**The MAP3S Precipitation
Chemistry Network:
Eighth Periodic Summary Report (1984)**

THE MAP3S PRECIPITATION CHEMISTRY NETWORK:
EIGHTH PERIODIC SUMMARY REPORT (1984)

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PREFACE

This report contains a listing of precipitation chemistry data collected during 1984. It is the eighth 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 precipitation 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 hardcopy data and the computer data bases managed by Brookhaven National Laboratory and Pacific Northwest Laboratory [the U.S. Environmental Protection Agency Atmospheric Deposition System (ADS)] are advised to study the data table legends and other information in this report before making extensive calculations and interpretations. Please inform the author of any deletions of vital information or ambiguities.

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SUMMARY

This summary report, the eighth in the series, contains complete field and chemical data from the MAP3S Precipitation Chemistry Network for the year 1984. Sections cover Quality Assurance/Quality Control, network site information, and a brief statistical summary of the 1984 data.

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1.0 INTRODUCTION

Pacific Northwest Laboratory (PNL) is charged with the operation of a research network of separately funded precipitation collection sites in the northeastern United States; the auditing of these sites; the chemical analysis of the precipitation event samples collected at the network sites for all species of interest to the Interagency Task Force on Acid Precipitation; and the reporting of the chemical analysis results to MAP3S participants, the MAP3S Data Bank, and the U.S. Environmental Protection Agency (EPA) Acid Deposition System data base in bimonthly and periodic summary form. This report is the eighth such periodic summary report.

Figure 1 shows the locations of the Precipitation Chemistry Network (PCN) sites, and Tables 1 and 2 present organizational and physical details, respectively. The site operators collect and handle samples according to procedures detailed in a site operator's manual; relevant portions of this manual and other quality control information are found in another report.⁽¹⁾ Samples are shipped to PNL monthly, using cool packs when necessary to maintain refrigerator temperature. Chemical analyses are performed (for major species, usually within 2 weeks of arrival) using methods summarized in Table 3. A more complete description of network operations and history, and a bibliography of relevant literature is found in the seventh report of this series.⁽²⁾

Section 2.0 considers quality control activities, including results of the U.S. Geological Survey (USGS) blind audit program and PNL site audits. Section 3.0 is a statistical summary of the data for 1984. Statistical overviews for the periods 1976-1979, and more recently for 1976-1983 may be found in the open literature.^(3,4)

The Appendix is a listing of precipitation chemistry data for 1984. Data for past years is similarly reported in earlier periodic summary reports.^(2,5,6,7,8,9,10) Because of a restructuring of the hourly rainfall data format and a thorough review of past rainfall data for accuracy, these data for 1984 are not available for publication at this time.

FIGURE 1. Location of MAP3S/PCN Sites

Table 1. Network Site Identification and Participating Organizations

<u>Site Number</u>	<u>Site Name</u>	<u>Participating Organization</u>
1	Whiteface	Atmospheric Sciences Research Center State University of New York at Albany
2	Ithaca	Section of Ecology and Systematics Cornell University
3	Penn State	Department of Meteorology Pennsylvania State University
4	Virginia	Department of Environmental Sciences University of Virginia
5	Illinois	Illinois State Water Survey Champaign, Illinois
6	Brookhaven	Atmospheric Sciences Division Brookhaven National Laboratory
7	Lewes	College of Marine Studies University of Delaware
8	Oxford	Institute of Environmental Sciences Miami University
9	Oak Ridge	Oak Ridge National Laboratory

TABLE 2. Network Site Details

<u>Site Number</u>	<u>Name</u>	<u>Location</u>		<u>Elevation (m, msl)</u>	<u>Date of First Sample Collected</u>
		<u>Longitude</u>	<u>Latitude</u>		
1	Whiteface	73° 51'	44° 23'	605	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	75° 0'	38° 46'	0	March 1, 1978
8	Oxford	84° 44'	39° 32'	283	October 1, 1978
9	Oak Ridge	84° 17'	35° 58'	330	January 7, 1981

TABLE 3. Chemical Species and Analysis Details

Species	Method ^(a)	Instrument	Minimum Detection Limit ($\mu\text{mol/l}$)	Quantitative Detection Limit ($\mu\text{mol/l}$) ^(b)	Estimated Error ^(c)
H ⁺ (free)	Electrode	Corning ® Model 135 pH/Ion Meter	--	--	± 0.05 pH units ^(d)
Conductivity	Bridge	Markson Electro- mark ®	1.20	--	$\pm 20\%$
SO ₃ ⁼	AWC	Alpkem ® Auto Analyzer	0.10	0.20	± 60 (QDL or 10%)
SO ₄ ⁼	IC	Dionex ™ System 2000i (Anion)	0.03	0.20	± 60 (QDL or 10%)
NO ₃ ⁻	IC	Dionex ™ System 2000i (Anion)	0.05	0.20	± 60 (QDL or 10%)
Cl ⁻	IC	Dionex ™ System 200Di (Anion)	0.50	2.00	± 60 (QDL or 10%)
PO ₄ ³⁻	IC	Dionex ™ System 2000i (Anion)	0.05	0.20	± 60 (QDL or 10%)
NH ₄ ⁺	IC	Alpkem ® Auto Analyzer	0.10	0.50	± 60 (QDL or 10%)
Na ⁺	ICAP	Leeman Labs Plasma- Spec ® . ICP 2.5	0.10	0.40	± 60 (QDL or 10%)
K ⁺	ICAP	Leeman Labs Plasma- Spec ® . ICP 2.5	0.20	0.50	± 60 (QDL or 10%)

TABLE 3. Chemical Species and Analysis Details (continued)

Species	Method ^(a)	Instrument	Minimum Detection Limit ($\mu\text{mol/l}$)	Quantitative Detection Limit ($\mu\text{mol/l}$) ^(b)	Estimated Error ^(c)
Ca ⁺⁺	ICAP	Leeman Labs Plasma-Spec ® . ICP 2.5	0.05	0.20	± 60 (QDL or 10%)
Mg ⁺⁺	ICAP	Leeman Labs Plasma-Spec ® . ICP 2.5	0.08	0.20	± 60 (QDL or 10%)

(a) AWC = Automated Wet Chemistry; IC = Ion Chromatography; ICAP = Inductively Coupled Argon Plasma.

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

(c) GO = Greater Of; QDL = Quantitative Detection Limit.

(d) At pH = 4.

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2.0 QUALITY CONTROL

2.1 RESULTS OF USGS/MAP3S BLIND AUDIT PROGRAM

The MAP3S precipitation sampling network was monitored by an external quality assurance (QA) program managed by the USGS during CY 1984. Thirty-three blind audit samples were submitted to the network laboratory for analysis by the nine network sampling sites. Site operators submitted the blind samples during specified weeks, on days when no precipitation was recorded at the sampling site. The program design resulted in blind-audit sample submission from each of the network sites at least three times during the year. The blind audit samples were dilutions of Standard Reference Water Samples (SRWS) having most-probable analyte concentrations. The SRWSs were prepared by the USGS for QA monitoring of their Central Laboratory System. The SRWS solutions were prepared from surface waters and had analyte concentrations that were significantly higher than those normally found in precipitation. Therefore, the solutions were diluted to provide more realistic analyte concentrations before their use as blind-audit samples. The analyte concentrations in the dilutions were measured and compared to the calculated most-probable analyte concentrations. Dilutions whose analyte concentrations had relative errors greater than $\pm 10\%$ were rejected for use as blind-audit samples.

The means of network-reported values and most-probable values for each analyte were compared using paired-t tests. Results of these comparisons are presented in Table 4. Means for each of the eight analyses compared were significantly different at the 95% confidence level.

Plots of MAP3S-reported analyte concentrations versus most-probable analyte concentrations are presented for all eight analytes (Figures 2 through 9). Linear regression fits of the data are included on each plot. All reported values were used, and no attempt was made to screen the data for outlying values. Some of the linear regression fits were strongly influenced by one or more points that were located far from the one-to-one correspondence line; e.g., the poor fit for potassium results from a single MAP3S-measured value nearly ten times the expected most-probable value. Nitrate and phosphate results show much more scatter than do the results for the other six analytes. This probably results from their instability in unpreserved aqueous solutions.

TABLE 4. Comparisons of Network-Reported Values and Most-Probable Values

Analyte	N	t value	Probability of a greater
			t value
Ca	32	1.35	.185
Mg	31	1.32	.195
K	28	-.68	.504
Na	33	.73	.471
Cl	33	0.89	.379
SO ₄	32	1.11	.275
NO ₃	26	.36	.722
PO ₄	10	1.68	.128

2.2 SITE AUDITS

Audits of all nine sites were conducted during 1984 by PNL personnel. Copies of the forms completed at the site locations by auditors are reproduced in Appendix B.

FIGURE 2. MAP3S-Measured Versus Most-Probable Value Sulfate Measurements of Blind-Audit Samples 1984

FIGURE 3. MAP3S-Measured Versus Most-Probable Value Nitrate Measurements of Blind-Audit Samples 1984

FIGURE 4. MAP3S-Measured Versus Most-Probable Value Chloride Measurements of Blind-Audit Samples 1984

FIGURE 5. MAP3S-Measured Versus Most-Probable Value Phosphate Measurements of Blind-Audit Samples 1984

FIGURE 6. MAP3S-Measured Versus Most-Probable Value Sodium Measurements of Blind-Audit Samples 1984

FIGURE 7. MAP3S-Measured Versus Most-Probable Value Potassium Measurements of Blind-Audit Samples 1984

FIGURE 8. MAP3S-Measured Versus Most-Probable Value Calcium Measurements of Blind-Audit Samples 1984

FIGURE 9. MAP3S-Measured Versus Most-Probable Value Magnesium Measurements of Blind-Audit Samples 1984

3.0 STATISTICAL SUMMARY FOR 1984

General statistics for individual major species are shown in Table 5. Standard computer library routines were used for most parameters. The sites are listed by name abbreviation in numerical order (see Table 2), and the parameter column headings are defined as follows:

NTOT	-	Total number events reported
NEDT	-	Number of events included in calculations after edit (see Table 6)
MIN, MAX	-	Minimum and maximum values ($\mu\text{mol/l}$)
A-MEAN	-	Arithmetic mean ($\mu\text{mol/l}$)
A-SD	-	Arithmetic standard deviation ($\mu\text{mol/l}$)
G-MEAN	-	Geometric mean (antilogarithm of the mean of the logarithms) ($\mu\text{mol/l}$)
G-SD	-	Geometric standard deviation (antilogarithm of the standard deviation of the logarithms)
MED	-	Median [magnitude of the (NEDT/2)th sample, ordered by magnitude] ($\mu\text{mol/l}$)
CENTILE VALUES	-	Same as median, but for 5, 25, 75, and 95% ['05' = magnitude of (NEDT/20)th sample, etc.].

Note that the minimum value is for some species often equal to the minimum detectable limit divided by two as prescribed by the editing routine (Table 6). These cases (e.g., S-IV, Na, Mg) are shown by an asterisk. Several of the statistical parameters may be affected by this artificial treatment of unmeasurable concentrations. Significant figures in printing the statistical parameters were deliberately restricted to demonstrate the questionable usefulness of some parameters for some species.

TABLE 5. General Statistics for 1984

INDIVIDUAL DATA FOR SPECIES S											CENTILE VALUES			
SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	05	25	75	95
WH	106	93	1	1.3	190.	30.0	28.8	21.2	2.4	24.0	4.4	12.0	37.0	72.0
IT	87	79	1	1.8	130.	35.4	24.8	27.4	2.2	28.0	6.0	17.0	48.0	76.0
PS	110	95	1	2.7	120.	41.8	26.2	32.5	2.2	39.0	4.9	20.0	55.0	94.0
VA	66	49	1	3.1	110.	27.0	21.6	21.2	2.0	22.0	6.9	13.0	27.0	77.0
IL	89	67	1	11.0	190.	43.5	33.8	34.9	1.9	34.0	12.0	21.0	51.0	96.0
BR	70	62	1	4.5	110.	31.3	25.1	23.2	2.2	25.0	6.5	12.0	40.0	70.0
LE	72	62	1	4.4	160.	31.2	27.1	23.4	2.2	24.5	6.2	13.0	37.0	69.0
OX	88	74	1	2.3	140.	32.0	22.1	26.3	2.0	27.5	7.2	18.0	47.0	69.0
OR	69	67	1	8.0	180.	37.4	28.0	30.3	1.9	32.0	9.4	19.0	46.0	76.0

INDIVIDUAL DATA FOR SPECIES NO3-											CENTILE VALUES			
SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	05	25	75	95
WH	106	93	1	2.7	140.	33.9	24.6	25.4	2.3	29.0	6.8	13.0	46.0	72.0
IT	87	79	1	9.3	110.	40.9	26.9	33.3	1.9	31.0	12.0	20.0	52.0	96.0
PS	110	95	1	4.6	120.	50.8	26.5	43.5	1.8	45.0	16.0	30.0	67.0	100.0
VA	66	49	1	3.0	60.	25.4	15.3	21.4	1.8	22.0	8.3	15.0	30.0	59.0
IL	89	68	1	11.0	170.	48.4	33.6	38.8	2.0	37.5	12.0	25.0	66.0	110.0
BR	70	62	1	3.1	140.	35.9	33.0	22.0	2.8	26.0	4.0	10.0	55.0	100.0
LE	72	62	1	1.3	160.	34.5	30.6	22.8	2.7	24.5	3.0	12.0	46.0	86.0
OX	88	74	1	2.5	99.	33.3	20.8	26.4	2.1	32.5	4.2	18.0	42.0	66.0
OR	69	67	1	4.6	110.	30.6	20.7	25.1	1.9	24.0	8.6	15.0	39.0	64.0

INDIVIDUAL DATA FOR SPECIES CL-											CENTILE VALUES			
SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	05	25	75	95
WH	106	93	1	*	51.	6.3	9.0	3.9	2.5	3.0	1.0	2.3	5.5	16.0
IT	87	79	1	1.2	57.	6.8	7.9	5.0	2.0	4.8	1.6	3.0	7.1	16.0
PS	110	95	1	1.1	33.	8.2	6.2	6.6	1.9	6.3	2.2	4.4	9.2	21.0
VA	66	49	1	1.0	66.	7.8	10.2	5.4	2.2	5.1	1.4	3.3	7.2	18.0
IL	89	69	1	1.8	53.	9.6	9.0	7.3	2.0	6.8	2.3	4.5	11.0	22.0
BR	70	62	1	2.7	300.	36.5	53.3	20.7	2.7	17.5	6.4	9.5	36.0	82.0
LE	72	63	1	1.5	420.	50.9	62.6	27.8	3.3	36.0	3.9	9.7	69.0	130.0
OX	88	74	1	0.9	73.	6.7	8.6	5.0	2.0	4.6	1.3	3.0	7.2	14.0
OR	69	67	1	1.8	51.	9.3	8.4	7.2	2.0	6.7	2.2	4.3	11.0	19.0

TABLE 5. General Statistics for 1984 (continued)

INDIVIDUAL DATA FOR SPECIES ASUM

SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	CENTILE VALUES			
											05	25	75	95
WH	106	93	1	10.0	531.	100.1	78.9	77.9	2.1	77.0	22.7	48.0	125.7	212.0
IT	87	79	1	23.7	385.	118.4	72.9	98.7	1.9	99.0	32.0	59.3	151.9	254.2
PS	110	95	1	11.7	384.	142.8	72.6	123.3	1.8	133.9	20.6	87.7	176.0	271.2
VA	66	49	1	16.4	288.	87.3	57.3	72.6	1.8	74.3	20.5	45.0	101.1	203.1
IL	89	67	1	41.2	569.	144.0	97.4	119.5	1.0	113.7	44.2	74.5	172.6	312.0
BR	70	62	1	26.2	463.	134.9	97.0	107.4	2.0	104.5	33.6	63.5	164.0	297.0
LE	72	62	1	27.7	552.	148.4	101.1	122.0	1.9	124.8	30.6	84.0	168.0	285.0
OX	88	74	1	17.0	388.	105.7	63.4	80.1	1.9	90.1	22.2	65.7	145.2	200.7
OR	69	67	1	27.3	495.	114.8	81.2	95.3	1.8	97.7	31.6	60.1	137.2	234.2

INDIVIDUAL DATA FOR SPECIES H+

SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	CENTILE VALUES			
											05	25	75	95
WH	106	90	1	2.8	372.	60.6	52.9	44.4	2.3	49.5	8.3	25.7	77.6	141.3
IT	87	79	1	13.2	234.	78.7	49.0	65.0	1.9	69.2	19.1	40.7	102.3	162.2
PS	110	93	1	5.0	240.	93.0	49.0	79.6	1.9	87.1	10.2	60.3	112.2	177.0
VA	66	49	1	8.7	219.	58.3	41.5	47.2	1.9	47.9	13.2	29.5	69.2	125.9
IL	89	68	1	0.5	603.	63.8	78.1	38.7	3.4	49.0	1.1	27.5	74.1	141.3
BR	70	61	1	6.6	229.	68.7	57.5	47.5	2.5	46.8	9.1	24.5	89.1	173.0
LE	72	62	1	6.3	295.	63.8	53.8	46.0	2.4	48.4	7.2	25.7	83.2	151.4
OX	88	74	1	11.0	263.	66.3	41.4	55.5	1.8	56.2	10.2	36.3	83.2	120.2
OR	69	67	1	15.1	339.	70.2	55.2	57.0	1.9	56.2	20.0	37.2	83.2	128.0

INDIVIDUAL DATA FOR SPECIES NH4+

SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	CENTILE VALUES			
											05	25	75	95
WH	106	93	1	*	94.	20.5	20.9	12.3	3.2	13.0	0.0	6.7	25.0	66.0
IT	87	79	1	*	71.	10.8	15.4	12.4	2.9	13.0	0.9	7.7	26.0	48.0
PS	110	95	1	0.0	140.	21.3	21.0	14.0	2.7	15.0	1.7	0.1	20.0	52.0
VA	66	50	1	*	97.	15.0	15.8	9.9	2.7	11.0	1.7	5.6	17.0	32.0
IL	89	67	1	4.0	200.	39.3	47.6	26.1	2.4	26.0	6.2	13.0	45.0	91.0
BR	70	62	1	*	61.	14.6	14.4	7.6	4.0	9.5	*	3.1	20.0	41.0
LE	72	63	1	*	84.	18.8	20.2	11.0	3.1	11.0	1.4	5.1	23.0	65.0
OX	88	74	1	1.0	98.	19.9	17.1	13.0	2.6	15.0	2.3	0.3	26.0	44.0
OR	69	66	1	0.9	50.	15.3	11.8	10.6	2.6	12.0	1.5	5.7	22.0	36.0

TABLE 5. General Statistics for 1984 (continued)

INDIVIDUAL DATA FOR SPECIES NA+

SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	CENTILE VALUES			
											05	25	75	95
WH	106	92	1	*	40.	3.4	5.3	1.8	3.0	1.8	*	0.9	3.4	11.0
IT	87	79	1	*	35.	2.5	5.2	1.2	3.1	1.2	*	0.5	2.1	10.0
PS	110	95	1	*	30.	3.6	5.4	1.8	3.2	1.9	*	0.9	3.8	14.0
VA	66	49	1	*	52.	4.0	8.4	2.4	3.1	2.2	*	1.1	3.6	15.0
IL	89	67	1	0.4	78.	8.0	11.0	4.3	2.9	3.9	0.7	2.3	8.9	21.0
BR	70	61	1	0.8	180.	25.9	36.0	13.6	3.1	11.0	2.2	6.0	30.0	76.0
LE	72	62	1	0.6	310.	41.0	52.7	18.3	4.2	24.0	1.1	6.3	49.0	120.0
OX	88	73	1	*	32.	3.5	4.8	2.1	2.7	1.8	*	1.0	3.2	13.0
OR	69	65	1	*	57.	7.5	11.7	3.3	3.8	3.4	*	1.5	7.1	24.0

INDIVIDUAL DATA FOR SPECIES CA++

SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	CENTILE VALUES			
											05	25	75	95
WH	106	93	1	0.2	22.	3.2	4.3	1.7	3.0	1.6	0.3	0.8	3.7	13.0
IT	87	77	1	*	35.	4.5	6.8	2.1	3.3	1.8	0.3	0.8	5.3	14.0
PS	110	95	1	*	67.	5.5	9.1	3.0	3.0	3.0	0.4	1.5	4.9	17.0
VA	66	49	1	*	9.	1.8	1.7	1.2	2.6	1.4	*	0.8	2.0	3.6
IL	89	66	1	1.2	110.	15.5	19.9	9.0	2.8	8.4	1.4	4.1	15.0	51.0
BR	70	62	1	*	30.	3.3	4.3	2.0	2.7	1.7	0.7	1.0	4.0	8.6
LE	72	61	1	0.3	13.	3.2	3.0	2.2	2.4	2.2	0.6	1.2	3.8	9.7
OX	88	73	1	0.2	32.	5.3	6.3	3.0	3.1	3.1	0.4	1.3	6.2	17.0
OR	69	65	1	0.6	31.	5.5	5.4	3.8	2.4	3.8	1.0	1.9	7.5	15.0

INDIVIDUAL DATA FOR SPECIES MG++

SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	CENTILE VALUES			
											05	25	75	95
WH	106	93	1	*	7.	1.0	1.4	0.5	2.9	*	*	*	1.0	4.2
IT	87	77	1	*	9.	1.0	1.5	0.5	2.9	0.4	*	*	1.1	3.2
PS	110	96	1	*	8.	1.1	1.2	0.7	2.5	0.7	*	0.4	1.2	3.1
VA	66	49	1	*	6.	0.8	0.9	0.5	2.4	0.5	*	*	0.8	2.0
IL	89	66	1	*	25.	4.1	5.0	2.4	2.8	2.0	0.5	1.2	4.2	11.0
BR	70	62	1	*	22.	3.4	4.4	2.0	2.8	1.9	*	1.0	3.8	13.0
LE	72	61	1	*	36.	4.7	5.7	2.4	3.6	2.8	*	0.9	6.5	13.0
OX	88	73	1	*	7.	1.3	1.3	0.8	2.6	0.9	*	*	1.5	3.5
OR	69	65	1	*	6.	1.4	1.4	0.9	2.5	0.9	*	0.5	1.4	4.7

TABLE 5. General Statistics for 1984 (continued)

INDIVIDUAL DATA FOR SPECIES CSUM

SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	CENTILE VALUES			
											05	25	75	95
WH	106	89	1	9.9	486.	92.7	71.2	72.6	2.0	74.7	22.6	40.3	117.9	184.6
IT	87	77	1	20.5	290.	108.3	62.9	91.1	1.8	89.5	31.3	55.2	142.0	221.0
PS	110	93	1	19.4	364.	132.2	69.3	114.3	1.8	119.2	27.5	85.3	163.0	274.0
VA	66	49	1	18.3	285.	84.1	54.6	70.3	1.8	72.4	27.3	42.9	95.7	194.3
IL	89	63	1	38.2	493.	136.7	94.1	113.1	1.8	109.5	39.7	73.6	153.7	293.7
BR	70	60	1	25.3	394.	122.6	83.5	98.7	2.0	103.1	28.7	59.7	145.9	284.7
LE	72	60	1	25.3	447.	132.4	79.7	111.5	1.8	123.5	30.1	78.4	151.2	282.7
OX	88	73	1	14.7	375.	103.2	62.4	85.7	1.9	88.4	24.5	62.5	139.5	189.5
OR	69	64	1	25.9	441.	107.1	72.7	89.7	1.8	86.4	33.9	56.9	130.1	226.1

INDIVIDUAL DATA FOR SPECIES COND

SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	CENTILE VALUES			
											05	25	75	95
WH	106	87	1	3.6	190.	31.7	25.9	24.7	2.1	26.0	7.5	15.0	40.0	64.0
IT	87	77	1	7.9	112.	38.4	22.6	32.3	1.8	33.0	10.0	21.0	49.0	80.0
PS	110	90	1	5.5	121.	47.7	24.2	41.4	1.8	44.0	9.8	30.0	60.0	89.0
VA	66	49	1	6.1	113.	30.2	20.7	25.0	1.8	25.0	8.9	16.0	36.0	60.0
IL	89	59	1	11.0	131.	34.7	21.1	30.2	1.7	31.0	11.0	20.0	40.0	68.0
BR	70	61	1	6.8	124.	39.6	29.5	30.5	2.1	30.0	8.3	17.0	48.0	92.0
LE	72	60	1	7.0	150.	36.6	24.4	30.7	1.8	31.0	11.0	22.0	45.0	69.0
OX	88	73	1	5.2	133.	35.3	20.6	29.9	1.8	30.0	9.4	22.0	46.0	65.0
OR	69	64	1	8.9	166.	37.1	27.2	30.7	1.8	30.0	14.0	20.0	47.0	66.0

INDIVIDUAL DATA FOR SPECIES PREC

SITE	NTOT	NEDT	YRS	MIN	MAX	A-MEAN	A-SD	G-MEAN	G-SD	MED	CENTILE VALUES			
											05	25	75	95
WH	106	104	1	0.01	8.9	1.10	1.35	0.55	3.72	0.65	0.08	0.20	1.38	3.20
IT	87	83	1	0.01	6.3	1.49	1.52	0.82	3.67	1.02	0.05	0.30	1.83	4.48
PS	110	107	1	0.03	7.9	1.14	1.45	0.52	4.12	0.73	0.03	0.16	1.42	4.54
VA	66	59	1	0.03	10.1	2.04	2.40	0.95	4.33	1.23	0.05	0.41	2.42	8.08
IL	89	82	1	0.00	6.6	0.91	1.27	0.28	6.69	0.36	0.01	0.08	1.19	3.45
BR	70	68	1	0.02	11.7	2.18	2.39	1.07	4.06	1.24	0.06	0.50	3.35	5.96
LE	72	71	1	0.02	17.3	1.70	2.49	0.70	4.56	0.80	0.03	0.20	2.11	4.78
OX	88	81	1	0.03	6.2	1.25	1.30	0.69	3.44	0.84	0.06	0.30	1.69	3.36
OR	69	68	1	0.02	14.6	2.03	2.48	1.03	3.78	1.32	0.06	0.40	2.74	4.31

TABLE 6. Procedures for Precipitation Chemistry Laboratory Data Base Calculations

A. DEFINITIONS OF CALCULATED PARAMETERS

1. PRECIPITATION (cm). The greater of sample volume or predicted volume divided by collector area.
2. COLLECTION EFFICIENCY. The ratio of sample volume to predicted volume.
3. TIME (year). Time of collection of sample in years since January 1, 1976.

B. GENERAL EDIT ROUTINE (LISTED IN ORDER OF PRIORITY FOR ACTION)

1. If precipitation is missing (both volumes missing), sample is removed. Number of samples thus removed is counted.
2. If collection efficiency exists (both volumes exist), and is less than 0.5, sample is removed and numbers so removed counted. (Sample is retained if one of volumes is missing.)
3. If concentration (or other parameter of interest) is missing, sample is removed and numbers so removed counted.
4. If concentration is below minimum detection limit (MDL), concentration is set to MDL/2.

NOTE: This has no effect on averages for major species. Minor species such as 'SO₂' or 'K⁺' could be significantly affected by this action, so caution should be taken.

Each of the above four steps may be bypassed, according to the particular application.

For weighted averaging, ALL FOUR are operative.

C. ADDITIONAL NOTES ON WEIGHTED AVERAGES

1. Total precipitation (for samples before the general edit) is compared with precipitation for those samples surviving the edit. If the latter is less than 80% of the former, the weighted average is replaced by "IPC" (insufficient precipitation coverage).
2. Precipitation reported is total precipitation (pre-edit), but all weighting is done with post-edit precipitation.
3. Averages for periods with less than two events available for averaging are not reported.

Monthly and annual statistics are shown in Table 7. Missing numbers ("----") indicate no surviving events in the period. The numbers of events included in the averages vary from species to species, but only those for total sulfur ("S") are shown here because of space limitations. Generally, sulfur (sulfate) measurements are made on more samples than any other species. Fractions of precipitation included in the average are also shown only for sulfur. If this value is less than 0.8, "IPC" (i.e, Insufficient Precipitation Coverage) is entered in the weighted average table. The sites are listed by name abbreviation in numerical order (see Table 2).

A more complete statistical analyses of these data and the complete MAP3S/PCN data base (1976-1983), including time trend analysis and correlations, has been accepted for journal publication [Dana and Easter(a)].

(a) Dana, M. Terry and R. C. Easter. 1986. "Statistical Summary and Analyses of Event Precipitation from the MAP3S Network, 1976-1983." (In press), Atmos. Environ.

TABLE 7. Monthly and Annual Statistics for 1984

SPECIES = S

TOTAL NUMBER OF EVENTS

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	8	6	7	7	11	7	10	9	10	10	9	12	106
IT	7	5	6	5	11	8	7	9	7	8	7	7	87
PS	9	11	9	9	11	8	9	12	6	8	7	10	110
VA	5	6	5	3	8	4	8	10	3	5	3	6	66
IL	8	5	10	10	8	5	9	7	7	6	7	7	89
BR	4	8	6	3	8	8	8	5	4	5	5	6	70
LE	8	9	6	6	5	4	9	6	4	5	4	6	72
OX	7	6	10	6	10	5	7	9	9	6	6	7	88
OR	5	5	6	4	7	5	10	8	2	7	5	5	69

SPECIES = S

NUMBER OF EVENTS
INCLUDED IN AVERAGE

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	8	5	6	6	10	7	8	9	9	7	8	10	93
IT	4	3	6	5	11	8	6	9	7	8	6	6	79
PS	7	9	7	8	9	7	8	12	4	7	7	10	95
VA	3	5	4	2	7	3	7	6	2	5	3	2	49
IL	4	4	8	9	7	3	8	3	7	2	6	6	67
BR	3	6	5	3	8	7	8	4	4	4	4	6	62
LE	5	8	6	5	5	4	7	5	4	5	4	4	62
OX	4	6	9	5	8	5	6	6	8	5	6	6	74
OR	5	5	6	4	7	4	10	7	2	7	5	5	67

SPECIES = S

FRACTION OF PRECIPITATION
INCLUDED IN AVERAGE

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	1.000	0.941	0.886	0.999	0.956	1.000	0.996	1.000	0.998	0.967	0.990	0.914	0.962
IT	0.574	0.993	1.000	1.000	1.000	1.000	0.998	1.000	1.000	1.000	0.951	0.976	0.977
PS	0.963	0.989	0.987	0.996	0.994	0.997	0.996	0.999	0.942	0.754	1.000	1.000	0.980
VA	0.918	0.997	0.997	0.765	0.994	0.986	0.994	0.983	0.982	1.000	1.000	0.469	0.939
IL	0.966	0.998	0.845	0.999	1.000	0.882	1.000	0.674	1.000	0.273	0.999	0.982	0.905
BR	0.938	0.991	0.996	1.000	1.000	0.996	1.000	0.978	1.000	0.869	0.998	1.000	0.987
LE	0.980	0.989	1.000	0.996	1.000	1.000	0.991	0.986	1.000	1.000	1.000	0.974	0.995
OX	0.773	1.000	0.995	0.996	0.854	1.000	0.994	0.953	0.997	0.988	1.000	0.699	0.939
OR	1.000	1.000	1.000	1.000	1.000	0.991	1.000	0.989	1.000	1.000	1.000	1.000	0.999

TABLE 7. Monthly and Annual Statistics for 1984 (continued)

SPECIES = S

WEIGHTED AVERAGE (UMOL/L)

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	13.7	12.1	9.1	16.3	21.3	25.9	34.6	42.1	24.3	33.1	14.8	11.1	21.1
IT	10.1	11.8	13.8	25.0	22.4	34.0	33.6	46.4	31.5	32.2	15.3	12.0	25.7
PS	13.2	10.0	19.4	31.4	42.7	54.4	55.5	56.7	42.2	35.0	13.1	24.0	36.4
VA	16.6	8.5	12.8	19.0	22.3	22.0	21.6	33.4	59.7	19.0	23.5	IPC	20.9
IL	26.6	21.7	27.6	30.9	29.6	45.5	47.6	53.4	28.3	IPC	16.3	25.4	30.5
BR	16.3	9.1	18.1	15.4	28.3	18.1	21.5	67.7	37.3	17.6	9.4	20.5	20.0
LE	19.1	15.8	24.2	23.3	17.3	40.3	22.5	53.2	44.6	24.5	11.1	21.5	22.9
OX	24.0	19.5	23.4	25.5	29.0	38.2	56.8	50.4	15.3	31.0	16.0	15.5	27.3
OR	18.6	21.1	23.7	31.0	23.0	49.6	23.9	41.2	40.4	23.1	26.6	28.6	26.1

AVERAGE PRECIPITATION PER EVENT (CM)

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	0.42	0.93	1.40	1.17	2.05	0.54	1.06	0.90	1.02	0.59	0.96	1.47	1.00
IT	0.76	1.56	2.08	1.99	1.96	1.19	1.81	1.60	1.16	0.94	1.10	1.20	1.44
PS	0.49	1.21	1.15	0.69	1.19	1.32	1.48	1.81	0.26	0.91	1.39	1.03	1.12
VA	0.50	2.98	2.88	4.69	1.69	1.29	2.27	1.94	0.98	1.75	1.42	1.11	1.93
IL	0.15	0.99	1.23	0.94	1.62	0.14	0.99	0.60	1.14	0.97	1.32	0.61	0.92
BR	1.35	2.10	2.91	4.72	1.24	3.82	2.40	0.57	2.76	1.75	1.30	1.15	2.14
LE	1.15	1.07	3.16	2.28	4.42	1.13	1.32	0.36	1.56	1.94	1.90	0.83	1.68
OX	0.27	1.03	0.94	2.37	0.91	0.52	1.63	0.44	1.14	1.74	2.21	2.05	1.22
OR	1.43	2.00	2.03	2.15	4.30	1.16	2.03	0.61	1.81	2.43	2.45	1.30	2.00

AVERAGE PRECIPITATION PER PERIOD (CM)

WH	3.3	5.6	9.8	8.2	22.6	3.8	10.6	8.1	10.2	5.9	8.7	17.7	114.5
IT	5.4	7.8	12.5	10.0	21.5	9.5	12.7	14.4	8.1	7.5	7.7	8.4	125.4
PS	4.4	13.3	10.3	6.2	13.1	10.6	13.3	23.6	1.6	7.2	9.7	10.3	123.5
VA	2.5	17.9	14.4	14.1	13.5	5.2	18.1	19.4	2.9	8.8	4.3	6.7	127.7
IL	1.2	5.0	12.3	9.4	12.9	0.7	8.9	4.2	8.0	5.8	9.3	4.3	81.9
BR	5.4	16.8	17.5	14.2	9.9	30.6	19.2	2.9	11.0	8.7	6.5	6.9	149.5
LE	9.2	9.6	19.0	13.7	22.1	4.5	11.9	2.2	6.2	9.7	7.6	5.0	120.6
OX	1.9	6.2	9.4	14.2	9.1	2.6	11.4	3.9	10.3	10.4	13.3	14.3	107.1
OR	7.1	10.0	12.2	8.6	30.1	5.8	20.3	4.9	3.6	17.0	12.3	6.5	138.3

TABLE 7. Monthly and Annual Statistics for 1984 (continued)

SPECIES NO3

WEIGHTED AVERAGE (UMOL/L)

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	40.2	29.2	13.9	22.5	19.8	22.6	22.2	29.0	16.6	31.4	18.2	17.9	21.8
IT	35.0	28.7	24.7	40.3	22.2	30.9	21.2	32.7	27.8	34.5	24.1	22.1	27.7
PS	41.1	20.7	31.0	46.3	45.4	48.0	39.3	34.2	43.9	40.0	15.0	35.0	35.2
VA	14.2	12.0	14.2	22.9	23.7	15.2	16.8	23.1	43.7	20.9	20.3	IPC	19.7
IL	58.6	28.5	31.0	30.0	29.2	43.1	33.0	35.1	24.8	IPC	14.9	28.6	28.7
BR	26.0	7.6	10.0	10.6	30.4	15.1	24.0	110.1	39.4	18.1	9.4	21.8	19.6
LE	17.6	16.2	17.2	18.6	14.9	34.7	19.9	53.0	34.9	28.3	12.0	21.3	20.1
OX	36.0	35.4	32.1	27.5	26.6	42.8	32.1	38.5	11.5	18.6	14.5	15.0	24.3
OR	15.6	18.5	18.1	23.6	18.1	33.2	20.1	32.1	25.9	13.0	19.0	24.3	19.7

SPECIES = CL

WEIGHTED AVERAGE (UMOL/L)

26

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	4.7	2.8	2.8	3.6	17.5	3.5	2.2	2.8	2.2	2.5	4.0	8.9	6.7
IT	4.7	4.0	12.1	3.3	2.4	3.9	2.4	3.7	3.3	4.9	5.3	8.1	4.7
PS	9.3	3.3	5.0	5.3	5.3	6.0	4.2	4.2	5.2	6.7	7.2	7.9	5.4
VA	11.2	7.6	2.7	3.6	5.4	6.0	4.3	5.4	7.3	5.2	10.4	IPC	5.4
IL	10.6	5.8	4.6	5.4	5.8	36.7	4.3	17.3	4.8	IPC	5.3	9.2	6.2
BR	25.0	23.2	84.7	20.4	13.9	19.3	15.5	10.1	10.8	35.5	44.5	93.4	31.5
LE	21.4	81.1	154.7	40.1	29.5	12.8	10.6	15.5	124.3	97.5	28.3	94.1	65.0
OX	18.2	4.0	3.4	3.0	5.0	4.6	4.3	3.5	3.8	5.5	7.0	5.9	4.8
OR	6.6	6.3	5.2	7.7	8.7	4.4	3.3	5.7	6.9	8.5	15.4	9.9	7.6

WEIGHTED AVERAGE (UMOL/L)

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	61.6	47.7	25.4	40.6	34.0	43.6	68.7	75.0	37.5	49.3	31.4	31.5	42.5
IT	48.7	44.5	30.0	89.4	42.1	70.6	73.3	88.8	61.5	68.1	38.6	39.4	58.4
PS	62.3	30.4	62.1	77.5	81.9	127.9	106.3	105.2	67.4	76.2	28.6	72.1	79.4
VA	39.8	24.6	35.0	41.2	44.5	39.5	47.8	70.9	93.5	33.5	64.4	IPC	46.0
IL	56.7	50.2	60.0	51.3	35.1	17.4	81.5	99.4	41.2	IPC	25.9	49.1	50.9
BR	43.3	18.1	29.9	24.5	50.5	38.9	48.0	189.4	84.6	37.5	19.7	49.0	42.0
LE	38.6	30.5	44.3	42.2	33.1	80.4	47.8	92.9	56.6	42.7	27.4	46.5	42.5
OX	60.7	43.6	60.6	50.1	46.9	63.2	120.8	82.8	29.0	55.6	34.8	37.1	56.3
OR	43.5	44.9	42.0	53.1	26.7	100.8	49.1	83.4	55.3	43.9	51.1	61.4	46.9

TABLE 7. Monthly and Annual Statistics for 1984 (continued)

SPECIES = NH4

WEIGHTED AVERAGE (UMOL/L)

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	9.5	7.5	3.6	7.9	20.9	22.0	16.8	22.4	13.9	25.6	7.9	8.2	14.1
IT	5.9	10.4	7.4	11.2	17.3	19.7	12.2	20.2	15.1	19.5	11.4	6.7	14.0
PS	7.2	7.3	11.3	16.7	27.8	20.0	20.5	23.4	14.8	14.9	3.9	12.0	17.3
VA	2.5	4.9	5.7	12.1	22.7	16.4	10.4	12.5	26.0	10.2	10.3	IPC	11.3
IL	35.1	14.9	19.1	19.6	32.1	31.5	29.5	31.1	17.7	IPC	11.0	18.3	22.3
BR	6.2	2.5	5.9	8.2	22.3	9.9	9.1	20.5	15.9	10.2	2.0	6.8	9.3
LE	7.0	7.0	9.2	14.5	9.7	20.5	13.7	34.7	23.3	13.2	6.1	6.4	11.6
OX	11.9	17.7	17.1	19.8	20.0	39.5	25.5	28.0	8.3	17.4	7.5	8.4	16.6
OR	3.9	4.7	12.1	16.2	27.3	20.2	8.2	11.4	24.6	8.0	10.1	10.0	14.3

SPECIES = CA

WEIGHTED AVERAGE (UMOL/L)

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	1.2	0.5	2.6	1.5	2.7	2.5	2.3	2.1	1.6	4.2	1.2	0.5	1.9
IT	1.0	0.6	6.4	1.7	3.9	3.4	1.4	2.0	2.4	1.0	1.7	0.6	2.6
PS	1.2	2.1	2.9	6.4	5.0	4.3	3.2	1.8	8.0	2.2	1.3	1.4	2.9
VA	0.6	0.9	1.0	1.0	2.4	1.0	1.4	0.9	2.2	0.6	1.3	IPC	1.3
IL	8.4	3.6	5.8	8.2	11.0	31.5	9.5	4.8	7.9	IPC	4.0	3.7	7.4
BR	1.2	1.1	2.6	1.5	3.4	1.3	1.7	6.2	1.5	1.1	1.6	2.0	1.0
LE	1.0	2.7	4.6	3.9	1.5	1.7	1.4	1.3	2.9	2.2	1.0	2.2	2.4
OX	2.7	4.6	3.2	4.4	5.4	0.4	3.8	3.3	1.7	2.0	1.5	0.9	3.1
OR	2.2	3.9	5.9	6.0	3.8	4.6	3.0	4.9	5.9	1.2	3.0	2.9	3.6

SPECIES = NA

WEIGHTED AVERAGE (UMOL/L)

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	1.6	11.9	6.7	1.5	0.7	3.2	1.1	1.7	1.1	1.3	3.5	1.4	2.4
IT	1.6	1.8	5.9	0.5	0.7	1.4	0.4	1.2	1.0	1.1	2.0	0.7	1.6
PS	3.3	5.0	1.6	3.2	2.3	1.9	0.3	0.7	1.2	2.1	3.7	3.0	2.3
VA	8.4	6.2	1.3	3.2	3.3	3.8	2.0	2.0	2.4	1.9	6.4	IPC	3.1
JL	5.3	3.0	2.3	2.1	3.1	29.9	3.0	5.4	3.2	IPC	3.1	4.0	3.3
BR	20.9	20.9	67.3	11.9	7.5	13.7	10.8	3.7	5.7	31.7	42.3	74.9	24.3
LE	16.9	66.6	116.1	20.6	16.3	7.9	5.3	0.0	120.0	100.7	21.0	06.0	51.3
OX	6.6	1.3	1.5	1.0	2.5	2.5	1.0	2.0	2.4	2.5	3.4	3.4	2.3
OR	2.5	2.6	1.7	3.7	5.6	0.8	1.6	4.2	2.2	15.0	20.1	4.2	6.2

TABLE 7. Monthly and Annual Statistics for 1984 (continued)

SPECIES = MG

WEIGHTED AVERAGE (UMOL/L)

SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	0.3	0.2	0.4	0.4	0.8	0.7	0.5	0.5	0.4	1.2	0.9	0.2	0.6
IT	0.1	0.2	1.5	0.4	0.8	0.9	0.7	0.5	0.3	0.3	0.5	0.2	0.6
PS	0.3	0.4	0.6	0.9	1.4	1.1	0.6	0.5	0.9	0.5	0.5	0.4	0.7
VA	0.9	0.6	0.3	0.5	0.9	0.3	0.4	0.4	0.6	0.3	0.8	1PC	0.5
IL	1.8	0.6	1.4	1.7	1.7	10.1	1.9	2.0	1.9	1PC	1.0	1.2	1.6
BR	2.3	2.1	7.7	1.6	1.7	1.7	1.3	2.0	1.0	3.3	4.5	7.7	2.8
LE	1.8	6.7	13.8	5.3	2.7	1.1	0.6	0.9	11.4	9.5	2.3	7.7	5.9
OX	0.5	1.0	0.7	0.8	1.3	2.3	0.8	1.0	0.7	0.6	0.5	0.4	0.8
OR	0.6	0.6	0.9	1.0	1.2	0.9	0.6	0.9	1.5	0.8	1.6	0.6	1.0

SPECIES = COND

WEIGHTED AVERAGE (UMOL/L)

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SITE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
WH	28.9	21.9	11.4	21.0	20.5	27.3	36.3	39.2	20.8	29.4	16.7	14.5	22.5
IT	23.5	21.0	16.9	35.6	24.0	37.0	36.0	40.5	29.9	34.0	19.0	18.2	28.6
PS	30.0	15.7	27.2	37.7	46.5	65.2	55.0	50.1	36.9	37.9	15.4	33.4	39.7
VA	20.2	13.7	14.7	22.4	25.5	22.1	25.4	33.6	48.6	17.7	32.2	1PC	23.5
IL	34.1	27.4	30.8	30.1	24.5	1PC	46.5	44.1	24.9	1PC	14.5	24.9	28.9
BR	25.3	12.7	25.7	16.6	30.7	23.5	25.4	90.3	41.4	23.1	20.2	33.6	25.5
LE	21.8	25.1	36.9	30.3	21.5	44.3	25.7	47.1	44.4	33.7	17.5	33.5	29.4
OX	32.4	24.3	30.8	31.3	27.9	37.6	60.2	39.5	16.0	29.5	19.0	18.0	29.6
OR	22.1	22.9	21.2	29.6	19.3	55.4	26.5	41.0	32.3	22.2	26.9	29.9	25.7

4.0 REFERENCES

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APPENDIX A

DATA FOR 1984

APPENDIX A

DATA FOR 1984

The results of the field data collection and chemical analyses of precipitation samples collected on the MAP3S/PCN during 1984 are listed in the following tables.

Table A.1 explains the contents of the chemistry tables in Table A.5, and Table A.2 explains the special data codes. Table A.3 is a list of Atmospheric Deposition System⁽¹⁰⁾ note codes used by MAP3S/PCN.

Table A.4 shows data availability. Each row represents a date, which is the date of collection of one or more samples. An "X" in a column indicates that a sample was collected on that date at the site heading the column.

The chronological list of field and chemistry data is shown in Table A.5. Each row corresponds to a collection date and a site, and each column corresponds to a parameter. Because there are 23 listed parameters, this table is broken in three subtables, as described in the data table legend of Table A.1.

Sample and predicted volumes should be used for comparison and weighting only, and not for calculating rainfall amounts.

Table A.6 is a summary of the ADS note codes for 1984, and Table A.7 is a list of the sample notes ordered by sample ID.

TABLE A.1. Legend for Table A.5

Sub-Table	Column	Species	Units
1	1	Time Removed Time of day (on date at left) that sample was collected.	GMT(a) 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 10 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)	$\mu\text{mho/cm}$
2	1	SO ₂ S(IV) or dissolved SO ₂ measured in separate tetrachloromercurate-fixed aliquots.	$\mu\text{moles/l}$
	2	SO ₄ ⁼ "Total Sulfur" measured as sulfate. This is normally the sum of SO ₂ and SO ₄ ⁼ .	$\mu\text{moles/l}$
	3	NO ₂ ⁻	$\mu\text{moles/l}$
	4	NO ₃ ⁻	$\mu\text{moles/l}$
	5	Cl ⁻	$\mu\text{moles/l}$

(a) Greenwich Mean Time.

TABLE A.1. Legend for Table A.5 (continued)

Sub- Table	Column	Species	Units
	6	PO_4^{3-}	$\mu\text{moles/l}$
3	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 $2[\text{SO}_4^{=}] + [\text{NO}_2^-] + [\text{NO}_3^-] + [\text{Cl}^-]$ $+ 3[\text{PO}_4^{3-}] + [\text{unoxidized SO}_2](\text{b})$	$\mu\text{eq/l}$
	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 25°C.

(b) Estimated.

TABLE A.2. 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

(a) On data tape.

TABLE A.3. MAP3S/PCN Note Codes

ADS ^(a) Note Codes	Explanation
A21	Equipment failure--all of event missed
A22	Equipment failure--some data loss
A23	Contaminated and discarded in field
A24	Sample too aged for SO ₂ analysis
A25	Sample leaked in shipment
A26	Sample inadvertently discarded in field
A27	Sample not shipped
A28	Sample spoiled before analysis
A29	Vandalism--some data loss
A30	No explanation from operator
B05	Insects in sample
B31	Alternate rain gauge used
B32	Alternate collector used
B33	Wind problems
B34	Snowbridge or ice problems
B35	Overflow
B36	Sample frozen
B37	Late collection
B38	Organic debris in sample
B39	Unidentified debris in sample
B40	Fly ash in sample
B41	Dust/dirt in sample
B42	Bird droppings on funnel
B57	Bird droppings in sample
B58	Wet side open until sample collected
C21	Two events combined
C22	More than two events combined
C23	Weekly sample
C24	Sample leaked before volume measurement
D21	Equipment failure--part of event missing
D22	Possible operator contamination
D23	Field pH suspect because of procedure
D24	Predicted volume suspect because of raingauge problems

(a) Atmospheric Deposition System⁽¹⁰⁾.

TABLE A.4. Data Availability for 1984

	W h i t e f a c e	P e n n s t a t e	I t h a c a	V i r g i n i a	I l l i n o i s	B r o c k h a v e n	L e w e s	O x f o r d	O a k R i d g e
2 Jan 1984	-	X	-	-	-	-	-	-	-
3 Jan 1984	X	-	-	-	X	-	-	-	-
5 Jan 1984	-	-	-	-	-	-	X	-	X
6 Jan 1984	-	-	-	-	X	-	-	-	-
7 Jan 1984	-	-	X	-	-	-	X	-	-
9 Jan 1984	X	X	X	-	-	-	-	-	-
10 Jan 1984	-	-	-	-	X	-	-	X	-
11 Jan 1984	-	X	X	X	-	X	X	-	X
12 Jan 1984	X	-	-	-	-	-	-	-	-
13 Jan 1984	-	-	-	-	X	-	-	-	-
14 Jan 1984	-	-	X	-	-	-	-	X	-
15 Jan 1984	-	X	-	X	-	-	X	-	-
16 Jan 1984	X	-	X	-	-	-	-	-	-
17 Jan 1984	-	-	-	-	X	-	X	X	X
18 Jan 1984	-	-	-	-	X	-	-	X	-
19 Jan 1984	-	X	X	X	-	-	X	-	X
20 Jan 1984	X	-	-	-	-	-	-	-	-
24 Jan 1984	-	-	X	X	X	-	-	X	-
25 Jan 1984	X	X	-	-	-	X	X	-	X
26 Jan 1984	X	-	-	-	-	-	-	-	-
27 Jan 1984	X	-	-	-	-	X	-	-	-
29 Jan 1984	-	-	-	-	-	-	-	X	-
30 Jan 1984	-	-	X	-	-	-	-	-	-
31 Jan 1984	-	X	X	X	X	X	X	X	-
1 Feb 1984	X	-	-	-	-	-	-	-	-
3 Feb 1984	-	-	-	-	X	-	-	-	-
4 Feb 1984	-	-	X	X	-	-	-	-	-
5 Feb 1984	-	-	X	-	-	X	X	X	-
6 Feb 1984	-	X	-	X	X	X	X	-	X
7 Feb 1984	-	-	X	-	-	-	-	-	-
8 Feb 1984	X	-	-	-	-	-	-	-	-
9 Feb 1984	X	-	-	-	-	-	-	-	-
11 Feb 1984	-	-	X	-	-	-	-	X	-
12 Feb 1984	-	-	-	-	-	X	X	-	-
13 Feb 1984	-	X	-	-	X	-	-	-	-
14 Feb 1984	X	-	-	-	-	-	-	X	X
15 Feb 1984	-	X	X	X	-	-	X	-	-
16 Feb 1984	X	-	X	-	-	X	X	-	-
17 Feb 1984	-	-	-	-	X	-	-	-	-
18 Feb 1984	-	-	X	-	-	-	X	-	-
19 Feb 1984	-	-	-	-	-	X	-	-	-
20 Feb 1984	-	X	X	-	X	-	-	X	-
21 Feb 1984	X	-	X	-	-	X	-	-	X
23 Feb 1984	-	-	-	-	-	-	-	-	X
24 Feb 1984	-	-	-	X	-	X	X	-	-
25 Feb 1984	-	-	-	X	-	-	-	X	-
26 Feb 1984	-	-	X	-	-	-	-	-	-
27 Feb 1984	-	X	-	-	-	-	-	-	-

TABLE A.4. Data Availability for 1984 (continued)

	White face	Penn Itaca	Virg State	Ill inois	Brook haven	Lewis	Oak ford	Ridge
28 Feb 1984	-	-	-	-	-	X	-	-
29 Feb 1984	-	-	X	X	-	X	X	X
1 Mar 1984	X	X	-	-	X	-	-	-
5 Mar 1984	-	-	-	-	X	-	-	-
6 Mar 1984	-	-	X	X	-	X	X	X
7 Mar 1984	X	X	-	X	-	-	-	-
9 Mar 1984	-	-	X	-	X	-	X	-
10 Mar 1984	-	-	-	-	-	-	X	-
12 Mar 1984	-	X	-	-	-	-	-	-
13 Mar 1984	-	-	X	-	X	-	X	-
14 Mar 1984	-	-	-	-	-	X	-	-
15 Mar 1984	X	-	-	-	-	-	-	X
16 Mar 1984	-	-	-	-	X	-	-	-
17 Mar 1984	-	-	X	-	-	X	X	-
18 Mar 1984	X	-	-	-	-	-	-	-
19 Mar 1984	-	X	X	-	-	-	X	X
20 Mar 1984	X	-	-	-	X	-	-	-
21 Mar 1984	-	-	-	-	-	X	-	-
22 Mar 1984	-	X	X	X	X	-	X	X
23 Mar 1984	-	-	X	-	-	-	-	-
24 Mar 1984	-	-	-	-	-	-	X	-
25 Mar 1984	X	-	-	-	-	-	-	-
26 Mar 1984	-	-	-	X	X	X	X	X
27 Mar 1984	-	-	-	-	X	-	X	-
29 Mar 1984	-	-	-	X	-	-	X	-
30 Mar 1984	X	X	X	-	X	X	-	X
31 Mar 1984	-	-	X	-	-	X	-	-
2 Apr 1984	X	-	-	-	X	-	-	-
3 Apr 1984	-	-	-	-	X	-	-	-
4 Apr 1984	-	-	-	-	X	-	-	-
5 Apr 1984	-	-	X	X	X	X	X	-
6 Apr 1984	X	X	X	-	-	X	-	-
8 Apr 1984	-	-	X	-	-	-	-	-
10 Apr 1984	X	-	-	-	X	-	X	X
13 Apr 1984	-	-	X	-	X	-	-	X
14 Apr 1984	-	-	-	-	-	-	X	-
15 Apr 1984	-	-	X	X	-	-	-	-
16 Apr 1984	-	-	X	-	-	X	-	-
17 Apr 1984	X	X	-	-	X	X	-	-
18 Apr 1984	X	X	X	-	X	-	-	-
19 Apr 1984	-	-	-	-	-	X	X	-
20 Apr 1984	-	X	-	-	-	-	-	-
21 Apr 1984	X	-	-	-	-	-	-	-
23 Apr 1984	-	-	-	-	-	-	-	X
24 Apr 1984	-	-	-	-	X	X	X	X
25 Apr 1984	X	X	X	-	-	X	-	-
29 Apr 1984	-	-	X	X	-	X	-	-
30 Apr 1984	-	-	-	-	X	-	X	-

TABLE A.4. Data Availability for 1984 (continued)

	W h i t e f a c e	P e n n I t h a c a	V i r g i n i a	I l l i n o i s	B r o o k h a v e n	L e w e s	O x f o r d	O a k R i d g e	
1 May 1984	X	X	X	X	-	-	X	-	X
2 May 1984	-	-	-	-	X	-	-	-	-
3 May 1984	-	-	-	-	-	-	-	X	-
4 May 1984	-	X	-	-	X	X	X	-	X
5 May 1984	-	-	X	X	-	-	-	X	-
6 May 1984	X	-	-	-	-	-	-	X	-
7 May 1984	-	X	-	X	X	-	-	-	-
8 May 1984	-	-	-	X	-	-	-	-	-
9 May 1984	-	X	X	X	-	X	X	-	X
10 May 1984	X	X	X	-	-	-	-	X	-
12 May 1984	X	X	X	-	-	-	-	X	-
13 May 1984	X	-	-	-	-	X	-	-	-
14 May 1984	-	X	X	-	X	-	-	X	X
15 May 1984	-	-	-	-	-	X	-	-	-
17 May 1984	X	-	-	-	-	-	-	-	-
19 May 1984	-	-	X	-	-	-	-	-	-
21 May 1984	X	X	X	-	X	X	-	-	-
22 May 1984	-	-	-	-	X	-	-	X	X
23 May 1984	-	X	X	-	X	-	-	X	-
24 May 1984	X	-	-	X	-	X	X	-	X
26 May 1984	-	-	X	-	-	-	-	X	-
27 May 1984	-	X	-	-	-	X	-	-	-
28 May 1984	X	-	-	X	-	-	-	-	-
29 May 1984	X	-	X	-	X	X	-	-	X
30 May 1984	-	X	-	X	-	-	-	X	-
31 May 1984	X	-	-	-	-	-	X	-	-
1 Jun 1984	-	-	-	-	-	X	-	-	-
2 Jun 1984	-	-	-	X	-	-	-	-	-
3 Jun 1984	-	-	X	-	-	X	-	-	-
4 Jun 1984	X	X	-	-	-	-	-	-	-
6 Jun 1984	-	X	-	-	-	-	-	-	-
7 Jun 1984	X	-	X	-	X	X	X	-	-
11 Jun 1984	-	-	-	-	X	-	-	-	-
13 Jun 1984	-	-	-	-	X	-	-	-	-
14 Jun 1984	-	X	X	-	-	X	-	X	-
15 Jun 1984	X	-	-	-	-	-	-	-	X
18 Jun 1984	X	-	X	X	-	X	X	-	-
19 Jun 1984	X	X	X	-	-	X	X	X	X
21 Jun 1984	-	-	-	-	-	-	-	X	-
22 Jun 1984	-	-	-	-	X	-	-	-	X
24 Jun 1984	-	-	-	-	-	-	-	X	-
25 Jun 1984	X	X	X	X	X	X	X	-	X
26 Jun 1984	-	X	X	-	-	-	-	-	-
27 Jun 1984	-	-	-	-	-	-	-	X	-
28 Jun 1984	X	X	X	-	-	-	-	-	-
29 Jun 1984	-	-	-	-	-	X	-	-	X
30 Jun 1984	-	X	-	X	-	-	-	-	-
1 Jul 1984	-	-	-	X	-	X	-	-	-

TABLE A.4. Data Availability for 1984 (continued)

	White face	Penn Ithaca	Virg State	Ill inois	Brook haven	Lew es	Oak ford	Ridge
2 Jul 1984	X	X	X	-	-	-	-	X
3 Jul 1984	X	-	X	-	-	X	-	-
4 Jul 1984	-	-	-	-	-	-	X	-
5 Jul 1984	-	-	-	-	X	-	X	X
6 Jul 1984	X	X	X	-	X	X	-	X
7 Jul 1984	X	X	X	-	-	-	X	-
8 Jul 1984	-	-	-	X	-	X	-	-
9 Jul 1984	-	-	-	-	X	X	-	X
11 Jul 1984	-	X	X	X	-	X	-	-
12 Jul 1984	X	-	X	-	X	X	X	-
13 Jul 1984	-	-	-	-	-	-	-	X
16 Jul 1984	X	-	X	-	X	X	X	-
17 Jul 1984	-	-	-	X	-	-	-	X
18 Jul 1984	X	-	X	X	-	X	-	X
19 Jul 1984	X	X	-	-	-	X	-	-
21 Jul 1984	-	-	-	-	-	-	X	-
22 Jul 1984	-	-	-	-	-	X	-	-
23 Jul 1984	X	-	-	X	X	X	-	X
24 Jul 1984	-	X	-	-	-	-	-	-
25 Jul 1984	-	-	-	-	X	-	-	-
26 Jul 1984	-	-	-	X	-	-	-	X
27 Jul 1984	-	-	-	-	X	X	X	-
28 Jul 1984	X	X	X	X	-	X	-	-
30 Jul 1984	-	-	-	-	X	X	-	-
31 Jul 1984	-	-	-	-	-	-	-	X
2 Aug 1984	X	-	-	X	-	X	X	-
3 Aug 1984	-	-	-	X	X	X	X	X
4 Aug 1984	-	X	X	-	-	X	X	-
5 Aug 1984	-	-	X	X	-	-	X	-
6 Aug 1984	-	-	-	-	X	X	-	X
7 Aug 1984	-	-	X	X	X	X	-	-
8 Aug 1984	X	X	X	-	-	X	X	-
9 Aug 1984	-	-	X	-	X	-	-	X
10 Aug 1984	-	-	X	X	-	-	-	X
11 Aug 1984	-	-	-	-	-	-	X	-
12 Aug 1984	-	-	-	X	-	-	-	-
13 Aug 1984	X	X	X	-	X	-	-	-
14 Aug 1984	-	-	X	-	-	-	-	X
15 Aug 1984	X	X	X	X	-	X	-	-
16 Aug 1984	X	-	-	-	-	-	-	-
17 Aug 1984	-	X	-	-	-	X	-	-
18 Aug 1984	-	-	-	-	-	-	X	-
19 Aug 1984	-	-	X	X	-	-	-	-
20 Aug 1984	X	X	-	-	-	X	-	-
21 Aug 1984	-	-	-	-	X	-	-	X
23 Aug 1984	-	X	X	-	X	-	X	X
24 Aug 1984	X	X	-	-	-	-	-	-
29 Aug 1984	-	-	-	X	-	-	X	-

TABLE A.4. Data Availability for 1984 (continued)

	W h i t e f a c e	P e n n I t h a c a	S t a t e	V i r g i n i a	I l l i n o i s	B r o o k h a v e n	L e w e s	O x f o r d	O a k R i d g e
30 Aug 1984	X	-	X	-	-	-	-	-	X
31 Aug 1984	X	X	X	X	-	X	-	-	-
4 Sep 1984	X	X	X	X	X	X	-	X	X
5 Sep 1984	X	-	-	-	X	X	X	-	-
6 Sep 1984	X	-	-	X	-	-	-	X	-
7 Sep 1984	-	-	-	-	X	-	-	X	-
10 Sep 1984	-	-	-	-	-	-	-	X	-
11 Sep 1984	X	X	-	-	X	-	X	-	-
12 Sep 1984	X	X	X	-	-	-	-	-	-
13 Sep 1984	-	-	-	-	-	-	-	-	X
14 Sep 1984	X	X	X	-	-	-	-	X	-
15 Sep 1984	-	-	-	-	-	-	X	X	-
16 Sep 1984	-	-	X	-	-	X	-	-	-
17 Sep 1984	X	X	-	-	-	-	-	-	-
18 Sep 1984	-	-	-	-	X	-	-	-	-
21 Sep 1984	X	-	-	-	-	-	-	-	-
24 Sep 1984	X	X	-	-	X	-	-	X	-
25 Sep 1984	-	-	-	-	-	-	-	X	-
26 Sep 1984	X	-	X	-	-	-	-	X	-
27 Sep 1984	-	X	-	-	-	-	-	-	-
28 Sep 1984	-	-	X	-	X	-	-	-	-
29 Sep 1984	-	-	-	X	-	-	-	-	-
30 Sep 1984	-	-	-	-	-	X	X	-	-
1 Oct 1984	-	-	-	-	-	-	-	X	X
2 Oct 1984	-	X	X	X	-	X	X	-	-
3 Oct 1984	X	-	-	-	-	-	-	-	-
4 Oct 1984	X	X	-	-	-	-	-	-	-
5 Oct 1984	X	-	-	-	-	-	-	-	-
9 Oct 1984	X	-	X	-	X	-	-	X	X
11 Oct 1984	-	X	-	-	-	-	-	-	-
12 Oct 1984	-	-	-	-	X	-	-	-	-
16 Oct 1984	X	-	-	X	X	-	-	X	X
17 Oct 1984	-	-	X	-	X	-	-	-	-
18 Oct 1984	-	-	X	-	-	-	-	-	X
19 Oct 1984	-	-	-	-	X	-	-	-	-
20 Oct 1984	-	X	X	-	-	-	-	-	-
21 Oct 1984	X	-	-	-	-	-	-	-	-
22 Oct 1984	X	-	-	-	-	-	-	-	-
23 Oct 1984	-	X	-	X	-	-	X	X	X
24 Oct 1984	-	X	X	-	-	X	-	-	-
25 Oct 1984	-	-	-	X	-	-	X	-	X
26 Oct 1984	X	X	-	-	-	-	-	X	-
27 Oct 1984	-	-	X	-	-	X	-	-	-
28 Oct 1984	X	-	-	-	-	-	-	-	-
29 Oct 1984	-	X	-	X	X	X	X	X	X
30 Oct 1984	-	-	X	-	-	-	X	-	-
31 Oct 1984	X	-	-	-	-	X	-	-	-
2 Nov 1984	X	X	X	-	X	-	-	X	-

TABLE A.4. Data Availability for 1984 (continued)

	W h i t e f a c e	P e n n I t h a c a	V i r g i n i a	I l l i n o i s	B r o o k h a v e n	L e w e s	O x f o r d	O a k R i d g e
5 Nov 1984	X	-	-	-	X	X	X	X
6 Nov 1984	-	X	-	X	-	-	-	-
7 Nov 1984	X	-	X	-	-	-	-	-
9 Nov 1984	-	-	-	-	X	-	-	-
10 Nov 1984	-	-	X	-	-	-	-	-
11 Nov 1984	-	-	-	-	-	-	X	-
12 Nov 1984	-	X	X	X	X	X	-	X
13 Nov 1984	X	-	-	-	-	-	-	-
14 Nov 1984	X	X	-	-	X	-	-	-
15 Nov 1984	-	-	-	X	-	-	-	-
16 Nov 1984	-	-	X	-	-	-	X	X
17 Nov 1984	X	-	-	-	-	-	-	-
19 Nov 1984	X	X	X	-	X	-	X	X
20 Nov 1984	-	-	-	X	-	X	-	-
21 Nov 1984	-	X	-	-	-	-	-	-
26 Nov 1984	X	-	-	-	-	-	-	-
27 Nov 1984	-	-	-	-	X	-	-	-
28 Nov 1984	-	-	-	-	X	-	-	-
29 Nov 1984	-	X	X	-	-	X	X	X
30 Nov 1984	X	-	-	-	-	X	-	-
1 Dec 1984	-	-	X	-	-	-	-	-
2 Dec 1984	-	X	-	-	-	-	-	-
3 Dec 1984	X	X	X	-	X	X	X	X
4 Dec 1984	X	-	-	X	-	X	-	-
6 Dec 1984	X	X	-	X	X	X	X	X
7 Dec 1984	X	-	X	-	-	-	-	-
10 Dec 1984	X	-	-	-	-	-	-	-
11 Dec 1984	-	X	X	X	-	-	-	X
12 Dec 1984	-	-	-	-	-	-	X	-
13 Dec 1984	-	-	-	-	-	X	-	-
14 Dec 1984	X	-	-	-	X	-	-	-
15 Dec 1984	-	-	X	-	-	-	X	-
17 Dec 1984	X	X	-	-	-	X	-	-
18 Dec 1984	-	-	-	-	-	-	-	X
19 Dec 1984	X	-	-	-	X	-	-	-
20 Dec 1984	-	X	X	X	-	X	X	-
21 Dec 1984	X	-	-	-	-	-	-	-
22 Dec 1984	-	-	-	X	X	X	X	-
23 Dec 1984	-	-	X	-	-	X	-	-
24 Dec 1984	X	-	-	-	-	-	-	-
25 Dec 1984	-	-	X	-	-	X	-	-
26 Dec 1984	-	-	-	X	X	X	-	X
27 Dec 1984	X	-	-	-	-	-	-	-
28 Dec 1984	-	-	X	-	X	-	-	-
30 Dec 1984	-	X	-	-	-	-	X	-
31 Dec 1984	X	-	X	-	-	X	-	-

	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	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			
2 Jan 1984 # Ithaca	1700	4	1.06	490.0	640.0	26.	4.76	4.72	8.8
3 Jan 1984 # Whiteface	1630	NAP	1.09	178.0	150.0	10.	4.43	4.30	21.0
# Illinois	1630	NAP	ISA	2.9	ISA	ISA	ISA	ISA	ISA
5 Jan 1984 Lewes	1600	NAP	ISA	15.0	ISA	21.	4.11	ISA	ISA
Oak Ridge	1930	11	2.06	100.0	98.0	20.	4.09	4.09	45.0
6 Jan 1984 Illinois	1600	2	ISA	7.1	ISA	25.	5.03	ISA	ISA
7 Jan 1984 # Penn State	2200	NAP	ISA	18.0	ISA	25.	4.09	ISA	ISA
Lewes	1900	NAP	ISA	53.0	ISA	19.	4.06	ISA	ISA
9 Jan 1984 # Whiteface	1900	NAP	2.06	153.0	150.0	19.	4.16	4.13	36.0
# Ithaca	2100	12	2.06	150.0	480.0	25.	3.88	3.88	66.0
# Penn State	1500	NAP	2.06	56.0	51.0	25.	3.98	ISA	ISA
10 Jan 1984 # Illinois	1600	NAP	2.06	242.0	280.0	25.	4.13	4.11	45.0
# Oxford	2100	3	2.07	143.0	160.0	18.	4.11	3.94	62.0
11 Jan 1984 # Ithaca	1900	14	ISA	MOE	740.0	ISA	ISA	ISA	ISA
# Penn State	1530	NAP	2.06	523.0	510.0	25.	4.51	4.21	29.0
Virginia	1500	11	2.06	1099.0	210.0	20.	4.56	4.50	13.0
# Brookhaven	1600	7	2.07	1158.0	1630.0	25.	4.46	4.45	20.0
# Lewes	1500	NAP	2.07	3055.0	MOE	19.	4.44	4.41	21.0
# Oak Ridge	1400	10	2.06	1310.0	1070.0	13.	4.59	4.54	14.0
12 Jan 1984 # Whiteface	1400	NAP	2.06	500.0	360.0	17.	4.45	4.46	17.0
13 Jan 1984 # Illinois	1830	NAP	2.06	40.0	ISA	25.	3.94	3.94	ISA
14 Jan 1984 # Penn State	1800	NAP	ISA	43.0	85.0	25.	4.11	ISA	ISA
# Oxford	1730	3	ISA	31.0	30.0	18.	4.60	ISA	ISA

MAP3S, PRECIPITATION CHEMISTRY DATA (CONT.)

2/

		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	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			
15 Jan 1984	# Ithaca	1800	3	ISA	ISA	240.0	ISA	ISA	ISA	ISA
	Virginia	1800	67	2.06	211.0	MOE	18.	4.15	4.15	37.0
	Lewes	1700	NAP	ISA	18.0	49.0	20.	4.10	ISA	ISA
16 Jan 1984	# Whiteface	1400	NAP	2.06	599.0	550.0	19.	4.17	4.11	36.0
	# Penn State	2000	NAP	2.06	90.0	100.0	25.	4.05	ISA	ISA
17 Jan 1984	# Illinois	1600	2	ISA	10.0	ISA	25.	4.10	ISA	ISA
	# Lewes	1300	NAP	2.07	224.0	MOE	20.	4.13	4.19	32.0
	# Oxford	2000	7	ISA	22.0	50.0	19.	3.76	ISA	ISA
	# Oak Ridge	1400	7	2.06	257.0	210.0	11.	3.89	3.89	66.0
18 Jan 1984	Illinois	1830	10	ISA	6.1	ISA	25.	4.40	ISA	ISA
	# Oxford	2400	10	2.07	86.0	195.0	19.	4.83	4.23	27.0
19 Jan 1984	# Ithaca	2000	4	2.06	160.0	315.0	25.	4.00	3.99	48.0
	# Penn State	1530	NAP	2.06	244.0	220.0	25.	4.00	3.97	51.0
	# Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Lewes	1500	NAP	2.07	1191.0	1220.0	19.	4.22	4.29	27.0
	# Oak Ridge	1330	3	2.06	1411.0	1220.0	14.	4.39	4.40	20.0
20 Jan 1984	# Whiteface	1430	NAP	2.06	153.0	110.0	19.	4.09	4.05	40.0
24 Jan 1984	Penn State	1830	NAP	2.06	1090.0	960.0	25.	4.30	4.29	25.0
	# Virginia	1600	3	2.06	149.0	90.0	22.	4.05	4.02	50.0
	# Illinois	1600	NAP	2.06	152.0	240.0	25.	4.49	4.47	20.0
	# Oxford	2030	4	2.07	539.0	540.0	MOE	4.77	4.25	27.0
25 Jan 1984	# Whiteface	1700	NAP	2.06	335.0	360.0	19.	4.26	4.24	27.0
	# Ithaca	1900	MOE	2.06	370.0	440.0	25.	4.49	4.51	15.0

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MAP35 PRECIPITATION CHEMISTRY DATA (CONT.)

3/

		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		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	
25 Jan 1984	Brookhaven	1400	12	2.07	938.0	890.0	27.	4.52	4.51	22.0									
	Lewes	1700	NAP	2.07	1098.0	1070.0	21.	4.66	4.62	12.0									
	Oak Ridge	1830	11	2.06	1489.0	1320.0	14.	4.35	4.37	22.0									
26 Jan 1984	# Whiteface	1400	NAP	2.06	76.0	100.0	19.	3.93	ISA	ISA									
27 Jan 1984	# Whiteface	1400	NAP	2.06	95.0	81.0	NAP	4.14	4.13	40.0									
	Brookhaven	2130	1	2.07	213.0	195.0	24.	4.17	ISA	ISA									
29 Jan 1984	# Oxford	1900	3	2.07	55.0	81.0	19.	4.92	4.50	ISA									
30 Jan 1984	# Penn State	1530	NAP	2.06	129.0	150.0	25.	4.24	4.01	47.0									
31 Jan 1984	# Ithaca	1600	MOE	2.06	395.0	570.0	25.	4.15	4.18	33.0									
	# Penn State	1530	NAP	2.06	474.0	530.0	25.	4.30	4.26	27.0									
	Virginia	1700	8	2.06	63.0	130.0	23.	3.88	ISA	ISA									
	# Illinois	1530	NAP	2.06	94.0	180.0	25.	4.33	4.38	36.0									
	# Brookhaven	1430	7	2.07	672.0	570.0	24.	4.06	4.07	43.0									
	Lewes	1300	NAP	2.07	193.0	98.0	19.	3.91	4.06	47.0									
	# Oxford	1730	4	2.07	129.0	160.0	23.	4.91	4.44	21.0									

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

	(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 Jan 1984 # Ithaca	2.1	6.0	<0.10	9.3	2.40	<0.20
3 Jan 1984 # Whiteface	<0.2	8.2	0.11	45.0	8.30	<0.20
# Illinois	ISA	ISA	ISA	ISA	ISA	ISA
5 Jan 1984 Lewes	ISA	ISA	ISA	ISA	ISA	ISA
Oak Ridge	3.1	32.0	NAP	52.0	11.00	<0.20
6 Jan 1984 Illinois	ISA	ISA	ISA	ISA	ISA	ISA
7 Jan 1984 # Penn State	ISA	ISA	ISA	ISA	ISA	ISA
Lewes	ISA	ISA	ISA	ISA	ISA	ISA
9 Jan 1984 # Whiteface	<0.2	17.0	NAP	55.0	3.30	<0.20
# Ithaca	0.6	46.0	NAP	69.0	9.90	<0.20
# Penn State	ISA	21.0	NAP	99.0	21.00	<0.20
10 Jan 1984 # Illinois	1.0	35.0	NAP	66.0	8.00	<0.20
# Oxford	4.5	31.0	NAP	81.0	73.00	<0.20
11 Jan 1984 # Ithaca	ISA	ISA	ISA	ISA	ISA	ISA
# Penn State	<0.2	14.0	NAP	35.0	0.40	<0.20
Virginia	12.0	13.0	NAP	8.3	2.40	<0.20
# Brookhaven	7.1	15.0	NAP	16.0	17.00	<0.20
# Lewes	12.0	21.0	NAP	14.0	28.00	<0.20
# Oak Ridge	2.4	9.4	NAP	11.0	1.80	<0.20
12 Jan 1984 # Whiteface	ISA	3.6	NAP	35.0	3.00	<0.20
13 Jan 1984 # Illinois	ISA	28.0	NAP	110.0	24.00	<0.20
14 Jan 1984 # Penn State	ISA	ISA	ISA	ISA	ISA	ISA
# Oxford	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
15 Jan 1984 # Ithaca	ISA	ISA	ISA	ISA	ISA	ISA
Virginia	1.6	27.0	NAP	27.0	18.00	<0.20
Lewes	ISA	ISA	ISA	ISA	ISA	ISA
16 Jan 1984 # Whiteface	<0.2	15.0	NAP	53.0	4.10	0.42
# Penn State	ISA	4.5	NAP	80.0	21.00	<0.20
17 Jan 1984 # Illinois	ISA	ISA	ISA	ISA	ISA	ISA
# Lewes	<0.2	6.2	NAP	63.0	17.00	<0.20
# Oxford	ISA	ISA	ISA	ISA	ISA	ISA
# Oak Ridge	<0.2	46.0	NAP	64.0	18.00	<0.20
18 Jan 1984 Illinois	ISA	ISA	ISA	ISA	ISA	ISA
# Oxford	ISA	3.3	NAP	60.0	7.00	<0.20
19 Jan 1984 # Ithaca	<0.2	11.0	NAP	80.0	8.50	<0.20
# Penn State	<0.2	13.0	NAP	74.0	16.00	<0.20
# Virginia	ISA	ISA	ISA	ISA	ISA	ISA
# Lewes	14.0	27.0	NAP	20.0	19.00	<0.20
# Oak Ridge	<0.2	22.0	NAP	8.2	4.20	0.41
20 Jan 1984 # Whiteface	<0.2	8.9	NAP	72.0	6.40	<0.20
24 Jan 1984 Penn State	2.5	13.0	NAP	26.0	6.90	<0.20
# Virginia	4.5	20.0	NAP	40.0	66.00	<1.00
# Illinois	<0.2	11.0	NAP	26.0	11.00	<0.20
# Oxford	10.0	27.0	NAP	20.0	6.20	<0.20
25 Jan 1984 # Whiteface	0.2	17.0	NAP	29.0	2.60	<0.20
# Ithaca	1.1	6.4	NAP	20.0	4.60	<0.20

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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 Jan 1984	Brookhaven	<0.2	16.0	NAP	17.0	49.00	<0.20
	Lewes	6.9	6.8	NAP	5.9	8.50	<0.20
	Oak Ridge	6.0	18.0	NAP	16.0	11.00	<0.20
26 Jan 1984	# Whiteface	0.3	51.0	NAP	90.0	16.00	<0.40
27 Jan 1984	# Whiteface	<0.2	19.0	NAP	74.0	5.50	<0.20
	Brookhaven	<0.2	ISA	ISA	ISA	ISA	ISA
29 Jan 1984	# Oxford	ISA	16.0	NAP	40.0	10.00	<0.20
30 Jan 1984	# Penn State	<0.2	19.0	NAP	64.0	22.00	0.44
31 Jan 1984	# Ithaca	<0.2	17.0	NAP	46.0	5.40	<0.20
	# Penn State	<0.2	12.0	NAP	43.0	5.20	<0.20
	Virginia	<0.2	ISA	ISA	ISA	ISA	ISA
	# Illinois	1.0	34.0	NAP	79.0	11.00	<0.20
	# Brookhaven	0.9	20.0	NAP	63.0	11.00	<0.20
	Lewes	<0.2	23.0	NAP	72.0	12.00	0.46
	# Oxford	ISA	11.0	NAP	43.0	7.90	<0.20

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

	(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
2 Jan 1984 # Ithaca	19.1	0.5	1.50	<0.40	1.60	<0.20	24.	24.
3 Jan 1984 # Whiteface	50.1	6.6	5.20	<0.40	1.70	0.33	70.	66.
# Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
5 Jan 1984 Lewes	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
Oak Ridge	81.3	24.0	2.50	<1.00	6.80	1.00	127.	123.
6 Jan 1984 Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
7 Jan 1984 # Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
Lewes	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
9 Jan 1984 # Whiteface	74.1	13.0	0.50	<0.50	0.70	<0.20	92.	89.
# Ithaca	131.8	32.0	1.70	<0.40	2.30	0.37	171.	171.
# Penn State	ISA	39.0	4.70	<1.00	4.00	1.10	162.	ISA
10 Jan 1984 # Illinois	77.6	45.0	3.50	<1.00	7.80	1.30	144.	144.
# Oxford	114.8	23.0	32.00	<1.00	4.80	0.78	216.	181.
11 Jan 1984 # Ithaca	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
# Penn State	61.7	5.0	0.86	<1.00	0.67	<0.20	71.	69.
Virginia	26.3	2.2	1.20	0.80	0.30	<0.20	37.	31.
# Brookhaven	35.5	5.7	13.00	<1.00	0.82	1.40	63.	59.
# Lewes	33.9	7.1	24.00	1.40	0.67	2.50	84.	73.
# Oak Ridge	28.8	1.6	0.99	<0.50	0.97	0.25	32.	34.
12 Jan 1984 # Whiteface	34.7	1.7	1.10	<0.50	1.20	0.21	45.	40.
13 Jan 1984 # Illinois	114.8	21.0	11.00	<1.00	15.00	3.70	190.	184.
14 Jan 1984 # Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
# Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA

		(H +)	(N H 4 +)	(N H +)	(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
15 Jan 1984	# Ithaca	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	70.8	4.7	15.00	<1.00	0.97	1.40	99.	95.
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
16 Jan 1984	# Whiteface	77.6	6.7	2.00	<2.00	0.47	0.21	88.	88.
	# Penn State	ISA	1.7	30.00	<1.00	4.00	0.45	110.	ISA
17 Jan 1984	# Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Lewes	64.6	3.4	12.00	<1.00	1.50	1.30	92.	86.
	# Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Oak Ridge	128.8	33.0	0.72	<1.00	1.70	0.33	174.	167.
18 Jan 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Oxford	58.9	0.6	0.92	<0.40	1.50	0.41	74.	64.
19 Jan 1984	# Ithaca	102.3	4.5	1.80	<0.50	0.72	<0.20	119.	110.
	# Penn State	107.2	4.4	1.40	<1.00	2.90	0.21	116.	119.
	# Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Lewes	51.3	7.5	15.00	<2.00	1.50	1.60	93.	80.
	# Oak Ridge	39.8	2.4	0.49	<0.40	2.80	0.45	58.	49.
20 Jan 1984	# Whiteface	89.1	4.2	0.84	<0.50	1.00	0.21	96.	97.
24 Jan 1984	Penn State	51.3	4.1	4.20	<1.00	0.80	0.49	59.	62.
	# Virginia	95.5	1.7	52.00	<1.00	1.90	5.90	162.	165.
	# Illinois	33.9	0.0	3.50	<1.00	4.40	1.30	59.	57.
	# Oxford	56.2	3.2	1.20	<0.40	1.30	0.25	80.	64.
25 Jan 1984	# Whiteface	57.5	5.3	0.42	0.54	1.60	0.33	66.	68.
	# Ithaca	30.9	<0.5	1.90	<0.50	0.67	0.21	37.	35.

		(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
25 Jan 1984	Brookhaven	26.9	0.8	45.00	0.50	2.10	4.90	98.	87.
	Lewes	24.0	3.2	2.10	<1.00	0.60	0.29	28.	31.
	Oak Ridge	42.7	1.0	5.90	<1.00	2.50	1.20	63.	57.
26 Jan 1984	# Whiteface	ISA	66.0	2.50	<1.00	2.80	0.49	208.	ISA
27 Jan 1984	# Whiteface	74.1	34.0	1.60	<1.00	2.50	0.74	118.	116.
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
29 Jan 1984	# Oxford	31.6	30.0	2.80	<1.00	5.40	1.60	82.	78.
30 Jan 1984	# Penn State	97.7	14.0	1.00	1.40	2.00	0.41	125.	119.
31 Jan 1984	# Ithaca	66.1	17.0	1.20	<0.50	0.51	<0.20	85.	85.
	# Penn State	55.0	13.0	<0.50	<1.00	0.51	<0.20	72.	69.
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Illinois	41.7	59.0	9.30	<0.50	13.00	3.00	158.	142.
	# Brookhaven	85.1	15.0	6.20	<1.00	0.77	0.78	114.	109.
	Lewes	87.1	28.0	7.00	2.20	5.90	1.10	131.	138.
	# Oxford	36.3	21.0	1.50	<1.00	4.10	0.74	73.	68.

MISSING DATA CODES:

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 MOE MEANS MALFUNCTION OR OPERATOR ERROR
 RPC MEANS REJECTED - PROBABLE CONTAMINATION

MAP3S PRECIPITATION CHEMISTRY DATA

1/

		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	O P E N	D A T E	V O L	V O L	P H	P H	P H	U M I O /C M
		?		MO. DA	ML	ML	C			
1 Feb 1984	# Whiteface	1400	NAP	ISA	MOE	210.0	ISA	ISA	ISA	ISA
3 Feb 1984	Illinois	1500	4	3.05	158.0	120.0	25.	4.06	4.07	47.0
4 Feb 1984	Penn State	1530	NAP	3.06	131.0	85.0	25.	4.41	4.08	43.0
	Virginia	2200	2	3.05	703.0	380.0	23.	4.18	4.18	36.0
5 Feb 1984	# Penn State	1730	NAP	3.06	128.0	51.0	25.	4.06	3.84	74.0
	Brookhaven	1700	5	3.06	2218.0	2000.0	25.	4.45	4.54	18.0
	Lewes	1400	NAP	3.09	795.0	620.0	19.	4.17	4.23	30.0
	# Oxford	1800	18	3.09	397.0	460.0	19.	4.45	4.17	34.0
6 Feb 1984	# Ithaca	2000	NAP	3.07	540.0	650.0	26.	4.01	4.02	46.0
	Virginia	2130	3	3.05	754.0	480.0	22.	4.15	4.16	34.0
	# Illinois	1530	2	ISA	5.3	ISA	ISA	ISA	ISA	ISA
	Brookhaven	2200	7	3.06	658.0	600.0	25.	4.40	4.42	18.0
	# Lewes	1400	NAP	ISA	49.0	65.0	18.	3.60	ISA	ISA
	# Oak Ridge	1900	2	3.09	685.0	520.0	12.	4.50	4.54	16.0
7 Feb 1984	# Penn State	1530	NAP	ISA	24.0	17.0	25.	4.29	ISA	ISA
8 Feb 1984	# Whiteface	1400	NAP	3.05	1194.0	910.0	19.	4.40	4.34	24.0
9 Feb 1984	# Whiteface	1400	NAP	3.05	185.0	160.0	19.	4.27	4.25	29.0
11 Feb 1984	Penn State	1930	NAP	3.06	470.0	310.0	25.	4.20	4.06	41.0
	Oxford	1700	12	3.09	131.0	160.0	21.	4.14	3.96	55.0
12 Feb 1984	Brookhaven	1600	12	3.06	547.0	520.0	25.	4.18	4.25	37.0
	Lewes	2100	NAP	3.09	513.0	470.0	21.	3.96	4.06	47.0
13 Feb 1984	Ithaca	1300	NAP	ISA	5.0	ISA	26.	3.42	ISA	ISA
	Illinois	1600	14	3.05	2228.0	2240.0	25.	4.31	4.33	25.0

		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 H 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			
14 Feb 1984	Whiteface	1800	NAP	3.05	278.0	260.0	19.	4.21	4.19	31.0
	Oxford	1900	4	3.09	627.0	700.0	21.	5.34	4.64	12.0
	Oak Ridge	1400	19	3.09	2546.0	2210.0	12.	4.48	4.53	15.0
15 Feb 1984	Ithaca	2200	NAP	3.07	3766.0	3745.0	26.	4.61	4.58	13.0
	Penn State	1600	NAP	3.06	5085.0	5050.0	25.	5.50	4.99	5.5
	Virginia	1600	21	3.05	6355.0	6450.0	24.	4.98	5.06	6.1
	Lewes	1530	NAP	3.09	2120.0	2030.0	24.	5.23	5.20	10.0
16 Feb 1984	Whiteface	1500	NAP	3.05	1101.0	910.0	19.	4.71	4.59	10.0
	Penn State	1700	NAP	3.06	229.0	190.0	25.	4.99	4.74	9.8
	Brookhaven	1800	8	3.06	1118.0	1070.0	27.	5.00	5.10	15.0
	Lewes	1630	NAP	3.09	209.0	114.0	8.	4.31	4.33	22.0
17 Feb 1984	Illinois	2100	3	3.05	467.0	310.0	24.	4.22	4.20	29.0
18 Feb 1984	Penn State	1700	NAP	3.06	400.0	390.0	25.	4.10	3.95	55.0
	Lewes	1900	NAP	3.09	422.0	340.0	22.	4.12	4.16	33.0
19 Feb 1984	Brookhaven	200	9	ISA	35.0	49.0	28.	3.38	ISA	ISA
20 Feb 1984	Ithaca	2100	NAP	3.07	540.0	540.0	23.	3.97	3.96	54.0
	Penn State	1630	NAP	3.06	835.0	840.0	25.	4.20	4.16	34.0
	Illinois	1530	4	3.05	311.0	260.0	25.	4.24	4.27	32.0
	Oxford	1500	9	3.09	102.0	130.0	14.	4.31	4.10	45.0
21 Feb 1984	Whiteface	1400	NAP	3.05	602.0	570.0	20.	4.18	4.09	33.0
	* Penn State	1700	NAP	3.06	57.0	51.0	25.	4.19	4.03	53.0
	Brookhaven	1400	2	3.06	50.0	49.0	27.	3.75	ISA	ISA
	Oak Ridge	1400	5	3.09	140.0	81.0	13.	4.10	4.16	39.0

		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		O P E N		D A T E		V O L		V O L		P H T		P H		P H			
		Z		MO.DA		ML		ML		C								UMHO/CM	
23 Feb 1984	# Oak Ridge	1400		MOE		3.09		834.0		650.0		14.		4.32		4.31		23.0	
24 Feb 1984	# Virginia	2000		5		3.05		2697.0		2310.0		23.		4.40		4.41		17.0	
	Brookhaven	1900		8		3.06		2307.0		2230.0		25.		4.75		4.87		8.9	
	Lewes	1400		NAP		3.09		697.0		550.0		22.		4.78		4.80		22.0	
25 Feb 1984	Virginia	2100		1		3.05		39.0		ISA		22.		3.91		ISA		ISA	
	# Oxford	2100		7		3.09		1081.0		930.0		19.		4.86		4.41		23.0	
26 Feb 1984	# Penn State	1600		NAP		ISA		29.0		60.0		25.		3.90		ISA		ISA	
27 Feb 1984	# Ithaca	1400		NAP		ISA		5.0		32.0		23.		3.79		ISA		ISA	
28 Feb 1984	Lewes	2030		NAP		3.09		1080.0		910.0		22.		4.69		4.75		24.0	
29 Feb 1984	# Penn State	1600		NAP		3.06		1056.0		1090.0		25.		4.91		4.72		13.0	
	Virginia	1900		7		3.05		787.0		270.0		22.		4.31		4.36		25.0	
	# Brookhaven	1400		14		3.06		3014.0		3580.0		26.		4.85		5.04		6.8	
	Lewes	1830		NAP		3.09		271.0		130.0		20.		4.28		4.34		28.0	
	# Oxford	2400		14		3.09		MOE		1430.0		20.		4.93		4.41		23.0	
	# Oak Ridge	1500		21		3.09		2203.0		1770.0		14.		4.17		4.19		33.0	

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 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 Feb 1984	# Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
3 Feb 1984	Illinois	<0.2	39.0	0.43	70.0	7.50	<0.20
4 Feb 1984	Penn State	<0.2	32.0	0.49	48.0	20.00	<0.20
	Virginia	<0.2	28.0	<0.10	23.0	31.00	<0.20
5 Feb 1984	# Penn State	<0.2	41.0	0.53	110.0	20.00	<0.20
	Brookhaven	<0.2	12.0	0.21	10.0	24.00	<0.20
	Lewes	1.1	19.0	0.32	30.0	22.00	<0.20
	# Oxford	<0.2	18.0	0.48	51.0	3.30	<0.20
6 Feb 1984	# Ithaca	0.3	24.0	0.42	65.0	9.10	<0.20
	Virginia	1.7	14.0	0.27	52.0	6.80	<0.20
	# Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	12.0	20.0	0.20	11.0	2.70	<0.20
	# Lewes	ISA	ISA	ISA	ISA	ISA	ISA
	# Oak Ridge	<0.2	10.0	0.35	24.0	6.70	<0.20
7 Feb 1984	# Penn State	ISA	ISA	ISA	ISA	ISA	ISA
8 Feb 1984	# Whiteface	<0.2	15.0	<0.10	29.0	2.50	<0.20
9 Feb 1984	# Whiteface	<0.2	7.8	<0.10	59.0	4.50	<0.20
11 Feb 1984	Penn State	0.6	25.0	<0.10	46.0	5.40	<0.20
	Oxford	NAP	45.0	0.49	45.0	14.00	<0.20
12 Feb 1984	Brookhaven	<0.2	29.0	0.40	34.0	34.00	<0.20
	Lewes	<0.2	42.0	0.26	37.0	39.00	<0.20
13 Feb 1984	Ithaca	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	<0.2	18.0	<0.10	24.0	5.90	<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 Feb 1984	Whiteface	2.0	19.0	<0.10	31.0	1.80	<0.20
	Oxford	1.9	9.4	<0.10	9.2	2.70	<0.20
	Oak Ridge	<0.2	13.0	0.39	11.0	7.30	<0.20
15 Feb 1984	Ithaca	1.9	6.7	0.61	15.0	3.00	<0.20
	Penn State	<0.2	2.9	0.20	4.6	1.10	<0.20
	Virginia	<0.2	3.1	<0.10	3.0	7.20	<0.20
	Lewes	<0.2	6.9	0.50	1.3	130.00	<0.20
16 Feb 1984	Whiteface	<0.2	6.2	0.21	12.0	3.50	<0.20
	Penn State	<0.2	7.1	0.28	12.0	2.10	<0.20
	Brookhaven	<0.2	7.2	<0.10	3.1	82.00	<0.20
	Lewes	2.5	8.9	0.30	42.0	<3.00	<0.20
17 Feb 1984	Illinois	<0.2	27.0	0.27	31.0	4.30	<0.20
18 Feb 1984	Penn State	0.8	35.0	0.23	77.0	8.90	<0.20
	Lewes	<0.2	19.0	0.34	46.0	3.90	<0.20
19 Feb 1984	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA
20 Feb 1984	Ithaca	4.1	33.0	0.66	81.0	4.60	0.29
	Penn State	3.1	30.0	0.37	38.0	5.60	<0.20
	Illinois	1.6	32.0	<0.10	36.0	6.80	<0.20
	Oxford	ISA	53.0	0.66	37.0	8.70	<0.20
21 Feb 1984	Whiteface	1.7	15.0	0.26	51.0	1.80	<0.20
	* Penn State	ISA	31.0	<0.10	91.0	12.00	<0.20
	Brookhaven	1.8	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	<0.2	45.0	0.61	29.0	8.80	<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 Feb 1984 # Oak Ridge	8.4	17.0	0.47	23.0	4.30	<0.20
24 Feb 1984 # Virginia	2.2	11.0	NAP	15.0	3.10	<0.20
Brookhaven	<0.2	6.8	<0.10	6.0	14.00	<0.20
Lewes	<0.2	13.0	0.55	5.3	110.00	<0.20
25 Feb 1984 Virginia	<0.2	ISA	ISA	ISA	ISA	ISA
# Oxford	0.7	17.0	0.39	42.0	2.30	0.26
26 Feb 1984 # Penn State	ISA	ISA	ISA	ISA	ISA	ISA
27 Feb 1984 # Ithaca	ISA	ISA	ISA	ISA	ISA	ISA
28 Feb 1984 Lewes	<0.2	17.0	0.37	12.0	93.00	<0.20
29 Feb 1984 # Penn State	<0.2	4.9	0.41	35.0	4.60	<0.20
Virginia	3.2	21.0	0.43	28.0	5.90	<0.20
# Brookhaven	<0.2	4.5	<0.10	4.2	13.00	<0.20
Lewes	ISA	29.0	0.63	32.0	12.00	<0.20
# Oxford	<0.2	21.0	NAP	37.0	4.60	<0.20
# Oak Ridge	1.1	34.0	0.39	23.0	5.60	0.29

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A.27

		(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
1 Feb 1984	# Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
3 Feb 1984	Illinois	85.1	43.0	4.60	<0.50	8.20	2.30	156.	154.
4 Feb 1984	Penn State	83.2	31.0	6.50	<0.40	3.00	0.82	132.	128.
	Virginia	66.1	11.0	25.00	<1.00	1.40	2.60	110.	110.
5 Feb 1984	# Penn State	144.5	54.0	1.80	<0.40	5.60	1.40	213.	214.
	Brookhaven	28.8	1.8	23.00	<0.50	0.72	2.30	58.	60.
	Lewes	58.9	8.1	16.00	<0.40	1.10	1.60	90.	88.
	# Oxford	67.6	23.0	0.94	<0.40	3.50	0.58	91.	100.
6 Feb 1984	# Ithaca	95.5	24.0	2.40	<0.40	1.40	0.33	123.	125.
	Virginia	69.2	11.0	1.60	<1.00	1.60	0.21	87.	85.
	# Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	38.0	4.2	0.82	<0.50	1.30	<0.20	54.	46.
	# Lewes	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Oak Ridge	28.8	3.6	2.70	<0.40	3.70	0.74	51.	44.
7 Feb 1984	# Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
8 Feb 1984	# Whiteface	45.7	13.0	9.50	5.90	0.37	<0.20	62.	75.
9 Feb 1984	# Whiteface	56.2	8.5	3.10	<1.00	3.30	0.99	79.	76.
11 Feb 1984	Penn State	87.1	13.0	4.60	<0.40	3.20	0.82	101.	113.
	Oxford	109.6	27.0	5.40	<0.40	5.90	1.50	149.	157.
12 Feb 1984	Brookhaven	56.2	14.0	35.00	<0.50	7.40	4.60	126.	129.
	Lewes	87.1	18.0	32.00	<0.40	5.20	3.60	160.	155.
13 Feb 1984	Ithaca	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	46.8	12.0	2.70	<1.00	1.70	<0.20	66.	65.

A.28

		(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
14 Feb 1984	Whiteface	64.6	6.7	1.80	<1.00	<0.50	<0.20	71.	73.
	Oxford	22.9	3.8	1.10	<1.00	0.90	0.21	31.	30.
	Oak Ridge	29.5	3.3	4.10	<0.40	1.60	0.49	45.	41.
15 Feb 1984	Ithaca	26.3	3.4	1.70	<0.40	<0.20	<0.20	32.	31.
	Penn State	10.2	0.8	0.00	1.80	<0.20	<0.20	12.	21.
	Virginia	8.7	1.8	6.60	<0.40	<0.20	0.62	16.	18.
	Lewes	6.3	<0.6	94.00	<0.40	1.90	9.90	146.	124.
16 Feb 1984	Whiteface	25.7	<0.6	3.10	<0.40	<0.50	0.33	28.	29.
	Penn State	18.2	2.0	0.82	<0.50	2.40	0.82	29.	27.
	Brookhaven	6.6	0.7	76.00	2.00	2.20	7.40	100.	104.
	Lewes	46.8	9.6	0.50	<0.40	<0.50	<0.20	60.	57.
17 Feb 1984	Illinois	52.5	17.0	3.20	<1.00	7.50	1.70	90.	91.
18 Feb 1984	Penn State	112.2	37.0	2.30	<0.40	4.50	1.20	156.	163.
	Lewes	69.2	12.0	1.10	<0.40	1.20	0.33	88.	85.
19 Feb 1984	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
20 Feb 1984	Ithaca	109.6	43.0	1.60	<0.40	2.90	0.66	153.	161.
	Penn State	69.2	18.0	1.90	<0.40	2.60	0.45	104.	95.
	Illinois	53.7	18.0	4.40	<1.00	9.30	1.60	107.	98.
	Oxford	79.4	2.6	4.30	2.40	17.00	2.50	152.	128.
21 Feb 1984	Whiteface	81.3	9.8	40.00	22.00	0.55	<0.20	83.	154.
	* Penn State	93.3	66.0	1.40	<0.50	5.20	1.80	165.	175.
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	69.2	33.0	6.80	<0.40	4.00	1.10	128.	119.

	(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
23 Feb 1984 # Oak Ridge	49.0	2.2	<0.50	<0.40	1.30	<0.20	62.	54.
24 Feb 1984 # Virginia	33.9	6.6	2.00	<0.40	<0.20	<0.20	40.	42.
Brookhaven	13.5	2.0	11.00	<0.40	<0.20	1.10	34.	29.
Lewes	15.8	2.7	100.00	0.56	1.90	9.30	142.	142.
25 Feb 1984 Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
# Oxford	38.9	27.0	0.61	1.20	1.70	0.37	79.	72.
26 Feb 1984 # Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
27 Feb 1984 # Ithaca	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
28 Feb 1984 Lewes	17.8	4.4	98.00	0.44	6.00	9.30	139.	151.
29 Feb 1984 # Penn State	19.1	5.5	2.10	<0.40	9.10	0.95	50.	47.
Virginia	43.7	13.0	5.40	<0.40	9.00	1.10	76.	82.
# Brookhaven	9.1	1.8	11.00	<0.40	0.67	1.00	26.	25.
Lewes	45.7	46.0	7.40	<1.00	2.20	0.99	103.	105.
# Oxford	38.9	16.0	1.30	0.77	7.80	1.70	84.	76.
# Oak Ridge	64.6	5.7	1.50	<0.40	7.60	0.95	98.	89.

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

MAP3S PRECIPITATION CHEMISTRY DATA

I/

		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	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			
1 Mar 1984	# Whiteface	1400	NAP	3.05	2138.0	1790.0	20.	5.16	5.03	6.4
	# Ithaca	1300	NAP	3.07	2236.0	2440.0	26.	4.64	4.69	13.0
	# Illinois	1400	ISA	ISA	ISA	1325.0	ISA	ISA	ISA	ISA
5 Mar 1984	# Illinois	1700	2	4.06	109.0	61.0	25.	4.24	4.19	39.0
6 Mar 1984	# Penn State	1600	NAP	4.06	981.0	970.0	25.	3.90	3.95	49.0
	Virginia	1730	14	4.09	390.0	400.0	22.	4.35	4.26	25.0
	# Brookhaven	1400	10	4.03	1368.0	1450.0	27.	4.10	4.20	29.0
	# Lewes	2000	NAP	4.10	1132.0	780.0	21.	4.07	4.08	37.0
	# Oxford	1400	7	4.05	587.0	570.0	22.	4.60	4.24	28.0
	Oak Ridge	1430	11	4.06	645.0	540.0	21.	4.11	4.16	35.0
7 Mar 1984	# Whiteface	1400	NAP	4.06	408.0	340.0	19.	4.32	4.23	24.0
	# Ithaca	2100	NAP	4.06	200.0	200.0	25.	4.04	3.95	62.0
	# Virginia	1700	MOE	ISA	32.0	MOE	MOE	MOE	MOE	MOE
9 Mar 1984	# Penn State	1500	NAP	4.06	436.0	390.0	25.	4.09	4.01	38.0
	# Illinois	1600	2	4.06	70.0	120.0	25.	4.45	4.40	26.0
	# Lewes	1730	NAP	4.10	241.0	160.0	18.	4.02	4.02	49.0
10 Mar 1984	# Oxford	1600	10	4.05	307.0	440.0	21.	4.63	4.30	27.0
12 Mar 1984	# Ithaca	2200	NAP	4.06	310.0	315.0	25.	4.08	4.01	49.0
13 Mar 1984	# Penn State	2030	NAP	4.06	653.0	650.0	25.	4.31	4.21	22.0
	# Illinois	1630	1	ISA	20.0	190.0	25.	5.23	ISA	ISA
	# Oxford	2100	3	4.05	990.0	975.0	20.	4.69	4.18	35.0
14 Mar 1984	# Brookhaven	1400	2	4.03	4210.0	5100.0	27.	4.51	4.51	18.0
	Lewes	1500	NAP	4.10	4309.0	4020.0	20.	4.40	4.38	25.0

A.30

		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	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			
15 Mar 1984	# Whiteface	1400	NAP	4.06	740.0	630.0	19.	4.74	4.66	8.9
	Oak Ridge	1400	9	4.06	378.0	340.0	21.	4.00	4.10	40.0
16 Mar 1984	# Illinois	1530	NAP	4.06	1762.0	2210.0	25.	4.73	4.64	15.0
17 Mar 1984	Penn State	1730	NAP	ISA	36.0	20.0	25.	3.72	ISA	ISA
	Brookhaven	2200	2	ISA	31.0	49.0	27.	3.35	ISA	ISA
	Oxford	2200	3	4.05	624.0	620.0	19.	5.63	4.74	9.4
18 Mar 1984	Whiteface	2300	NAP	4.06	68.0	65.0	19.	3.76	3.68	88.0
19 Mar 1984	# Ithaca	2000	NAP	4.06	490.0	650.0	25.	4.46	4.39	34.0
	Penn State	1500	NAP	4.06	98.0	51.0	25.	3.65	3.62	101.0
	Oxford	100	1	4.05	225.0	210.0	15.	4.21	4.09	42.0
	Oak Ridge	1400	8	4.06	901.0	810.0	15.	4.24	4.32	27.0
20 Mar 1984	# Whiteface	1500	NAP	MOE	MOE	715.0	MOE	MOE	MOE	MOE
	# Illinois	1430	NAP	4.06	1939.0	1840.0	25.	4.11	4.09	39.0
21 Mar 1984	Lewes	2030	NAP	4.10	420.0	370.0	22.	4.39	4.38	37.0
22 Mar 1984	Ithaca	1300	2	4.06	620.0	650.0	24.	4.30	4.28	24.0
	# Penn State	1630	NAP	4.06	893.0	850.0	25.	4.34	4.20	28.0
	Virginia	2000	11	4.09	1061.0	940.0	22.	4.40	4.30	19.0
	# Illinois	1800	6	4.06	49.0	69.0	25.	3.75	3.73	94.0
	Brookhaven	1400	5	4.03	718.0	760.0	26.	4.37	4.48	23.0
	# Oxford	2230	32	4.05	1950.0	2060.0	10.	4.85	4.25	20.0
	# Oak Ridge	1630	17	4.06	2572.0	2540.0	14.	4.35	4.39	20.0
23 Mar 1984	# Penn State	1900	NAP	ISA	17.0	51.0	25.	4.25	ISA	ISA
24 Mar 1984	# Oxford	1430	1	ISA	12.0	33.0	14.	4.50	ISA	ISA

	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	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
25 Mar 1984 # Whiteface	1700	NAP	4.06	507.0	440.0	19.	4.04	3.98	40.0
26 Mar 1984 Virginia	2000	7	4.09	1661.0	1530.0	24.	4.25	4.24	23.0
Illinois	1900	7	4.06	1427.0	1530.0	25.	4.17	4.17	32.0
Brookhaven	1500	20	4.03	89.0	160.0	27.	3.81	3.89	66.0
Lewes	1500	NAP	4.10	2778.0	2470.0	21.	4.37	4.37	27.0
Oxford	1300	19	4.05	256.0	290.0	22.	4.13	3.94	56.0
Oak Ridge	1430	4	4.06	172.0	150.0	21.	3.98	4.08	48.0
27 Mar 1984 Illinois	1330	6	4.06	508.0	550.0	25.	4.03	4.03	48.0
Oxford	2030	4	4.05	153.0	110.0	18.	4.33	4.13	40.0
29 Mar 1984 Virginia	2130	4	4.09	6047.0	4310.0	25.	4.65	4.58	11.0
Oxford	100	9	4.05	629.0	620.0	14.	4.44	4.08	42.0
30 Mar 1984 # Whiteface	2000	NAP	4.06	1618.0	1690.0	19.	5.10	5.10	4.2
# Ithaca	1400	NAP	4.06	2077.0	3727.0	25.	4.70	4.69	10.0
# Penn State	1800	NAP	4.06	3288.0	3150.0	25.	4.48	4.44	17.0
# Illinois	1430	3	4.06	107.0	ISA	25.	4.07	4.00	60.0
# Brookhaven	1400	52	4.03	3390.0	3650.0	26.	4.62	4.70	34.0
Oak Ridge	1500	MOE	4.06	3126.0	2860.0	12.	4.52	4.54	14.0
31 Mar 1984 # Penn State	1900	NAP	4.06	145.0	170.0	25.	4.04	3.98	46.0
Lewes	1430	NAP	4.10	3266.0	MOE	21.	4.47	4.49	60.0

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

	(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 Mar 1984 # Whiteface	<0.2	6.8	NAP	8.9	2.10	<0.20
# Ithaca	<0.2	13.0	0.45	19.0	5.10	<0.20
# Illinois	ISA	ISA	ISA	ISA	ISA	ISA
5 Mar 1984 # Illinois	0.6	34.0	<0.10	52.0	6.60	<0.20
6 Mar 1984 # Penn State	0.9	41.0	0.23	53.0	5.30	<0.20
Virginia	<0.2	25.0	0.22	22.0	16.00	<0.20
# Brookhaven	NAP	27.0	<0.10	22.0	13.00	<0.20
# Lewes	4.7	29.0	<0.20	42.0	1.60	<0.20
# Oxford	5.6	23.0	0.44	29.0	3.20	<0.20
Oak Ridge	1.6	36.0	<0.10	29.0	0.20	<0.20
7 Mar 1984 # Whiteface	<0.2	17.0	<0.10	28.0	4.40	<0.20
# Ithaca	0.9	47.0	<0.10	96.0	37.00	<0.20
# Virginia	MOE	MOE	MOE	MOE	MOE	MOE
9 Mar 1984 # Penn State	<0.2	5.3	<0.20	79.0	10.00	<0.20
# Illinois	ISA	12.0	0.31	68.0	3.90	<0.20
# Lewes	0.4	26.0	<0.20	67.0	72.00	<0.20
10 Mar 1984 # Oxford	<0.2	9.9	0.32	57.0	6.40	<0.20
12 Mar 1984 # Ithaca	0.3	39.0	<0.10	65.0	14.00	<0.20
13 Mar 1984 # Penn State	<0.2	8.9	<0.20	42.0	3.70	<0.20
# Illinois	ISA	ISA	ISA	ISA	ISA	ISA
# Oxford	3.1	28.0	0.43	41.0	3.60	<0.20
14 Mar 1984 # Brookhaven	<0.2	15.0	0.32	5.7	36.00	<0.20
Lewes	<0.2	22.0	<0.20	7.1	56.00	<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 Mar 1984 # Whiteface	<0.2	4.4	<0.10	11.0	2.90	<0.20
Oak Ridge	3.0	42.0	0.24	30.0	7.80	<0.20
16 Mar 1984 # Illinois	<0.2	17.0	<0.10	13.0	2.30	<0.20
17 Mar 1984 Penn State	ISA	ISA	ISA	ISA	ISA	ISA
Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA
Oxford	<0.2	7.1	NAP	11.0	0.90	<0.20
18 Mar 1984 Whiteface	ISA	90.0	<0.10	91.0	13.00	<0.20
19 Mar 1984 # Ithaca	0.9	15.0	<0.10	85.0	57.00	<0.20
Penn State	NAP	110.0	0.42	86.0	10.00	<0.20
Oxford	6.4	44.0	0.29	31.0	2.90	<0.20
Oak Ridge	<0.2	29.0	0.20	27.0	5.30	<0.20
20 Mar 1984 # Whiteface	MOE	MOE	MOE	MOE	MOE	MOE
# Illinois	6.4	34.0	<0.10	28.0	7.50	<0.20
21 Mar 1984 Lewes	<0.2	23.0	<0.20	21.0	150.00	<0.20
22 Mar 1984 Ithaca	<0.2	24.0	<0.10	17.0	9.10	<0.20
# Penn State	<0.2	25.0	<0.20	23.0	14.00	<0.20
Virginia	<0.2	20.0	<0.20	16.0	6.20	<0.20
# Illinois	ISA	87.0	<0.10	160.0	8.60	0.31
Brookhaven	<0.2	17.0	<0.10	10.0	56.00	<0.20
# Oxford	5.3	22.0	<0.10	25.0	3.40	<0.20
# Oak Ridge	<0.2	20.0	<0.10	15.0	4.10	<0.20
23 Mar 1984 # Penn State	ISA	ISA	ISA	ISA	ISA	ISA
24 Mar 1984 # Oxford	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
25 Mar 1984	# Whiteface	0.2	27.0	<0.20	49.0	2.20	0.23
26 Mar 1984	Virginia	1.3	18.0	0.30	23.0	<2.00	<0.20
	Illinois	4.0	24.0	0.23	38.0	3.60	<0.20
	Brookhaven	1.4	46.0	0.43	82.0	22.00	<0.20
	Lewes	<0.2	19.0	<0.20	18.0	66.00	<0.20
	Oxford	5.4	40.0	0.32	58.0	5.10	<0.20
	Oak Ridge	<0.2	51.0	<0.10	62.0	14.00	<0.20
27 Mar 1984	Illinois	0.5	43.0	0.29	66.0	4.70	<0.20
	Oxford	5.7	27.0	0.35	40.0	5.70	<0.20
29 Mar 1984	Virginia	<0.2	9.3	<0.20	11.0	1.70	<0.20
	Oxford	2.9	31.0	0.34	34.0	2.80	<0.20
30 Mar 1984	# Whiteface	<0.2	3.6	<0.20	4.5	2.90	<0.20
	# Ithaca	<0.2	8.4	<0.10	12.0	7.80	<0.20
	# Penn State	<0.2	12.0	<0.20	16.0	1.80	<0.20
	# Illinois	<0.2	78.0	0.34	79.0	7.70	<0.20
	# Brookhaven	<0.2	18.0	<0.10	8.2	190.00	<0.20
	Oak Ridge	<0.2	19.0	<0.10	12.0	4.60	<0.20
31 Mar 1984	# Penn State	<0.2	34.0	<0.20	38.0	8.10	<0.20
	Lewes	<0.2	30.0	<0.10	17.0	420.00	<0.20

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

	(H +)	(N H 4 +)	(N A +)	(K +)	(C A +)	(H 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
1 Mar 1984 # Whiteface	9.3	3.2	13.00	3.10	4.40	0.37	25.	38.
# Ithaca	20.4	6.3	3.80	<0.50	6.30	0.74	51.	45.
# Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
5 Mar 1984 # Illinois	64.6	28.0	9.40	1.00	15.00	5.80	127.	145.
6 Mar 1984 # Penn State	112.2	34.0	1.30	0.64	2.60	0.41	141.	154.
Virginia	55.0	12.0	3.40	0.82	3.60	0.95	88.	80.
# Brookhaven	52.5	18.0	11.00	0.80	1.40	1.50	89.	88.
# Lewes	83.2	15.0	12.00	0.95	4.40	1.80	102.	124.
# Oxford	57.5	16.0	0.92	0.38	3.60	1.10	79.	84.
Oak Ridge	69.2	12.0	2.80	<1.00	8.90	1.70	109.	105.
7 Mar 1984 # Whiteface	58.9	7.4	17.00	11.00	3.20	0.66	66.	102.
# Ithaca	112.2	25.0	21.00	<1.00	25.00	6.80	227.	222.
# Virginia	MOE	<0.6	MOE	MOE	MOE	MOE	MOE	MOE
9 Mar 1984 # Penn State	97.7	2.2	1.50	<0.40	4.30	0.91	100.	112.
# Illinois	39.8	20.0	4.30	<1.00	13.00	2.90	96.	96.
# Lewes	95.5	15.0	51.00	2.00	5.20	7.20	191.	188.
10 Mar 1984 # Oxford	50.1	16.0	1.60	0.51	5.20	1.10	84.	81.
12 Mar 1984 # Ithaca	97.7	17.0	10.00	<1.00	10.00	2.70	157.	150.
13 Mar 1984 # Penn State	53.7	5.3	3.30	<0.40	3.40	1.00	64.	71.
# Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
# Oxford	66.1	30.0	1.40	<1.00	2.20	0.58	101.	103.
14 Mar 1984 # Brookhaven	26.9	4.0	30.00	0.51	0.87	3.50	72.	70.
Lewes	41.7	7.7	43.00	1.50	1.80	5.30	107.	108.

		(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
15 Mar 1984	# Whiteface	21.9	<0.6	<0.50	<0.40	0.60	<0.40	23.	23.
	Oak Ridge	79.4	25.0	2.00	0.84	5.50	1.00	122.	120.
16 Mar 1984	# Illinois	22.9	17.0	2.00	<1.00	6.40	0.91	49.	57.
17 Mar 1984	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	18.2	2.3	0.55	<0.40	1.40	0.33	26.	25.
18 Mar 1984	Whiteface	208.9	53.0	9.80	<1.00	7.30	1.70	284.	290.
19 Mar 1984	# Ithaca	40.7	11.0	35.00	0.72	31.00	8.90	172.	167.
	Penn State	239.9	26.0	5.40	1.30	17.00	2.10	316.	311.
	Oxford	81.3	15.0	2.30	29.00	8.60	1.70	122.	148.
	Oak Ridge	47.9	18.0	3.10	<1.00	7.60	1.70	91.	88.
20 Mar 1984	# Whiteface	MOE	MOE	MOE	MOE	MOE	MOE	MOE	MOE
	# Illinois	81.3	15.0	3.50	<1.00	4.60	1.20	104.	111.
21 Mar 1984	Lewes	41.7	8.8	120.00	3.30	5.00	14.00	217.	212.
22 Mar 1984	Ithaca	52.5	7.2	5.80	<1.00	2.00	1.10	74.	72.
	# Penn State	63.1	3.6	2.40	12.00	2.30	0.82	87.	87.
	Virginia	41.7	14.0	5.70	0.51	1.80	0.86	62.	67.
	# Illinois	186.2	ISA	ISA	ISA	11.00	4.20	344.	ISA
	Brookhaven	33.1	6.1	41.00	1.00	1.70	4.70	100.	94.
	# Oxford	56.2	11.0	1.60	1.00	2.30	0.41	72.	75.
	# Oak Ridge	40.7	14.0	1.00	<0.50	1.90	0.37	59.	60.
23 Mar 1984	# Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
24 Mar 1984	# Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA

A.40

		(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
25 Mar 1984	# Whiteface	104.7	9.7	0.66	<0.40	1.10	0.33	106.	110.
26 Mar 1984	Virginia	57.5	7.1	1.00	<0.40	1.20	0.33	59.	69.
	Illinois	67.6	15.0	0.50	<1.00	3.40	1.40	90.	93.
	Brookhaven	128.8	36.0	8.00	0.84	7.10	2.00	196.	192.
	Lewes	42.7	12.0	49.00	1.70	2.70	6.40	122.	124.
	Oxford	114.8	21.0	2.60	2.10	6.00	1.20	143.	155.
	Oak Ridge	83.2	27.0	7.70	<1.00	19.00	3.70	170.	163.
27 Mar 1984	Illinois	93.3	38.0	2.60	0.72	8.50	2.20	157.	156.
	Oxford	74.1	13.0	4.00	0.79	11.00	2.20	100.	110.
29 Mar 1984	Virginia	26.3	3.4	0.48	<0.40	0.62	<0.20	31.	31.
	Oxford	83.2	33.0	1.20	<1.00	2.80	0.50	99.	124.
30 Mar 1984	# Whiteface	7.9	0.9	0.86	<0.40	1.30	0.33	15.	13.
	# Ithaca	20.4	5.8	1.10	<1.00	1.60	0.41	37.	31.
	# Penn State	36.3	8.3	1.00	<0.40	2.50	0.41	42.	51.
	# Illinois	100.0	91.0	4.20	1.30	12.00	4.00	243.	229.
	# Brookhaven	20.0	2.3	150.00	3.40	5.50	17.00	234.	221.
	Oak Ridge	28.8	6.5	1.40	0.72	7.50	0.82	55.	54.
31 Mar 1984	# Penn State	104.7	15.0	1.90	<0.40	2.10	0.53	114.	127.
	Lewes	32.4	6.5	310.00	7.20	9.70	36.00	497.	447.

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

MAP3S PRECIPITATION CHEMISTRY DATA

1/

		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	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			
2 Apr 1984	Whiteface	1400	NAP	ISA	4.0	ISA	ISA	ISA	ISA	ISA
	Illinois	1800	4	ISA	6.5	ISA	25.	6.79	ISA	ISA
3 Apr 1984	Illinois	1600	1	5.08	763.0	800.0	25.	4.32	4.68	13.0
4 Apr 1984	Illinois	1330	2	5.08	95.0	95.0	25.	4.32	4.33	40.0
5 Apr 1984	Penn State	1630	NAP	5.03	1640.0	1600.0	25.	4.29	4.17	27.0
	Virginia	1600	5	5.04	3695.0	3430.0	22.	4.45	4.55	15.0
	Illinois	1830	MOE	5.08	315.0	310.0	25.	3.99	4.56	20.0
	# Lewes	1900	NAP	5.17	3014.0	2770.0	24.	4.55	4.63	21.0
	# Oxford	2400	19	5.04	MOE	3250.0	14.	4.87	4.30	26.0
6 Apr 1984	Whiteface	1400	NAP	5.04	1362.0	1070.0	19.	4.47	4.46	18.0
	Ithaca	1700	2	5.02	2480.0	2820.0	24.	4.17	4.11	31.0
	# Penn State	1830	NAP	5.03	90.0	68.0	25.	3.92	3.80	ISA
	Brookhaven	1400	40	5.08	1889.0	2150.0	25.	4.25	4.37	30.0
	Lewes	1600	NAP	ISA	31.0	ISA	20.	3.80	ISA	ISA
8 Apr 1984	# Penn State	1500	NAP	ISA	9.3	17.0	ISA	ISA	ISA	ISA
10 Apr 1984	# Whiteface	1600	NAP	5.04	110.0	58.0	19.	4.37	4.43	22.0
	Illinois	1500	17	5.08	661.0	790.0	25.	3.90	4.25	31.0
	Oxford	1730	4	ISA	16.0	33.0	21.	4.16	ISA	ISA
	Oak Ridge	1400	17	5.04	2674.0	2460.0	14.	4.30	4.31	26.0
13 Apr 1984	Penn State	1900	NAP	5.03	166.0	140.0	25.	3.98	4.06	48.0
	Illinois	1600	4	5.08	449.0	510.0	25.	4.20	4.21	37.0
	Oak Ridge	1800	1	5.04	100.0	110.0	15.	4.05	4.09	57.0
14 Apr 1984	Oxford	1530	8	5.04	571.0	490.0	19.	4.40	4.20	35.0

A.42

		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	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			
15 Apr 1984	Penn State	1700	NAP	5.03	652.0	650.0	25.	4.28	4.22	31.0
	Virginia	2230	7	5.04	3078.0	3190.0	23.	4.16	4.25	31.0
16 Apr 1984	Penn State	2300	NAP	5.03	252.0	220.0	25.	3.99	4.02	48.0
	Brookhaven	2000	10	5.08	5799.0	5570.0	25.	4.54	4.69	13.0
17 Apr 1984	Whiteface	1400	NAP	5.04	1380.0	1190.0	19.	4.73	4.76	9.2
	Ithaca	1300	3	5.02	1631.0	1600.0	23.	4.50	4.45	14.0
	Illinois	1600	MOE	5.08	1141.0	1130.0	25.	3.96	4.20	34.0
	# Lewes	1630	NAP	5.17	2995.0	2020.0	19.	4.19	4.31	33.0
18 Apr 1984	Whiteface	1500	NAP	5.04	824.0	490.0	19.	4.13	3.92	58.0
	Ithaca	1400	2	5.02	315.0	280.0	23.	3.85	3.80	62.0
	Penn State	2330	NAP	5.03	106.0	100.0	25.	3.87	3.80	78.0
	Illinois	1800	1	5.08	53.0	54.0	25.	5.67	5.36	23.0
19 Apr 1984	# Lewes	1400	NAP	5.17	349.0	310.0	20.	3.69	3.80	95.0
	Oxford	1530	43	5.04	684.0	880.0	14.	4.32	4.04	48.0
20 Apr 1984	Ithaca	1700	36	5.02	755.0	810.0	23.	3.69	3.63	94.0
21 Apr 1984	Whiteface	2000	NAP	5.04	192.0	150.0	19.	4.13	3.99	53.0
23 Apr 1984	# Oak Ridge	1500	34	5.04	2672.0	2500.0	14.	4.20	4.25	32.0
24 Apr 1984	Illinois	1500	MOE	5.08	1902.0	2070.0	25.	4.18	4.26	31.0
	Brookhaven	1800	6	5.08	1116.0	970.0	25.	4.68	4.97	9.2
	# Oxford	2400	23	5.04	MOE	3950.0	MOE	MOE	4.25	30.0
	Oak Ridge	1530	3	5.04	36.0	33.0	21.	4.30	4.39	ISA
25 Apr 1984	Whiteface	1000	NAP	5.04	1369.0	810.0	20.	4.86	4.87	8.9
	Ithaca	1500	48	5.02	500.0	750.0	23.	4.23	4.16	27.0

		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	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
25 Apr 1984	Penn State	1500	NAP	5.03	832.0	840.0	25.	4.12	4.09	44.0
	# Lewes	1430	NAP	5.17	1459.0	870.0	23.	4.88	5.07	16.0
29 Apr 1984	Penn State	1430	NAP	5.03	189.0	140.0	25.	3.96	4.05	80.0
	# Virginia	1800	4	5.04	833.0	2120.0	25.	4.39	4.65	15.0
	# Lewes	1600	NAP	5.17	911.0	670.0	21.	3.91	4.04	50.0
30 Apr 1984	Illinois	1900	2	5.08	183.0	220.0	25.	4.02	4.14	56.0
	Oxford	2300	13	5.04	404.0	410.0	19.	4.35	4.21	45.0

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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
2 Apr 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
3 Apr 1984	Illinois	4.1	12.0	NAP	14.0	3.20	<0.20
4 Apr 1984	Illinois	0.3	49.0	NAP	85.0	8.10	<0.20
5 Apr 1984	Penn State	<0.2	21.0	NAP	32.0	3.30	<0.20
	Virginia	<0.2	13.0	NAP	16.0	3.80	<0.20
	Illinois	0.2	23.0	NAP	31.0	4.40	<0.20
	# Lewes	<0.2	15.0	NAP	3.8	56.00	<0.20
	# Oxford	5.9	19.0	NAP	30.0	2.10	<0.20
6 Apr 1984	Whiteface	<0.2	14.0	NAP	18.0	3.50	<0.20
	Ithaca	2.6	18.0	NAP	38.0	2.90	<0.20
	# Penn State	<0.2	25.0	NAP	100.0	9.40	<0.20
	Brookhaven	<0.2	27.0	NAP	12.0	57.00	<0.20
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA
8 Apr 1984	# Penn State	ISA	ISA	ISA	ISA	ISA	ISA
10 Apr 1984	# Whiteface	<0.2	26.0	NAP	14.0	3.00	<0.20
	Illinois	<0.2	31.0	NAP	28.0	4.90	<0.20
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	1.9	26.0	NAP	19.0	5.20	<0.20
13 Apr 1984	Penn State	<0.2	36.0	NAP	64.0	6.50	<0.20
	Illinois	<0.2	45.0	NAP	33.0	6.20	<0.20
	Oak Ridge	<0.2	76.0	NAP	69.0	18.00	<0.20
14 Apr 1984	Oxford	<0.2	29.0	NAP	36.0	3.50	<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 Apr 1984	Penn State	<0.2	26.0	NAP	32.0	3.70	<0.20
	Virginia	<0.2	26.0	NAP	31.0	3.40	<0.20
16 Apr 1984	Penn State	0.8	30.0	NAP	64.0	4.00	<0.20
	Brookhaven	<0.2	12.0	NAP	11.0	9.00	<0.20
17 Apr 1984	Whiteface	<0.2	8.0	NAP	6.9	2.60	<0.20
	Ithaca	<0.2	12.0	NAP	15.0	2.60	<0.20
	Illinois	0.7	30.0	NAP	31.0	7.50	<0.20
	# Lewes	<0.2	26.0	NAP	26.0	37.00	<0.20
18 Apr 1984	Whiteface	<0.2	37.0	NAP	70.0	4.90	<0.20
	Ithaca	0.6	41.0	NAP	70.0	5.90	<0.20
	Penn State	2.5	40.0	NAP	96.0	6.80	<0.20
	Illinois	ISA	41.0	NAP	54.0	12.00	<0.20
19 Apr 1984	# Lewes	<0.2	67.0	NAP	100.0	37.00	<0.20
	Oxford	0.9	32.0	NAP	52.0	3.00	<0.20
20 Apr 1984	Ithaca	0.5	76.0	NAP	100.0	5.30	<0.40
21 Apr 1984	Whiteface	<0.2	45.0	NAP	34.0	4.00	<0.20
23 Apr 1984	# Oak Ridge	<0.2	34.0	NAP	26.0	9.90	<0.20
24 Apr 1984	Illinois	2.0	30.0	NAP	31.0	3.80	<0.20
	Brookhaven	<0.2	11.0	NAP	5.9	6.90	<0.20
	# Oxford	0.6	26.0	NAP	18.0	2.70	<0.20
	Oak Ridge	<0.2	41.0	NAP	42.0	5.90	0.25
25 Apr 1984	Whiteface	<0.2	9.7	NAP	13.0	4.00	<0.20
	Ithaca	<0.2	19.0	NAP	29.0	2.90	<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
25 Apr 1984	Penn State	<0.2	35.0	NAP	48.0	6.30	<0.20
	# Lewes	<0.2	7.8	NAP	4.0	79.00	<0.20
29 Apr 1984	Penn State	<0.2	120.0	NAP	120.0	22.00	0.61
	# Virginia	<0.2	15.0	NAP	22.0	5.00	<0.20
	# Lewes	<0.2	50.0	NAP	35.0	13.00	<0.20
30 Apr 1984	Illinois	<0.2	82.0	NAP	44.0	15.00	<0.20
	Oxford	<0.2	54.0	NAP	34.0	12.00	<0.20

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		(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
2 Apr 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
3 Apr 1984	Illinois	20.9	9.5	0.74	0.20	4.00	1.10	41.	42.
4 Apr 1984	Illinois	46.8	26.0	7.50	2.80	45.00	7.70	191.	180.
5 Apr 1984	Penn State	67.6	11.0	1.60	<0.50	2.40	0.41	77.	86.
	Virginia	28.2	7.9	3.40	0.15	1.20	0.41	46.	43.
	Illinois	27.5	31.0	2.30	0.46	6.60	1.80	81.	78.
	# Lewes	23.4	4.9	34.00	1.20	1.80	6.20	90.	80.
	# Oxford	50.1	19.0	0.65	0.18	1.20	0.33	70.	73.
6 Apr 1984	Whiteface	34.7	5.1	2.20	0.26	0.72	0.33	50.	44.
	Ithaca	77.6	7.8	0.51	<0.50	0.82	0.29	77.	88.
	# Penn State	158.5	4.3	6.70	0.72	3.60	0.91	159.	179.
	Brookhaven	42.7	10.0	33.00	1.00	2.10	5.40	123.	102.
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
8 Apr 1984	# Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
10 Apr 1984	# Whiteface	37.2	19.0	3.00	0.44	1.80	0.51	69.	64.
	Illinois	56.2	11.0	0.96	<0.40	10.00	1.50	95.	91.
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	49.0	11.0	1.30	0.36	4.50	0.62	76.	72.
13 Apr 1984	Penn State	87.1	21.0	3.90	<1.00	9.90	1.70	143.	135.
	Illinois	61.7	29.0	3.00	0.84	13.00	2.20	129.	125.
	Oak Ridge	81.3	50.0	18.00	4.60	31.00	5.10	239.	226.
14 Apr 1984	Oxford	63.1	26.0	1.00	0.56	8.90	1.30	98.	111.

		(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
15 Apr 1984	Penn State	60.3	15.0	1.30	<1.00	2.20	0.33	88.	82.
	Virginia	56.2	17.0	3.00	0.38	2.60	0.66	86.	83.
16 Apr 1984	Penn State	95.5	12.0	1.70	0.54	4.60	0.41	128.	120.
	Brookhaven	20.4	8.0	5.40	0.38	<0.50	<0.40	44.	34.
17 Apr 1984	Whiteface	17.4	3.9	0.48	<0.40	0.42	<0.40	26.	23.
	Ithaca	35.5	7.1	0.30	<0.40	1.00	0.29	42.	45.
	Illinois	63.1	24.0	0.44	<0.40	2.50	0.78	99.	94.
	# Lewes	49.0	19.0	24.00	1.10	5.30	4.40	115.	112.
18 Apr 1984	Whiteface	120.2	12.0	0.65	0.51	0.90	0.33	149.	136.
	Ithaca	158.5	11.0	0.35	<0.50	1.60	0.37	158.	174.
	Penn State	158.5	3.6	3.00	0.59	2.00	0.45	183.	171.
	Illinois	4.4	84.0	7.80	1.60	ISA	ISA	148.	ISA
19 Apr 1984	# Lewes	158.5	84.0	22.00	1.40	3.90	4.50	271.	283.
	Oxford	91.2	27.0	1.80	0.51	7.60	1.20	119.	138.
20 Apr 1984	Ithaca	234.4	37.0	0.78	0.49	7.40	1.30	257.	290.
21 Apr 1984	Whiteface	102.3	17.0	4.10	1.00	1.70	0.41	128.	129.
23 Apr 1984	# Oak Ridge	56.2	20.0	5.50	1.30	6.40	1.30	104.	98.
24 Apr 1984	Illinois	55.0	11.0	2.60	0.64	8.50	1.60	95.	89.
	Brookhaven	10.7	6.0	5.00	0.36	6.80	1.30	37.	38.
	# Oxford	56.2	14.0	2.00	0.92	4.20	0.91	73.	83.
	Oak Ridge	40.7	ISA	ISA	ISA	ISA	ISA	131.	ISA
25 Apr 1984	Whiteface	13.5	10.0	1.70	0.44	3.70	0.74	36.	35.
	Ithaca	69.2	5.0	0.52	<0.50	0.65	<0.20	70.	76.

		(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
25 Apr 1984	Penn State	81.3	15.0	3.10	1.40	4.60	0.99	124.	112.
	# Lewes	8.5	3.9	42.00	1.20	3.80	7.60	99.	78.
29 Apr 1984	Penn State	89.1	95.0	23.00	6.70	67.00	7.90	384.	364.
	# Virginia	22.4	9.6	5.40	1.10	5.50	1.10	57.	52.
	# Lewes	91.2	22.0	6.80	0.69	6.30	1.60	148.	136.
30 Apr 1984	Illinois	72.4	89.0	7.70	4.60	20.00	5.40	223.	225.
	Oxford	61.7	58.0	10.00	4.10	18.00	2.80	154.	175.

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MAP3S PRECIPITATION CHEMISTRY DATA

1/

		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	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			
1 May 1984	# Whiteface	1400	NAP	ISA	ISA	640.0	ISA	ISA	ISA	ISA
	# Ithaca	1200	9	5.02	810.0	760.0	22.	4.38	4.58	27.0
	Penn State	1230	NAP	5.03	89.0	100.0	25.	4.08	4.38	50.0
	Virginia	1600	18	5.04	51.0	ISA	24.	4.13	ISA	ISA
	# Lewes	1430	NAP	5.17	88.0	MOE	21.	4.01	3.82	44.0
	# Oak Ridge	1330	16	5.04	1415.0	1270.0	13.	4.49	4.59	23.0
2 May 1984	Illinois	1430	3	ISA	1.5	ISA	ISA	ISA	ISA	ISA
3 May 1984	Oxford	2330	2	6.11	1660.0	1460.0	18.	5.39	4.62	14.0
4 May 1984	Ithaca	1800	10	6.06	1590.0	1640.0	23.	4.35	4.43	20.0
	# Illinois	1600	8	6.06	103.0	103.0	25.	4.65	4.55	68.0
	Brookhaven	1400	20	5.08	1281.0	1270.0	26.	4.15	4.39	26.0
	# Lewes	1830	NAP	5.17	185.0	50.0	22.	4.13	4.28	40.0
	Oak Ridge	1900	12	6.07	4842.0	4260.0	13.	4.44	4.45	20.0
5 May 1984	Penn State	1430	NAP	6.06	1097.0	1130.0	25.	4.31	4.17	38.0
	Virginia	1800	18	6.06	3662.0	2040.0	24.	4.37	4.55	17.0
	# Oxford	2300	5	6.11	80.0	81.0	19.	4.29	ISA	ISA
6 May 1984	Whiteface	1500	NAP	6.05	2051.0	1400.0	18.	4.60	4.63	14.0
	Oxford	2300	1	6.11	648.0	600.0	20.	4.38	4.18	35.0
7 May 1984	Ithaca	1200	20	6.06	80.0	160.0	23.	3.87	3.90	61.0
	Virginia	1900	9	6.06	1450.0	1290.0	24.	4.18	4.34	26.0
	# Illinois	1430	6	6.06	68.0	52.0	25.	6.14	6.07	ISA
8 May 1984	Virginia	1600	2	6.06	158.0	220.0	24.	4.03	4.15	51.0
9 May 1984	Ithaca	1400	18	6.06	450.0	490.0	23.	4.00	4.06	46.0

MAP3S PRECIPITATION CHEMISTRY DATA (CONT.)

2/

		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	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			
9 May 1984	Penn State	1200	NAP	6.06	527.0	560.0	25.	3.91	3.92	65.0
	# Virginia	2000	2	6.06	264.0	130.0	24.	4.43	4.76	12.0
	Brookhaven	1700	12	6.06	1564.0	1460.0	24.	4.30	4.60	16.0
	# Lewes	1400	NAP	5.17	1413.0	880.0	21.	4.24	4.20	38.0
	# Oak Ridge	1500	23	6.07	9320.0	9090.0	21.	4.50	4.70	18.0
10 May 1984	Whiteface	1500	NAP	6.05	678.0	500.0	17.	4.10	4.23	33.0
	Ithaca	1800	7	6.06	225.0	230.0	23.	4.27	4.36	27.0
	Penn State	1500	NAP	ISA	18.0	24.0	25.	3.95	ISA	ISA
	Oxford	30	7	6.11	435.0	370.0	19.	5.01	4.57	24.0
12 May 1984	Whiteface	1500	NAP	6.05	1113.0	680.0	18.	4.04	4.14	44.0
	Ithaca	2200	19	6.06	2150.0	2420.0	23.	4.21	4.32	28.0
	Penn State	1700	NAP	6.06	538.0	440.0	25.	3.99	4.04	53.0
	# Oxford	1900	2	6.11	308.0	290.0	23.	6.89	4.34	40.0
13 May 1984	Whiteface	1600	NAF	6.05	93.0	81.0	18.	4.24	4.36	39.0
	Brookhaven	200	7	6.06	158.0	130.0	23.	3.63	3.79	110.0
14 May 1984	Ithaca	2200	6	6.06	1970.0	1950.0	22.	4.53	4.64	13.0
	Penn State	1600	NAP	6.06	411.0	390.0	25.	3.99	4.00	52.0
	Illinois	1600	NAP	6.06	401.0	450.0	25.	6.92	6.29	48.0
	Oxford	2330	2	6.11	224.0	195.0	18.	4.97	4.30	27.0
	Oak Ridge	1300	3	6.07	1125.0	1140.0	14.	4.33	4.55	21.0
15 May 1984	Brookhaven	1300	4	6.06	455.0	440.0	23.	3.88	4.08	50.0
17 May 1984	# Whiteface	1500	NAP	6.05	1286.0	810.0	18.	4.69	4.79	11.0
19 May 1984	Penn State	1300	NAP	6.06	1171.0	1110.0	25.	4.12	4.11	45.0

A.52

		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	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			
21 May 1984	Whiteface	1330	NAP	6.05	1644.0	1350.0	18.	4.13	4.27	40.0
	Ithaca	1300	5	6.06	775.0	810.0	23.	4.26	4.39	26.0
	Penn State	1400	NAP	6.06	908.0	870.0	25.	3.88	3.92	64.0
	# Illinois	1500	NAP	6.06	MOE	4240.0	25.	4.35	4.47	20.0
	# Brookhaven	1300	MOE	6.06	1149.0	1220.0	26.	3.95	4.14	42.0
22 May 1984	Illinois	1400	15	6.06	57.0	MOE	25.	3.95	3.94	ISA
	# Oxford	1200	9	6.11	341.0	370.0	26.	3.84	3.95	65.0
	Oak Ridge	1730	4	6.07	182.0	150.0	15.	4.01	4.07	53.0
23 May 1984	Ithaca	2100	4	6.06	835.0	930.0	22.	4.33	4.42	20.0
	Penn State	1900	NAP	6.06	521.0	480.0	25.	4.60	4.26	32.0
	Illinois	1600	1	6.06	428.0	470.0	25.	4.55	4.78	11.0
	# Oxford	1830	5	6.11	791.0	780.0	26.	4.44	4.46	19.0
24 May 1984	# Whiteface	1330	NAP	6.05	2018.0	1610.0	19.	4.39	4.53	17.0
	# Virginia	1630	5	6.06	848.0	845.0	24.	4.57	4.76	11.0
	Brookhaven	1430	3	6.06	946.0	890.0	24.	4.43	4.58	17.0
	Lewes	1400	NAP	6.06	1350.0	845.0	22.	4.52	4.58	13.0
	Oak Ridge	1300	2	6.07	486.0	390.0	20.	4.17	4.25	30.0
26 May 1984	Penn State	2330	NAP	ISA	30.0	17.0	25.	3.79	ISA	ISA
	Oxford	2200	4	6.11	316.0	325.0	26.	4.38	4.49	19.0
27 May 1984	Ithaca	1400	12	6.06	270.0	260.0	23.	3.80	3.89	73.0
	Brookhaven	2330	3	6.06	106.0	160.0	25.	4.00	4.14	40.0
28 May 1984	Whiteface	300	NAP	6.05	420.0	440.0	18.	3.94	4.03	49.0
	# Virginia	1830	18	6.06	1551.0	1500.0	24.	3.96	4.04	48.0

MAP3S PRECIPITATION CHEMISTRY DATA (CONT.)

4/

		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	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			
29 May 1984	Whiteface	2000	NAP	6.05	4071.0	3770.0	18.	4.85	4.78	8.4
	# Penn State	1600	NAP	6.06	2959.0	2950.0	25.	4.09	4.13	42.0
	Illinois	1430	NAP	6.06	2335.0	2890.0	25.	4.32	4.35	28.0
	Brookhaven	1300	4	6.06	502.0	520.0	25.	3.99	4.14	40.0
	Oak Ridge	1300	8	6.07	1589.0	1870.0	13.	4.50	4.62	14.0
30 May 1984	Ithaca	1300	21	6.06	3098.0	4060.0	23.	4.31	4.40	21.0
	Virginia	1630	14	6.06	597.0	540.0	24.	4.14	4.21	35.0
	# Oxford	1230	4	6.11	561.0	550.0	21.	4.06	4.09	46.0
31 May 1984	Whiteface	2000	NAP	6.05	425.0	420.0	18.	4.25	4.34	23.0
	Lewes	1800	NAP	6.06	11095.0	8760.0	21.	4.49	4.52	20.0

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

		(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 May 1984	# Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	# Ithaca	<0.2	48.0	NAP	43.0	7.10	<0.20
	Penn State	NAP	63.0	NAP	93.0	28.00	0.80
	Virginia	<0.2	ISA	ISA	ISA	ISA	ISA
	# Lewes	<0.2	49.0	NAP	27.0	11.00	<0.20
	# Oak Ridge	<0.2	30.0	NAP	29.0	12.00	<0.20
2 May 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
3 May 1984	Oxford	<0.2	13.0	NAP	13.0	1.30	<0.20
4 May 1984	Ithaca	<0.2	15.0	NAP	21.0	1.30	<0.20
	# Illinois	1.7	170.0	NAP	78.0	12.00	<0.20
	Brookhaven	<0.2	21.0	NAP	19.0	19.00	<0.20
	# Lewes	<0.2	37.0	NAP	51.0	43.00	<0.20
	Oak Ridge	<0.2	23.0	NAP	10.0	4.10	<0.20
5 May 1984	Penn State	<0.2	30.0	NAP	45.0	4.10	<0.20
	Virginia	<0.2	16.0	NAP	18.0	5.80	<0.20
	# Oxford	<0.2	ISA	ISA	ISA	ISA	ISA
6 May 1984	Whiteface	<0.2	12.0	NAP	12.0	12.00	<0.20
	Oxford	<0.2	34.0	NAP	23.0	3.90	<0.20
7 May 1984	Ithaca	ISA	48.0	NAP	52.0	3.90	<0.20
	Virginia	<0.2	23.0	NAP	22.0	3.10	<0.20
	# Illinois	ISA	120.0	NAP	78.0	17.00	<0.20
8 May 1984	Virginia	<0.2	46.0	NAP	67.0	10.00	<0.20
9 May 1984	Ithaca	<0.2	30.0	NAP	35.0	3.70	<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
9 May 1984	Penn State	<0.2	56.0	NAP	61.0	7.20	<0.20
	# Virginia	<0.2	9.2	NAP	14.0	2.00	<0.20
	Brookhaven	<0.2	14.0	NAP	21.0	7.50	<0.20
	# Lewes	<0.2	28.0	NAP	23.0	69.00	<0.20
	# Oak Ridge	<0.2	23.0	NAP	20.0	11.00	<0.20
10 May 1984	Whiteface	<0.2	31.0	NAP	32.0	31.00	<0.20
	Ithaca	<0.2	22.0	NAP	30.0	2.20	<0.20
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	29.0	NAP	44.0	7.00	<0.20
12 May 1984	Whiteface	<0.2	46.0	NAP	42.0	46.00	<0.20
	Ithaca	<0.2	26.0	NAP	30.0	2.00	<0.20
	Penn State	<0.2	52.0	NAP	56.0	6.60	<0.20
	# Oxford	<0.2	54.0	NAP	60.0	8.40	0.35
13 May 1984	Whiteface	ISA	51.0	NAP	62.0	51.00	<0.20
	Brookhaven	<0.2	110.0	NAP	140.0	77.00	<0.20
14 May 1984	Ithaca	<0.2	12.0	NAP	9.3	1.20	<0.20
	Penn State	<0.2	55.0	NAP	62.0	9.10	<0.20
	Illinois	<0.2	67.0	NAP	100.0	22.00	<0.20
	Oxford	5.5	27.0	NAP	18.0	2.90	<0.20
	Oak Ridge	<0.2	24.0	NAP	25.0	11.00	<0.20
15 May 1984	Brookhaven	<0.2	45.0	NAP	60.0	14.00	<0.20
17 May 1984	# Whiteface	<0.2	14.0	NAP	11.0	14.00	<0.20
19 May 1984	Penn State	1.0	37.0	NAP	53.0	5.20	<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
21 May 1984	Whiteface	<0.2	49.0	NAP	49.0	49.00	<0.20
	Ithaca	<0.2	28.0	NAP	29.0	2.90	<0.20
	Penn State	<0.2	65.0	NAP	42.0	6.70	<0.20
	# Illinois	<0.2	21.0	NAP	20.0	4.60	<0.20
	# Brookhaven	<0.2	46.0	NAP	36.0	6.40	<0.20
22 May 1984	Illinois	ISA	68.0	NAP	57.0	8.70	<0.20
	# Oxford	<0.2	66.0	NAP	60.0	16.00	<0.20
	Oak Ridge	<0.2	60.0	NAP	42.0	22.00	<0.20
23 May 1984	Ithaca	<0.2	17.0	NAP	13.0	2.50	<0.20
	Penn State	<0.2	34.0	NAP	27.0	5.20	<0.20
	Illinois	<0.2	14.0	NAP	13.0	3.20	<0.20
	# Oxford	<0.2	19.0	NAP	18.0	5.80	<0.20
24 May 1984	# Whiteface	<0.2	18.0	NAP	13.0	18.00	<0.20
	# Virginia	<0.2	9.0	NAP	9.1	1.40	<0.20
	Brookhaven	<0.2	14.0	NAP	17.0	12.00	<0.20
	Lewes	<0.2	12.0	NAP	7.8	7.80	<0.20
	Oak Ridge	<0.2	30.0	NAP	21.0	9.00	<0.20
26 May 1984	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	16.0	NAP	24.0	3.20	<0.20
27 May 1984	Ithaca	<0.2	76.0	NAP	24.0	4.20	<0.20
	Brookhaven	<0.2	32.0	NAP	46.0	13.00	<0.20
28 May 1984	Whiteface	<0.2	50.0	NAP	27.0	2.60	<0.20
	# Virginia	<0.2	41.0	NAP	40.0	3.90	<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 May 1984	Whiteface	<0.2	7.1	NAP	8.0	0.76	<0.20
	# Penn State	<0.2	38.0	NAP	38.0	3.60	<0.20
	Illinois	<0.2	31.0	NAP	31.0	4.90	<0.20
	Brookhaven	<0.2	33.0	NAP	33.0	23.00	<0.20
	Oak Ridge	<0.2	12.0	NAP	14.0	4.10	<0.20
30 May 1984	Ithaca	<0.2	17.0	NAP	17.0	2.20	<0.20
	Virginia	<0.2	27.0	NAP	30.0	10.00	<0.20
	# Oxford	<0.2	47.0	NAP	33.0	6.50	0.21
31 May 1984	Whiteface	<0.2	16.0	NAP	22.0	1.50	<0.20
	Lewes	<0.2	16.0	NAP	14.0	27.00	<0.20

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

		(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
1 May 1984	# Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Ithaca	26.3	54.0	6.20	3.40	29.00	4.40	146.	157.
	Penn State	41.7	140.0	23.00	11.00	23.00	3.80	249.	269.
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Lewes	151.4	31.0	6.30	2.60	13.00	2.90	136.	223.
	# Oak Ridge	25.7	48.0	7.80	4.40	8.40	1.70	101.	106.
2 May 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
3 May 1984	Oxford	24.0	9.1	0.70	0.23	1.20	0.45	40.	37.
4 May 1984	Ithaca	37.2	10.0	0.30	0.31	1.80	0.49	52.	52.
	# Illinois	28.2	270.0	10.00	2.30	52.00	8.50	430.	431.
	Brookhaven	40.7	21.0	9.40	0.77	5.20	2.30	80.	87.
	# Lewes	52.5	30.0	26.00	2.80	12.00	5.90	168.	155.
	Oak Ridge	35.5	12.0	1.60	0.87	2.50	0.58	60.	56.
5 May 1984	Penn State	67.6	20.0	2.00	0.54	3.50	0.82	109.	99.
	Virginia	28.2	10.0	3.40	0.44	2.00	0.78	56.	56.
	# Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
6 May 1984	Whiteface	23.4	9.3	0.30	<0.40	1.10	0.29	48.	36.
	Oxford	66.1	13.0	1.40	0.54	3.90	1.10	95.	91.
7 May 1984	Ithaca	125.9	13.0	0.61	0.26	0.92	0.21	152.	142.
	Virginia	45.7	25.0	1.50	0.67	3.00	0.78	71.	80.
	# Illinois	0.9	280.0	12.00	3.30	25.00	8.80	335.	364.
8 May 1984	Virginia	70.8	97.0	8.20	4.10	7.90	2.50	169.	201.
9 May 1984	Ithaca	87.1	12.0	0.61	0.26	2.20	0.45	115.	105.

		(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
9 May 1984	Penn State	120.2	25.0	2.30	1.60	4.20	1.10	180.	160.
	# Virginia	17.4	10.0	0.48	3.10	3.10	1.50	34.	40.
	Brookhaven	25.1	15.0	3.90	0.95	1.30	0.86	57.	49.
	# Lewes	52.5	16.0	37.00	1.70	3.10	6.90	148.	127.
	# Oak Ridge	20.0	37.0	7.60	2.80	3.90	1.50	77.	78.
10 May 1984	Whiteface	58.9	14.0	1.50	0.64	4.30	1.60	125.	87.
	Ithaca	43.7	25.0	0.39	0.36	4.00	1.20	84.	80.
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	26.9	44.0	3.00	1.10	8.90	2.80	109.	98.
12 May 1984	Whiteface	72.4	45.0	1.30	0.84	5.60	1.20	180.	133.
	Ithaca	47.9	21.0	0.48	0.44	5.30	0.99	84.	82.
	Penn State	91.2	25.0	2.00	2.70	12.00	2.30	167.	150.
	# Oxford	45.7	42.0	5.60	3.50	31.00	5.00	177.	169.
13 May 1984	Whiteface	43.7	91.0	4.80	1.30	13.00	4.30	215.	175.
	Brookhaven	162.2	0.1	47.00	6.80	30.00	13.00	437.	302.
14 May 1984	Ithaca	22.9	7.9	<0.50	<0.40	1.00	0.25	35.	33.
	Penn State	83.2	40.0	2.10	2.90	14.00	3.80	181.	164.
	Illinois	0.5	91.0	15.00	4.00	110.00	9.80	256.	350.
	Oxford	50.1	12.0	1.80	0.36	3.00	0.86	75.	72.
	Oak Ridge	20.2	22.0	5.70	1.30	7.80	1.30	84.	75.
15 May 1984	Brookhaven	83.2	42.0	6.10	1.00	4.80	2.00	164.	146.
17 May 1984	# Whiteface	16.2	11.0	0.65	0.31	4.50	1.10	53.	39.
19 May 1984	Penn State	77.6	22.0	1.50	0.59	9.40	3.00	132.	127.

		H		N		K		C		M		A		C	
		+		+		+		+		+		+		+	
		)		)		)		)		)		)		)	
		UMOL/L		UMOL/L		UMOL/L		UMOL/L		UMOL/L		UEQ/L		UEQ/L	
A.61	21 May 1984	Whiteface	53.7	81.0	0.87	1.00	6.40	1.90	196.	153.					
		Ithaca	40.7	31.0	0.74	0.28	5.90	1.40	88.	87.					
		Penn State	120.2	31.0	2.40	1.50	4.30	1.20	179.	166.					
		# Illinois	33.9	19.0	1.70	<0.40	3.60	0.95	67.	64.					
		# Brookhaven	72.4	41.0	2.20	0.38	2.10	0.70	134.	122.					
	22 May 1984	Illinois	114.8	47.0	5.20	1.00	5.80	2.80	202.	185.					
		# Oxford	112.2	37.0	13.00	1.60	13.00	3.50	208.	197.					
		Oak Ridge	85.1	40.0	20.00	1.90	9.00	4.90	184.	175.					
	23 May 1984	Ithaca	38.0	4.9	0.52	0.92	1.20	0.41	50.	48.					
		Penn State	55.0	26.0	2.90	1.90	3.70	1.40	100.	96.					
		Illinois	16.6	11.0	1.60	<0.40	3.90	1.10	44.	39.					
		# Oxford	34.7	14.0	1.20	0.51	2.10	0.58	62.	56.					
	24 May 1984	# Whiteface	29.5	10.0	1.10	1.70	1.40	0.74	67.	47.					
		# Virginia	17.4	11.0	0.87	1.00	1.60	0.53	29.	35.					
		Brookhaven	26.3	8.0	8.40	1.00	1.60	1.50	57.	51.					
		Lewes	26.3	5.1	4.60	0.56	0.67	0.66	40.	39.					
		Oak Ridge	56.2	16.0	4.50	0.61	1.80	0.86	90.	83.					
	26 May 1984	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA					
		Oxford	32.4	11.0	2.00	0.59	4.60	0.78	59.	57.					
	27 May 1984	Ithaca	128.8	42.0	1.40	2.20	6.90	1.60	180.	191.					
		Brookhaven	72.4	14.0	9.40	1.60	4.00	1.40	123.	108.					
	28 May 1984	Whiteface	93.3	19.0	1.70	1.90	3.20	1.20	130.	125.					
		# Virginia	91.2	32.0	1.50	0.49	2.50	0.70	126.	132.					

		(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
29 May 1984	Whiteface	16.6	5.5	<0.50	0.28	1.00	0.29	23.	25.
	* Penn State	74.1	28.0	1.90	0.69	1.30	0.49	118.	108.
	Illinois	44.7	31.0	3.00	0.61	5.90	1.20	98.	93.
	Brookhaven	72.4	21.0	13.00	0.87	2.00	1.90	122.	115.
	Oak Ridge	24.0	7.6	3.40	0.49	1.20	0.70	42.	39.
30 May 1984	Ithaca	39.8	14.0	0.26	<0.40	0.70	<0.40	53.	55.
	Virginia	61.7	16.0	14.00	1.30	2.30	2.00	102.	102.
	* Oxford	81.3	30.0	2.60	0.59	3.10	0.86	134.	122.
31 May 1984	Whiteface	45.7	6.6	1.10	0.18	1.10	0.29	56.	56.
	Lewes	30.2	8.8	15.00	0.82	1.10	2.30	73.	62.

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

MAP3S PRECIPITATION CHEMISTRY DATA

1/

		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	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			
1 Jun 1984	Brookhaven	1300	20	6.06	7473.0	6880.0	27.	4.69	4.79	12.0
2 Jun 1984	Virginia	1400	6	7.05	42.0	45.0	24.	3.68	ISA	ISA
3 Jun 1984	Penn State	1400	NAP	6.06	529.0	495.0	25.	3.79	3.86	85.0
	Brookhaven	1700	2	6.06	3580.0	1860.0	27.	4.70	4.88	8.3
4 Jun 1984	Whiteface	1300	NAP	7.11	80.0	65.0	19.	4.77	5.55	12.0
	Ithaca	1200	9	6.06	140.0	180.0	23.	3.62	3.69	112.0
6 Jun 1984	Ithaca	1900	5	7.03	355.0	370.0	22.	3.83	3.91	63.0
7 Jun 1984	Whiteface	1600	NAP	7.11	457.0	390.0	23.	4.41	4.16	40.0
	Penn State	1330	NAP	7.03	188.0	150.0	25.	3.84	3.83	72.0
	Illinois	1530	4	ISA	12.0	34.0	25.	6.34	ISA	ISA
	Brookhaven	1400	1	7.10	336.0	325.0	26.	3.50	3.64	124.0
	Lewes	1330	NAP	7.20	54.0	50.0	22.	3.62	ISA	ISA
11 Jun 1984	Illinois	1630	10	7.03	302.0	310.0	25.	4.75	4.69	27.0
13 Jun 1984	Illinois	1500	1	7.03	57.0	54.0	25.	6.11	5.96	ISA
14 Jun 1984	Ithaca	1900	9	7.03	1132.0	1120.0	22.	4.07	4.16	39.0
	Penn State	1900	NAP	7.03	653.0	650.0	25.	3.70	3.66	109.0
	Brookhaven	1300	4	7.10	992.0	940.0	26.	3.55	3.69	111.0
	* Oxford	1900	2	7.05	657.0	630.0	23.	4.19	4.30	28.0
15 Jun 1984	Whiteface	1400	NAP	7.11	838.0	760.0	20.	4.26	4.37	26.0
	Oak Ridge	1300	2	7.06	289.0	260.0	22.	3.59	3.68	97.0
18 Jun 1984	Whiteface	1900	NAP	7.11	191.0	160.0	23.	4.61	4.81	9.2
	Penn State	1500	NAP	7.03	3400.0	3390.0	25.	3.97	3.92	60.0
	Virginia	1530	5	7.05	855.0	800.0	25.	4.11	4.30	30.0

		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	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 Jun 1984	Brookhaven	1300	9	ISA	23.0	81.0	24.	4.14	ISA	ISA
	Lewes	1800	NAP	7.20	2100.0	1970.0	21.	3.94	4.06	45.0
19 Jun 1984	Whiteface	1300	NAP	7.11	120.0	98.0	23.	3.98	4.01	59.0
	Ithaca	1400	18	7.03	2495.0	2500.0	23.	4.42	4.49	17.0
	Penn State	1500	NAP	7.03	1178.0	1090.0	25.	4.01	4.07	42.0
	Brookhaven	1300	7	7.10	889.0	890.0	24.	3.68	3.84	79.0
	Lewes	1400	NAP	7.20	601.0	570.0	26.	3.94	4.08	45.0
	* Oxford	1200	1	7.05	204.0	195.0	25.	3.96	4.15	54.0
	Oak Ridge	1300	2	7.06	16.0	33.0	16.	3.91	ISA	ISA
21 Jun 1984	Oxford	1200	2	7.05	117.0	110.0	22.	3.82	3.88	74.0
22 Jun 1984	Illinois	1600	5	ISA	19.0	ISA	25.	3.80	ISA	ISA
	Oak Ridge	1300	5	7.06	587.0	500.0	21.	3.96	4.06	47.0
24 Jun 1984	* Oxford	1730	3	7.05	583.0	490.0	23.	4.22	4.26	33.0
25 Jun 1984	Whiteface	1230	NAP	7.11	639.0	570.0	22.	4.37	4.51	19.0
	Ithaca	1400	11	7.03	820.0	800.0	23.	4.07	4.12	38.0
	Penn State	1400	NAP	7.03	710.0	660.0	25.	3.89	3.90	64.0
	Virginia	1900	8	7.05	431.0	360.0	27.	4.36	4.51	16.0
	Illinois	1930	9	7.03	31.0	MOE	25.	4.07	ISA	ISA
	Brookhaven	1300	2	7.10	4626.0	4310.0	24.	4.58	4.73	13.0
	Lewes	1400	NAP	7.20	129.0	100.0	25.	4.56	4.67	29.0
	* Oak Ridge	1300	8	7.06	1078.0	975.0	22.	3.86	3.97	59.0
26 Jun 1984	Ithaca	2100	2	7.03	220.0	195.0	23.	4.11	4.11	42.0
	Penn State	1400	NAP	ISA	14.0	17.0	25.	3.76	ISA	ISA

		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	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			
27 Jun 1984	Oxford	1830	7	7.05	92.0	98.0	23.	3.96	3.99	52.0
28 Jun 1984	* Whiteface	1300	NAP	7.11	115.0	98.0	21.	4.06	4.41	40.0
	Ithaca	2200	18	7.03	640.0	630.0	23.	3.93	3.94	58.0
	Penn State	1400	NAP	7.03	95.0	68.0	25.	3.63	3.64	121.0
29 Jun 1984	Brookhaven	1400	2	7.10	1580.0	1500.0	25.	4.03	4.22	35.0
	Oak Ridge	1830	1	7.06	1715.0	1510.0	14.	3.97	4.08	49.0
30 Jun 1984	Ithaca	2000	9	7.03	240.0	240.0	23.	3.80	3.82	76.0
	Virginia	1300	3	7.05	1980.0	1890.0	26.	4.44	4.43	20.0

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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
1 Jun 1984	Brookhaven	<0.2	8.7	NAP	8.0	29.00	<0.20
2 Jun 1984	Virginia	<0.2	ISA	ISA	ISA	ISA	ISA
3 Jun 1984	Penn State	<0.2	85.0	NAP	93.0	8.20	<0.20
	Brookhaven	<0.2	6.5	NAP	5.0	11.00	<0.20
4 Jun 1984	Whiteface	<0.2	27.0	NAP	11.0	2.00	<0.20
	Ithaca	<0.2	110.0	NAP	100.0	6.80	<0.20
6 Jun 1984	Ithaca	<0.2	53.0	NAP	47.0	5.90	<0.20
7 Jun 1984	Whiteface	<0.2	36.0	NAP	41.0	5.10	<0.20
	Penn State	<0.2	51.0	NAP	55.0	8.80	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	<0.2	110.0	NAP	79.0	9.20	<0.20
	Lewes	ISA	75.0	NAP	95.0	40.00	<0.20
11 Jun 1984	Illinois	<0.2	42.0	NAP	31.0	38.00	<0.20
13 Jun 1984	Illinois	<0.2	56.0	NAP	87.0	39.00	<0.20
14 Jun 1984	Ithaca	<0.2	43.0	NAP	38.0	4.40	<0.20
	Penn State	<0.2	87.0	NAP	85.0	11.00	<0.20
	Brookhaven	<0.2	95.0	NAP	75.0	8.50	<0.20
	# Oxford	<0.2	27.0	NAP	34.0	4.50	<0.20
15 Jun 1984	Whiteface	<0.2	25.0	NAP	20.0	1.80	<0.20
	Oak Ridge	<0.2	84.0	NAP	59.0	7.20	<0.20
18 Jun 1984	Whiteface	<0.2	8.4	NAP	6.8	3.70	<0.20
	Penn State	<0.2	48.0	NAP	40.0	5.40	<0.20
	Virginia	<0.2	32.0	NAP	23.0	4.80	<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
18 Jun 1984	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA
	Lewes	<0.2	42.0	NAP	33.0	7.70	<0.20
19 Jun 1984	Whiteface	<0.2	49.0	NAP	42.0	15.00	<0.20
	Ithaca	<0.2	15.0	NAP	14.0	1.60	<0.20
	Penn State	<0.2	39.0	NAP	26.0	3.20	<0.20
	Brookhaven	<0.2	63.0	NAP	53.0	7.20	<0.20
	Lewes	<0.2	37.0	NAP	39.0	7.10	<0.20
	# Oxford	<0.2	72.0	NAP	57.0	7.70	<0.20
	Oak Ridge	ISA	34.0	NAP	69.0	7.80	<0.20
21 Jun 1984	Oxford	<0.2	71.0	NAP	86.0	5.20	<0.20
22 Jun 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	<0.2	32.0	NAP	35.0	4.10	<0.20
24 Jun 1984	# Oxford	<0.2	32.0	NAP	38.0	3.00	<0.20
25 Jun 1984	Whiteface	<0.2	18.0	NAP	15.0	2.70	<0.20
	Ithaca	<0.2	37.0	NAP	20.0	5.30	<0.20
	Penn State	MOE	51.0	NAP	46.0	6.10	<0.20
	Virginia	<0.2	16.0	NAP	19.0	9.10	<0.20
	Illinois	ISA	61.0	NAP	84.0	19.00	<0.20
	Brookhaven	<0.2	7.6	NAP	5.7	19.00	<0.20
	Lewes	<0.2	14.0	NAP	18.0	110.00	<0.20
	# Oak Ridge	<0.2	59.0	NAP	35.0	4.40	<0.20
26 Jun 1984	Ithaca	<0.2	43.0	NAP	31.0	7.90	<0.20
	Penn State	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
27 Jun 1984	Oxford	<0.2	41.0	NAP	49.0	7.20	<0.20
28 Jun 1984	# Whiteface	<0.2	40.0	NAP	24.0	2.50	<0.20
	Ithaca	<0.2	45.0	NAP	43.0	5.40	<0.20
	Penn State	<0.2	110.0	NAP	100.0	10.00	<0.20
29 Jun 1984	Brookhaven	<0.2	27.0	NAP	26.0	8.40	<0.20
	Oak Ridge	<0.2	44.0	NAP	27.0	4.00	<0.20
30 Jun 1984	Ithaca	<0.2	55.0	NAP	75.0	8.20	<0.20
	Virginia	<0.2	19.0	NAP	11.0	5.90	<0.20

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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	UEQ/L	UEQ/L	UEQ/L	UEQ/L
1 Jun 1984	Brookhaven	16.2	3.1	18.00	0.77	0.75	2.30	54.	44.								
2 Jun 1984	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
3 Jun 1984	Penn State	138.0	84.0	2.30	1.30	18.00	4.60	271.	271.								
	Brookhaven	13.2	3.0	6.40	0.59	0.67	0.91	29.	26.								
4 Jun 1984	Whiteface	2.8	24.0	6.90	5.20	15.00	2.90	67.	75.								
	Ithaca	204.2	0.9	1.30	0.92	5.80	1.10	327.	221.								
6 Jun 1984	Ithaca	123.0	36.0	1.60	1.30	5.80	1.60	159.	177.								
7 Jun 1984	Whiteface	69.2	23.0	3.70	1.10	5.50	1.60	118.	111.								
	Penn State	147.9	3.0	3.80	0.54	7.60	2.00	166.	174.								
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Brookhaven	229.1	43.0	4.40	0.62	10.00	2.00	308.	301.								
	Lewes	ISA	25.0	31.00	1.30	12.00	6.50	285.	ISA								
11 Jun 1984	Illinois	20.4	29.0	21.00	2.70	27.00	6.50	153.	140.								
13 Jun 1984	Illinois	1.1	ISA	78.00	11.00	47.00	25.00	238.	ISA								
14 Jun 1984	Ithaca	69.2	31.0	2.90	0.81	7.60	2.10	128.	123.								
	Penn State	210.8	33.0	4.10	0.54	9.20	1.90	270.	279.								
	Brookhaven	204.2	61.0	4.30	<0.40	5.70	1.90	274.	285.								
	* Oxford	50.1	21.0	2.90	0.89	6.70	1.60	93.	92.								
15 Jun 1984	Whiteface	42.7	24.0	1.40	<0.40	1.60	0.53	72.	72.								
	Oak Ridge	208.9	22.0	2.70	1.70	9.40	2.40	234.	259.								
10 Jun 1984	Whiteface	15.5	6.7	3.60	<0.40	0.37	<0.40	27.	27.								
	Penn State	120.2	26.0	1.20	0.38	2.00	0.50	141.	153.								
	Virginia	50.1	31.0	3.30	2.10	1.60	0.53	92.	91.								

		(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 Jun 1984	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Lewes	83.2	23.0	3.70	0.84	1.30	0.53	125.	114.
19 Jun 1984	Whiteface	97.7	48.0	15.00	1.30	2.70	0.66	155.	169.
	Ithaca	32.4	9.9	0.27	<0.40	0.75	0.21	46.	44.
	Penn State	85.1	12.0	0.82	0.27	1.80	0.45	107.	103.
	Brookhaven	144.5	40.0	3.90	1.50	2.10	0.70	186.	196.
	Lewes	83.2	15.0	2.60	0.22	1.90	0.62	120.	106.
	# Oxford	70.8	98.0	7.10	4.00	21.00	5.90	209.	234.
	Oak Ridge	ISA	ISA	ISA	ISA	ISA	ISA	145.	ISA
21 Jun 1984	Oxford	131.8	74.0	0.91	0.89	15.00	6.70	233.	251.
22 Jun 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	87.1	8.7	0.91	0.54	3.00	1.00	103.	105.
24 Jun 1984	# Oxford	55.0	37.0	0.82	0.46	4.60	0.99	105.	104.
25 Jun 1984	Whiteface	30.9	18.0	2.10	<0.40	0.92	0.29	54.	53.
	Ithaca	75.9	19.0	2.70	0.24	1.30	0.58	107.	102.
	Penn State	125.9	29.0	4.00	0.81	1.50	0.70	154.	164.
	Virginia	29.5	3.0	5.90	<0.20	0.92	0.53	60.	41.
	Illinois	ISA	57.0	ISA	ISA	48.00	19.00	225.	ISA
	Brookhaven	18.6	3.1	19.00	<0.40	0.70	1.60	40.	45.
	Lewes	21.4	3.1	91.00	2.00	4.00	11.00	156.	147.
	# Oak Ridge	107.2	28.0	0.96	<0.40	3.80	0.99	157.	146.
26 Jun 1984	Ithaca	77.6	26.0	3.10	0.67	5.60	1.40	125.	121.
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA

		A N I O N		C A T I O N					
		(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
27 Jun 1984	Oxford	102.3	15.0	1.50	1.30	8.20	1.50	138.	140.
28 Jun 1984	# Whiteface	38.9	23.0	5.10	1.30	1.20	0.33	107.	71.
	Ithaca	114.8	30.0	1.40	0.91	4.00	0.86	138.	157.
	Penn State	229.1	52.0	1.10	1.60	23.00	4.20	330.	338.
29 Jun 1984	Brookhaven	60.3	21.0	7.30	0.22	1.80	0.86	88.	94.
	Oak Ridge	83.2	36.0	<0.50	<0.40	4.80	0.66	119.	130.
30 Jun 1984	Ithaca	151.4	26.0	0.91	0.54	10.00	2.70	193.	204.
	Virginia	37.2	13.0	3.60	2.10	0.75	0.21	55.	58.

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

MAP3S PRECIPITATION CHEMISTRY DATA

1/

		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	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			
1 Jul 1984	Virginia	1500	3	7.05	330.0	ISA	25.	4.58	4.16	36.0
	Brookhaven	2400	6	7.10	526.0	450.0	25.	4.06	4.18	38.0
2 Jul 1984	Whiteface	1500	NAP	ISA	20.0	16.0	ISA	ISA	ISA	ISA
	Ithaca	1400	12	7.03	210.0	230.0	23.	4.10	4.12	37.0
	Penn State	1800	NAP	7.03	2674.0	2540.0	25.	4.39	4.37	22.0
	Oak Ridge	1430	6	7.06	1633.0	1430.0	22.	3.91	4.00	56.0
3 Jul 1984	Whiteface	1500	NAP	ISA	10.0	ISA	ISA	ISA	ISA	ISA
	Penn State	1430	NAP	8.07	403.0	360.0	25.	3.72	3.75	89.0
	Lewes	1230	NAP	8.03	370.0	325.0	25.	4.25	4.34	26.0
4 Jul 1984	Oxford	1430	17	8.08	1433.0	1350.0	25.	3.89	3.93	61.0
5 Jul 1984	Illinois	1630	8	8.03	1276.0	1280.0	25.	4.16	4.31	32.0
	Oxford	1400	5	8.08	1614.0	1510.0	23.	4.30	4.32	25.0
	Oak Ridge	1830	3	8.03	852.0	750.0	23.	4.45	4.67	14.0
6 Jul 1984	Whiteface	1630	NAP	7.11	2730.0	2360.0	23.	4.32	4.48	18.0
	Ithaca	1200	21	8.16	3390.0	3380.0	24.	4.14	4.20	31.0
	Penn State	1230	NAP	8.07	1157.0	1110.0	25.	3.76	3.85	74.0
	Illinois	1630	1	8.03	101.0	67.0	24.	4.81	4.81	24.0
	Brookhaven	1400	6	8.13	546.0	490.0	23.	3.69	3.78	84.0
	Oak Ridge	1830	3	8.03	1526.0	1370.0	13.	4.61	4.82	9.7
7 Jul 1984	Whiteface	1730	NAP	7.11	617.0	520.0	23.	4.13	4.22	31.0
	Ithaca	1800	6	8.16	630.0	620.0	23.	3.84	3.89	60.0
	Penn State	1430	NAP	8.07	911.0	900.0	25.	3.99	4.04	47.0
	Oxford	1430	3	8.08	369.0	370.0	23.	3.92	3.92	59.0

		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	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			
8 Jul 1984	Virginia	1800	11	8.03	2447.0	2240.0	25.	4.27	4.40	21.0
	Lewes	1500	NAP	8.03	1605.0	1300.0	26.	3.93	4.01	52.0
9 Jul 1984	Illinois	1630	1	ISA	1.0	ISA	ISA	ISA	ISA	ISA
	Brookhaven	130	7	8.13	3075.0	3020.0	23.	4.36	4.53	17.0
	Oak Ridge	1400	4	8.03	1014.0	970.0	21.	4.25	4.40	22.0
11 Jul 1984	Ithaca	1400	10	8.16	635.0	630.0	23.	3.73	3.80	80.0
	Penn State	1430	NAP	8.07	258.0	240.0	25.	4.26	4.31	31.0
	Virginia	2100	1	8.03	971.0	740.0	28.	4.17	4.25	29.0
	Lewes	1400	NAP	8.03	39.0	16.0	27.	3.69	3.77	ISA
12 Jul 1984	Whiteface	1230	NAP	8.06	603.0	530.0	23.	3.96	4.06	46.0
	Penn State	1430	NAP	8.07	1377.0	1380.0	25.	3.95	4.02	50.0
	Illinois	1530	12	8.03	262.0	471.0	25.	4.47	4.60	21.0
	Brookhaven	1430	3	8.13	114.0	81.0	20.	3.66	3.76	88.0
	Lewes	1630	NAP	8.03	1199.0	845.0	29.	4.12	4.36	25.0
	Oxford	1400	2	8.08	42.0	33.0	24.	3.91	ISA	ISA
13 Jul 1984	Oak Ridge	1700	3	8.03	2175.0	1850.0	14.	4.57	4.55	15.0
16 Jul 1984	Whiteface	1300	NAP	8.06	1929.0	1760.0	23.	3.90	3.98	56.0
	Penn State	1430	NAP	ISA	35.0	17.0	25.	3.85	ISA	ISA
	Illinois	1630	4	8.03	770.0	1020.0	23.	4.24	4.24	31.0
	Brookhaven	1930	3	8.13	821.0	810.0	20.	3.75	3.89	66.0
	Oxford	1900	2	8.08	122.0	98.0	25.	3.94	4.00	53.0
17 Jul 1984	Virginia	1400	3	ISA	42.0	70.0	26.	3.66	ISA	ISA
	Oak Ridge	1300	3	8.03	703.0	580.0	15.	4.22	4.32	25.0

		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	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 Jul 1984	Whiteface	1700	NAP	8.06	205.0	180.0	24.	3.78	3.84	77.0
	Penn State	1430	NAP	8.07	784.0	780.0	25.	3.58	3.64	116.0
	Virginia	1600	3	8.03	811.0	600.0	26.	5.01	4.68	12.0
	Lewes	1830	NAP	8.03	504.0	439.0	24.	4.92	5.03	7.8
	Oak Ridge	1330	3	8.03	1990.0	1765.0	22.	4.31	4.43	18.0
19 Jul 1984	Whiteface	1200	NAP	8.06	225.0	230.0	22.	4.39	4.48	17.0
	Ithaca	1500	9	8.16	100.0	110.0	23.	3.76	3.80	80.0
	Brookhaven	1230	2	8.13	2021.0	1900.0	20.	4.21	4.34	23.0
	Lewes	1200	NAP	ISA	26.0	16.0	26.	3.76	ISA	ISA
21 Jul 1984	Oxford	1430	11	8.08	104.0	98.0	25.	3.58	3.58	133.0
22 Jul 1984	Lewes	1500	NAP	8.03	3058.0	2590.0	25.	4.61	4.65	12.0
23 Jul 1984	Whiteface	1200	NAP	8.06	53.0	49.0	23.	3.66	3.75	ISA
	* Virginia	1600	15	8.03	5568.0	MOE	26.	4.89	4.76	10.0
	Illinois	1530	2	8.03	499.0	480.0	25.	4.16	4.18	39.0
	Brookhaven	1330	NAP	8.10	2732.0	2730.0	20.	4.81	4.96	8.1
	* Oak Ridge	1300	2	8.03	105.0	100.0	16.	4.00	3.96	58.0
24 Jul 1984	Ithaca	1500	4	ISA	15.0	16.0	23.	3.80	ISA	ISA
25 Jul 1984	Illinois	1530	1	8.03	59.0	41.0	25.	4.03	4.05	ISA
26 Jul 1984	* Virginia	2200	7	8.03	587.0	MOE	26.	3.63	3.66	113.0
	Oak Ridge	1300	2	8.03	203.0	180.0	16.	4.09	4.12	45.0
27 Jul 1984	Illinois	1630	MOE	8.03	1384.0	1670.0	24.	3.77	3.79	87.0
	Lewes	1630	NAP	8.03	673.0	440.0	24.	4.06	4.13	39.0
	Oxford	1130	13	8.08	3605.0	3450.0	23.	3.79	3.82	74.0

MAP3C PRECIPITATION CHEMISTRY DATA (CONT.)

4/

		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	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			
28 Jul 1984	Whiteface	1500	NAP	8.06	396.0	340.0	21.	4.00	4.05	50.0
	Ithaca	2400	11	8.16	3100.0	3040.0	23.	4.25	4.28	26.0
	Penn State	30	NAP	8.07	974.0	955.0	25.	3.72	3.78	86.0
	Virginia	1700	3	8.03	832.0	700.0	26.	3.73	3.79	84.0
	Brookhaven	1800	4	8.10	2456.0	2260.0	20.	4.15	4.29	25.0
30 Jul 1984	Illinois	1930	5	8.03	596.0	570.0	24.	4.47	4.47	21.0
	Lewes	1730	NAP	8.03	125.0	81.0	23.	4.28	4.32	29.0
31 Jul 1984	Oak Ridge	1400	23	8.03	2761.0	2565.0	21.	4.17	4.15	37.0

MISSING DATA CODES:

NSC MEANS NO SAMPLE COLLECTED
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NAP MEANS NO ANALYSIS PERFORMED
MOE MEANS MALFUNCTION 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 Jul 1984	Virginia	MOE	31.0	NAP	33.0	6.10	<0.20
	Brookhaven	<0.2	32.0	NAP	26.0	19.00	<0.20
2 Jul 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Ithaca	<0.2	20.0	NAP	40.0	4.10	<0.20
	Penn State	<0.2	18.0	<0.10	16.0	2.20	<0.20
	Oak Ridge	<0.2	46.0	NAP	39.0	3.20	<0.20
3 Jul 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Penn State	<0.2	94.0	NAP	60.0	7.40	<0.20
	Lewes	<0.2	18.0	NAP	30.0	14.00	<0.20
4 Jul 1984	Oxford	<0.2	58.0	NAP	38.0	4.40	<0.20
5 Jul 1984	Illinois	<0.2	28.0	NAP	31.0	2.90	<0.20
	Oxford	<0.2	24.0	NAP	15.0	2.70	<0.20
	Oak Ridge	<0.2	14.0	NAP	14.0	3.20	<0.20
6 Jul 1984	Whiteface	<0.2	19.0	NAP	9.1	<2.00	<0.20
	Ithaca	<0.2	32.0	NAP	15.0	1.60	<0.20
	Penn State	<0.2	92.0	NAP	41.0	4.40	<0.20
	Illinois	<0.2	34.0	NAP	37.0	4.50	<0.20
	Brookhaven	<0.2	71.0	NAP	68.0	27.00	<0.20
	Oak Ridge	<0.2	8.3	NAP	9.4	3.40	<0.20
7 Jul 1984	Whiteface	<0.2	30.0	NAP	23.0	1.30	<0.20
	Ithaca	<0.2	51.0	NAP	34.0	2.70	<0.20
	Penn State	<0.2	54.0	NAP	29.0	2.80	<0.20
	Oxford	<0.2	56.0	NAP	33.0	5.80	<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
8 Jul 1984	Virginia	<0.2	14.0	NAP	16.0	2.60	<0.20
	Lewes	<0.2	45.0	NAP	44.0	10.00	<0.20
9 Jul 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	<0.2	12.0	NAP	18.0	23.00	<0.20
	Oak Ridge	<0.2	21.0	NAP	22.0	2.20	<0.20
11 Jul 1984	Ithaca	<0.2	72.0	NAP	60.0	7.10	<0.20
	Penn State	MOE	38.0	NAP	30.0	3.30	<0.20
	Virginia	<0.2	23.0	NAP	14.0	1.60	<0.20
	Lewes	ISA	ISA	NAP	ISA	19.00	<0.20
12 Jul 1984	Whiteface	<0.2	34.0	NAP	35.0	3.60	<0.20
	Penn State	<0.2	56.0	NAP	30.0	3.30	<0.20
	Illinois	<0.2	22.0	NAP	22.0	5.20	<0.20
	Brookhaven	<0.2	60.0	NAP	110.0	21.00	<0.20
	Lewes	<0.2	25.0	NAP	19.0	4.20	<0.20
	Oxford	<0.2	ISA	ISA	ISA	ISA	ISA
13 Jul 1984	Oak Ridge	<0.2	12.0	NAP	14.0	2.80	<0.20
16 Jul 1984	Whiteface	<0.2	56.0	NAP	25.0	2.70	<0.20
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	<0.2	25.0	NAP	22.0	5.10	<0.20
	Brookhaven	<0.2	60.0	NAP	55.0	9.90	<0.20
	Oxford	<0.2	49.0	NAP	49.0	9.80	<0.20
17 Jul 1984	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	<0.2	23.0	NAP	23.0	5.30	<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
18 Jul 1984	Whiteface	<0.2	55.0	NAP	67.0	5.30	<0.20
	Penn State	<0.2	94.0	NAP	110.0	12.00	<0.20
	Virginia	<0.2	6.9	NAP	10.0	4.80	<0.20
	Lewes	<0.2	8.9	NAP	5.8	4.10	<0.20
	Oak Ridge	<0.2	16.0	NAP	13.0	1.90	<0.20
19 Jul 1984	Whiteface	<0.2	12.0	NAP	9.8	1.10	<0.20
	Ithaca	ISA	63.0	NAP	82.0	8.80	<0.20
	Brookhaven	<0.2	24.0	NAP	17.0	11.00	<0.20
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA
21 Jul 1984	Oxford	<0.2	140.0	NAP	96.0	12.00	<0.20
22 Jul 1984	Lewes	<0.2	12.0	NAP	8.1	7.40	<0.20
23 Jul 1984	Whiteface	ISA	110.0	NAP	66.0	5.50	<0.20
	# Virginia	<0.2	8.6	NAP	9.1	5.10	<0.20
	Illinois	<0.2	43.0	NAP	28.0	5.90	<0.20
	Brookhaven	<0.2	6.8	NAP	11.0	17.00	<0.20
	# Oak Ridge	<0.2	56.0	NAP	38.0	4.60	<0.20
24 Jul 1984	Ithaca	ISA	ISA	ISA	ISA	ISA	ISA
25 Jul 1984	Illinois	ISA	66.0	NAP	110.0	11.00	<0.20
26 Jul 1984	# Virginia	<0.2	110.0	NAP	61.0	6.60	<0.20
	Oak Ridge	<0.2	46.0	NAP	41.0	4.20	<0.20
27 Jul 1984	Illinois	<0.2	96.0	NAP	47.0	4.70	<0.20
	Lewes	<0.2	27.0	NAP	22.0	36.00	<0.20
	Oxford	<0.2	69.0	NAP	35.0	4.40	<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 Jul 1984	Whiteface	<0.2	38.0	NAP	57.0	5.80	<0.20
	Ithaca	<0.2	24.0	NAP	14.0	2.00	<0.20
	Penn State	<0.2	77.0	NAP	67.0	5.00	<0.20
	Virginia	<0.2	78.0	NAP	43.0	4.10	<0.20
	Brookhaven	<0.2	20.0	NAP	27.0	6.50	<0.20
30 Jul 1984	Illinois	<0.2	17.0	NAP	21.0	1.80	<0.20
	Lewes	ISA	8.6	NAP	26.0	33.00	<0.20
31 Jul 1984	Oak Ridge	<0.2	36.0	NAP	23.0	4.60	<0.20

MISSING DATA CODES:

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NAP MEANS NO ANALYSIS PERFORMED
MOE MEANS MALFUNCTION OR OPERATOR ERROR
RPC MEANS REJECTED - PROBABLE CONTAMINATION

		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
1 Jul 1984	Virginia	69.2	29.0	3.60	1.10	0.87	0.29	101.	105.
	Brookhaven	66.1	14.0	13.00	<0.40	1.40	1.00	109.	98.
2 Jul 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Ithaca	75.9	10.0	0.23	0.22	1.30	0.29	84.	89.
	Penn State	42.7	8.1	<0.50	<0.40	1.20	<0.40	54.	53.
	Oak Ridge	100.0	19.0	<0.50	<0.40	4.40	0.86	134.	130.
	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
3 Jul 1984	Penn State	177.8	20.0	<0.50	<0.40	1.30	0.58	255.	202.
	Lewis	45.7	12.0	11.00	0.44	1.40	0.99	80.	74.
	Oxford	117.5	36.0	1.20	0.87	6.20	1.20	158.	170.
5 Jul 1984	Illinois	49.0	35.0	0.87	0.87	8.60	1.50	90.	106.
	Oxford	47.9	18.0	<0.50	0.38	0.65	<0.20	66.	68.
	Oak Ridge	21.4	10.0	2.90	0.64	3.10	1.10	45.	43.
6 Jul 1984	Whiteface	33.1	9.6	1.10	<0.40	0.52	<0.20	47.	45.
	Ithaca	63.1	8.4	<0.50	<0.40	0.67	0.33	81.	73.
	Penn State	141.3	38.0	<0.50	<0.40	4.80	0.70	229.	190.
	Illinois	15.5	70.0	5.90	2.60	18.00	3.90	110.	138.
	Brookhaven	166.0	35.0	16.00	0.69	3.90	2.20	237.	230.
	Oak Ridge	15.1	4.7	3.20	0.28	2.50	0.66	29.	30.
7 Jul 1984	Whiteface	60.3	7.3	1.00	<0.20	0.67	<0.20	84.	70.
	Ithaca	128.8	8.9	<0.50	<0.40	0.62	0.25	139.	139.
	Penn State	91.2	16.0	<0.50	0.46	1.40	0.58	140.	112.
	Oxford	120.2	20.0	2.90	0.54	3.20	0.74	151.	160.

		(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
8 Jul 1984	Virginia	39.8	8.3	1.80	<0.20	0.85	0.37	47.	52.
	Lewes	97.7	29.0	7.10	0.61	1.90	0.91	144.	140.
9 Jul 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	29.5	5.3	18.00	0.61	1.20	1.90	65.	60.
	Oak Ridge	39.8	9.7	<0.50	0.61	2.00	0.37	66.	55.
11 Jul 1984	Ithaca	158.5	34.0	1.40	0.64	6.10	1.90	211.	211.
	Penn State	49.0	24.0	1.10	<0.40	8.60	0.78	109.	93.
	Virginia	56.2	8.3	1.30	<0.20	0.80	<0.20	62.	67.
	Lewes	169.8	72.0	ISA	ISA	ISA	ISA	ISA	ISA
12 Jul 1984	Whiteface	87.1	21.0	1.60	<0.40	2.60	0.49	107.	116.
	Penn State	95.5	14.0	0.61	<0.40	3.10	0.78	145.	118.
	Illinois	25.1	19.0	14.00	1.70	11.00	4.70	71.	91.
	Brookhaven	173.8	20.0	22.00	1.30	9.80	4.20	251.	245.
	Lewes	43.7	25.0	0.78	<0.40	1.80	0.29	73.	74.
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
13 Jul 1984	Oak Ridge	28.2	5.2	2.00	<0.40	2.90	0.49	41.	42.
16 Jul 1984	Whiteface	104.7	27.0	<0.50	<0.40	2.70	0.53	140.	138.
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	57.5	12.0	2.50	0.61	4.80	0.91	77.	84.
	Brookhaven	120.8	38.0	6.20	0.64	3.50	1.10	185.	183.
	Oxford	100.0	12.0	13.00	0.44	11.00	2.60	157.	153.
17 Jul 1984	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	47.9	6.5	3.60	4.60	3.90	0.78	74.	72.

		(H ⁺)		(NH ₄ ⁺)		(NO ₃ ⁻)		(SO ₄ ²⁻)		(Ca ²⁺)		(Mg ²⁺)		(ANION SUM)		(CATION SUM)	
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L	UEQ/L
18 Jul 1984	Whiteface	147.9	21.0	2.10	<0.40	5.60	1.20	182.	185.								
	Penn State	229.1	39.0	<0.50	<0.40	6.20	1.20	310.	283.								
	Virginia	20.9	4.3	2.20	2.50	0.50	0.29	29.	31.								
	Lewes	9.3	8.0	2.10	<0.40	2.60	0.33	28.	25.								
	Oak Ridge	37.2	2.6	<0.50	<0.40	0.57	<0.20	47.	41.								
19 Jul 1984	Whiteface	33.1	7.1	1.70	<0.40	0.77	0.21	35.	44.								
	Ithaca	158.5	36.0	1.10	1.00	9.80	3.20	217.	223.								
	Brookhaven	45.7	8.4	7.00	0.33	0.82	0.70	76.	64.								
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
21 Jul 1984	Oxford	263.0	24.0	13.00	1.40	32.00	4.70	388.	375.								
22 Jul 1984	Lewes	22.4	2.6	3.30	<0.40	0.60	0.33	40.	30.								
23 Jul 1984	Whiteface	177.8	45.0	ISA	ISA	18.00	5.20	292.	ISA								
	† Virginia	17.4	3.4	2.30	0.77	1.30	0.45	31.	27.								
	Illinois	66.1	25.0	3.70	1.20	8.30	1.90	120.	116.								
	Brookhaven	11.0	1.3	12.00	0.31	2.20	1.20	42.	31.								
	† Oak Ridge	109.6	11.0	6.80	0.41	7.20	1.80	155.	146.								
24 Jul 1984	Ithaca	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
25 Jul 1984	Illinois	89.1	4.0	34.00	4.80	51.00	20.00	253.	274.								
26 Jul 1984	† Virginia	218.8	53.0	1.30	0.92	4.70	0.86	288.	285.								
	Oak Ridge	75.9	14.0	4.40	<0.40	18.00	5.20	137.	141.								
27 Jul 1984	Illinois	162.2	40.0	0.87	0.46	13.00	1.40	244.	232.								
	Lewes	74.1	9.6	13.00	0.46	2.20	1.20	112.	104.								
	Oxford	151.4	25.0	<0.50	0.26	3.20	0.70	177.	184.								

		(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
28 Jul 1984	Whiteface	89.1	24.0	3.70	0.51	12.00	3.60	139.	149.
	Ithaca	52.5	12.0	<0.50	<0.40	1.20	0.91	64.	69.
	Penn State	166.0	33.0	<0.50	0.77	5.80	1.00	226.	213.
	Virginia	162.2	35.0	0.87	0.44	2.50	0.49	203.	204.
	Brookhaven	51.3	6.0	3.10	0.20	1.20	0.91	74.	65.
30 Jul 1984	Illinois	33.9	26.0	1.30	0.49	4.10	1.20	57.	72.
	Lewes	47.9	11.0	31.00	1.00	2.60	3.00	76.	102.
31 Jul 1984	Oak Ridge	70.8	8.9	1.50	0.38	3.20	0.41	100.	89.

MISSING DATA CODES:

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

		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	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 Aug 1984	Whiteface	1200	NAP	8.06	120.0	97.0	22.	3.65	3.72	106.0
	Virginia	1830	2	9.10	58.0	73.0	27.	4.12	ISA	ISA
	Lewes	1400	NAP	9.06	745.0	550.0	25.	4.66	4.77	14.0
	Oxford	1130	1	9.05	527.0	420.0	23.	4.00	3.96	47.0
3 Aug 1984	Virginia	2200	2	9.10	73.0	65.0	27.	4.68	ISA	ISA
	Illinois	1600	1	9.06	36.0	35.0	25.	4.13	4.14	ISA
	Lewes	1430	NAP	9.06	234.0	150.0	25.	3.92	3.93	52.0
	* Oxford	2030	4	9.05	51.0	65.0	23.	3.86	ISA	ISA
	* Oak Ridge	1300	9	9.07	310.0	220.0	22.	4.43	4.35	20.0
4 Aug 1984	Ithaca	2100	7	8.16	1450.0	1330.0	23.	3.90	3.86	69.0
	Penn State	1400	NAP	8.07	856.0	840.0	25.	3.88	3.89	64.0
	Lewes	1500	NAP	9.06	92.0	65.0	25.	3.82	3.88	62.0
	Oxford	1130	2	9.05	79.0	81.0	26.	3.79	3.77	72.0
5 Aug 1984	* Penn State	1600	NAP	9.07	2010.0	1980.0	25.	4.01	3.99	49.0
	* Virginia	1830	6	9.10	1931.0	1790.0	25.	3.86	3.90	58.0
	Oxford	1330	1	9.05	266.0	210.0	23.	4.01	3.98	45.0
6 Aug 1984	Illinois	1530	5	9.06	33.0	35.0	25.	3.22	3.22	ISA
	Brookhaven	1300	4	8.10	440.0	410.0	20.	3.91	3.95	53.0
	Lewes	1400	NAP	9.06	212.0	150.0	26.	3.59	3.63	110.0
	* Oak Ridge	1300	7	9.07	1753.0	1520.0	22.	4.52	4.42	19.0
7 Aug 1984	Penn State	1430	NAP	9.07	370.0	340.0	25.	3.89	3.91	60.0
	* Virginia	2300	4	9.10	920.0	780.0	28.	4.01	4.08	39.0
	Illinois	1500	NAP	9.06	234.0	790.0	25.	3.94	3.98	54.0

		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	O 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			
7 Aug 1984	Brookhaven	1300	1	9.12	1188.0	1040.0	20.	3.58	3.66	104.0
8 Aug 1984	Whiteface	1300	NAP	9.07	67.0	49.0	24.	3.92	4.04	ISA
	Ithaca	2200	9	9.05	540.0	520.0	23.	3.90	3.92	52.0
	Penn State	1330	NAP	9.07	191.0	154.0	25.	4.13	4.11	44.0
	Lewes	1300	NAP	ISA	19.0	16.0	26.	3.55	ISA	ISA
	Oxford	2330	1	ISA	15.0	16.0	27.	3.63	ISA	ISA
9 Aug 1984	Penn State	1430	NAP	9.07	1112.0	1060.0	25.	3.82	3.83	70.0
	Illinois	1700	4	ISA	19.0	ISA	25.	4.23	ISA	ISA
	Oak Ridge	1900	3	9.07	102.0	100.0	22.	3.48	3.47	166.0
10 Aug 1984	Penn State	1300	NAP	9.07	1359.0	1310.0	25.	4.06	4.06	41.0
	Virginia	1500	3	ISA	15.0	50.0	26.	3.59	ISA	ISA
	Oak Ridge	1900	1	9.07	140.0	100.0	22.	3.65	3.68	98.0
11 Aug 1984	Oxford	1230	2	9.05	37.0	33.0	25.	3.42	ISA	ISA
12 Aug 1984	Virginia	1830	19	9.10	5170.0	2800.0	26.	4.52	4.20	30.0
13 Aug 1984	Whiteface	1300	NAP	9.07	1182.0	1110.0	25.	4.03	4.10	44.0
	Ithaca	1200	9	9.05	2865.0	2760.0	23.	4.16	4.21	27.0
	Penn State	1400	NAP	9.07	3810.0	3680.0	25.	4.01	3.98	50.0
	Illinois	1630	1	9.06	197.0	190.0	25.	4.02	4.00	59.0
14 Aug 1984	* Penn State	1330	NAP	9.07	181.0	140.0	25.	4.11	4.06	42.0
	Oak Ridge	1300	5	9.07	246.0	220.0	22.	4.09	3.99	49.0
15 Aug 1984	Whiteface	1400	NAP	9.07	119.0	98.0	25.	4.57	4.59	17.0
	Ithaca	1300	6	9.05	2384.0	2280.0	23.	4.09	4.11	33.0
	* Penn State	1400	NAP	9.07	645.0	665.0	25.	4.17	4.19	30.0

		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	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			
15 Aug 1984	Virginia	1700	9	9.10	2896.0	2845.0	26.	4.40	4.52	15.0
	Brookhaven	1300	1	9.12	41.0	33.0	20.	4.01	ISA	ISA
16 Aug 1984	Whiteface	1700	NAP	9.07	48.0	49.0	26.	5.39	5.35	ISA
17 Aug 1984	Ithaca	1200	3	9.05	515.0	490.0	23.	3.95	4.02	51.0
	Brookhaven	1300	1	9.12	40.0	33.0	20.	4.26	ISA	ISA
18 Aug 1984	Oxford	1230	10	9.05	811.0	830.0	25.	4.01	4.10	44.0
19 Aug 1984	Penn State	1330	NAP	9.07	2904.0	2850.0	25.	3.93	3.97	50.0
	Virginia	1600	6	9.10	650.0	650.0	26.	3.75	3.80	74.0
20 Aug 1984	Whiteface	1300	NAP	9.07	85.0	65.0	20.	4.54	ISA	ISA
	Ithaca	1300	9	9.05	450.0	460.0	22.	4.08	4.13	33.0
	Lewes	1330	NAP	9.06	85.0	65.0	22.	3.50	3.53	150.0
21 Aug 1984	Illinois	1600	12	9.06	144.0	140.0	25.	4.13	4.05	45.0
	Oak Ridge	1300	4	9.07	243.0	200.0	22.	3.64	3.59	124.0
23 Aug 1984	Ithaca	1400	4	9.05	725.0	690.0	23.	3.97	3.99	44.0
	Penn State	1530	NAP	9.07	992.0	955.0	25.	4.05	4.03	43.0
	Illinois	1500	5	9.06	1479.0	1430.0	25.	3.98	4.05	42.0
	Oxford	1300	2	9.05	71.0	81.0	24.	3.87	3.97	51.0
	Oak Ridge	1700	4	9.07	281.0	230.0	22.	4.08	4.06	49.0
24 Aug 1984	Whiteface	1600	NAP	9.07	2409.0	2200.0	21.	4.34	4.28	26.0
	Ithaca	2100	4	9.05	114.0	130.0	23.	4.37	4.36	22.0
29 Aug 1984	Virginia	2200	NOE	ISA	6.0	19.0	ISA	ISA	ISA	ISA
	Oxford	1230	10	9.05	621.0	600.0	24.	4.30	4.39	19.0
30 Aug 1984	Whiteface	1300	NAP	9.07	423.0	370.0	23.	3.88	3.85	72.0

		T I M E	L I D	A R R	S A M P	P R E D	P I E L D	F I E L D	L A B	C O N D U C T
		R M V D	O F 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			
30 Aug 1984	Penn State	1530	NAP	ISA	15.0	17.0	25.	3.95	ISA	ISA
	Oak Ridge	1500	4	ISA	23.0	33.0	20.	4.30	ISA	ISA
31 Aug 1984	Whiteface	1300	NAP	9.07	754.0	750.0	22.	4.04	4.02	40.0
	Ithaca	1200	8	9.05	130.0	130.0	23.	3.67	3.68	97.0
	Penn State	2000	NAP	9.07	621.0	560.0	25.	3.99	3.98	51.0
	Virginia	1600	7	9.10	645.0	650.0	25.	4.10	4.34	24.0
	Brookhaven	2030	1	9.12	122.0	110.0	25.	3.75	3.74	92.0

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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
2 Aug 1984	Whiteface	<0.2	140.0	NAP	57.0	4.90	<0.20
	Virginia	<0.2	ISA	ISA	ISA	ISA	ISA
	Lewes	<0.2	24.0	NAP	22.0	6.80	<0.20
	Oxford	3.5	50.0	NAP	40.0	5.20	<0.20
3 Aug 1984	Virginia	<0.2	ISA	ISA	ISA	ISA	ISA
	Illinois	ISA	ISA	NAP	110.0	22.00	<0.20
	Lewes	<0.2	54.0	NAP	48.0	7.00	<0.20
	# Oxford	<0.2	ISA	ISA	ISA	ISA	ISA
	# Oak Ridge	<0.2	19.0	NAP	18.0	6.00	<0.20
4 Aug 1984	Ithaca	<0.2	65.0	NAP	41.0	4.90	<0.20
	Penn State	0.5	52.0	NAP	60.0	7.20	<0.20
	Lewes	ISA	58.0	NAP	86.0	8.10	<0.20
	Oxford	<0.2	60.0	NAP	99.0	5.90	<0.20
5 Aug 1984	# Penn State	<0.2	57.0	NAP	29.0	2.30	<0.20
	# Virginia	<0.2	60.0	NAP	33.0	4.50	<0.20
	Oxford	<0.2	56.0	NAP	32.0	2.60	<0.20
6 Aug 1984	Illinois	ISA	ISA	NAP	ISA	2.10	<0.20
	Brookhaven	<0.2	40.0	NAP	64.0	4.70	<0.20
	Lewes	<0.2	110.0	NAP	110.0	36.00	<0.20
	# Oak Ridge	<0.2	16.0	NAP	14.0	2.70	<0.20
7 Aug 1984	Penn State	<0.2	64.0	NAP	45.0	4.70	<0.20
	# Virginia	<0.2	48.0	NAP	26.0	6.60	<0.20
	Illinois	<0.2	78.0	NAP	62.0	6.70	<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
7 Aug 1984	Brookhaven	<0.2	78.0	NAP	130.0	11.00	<0.20
8 Aug 1984	Whiteface	<0.2	71.0	NAP	46.0	3.80	<0.20
	Ithaca	<0.2	66.0	NAP	37.0	4.30	<0.20
	Penn State	<0.2	62.0	NAP	31.0	7.70	<0.20
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
9 Aug 1984	Penn State	<0.2	67.0	NAP	50.0	4.70	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	<0.2	180.0	NAP	110.0	25.00	<0.20
10 Aug 1984	Penn State	<0.2	45.0	NAP	22.0	2.80	<0.20
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	<0.2	100.0	NAP	75.0	9.60	<0.20
11 Aug 1984	Oxford	<0.2	ISA	ISA	ISA	ISA	ISA
12 Aug 1984	Virginia	<0.2	27.0	NAP	22.0	7.80	<0.20
13 Aug 1984	Whiteface	<0.2	52.0	NAP	38.0	4.90	<0.20
	Ithaca	<0.2	36.0	NAP	22.0	2.40	<0.20
	Penn State	<0.2	55.0	NAP	35.0	4.90	<0.20
	Illinois	ISA	77.0	NAP	89.0	8.60	<0.20
14 Aug 1984 #	Penn State	<0.2	53.0	NAP	42.0	8.30	<0.20
	Oak Ridge	<0.2	45.0	NAP	41.0	5.40	<0.20
15 Aug 1984	Whiteface	<0.2	20.0	NAP	26.0	5.80	<0.20
	Ithaca	<0.2	37.0	NAP	29.0	4.00	<0.20
	# Penn State	<0.2	39.0	NAP	22.0	3.40	<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 Aug 1984	Virginia	<0.2	13.0	NAP	13.0	2.40	<0.20
	Brookhaven	<0.2	ISA	ISA	ISA	ISA	ISA
16 Aug 1984	Whiteface	ISA	8.9	NAP	17.0	3.80	<0.20
17 Aug 1984	Ithaca	<0.2	68.0	NAP	54.0	5.30	<0.20
	Brookhaven	<0.2	27.0	NAP	28.0	17.00	<0.20
18 Aug 1984	Oxford	<0.2	71.0	NAP	45.0	2.30	<0.20
19 Aug 1984	Penn State	<0.2	65.0	NAP	31.0	3.60	<0.20
	Virginia	<0.2	83.0	NAP	39.0	3.30	<0.20
20 Aug 1984	Whiteface	<0.2	19.0	NAP	12.0	4.90	<0.20
	Ithaca	<0.2	38.0	NAP	31.0	3.20	<0.20
	Lewes	ISA	160.0	NAP	160.0	72.00	<0.20
21 Aug 1984	Illinois	<0.2	66.0	NAP	46.0	4.50	<0.20
	Oak Ridge	<0.2	140.0	NAP	100.0	18.00	<0.20
23 Aug 1984	Ithaca	<0.2	52.0	NAP	43.0	3.10	<0.20
	Penn State	<0.2	49.0	NAP	33.0	2.60	<0.20
	Illinois	<0.2	49.0	NAP	25.0	20.00	<0.20
	Oxford	<0.2	48.0	NAP	66.0	15.00	<0.20
	Oak Ridge	<0.2	55.0	NAP	44.0	5.30	<0.20
24 Aug 1984	Whiteface	<0.2	26.0	NAP	15.0	<2.00	<0.20
	Ithaca	MOE	32.0	NAP	16.0	3.60	<0.20
29 Aug 1984	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	20.0	NAP	20.0	2.20	<0.20
30 Aug 1984	Whiteface	<0.2	69.0	NAP	55.0	4.10	<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
30 Aug 1984	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	ISA	ISA	ISA	ISA	ISA	ISA
31 Aug 1984	Whiteface	<0.2	53.0	NAP	42.0	3.00	<0.20
	Ithaca	<0.2	86.0	NAP	110.0	7.30	<0.20
	Penn State	<0.2	67.0	NAP	31.0	7.30	<0.20
	Virginia	<0.2	25.0	NAP	27.0	2.70	<0.20
	Brookhaven	<0.2	81.0	NAP	110.0	18.00	<0.20

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 RPC MEANS REJECTED - PROBABLE CONTAMINATION

		(H +)	(N H 4 +)	(N A +)	(K +)	(C A +)	(H 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
2 Aug 1984	Whiteface	190.5	87.0	5.40	0.64	6.00	1.80	342.	299.
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Lewes	17.0	41.0	3.30	<0.40	0.87	0.62	77.	64.
	Oxford	109.6	6.1	1.30	<0.40	2.10	0.70	145.	123.
3 Aug 1984	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	72.4	15.0	20.00	7.50	ISA	ISA	ISA	ISA
	Lewes	117.5	5.9	3.10	<0.40	1.10	0.58	163.	130.
	# Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Oak Ridge	44.7	0.9	6.10	0.27	2.50	0.58	62.	50.
4 Aug 1984	Ithaca	130.0	29.0	2.40	<0.40	3.10	0.95	176.	170.
	Penn State	128.0	4.0	1.60	<0.40	1.80	0.40	171.	139.
	Lewes	131.8	9.1	1.80	<0.40	2.50	0.78	210.	149.
	Oxford	169.8	2.4	5.90	<0.40	4.30	1.40	225.	190.
5 Aug 1984	# Penn State	102.3	30.0	<0.50	<0.40	0.92	0.53	145.	135.
	# Virginia	125.9	15.0	1.10	<1.00	1.80	0.45	150.	146.
	Oxford	104.7	13.0	3.00	<0.40	0.57	<0.40	147.	122.
6 Aug 1984	Illinois	602.6	61.0	23.00	<0.40	ISA	ISA	ISA	ISA
	Brookhaven	112.2	1.3	4.40	<0.20	2.00	0.70	149.	123.
	Lewes	234.4	41.0	16.00	<0.40	2.60	2.30	366.	301.
	# Oak Ridge	38.0	6.7	2.20	<0.40	2.80	0.53	49.	54.
7 Aug 1984	Penn State	123.0	31.0	0.63	<0.40	3.20	0.95	170.	163.
	# Virginia	83.2	5.6	1.40	<1.00	2.10	0.66	129.	96.
	Illinois	104.7	44.0	5.90	<0.40	17.00	2.60	225.	194.

		(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
7 Aug 1984	Brookhaven	218.8	37.0	2.10	<1.00	7.40	2.40	297.	277.
8 Aug 1984	Whiteface	91.2	36.0	7.10	<0.40	21.00	7.40	192.	191.
	Ithaca	120.2	36.0	1.50	<0.40	2.60	0.62	173.	164.
	Penn State	77.6	51.0	0.41	<0.40	2.10	0.66	163.	135.
	Lewes	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
9 Aug 1984	Penn State	147.9	19.0	1.20	<0.40	3.00	0.70	189.	176.
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	338.8	27.0	34.00	<0.40	16.00	4.40	495.	441.
10 Aug 1984	Penn State	87.1	15.0	<0.50	<0.40	1.00	0.29	115.	105.
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	208.9	23.0	8.80	<0.40	12.00	2.10	285.	269.
11 Aug 1984	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
12 Aug 1984	Virginia	63.1	11.0	3.30	1.50	0.47	0.37	84.	81.
13 Aug 1984	Whiteface	79.4	48.0	2.80	<0.40	1.50	<0.40	147.	133.
	Ithaca	61.7	16.0	0.82	<0.40	0.37	<0.40	96.	79.
	Penn State	104.7	31.0	0.85	<1.00	1.00	0.45	150.	139.
	Illinois	100.0	67.0	11.00	<0.40	21.00	11.00	252.	242.
14 Aug 1984	† Penn State	87.1	17.0	2.80	<0.40	3.10	0.86	156.	115.
	Oak Ridge	102.3	11.0	7.10	<0.40	4.20	0.37	136.	130.
15 Aug 1984	Whiteface	25.7	14.0	2.20	7.50	1.00	<0.40	72.	51.
	Ithaca	77.6	9.3	1.10	<0.40	0.50	0.25	107.	90.
	† Penn State	64.6	18.0	1.80	<0.40	0.21	0.21	103.	85.

A.93

		(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
15 Aug 1984	Virginia	30.2	10.0	0.75	<1.00	0.30	<0.40	41.	42.
	Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
16 Aug 1984	Whiteface	4.5	14.0	5.40	3.50	2.00	0.74	39.	33.
17 Aug 1984	Ithaca	95.5	64.0	0.76	<0.40	12.00	2.20	195.	189.
	Brookhaven	ISA	15.0	25.00	4.00	8.60	2.50	99.	ISA
18 Aug 1984	Oxford	79.4	63.0	1.80	<0.40	6.10	2.00	189.	160.
19 Aug 1984	Penn State	107.2	24.0	<0.50	<0.40	2.80	0.53	165.	138.
	Virginia	158.5	29.0	1.40	<1.00	2.20	0.49	208.	194.
20 Aug 1984	Whiteface	ISA	13.0	2.30	2.40	4.00	0.82	55.	ISA
	Ithaca	74.1	12.0	0.89	<0.40	1.80	0.45	110.	92.
	Lewes	295.1	71.0	49.00	<0.40	ISA	ISA	552.	ISA
21 Aug 1984	Illinois	89.1	41.0	5.40	<0.40	6.40	2.10	183.	153.
	Oak Ridge	257.0	33.0	1.50	<0.40	12.00	1.10	398.	318.
23 Aug 1984	Ithaca	102.3	13.0	0.51	<0.40	3.00	0.25	150.	122.
	Penn State	93.3	13.0	<0.50	<0.40	1.80	0.21	134.	110.
	Illinois	89.1	25.0	3.90	<0.40	2.50	0.74	143.	125.
	Oxford	107.2	8.5	ISA	ISA	ISA	ISA	177.	ISA
	Oak Ridge	87.1	22.0	1.70	<0.40	8.00	1.60	159.	130.
24 Aug 1984	Whiteface	52.5	5.4	<0.50	<0.40	0.70	<0.40	67.	59.
	Ithaca	43.7	23.0	2.10	<0.40	2.70	0.33	84.	75.
29 Aug 1984	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	40.7	12.0	2.10	<0.40	1.60	<0.40	62.	58.
30 Aug 1984	Whiteface	141.3	35.0	<0.50	<0.40	3.10	0.66	197.	184.

A.94

		(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
30 Aug 1984	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
31 Aug 1984	Whiteface	95.5	21.0	4.20	<0.40	4.40	1.20	151.	132.
	Ithaca	208.9	42.0	2.30	<0.40	6.50	0.91	289.	268.
	Penn State	104.7	18.0	1.50	<0.40	4.80	1.10	172.	136.
	Virginia	45.7	21.0	0.80	<1.00	2.00	0.45	80.	72.
	Brookhaven	182.0	48.0	9.70	<1.00	9.40	2.00	290.	262.

MISSING DATA CODES:

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

NAPS PRECIPITATION CHEMISTRY DATA

1/

		T I M E	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	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			
4 Sep 1984	Whiteface	1300	NAP	9.07	509.0	455.0	19.	4.35	4.37	24.0
	Ithaca	1200	13	9.05	1960.0	1950.0	23.	4.10	4.20	29.0
	Penn State	1530	NAP	9.07	362.0	310.0	25.	4.00	4.11	39.0
	Virginia	2100	2	10.04	912.0	870.0	25.	4.01	4.16	37.0
	Illinois	1700	8	9.06	923.0	950.0	24.	4.31	4.27	30.0
	Brookhaven	1900	9	9.12	2929.0	2780.0	25.	4.07	4.08	40.0
	Oxford	1500	9	10.04	1257.0	1220.0	25.	4.74	4.85	7.5
	Oak Ridge	1300	6	10.08	1988.0	1800.0	22.	4.10	4.29	30.0
5 Sep 1984	Whiteface	1300	NAP	ISA	16.0	16.0	20.	4.76	ISA	ISA
	Illinois	1530	1	10.04	95.0	110.0	25.	6.34	5.94	29.0
	# Brookhaven	1800	8	9.12	157.0	150.0	25.	3.99	3.98	48.0
	# Lewes	1400	NAP	10.04	655.0	520.0	23.	4.05	4.11	46.0
6 Sep 1984	Whiteface	1300	NAP	9.07	139.0	130.0	19.	4.75	4.68	12.0
	Virginia	1800	6	10.04	34.0	17.0	25.	3.60	ISA	ISA
	Oxford	1300	4	10.04	418.0	390.0	21.	4.24	4.31	28.0
7 Sep 1984	Illinois	1530	15	10.04	61.0	81.0	25.	3.66	3.69	131.0
	Oxford	ISA	4	ISA	17.0	33.0	26.	3.81	ISA	ISA
10 Sep 1984	Oxford	2100	4	10.04	323.0	360.0	26.	3.99	4.04	47.0
11 Sep 1984	Whiteface	1530	NAP	10.08	121.0	110.0	21.	4.19	4.16	38.0
	Ithaca	1200	3	10.10	30.0	32.0	23.	4.00	4.06	ISA
	Illinois	1530	5	10.04	2554.0	2540.0	22.	4.49	4.48	19.0
	Lewes	1400	NAP	10.04	118.0	98.0	24.	5.09	5.00	10.0
12 Sep 1984	Whiteface	1300	NAP	10.08	1181.0	1110.0	21.	4.23	4.27	28.0

		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	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			
12 Sep 1984	Ithaca	1200	3	10.10	910.0	900.0	23.	4.02	4.00	49.0
	Penn State	1400	NAP	ISA	30.0	34.0	25.	3.51	ISA	ISA
13 Sep 1984	Oak Ridge	1300	4	10.08	331.0	280.0	22.	4.05	4.10	46.0
14 Sep 1984	Whiteface	1300	NAP	10.08	1500.0	1580.0	21.	4.50	4.54	15.0
	Ithaca	2100	8	10.10	1350.0	1330.0	24.	4.33	4.43	19.0
	Penn State	2000	NAP	10.04	50.0	34.0	25.	4.61	5.30	ISA
	# Oxford	1730	2	10.04	718.0	700.0	26.	4.32	4.49	20.0
15 Sep 1984	Lewes	1900	NAP	10.04	466.0	390.0	24.	3.88	3.94	69.0
	# Oxford	1500	3	10.04	552.0	500.0	22.	4.20	4.45	22.0
16 Sep 1984	Penn State	1230	NAP	10.04	424.0	390.0	25.	4.10	4.13	40.0
	Brookhaven	1730	15	10.10	3448.0	3330.0	26.	4.01	4.05	44.0
17 Sep 1984	# Whiteface	1230	NAP	10.08	1058.0	MOE	17.	4.62	4.68	12.0
	Ithaca	1300	31	10.10	205.0	240.0	24.	4.19	4.20	29.0
18 Sep 1984	Illinois	1530	16	10.04	764.0	750.0	23.	4.32	4.37	26.0
21 Sep 1984	Whiteface	1300	NAP	10.08	148.0	130.0	20.	4.14	4.22	48.0
24 Sep 1984	# Whiteface	1400	NAP	10.08	157.0	160.0	21.	3.91	3.90	61.0
	Ithaca	1300	10	10.10	35.0	49.0	27.	3.75	3.79	78.0
	Illinois	1630	14	10.04	406.0	390.0	26.	4.48	4.50	18.0
	Oxford	1400	9	10.04	1002.0	940.0	24.	4.50	4.66	11.0
25 Sep 1984	Oxford	1300	4	10.04	1149.0	1090.0	24.	4.52	4.63	12.0
26 Sep 1984	# Whiteface	1400	NAP	10.08	1591.0	1400.0	22.	4.40	4.48	19.0
	Penn State	1630	NAP	ISA	20.0	17.0	ISA	ISA	ISA	ISA
	Oxford	1700	2	10.04	1103.0	1040.0	20.	4.40	4.60	14.0

		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	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			
27 Sep 1984	Ithaca	2000	2	10.10	655.0	650.0	25.	4.26	4.32	25.0
28 Sep 1984	Penn State	1330	NAP	10.04	112.0	100.0	25.	4.55	4.44	18.0
	Illinois	1630	5	10.04	225.0	220.0	25.	4.22	4.21	39.0
29 Sep 1984	Virginia	1900	14	10.04	928.0	730.0	21.	3.80	3.93	60.0
30 Sep 1984	Brookhaven	1700	7	10.10	526.0	440.0	25.	4.24	4.25	30.0
	Lewes	1630	NAP	10.04	2742.0	2390.0	24.	4.30	4.36	41.0

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 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
4 Sep 1984	Whiteface	<0.2	26.0	NAP	23.0	<2.00	<0.20
	Ithaca	<0.2	33.0	NAP	30.0	3.00	<0.20
	Penn State	<0.2	55.0	NAP	34.0	5.10	<0.20
	Virginia	<0.2	42.0	NAP	19.0	3.60	<0.20
	Illinois	<0.2	45.0	NAP	38.0	4.40	<0.20
	Brookhaven	<0.2	37.0	NAP	38.0	9.00	<0.20
	Oxford	<0.2	7.2	NAP	4.2	1.20	<0.20
	Oak Ridge	NAP	30.0	NAP	22.0	5.90	<0.20
5 Sep 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	ISA	59.0	NAP	48.0	6.60	<0.20
	# Brookhaven	<0.2	45.0	NAP	42.0	6.90	<0.20
	# Lewes	<0.2	65.0	NAP	54.0	36.00	<0.20
6 Sep 1984	Whiteface	<0.2	13.0	NAP	7.2	3.80	<0.20
	Virginia	<0.2	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	28.0	NAP	32.0	2.80	<0.20
7 Sep 1984	Illinois	ISA	190.0	NAP	170.0	19.00	<0.20
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
10 Sep 1984	Oxford	<0.2	48.0	NAP	32.0	14.00	<0.20
11 Sep 1984	Whiteface	<0.2	40.0	NAP	32.0	14.00	<0.20
	Ithaca	ISA	68.0	NAP	68.0	16.00	<0.20
	Illinois	<0.2	17.0	NAP	14.0	4.10	<0.20
	Lewes	ISA	13.0	NAP	0.0	91.00	<0.20
12 Sep 1984	Whiteface	<0.2	31.0	NAP	24.0	2.60	<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
12 Sep 1984	Ithaca	NAP	49.0	NAP	34.0	4.80	<0.20
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
13 Sep 1984	Oak Ridge	NAP	55.0	NAP	49.0	13.00	<0.20
14 Sep 1984	Whiteface	<0.2	17.0	NAP	8.0	1.10	<0.20
	Ithaca	NAP	18.0	NAP	21.0	2.30	<0.20
	Penn State	ISA	51.0	NAP	71.0	10.00	<0.20
	# Oxford	<0.2	20.0	NAP	18.0	3.90	<0.20
15 Sep 1984	Lewes	0.8	69.0	NAP	85.0	47.00	<0.20
	# Oxford	<0.2	21.0	NAP	20.0	5.30	<0.20
16 Sep 1984	Penn State	<0.2	38.0	NAP	53.0	4.90	<0.20
	Brookhaven	<0.2	39.0	NAP	42.0	12.00	<0.20
17 Sep 1984	# Whiteface	<0.2	13.0	NAP	14.0	2.20	<0.20
	Ithaca	<0.2	29.0	NAP	27.0	4.00	<0.20
18 Sep 1984	Illinois	<0.2	22.0	NAP	27.0	3.50	<0.20
21 Sep 1984	Whiteface	<0.2	72.0	NAP	63.0	5.80	<0.20
24 Sep 1984	# Whiteface	<0.2	72.0	NAP	54.0	6.10	<0.20
	Ithaca	ISA	79.0	NAP	82.0	12.00	<0.20
	Illinois	<0.2	19.0	NAP	12.0	5.00	<0.20
	Oxford	<0.2	9.2	NAP	5.5	3.50	<0.20
25 Sep 1984	Oxford	<0.2	11.0	NAP	3.9	3.70	<0.20
26 Sep 1984	# Whiteface	<0.2	24.0	NAP	11.0	1.80	<0.20
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	<0.2	13.0	NAP	10.0	3.50	<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
27 Sep 1984	Ithaca	<0.2	26.0	NAP	21.0	3.00	<0.20
28 Sep 1984	Penn State	ISA	13.0	NAP	29.0	4.40	<0.20
	Illinois	<0.2	51.0	NAP	43.0	13.00	<0.20
29 Sep 1984	Virginia	<0.2	77.0	NAP	68.0	11.00	<0.20
30 Sep 1984	Brookhaven	<0.2	26.0	NAP	29.0	14.00	<0.20
	Lewes	<0.2	37.0	NAP	23.0	160.00	<0.20

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 RPC MEANS REJECTED - PROBABLE CONTAMINATION

A.102

		(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
4 Sep 1984	Whiteface	42.7	32.0	0.57	<0.40	1.20	<0.40	75.	78.
	Ithaca	63.1	21.0	0.59	<0.40	2.80	0.25	99.	91.
	Penn State	77.6	13.0	2.00	<0.40	7.90	1.40	149.	111.
	Virginia	69.2	24.0	<0.50	<0.40	2.60	0.45	107.	99.
	Illinois	53.7	30.0	3.50	<0.40	12.00	2.30	132.	116.
	Brookhaven	83.2	19.0	5.10	<1.00	1.70	0.99	121.	113.
	Oxford	14.1	3.9	0.50	<0.40	0.22	0.20	20.	19.
	Oak Ridge	51.3	26.0	1.60	<1.00	4.90	0.78	104.	90.
5 Sep 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Illinois	1.1	91.0	2.60	<1.00	55.00	9.00	173.	223.
	# Brookhaven	104.7	9.4	4.70	2.50	1.60	0.53	139.	126.
	# Lewes	77.6	41.0	22.00	<1.00	1.70	2.20	220.	148.
6 Sep 1984	Whiteface	20.9	11.0	1.90	<0.40	0.82	0.53	37.	36.
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	49.0	26.0	1.00	<0.40	4.80	1.40	91.	88.
7 Sep 1984	Illinois	204.2	57.0	15.00	6.60	87.00	18.00	569.	493.
	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
10 Sep 1984	Oxford	91.2	13.0	14.00	<0.40	8.10	2.70	142.	140.
11 Sep 1984	Whiteface	69.2	21.0	11.00	<1.00	1.90	1.30	126.	108.
	Ithaca	87.1	48.0	3.90	<1.00	ISA	ISA	220.	ISA
	Illinois	33.1	6.6	1.90	<1.00	3.60	0.86	52.	51.
	Lewes	10.0	0.9	93.00	2.70	2.50	7.70	125.	127.
12 Sep 1984	Whiteface	53.7	14.0	0.53	<1.00	0.60	<0.40	89.	69.

		(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
12 Sep 1984	Ithaca	100.0	14.0	1.90	<1.00	1.50	0.33	137.	120.
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
13 Sep 1984	Oak Ridge	79.4	16.0	6.00	<1.00	12.00	5.50	172.	136.
14 Sep 1984	Whiteface	28.8	4.7	<0.50	<1.00	0.60	<0.40	43.	35.
	Ithaca	37.2	7.9	0.69	<1.00	2.20	0.29	59.	51.
	Penn State	5.0	6.1	3.20	3.50	50.00	2.50	183.	123.
	# Oxford	32.4	13.0	2.00	2.30	3.00	2.10	62.	60.
15 Sep 1984	Lewes	114.8	65.0	36.00	<1.00	3.80	4.20	270.	232.
	# Oxford	35.5	20.0	3.30	<1.00	2.70	0.82	67.	66.
16 Sep 1984	Penn State	74.1	20.0	0.62	<2.00	4.80	0.58	134.	106.
	Brookhaven	89.1	15.0	6.00	<1.00	1.40	0.99	132.	115.
17 Sep 1984	# Whiteface	20.9	8.2	1.00	<1.00	1.50	<0.40	42.	33.
	Ithaca	52.5	16.0	0.78	<1.00	4.10	0.53	89.	79.
18 Sep 1984	Illinois	42.7	23.0	1.10	<1.00	2.30	1.10	75.	74.
21 Sep 1984	Whiteface	60.3	81.0	6.00	<1.00	22.00	5.00	213.	201.
24 Sep 1984	# Whiteface	109.6	50.0	6.10	<1.00	5.10	1.20	204.	178.
	Ithaca	162.2	11.0	5.00	<1.00	14.00	2.60	252.	211.
	Illinois	31.6	4.3	3.50	<1.00	4.50	1.60	55.	52.
	Oxford	21.9	1.5	1.50	<1.00	0.65	0.21	27.	27.
25 Sep 1984	Oxford	23.4	2.6	1.00	<1.00	0.25	<0.40	30.	28.
26 Sep 1984	# Whiteface	33.1	11.0	0.68	<1.00	1.30	0.37	61.	48.
	Penn State	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oxford	25.1	8.2	3.20	<1.00	1.10	0.37	40.	39.

A.103

		(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
27 Sep 1984	Ithaca	47.9	12.0	0.92	<1.00	1.00	<0.40	76.	63.
28 Sep 1984	Penn State	36.3	5.2	<0.50	<2.00	1.60	<0.40	59.	45.
	Illinois	53.7	49.0	20.00	<1.00	13.00	6.00	158.	161.
29 Sep 1984	Virginia	117.5	28.0	4.60	<1.00	1.90	0.70	233.	155.
30 Sep 1984	Brookhaven	56.2	6.0	8.00	<1.00	0.95	1.00	95.	74.
	Lewes	43.7	13.0	160.00	1.80	3.00	15.00	257.	254.

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

MAP3S* PRECIPITATION CHEMISTRY DATA

1/

		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	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
1 Oct 1984	Oxford	1330	11	ISA	25.0	81.0	18.	3.55	ISA	ISA
	Oak Ridge	1300	8	10.08	410.0	380.0	13.	3.88	3.93	50.0
2 Oct 1984	Ithaca	2000	10	10.10	815.0	813.0	25.	MOE	4.30	27.0
	Penn State	1530	NAP	10.04	1307.0	1280.0	25.	4.29	4.26	28.0
	* Virginia	1900	17	10.04	2725.0	1830.0	24.	4.34	4.43	19.0
	Brookhaven	1230	10	10.10	2074.0	1930.0	25.	4.59	4.61	21.0
	Lewes	1630	NAP	10.04	3534.0	3020.0	25.	4.58	4.56	33.0
	Whiteface	1400	NAP	10.08	883.0	760.0	21.	4.44	4.47	21.0
4 Oct 1984	Whiteface	1300	NAP	10.08	1339.0	1170.0	22.	4.48	4.53	21.0
	Ithaca	1300	1	11.06	50.0	49.0	25.	3.99	4.07	59.0
5 Oct 1984	Whiteface	1400	NAP	11.08	279.0	240.0	22.	4.64	4.58	17.0
9 Oct 1984	Whiteface	1600	NAP	11.08	128.0	114.0	19.	3.41	3.43	190.0
	Penn State	1730	NAP	11.06	130.0	100.0	25.	3.81	3.82	75.0
	Illinois	1530	22	11.08	499.0	490.0	25.	4.32	4.31	30.0
	Oxford	1230	24	11.06	1510.0	2150.0	22.	4.09	4.23	31.0
	Oak Ridge	1300	6	11.13	1781.0	1720.0	13.	4.30	4.33	26.0
11 Oct 1984	Ithaca	1300	5	11.06	20.0	32.0	22.	3.57	3.71	ISA
12 Oct 1984	Illinois	1530	9	ISA	21.0	17.0	25.	3.56	ISA	ISA
16 Oct 1984	Whiteface	1300	NAP	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	1800	4	11.08	421.0	410.0	24.	4.23	4.32	24.0
	Illinois	1430	18	11.08	522.0	510.0	25.	4.07	4.08	45.0
	* Oxford	1300	4	11.06	332.0	540.0	23.	3.93	4.04	52.0
	Oak Ridge	1230	8	11.13	50.0	67.0	13.	4.05	4.10	ISA

MAP3S PRECIPITATION CHEMISTRY DATA (CONT.)

2/

		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	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			
17 Oct 1984	Penn State	1330	NAP	11.06	76.0	85.0	25.	3.85	3.89	65.0
	Illinois	1700	3	ISA	16.0	MOE	25.	4.04	ISA	ISA
18 Oct 1984	Penn State	1600	NAP	11.06	71.0	34.0	25.	4.00	4.03	51.0
	Oak Ridge	1230	1	11.13	324.0	300.0	13.	4.28	4.16	34.0
19 Oct 1984	# Illinois	1930	NAP	11.08	92.0	590.0	25.	4.42	4.44	26.0
20 Oct 1984	Ithaca	2100	8	11.06	1110.0	1060.0	22.	4.05	4.04	47.0
	Penn State	2130	NAP	11.06	761.0	720.0	25.	4.24	4.18	33.0
21 Oct 1984	# Whiteface	1400	NAP	11.08	172.0	114.0	19.	4.20	4.67	22.0
22 Oct 1984	# Whiteface	1700	NAP	11.08	501.0	460.0	19.	4.17	4.18	36.0
23 Oct 1984	Ithaca	1200	19	11.06	800.0	780.0	22.	4.14	4.13	36.0
	Virginia	1930	5	11.08	514.0	220.0	25.	4.35	4.88	8.9
	Lewes	1730	NAP	11.13	50.0	33.0	24.	4.00	4.00	ISA
	Oxford	1200	30	11.06	1213.0	1240.0	17.	4.12	4.24	30.0
	Oak Ridge	1630	14	11.13	7341.0	7060.0	13.	4.26	4.42	19.0
24 Oct 1984	Ithaca	1900	1	11.06	85.0	98.0	22.	4.43	4.39	20.0
	Penn State	1730	NAP	11.06	1077.0	1060.0	25.	4.13	4.06	42.0
	Brookhaven	1300	6	11.12	2145.0	1950.0	25.	4.42	4.38	22.0
25 Oct 1984	# Virginia	1430	4	11.08	1368.0	1180.0	26.	4.36	4.41	17.0
	# Lewes	1530	NAP	11.13	1652.0	1690.0	24.	4.09	4.09	45.0
	Oak Ridge	1630	3	11.13	685.0	683.0	13.	4.46	4.49	16.0
26 Oct 1984	Whiteface	1030	NAP	11.08	363.0	260.0	20.	4.25	4.21	28.0
	Ithaca	2100	9	11.06	780.0	764.0	22.	4.11	4.14	34.0
	Oxford	1230	5	11.06	297.0	240.0	24.	4.14	4.26	27.0

A.106

MAP3S PRECIPITATION CHEMISTRY DATA (CONT.)

3/

		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	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			
27 Oct 1984	Penn State	1330	NAP	11.06	66.0	51.0	25.	3.71	3.69	103.0
	Brookhaven	2130	5	11.12	25.0	732.0	25.	3.81	3.82	74.0
28 Oct 1984	Whiteface	1500	NAP	11.08	43.0	65.0	19.	3.63	ISA	ISA
29 Oct 1984	Ithaca	1400	10	11.06	1120.0	1075.0	22.	4.24	4.31	25.0
	# Virginia	1830	3	11.08	580.0	530.0	24.	4.45	4.64	16.0
	# Illinois	1730	9	12.13	103.0	2090.0	23.	3.79	3.77	91.0
	Brookhaven	1500	1	11.12	323.0	290.0	25.	4.34	4.33	25.0
	Lewes	1530	NAP	11.13	681.0	520.0	25.	4.76	4.71	11.0
	Oxford	2230	10	11.06	2376.0	1850.0	22.	4.21	4.36	23.0
	Oak Ridge	1930	8	11.13	286.0	250.0	13.	4.26	4.23	29.0
30 Oct 1984	Penn State	1500	NAP	11.06	353.0	1140.0	25.	25.00	4.26	27.0
	Lewes	2000	NAP	11.13	239.0	240.0	24.	4.30	4.29	29.0
31 Oct 1984	Whiteface	1700	NAP	11.08	59.0	49.0	19.	3.72	ISA	ISA
	Brookhaven	1400	3	11.12	314.0	290.0	20.	4.07	4.07	42.0

MISSING DATA CODES:

NSC MEANS NO SAMPLE COLLECTED
ISA MEANS INSUFFICIENT SAMPLE FOR ANALYSIS
NAP MEANS NO ANALYSIS PERFORMED
NOE MEANS MALFUNCTION 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 Oct 1984	Oxford	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	NAP	58.0	NAP	41.0	7.60	<0.20
2 Oct 1984	Ithaca	<0.2	27.0	NAP	29.0	3.10	<0.20
	Penn State	<0.2	20.0	NAP	41.0	4.10	<0.20
	* Virginia	<0.2	22.0	NAP	25.0	5.30	<0.20
	Brookhaven	<0.2	16.0	NAP	8.8	69.00	<0.20
	Lewes	<0.2	23.0	NAP	21.0	150.00	<0.20
3 Oct 1984	Whiteface	<0.2	24.0	NAP	15.0	<2.00	<0.20
4 Oct 1984	Whiteface	<0.2	25.0	NAP	27.0	<3.00	<0.20
	Ithaca	ISA	75.0	NAP	95.0	9.20	<0.20
5 Oct 1984	Whiteface	1.0	17.0	NAP	36.0	2.20	<0.20
9 Oct 1984	Whiteface	<0.2	190.0	NAP	140.0	11.00	<0.20
	Penn State	ISA	59.0	NAP	88.0	13.00	<0.20
	Illinois	<0.2	38.0	NAP	33.0	4.70	<0.20
	Oxford	<0.2	33.0	NAP	20.0	3.50	<0.20
	Oak Ridge	<0.2	27.0	NAP	17.0	19.00	<0.20
11 Oct 1984	Ithaca	ISA	130.0	NAP	110.0	15.00	<0.20
12 Oct 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
16 Oct 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Virginia	<0.2	19.0	NAP	26.0	4.10	<0.20
	Illinois	ISA	55.0	NAP	39.0	6.10	<0.20
	* Oxford	0.5	60.0	NAP	34.0	8.30	<0.20
	Oak Ridge	<0.2	56.0	NAP	39.0	18.00	<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
17 Oct 1984	Penn State	ISA	63.0	NAP	70.0	9.00	<0.20
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
18 Oct 1984	Penn State	ISA	46.0	NAP	73.0	11.00	<0.20
	Oak Ridge	<0.2	33.0	NAP	21.0	13.00	<0.20
19 Oct 1984	Illinois	ISA	51.0	NAP	39.0	6.60	<0.20
20 Oct 1984	Ithaca	<0.2	44.0	NAP	48.0	7.00	<0.20
	Penn State	<0.2	39.0	NAP	20.0	5.00	<0.20
21 Oct 1984	Whiteface	<0.2	35.0	NAP	25.0	9.30	<0.20
22 Oct 1984	Whiteface	<0.2	44.0	NAP	38.0	3.90	<0.20
23 Oct 1984	Ithaca	3.4	35.0	NAP	29.0	7.70	<0.20
	Virginia	<0.2	11.0	NAP	10.0	4.80	<0.20
	Lewes	<0.2	89.0	NAP	66.0	99.00	<0.20
	Oxford	<0.2	31.0	NAP	20.0	4.30	<0.20
	Oak Ridge	<0.2	20.0	NAP	10.0	6.10	<0.20
24 Oct 1984	Ithaca	ISA	18.0	NAP	18.0	3.30	<0.20
	Penn State	<0.2	43.0	NAP	39.0	8.30	<0.20
	Brookhaven	<0.2	17.0	NAP	20.0	9.50	<0.20
25 Oct 1984	Virginia	<0.2	17.0	NAP	17.0	3.90	<0.20
	Lewes	<0.2	33.0	NAP	50.0	35.00	<0.20
	Oak Ridge	<0.2	15.0	NAP	8.6	5.10	<0.20
26 Oct 1984	Whiteface	<0.2	26.0	NAP	40.0	2.30	<0.20
	Ithaca	2.4	26.0	NAP	40.0	3.10	<0.20
	Oxford	2.5	28.0	NAP	12.0	5.90	<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
27 Oct 1984	Penn State	ISA	100.0	NAP	100.0	33.00	<0.20
	Brookhaven	<0.2	19.0	NAP	20.0	7.80	<0.20
28 Oct 1984	Whiteface	<0.2	ISA	ISA	ISA	ISA	ISA
29 Oct 1984	Ithaca	0.7	23.0	NAP	22.0	3.10	<0.20
	# Virginia	<0.2	17.0	NAP	17.0	9.20	<0.20
	# Illinois	ISA	71.0	NAP	130.0	20.00	<0.20
	Brookhaven	<0.2	18.0	NAP	28.0	22.00	<0.20
	Lewes	<0.2	7.8	NAP	8.4	6.60	<0.20
	Oxford	0.9	23.0	NAP	14.0	7.20	<0.20
	Oak Ridge	<0.2	27.0	NAP	21.0	7.90	<0.20
30 Oct 1984	Penn State	1.3	23.0	NAP	26.0	7.70	<0.20
	Lewes	2.0	21.0	NAP	32.0	21.00	<0.20
31 Oct 1984	Whiteface	0.8	ISA	ISA	ISA	ISA	ISA
	Brookhaven	<0.2	32.0	NAP	57.0	6.50	<0.20

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

		(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
1 Oct 1984	Oxford	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	117.5	16.0	0.60	3.60	1.70	0.33	165.	142.								
2 Oct 1984	Ithaca	50.1	23.0	<0.50	<1.00	1.50	0.21	86.	77.								
	Penn State	55.0	13.0	0.50	<2.00	1.30	<0.40	85.	71.								
	Virginia	37.2	11.0	1.00	<1.00	<0.50	<0.40	74.	49.								
	Brookhaven	24.5	12.0	63.00	<1.00	1.40	6.40	110.	115.								
	Lewes	27.5	8.7	160.00	0.69	3.00	15.00	217.	233.								
3 Oct 1984	Whiteface	33.9	18.0	1.10	<1.00	1.30	<0.40	63.	56.								
4 Oct 1984	Whiteface	29.5	26.0	0.70	<1.00	6.10	1.60	77.	72.								
	Ithaca	85.1	71.0	1.30	<1.00	35.00	5.10	254.	238.								
5 Oct 1984	Whiteface	26.3	25.0	2.50	<1.00	3.70	0.82	72.	63.								
9 Oct 1984	Whiteface	371.5	94.0	8.70	<1.00	4.80	0.86	531.	486.								
	Penn State	151.4	23.0	5.20	<1.00	2.20	0.86	219.	186.								
	Illinois	49.0	36.0	2.40	<1.00	5.80	1.90	114.	103.								
	Oxford	58.9	20.0	0.99	<2.00	1.30	0.33	90.	83.								
	Oak Ridge	46.8	16.0	11.00	<1.00	1.30	1.40	90.	79.								
11 Oct 1984	Ithaca	195.0	57.0	22.00	<1.00	ISA	ISA	385.	ISA								
12 Oct 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
16 Oct 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA								
	Virginia	47.9	6.7	<0.50	<1.00	1.10	0.25	68.	57.								
	Illinois	83.2	32.0	2.50	<1.00	6.00	2.20	155.	134.								
	Oxford	91.2	40.0	4.70	<2.00	7.90	2.00	162.	156.								
	Oak Ridge	79.4	18.0	10.00	<1.00	15.00	3.30	169.	152.								

A.111

		(H +)	(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
17 Oct 1984	Penn State	128.8	14.0	1.40	<1.00	7.40	0.82	205.	161.
	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
18 Oct 1984	Penn State	93.3	8.4	4.20	2.70	12.00	2.00	176.	137.
	Oak Ridge	69.2	4.8	NAP	NAP	1.70	0.95	100.	NAP
19 Oct 1984	# Illinois	36.3	16.0	9.40	<1.00	12.00	5.80	148.	97.
20 Oct 1984	Ithaca	91.2	26.0	1.40	<1.00	2.50	0.45	144.	125.
	Penn State	66.1	12.0	1.20	<0.40	2.60	0.53	103.	86.
21 Oct 1984	# Whiteface	21.4	2.7	2.40	73.00	15.00	6.50	104.	142.
22 Oct 1984	# Whiteface	66.1	28.0	1.10	8.70	2.60	1.20	130.	111.
23 Oct 1984	Ithaca	74.1	17.0	0.88	<1.00	1.20	0.21	107.	95.
	Virginia	13.2	8.7	3.30	<1.00	1.20	0.53	37.	29.
	Lewes	83.2	84.0	120.00	<1.00	11.00	13.00	343.	335.
	Oxford	57.5	15.0	2.50	<2.00	3.00	0.91	86.	83.
	Oak Ridge	38.0	6.3	16.00	2.20	0.92	0.62	56.	66.
24 Oct 1984	Ithaca	40.7	2.6	<0.50	<1.00	2.60	0.58	57.	50.
	Penn State	87.1	18.0	2.90	<2.00	1.70	0.53	133.	112.
	Brookhaven	41.7	6.4	7.10	<1.00	0.77	0.91	64.	59.
25 Oct 1984	# Virginia	33.9	9.5	1.40	<1.00	0.50	0.29	55.	46.
	# Lewes	81.3	23.0	28.00	<1.00	1.20	2.80	151.	140.
	Oak Ridge	32.4	1.5	24.00	2.60	0.97	0.53	44.	63.
26 Oct 1984	Whiteface	53.7	26.0	<0.50	<1.00	1.50	0.33	94.	83.
	Ithaca	72.4	13.0	0.61	<1.00	0.95	<0.40	95.	88.
	Oxford	55.0	3.5	3.60	<2.00	1.70	0.53	74.	67.

A.112

		(H ⁺)	(NH ₄ ⁺)	(NA ⁺)	(K ⁺)	(Ca ²⁺)	(Mg ²⁺)	ANION SUM	CATION SUM
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L	UEQ/L
27 Oct 1984	Penn State	204.2	30.0	24.00	<2.00	4.90	3.00	333.	274.
	Brookhaven	151.4	23.0	13.00	<1.00	1.90	1.60	66.	194.
28 Oct 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
29 Oct 1984	Ithaca	49.0	15.0	1.30	<1.00	0.65	0.21	71.	67.
	# Virginia	22.9	12.0	6.80	2.00	1.30	0.82	60.	48.
	# Illinois	169.8	67.0	8.10	<1.00	6.70	3.50	292.	265.
	Brookhaven	46.8	11.0	19.00	<1.00	1.40	2.00	86.	84.
	Lewes	19.5	4.3	2.60	<1.00	0.35	0.25	31.	28.
	Oxford	43.7	13.0	3.20	<2.00	0.87	0.45	67.	62.
	Oak Ridge	58.9	5.7	13.00	1.50	2.10	0.99	83.	85.
30 Oct 1984	Penn State	55.0	3.0	0.74	<2.00	0.82	0.29	80.	61.
	Lewes	51.3	21.0	13.00	<1.00	1.80	1.70	95.	92.
31 Oct 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	85.1	24.0	5.50	<1.00	0.75	0.37	128.	117.

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

MAP3S PRECIPITATION CHEMISTRY DATA

1/

		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	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			UNHO/CM
2 Nov 1984	# Whiteface	1800	NAP	11.08	377.0	360.0	19.	4.43	4.50	22.0
	Ithaca	1500	4	11.06	200.0	195.0	24.	4.00	4.05	47.0
	Penn State	1430	NAP	12.05	26.0	51.0	25.	3.91	3.96	ISA
	Illinois	1530	15	12.13	2291.0	2360.0	23.	4.60	4.59	13.0
	# Oxford	1500	6	11.06	2051.0	1930.0	16.	4.40	4.64	12.0
5 Nov 1984	Whiteface	1900	NAP	12.05	919.0	830.0	20.	4.90	4.81	7.5
	Brookhaven	1600	6	11.12	705.0	530.0	24.	4.97	4.81	13.0
	Lewes	1800	NAP	11.13	1302.0	1090.0	24.	5.33	5.17	8.2
	# Oxford	1600	8	12.05	1256.0	1200.0	22.	4.19	4.38	22.0
	Oak Ridge	1530	15	11.13	1085.0	1130.0	13.	4.20	4.17	33.0
6 Nov 1984	Ithaca	1400	11	12.06	1170.0	1150.0	27.	4.57	4.53	14.0
	Virginia	1530	10	12.06	694.0	560.0	23.	4.22	4.31	28.0
7 Nov 1984	# Whiteface	1600	NAP	12.05	178.0	210.0	20.	4.49	4.41	21.0
	Penn State	1430	NAP	12.05	1356.0	1310.0	25.	4.50	4.50	16.0
9 Nov 1984	Illinois	1600	ISA	ISA	8.0	ISA	23.	6.53	ISA	ISA
10 Nov 1984	Penn State	1600	NAP	12.05	492.0	460.0	25.	4.06	4.04	48.0
11 Nov 1984	# Oxford	1930	23	12.05	2528.0	2370.0	15.	4.06	4.33	27.0
12 Nov 1984	Ithaca	1400	16	12.06	710.0	715.0	25.	4.23	4.25	26.0
	# Penn State	1600	NAP	12.05	246.0	240.0	25.	4.16	4.21	30.0
	Virginia	1530	5	12.06	348.0	300.0	20.	4.43	4.51	17.0
	# Illinois	1730	18	12.13	363.0	394.0	23.	4.65	4.65	23.0
	Brookhaven	1400	10	12.13	2671.0	2730.0	20.	4.98	4.86	19.0
	Lewes	1500	NAP	12.06	592.0	520.0	22.	4.43	4.45	27.0

MAP3S PRECIPITATION CHEMISTRY DATA (CONT.)

2/

		T I M E		L I D		A R K		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		O P E N		D A T E		V O L		V O L		P H T		P H		P H			
		Z				MO.DA		ML		ML		C						UMHO/CM	
12 Nov 1984	# Oak Ridge	1600		8		12.05		2501.0		2465.0		14.		4.20		4.34		24.0	
13 Nov 1984	# Whiteface	1900		NAP		12.05		752.0		780.0		20.		4.22		4.13		35.0	
14 Nov 1984	Whiteface	1400		NAP		12.05		127.0		114.0		20.		4.76		4.69		11.0	
	# Ithaca	1500		31		12.06		105.0		240.0		25.		4.19		4.10		31.0	
	# Brookhaven	2000		1		ISA		10.0		2.0		21.		4.54		ISA		ISA	
15 Nov 1984	Illinois	1800		1		12.13		151.0		150.0		25.		4.85		5.04		17.0	
16 Nov 1984	Penn State	1400		NAP		12.05		39.0		51.0		25.		4.06		4.12		42.0	
	Oxford	2300		2		12.05		194.0		180.0		17.		3.84		4.02		49.0	
	Oak Ridge	1430		3		12.05		1053.0		1170.0		17.		4.20		4.40		22.0	
17 Nov 1984	# Whiteface	2100		NAP		12.05		392.0		195.0		20.		4.68		4.66		17.0	
19 Nov 1984	# Whiteface	1400		NAP		12.05		287.0		330.0		20.		4.15		4.10		40.0	
	# Ithaca	1400		36		12.06		237.0		285.0		26.		4.18		4.17		34.0	
	# Penn State	1430		NAP		12.05		72.0		85.0		25.		4.23		4.24		29.0	
	# Illinois	1600		6		12.13		241.0		210.0		25.		4.84		4.93		11.0	
	# Oxford	2200		23		12.05		510.0		504.0		20.		4.26		4.40		19.0	
	Oak Ridge	1400		5		12.05		1392.0		1530.0		18.		3.99		4.04		49.0	
20 Nov 1984	Virginia	1830		11		12.06		1691.0		880.0		21.		4.12		4.11		37.0	
	Brookhaven	1400		3		12.13		324.0		325.0		21.		4.02		4.04		52.0	
	Lewes	1430		NAP		12.06		2135.0		1980.0		22.		4.39		4.34		23.0	
21 Nov 1984	# Ithaca	1300		38		12.06		70.0		140.0		25.		4.85		4.88		11.0	
26 Nov 1984	# Whiteface	1400		NAP		12.05		55.0		50.0		20.		4.65		ISA		ISA	
27 Nov 1984	Illinois	900		NCE		12.13		1781.0		1970.0		25.		4.57		4.54		15.0	
28 Nov 1984	# Illinois	1800		2		12.13		798.0		780.0		25.		4.58		4.55		14.0	

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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

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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
2 Nov 1984	# Whiteface	<0.2	28.0	NAP	25.0	7.40	<0.20
	Ithaca	<0.2	50.0	NAP	43.0	4.30	<0.20
	Penn State	ISA	70.0	NAP	89.0	12.00	<0.20
	Illinois	ISA	14.0	NAP	11.0	2.60	<0.20
	# Oxford	3.2	12.0	NAP	7.2	3.50	<0.20
5 Nov 1984	Whiteface	<0.2	5.1	NAP	7.1	<2.00	<0.20
	Brookhaven	<0.2	8.7	NAP	5.5	45.00	<0.20
	Lewes	<0.2	4.4	NAP	2.6	37.00	<0.20
	# Oxford	3.2	21.0	NAP	16.0	8.00	<0.20
	Oak Ridge	<0.2	32.0	NAP	27.0	4.70	<0.20
6 Nov 1984	Ithaca	<0.2	8.7	NAP	14.0	3.40	<0.20
	Virginia	<0.2	22.0	NAP	25.0	20.00	<0.20
7 Nov 1984	# Whiteface	<0.2	24.0	NAP	2.7	<0.60	<0.20
	Penn State	<0.2	12.0	NAP	19.0	6.90	<0.20
9 Nov 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA
10 Nov 1984	Penn State	<0.2	48.0	NAP	51.0	24.00	<0.20
11 Nov 1984	# Oxford	4.9	22.0	NAP	23.0	12.00	<0.20
12 Nov 1984	Ithaca	1.6	20.0	NAP	28.0	5.20	<0.20
	# Penn State	0.7	24.0	NAP	31.0	5.60	<0.20
	Virginia	<0.2	14.0	NAP	17.0	6.50	<0.20
	# Illinois	2.7	37.0	NAP	46.0	12.00	<0.20
	Brookhaven	<0.2	6.5	NAP	4.4	38.00	<0.20
	Lewes	<0.2	26.0	NAP	18.0	51.00	<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
12 Nov 1984	# Oak Ridge	0.2	24.0	NAP	13.0	13.00	<0.20
13 Nov 1984	# Whiteface	<0.2	25.0	NAP	40.0	3.90	<0.20
14 Nov 1984	Whiteface	<0.2	13.0	NAP	9.6	3.10	<0.20
	# Ithaca	ISA	16.0	NAP	53.0	5.00	<0.20
	# Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA
15 Nov 1984	Illinois	1.3	28.0	NAP	47.0	9.30	<0.20
16 Nov 1984	Penn State	ISA	40.0	NAP	52.0	8.80	<0.20
	Oxford	2.8	47.0	NAP	47.0	14.00	<0.20
	Oak Ridge	<0.2	23.0	NAP	17.0	6.30	<0.20
17 Nov 1984	# Whiteface	NAP	22.0	NAP	30.0	2.60	<0.20
19 Nov 1984	# Whiteface	0.1	26.0	NAP	69.0	3.80	<0.20
	# Ithaca	<0.2	21.0	NAP	60.0	4.90	<0.20
	# Penn State	ISA	15.0	NAP	57.0	5.90	<0.20
	# Illinois	<0.2	12.0	NAP	19.0	8.20	<0.20
	# Oxford	1.2	8.9	NAP	31.0	5.70	<0.20
	Oak Ridge	6.5	48.0	NAP	39.0	43.00	<0.20
20 Nov 1984	Virginia	4.4	26.0	NAP	32.0	7.30	<0.20
	Brookhaven	2.5	38.0	NAP	66.0	65.00	<0.20
	Lewes	0.1	13.0	NAP	19.0	9.70	<0.20
21 Nov 1984	# Ithaca	ISA	5.7	NAP	20.0	23.00	<0.20
26 Nov 1984	# Whiteface	<0.2	ISA	ISA	ISA	ISA	ISA
27 Nov 1984	Illinois	2.6	15.0	NAP	12.0	7.10	<0.20
28 Nov 1984	# Illinois	4.0	15.0	NAP	11.0	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
29 Nov 1984 # Ithaca	1.4	14.0	NAP	22.0	5.40	<0.20
Penn State	5.6	7.3	NAP	5.8	5.20	<0.20
Lewes	1.7	5.9	NAP	4.4	46.00	<0.20
# Oxford	1.0	8.2	NAP	2.5	3.30	<0.20
# Oak Ridge	0.4	8.0	NAP	4.6	6.70	<0.20
30 Nov 1984 # Whiteface	<0.2	9.7	NAP	7.0	5.30	<0.20
Brookhaven	<0.2	7.2	NAP	4.0	73.00	<0.20

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

		(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
2 Nov 1984	# Whiteface	31.6	8.9	1.50	23.00	5.10	4.00	88.	83.
	Ithaca	89.1	40.0	2.00	<1.00	1.50	0.49	147.	135.
	Penn State	109.6	48.0	3.20	<1.00	9.40	1.90	241.	183.
	Illinois	25.7	8.8	0.73	<1.00	1.20	0.29	42.	38.
	# Oxford	22.9	8.3	0.59	<2.00	0.50	<0.40	35.	33.
5 Nov 1984	Whiteface	15.5	<0.6	<0.50	<0.40	0.22	<0.40	17.	16.
	Brookhaven	15.5	2.9	39.00	0.96	1.40	4.10	68.	69.
	Lewes	6.8	1.4	29.00	0.88	0.75	2.80	48.	45.
	# Oxford	41.7	7.7	1.90	<1.00	0.60	<0.40	66.	52.
	Oak Ridge	67.6	13.0	57.00	11.00	1.50	0.66	96.	153.
6 Nov 1984	Ithaca	29.5	1.0	2.50	<1.00	0.50	0.29	35.	35.
	Virginia	49.0	11.0	18.00	<1.00	1.20	1.90	89.	84.
7 Nov 1984	# Whiteface	38.9	20.0	1.50	<1.00	2.50	0.37	51.	66.
	Penn State	31.6	4.0	4.20	<1.00	0.32	0.49	50.	41.
9 Nov 1984	Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
10 Nov 1984	Penn State	91.2	13.0	20.00	<1.00	9.60	3.10	171.	150.
11 Nov 1984	# Oxford	46.8	8.9	7.80	<1.00	2.60	1.10	79.	71.
12 Nov 1984	Ithaca	56.2	4.4	2.50	<1.00	2.60	0.45	73.	69.
	# Penn State	61.7	8.3	2.50	<1.00	1.50	0.37	85.	76.
	Virginia	30.9	5.4	3.90	<1.00	1.20	0.62	52.	44.
	# Illinois	22.4	42.0	8.10	<1.00	23.00	4.20	132.	127.
	Brookhaven	13.8	0.8	36.00	0.51	1.00	3.80	55.	61.
	Lewes	35.5	23.0	45.00	<1.00	2.30	4.90	121.	118.

		(H +)	(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
12 Nov 1984	# Oak Ridge	45.7	7.2	8.90	<0.40	2.50	1.20	74.	69.
13 Nov 1984	# Whiteface	74.1	7.9	1.60	<1.00	1.00	0.29	94.	86.
14 Nov 1984	Whiteface	20.4	7.4	2.50	<1.00	1.60	0.53	39.	35.
	# Ithaca	66.1	10.0	1.80	2.20	3.60	0.50	90.	88.
	# Brookhaven	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
15 Nov 1984	Illinois	9.1	49.0	14.00	<1.00	15.00	3.70	112.	110.
16 Nov 1984	Penn State	75.9	20.0	14.00	<1.00	11.00	2.50	141.	137.
	Oxford	95.5	23.0	12.00	<1.00	9.50	1.90	155.	153.
	Oak Ridge	39.8	10.0	3.40	<1.00	4.00	0.78	69.	63.
17 Nov 1984	# Whiteface	21.9	22.0	20.00	7.90	4.30	4.20	77.	89.
19 Nov 1984	# Whiteface	79.4	27.0	1.40	<1.00	1.60	0.29	125.	112.
	# Ithaca	67.6	21.0	1.20	<1.00	5.10	1.10	107.	102.
	# Penn State	57.5	5.4	3.00	<1.00	3.70	0.49	93.	74.
	# Illinois	11.7	7.0	6.20	<1.00	6.70	2.80	51.	44.
	# Oxford	39.8	5.8	1.50	<1.00	1.30	0.41	55.	51.
	Oak Ridge	91.2	20.0	40.00	<1.00	6.20	4.70	178.	173.
20 Nov 1984	Virginia	77.6	11.0	2.20	<1.00	1.40	0.33	91.	94.
	Brookhaven	91.2	13.0	61.00	<1.00	6.60	7.30	207.	193.
	Lewes	45.7	5.8	6.20	<1.00	0.72	0.66	55.	60.
21 Nov 1984	# Ithaca	13.2	2.9	10.00	0.69	10.00	1.70	54.	50.
26 Nov 1984	# Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
27 Nov 1984	Illinois	28.8	7.0	4.50	<1.00	3.40	0.91	49.	49.
28 Nov 1984	# Illinois	28.2	6.2	1.30	<1.00	1.40	0.62	45.	40.

A.121

	(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
29 Nov 1984 # Ithaca	30.9	16.0	2.80	<1.00	1.00	0.49	55.	53.
Penn State	15.5	1.7	1.50	<1.00	0.37	<0.40	26.	19.
Lewes	7.2	2.3	34.00	0.27	0.97	3.80	62.	53.
# Oxford	20.0	3.7	1.40	<1.00	1.10	0.29	22.	28.
# Oak Ridge	16.2	2.6	3.80	<1.00	1.10	0.53	27.	26.
30 Nov 1984 # Whiteface	18.2	4.6	3.40	<1.00	0.35	0.41	32.	28.
Brookhaven	8.5	<0.6	78.00	0.54	1.70	7.40	91.	105.

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

NAPIS PRECIPITATION CHEMISTRY DATA

1/

		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	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			
1 Dec 1984	Penn State	1900	NAP	12.05	255.0	290.0	25.	4.20	4.22	31.0
2 Dec 1984	# Ithaca	1900	4	12.06	1260.0	1220.0	24.	4.32	4.32	23.0
3 Dec 1984	# Whiteface	1400	NAP	12.05	365.0	310.0	20.	4.30	4.20	29.0
	# Ithaca	2200	4	1.09	585.0	560.0	24.	4.48	4.40	16.0
	Penn State	1800	NAP	1.07	693.0	700.0	25.	4.35	4.33	22.0
	Illinois	1700	NAP	12.13	426.0	390.0	25.	4.16	4.13	40.0
	Lewes	2000	NAP	12.06	443.0	420.0	25.	4.18	4.15	45.0
	# Oxford	2000	2	12.05	315.0	2760.0	15.	4.07	4.20	33.0
	Oak Ridge	1400	5	12.05	547.0	470.0	16.	4.15	4.20	30.0
4 Dec 1984	# Whiteface	1430	NAP	1.10	702.0	680.0	20.	4.78	4.64	11.0
	Virginia	1930	9	1.16	31.0	2190.0	22.	3.99	ISA	ISA
	Brookhaven	1400	10	12.13	390.0	420.0	20.	4.37	4.36	42.0
6 Dec 1984	# Whiteface	1900	NAP	1.10	1595.0	1460.0	20.	5.35	5.08	3.6
	# Ithaca	2000	2	1.09	1360.0	1450.0	25.	4.85	4.73	7.9
	Virginia	2030	7	1.16	1318.0	790.0	21.	4.43	4.37	18.0
	# Illinois	2000	2	1.08	37.0	48.0	25.	4.77	4.72	ISA
	Brookhaven	1400	1	12.13	2593.0	2400.0	20.	4.72	4.67	15.0
	# Lewes	1700	NAP	1.10	1864.0	1710.0	26.	4.68	4.59	25.0
	# Oxford	2230	20	1.03	590.0	730.0	18.	4.86	4.96	5.2
	Oak Ridge	2130	9	1.09	583.0	670.0	16.	4.44	4.44	21.0
7 Dec 1984	# Whiteface	1400	NAP	1.10	84.0	81.0	20.	4.37	ISA	ISA
	# Penn State	1400	NAP	1.07	1026.0	960.0	25.	4.63	4.69	9.5
10 Dec 1984	# Whiteface	1800	NAP	1.10	119.0	290.0	19.	4.56	4.44	16.0

A.123

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 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	U M H O /C M
		Z		MO.DA	ML	ML	C			
11 Dec 1984	Ithaca	2100	3	1.09	40.0	51.0	24.	3.92	3.94	52.0
	Penn State	1430	NAP	1.07	512.0	440.0	25.	4.16	4.17	30.0
	Virginia	2000	3	1.16	39.0	33.0	23.	4.09	ISA	ISA
	Oak Ridge	1400	4	1.09	171.0	130.0	15.	4.00	4.01	47.0
12 Dec 1984	Oxford	100	3	1.03	433.0	420.0	17.	4.03	4.14	33.0
13 Dec 1984	Lewes	2000	NAP	ISA	18.0	16.0	26.	3.65	ISA	ISA
14 Dec 1984	Whiteface	1400	NAP	1.10	85.0	130.0	20.	3.94	3.87	64.0
	Illinois	1430	6	1.08	1065.0	1150.0	25.	4.35	4.34	24.0
15 Dec 1984	Penn State	1330	NAP	1.07	403.0	540.0	25.	3.83	3.80	75.0
	Oxford	1700	21	1.03	1081.0	1070.0	19.	4.05	4.16	36.0
17 Dec 1984	Whiteface	1700	NAP	ISA	MOE	680.0	ISA	ISA	ISA	ISA
	Ithaca	1400	8	ISA	20.0	130.0	24.	3.88	ISA	ISA
	Brookhaven	130	4	1.10	166.0	130.0	20.	3.99	4.01	81.0
18 Dec 1984	Oak Ridge	1400	3	1.09	14.0	ISA	15.	4.00	4.01	ISA
19 Dec 1984	Whiteface	1500	NAP	1.10	285.0	98.0	21.	4.31	4.20	32.0
	Illinois	1800	5	1.08	173.0	190.0	25.	4.26	4.22	31.0
20 Dec 1984	Ithaca	1400	1	1.09	290.0	480.0	26.	4.51	4.37	19.0
	Penn State	1330	NAP	1.07	895.0	900.0	25.	4.11	4.29	24.0
	Virginia	2200	1	ISA	1.0	19.0	ISA	ISA	ISA	ISA
	Brookhaven	1400	7	1.10	169.0	150.0	20.	3.86	3.85	69.0
	Oxford	1600	8	1.03	304.0	280.0	16.	4.42	4.36	22.0
21 Dec 1984	Whiteface	1400	NAP	1.10	309.0	360.0	20.	4.78	4.59	12.0
22 Dec 1984	Virginia	1700	9	1.16	682.0	530.0	21.	4.08	4.01	44.0

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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 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		D A T E		V O L		V O L		P H		P H		P H			
		Z		MO.DA		ML		NL		C								UMHO/CM	
22 Dec 1984	# Illinois	1530	4	1.08	773.0	830.0	25.	4.41	4.44	17.0									
	Lewes	1630	NAP	1.10	344.0	340.0	25.	3.98	3.92	63.0									
	Oxford	1500	7	1.03	1789.0	1690.0	18.	4.58	4.46	16.0									
23 Dec 1984	# Penn State	1330	NAP	1.07	1262.0	1300.0	25.	4.14	4.25	25.0									
	Brookhaven	1100	13	1.10	691.0	715.0	20.	3.94	3.92	80.0									
24 Dec 1984	# Whiteface	1400	NAP	1.10	515.0	700.0	20.	4.44	4.31	24.0									
25 Dec 1984	Penn State	1230	NAP	1.07	129.0	100.0	25.	3.75	4.04	42.0									
	Brookhaven	1600	7	1.10	308.0	340.0	20.	4.34	4.33	27.0									
26 Dec 1984	Virginia	1630	2	1.16	15.0	19.0	18.	4.04	ISA	ISA									
	# Illinois	1600	7	ISA	3.2	48.0	ISA	ISA	ISA	ISA									
	# Lewes	1700	NAP	1.10	59.0	65.0	25.	3.79	ISA	ISA									
	Oak Ridge	1700	5	1.09	2744.0	2580.0	22.	4.10	4.19	31.0									
27 Dec 1984	# Whiteface	1700	NAP	1.10	399.0	440.0	20.	4.17	4.06	41.0									
28 Dec 1984	# Penn State	1600	NAP	1.07	806.0	900.0	25.	3.66	3.83	68.0									
	Illinois	1730	9	1.08	30.0	34.0	25.	3.86	3.85	ISA									
30 Dec 1984	# Ithaca	2000	29	1.09	1270.0	1400.0	25.	4.32	4.29	24.0									
	Oxford	1500	8	1.03	2079.0	1840.0	19.	4.73	4.63	11.0									
31 Dec 1984	# Whiteface	1400	NAP	1.10	MOE	5690.0	20.	4.67	4.51	12.0									
	Penn State	1600	NAP	1.07	286.0	250.0	25.	3.90	4.18	31.0									
	Lewes	2400	NAP	1.10	444.0	420.0	25.	4.37	4.28	35.0									

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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
1 Dec 1984	Penn State	1.0	12.0	NAP	56.0	6.00	<0.20
2 Dec 1984	# Ithaca	5.0	11.0	NAP	26.0	4.90	<0.20
3 Dec 1984	# Whiteface	0.1	11.0	NAP	55.0	2.40	<0.20
	# Ithaca	2.9	12.0	NAP	17.0	5.40	<0.20
	Penn State	0.8	26.0	NAP	20.0	3.60	<0.20
	Illinois	2.0	31.0	NAP	66.0	12.00	<0.20
	Lewes	<0.2	25.0	NAP	52.0	84.00	<0.20
	# Oxford	11.0	26.0	NAP	29.0	6.20	<0.20
	Oak Ridge	9.0	10.0	NAP	20.0	7.50	<0.20
4 Dec 1984	# Whiteface	<0.2	6.5	NAP	14.0	1.20	<0.20
	Virginia	0.9	ISA	NAP	ISA	ISA	ISA
	Brookhaven	1.8	20.0	NAP	24.0	170.00	<0.20
6 Dec 1984	# Whiteface	<0.2	1.3	NAP	4.1	3.30	<0.20
	# Ithaca	<0.2	1.0	NAP	16.0	5.20	<0.20
	Virginia	15.0	9.3	NAP	15.0	3.60	<0.20
	# Illinois	ISA	21.0	NAP	61.0	9.00	<0.20
	Brookhaven	0.2	8.2	NAP	3.4	46.00	<0.20
	# Lewes	<0.2	14.0	NAP	8.4	100.00	<0.20
	# Oxford	<0.1	2.3	NAP	8.8	3.60	<0.20
	Oak Ridge	6.8	19.0	NAP	23.0	11.00	<0.20
7 Dec 1984	# Whiteface	<0.2	0.0	NAP	42.0	4.20	<0.20
	# Penn State	<0.2	2.7	NAP	16.0	4.40	<0.20
10 Dec 1984	# Whiteface	<0.2	7.9	NAP	20.0	5.30	<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
11 Dec 1984	Ithaca	ISA	23.0	NAP	82.0	20.00	<0.20
	Penn State	5.4	17.0	NAP	39.0	5.00	<0.20
	Virginia	0.1	ISA	NAP	ISA	ISA	ISA
	Oak Ridge	<0.2	42.0	NAP	45.0	13.00	<0.20
12 Dec 1984	Oxford	7.7	24.0	NAP	31.0	6.00	<0.20
13 Dec 1984	Lewes	ISA	ISA	ISA	ISA	ISA	ISA
14 Dec 1984	Whiteface	<0.2	49.0	NAP	87.0	8.10	<0.20
	Illinois	2.4	24.0	NAP	24.0	10.00	<0.20
15 Dec 1984	Penn State	1.4	54.0	NAP	73.0	18.00	<0.20
	Oxford	2.1	36.0	NAP	36.0	16.00	<0.20
17 Dec 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA
	Ithaca	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	<0.2	52.0	NAP	59.0	300.00	<0.20
18 Dec 1984	Oak Ridge	ISA	50.0	NAP	59.0	51.00	<0.20
19 Dec 1984	Whiteface	<0.2	28.0	NAP	45.0	5.40	<0.20
	Illinois	9.5	33.0	NAP	32.0	9.70	<0.20
20 Dec 1984	Ithaca	7.9	21.0	NAP	13.0	13.00	<0.20
	Penn State	6.6	19.0	NAP	23.0	2.80	<0.20
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	0.1	46.0	NAP	100.0	32.00	<0.20
	Oxford	6.2	20.0	NAP	10.0	4.70	<0.20
21 Dec 1984	Whiteface	<0.2	7.6	NAP	18.0	6.30	<0.20
22 Dec 1984	Virginia	2.6	26.0	NAP	59.0	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
22 Dec 1984	# Illinois	<0.2	20.0	NAP	12.0	4.00	<0.20
	Lewes	<0.2	49.0	NAP	55.0	69.00	<0.20
	Oxford	13.0	11.0	NAP	7.0	4.00	<0.20
23 Dec 1984	# Penn State	7.4	18.0	NAP	22.0	4.40	<0.20
	Brookhaven	0.2	49.0	NAP	55.0	210.00	<0.20
24 Dec 1984	# Whiteface	<0.2	17.0	NAP	42.0	4.10	<0.20
25 Dec 1984	Penn State	ISA	30.0	NAP	49.0	8.20	<0.20
	Brookhaven	0.6	17.0	NAP	32.0	45.00	<0.20
26 Dec 1984	Virginia	ISA	ISA	NAP	ISA	ISA	ISA
	# Illinois	ISA	ISA	ISA	ISA	ISA	ISA
	# Lewes	<0.2	ISA	NAP	ISA	ISA	ISA
	Oak Ridge	<0.2	32.0	NAP	24.0	9.70	<0.20
27 Dec 1984	# Whiteface	0.2	26.0	NAP	67.0	6.70	<0.20
28 Dec 1984	# Penn State	ISA	48.0	NAP	60.0	21.00	<0.20
	Illinois	ISA	100.0	NAP	59.0	53.00	<0.20
30 Dec 1984	# Ithaca	0.8	20.0	NAP	28.0	13.00	<0.20
	Oxford	<0.2	11.0	NAP	9.4	3.00	<0.20
31 Dec 1984	# Whiteface	<0.2	11.0	NAP	9.9	13.00	<0.20
	Penn State	0.7	28.0	NAP	27.0	9.20	<0.20
	Lewes	NAP	28.0	NAP	19.0	99.00	<0.20

		(H +)	(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
1 Dec 1984	Penn State	60.3	4.1	4.20	<1.00	3.90	0.29	86.	77.
2 Dec 1984	# Ithaca	47.9	5.7	<0.50	<1.00	0.82	<0.40	53.	55.
3 Dec 1984	# Whiteface	63.1	9.0	2.50	<1.00	0.85	<0.40	79.	76.
	# Ithaca	34.7	7.7	0.35	0.40	0.30	<0.40	46.	44.
	Penn State	46.8	8.3	1.20	<0.40	0.45	<0.40	76.	57.
	Illinois	74.1	36.0	2.80	<1.00	8.40	1.30	140.	132.
	Lewes	70.8	8.0	67.00	<1.00	3.60	7.80	186.	169.
	# Oxford	63.1	17.0	3.40	<1.00	5.20	1.30	87.	96.
	Oak Ridge	63.1	7.5	4.20	<1.00	3.10	0.70	64.	82.
4 Dec 1984	# Whiteface	22.9	4.8	1.10	<0.40	0.30	<0.40	28.	29.
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	43.7	8.9	150.00	<1.00	4.00	16.00	250.	241.
6 Dec 1984	# Whiteface	8.3	0.8	0.81	<0.40	<0.50	<0.40	10.	10.
	# Ithaca	18.6	1.5	<0.50	<0.40	0.20	<0.40	25.	21.
	Virginia	42.7	2.4	0.56	0.64	1.60	<0.40	37.	49.
	# Illinois	19.1	13.0	8.90	<0.40	20.00	7.70	112.	96.
	Brookhaven	21.4	<0.6	41.00	<1.00	1.00	4.20	66.	73.
	# Lewes	25.7	3.1	95.00	1.70	1.80	8.20	136.	146.
	# Oxford	11.0	1.0	1.00	<0.40	0.62	0.25	17.	15.
	Oak Ridge	37.2	2.0	0.35	<0.40	9.50	2.70	72.	64.
7 Dec 1984	# Whiteface	ISA	5.6	2.60	0.98	0.60	<0.40	64.	ISA
	# Penn State	20.4	1.1	<0.50	<0.40	0.50	<0.40	26.	23.
10 Dec 1984	# Whiteface	37.2	1.6	1.10	<0.40	1.40	<0.40	49.	43.

		(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
11 Dec 1984	Ithaca	114.8	6.0	2.10	0.51	2.50	<0.40	140.	128.
	Penn State	67.6	3.5	1.60	<0.40	0.67	<0.40	78.	74.
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	97.7	15.0	7.70	0.62	2.10	0.30	142.	126.
12 Dec 1984	Oxford	72.4	15.0	2.00	<0.40	0.90	0.25	86.	92.
13 Dec 1984	Lewis	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
14 Dec 1984	Whiteface	134.9	41.0	2.00	0.87	1.60	<0.40	193.	182.
	Illinois	45.7	15.0	6.70	<0.40	2.60	1.20	82.	75.
15 Dec 1984	Penn State	158.5	39.0	8.70	<0.40	2.20	0.86	199.	212.
	Oxford	69.2	25.0	12.00	<0.40	2.40	1.40	124.	114.
17 Dec 1984	Whiteface	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Ithaca	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	97.7	9.6	NAP	5.10	5.40	22.00	463.	NAP
18 Dec 1984	Oak Ridge	85.1	25.0	57.00	2.70	ISA	ISA	226.	ISA
19 Dec 1984	Whiteface	63.1	32.0	2.60	0.97	2.00	<0.40	106.	103.
	Illinois	60.3	22.0	4.20	<0.40	3.50	1.60	108.	97.
20 Dec 1984	Ithaca	42.7	8.6	<0.50	<0.40	0.30	<0.40	60.	52.
	Penn State	51.3	11.0	0.87	<0.40	0.62	<0.40	64.	64.
	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Brookhaven	141.3	36.0	26.00	1.30	2.00	1.60	224.	212.
	Oxford	43.7	14.0	4.30	<0.40	1.30	0.62	63.	66.
21 Dec 1984	Whiteface	25.7	7.3	2.10	<0.40	0.90	<0.40	40.	37.
22 Dec 1984	Virginia	97.7	19.0	3.30	0.74	0.20	0.40	121.	122.

		(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
22 Dec 1984	# Illinois	36.3	12.0	1.40	0.35	1.40	0.53	57.	54.
	Lewes	120.2	22.0	59.00	2.60	3.10	5.20	222.	220.
	Oxford	34.7	3.4	<0.50	<0.40	0.62	<0.40	33.	39.
23 Dec 1984	# Penn State	56.2	9.2	0.73	<0.40	0.60	<0.40	62.	67.
	Brookhaven	120.2	22.0	180.00	32.00	3.90	16.00	363.	394.
24 Dec 1984	# Whiteface	49.0	13.0	1.10	3.80	1.20	1.10	80.	71.
25 Dec 1984	Penn State	91.2	9.1	4.40	<0.40	2.60	0.37	117.	111.
	Brookhaven	46.8	6.0	44.00	2.60	1.40	3.30	111.	109.
26 Dec 1984	Virginia	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Illinois	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	# Lewes	ISA	ISA	ISA	ISA	ISA	ISA	ISA	ISA
	Oak Ridge	64.6	12.0	4.70	0.54	1.30	0.10	90.	85.
27 Dec 1984	# Whiteface	87.1	25.0	2.60	0.71	2.60	0.60	126.	122.
28 Dec 1984	# Penn State	147.9	24.0	8.10	<0.40	3.90	1.20	185.	190.
	Illinois	141.3	49.0	46.00	4.00	19.00	7.70	312.	294.
30 Dec 1984	# Ithaca	51.3	12.0	1.80	0.40	0.83	<0.40	81.	67.
	Oxford	23.4	4.4	2.50	<0.40	0.37	0.25	34.	32.
31 Dec 1984	# Whiteface	26.9	6.9	1.40	0.61	<0.50	0.10	45.	36.
	Penn State	66.1	11.0	8.30	<0.40	1.00	0.70	92.	89.
	Lewes	52.5	6.4	88.00	1.70	2.10	7.50	174.	168.

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TABLE A.6. ADS Codes for 1984

A21	- Equipment failure - all of event missed							
	84011520	84011940	84012440	84020110	84030740	84032010	84032400	84050110
	84121710							
A22	- Equipment failure - some data loss							
	84011170	84011770	84012520	84040570	84040580	84041770	84041970	84042480
	84042570	84042970	84050170	84050470	84050970	84052160	84072340	84072640
	84112610							
A26	- Sample inadvertently discarded in field							
	84050580							
A32	- Wet side open until sample collected							
	84011050	84011190	84013150	84091710	84111290	84122410		
B31	- Alternate rain gauge used							
	84030950	84031350	84032050	84050450	84050750	84090570	84102570	
B33	- Wind problems							
	84050110							
B36	- Sample frozen							
	84011990	84110580	84111180	84120380				
B37	- Late collection							
	84031920							
B38	- Organic debris in sample							
	84050990	84052410	84052930	84061980	84062590	84070480	84071390	84080380
	84080390	84080530	84080690	84081530	84090560	84091480	84091580	84092410
	84092610	84102110	84102210	84111710				
B39	- Unidentified debris in sample							
	84022440	84042390	84050190	84050940	84052280	84052380	84052440	84052840
	84053080	84061980	84062480	84062810	84072390	84080540	84080740	84081940
	84100240	84102540	84102940	84110210	84110280	84111420	84111920	84121010
B41	- Dust/dirt in sample							
	84022980	84030680	84031080	84031380	84042480	84050120	84051280	
B44	- Insects in sample							
	84122670							
D21	- Equipment failure - part of event missed							
	84022980	84042940	84052150	84101680	84101950	84102950	84111310	84111420
	84112120	84121010	84123110					
D22	- Possible operator contamination							
	84052280	84081430	84112990					
D23	- Field pH suspect due to procedure							
	84061480							
D24	- Predicted volume suspect due to rain gauge problems							
	84112610							

TABLE A.6. ADS Codes for 1984 (continued)

B	- Bulk Sample							
	84030120	84030720	84031220	84031920	84033020			
SAMPLES WITH FROZEN OR SEMI-FROZEN PRECIPITATION								
M	- Mixed rain and snow							
	84010220	84011000	84012400	84012510	84013160	84030550	84030630	84030660
	84030740	84031330	84031380	84031650	84032010	84032230	84032250	84032280
	84032290	84033050	84033060	84040630	84040830	84051710	84110210	84111230
	84111250	84111310	84111460	84111950	84112850	84112920	84112980	84113010
	84120220	84120320	84120670	84122020	84122250	84122330	84123020	
S	- Snow							
	84010310	84010350	84010730	84010910	84010920	84010930	84011120	84011130
	84011160	84011170	84011190	84011210	84011350	84011430	84011480	84011520
	84011610	84011630	84011750	84011770	84011780	84011790	84011800	84011920
	84011930	84011970	84012010	84012450	84012610	84012710	84012900	84013030
	84013120	84013130	84013150	84013180	84020530	84020580	84020620	84020650
	84020670	84020690	84020730	84020810	84020910	84022130	84022390	84022580
	84022630	84022720	84022930	84022960	84022980	84022990	84030110	84030120
	84030150	84030670	84030710	84030720	84030930	84030950	84030970	84031080
	84031220	84031350	84031460	84031510	84031920	84032330	84032510	84033010
	84033020	84033030	84033130	84041010	84110710	84111420	84111710	84111910
	84111930	84111980	84112120	84112610	84120310	84120410	84120610	84120620
	84120650	84120680	84120710	84120730	84121010	84121910	84122110	84122650
	84122710	84122830						

TABLE A.7. ADS Codes Listed by Sample ID for 1984

[illegible]

APPENDIX B
SITE AUDIT FORMS

MAP3S/PCN SITE AUDIT FORM

PAGE 1 OF 3

SITE # 1 - WhitefaceAUDITOR Terry DanaSITE OPERATOR Marc DuboisDATE 7/8/84SITE MANAGER J. KadlecPRESENT Marc Dubois

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			
B. Sample Changing	X			
1) Preparation	X			
2) Bucket Handling En Route	X			
3) Change of Buckets	X			
4) Cleaning of Collector Pad	X			
5) Handling on Return	X			
C. Lab Handling & Measurement	X			
1) Weighing Bucket	X			New Scales
2) TCM Aliquot			X	Pipetted from bucket with glass pipette
3) TCM Fixing	X			
4) pH Aliquot	X			
5) pH Procedure	X			pH of Test Sol. <u>4.22</u>
(a) calibration	X			T of Test Sol. <u>22°C</u>
(b) recalibration	X			Buffers Lo <u> </u> Hi <u> </u>
6) Shipping Aliquot(s)	X			
7) Blank Procedure	X			Will do 4-5 day ones
D. Storage of Samples	X			
E. Shipping Procedure	X			
1) Taping Bottles	X			
2) Blue Ice Control	X			
3) Packing	X			
4) Separation of TCM	X			

SITE # 1-WhitefaceAUDITOR T. DanaSITE OPERATOR Marc DuboisDATE 7/8/84

	GOOD	FAIR	POOR	REMARKS
F. Cleaning of Reused Buckets	X			
G. Rainfall Determination	X			
Calculation of Pred. Vol.	X			
2. Discussion				
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			Will for note codes
6) Copy or Original:	X			Copy required locally
C. Sampling Days of Week	X			
D. Awareness of Data Reports	X			
1) Any on Hand?	X			
2) Checks Data?	X			
E. Complaints				None
1) Deficiencies in Instructions				
2) Supply Problems?				
3) Communications Problems?				

SITE # 1 - WhitefaceAUDITOR T. DanaSITE OPERATOR Marc DuboisDATE 7/8/84

3. Additional Notes/Items of Discussion

A.

B.

C.

D.

E.

F.

G.

4. Major Problems

5. Summary

ACTION REQUIRED

Separate container for drawing the aliquot if nondisposable pipette used.

ACTION PERFORMED

MAP3S/PCN SITE AUDIT FORM

PAGE 1 OF 3

SITE # 20 - Ithaca

AUDITOR J. Rothert

SITE OPERATOR Tom Butler

DATE 10/24/84

SITE MANAGER Gene Likens

PRESENT Tom Butler

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control				
B. Sample Changing				
1) Preparation	X			
2) Bucket Handling En Route	X			
3) Change of Buckets	X			
4) Cleaning of Collector Pad	X			
5) Handling on Return	X			
C. Lab Handling & Measurement				
1) Weighing Bucket	X			Volume by weight
2) TCM Aliquot	X			
3) TCM Fixing	X			
4) pH Aliquot	X			
5) pH Procedure	X			pH of Test Sol. <u>4.32</u>
a) calibration 4.01 pH 1-Pt calibration				T of Test Sol. <u>air temp. 23°C</u>
b) recalibration				Buffers Lo <u> </u> Hi <u> </u>
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			

SITE # 20 - IthacaAUDITOR J. RothertSITE OPERATOR Tom ButlerDATE 10/24/84

	GOOD	FAIR	POOR	REMARKS
F. Cleaning of Reused Buckets	X			Brought DD H ₂ O back to PCL to analyze
G. Rainfall Determination	X			
Calculation of Pred. Vol.				
2. Discussion				
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				
D. Awareness of Data Reports				
1) Any on Hand?	X			
2) Checks Data?	X			
E. Complaints				
1) Deficiencies in Instructions	X			
2) Supply Problems?				
3) Communications Problems?				

SITE # 20 - IthacaAUDITOR Jane RothertSITE OPERATOR Tom ButlerDATE 10/24/84

3. Additional Notes/Items of Discussion

- A. Rinses out sample bottle before pouring in sample if there is enough sample.
- B.
- C.
- D.
- E.
- F.
- G.

4. Major Problems

Need rain gauge ink.

5. Summary

Recleans buckets occasionally. Brought sample of DD H₂O back for analysis. Can use own DD H₂O for field blanks.

ACTION REQUIRED

ACTION PERFORMED

MAP3S/PCN SITE AUDIT FORM

PAGE 1 OF 3

SITE # 30 - Penn StateAUDITOR Jane RothertSITE OPERATOR Glenn RolphDATE 10/25/84SITE MANAGER Rosa de PenaPRESENT Rosa de Pena & Glenn Rolph

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control				
B. Sample Changing				
1) Preparation	X			
2) Bucket Handling En Route	X			
3) Change of Buckets	X			
4) Cleaning of Collector Pad	X			
5) Handling on Return	X			
C. Lab Handling & Measurement				
1) Weighing Bucket	X			
2) TCM Aliquot	X			
3) TCM Fixing	X			
4) pH Aliquot	1st			040350
5) pH Procedure				pH of Test Sol. <u>5.90 (?)</u>
a) calibration				T of Test Sol. <u>25°C</u> re-analysis
b) recalibration lets it set for a long				Buffers Lo <u>4.00</u> Hi <u>7.00</u>
time to equilibrate ≈ 11 min/cm				
6) Shipping Aliquot(s)				
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			

SITE # 30 - Penn StateAUDITOR Jane RothertSITE OPERATOR Glenn RolphDATE 10/25/84

	GOOD	FAIR	POOR	REMARKS
F. Cleaning of Reused Buckets	X			
G. Rainfall Determination				
Calculation of Pred. Vol.				
2. Discussion				
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				
5) Records Unusual Items?	X			
6) Copy or Original:				Original
C. Sampling Days of Week				
D. Awareness of Data Reports				
1) Any on Hand?	X			
2) Checks Data?	X			Checks and reports back to PCL
E. Complaints				
1) Deficiencies in Instructions				
2) Supply Problems?				Almost out of buckets
3) Communications Problems?				

SITE # 30 - Penn StateAUDITOR Jane RothertSITE OPERATOR Glenn RolphDATE 10/25/84

3. Additional Notes/Items of Discussion

A.

B.

C.

D.

E.

F.

G.

4. Major Problems

Poor field pH readings and pH test readings. New electrode - better pH readings.

5. Summary

ACTION REQUIRED

ACTION PERFORMED

Explained how to use straps on shipping boxes.

MAP3S/PCN SITE AUDIT FORM

PAGE 1 OF 3

SITE # 40 - VirginiaAUDITOR Elaine ChapmanSITE OPERATOR Linda JolleyDATE 12/3/84SITE MANAGER Bill Keene/Jim GallowayPRESENT Linda Jolley

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			See note A
B. Sample Changing				
1) Preparation	X			
2) Bucket Handling En Route	X			
3) Change of Buckets	X			
4) Cleaning of Collector Pad	X			
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	See	note	E	pH of Test Sol. <u>3.75</u>
a) calibration	X			T of Test Sol. <u>21.8°C</u>
b) recalibration	X			Buffers Lo <u> </u> Hi <u> </u>
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			See note B
3) Packing		X		See note F
4) Separation of TCM	X			

SITE # 40 - VirginiaAUDITOR Elaine ChapmanSITE OPERATOR Linda JolleyDATE 12/3/84

	GOOD	FAIR	POOR	REMARKS
F. Cleaning of Reused Buckets	X			
G. Rainfall Determination				
Calculation of Pred. Vol.	X			
2. Discussion				
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				None
1) Deficiencies in Instructions				None
2) Supply Problems?				Getting low on shipping boxes and available blue ice
3) Communications Problems?				

SITE # 40 - VirginiaAUDITOR Elaine ChapmanSITE OPERATOR Linda JolleyDATE 12/3/84

3. Additional Notes/Items of Discussion

- A. Suggest moving extra batteries away from clean collector buckets in on-site storage shed.
- B. Some Blue Ice frozen into refrigerator freezer frost. Should be recovered before summer.
- C. Reviewed parts of operator's manual dealing with volumes to ship for a given amount of precipitation.
- D. Reviewed filing of field information every time collector bucket is changed, whether or not a usable sample is recovered.
- E. Orion Model 801 Ionalyzer with Corning electrode and YSI Model 31 conductivity bridge with Beckman cell in use for field measurements. Takes 3 conductivity measurements and reports average. Operator states that individual measurements are usually within 4 - 5 $\mu\text{mho/cm}$ of each other.
- F. When packing Blue Ice in shipping containers, place the Blue Ice on sides of container with samples in between. Fill with packing chips and place third Blue Ice on top of samples.

4. Major Problems

None

5. Summary

ACTION REQUIRED

- 1. Move batteries as indicated in Note A.
- 2. Defrost refrigerator and recover Blue Ice, as indicated in Note B.
- 3. Change Blue Ice packing procedure.

ACTION PERFORMED

MAP3S/PCN SITE AUDIT FORM

PAGE 1 OF 3

SITE # 5 - IllinoisAUDITOR R. N. LeeSITE OPERATOR Scott DossettDATE 9/21/84

SITE MANAGER _____

PRESENT Jackie Sauer/Scott Dossett

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			
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	X			pH of Test Sol. <u>Not done at time of visit</u> T of Test Sol. _____ Buffers Lo _____ Hi _____
a) calibration	X			
b) recalibration	X			
6) Shipping Aliquot(s)	X			
7) Blank Procedure	X			
D. Storage of Samples	X			See note 3A
E. Shipping Procedure				
1) Taping Bottles	X			
2) Blue Ice Control	X			
3) Packing				
4) Separation of TCM	X			

SITE # 5 - IllinoisAUDITOR R. N. LeeSITE OPERATOR Scott DossettDATE 9/21/84

	GOOD	FAIR	POOR	REMARKS
F. Cleaning of Reused Buckets	X			
G. Rainfall Determination	X			
Calculation of Pred. Vol.	X			
2. Discussion				
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:				Two copies retained by site personnel
C. Sampling Days of Week				No sample retrieval on weekend
D. Awareness of Data Reports				
1) Any on Hand?	X			
2) Checks Data?	X			
E. Complaints				
1) Deficiencies in Instructions				
2) Supply Problems?				None identified
3) Communications Problems?				

SITE # 5 - IllinoisAUDITOR R. N. LeeSITE OPERATOR Scott DossettDATE 9/21/84

3. Additional Notes/Items of Discussion

- A. The refrigerator used to store samples was not operating during visit so samples from last four events were stored at room temperature. These samples will be identified when shipped to the central analytical laboratory.

B.

C.

D.

E.

F.

G.

4. Major Problems - The field site was generally well maintained. Major problems were the frayed condition of the power cord and the amount of activity at the site which contained an array of NADP samplers and an air quality station equipped for 24-hr aerosol collection and continuous trace gas measurement. The presence of two other vehicles at the site during the inspection appears to be indicative of the level of activity at the collection site. Scott recognized both of these problems and indicated that he was responding to them.

5. Summary

ACTION REQUIRED

ACTION PERFORMED

MAP3S/PCN SITE AUDIT FORM

PAGE 1 OF 3

SITE # 6 - Brookhaven
 SITE OPERATOR J. McNeil
 SITE MANAGER Patrinos/Brown

AUDITOR T. Dana
 DATE 10/29/84
 PRESENT Patrinos/McNeil

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			
B. Sample Changing	X			
1) Preparation	X			
2) Bucket Handling En Route	X			
3) Change of Buckets	X			
4) Cleaning of Collector Pad	X			Weekly-replaces pads every 6 mnt
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 See Note A	X			pH of Test Sol. <u>4.09</u>
a) calibration	X			T of Test Sol. <u>20°C</u>
b) recalibration	X			Buffers Lo <u>4</u> Hi <u>7</u>
6) Shipping Aliquot(s)	X			
7) Blank Procedure		X		ID problem will be corrected
D. Storage of Samples	X			
E. Shipping Procedure	X			
1) Taping Bottles	X			
2) Blue Ice Control	X			
3) Packing	X			
4) Separation of TCM	X			

SITE # 6 - BrookhavenAUDITOR T. DanaSITE OPERATOR J. McNeilDATE 10/29/84

	GOOD	FAIR	POOR	REMARKS
F. Cleaning of Reused Buckets	X			
G. Rainfall Determination	X			
Calculation of Pred. Vol.	X			
2. Discussion				
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?				
2) Checks Data?				
E. Complaints				None
1) Deficiencies in Instructions				
2) Supply Problems?				
3) Communications Problems?				

SITE # 6 - BrookhavenAUDITOR T. DanaSITE OPERATOR Brown/PatrinisDATE 10/29/84

3. Additional Notes/Items of Discussion

- A. Uses temperature-controlled vial glass; rinses with DD H₂O and sucks dry between samples/buffers. Stirs with mag. rod; uses Ross electrode.
- B. Brown will take over as site manager after Syracuse field work.
- C. Collector will be moved soon, as new construction infringes on site. May be remote site if power can be obtained - otherwise, move of a hundred meters or so.
- D.
- E.
- F.
- G.

4. Major Problems

ID on field blank missing due to failure to place "69" on f.b. bottle. McNeil will start doing this.

5. Summary

ACTION REQUIRED

None

ACTION PERFORMED

MAP3S/PCN SITE AUDIT FORM

PAGE 1 OF 3

SITE # 7 - LewesAUDITOR Elaine ChapmanSITE OPERATOR Patti Salevan; Joe ScudlarkDATE 12/4/84SITE MANAGER Joe Scudlark/Tom ChurchPRESENT Salevan/Scudlark/Church

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			See note A
B. Sample Changing	X			
1) Preparation	X			
2) Bucket Handling En Route	X			
3) Change of Buckets	X			
4) Cleaning of Collector Pad	X			
5) Handling on Return	X			
C. Lab Handling & Measurement	X			
1) Weighing Bucket	X			
2) TCM Aliquot	X			
3) TCM Fixing	X			
4) pH Aliquot	X			
5) pH Procedure See note B	X			pH of Test Sol. <u>3.70</u>
a) calibration	X			T of Test Sol. <u>25°C</u>
b) recalibration	X			Buffers Lo <u> </u> Hi <u> </u>
6) Shipping Aliquot(s)	X			
7) Blank Procedure	X			
D. Storage of Samples	X			
E. Shipping Procedure	X			
1) Taping Bottles	X			
2) Blue Ice Control	X			
3) Packing	X			
4) Separation of TCM	X			

MAP3S/PCN SITE AUDIT FORM

PAGE 2 OF 3

SITE # 7 - Lewes

AUDITOR Elaine Chapman

SITE OPERATOR Patti Salevan/Joe Scudlark

DATE 12/4/84

	GOOD	FAIR	POOR	REMARKS
F. Cleaning of Reused Buckets	X			
G. Rainfall Determination	X			
Calculation of Pred. Vol.	X			
2. Discussion				
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				None
1) Deficiencies in Instructions				None
2) Supply Problems?				Needs buckets, lids, sample bottles field blanks, Blue Ice
3) Communications Problems?				

SITE # 7 - LewesAUDITOR Elaine ChapmanSITE OPERATOR Patti Salevan/Joe ScudlarkDATE 12/4/84

3. Additional Notes/Items of Discussion

- A. Operation has moved into new laboratory dedicated to precipitation work. Dionex Model 14 1C available. Doors can be locked for additional supply security.
- B. Fisher Accumet Model 520 Digital pH/Ion Meter used with Thomas "Universal" electrode. Millivolt readings of all buffers and samples recorded, and then converted to pH units.
- C. Raingauge releveled on 10/26/84. Predicted and actual collection volumes now much closer.
- D. Trace metal work also being performed using separate ACM collector.
- E.
- F.
- G.

4. Major Problems

None, Site is in excellent condition and very well run.

5. Summary

ACTION REQUIRED

ACTION PERFORMED

MAP3S/PCN SITE AUDIT FORM

PAGE 1 OF 3

SITE # 8 OhioAUDITOR T. DanaSITE OPERATOR Randy Meyer/Ann PerryDATE 5/15/84SITE MANAGER John KlinkPRESENT R. Meyer/A. Perry/J. Klink

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control	X			Temporary, in Klink's office
B. Sample Changing	X			
1) Preparation				
2) Bucket Handling En Route				
3) Change of Buckets				
4) Cleaning of Collector Pad				
5) Handling on Return				
C. Lab Handling & Measurement	X			
1) Weighing Bucket	X			
2) TCM Aliquot	X			
3) TCM Fixing	X			
4) pH Aliquot	X			
5) pH Procedure		X		pH of Test Sol. <u>4.27</u> (10 min.)(C)
a) calibration		X		T of Test Sol. <u>21°C</u>
b) recalibration	X			Buffers Lo _____ Hi _____
6) Shipping Aliquot(s)	X			
7) Blank Procedure	X			
D. Storage of Samples	X			
E. Shipping Procedure	X			
1) Taping Bottles				
2) Blue Ice Control				
3) Packing				
4) Separation of TCM				

MAP35/PCN SITE AUDIT FORM

PAGE 2 OF 3

SITE # 8 - OhioAUDITOR T. DanaSITE OPERATOR Randy Meyer/Ann PerryDATE 5/15/84

	GOOD	FAIR	POOR	REMARKS
F. Cleaning of Reused Buckets	X			
G. Rainfall Determination	X			
Calculation of Pred. Vol.				
2. Discussion				
A. Operator's Manual on Hand	X			
1) Understands QA Requirements				
B. Understanding of Forms	X			
1) Data Log				
2) Rainfall				
3) Embarkation				
4) Significant Figures				
5) Records Unusual Items?				
6) Copy or Original:				
C. Sampling Days of Week	X			
D. Awareness of Data Reports	X			
1) Any on Hand?				
2) Checks Data?				
E. Complaints				
1) Deficiencies in Instructions				
2) Supply Problems?	a) Needs plastic gloves for bucket rewash if neces b) Want funnels for sample pouring.			
3) Communications Problems?				

SITE # 8 - OhioAUDITOR T. DanaSITE OPERATOR Randy Meyer/Ann Perry/John Klink DATE 5/15/84

3. Additional Notes/Items of Discussion

- A. Stores electrode in Orion storage solution (pH approx. 6.6)
- B. Uses 4 & 7 from undated bottles - changes aliquot biweekly
- C. Need new electrode - very slow stabilization
- D. New address for shipping materials - temporary until field lab is rebuilt
- E. Will use NTN procedures for pH conductivity when that site starts up
- F. They got a pH test solution (#8103) without any instructions.
- G.

4. Major Problems

5. Summary

ACTION REQUIRED

New electrode (they will buy)

ACTION PERFORMED

New Address (We need to inform LeRoy Schroder): John Klink
Shideler Hall
Miami University
Oxford, OH 45056

FORM DATE 4/9/86

MAP3S/PCN SITE AUDIT FORM

PAGE 1 OF 3

SITE # 9 - Oak RidgeAUDITOR Jane RothertSITE OPERATOR Jan CoeDATE 10/29/84SITE MANAGER S. LindbergPRESENT Jan Coe

1. Observation of Procedures/Practices

	GOOD	FAIR	POOR	REMARKS
A. Supplies Security & Control				
B. Sample Changing				
1) Preparation	X			
2) Bucket Handling En Route	X			
3) Change of Buckets	X			
4) Cleaning of Collector Pad	X			
5) Handling on Return	X			
C. Lab Handling & Measurement				
1) Weighing Bucket	X			
All with one syringe full 2) TCM Aliquot				1st with syringe
3) TCM Fixing				Store at other side of hood
4) pH Aliquot				Also do 2
5) pH Procedure	X			pH of Test Sol. <u>3.93</u> T of Test Sol. <u>22°C</u> Buffers Lo <u>4.00</u> Hi <u>7.00</u>
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			

SITE # 9 - Oak RidgeAUDITOR Jane RothertSITE OPERATOR Jan CoeDATE 10/29/84

	GOOD	FAIR	POOR	REMARKS
F. Cleaning of Reused Buckets				
G. Rainfall Determination				
Calculation of Pred. Vol.				Using wedge gauge; others temporarily out of order
2. Discussion				
A. Operator's Manual on Hand	X			
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:	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?				
3) Communications Problems?				

SITE # 9 - Oak RidgeAUDITOR Jane RothertSITE OPERATOR Jan CoeDATE 10/29/84

3. Additional Notes/Items of Discussion

A.

B.

C.

D.

E.

F.

G.

4. Major Problems

None - are considering changing site location.
What to do about it?

Change site or change operator: have about two years comparative data for old vs. new site. Will look at the data for statistical differences between sites.

5. Summary

ACTION REQUIRED

ACTION PERFORMED

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