490	10/1/78-11/23/80
	ACM	11/24/80-5/83	640	11/24/80-5/83
Oak Ridge-90 ^e	ACM	1/7/81-5/83	604	1/7/81-5/83

^aDate may be between sample dates

^b"Battelle Northwest" - BNW

^cH1

^dACM 301-A2

^eEntire record for Oak Ridge has same collector and area

Table 6. Chemical Species and Analysis Details

Species	Method ^(a)	Instrument	Minimum Detection Limit $\mu\text{mol/l}$	Quantitative Detection Limit(b) $\mu\text{mol/l}$	Estimated Error(c)
H^+ (free)	Electrode	Corning	--	--	± 0.05 pH units ^(d)
Conductivity	Bridge	Markson Electro- mark	1.2	--	$\pm 20\%$
SO_3^-	AWC	Technicon Auto Analyzer	0.1	0.2	± 60 (QDL or 10%)
SO_4^-	IC	Dionex System 10 (Anion)	0.03	0.2	± 60 (QDL or 10%)
NO_2^-	AWC	Technicon Auto Analyzer	0.05	0.1	± 60 (QDL or 10%)
NO_3^-	IC	Dionex System 10 (Anion)	0.05	0.2	± 60 (QDL or 10%)
Cl^-	IC	Dionex System 10 (Anion)	0.5	2.0	± 60 (QDL or 10%)
PO_4^{3-}	IC	Dionex System 10 (Anion)	0.05	0.2	± 60 (QDL or 10%)
NH_4^+	IC	Dionex System 10 (Cation)	0.1	0.5	± 60 (QDL or 10%)
Na^+	IC	Dionex System 10 (Cation)	0.1	0.4	± 60 (QDL or 10%)
K^+	IC	Dionex System 10 (Cation)	0.2	0.5	± 60 (QDL or 10%)

Table 6 Continued

<u>Species</u>	<u>Method(a)</u>	<u>Instrument</u>	<u>Minimum Detection Limit $\mu\text{mol}/\ell$</u>	<u>Quantitative Detection Limit(b) $\mu\text{moles}/\ell$</u>	<u>Estimated Error(c)</u>
Ca^{++}	AA	Perkin-Elmer 306	0.2	0.5	$\pm\text{GO}(\text{QDL or } 10\%)$
Mg^{++}	AA	Perkin-Elmer 306	0.1	0.4	$\pm\text{GO}(\text{QDL or } 10\%)$

(a) AWC = Automated Wet Chemistry; IC = Ion Chromatography; AA = Atomic Absorption Spectrophotometry

(b) Best Obtained--Some analysis sessions result in higher maximum detection limits. These are noted, where relevant, in the Appendix.

(c) QDL = Quantitative detection limit; GO = "Greater Of."

(d) At pH = 4.

3.0 QUALITY CONTROL

3.1 Results of USGS/MAP3S Blind Audit Program

Summaries of 1980 and 1981 USGS/MAP3S blind audit program are reported on page 129 and 201 in the two previous summary reports.^(5,6) Twenty-six simulated precipitation samples were used for the 1982 data analysis. All analytical results that are reported as "less than" by either the laboratory or the USGS are deleted from the blind-audit data set. All analytical results from a sample that was determined to be contaminated are not reported. Ammonium nitrite, and sulfur dioxide are not present in the audit samples at time of preparation; therefore, these species are not included in the data analysis.

Replicate analyses of audit samples are shown on Table 7. Nitrate and phosphate do not appear to be stable during the entire submission train. Nitrate is usually and phosphate is always reported at concentrations lower than the USGS recommended concentrations. Simulated precipitation samples are not chilled during sample submission to the laboratory. This small data-subset indicates that calcium, magnesium, and probably sulfate show a bias between the laboratory and the USGS reported values. It should be noted that all laboratory data includes field handling and processing of the simulated precipitation samples.

Graphical representation of the laboratory analysis versus the USGS reported values are shown on Figures 2-9. All stable chemical parameters (Ca, Mg, K, Na, Cl, and SO_4) have high correlation coefficients (R) indicating that the laboratory and USGS reported values have a commonality of greater than 90 percent. The two unstable chemical parameters (NO_3 and PO_4) have much lower R values than the stable parameters indicating that NO_3 and PO_4 are being lost from sample preparation and laboratory analysis.

Since commonality is shown for Ca, Mg, K, Na, Cl, and SO₄, a least square equation can be generated to describe the audit data for MAP3S network. The form of the equation would be $P = SX + I$ where:

P = parameter measured by the laboratory,

S = slope,

X = chemical parameter as reported by USGS, and

I = intercept.

This least-square equation includes variability caused by USGS and site-operator handling, storage container, sample shipping, and laboratory analysis. Therefore, it is not a valid estimate of only laboratory accuracy; but, rather an estimate of the accuracy of the entire submission train and laboratory analysis.

Table 7. Interlaboratory Comparison of Replicate Blind Audit Samples

PARAMETER	CALC. MAP3S mg/L		USGS REPORTED mg/L
Ca	1.44	1.44	1.45
Mg	.27	.29	.31
Na	1.49	1.77	1.48
K	<.02	.03	.10
SO ₄	2.98	3.07	2.88
NO ₃	.34	.35	.43
Cl	1.31	1.34	1.16
PO ₄	--	.07	.09

PARAMETER	CALC. MAP3S mg/L			USGS REPORTED mg/L
Ca	0.84	0.96	1.24	1.24
Mg	.24	.27	.17	.27
Na	1.20	1.30	1.31	1.13
K	.04	.08	.07	.07
SO ₄	2.40	4.42	2.59	2.22
NO ₃	.13	.45	.02	.06
CL	.96	1.17	1.17	.90
PO ₄	<.02	<.02	<.02	.01

Table 7 Continued

PARAMETER	CALC. MAP3S mg/L		USGS REPORTED mg/L
Ca	0.32	0.34	0.37
Mg	.11	.09	.10
Na	.14	.14	.14
K	.82	.43	.47
SO ₄	.93	.68	.72
NO ₃	.23	.13	.54
Cl	.53	.10	.07
PO ₄	<.02	<.02	.13

PARAMETER	CALC. MAP3S mg/L				USGS REPORTED mg/L
Ca	2.08	2.57	2.40	2.28	2.47
Mg	.39	.49	.46	.49	.54
Na	2.30	2.30	2.25	2.53	2.25
K	.11	.10	.10	.16	.15
SO ₄	3.65	4.41	7.68	5.19	4.44
NO ₃	.28	.25	.20	.25	.53
Cl	1.67	2.09	1.81	2.16	1.80
PO ₄	<.02	<.02	<.02	<.02	.07

Figure 2. MAP3S laboratory analysis for NO₃ verses USCS most probable value of NO₃.

Figure 3. MAP3S laboratory analysis for SO₄ verses USGS most probable value of SO₄.

Figure 4. MAP3S laboratory analysis of Mg verses USGS most probable value of Mg.

2.0
1.9
1.8
1.7
1.6
1.5
1.4
1.3
1.2
1.1
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0

MAP3S K in mg/L

222

$R^2 = 0.931$
 $S = 1.072$
 $I = -0.038$

K MPV in mg/L

Figure 5. MAP3S laboratory analysis for K verses USGS most probable value of K.

Figure 6. MAP3S laboratory analysis for Ca verses USGS most probable value of Ca.

MAP3S Na in mg/L

Figure 8. MAP3S laboratory analysis for Na verses USGS most probable value of Na.

Figure 9. MAP3S laboratory analysis for Cl verses USGS most probable value of Cl.

3.2 Laboratory Sample Exchanges

During 1982, there were two opportunities for comparison of laboratory analyses of precipitation samples between the PNL laboratory and others, in addition to the USGS blind sample program. The first of these involved analysis of samples collected in the Philadelphia urban area during the summer of 1982. The collection was conducted by the Department of Energy and Environment of Brookhaven National Laboratory (BNL), and chemical analysis for certain species was done at BNL. Prior to analysis, the samples were split and a portion sent by normal MAP3S/PCN means to PNL for the standard analysis procedures. Table 8 is a comparison of the results for two convective rain events, with samples collected at several sites simultaneously. The samples were quite acidic and contained high concentrations of the major species (compared to the PCN sites) as one might expect from the sampling locations; under the conditions, it appears that the samples were quite stable chemically and undue degradation did not occur during transit to PNL.

Table 8 . Comparison Between BNL and PNL Chemical Analyses:
Rain Samples from the Philadelphia Urban Area

Date	Site No.	$\text{NO}_2^- + \text{NO}_3^-$		$\text{SO}_4^{=}$		Cl^-		NH_4^+	
		BNL	PNL	BNL	PNL	BNL	PNL	BNL	PNL
7/19/82	5	90	91	164	170	<14	14	57	50
	7	69	69	100	110	<14	10	46	39
	8	71	72	106	110	<14	12	43	33
7/20/82	5	31	31	53	58	<14	4.3	26	a
	7	62	65	94	100	<14	8.2	43	39
	8	66	70	113	120	<14	7.0	32	a
	34	83	88	188	200	<14	8.1	30	a

^ano analysis performed

The second sample exchange was with the Atmospheric Chemistry Laboratory of Desert Research Institute (DRI) (Reno, Nevada). In this case, four PCN samples were retrieved from storage and sent to DRI, along with one ion

chromatography standard and a blank of distilled, deionized water. The initial chemical results at PNL of the four rain samples had not yet been released in a bimonthly data report. Table 8 lists the results of the analyses by each laboratory, including a second or third run by PNL conducted after the samples were returned to PNL. The only major discrepancy appears with the Cl^- in one of the rain samples. The initial PNL measurement of $17 \mu\text{mol}/\ell$ for sample 072440 may be in error due to contamination, or some chemical change occurred between the first and second analysis date.

3.3 Short-term Chemical Stability of Rain Samples: Results from the OSCAR Stability Studies

In the course of analysis of precipitation samples at the PNL precipitation chemistry laboratory, a significant fraction of the samples are routinely reanalyzed for one or more chemical species. This occurs primarily with the ion chromatography species--sulfate, nitrate, chloride, phosphate, sodium, ammonium, and potassium--since the need to reanalyze one species results in the reanalysis of two or three others which also appear on the chromatogram. These reruns, however, do not normally take place on the same day or analysis "session", and may be delayed up to one month because of workload and scheduling. This, these reanalyses do not represent a measure of analytical precision, but are--if one assumes that the samples are chemically stable over this time period--a measure of a combination of accuracy and precision variations between analytical sessions. The statistics of short-term stability measurements, moreover, may be compared with long-term stability results to derive an estimate of the "background" of laboratory variability influencing the latter. Most of the chemical species can be considered to be stable over a time period of a month or so, particularly in fairly acidic samples, so these data can be used to assess how the laboratory meets its goals for combined accuracy and precision, and to standardize in some way the variations observed in long-term stability studies.

Approximately five percent of the samples from the OSCAR experiment^{*} were reanalyzed for at least one species on a short-term basis. Table 9 lists elementary statistics for the major ions rerun in this process. Shown are the number of samples, the means and standard deviations of the first measured concentrations, and means and standard deviations of ΔC , given by

$$\Delta C = \frac{C_1 - C_2}{C_1 + C_2} \times 100, \quad (1)$$

where C_1 and C_2 are the first- and second-measured concentrations, respectively. This parameter is a measure of variability which can be compared to the MAP3S/PCN goal for overall variability (including sampling, handling and analysis) of $|\Delta C| < 10$.

Table 9. Elementary Statistics for Short-Term Stability

Species	N ^a	C, $\mu\text{mol/l}$		ΔC , %		ΔC , %	
		Mean	S.D. ^b	Mean	S.D.	Mean	S.D.
Sulfur ^c	136	41	34	4.0	4.4	+2.0	5.9
Nitrate	152	39	43	4.5	5.2	+9.3	7.9
Chloride	83	14	17	9.0	12.	+2.1	14
Hydrogen ^d	125	48	40	2.3	2.6	+1.5	8.7
Ammonium	97	24	26	4.5	5.9	-.66	7.4

^aNumber of samples

^bStandard deviation

^cS^{IV} and S^{VI}, measured as sulfate

^dStatistics for hydrogen ion from pH represent true precision

^{*}Results for long-term chemical stability of Oxidation and Scavenging of April Rains will be presented in a future report.

The samples involved in this analysis were selected on the basis of the need to rerun (except for H^+); most often, this need follows from one of the peaks of the chromatogram being off-scale. Thus, there may be a slight bias toward the higher concentration samples, since most of the species concentrations are positively correlated. The standard deviations of C_1 show that a fairly broad range of magnitudes is represented, however. The H^+ data, from pH measurements, represent routine reanalyses during analytical sessions; thus for H^+ , unlike all the other species shown in the table, the statistics are true precision statistics.

The mean of $|\Delta C|$ for most species is less than five, which is an acceptable value for accuracy and precision variations. The standard deviation of $|\Delta C|$ is only an indicator of the number of outliers--values of ΔC which are far from zero. The mean of ΔC indicates if there is any significant bias toward the second measurement being consistently higher or lower than the first (the mean of ΔC should be zero). The slight bias for Cl^- is unexplained, while that for H^+ is probably due to pH meter drift over the about one hour period between measurements.

The chemistry of the OSCAR events was such that the concentrations of NO_3^- , NH_4^+ , and Cl^- were often below 10 $\mu\text{moles}/\ell$. In this area, an acceptable value of $|\Delta C|$ may be somewhat larger than five because rather small changes in concentration result in relatively large values of ΔC . Accordingly, shown in Table 10 are similar statistics for these species for the concentration range 10-100 $\mu\text{moles}/\ell$ (concentrations above 100 are subject to an up-to 5% round off error). The means of $|\Delta C|$ for NH_4^+ and Cl^- are somewhat improved by this exercise.

Table 10. Elementary Statistics for Short-Term Stability:
 $10 \leq C < 100 \text{ } \mu\text{moles/l}$

Species	N	$ \Delta C , \%$	
		Mean	S.D.
Nitrate	102	4.6	6.8
Chloride	31	4.0	3.3
Ammonium	62	2.9	3.4

In summary, the short-term stability statistics indicate that the variations are approximately the same as one might expect from acceptable laboratory variations, and may in fact be a measure of these variations.

3.4 Site Audits

In the summer and fall of 1982, site visitations and audits were made by Battelle personnel to all nine MAP3S sites. M. Terry Dana visited Site #5, Illinois, on November 2, 1982, Site #6, Brookhaven, on June 17, 1982, and Site #8, Oxford, OH, on June 15, 1982. Elaine Chapman visited Site #1, Whiteface, on October 5, 1982, Site #2, Ithaca, on October 1, 1982, and Site #3, Penn State, on September 28, 1982. Jane Rothert visited Site #4, Virginia, on October 12, 1982, Site #7, Lewes, DE, on October 11, 1982 and Site #9, Oak Ridge, TN, on October 13, 1982. The audit forms used at each site for the site audits follow. In general, the site operators were following standard operating procedures as set down in the Site Operator's Manual. The primary problem found was the accidental bumping of the rim of the bucket when removing the used bucket from the collector and when replacing a new one. Also the collector pad was not regularly cleaned by the operators. These problems were discussed and corrective action taken. Table 11 is a summary of the results of the pH test solutions used during the audits.

Table 11. QA Site Audit
pH Test Solution Results

<u>Site</u>	<u>Site pH</u>	<u>Battelle Original</u>	<u>Battelle Final</u>
Whiteface	3.89 4.39	4.01 4.50	3.89 4.40
Ithaca	3.91 4.42	4.01 4.50	3.89 4.40
Penn State	4.26 4.48	4.01 4.50	3.89 4.40
Virginia	3.95	4.10	4.04
Illinois	3.81	3.80	3.78
Brookhaven	NAP		
Lewes, DE	4.17	4.35	4.30
Oxford, OH	NAP		
Oak Ridge, TN	3.88	3.80	3.78

NAP = No Analysis Performed

SITE # 1 Whiteface MtnAUDITOR Elaine ChapmanSITE OPERATOR Marc duBoisDATE 10/5/82SITE MANAGER John KadlecsekPRESENT Marc duBois, E. Chapman

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			
B. Sample Changing				
1) Preparation	X			
2) Bucket Handling En Route	X			
3) Change of Buckets	X			
4) Cleaning of Collector Pad				Now aware of it
5) Handling on Return	X			
C. Lab Handling & Measurement				
1) Weighing Bucket	X			
2) TCM Aliquot	X			
3) TCM Fixing	X			
4) pH Aliquot	X			
5) pH Procedure				pH of Test Sol. <u>3.89</u> <u>4.39</u>
a) calibration	X			T of Test Sol. <u>19.5°C</u>
b) recalibration	X			
6) Shipping Aliquot(s)	X			
7) Blank Procedure				Now aware of it
D. Storage of Samples	X			
E. Shipping Procedure				
1) Taping Bottles	X			
2) Blue Ice Control	X			
3) Packing	X			
4) Separation of TCM	X			
F. Cleaning of Reused Buckets	X			
G. Rainfall Determination	X			
Calculation of Pred. Vol.	X			

SITE #1 Whiteface Mtn.AUDITOR E. Chapman *ec*SITE OPERATOR Marc duBoisDATE 10/5/82

2. Discussion

	GOOD	FAIR	POOR	REMARKS
A. Operator's Manual on Hand	X			
1) Understands QA Requirements	X			
B. Understanding of Forms				
1) Data Log	X			
2) Rainfall	X			
3) Embarkation	X			
4) Significant Figures	X			
5) Records Unusual Items?	X			
6) Copy or Original:				See note A
C. Sampling Days of Week	X			See note B
D. Awareness of Data Reports				
1) Any on Hand?	X			
2) Checks Data?			X	Not currently doing
E. Complaints				
1) Deficiencies in Instructions?				
2) Supply Problems?				Needs more buckets

SITE #1 Whiteface MtnAUDITOR E. Chapman *ec*SITE OPERATOR Marc duBoisDATE 10/5/823. Additional Notes/Items of Discussion
(Reference page 1)

- A. SUNY-Albany requires all originals to be kept at Whiteface Mtn; copies only sent regardless of agency.
- B. Does not have a permanent back-up. When he knows he will be away, he hires someone else to pick-up samples - - \$ comes out of his own pocket.
- C. Uses a Markson ElectroMark Analyzer with Orion combination electrode. Conductivity available on same meter, but measurements not performed. No water bath available; measurements at room temperature.
- D. Has not been checking data reports for accuracy or accidental inclusion of QC samples. Is now aware of importance of doing.
- E. Uses syringes for small volume determination and TCM aliquot removal.
- F.
- G.

4. Major Problems

See D above.

5. Summary

ACTION REQUIRED

Start checking data reports for accuracy and QC samples.

ACTION PERFORMED

SITE # 2 IthacaAUDITOR Elaine ChapmanSITE OPERATOR Tom ButlerDATE 10/1/82SITE MANAGER Gene LikensPRESENT T. Butler, E. Chapman

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	<u>X</u>			
B. Sample Changing				
1) Preparation	<u>X</u>			
2) Bucket Handling En Route	<u>X</u>			
3) Change of Buckets	<u>X</u>			
4) Cleaning of Collector Pad			<u>X</u>	<u>Done irregularly; now aware of</u>
5) Handling on Return	<u>X</u>			
C. Lab Handling & Measurement				
1) Weighing Bucket	<u>X</u>			
2) TCM Aliquot	<u>X</u>			
3) TCM Fixing	<u>X</u>			<u>Done in different room</u>
4) pH Aliquot	<u>X</u>			
5) pH Procedure	<u>X</u>			<u>pH of Test Sol. $\frac{3.91}{3.92}$ 4.42</u>
a) calibration	<u>X</u>			<u>T of Test Sol. 25°C room temp</u>
b) recalibration	<u>X</u>			
6) Shipping Aliquot(s)	<u>X</u>			
7) Blank Procedure				<u>Now aware of</u>
D. Storage of Samples	<u>X</u>			
E. Shipping Procedure				
1) Taping Bottles	<u>X</u>			
2) Blue Ice Control	<u>X</u>			
3) Packing	<u>X</u>			
4) Separation of TCM	<u>X</u>			
F. Cleaning of Reused Buckets		<u>X</u>		<u>See note A</u>
G. Rainfall Determination				
Calculation of Pred. Vol.	<u>X</u>			

SITE # 2 IthacaAUDITOR E ChapmanSITE OPERATOR Tom ButlerDATE 10/1/82

2. Discussion

	<u>GOOD</u>	<u>FAIR</u>	<u>POOR</u>	<u>REMARKS</u>
A. Operator's Manual on Hand	X			
1) Understands QA Requirements	X			
B. Understanding of Forms				
1) Data Log	X			
2) Rainfall	X			
3) Embarkation	X			
4) Significant Figures	X			
5) Records Unusual Items?	X			
6) Copy or Original:				See Note C
C. Sampling Days of Week	X			
D. Awareness of Data Reports				
1) Any on Hand?		X		
2) Checks Data?		X		Not done regularly
E. Complaints				
1) Deficiencies in Instructions?				
2) Supply Problems?				Needs more TCM bottles, shipping boxes, buckets, Feels turn around on data reports too slow, and that data should be given per site rather than per day with information on date/time of precipitation included.

SITE # 2 IthacaAUDITOR E ChapmanSITE OPERATOR Tom ButlerDATE 10/1/82

3. Additional Notes/Items of Discussion
(Reference page 1)

- A. For cleaning of used buckets, does 4 rinses but no overnight soak. Suggested soak.
- B. Uses a Radiometer PHM82 pH meter. Requires only 1 ml. Aliquot allowed to reach room temperature, which is supposed to be controlled at 25° C.
- C. Does not turn in raingauge charts because does not feel they are accurate. Uses National Weather Service gauge to obtain total precipitation amount, divides by number of tic marks on Weathermeasure chart to obtain an average precipitation amount per tic and counts tics per hour to fill out precipitation log.
- ~~X~~.D Does not use syringes.
- F.
- G.

4. Major Problems

5. Summary

ACTION REQUIRED

ACTION PERFORMED

SITE # 3 Penn StateAUDITOR Elaine Chapman ecSITE OPERATOR Jim HolianDATE 9/28/82SITE MANAGER Rosa de PenaPRESENT J. Holian, R. de Pena (in lab) E. Chapma

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			
B. Sample Changing				
1) Preparation	X			
2) Bucket Handling En Route	X			
3) Change of Buckets	X			
4) Cleaning of Collector Pad			X	Wasn't aware of procedure. Will start doing after each event.
5) Handling on Return	X			
C. Lab Handling & Measurement				
1) Weighing Bucket	X			
2) TCM Aliquot	X			
3) TCM Fixing	X			
4) pH Aliquot	X			B C
5) pH Procedure	see Note A			pH of Test Sol. 4.26 4.48
a) calibration				T of Test Sol. 25° C
b) recalibration				
6) Shipping Aliquot(s)	X			
7) Blank Procedure				Now aware of
D. Storage of Samples	X			
E. Shipping Procedure				
1) Taping Bottles	X			
2) Blue Ice Control	X			
3) Packing	X			
4) Separation of TCM				
F. Cleaning of Reused Buckets	X			
G. Rainfall Determination	X			
Calculation of Pred. Vol.	X			

SITE # 3 Penn StateAUDITOR E. Chapman ecSITE OPERATOR Jim HolianDATE 9/28/82

2. Discussion

	GOOD	FAIR	POOR	REMARKS
A. Operator's Manual on Hand	X			
1) Understands QA Requirements	X			
B. Understanding of Forms				
1) Data Log	X			
2) Rainfall	X			
3) Embarkation	X			
4) Significant Figures	X			
5) Records Unusual Items?	X			
6) Copy or Original:	X			
C. Sampling Days of Week	X			
D. Awareness of Data Reports				
1) Any on Hand?	X			
2) Checks Data?	X			
E. Complaints				
1) Deficiencies in Instructions?				
2) Supply Problems?				Too many boxes - needs black straps, TCM bottles, safety bulb for measuring TCM

SITE # 3 Penn StateAUDITOR E. Chapman *EC*SITE OPERATOR Jim HolianDATE 9/28/823. Additional Notes/Items of Discussion
(Reference page 1)

- A. pH and conductivity meters standardized by Rosa de Pena approximately once a quarter. Calibration seems to hold. Use an Orion Model 407A Ion Analyzer with output to a strip chart recorder. Steadiness of strip chart line used to indicate stable reading. Beckman Model RC 16B2 conductivity bridge used on routine basis. Samples warmed to 25° C in water bath.
- B. Vegetation at site needs to be cut back. Raspberry bushes and shrubs within 3 feet of sampler, above bucket height.
- C. Does not use syringes at all. Has an Eppendorf 10 ml pipette for TCM aliquot removal.
- D. Jim served as an "undergraduate aide" to other operators and was familiar with the site, equipment and procedures before starting as the "official" operator.
- F.
- G.

4. Major Problems

See B above.

5. Summary

ACTION REQUIRED

Cut back vegetation at site.

ACTION PERFORMED

SITE # 4 VirginiaAUDITOR Jane RothertSITE OPERATOR Tom WallDATE 10/12/82SITE MANAGER Bill Keene/Jim Galloway PRESENT Tom Wall, Bill Keene, Jane Rothert

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			
B. Sample Changing				
1) Preparation	X			buckets stored in shipping box at site
2) Bucket Handling En Route	X			uses global deposition buckets when out of MAP3S
3) Change of Buckets	X			
4) Cleaning of Collector Pad		X		hit rim of new bucket with hand
5) Handling on Return		X		leaves out so all sample to room temp - should refrigerate
C. Lab Handling & Measurement				
1) Weighing Bucket	X			
2) TCM Aliquot	X			uses glass pipettor
3) TCM Fixing	X			repipettor
4) pH Aliquot	X			pours to plastic beaker from bucket
5) pH Procedure				pH of Test Sol. 3.95
a) calibration	X			T of Test Sol. 23° uses H ₂ O
b) recalibration	X			42 Ω sample in room for temp
6) Shipping Aliquot(s)		X		
7) Blank Procedure	X			
D. Storage of Samples				
E. Shipping Procedure				
1) Taping Bottles		X		
2) Blue Ice Control		X		
3) Packing		X		
4) Separation of TCM		X		
F. Cleaning of Reused Buckets				uses global network buckets, first acid rinse
G. Rainfall Determination				640 x 2.54 x (tipping bucket & wedge gage)
Calculation of Pred. Vol.				2

SITE # 4 VirginiaAUDITOR J. RothertSITE OPERATOR Tom WallDATE 10/12/82

2. Discussion

	<u>GOOD</u>	<u>FAIR</u>	<u>POOR</u>	<u>REMARKS</u>
A. Operator's Manual on Hand	X			
1) Understands QA Requirements		X		
B. Understanding of Forms				
1) Data Log		X		
2) Rainfall		X		
3) Embarkation		X		
4) Significant Figures		X		
5) Records Unusual Items?		X		
6) Copy or Original:	X			
C. Sampling Days of Week	X			
D. Awareness of Data Reports				
1) Any on Hand?				add Tom's name to list
2) Checks Data?			X	doesn't check
E. Complaints				
1) Deficiencies in Instructions?				
2) Supply Problems?				supply lots of buckets - always out

SITE # 4 VirginiaAUDITOR J. RothertSITE OPERATOR Tom WallDATE 10/12/82

3. Additional Notes/Items of Discussion
(Reference page 1)

A. Removes lid counter before changes bucket, replaces when done to eliminate extra ticks.

B. Leaves whole sample to equilibrate to room temperature. Very bad.

C.

D.

E.

F.

G.

4. Major Problems

field data corrections for QA samples poorly explained
out of buckets! Send

5. Summary

ACTION REQUIRED

send forms: data log, embarkation, ppt

send lots of buckets

Allows only pH aliquot to come to room temperature

ACTION PERFORMED

SITE # 5AUDITOR Terry DanaSITE OPERATOR Scott Dosset/Mark SlaterDATE 11/2/82SITE MANAGER Gary StenslandPRESENT Dosset, Slater, Dana
(site) (lab)

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			storage at site
B. Sample Changing				
1) Preparation	X			use NADP buckets & lids preweighed
2) Bucket Handling En Route	N/A			storage at site
3) Change of Buckets	X			pounds lid on
4) Cleaning of Collector Pad		X		NADP procedure-monthly or when needed
5) Handling on Return	X			
C. Lab Handling & Measurement				
1) Weighing Bucket	X			with lid
2) TCM Aliquot	X			
3) TCM Fixing	X			
4) pH Aliquot	X			NADP procedure
5) pH Procedure	X			pH of Test Sol. "B" 3.81
a) calibration	X			7&4 Fisher colorT of Test Sol.
b) recalibration				coded Ω = 79
6) Shipping Aliquot(s)	X			
7) Blank Procedure	N/A			
D. Storage of Samples	X			
E. Shipping Procedure				
1) Taping Bottles	X			
2) Blue Ice Control	X			
3) Packing	X			
4) Separation of TCM	X			
F. Cleaning of Reused Buckets	X			regular NADP protocol
G. Rainfall Determination	X			just starting to use tipping bucket
Calculation of Pred. Vol.	X			

SITE # 5AUDITOR Terry DanaSITE OPERATOR Scott Dosset/Mike SlaterDATE 11/2/82

2. Discussion

	GOOD	FAIR	POOR	REMARKS
A. Operator's Manual on Hand		X		two should be sent
1) Understands QA Requirements				
B. Understanding of Forms				
1) Data Log				
2) Rainfall				Didn't have time to
3) Embarkation				discuss-should be OK
4) Significant Figures				
5) Records Unusual Items?				
6) Copy or Original:				
C. Sampling Days of Week				no weekend collections
D. Awareness of Data Reports		X		put both Scott & Mike on list
1) Any on Hand?			X	sees after filters down
2) Checks Data?			X	will do so
E. Complaints				
1) Deficiencies in Instructions?				OK
2) Supply Problems?				address all supplies to Slater

SITE # 5AUDITOR Terry DanaSITE OPERATOR Scott Dosset/Mike SlaterDATE 11/2/823. Additional Notes/Items of Discussion
(Reference page 1)

A.

B.

C.

D.

E.

F.

G.

4. Major Problems

None - Communication between S & D could be-re shipping, etc.
Stensland said complain to him or Semonin or anyone if they arise.

5. Summary

ACTION REQUIRED

ACTION PERFORMED

SITE # *6*
SITE OPERATOR J. McNeil
SITE MANAGER Gil Raynor (not present)

AUDITOR T. Dana TD/td
DATE June 17, 1982

MAP35/RAINE/PCN
DRAFT SITE QA AUDIT CHECKLIST

<u>ITEM</u>	<u>GOOD</u>	<u>FAIR</u>	<u>POOR</u>	<u>COMMENTS</u>
<u>Field pH</u>				
how take aliquot	<u>X</u>	<u> </u>	<u> </u>	-needs to decant to shipping bottles 1st
how is temperature obtained	<u>X</u>	<u> </u>	<u> </u>	room temp.
how is pH meter standardized	<u>X</u>	<u> </u>	<u> </u>	pH 4 and 7 buffers
how often is pH meter standardized	<u>X</u>	<u> </u>	<u> </u>	daily
<u>Buckets</u>				
how clean used buckets	<u>X</u>	<u> </u>	<u> </u>	SOP except for sponge
how handle buckets to site	<u>X</u>	<u> </u>	<u> </u>	
how handle buckets at site	<u>X</u>	<u> </u>	<u> </u>	
how handle buckets on return trip	<u>X</u>	<u> </u>	<u> </u>	
how handle buckets/bottles at lab	<u> </u>	<u>X</u>	<u> </u>	needs to decant 1st, as tends to thumb the rim in handling
<u>Bottles</u>				
taped properly	<u>X</u>	<u> </u>	<u> </u>	
where store new	<u>X</u>	<u> </u>	<u> </u>	
where store used with samples	<u>X</u>	<u> </u>	<u> </u>	
<u>TCM</u>				
how take aliquot	<u>X</u>	<u> </u>	<u> </u>	syringe
how spike with TCM	<u>X</u>	<u> </u>	<u> </u>	
where store spiked sample	<u>X</u>	<u> </u>	<u> </u>	refrigerator (in lab)

Page 2
Draft Site QA Audit Checklist

SITE # *6*

	<u>GOOD</u>	<u>FAIR</u>	<u>POOR</u>	<u>COMMENTS</u>
<u>Forms</u>				
time ("Z")	<u>X</u>	<u> </u>	<u> </u>	
time rounding (nearest 1/2 hour)	<u>X</u>	<u> </u>	<u> </u>	
fill in all spaces but last one and rinses	<u>X</u>	<u> </u>	<u> </u>	
understanding of #4	<u>X</u>	<u> </u>	<u> </u>	
understanding of #5	<u>X</u>	<u> </u>	<u> </u>	
correct number of sig. fig. (pH temp.)	<u> </u>	<u> </u>	<u> </u>	
QA samples recording	<u> </u>	<u> </u>	<u> </u>	
QA sample field data forms	<u> </u>	<u> </u>	<u> </u>	

SITE OPERATOR'S MANUAL: McNeil has it.

QUESTIONS: None

SUPPLIES: Needs shipping labels

COMPLAINTS:

Recommendations/Actions: All is fine except auditor recommended decanting (where possible) to shipping bottle(s) before taking aliquots. This protects main sample from any possible contamination in the handling.

SITE # 7 Lewes, DEAUDITOR Jane RothertSITE OPERATOR Joe ScudlarkDATE 10/11/82SITE MANAGER Tom ChurchPRESENT J. Scudlark, J. Rothert

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			refrig. not locked, clean bottles & buckets in locked lab
B. Sample Changing				
1) Preparation	X			preprepared
2) Bucket Handling En Route	X			in truck on seat
3) Change of Buckets	X			only cleans every other time, changes bucket
4) Cleaning of Collector Pad	X			hits bucket rim with hand
5) Handling on Return	X			in truck
C. Lab Handling & Measurement				
1) Weighing Bucket	X			
2) TCM Aliquot	X			with rinsed syringe
3) TCM Fixing	X			use pipettor
4) pH Aliquot	X			uses same syringe as above
5) pH Procedure				pH of Test Sol. <u>4.17</u>
a) calibration				T of Test Sol. <u>21° C</u>
b) recalibration				
6) Shipping Aliquot(s)	X			
7) Blank Procedure	X			
D. Storage of Samples	X			immediately in refrigerator
E. Shipping Procedure				
1) Taping Bottles	X			
2) Blue Ice Control	X			
3) Packing	X			
4) Separation of TCM	X			
F. Cleaning of Reused Buckets				soaks in 1 gal DDH ₂ O
G. Rainfall Determination				
Calculation of Pred. Vol.				tipping bucket inches x 2.54 x 640

SITE # 7 Lewes DEAUDITDR J. RothertSITE OPERATOR J. ScudlarkDATE 10/11/82

2. Discussion

	GOOD	FAIR	POOR	REMARKS
A. Operator's Manual on Hand				send forms for QA & substitutes
1) Understands QA Requirements				
B. Understanding of Forms				
1) Data Log	X			
2) Rainfall	X			
3) Embarkation	X			
4) Significant Figures	X			
5) Records Unusual Items?	X			
6) Copy or Original:				Original-doesn't keep copy-keeps original data
C. Sampling Days of Week	X			
D. Awareness of Data Reports				
1) Any on Hand?	X			ring binder folder
2) Checks Data?	X			
E. Complaints				
1) Deficiencies in Instructions?				
2) Supply Problems?				

SITE # 7 Lewes DEAUDITOR J. RothertSITE OPERATOR J. ScudlarkDATE 10/11/82

3. Additional Notes/Items of Discussion
(Reference page 1)

A. Lid opening counter broken, reads manually, estimates.

B.

C. Wipes electrode with Kimwipe, stores in rain water, uses glass beakers, does pH in MV, does sample, 2 standards and follows formula for each sample. Lets sit while weighs bottles, does TCM, etc., has thermometer in with electrode-good. Has autopipettor for TCM, no time on pH.

E.

F.

G.

4. Major Problems

storm direction off-front from west turns when it hits the coast, measures NE - log in NE but not true pollution flow - important for met. data.

send no more lids - doesn't use

5. Summary

ACTION REQUIRED

send ink for tipping bucket raingauge - out

send gloves

stop storing electrode in rainwater

ACTION PERFORMED

T. Church used rainwater for storing and rinsing electrode at

J. Galloway's supposed suggestion.

J. Galloway corrected misconception.

SITE # *8*
SITE OPERATOR Lee Wood
SITE MANAGER John Klink

AUDITOR Terry Dana TD/td
DATE June 15, 1982

MAP3S/RAINE/PCN
DRAFT SITE QA AUDIT CHECKLIST

<u>ITEM</u>	<u>GOOD</u>	<u>FAIR</u>	<u>POOR</u>	<u>COMMENTS</u>
<u>Field pH</u>				
how take aliquot	<u> </u>	<u> X </u>	<u> </u>	uses syringe before decanting to ship bt
how is temperature obtained	<u> </u>	<u> X </u>	<u> </u>	notes outside temp.
how is pH meter standardized	<u> </u>	<u> </u>	<u> X </u>	uses only pH 4 buffer as high
how often is pH meter standardized	<u> </u>	<u> </u>	<u> X </u>	every two weeks
<u>Buckets</u>				
how clean used buckets	<u> X </u>	<u> </u>	<u> </u>	SOP except for sponge
how handle buckets to site	<u> X </u>	<u> </u>	<u> </u>	uses bucket bag to and from site
how handle buckets at site	<u> X </u>	<u> </u>	<u> </u>	
how handle buckets on return trip	<u> X </u>	<u> </u>	<u> </u>	
how handle buckets/bottles at lab	<u> </u>	<u> X </u>	<u> </u>	does not decant to shipping bottle 1st
<u>Bottles</u>				
taped properly	<u> X </u>	<u> </u>	<u> </u>	
where store new	<u> X </u>	<u> </u>	<u> </u>	secure storage area - neat
where store used with samples	<u> X </u>	<u> </u>	<u> </u>	secure refrigerator
<u>TCM</u>				
how take aliquot	<u> X </u>	<u> </u>	<u> </u>	
how spike with TCM	<u> X </u>	<u> </u>	<u> </u>	
where store spiked sample	<u> X </u>	<u> </u>	<u> </u>	

Page 2
Draft Site QA Audit Checklist

SITE # *8*

	<u>GOOD</u>	<u>FAIR</u>	<u>POOR</u>	<u>COMMENTS</u>
<u>Forms</u>				
time ("Z")	<u>X</u>	<u> </u>	<u> </u>	
time rounding (nearest 1/2 hour)	<u>X</u>	<u> </u>	<u> </u>	
fill in all spaces but last one and rinses	<u>X</u>	<u> </u>	<u> </u>	
understanding of #4	<u>X</u>	<u> </u>	<u> </u>	
understanding of #5	<u>X</u>	<u> </u>	<u> </u>	
correct number of sig. fig. (pH temp.)	<u>X</u>	<u> </u>	<u> </u>	
QA samples recording	<u>X</u>	<u> </u>	<u> </u>	
QA sample field data forms	<u>X</u>	<u> </u>	<u> </u>	

SITE OPERATOR'S MANUAL: Yes

QUESTIONS: None

SUPPLIES: OK

COMPLAINTS: None

Recommendations/action: a) he will decant to shipping bottles (when possible) before taking aliquots. b) bag handling of buckets acceptable--BNW will provide new bags, however. c) he will use 4 and 7 buffers for pH, and will use procedure we will supply and pH measuring vials (single service) we will supply. 254

SITE # 9 ORNLAUDITOR Jane RothertSITE OPERATOR Jan CoeDATE 10/13/82SITE MANAGER Steve LindbergPRESENT Jan Coe, J. Rothert

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			security bldg/locked/no food refrigerator
B. Sample Changing				
1) Preparation	X			
2) Bucket Handling En Route	X			
3) Change of Buckets	X			
4) Cleaning of Collector Pad	X			cleans on cycle with bucket off
5) Handling on Return	X			
C. Lab Handling & Measurement				
1) Weighing Bucket	X			
2) TCM Aliquot	X			
3) TCM Fixing	X			
4) pH Aliquot	X			
5) pH Procedure				pH of Test Sol. 3.88
a) calibration				pH 4&7 7 first T of Test Sol. 21°C
b) recalibration				α-87
6) Shipping Aliquot(s)	X			
7) Blank Procedure	X			
D. Storage of Samples	X			
E. Shipping Procedure				
1) Taping Bottles	X			
2) Blue Ice Control		X		
3) Packing	X			
4) Separation of TCM	X			
F. Cleaning of Reused Buckets	X			soaks overnight DDH ₂ O full
G. Rainfall Determination				
Calculation of Pred. Vol.				inches x 1625.6

SITE # 9 ORNLAUDITOR J. RothertSITE OPERATOR Jan. CoeDATE 10/13/82

2. Discussion

	GOOD	FAIR	POOR	REMARKS
A. Operator's Manual on Hand	X			
1) Understands QA Requirements		X		
B. Understanding of Forms				
1) Data Log	X			
2) Rainfall	X			
3) Embarkation	X			
4) Significant Figures	X			
5) Records Unusual Items?	X			
6) Copy or Original:		copy out of originals		
C. Sampling Days of Week	X	can't on weekends without overtime		
D. Awareness of Data Reports	X			
1) Any on Hand?	X			
2) Checks Data?	X	hasn't been reporting errors		
E. Complaints				
1) Deficiencies in Instructions?				
2) Supply Problems?		wants to know how to improve supply shipping		

SITE # 9 ORNLAUDITOR J. RothertSITE OPERATOR Jan CoeDATE 10/13/823. Additional Notes/Items of Discussion
(Reference page 1)

A.

B.

C.

D.

E.

F.

G.

4. Major Problems

Wants to know how to define event end - produce data on tapes as well as the report sheets

5. Summary

ACTION REQUIRED

send forms - out
send letters to Jan, Bldg. 1505, Rm 315, data to Steve
out of buckets - send more more often
send VWR markers, lots of caps off 8oz & TCM, dirt on rims of buckets

ACTION PERFORMED

sent forms 10/18/82

3.5 Sample Shipping and Analysis

During 1982, 759 events were reported from the nine MAP3S/PCN sites. Table 12 shows the average length of time per site that events were stored before shipping and while in transit. The average length of time from sample arrival at the laboratory to analysis start was 12 days. The average time from analysis start to finish was 36 days.

Table 12. Sample Shipping and Storage

<u>Site</u>	<u>Last Event To Shipping (Days)</u>	<u>Shipping to Arrival (Days)</u>	<u>First Event To Shipping (Days)</u>
Whiteface	3	6	18
Ithaca	2	4	23
Penn State	3	4	31
Virginia	4	5	24
Illinois	9	5	31
Brookhaven	2	3	16
Lewes	2	5	27
Ohio	8	6	33
Oak Ridge	6	5	32

4.0 REFERENCES

1. MAP3S, The MAP3S/RAINE Precipitation Chemistry Network: Quality Control, PNL-3612, Pacific Northwest Laboratory, Richland, WA 99352, 1980.
2. The MAP3S Precipitation Chemistry Network: First Periodic Summary Report (September 1976-June 1977), PNL-2402, Pacific Northwest Laboratory, Richland, WA 99352, 1977.
3. The MAP3S Precipitation Chemistry Network: Second Periodic Summary Report (July 1977-June 1978), PNL-2829, Pacific Northwest Laboratory, Richland, WA 99352, 1978.
4. The MAP3S/RAINE Precipitation Chemistry Network: Third Periodic Summary Report (July 1978-December 1979), PNL-3400, Pacific Northwest Laboratory, Richland, WA 99352, 1980.
5. The MAP3S/RAINE Precipitation Chemistry Network: Fourth Periodic Summary Report (January 1980-December 1980), PNL-4144, Pacific Northwest Laboratory, Richland, WA 99352, 1981.
6. The MAP3S/RAINE Precipitation Chemistry Network: Fifth Periodic Summary Report (January 1981-December 1981), PNL-4599, Pacific Northwest Laboratory, Richland, WA 99352, 1983.
7. The MAP3S/RAINE Research Community, "The MAP3S/RAINE Precipitation Chemistry Network: Statistical Overview for the Period 1976-1979, Atmos. Environ., 16, pp. 1603-1631, 1982.

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APPENDIX A

LEGEND FOR DATA TABLES

TABLE 13
LEGEND FOR TABLE 2

Sub- Table	Column	Species	Units
1	1	Time Removed Time of day (on date at left) that sample was collected.	GMT or "Z"
	2	Lid Open. Number of times the collector opened during the sample period	(none)
	3	Arrival Date Date sample arrived at the laboratory	Month. Day of Month
	4	Sample Volume Volume of sample as measured immediately after collection	ml
	5	Predicted Volume Volume for sample predicted on the basis of precipitation amount measured by the rain gauge. See Table ___ for collector areas.	ml
	6	Field pH T Temperature at which field pH measurement was made	C
	7	Field pH	pH units
	8	Lab pH ^(a)	pH units
	9	Conductivity ^(a)	umho/cm
	1	SO ₂ S ^{IV} or dissolved SO ₂ measured in separate tetrachloromercurate ⁻ -fixed aliquots	umoles/l
	2	SO ₄ ⁼ "Total Sulfur" measured as sulfate--this is normally the sum of SO ₂ and SO ₄	umoles/l
	3	NO ₂ ⁻	umoles/l

Table 13 Continued

Sub- Table	Column	Species	Units
3	4	NO_3^-	$\mu\text{moles/l}$
	5	Cl^-	$\mu\text{moles/l}$
	6	PO_4^{3-}	$\mu\text{moles/l}$
	1	$\text{H}^+(\text{a})$ Free hydrogen ion concentration calculated from lab pH $[\text{H}^+ = 10^{(6-\text{pH})}]$	$\mu\text{moles/l}$
	2	NH_4^+	$\mu\text{moles/l}$
	3	Na^+	$\mu\text{moles/l}$
	4	K^+	$\mu\text{moles/l}$
	5	Ca^{++}	$\mu\text{moles/l}$
	6	Mg^{++}	$\mu\text{moles/l}$
	7	Anion Sum $2[\text{SO}_4^{=}] + [\text{NO}_2^-] + [\text{NO}_3^-] + [\text{Cl}^-]$ $+ 3[\text{PO}_4^{3-}] + [\text{unoxidized SO}_2]^b$	$\mu\text{eq/l}$
	8	Cation Sum $[\text{H}^+] + [\text{NH}_4^+] + [\text{Na}^+] + [\text{K}^+]$ $+ 2[\text{Ca}^{++}] + 2[\text{Mg}^{++}]$	$\mu\text{eq/l}$

(a) Measured at 25C.

(b) Estimated.

TABLE 14
SPECIAL DATA TABLE CODES

<u>Code</u>	<u>Numerical Value^a</u>	<u>Explanation</u>
ISA	-200.	Insufficient sample for analysis
NAP	-300.	No analysis performed
MOE	-400.	Malfunction or operator error
RPC	-500.	Rejected - probable contamination
T		Trace
ML		Missing, precipitation likely
MU		Missing, precipitation unlikely
<...>		Amount spans a period greater than one hour

^aOn data tape.

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