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**The MAP3S Precipitation
Chemistry Network:
Second Periodic Summary
Report
(July 1977 - June 1978)**

January 1979

Prepared for the U.S. Department of Energy
under Contract EY-76-C-06-1830

Pacific Northwest Laboratory
Operated for the U.S. Department of Energy
by Battelle Memorial Institute

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THE MAP3S PRECIPITATION CHEMISTRY NETWORK:
SECOND PERIODIC SUMMARY REPORT
(JULY 1977 - JUNE 1978)*

*Contributors are listed in the Preface.
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January 1979

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ABSTRACT

The MAP3S Precipitation Chemistry Network consists of eight sites located in the northeastern United States. Precipitation event samples are collected by cooperating site operators, using specially developed sampling equipment. The concentration data collected over the period July 1, 1977 to July 1, 1978, are listed as a summary of the data reported monthly throughout the year.

Samples were chemically analyzed at a central laboratory for 13 pollutant species--pH, conductivity, SO_2 , $\text{SO}_4^{=}$, NH_4^+ , NO_2^- , NO_3^- , Cl^- , PO_4^{3-} , Na^+ , K^+ , Ca^{++} , and Mg^{++} --using ion chromatography, automated wet chemistry, atomic absorption spectrophotometry, and electrode techniques.

Second-year developments included: the installation of refrigeration equipment in all Battelle collectors; the initiation of an externally administered quality control program; and use of ion chromatography for cation as well as anion species. Supplementary research efforts included a special collector comparison study at the Pennsylvania State site and further analysis of sulfite versus sulfate deposition.

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PREFACE

The contributors to this report are the MAP3S Precipitation Chemistry Network site operators and laboratory organization personnel. The cooperating organizations and individuals are listed below. Inquiries should be directed to M. Terry Dana.

This report contains a listing of precipitation chemistry data collected during the period July 1, 1977-June 30, 1978. It is the second of three planned annual summaries of the data collected during the MAP3S.

The primary objective of the project is to collect the concentration data and distribute them promptly; further analysis of the data and use of the data as an aid in precipitation chemistry research is generally left to the reader, but analyses and interesting applications of the results may appear in summary reports or in the open literature authored by the persons listed below. Other users of the data herein may credit: "The MAP3S Precipitation Network."

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1.0 INTRODUCTION

The Multi-State Atmospheric Power Production Pollution Study (MAP3S) is a large-scale atmospheric research effort, sponsored by the U.S. Department of Energy Division of Biomedical and Environmental Research and involving the National Laboratories, universities and contract research organizations throughout the United States.⁽¹⁾ The overall goal of the project is to develop the means for modeling and predicting the effect--on atmospheric concentrations and precipitation chemistry--of present and future pollutant emissions from power production processes. Because of the present circumstance where the short-to-medium term emphasis on electric power expansion is in the area of coal burning, and because of the present density of such sources in the upper midwest and northeastern United States, the MAP3S is concerned primarily with emissions resulting from coal burning and the research is focused on the northeastern United States.

The major pollutants--resulting from fossil-fuel energy production--of interest are the sulfur and nitrogen oxides and their reaction products, hydrocarbons, trace elements, and particulates. The present phase of the MAP3S is focused on the sulfur oxides and their reaction products because of the wide-spread recognition that sulfur dioxide is the major pollutant from coal. Specifically, the health effects of SO_2 and the resultant sulfate are of great concern and are actively studied for the purpose of establishing a sulfate standard and possibly revised SO_2 standards. It is expected that concentration on the sulfur pollutants, in the MAP3S, during the initial stages of the program will provide the framework for study and transferable methodology for treatment of the processes. In addition, this effort will be coordinated with other research efforts concerned with sulfur pollution, such as those of the Electric Power Research Institute (EPRI) and the Atmospheric Environment Service (AES) of Canada.

The precipitation chemistry aspect of the MAP3S is divided into two areas of study: the basic mechanisms of removal of pollutants by precipitation (precipitation scavenging), and the continuous measurement of precipitation chemistry at ground level at established permanent regional collection sites. The latter effort is the work of the MAP3S Precipitation Chemistry Network.

It was clear from the beginning of planning of the MAP3S that there would be a need to carefully observe the effects of fossil-fuel emissions on precipitation quality. This effort should provide high-quality chemistry data for use in developing and confirming regional-scale scavenging models, as well as in documenting trends in precipitation quality as the use of coal as power production fuel increases. Background results (e.g., from continuously operating reliable networks) were unfortunately lacking, and certain data required by the MAP3S had not and were not being provided by existing precipitation chemistry monitoring networks.⁽²⁾

One of the requirements of the MAP3S for precipitation chemistry data was that the sites for collection be regional sites, i.e., that they be unaffected by local sources of pollution. Measurement of fossil-fuel pollutants' effects on the entire region (the northeast United States), in the absence of a very large number of sites, requires that the measurement sites provide precipitation samples that are typical of the areas in which the sites are centered. This precludes urban areas for sites, and rural areas affected by large sources of pollution.

To serve the purpose of providing data for modelers, who often desire supporting data from particular storm systems, the network should provide *event* samples, that is, individual precipitation samples for each period of precipitation at each site. Past monitoring networks and the existing EPA/WMO network have provided only monthly average samples on a long-term basis.⁽³⁾ In addition, event samples can provide data to support intensive field experiment periods foreseen to occur occasionally throughout the duration of the MAP3S, and can also serve the basic purpose of examining how differing synoptic situations affect precipitation quality.

A major failing of past networks has been excessive delays in performing chemical analyses and reporting the results. A major objective of the MAP3S Precipitation Chemistry Network is to conduct analyses quickly and to report the results in a timely manner. This implies an efficient system of sample handling, a dedicated laboratory, and a formalized and scheduled reporting format.

Two more technical requirements of the Network emerged from the planning. First, it must provide wet deposition-only data for precipitation chemistry purposes. While dry deposition is of equal importance to the MAP3S, means of measuring this on the same basis (event samples and *every* event) as for precipitation have not been effectively devised. Precipitation samples collected in always-open collectors will contain some component of the dry deposition, and are practically useless as wet deposition samples. This requirement necessitates the use of an automatic wet deposition-only sampler--one which opens only during the time of precipitation events.

The second technical requirement involves the initial emphasis of the MAP3S on sulfur compounds. On the basis of the chemical properties of sulfur dioxide, it has been predicted that a significant portion of the depositing sulfur oxides could be in the form of dissolved sulfur dioxide or sulfite, rather than exclusively of the more chemically stable sulfate.⁽⁴⁾ Very little experimental data exist to establish in fact whether sulfite is a significant contributor to precipitation chemistry, at the time of deposition, as typical collection and sample handling practices have heretofore precluded the examination of sulfite concentrations. This requirement led to the development and use of a new type of collector for the MAP3S Network, which is intended to preserve deposition concentrations of sulfite and other volatile and/or reactive species.

There is one very important objective of the Network which in a sense goes beyond the MAP3S. This is to establish a network of sufficient quality and stability of operation that the results derived will compel its being maintained as a permanent network (or core thereto) for monitoring of the precipitation quality of the region beyond the conclusion of the MAP3S. In addition, the establishment of such a network, with careful handling and rapid processing of samples, makes it eminently reasonable to use it to provide as much data as possible on pollutant species of interest to precipitation chemistry researchers, both in and out of the MAP3S program. Thus, the chemical analyses are as extensive as is practical (even beyond species of immediate concern to the MAP3S), and the results are distributed to any interested researchers.

Since the beginning of the MAP3S, two other precipitation chemistry networks have started operation. The most extensive network geographically and long- range chronologically is that operated by the U.S. Department of Agriculture North Central region, the "NC-141" network. Sampling on this network is conducted at agricultural experiment stations using wet-dry samplers for weekly samples; it is planned to eventually include about two sites per state over the entire U.S. Another network project, associated with the EPRI-sponsored Sulfate Regional Experiment, is of short duration--eight months--but utilizes event sampling of wet deposition at ten sites in the same general region as the MAP3S. The data from this latter network should augment the geographical coverage of the MAP3S Network, and allow for more detailed study of precipitation quality during its operation. It is hoped that from these three networks, plus the AES network in Canada, a long-term coordinated system of precipitation chemistry sampling be developed.

Table 1 is a summary of the requirements of MAP3S for, and the objectives of, the MAP3S Precipitation Chemistry Network, and briefly the efforts made to implement them. The reader is referred to the First Periodic Summary Report⁽⁵⁾ for details on Network development and operation. The text of the current report is concerned with new developments and followups to previous special studies. The Appendix contains the second periodic listing of precipitation chemistry data, covering the period July 1, 1977-June 30, 1978.

TABLE 1. Requirements and Objectives of the MAP3S Precipitation Chemistry Network

<u>Need/Objective</u>	<u>Implementation</u>
Regional Collection Sites	Careful selection to avoid urban and nearby source effects
Precipitation Event Sampling	Individual samples collected for each precipitation event (minimum of 24 hours duration)
Rapid Chemical Analysis and Reporting of Results	Samples delivered to laboratory promptly, chemical analyses performed, and data distributed to interested parties normally within two months of sample collection
Technical:	
Wet deposition-only samples	Use of automatic, wet deposition-only collectors
Preservation of sulfite and other volatile species	Use of specially-developed samplers which prevent desorption (funnel-and-bottle collector) and slow chemical reaction by on-site refrigeration
Future Monitoring of Precipitation Quality (beyond the MAP3S)	Establishment of a high-quality and stable network such that it may form a core for a permanent national or regional monitoring network

2.0 NETWORK GROWTH AND PROCEDURAL CHANGES

The first Summary Report⁽⁵⁾ contains full details on Network field and chemical procedures, and on special studies conducted during the first year of full operation. The purpose of this section is to update the stations of the network sites and detail changes to field procedures, chemical methods and equipment usage.

THE NETWORK COLLECTION SITES

Four additional collection sites were added to the Network during the report period, making a total of eight. The locations are shown in Figure 1, and listed in Table 2 along with their official numbers and names and the dates of the initial collected samples. Cooperating institutions and key personnel are listed in the Preface. Because of the relatively recent location of collectors at the new sites, complete site descriptions will be postponed for inclusion in a future report.

Equipment Usage

The primary sampling unit in use throughout the report period is the Battelle collector, which is described in detail in the first Summary Report.⁽⁵⁾ These units have been modified in various minor ways to improve performance and help prevent debilitating damage during severe conditions. Such changes included a redesigned electronics package, fuses on the lid drive motor, stops to prevent overopening of the lid, and a cover over the lid shafts to reduce collection of water inside the collector lid cover while the lid is open. Reliability of these collectors has remained excellent, although some break-in difficulties occurred with the newer units, leading to the modifications and alterations listed above.^(a)

The refrigeration systems, which were previously described,⁽⁵⁾ were installed by early summer in all Battelle units in the field. These were set up to maintain a temperature of 4-8°C within the lower sample-holding chamber;

(a) See the "downtime" column in the Appendix data tables.

Figure 1. The MAP3S Precipitation Chemistry Network: Final Array

TABLE 2. Network Site Details^(a)

Site No.	Name	Location		Elevation (m, msl)	Date of First Sample Collected
		Longitude	Latitude		
1	WHITEFACE	73°, 51.5'	44°, 23.5'	604	October 11, 1976
2	ITHACA	76°, 43'	42°, 23'	503	October 26, 1976
3	PENN STATE	77°, 57'	40°, 47'	396	September 22, 1976
4	VIRGINIA	78°, 32.5'	38°, 2.5'	171	December 12, 1976
5	ILLINOIS	88°, 22'	40°, 3'	213	November 20, 1977
6	BROOKHAVEN	72°, 53'	40°, 52'	24	February 9, 1978
7	LEWES DE	75°, 0'	38°, 46'	(b)	March 1, 1978
8	OXFORD OH	84°, 44'	39°, 32'	283	October 1, 1978

(a) See Preface for cooperating institutions and personnel

(b) No data at the time of this writing

performance was generally good throughout the summer, but some units were required to operate at higher temperatures during the warmest weather. Because few of the data listed in the Appendix were collected with refrigerators operating there is no analysis of performance and/or effect on sample quality presented here.

The Health and Safety Laboratory^(a) (HASL) precipitation collectors, used for event sampling concurrently with the Battelle collectors at Sites 1-4 during the first year, continued in that capacity. However, complete chemical analyses of HASL collector samples were discontinued following the comparison study, which was reported,⁽⁵⁾ and only sulfite measurements on HASL collector samples were continued beyond the Fall of 1977. Late in the report period, early June, 1978, the remaining HASL collectors (Sites 1, 2, and 4) were switched to weekly sample collection. This latter move was for the purpose of comparing weekly sampling with event samples, and to conform to the sampling procedures used in the U.S. Department of Agriculture NC-141 project. Data in the main data tables (Appendix) reflect only that collected by the Battelle

(a) Now the Environmental Measurements Laboratory

collectors, but a separate section lists the few weekly samples collected during the report period.

FIELD PROCEDURES

These procedures remained as described in the first Summary Report,⁽⁵⁾ except that in addition to preparing 250 ml shipping bottles of the collected samples, small (10 or 20 ml) aliquots of same were treated with tetrachloro-mercurate (TCM) for preservation of sulfite ion. These aliquots were shipped to the Battelle laboratory in 30 ml bottles and used for sulfite analysis only. The samples so treated were those from the Battelle collector and from whatever samples were collected by HASL collectors.

LABORATORY PROCEDURES

Table 3 is an updated listing of chemical species analyzed, and the methods, sensitivities and estimated errors. The major change is that the species NH_4^+ , Na^+ , and K^+ are now analyzed by ion chromatography, using a second Durrum Dionex System 10 instrument. A comparison of NH_4^+ concentrations determined by both the IC method and the previous AWC method was completed for some 75 samples. The results for samples collected between September 10, 1977 and December 9, 1977 [monthly reports 3(1) and 3(2)], are summarized in Table 4. The variation in the first group may be related to the time difference between IC and AWC analyses. The second group was analyzed both ways at the same time and compares better. Individually and overall, the two methods agreed within the expected variations in time for this species, and within the error limits stated in Table 3.

A sample chromatogram for the cation IC system is shown in Figure 2; further details on IC methods may be found in the first Summary Report⁽¹⁾ and in Rothert.⁽⁶⁾

Sulfite analyses for samples collected at the Penn State site are being analyzed at Pennsylvania State University, as of August, 1978. These are associated with the special collector comparison study, described in the next section.

TABLE 3. Chemical Species and Analysis Details

Species	Method(a)	Instrument	Minimum Detection Limit(b) μmoles/l	Estimated Error(c)
H ⁺ (free)	Electrode	Orion 801A, Combination Electrode	--	± 0.04 pH units ^(d)
Conductivity	Bridge	Beckman RC-16C Bridge, Yellow-Springs 3403 Cell	--	± 20%
SO ₃ ⁼	AWC	Technicon Auto Analyzer	0.1	± GO(MDL or 10%)
SO ₄ ⁼	IC	Dionex System 10 (Anion)	0.2	± GO(MDL or 10%)
NO ₂ ⁻	AWC	Technicon Auto Analyzer	0.05	± GO(MDL or 10%)
NO ₃ ⁻	IC	Dionex System 10 (Anion)	0.2	± GO(MDL or 10%)
Cl ⁻	IC	Dionex System 10 (Anion)	2	± GO(MDL or 10%)
PO ₄ ³⁻	IC	Dionex System 10 (Anion)	0.2	± GO(MDL or 10%)
NH ₄ ⁺	IC	Dionex System 10 (Cation)	0.6	± GO(MDL or 10%)
Na ⁺	IC	Dionex System 10 (Cation)	0.4	± GO(MDL or 10%)
K ⁺	IC	Dionex System 10 (Cation)	0.25	± GO(MDL or 10%)
Ca ⁺⁺	AA	Perkin-Elmer 306	0.25	± GO(MDL or 10%)
Mg ⁺⁺	AA	Perkin-Elmer 306	0.4	± GO(MDL or 10%)

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

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

(c) MDL = Minimum detection limit; GO = "Greater Of"

(d) At pH = 4

CATION STANDARD

Figure 2. Sample Cation Standard Chromatogram. The Conductivity Setting is 0.3 μ mho/cm

TABLE 4. Comparison of IC and AWC Methods for NH_4^+

Sample Group	3(1)	3(2)
Number of Samples	39	35
Analysis Dates:		
IC	1/9-1/13/78	1/24-1/25/78
AWC	12/7/77	1/24/78
Simple Average Concentration ($\mu\text{moles}/\ell$)		
IC	21	13.8
AWC	18	13.3

QUALITY CONTROL PROCEDURES

An externally administered quality control program for chemical analysis was instituted early in 1978. Personnel of the Environmental Measurements Laboratory of the Department of Energy provide the site operators with either reference samples of known composition or instructions to submit duplicates of previously collected samples. These samples are included with regular shipment to the Battelle laboratory, carrying fictitious identification numbers and having accompanying fictitious data log forms. This procedure assumes that the analysts and the network coordinator at Battelle are blind as to the existence of quality control samples among the real samples. A disinterested "quality control officer" (QCO) at Battelle is informed of the identities of the QC samples. Just before printout of monthly data reports, the network coordinator submits the input cards to the QCO, who removes those for QC samples. The QC sample cards are sent to EML for processing, and are returned to the QCO with the proper computer codes identifying the sample. The QCO then submits these cards to the network coordinator for printing in a later monthly report.

At present, the system inserts one duplicate and one reference sample (standard, blank; or precipitation sample collected by EML) each month. The sites submitting these samples are rotated. Because of the time lag between insertion of these QC samples into the sample queue and reporting, only a few of them are included in the current report period; they are listed in a separate section in the Appendix.

3.0 SPECIAL STUDIES

Several activities were pursued within the MAP3S/PCN project in addition to the regular sampling, analysis, and reporting. This year, these included the beginning of a comprehensive collector comparison study at one site, further investigations of species preservation properties, and continuation of the study of sulfite deposition.

COLLECTOR COMPARISON STUDY

The comparison of collection properties of the Battelle and HASL collectors conducted last year was limited in that, with only one pair of collectors at each site, detailed statistics were not possible. In addition, expanded cooperation with the Canadian sampling network (CANSAP) made it desirable to compare the above two collectors also with the collector type used in Canada. Thus, an independently funded study was set up at the Penn State site which involves a comparison of nine simultaneously operating collectors, all sampling precipitation events. These nine collectors are three each of: the Battelle collectors (with refrigeration), the HASL or HASL-type,^(a) and the Sangamo collector used by CANSAP. The latter is similar in design and operation to the HASL type. The sulfite-sulfate deposition relationship is being studied in more detail than previously at this site, primarily with the addition of SO_2 air concentration measurements to accompany the liquid-phase measurements. In addition, the sulfite analyses are being performed at the Penn State Laboratory, rather than at Battelle. Although the MAP3S/PCN laboratory at Battelle is performing chemical analyses of all samples (except for $\text{SO}_3^{=}$), and is providing sampling supplies as with the other sites, the primary responsibility for data analysis and reporting is with the Penn State group.

The results of this study, which began in mid-May, 1978, and will continue through mid-May, 1979, should be of great value as the collectors used on the three major North American precipitation chemistry networks (MAP3S, USDA NC-141, and CANSAP) are being directly compared. Any significant differences detected in collecting for particular species will be useful in comparing data from these networks.

(a) Commercially available version of the HASL collector

SULFITE VS. SULFATE MEASUREMENTS

Careful sulfite measurements (utilizing TCM fixing) began on the Network during the Fall of 1977. These allow for a determination of the fraction of the depositing sulfur which is in the form of sulfite, inasmuch as samples not specifically treated for sulfite analysis deteriorate to sulfate rapidly. That is, sulfate measurements (made at some weeks time after collection) reflect the total of $\text{SO}_3^- + \text{SO}_4^-$ at deposition since SO_3^- has converted to SO_4^- by that time. Initial results of the study, which will be published shortly,⁽⁴⁾ indicate that in the cooler months (September-March) sulfite can be a significant fraction of the total sulfur deposited. Monthly deposition-weighted mean concentrations for sulfite, at Site 3 for example, were as high as one-fourth of those for sulfate (total sulfur) during mid-winter. The magnitudes of the sulfate concentrations are relatively low in the winter, however, so the sulfite contribution to the annual chemistry is not great. Air monitoring for SO_2 at the Penn State site will help to establish whether the sulfite levels in samples experienced follow from the solubility relationship for SO_2 , as was predicted.^(4,5)

Sulfite concentrations were determined in both Battelle and HASL event samples over the winter 1977-1978 season. The results are mixed in that while for individual events, the HASL and Battelle sulfite concentrations may vary considerably, there is no identifiable trend toward those from one being higher than those from the other. In fact, the average sulfite concentrations over a period of a month or so are very nearly the same. Again, SO_2 monitoring at Penn State will help to determine the conditions under which the two collectors measure SO_3^- differently.

NITRATE ION PRESERVATION

Very little NO_2^- appears in MAP3S/PCN samples, but no special preservation techniques are employed to preserve it, as is the case with SO_3^- . A simple experiment was devised which would determine the lifetime of NO_2^- in solution under various conditions. The experiment, besides helping to determine if standard analysis techniques are adequate, can provide valuable insight into $\text{NO}_2^- - \text{NO}_3^-$ behavior in the atmosphere.

The experiment began with spiking 250 ml aliquots of selected precipitation samples and distilled deionized (DD) water with easily measurable quantities of NaNO_2 . Naturally occurring nitrite could not be used because surviving nitrite concentrations were too low for accurate decay measurements. The samples were then divided into ~100 ml aliquots in capped 250 ml polyethylene bottles, and stored at three temperatures: -15C, +2C, and 25C. Subsequent nitrate analyses determined the history of the decay. These measurements were made at several hours, one day, and thenceforth weekly for seven weeks. Selected samples were analyzed for nitrate to confirm that the nitrite decay was due to conversion to nitrate.

Some results of the experiment are listed in Table 5. Samples A and C were made in DD water, while the rest were actual samples from the MAP3S/PCN. The latter are identified by the code MMDDST, where MM is the month, DD the day, S the site number, and T the sample type (irrelevant here). The network samples were selected to represent all the active sites at the time, various initial pH and NO_3^- levels, and a broad time span (winter-spring 1978).

Where sufficient data permitted, least squares fits to exponential decay were computed:

$$C = C_0 \exp(-bt), \quad (1)$$

where b is a constant, C is the nitrite concentration at time t , and $C_0 = C(t=0)$. The time to decay to one-half initial concentration is

$$t_{1/2} = \frac{-\ln(1/2)}{b} \quad (2)$$

These are listed in the table for cases where the coefficient of determination (r^2) was greater than about 0.85, except where footnoted.

The life of NO_2^- in DD and precipitation samples is remarkable long at room and refrigerator temperature, but is quite short when the samples are frozen. The $t_{1/2}$ values for frozen aliquots are approximate because the decay rates are strongly affected by number of thaws, method of thawing (e.g. microwave oven vs. room temperature), the volume of aliquot. Nitrite in unfrozen aliquots may decay faster for smaller volumes as well, but

TABLE 5. Results of Nitrite Preservation Tests

Sample(a)	$C_o^{(b)}$	pH(c)	$NO_3^{-(c)}$	$t_{1/2}$, days		
				T = -15C	T = +2C	T = 25C
A	6.4	~5.5	<0.2	~3 ^(d)	(e)	120
C	5.9	~5.5	<0.2	4-30 ^(d)	(e)	460
052533	7.1	4.16	26	~0.3 ^(d)	110	81
011135	3.6	4.39	14	(f)	(e)	(e)
012220	2.8	4.86	4.2	(f)	(e)	300
011910	4.0	4.87	2.2	(f)	(e)	(e)
121450	3.4	4.13	24	(f)	(e)	53
040520	3.9	4.02	35.	(f)	(e)	67
033170	3.6	4.65	12.	(f)	(e)	(e)
050720	3.3	3.77	70.	(f)	(e)	44
121940	3.4	4.21	22.	(f)	(e)	100

(a) Sample identification explained in text, A and C distilled deionized H₂O

(b) Initial spiked concentration, $\mu\text{moles/l NO}_2$

(c) Prior to spiking with NO_2^- , NO_3^- in $\mu\text{moles/l}$

(d) Varies widely depending on thawing conditions, etc.

(e) Very long--no measurable decay before 35 days.

(f) No data.

insufficient available sample volume prevents testing this effect in detail. The decay rates for nitrite in solution differ from those for sulfite in that the frozen samples show a much greater rate of conversion for nitrite, while the unfrozen nitrite samples decay much slower. In the precipitation samples, there appears to be a correlation between initial acidity (or NO_3^-) and faster decay, but insufficient samples were done here to confirm this.

The implications for laboratory and field sample handling are clear: nitrite samples should definitely not be frozen as a means of preservation. Refrigerator storage is preferable, but a few days at room temperature should not be harmful. In natural conditions--nitrite dissolved in cloud or precipitation water--little conversion is likely to take place during the

lifetime of cloud or rain drops. When freezing and thawing occur, nitrite can efficiently oxidize, but other data indicate that this probably does not happen to a significant degree. Nitrite concentrations are uniformly low ($<0.5 \mu\text{moles/l}$) and NO_3^- levels are roughly constant ($10\text{--}40 \mu\text{moles/l}$) all year, whereas one would expect higher NO_2^- in the summer if freezing conversion were important. Likewise, NO_3^- would be expected to vary more with the seasons. Assuming poor solubility (compared to that of SO_2) for NO and NO_2 gases, these results do not detract from an hypothesis that NO_3^- in precipitation largely comes from scavenged nitrate particles or HNO_3^- aerosol.

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APPENDIX

DATA FOR JULY 1, 1977-JUNE 30, 1978

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APPENDIX

INTRODUCTION

The results of the chemical analyses of precipitation samples collected on the MAP3S Network from July 1977, through June, 1978, are listed in the following tables. The format for listing data is slightly different from that used previously.⁽⁵⁾ The number of "species" was increased from 21 to 28, with additional field data entered in the new columns. The general printout scheme as now adopted employs three types of tables. The first shows sample availability. The presence of "S" in the table signifies that a sample was collected at the corresponding site (column heading) on the corresponding date (row heading).

The second table is a chronological list of field and chemistry data from all the sites in operation. Each row corresponds to a date and a site, and each column to one of the species analyzed. Since there are 28 species and room for only seven columns per page, this table is divided into four sub-tables as follows:

<u>Sub-Table</u>	<u>Species</u>
1	1. Time Removed, Z
	2. Sample Time--total time that collector container was in the field, hours
	3. Down Time--time prior to current event during which the collector was out of service, hours
	4. Precipitation time--duration of precipitation as recorded by a raingauge, hours
	5. Lid Open--number of times the collector opened during event
	6. Arrival Date--date sample arrived at the laboratory, month-day of month

Sub-TableSpecies

	7. Q.C. Code--special code used to identify quality control samples (this code is described in the preamble of the Q.C. printout)
2	1. Sample Volume, ml2. Predicted Volume--amount predicted on basis of rain gauge record, ml3. Field pH T--temperature at which the onsite pH was measured, °C4. Field pH, pH units5. Lab pH, pH units6. H^+--free hydrogen ion concentration from Lab pH (or Field pH if Lab pH is missing), $\mu\text{moles}/\ell$7. Conductivity, $\mu\text{mho}/\text{cm}$
3	1. SO_2--sulfite or dissolved SO_2 measured in separate, TCM-fixed aliquot, $\mu\text{moles}/\ell$2. $\text{SO}_4^{=}$, $\mu\text{moles}/\ell$3. NO_2^-, $\mu\text{moles}/\ell$4. NO_3^-, $\mu\text{moles}/\ell$5. Cl^-, $\mu\text{moles}/\ell$6. PO_4^{-3}, $\mu\text{moles}/\ell$7. Anion Sum, $\mu\text{eq}/\ell$
4	1. NH_4^+, $\mu\text{moles}/\ell$2. Na^+, $\mu\text{moles}/\ell$3. K^+, $\mu\text{moles}/\ell$4. Al^{3+}, $\mu\text{moles}/\ell$

<u>Sub-Table</u>	<u>Species</u>
5.	Ca ⁺⁺ , $\mu\text{moles}/\ell$
6.	Mg ⁺⁺ , $\mu\text{moles}/\ell$
7.	Cation Sum, $\mu\text{eg}/\ell$

The first eleven "species" are derived from data collected and reported to the laboratory organization by the field operators (cf. Table 2), and with the exception of "Field (H^+)," are data which locate the event in time, define the volume and comparison of volume with that expected from rain gauge measurements, and record the number of lid openings of the Battelle collector during the time period. The amount of precipitation may be determined from the sample volume (or predicted volume) by dividing by the Battelle collector funnel area, which is about 490 cm^2 . The predicted volume is listed only to give a rough indication of whether the sample represents the whole event. There is, in fact, no reason to believe that the rain gauge--which is of similar design to the Battelle collector, but shorter and with less collecting area--yields any more accurate a measure of precipitation than the Battelle collector. Many winter-time samples are frozen precipitation; the rain gauge is the heated type, but comparisons of sample volume to predicted volume are of lesser significance because of the normal uncertainties in collection of frozen precipitation in any container.

The field pH measurements are often made at sample temperatures different from that of the laboratory measurement, which is 25°C (also conductivity). Comparison of the two H^+ values may give some indication of chemical changes in the sample between collection and laboratory analysis. The main difference noted, if any, is in the direction of a higher pH (lower free H^+ concentration) in the later measurement. This may be an indication of neutralizing reactions taking place. Detailed analysis of such chemical changes should take into account the temperature of initial pH measurement and the exact dates of analysis of the various species; the latter were recorded, but are not listed here.

Symbols indicating either an insufficient volume for analysis, no analysis, no sample collected or contamination rejection are defined at the foot

of each table. The symbol "<" before the concentration indicates less than or equal to the detection limit for analysis. These are listed for the various methods in Section 2; it should be noted that these limits vary from one analysis session to another.

The vast majority of the data listed are from samples collected by the Battelle collector. A few entries, however, are for HASL collector samples for events at Sites 1-4 where HASL collectors were also operated, in cases where the Battelle collector was out of service.

Separate pairs of tables are listed for quality control samples and the (very limited) HASL weekly samples. As noted in the text, these projects started late in the report period. The next summary report will contain complete data for these.

The last section contains plots of monthly mean deposition-weighted concentrations for five species (H^+ , SO_2 , SO_4^- , NO_3^- , NH_4^+) and relative concentrations for each site. Not all months were suitable for monthly averages because of missing data or light precipitation. Any month containing significant "down time" was rejected, as were months where the relevant species averages were computed on the basis of less than 90% of the total precipitation for the month. Months with less than about 0.2 cm of precipitation or less than two samples collected were also rejected. Concentrations for events which were at the analysis detection limit were taken as zero.

SAMPLES AVAILABLE

	H	T	P	V	L	B	L
1 JUL 1977	-	-	S	-	-	-	-
5 JUL 1977	-	-	S	-	-	-	-
6 JUL 1977	S	-	-	-	-	-	-
7 JUL 1977	-	-	S	-	-	-	-
8 JUL 1977	-	-	S	-	-	-	-
9 JUL 1977	S	-	-	-	-	-	-
10 JUL 1977	-	-	S	-	-	-	-
11 JUL 1977	-	-	-	S	-	-	-
12 JUL 1977	-	-	S	-	-	-	-
13 JUL 1977	S	-	S	-	-	-	-
18 JUL 1977	-	S	S	-	-	-	-
20 JUL 1977	-	S	S	-	-	-	-
21 JUL 1977	S	-	-	-	-	-	-
22 JUL 1977	-	S	-	S	-	-	-
25 JUL 1977	S	-	-	-	-	-	-
26 JUL 1977	S	-	-	S	-	-	-
31 JUL 1977	S	-	-	-	-	-	-
1 AUG 1977	-	S	-	-	-	-	-
2 AUG 1977	S	-	-	-	-	-	-
3 AUG 1977	-	-	-	S	-	-	-
4 AUG 1977	-	-	-	S	-	-	-
5 AUG 1977	-	S	-	-	-	-	-
6 AUG 1977	S	-	-	-	-	-	-
8 AUG 1977	S	S	S	-	-	-	-
9 AUG 1977	-	-	S	S	-	-	-
11 AUG 1977	S	-	S	-	-	-	-
14 AUG 1977	-	-	-	S	-	-	-
15 AUG 1977	S	S	S	-	-	-	-
17 AUG 1977	S	S	-	-	-	-	-
18 AUG 1977	-	-	S	S	-	-	-
19 AUG 1977	S	-	-	-	-	-	-
22 AUG 1977	S	S	S	-	-	-	-
24 AUG 1977	S	S	-	S	-	-	-
25 AUG 1977	-	-	S	-	-	-	-
27 AUG 1977	-	-	S	-	-	-	-
30 AUG 1977	S	S	-	-	-	-	-
31 AUG 1977	-	-	S	-	-	-	-
1 SEP 1977	-	-	S	S	-	-	-
2 SEP 1977	-	S	-	-	-	-	-
6 SEP 1977	S	S	-	S	-	-	-
8 SEP 1977	-	-	-	S	-	-	-
10 SEP 1977	-	-	-	S	-	-	-
13 SEP 1977	-	-	S	-	-	-	-
14 SEP 1977	S	S	S	-	-	-	-
15 SEP 1977	S	-	-	-	-	-	-
17 SEP 1977	-	S	S	-	-	-	-
18 SEP 1977	-	-	-	S	-	-	-
19 SEP 1977	S	S	S	-	-	-	-
20 SEP 1977	-	-	S	-	-	-	-

21 SEP 1977	S	S	-	-	-	-	-	-
24 SEP 1977	-	-	S	-	-	-	-	-
26 SEP 1977	-	S	-	S	-	-	-	-
27 SEP 1977	-	-	S	-	-	-	-	-
28 SEP 1977	S	-	-	-	-	-	-	-
29 SEP 1977	S	-	-	-	-	-	-	-
2 OCT 1977	-	-	-	S	-	-	-	-
3 OCT 1977	S	-	S	-	-	-	-	-
4 OCT 1977	S	S	-	-	-	-	-	-
6 OCT 1977	-	S	-	-	-	-	-	-
7 OCT 1977	-	-	S	-	-	-	-	-
10 OCT 1977	-	S	-	S	-	-	-	-
11 OCT 1977	S	-	S	-	-	-	-	-
16 OCT 1977	-	-	-	S	-	-	-	-
17 OCT 1977	-	S	S	S	-	-	-	-
18 OCT 1977	S	-	-	-	-	-	-	-
20 OCT 1977	-	S	S	-	-	-	-	-
24 OCT 1977	S	-	-	-	-	-	-	-
27 OCT 1977	-	-	S	S	-	-	-	-
3 NOV 1977	-	-	S	-	-	-	-	-
5 NOV 1977	S	-	S	-	-	-	-	-
6 NOV 1977	-	S	-	-	-	-	-	-
7 NOV 1977	S	-	-	-	-	-	-	-
8 NOV 1977	-	-	S	S	-	-	-	-
9 NOV 1977	S	-	-	-	-	-	-	-
10 NOV 1977	-	-	S	-	-	-	-	-
11 NOV 1977	S	-	S	-	-	-	-	-
13 NOV 1977	-	S	-	-	-	-	-	-
14 NOV 1977	-	-	S	-	-	-	-	-
15 NOV 1977	S	-	-	S	-	-	-	-
18 NOV 1977	-	S	S	-	-	-	-	-
20 NOV 1977	S	-	-	S	S	-	-	-
21 NOV 1977	-	-	-	-	S	-	-	-
22 NOV 1977	-	-	S	-	-	-	-	-
23 NOV 1977	-	-	-	-	S	-	-	-
24 NOV 1977	-	-	-	S	-	-	-	-
25 NOV 1977	-	-	S	-	-	-	-	-
27 NOV 1977	-	S	S	-	-	-	-	-
28 NOV 1977	S	-	-	-	-	-	-	-
29 NOV 1977	-	-	-	S	-	-	-	-
1 DEC 1977	S	S	S	-	S	-	-	-
2 DEC 1977	-	-	-	S	-	-	-	-
3 DEC 1977	-	-	-	-	S	-	-	-
5 DEC 1977	S	-	-	-	-	-	-	-
6 DEC 1977	-	-	S	S	-	-	-	-
7 DEC 1977	S	S	S	-	S	-	-	-
9 DEC 1977	-	-	S	-	-	-	-	-
10 DEC 1977	-	-	-	-	S	-	-	-
11 DEC 1977	-	S	-	-	-	-	-	-
12 DEC 1977	S	-	-	-	-	-	-	-
13 DEC 1977	-	-	S	-	-	-	-	-
14 DEC 1977	-	-	-	-	S	-	-	-
15 DEC 1977	-	S	S	-	-	-	-	-
16 DEC 1977	S	-	-	S	-	-	-	-
18 DEC 1977	-	-	-	-	S	-	-	-
19 DEC 1977	-	-	S	S	-	-	-	-
21 DEC 1977	-	S	S	S	-	-	-	-
24 DEC 1977	S	-	-	-	-	-	-	-
26 DEC 1977	-	-	S	-	-	-	-	-
27 DEC 1977	-	-	-	S	-	-	-	-
3 JAN 1978	-	S	-	S	-	-	-	-
4 JAN 1978	-	-	S	-	-	-	-	-
6 JAN 1978	-	-	S	-	-	-	-	-
7 JAN 1978	S	-	S	-	-	-	-	-
9 JAN 1978	-	-	S	-	-	-	-	-
11 JAN 1978	-	S	-	-	-	-	-	-

12 JAN 1978	-	-	-	S	-	-	-
13 JAN 1978	S	-	-	-	-	-	-
15 JAN 1978	-	S	S	-	-	-	-
16 JAN 1978	-	-	-	S	-	-	-
19 JAN 1978	-	-	S	-	-	-	-
19 JAN 1978	S	S	-	S	-	-	-
21 JAN 1978	-	-	S	S	-	-	-
22 JAN 1978	-	S	-	-	-	-	-
26 JAN 1978	S	-	S	S	-	-	-
27 JAN 1978	-	S	-	-	-	-	-
31 JAN 1978	S	-	S	-	-	-	-
1 FEB 1978	-	-	-	-	S	-	-
8 FEB 1978	S	S	S	-	-	-	-
9 FEB 1978	-	-	-	-	-	S	-
14 FEB 1978	-	-	S	-	S	S	-
15 FEB 1978	-	-	-	S	-	-	-
19 FEB 1978	-	S	S	-	-	-	-
24 FEB 1978	-	-	-	-	S	-	-
25 FEB 1978	-	-	-	S	-	-	-
27 FEB 1978	-	-	S	-	-	-	-
1 MAR 1978	-	S	-	-	S	-	S
2 MAR 1978	-	-	S	-	-	-	-
3 MAR 1978	-	-	-	-	S	-	-
4 MAR 1978	-	S	-	-	-	-	S
5 MAR 1978	-	-	-	S	-	-	-
6 MAR 1978	S	-	S	-	-	S	-
8 MAR 1978	-	-	-	S	S	-	-
11 MAR 1978	-	-	-	-	-	S	S
12 MAR 1978	-	-	-	S	-	-	-
13 MAR 1978	-	-	S	-	-	-	-
14 MAR 1978	-	-	-	S	-	S	-
15 MAR 1978	-	S	S	-	-	-	S
16 MAR 1978	S	-	-	-	-	-	-
17 MAR 1978	-	-	-	-	-	S	S
18 MAR 1978	-	-	S	-	-	-	-
20 MAR 1978	S	-	-	-	-	-	-
22 MAR 1978	-	S	S	-	-	S	-
24 MAR 1978	S	-	-	S	-	-	-
27 MAR 1978	-	-	-	-	-	S	-
28 MAR 1978	-	S	S	S	-	-	-
29 MAR 1978	S	-	-	-	-	-	-
31 MAR 1978	-	-	-	-	-	-	S
2 APR 1978	-	S	-	-	-	-	-
3 APR 1978	S	-	-	-	-	-	-
4 APR 1978	-	-	S	-	-	S	-
5 APR 1978	-	S	S	-	-	-	-
6 APR 1978	S	-	-	-	-	-	-
7 APR 1978	-	S	S	-	-	-	-
8 APR 1978	-	-	-	-	-	-	S
10 APR 1978	S	-	-	-	-	-	-
11 APR 1978	S	-	-	-	-	-	-
12 APR 1978	-	-	S	-	-	-	S
13 APR 1978	S	S	-	-	-	-	-
14 APR 1978	-	-	-	S	-	-	-
17 APR 1978	S	-	-	-	-	-	-
18 APR 1978	-	-	-	-	S	-	-
20 APR 1978	-	-	-	-	S	-	-
21 APR 1978	-	-	S	S	-	-	-
22 APR 1978	-	S	-	-	-	-	-
23 APR 1978	-	-	S	-	S	-	-
24 APR 1978	S	-	S	-	S	-	-
25 APR 1978	-	-	-	-	S	-	-
28 APR 1978	-	-	-	S	-	-	S
5 MAY 1978	-	-	-	-	S	-	S
7 MAY 1978	-	S	S	-	-	-	-
8 MAY 1978	-	-	-	S	-	S	-

9 MAY 1978	S	-	S	S	-	-	-
10 MAY 1978	-	S	-	-	-	S	-
12 MAY 1978	-	-	-	-	S	-	-
13 MAY 1978	S	-	-	-	-	-	-
14 MAY 1978	-	-	S	-	S	-	-
15 MAY 1978	-	-	S	-	S	S	-
17 MAY 1978	-	S	-	S	-	-	S
19 MAY 1978	S	-	S	-	-	-	-
21 MAY 1978	-	S	-	-	-	-	-
22 MAY 1978	S	-	S	-	-	-	-
25 MAY 1978	-	-	S	S	-	-	-
27 MAY 1978	-	-	-	-	-	-	S
1 JUN 1978	-	-	-	S	-	-	S
2 JUN 1978	-	-	-	S	-	-	-
3 JUN 1978	-	S	-	-	-	-	-
4 JUN 1978	-	-	S	-	S	-	S
5 JUN 1978	-	S	-	-	-	-	-
6 JUN 1978	S	-	-	-	-	-	-
8 JUN 1978	S	-	-	-	S	-	-
9 JUN 1978	-	S	S	-	-	S	S
10 JUN 1978	-	-	-	S	-	-	-
12 JUN 1978	-	-	-	-	S	-	-
13 JUN 1978	-	-	S	S	-	-	-
15 JUN 1978	S	-	-	-	-	-	-
16 JUN 1978	-	-	-	-	S	-	-
18 JUN 1978	-	-	S	-	S	-	-
19 JUN 1978	S	S	-	-	-	-	-
20 JUN 1978	-	-	-	S	S	-	S
21 JUN 1978	-	-	-	S	-	-	-
22 JUN 1978	S	S	S	-	-	S	S
23 JUN 1978	-	-	-	S	-	-	-
27 JUN 1978	-	-	S	S	-	-	-
28 JUN 1978	S	-	S	-	-	-	-
29 JUN 1978	-	-	-	S	-	-	-
30 JUN 1978	-	-	S	-	S	-	-

DATA FROM 1 JUL 1977 TO 30 JUN 1978

		<div>U V R E M T</div>	<div>L H I P A S</div>	<div>L M I N U W D</div>	<div>L M I C E P R</div>	<div>N P U L</div>	<div>L A R R</div>	
		Z	HOURS	HOURS	HOURS		MO. DA	
1 JUL 1977	PENN STATE	1248.00	47.50	NAP	.20	3.00	NAP	NAP
5 JUL 1977	PENN STATE	1330.00	96.50	NAP	2.75	3.00	NAP	NAP
6 JUL 1977	WHITEFACE	1300.00	216.00	NAP	8.00	17.00	NAP	NAP
7 JUL 1977	PENN STATE	1347.00	48.00	NAP	4.75	4.00	NAP	NAP
8 JUL 1977	PENN STATE	1906.00	29.00	NAP	3.80	4.00	NAP	NAP
9 JUL 1977	WHITEFACE	1100.00	70.00	NAP	10.50	10.00	NAP	NAP
10 JUL 1977	PENN STATE	1424.00	22.00	NAP	.25	2.00	NAP	NAP
11 JUL 1977	VIRGINIA	1500.00	314.50	NAP	4.00	NAP	NAP	NAP
12 JUL 1977	PENN STATE	1329.00	47.00	NAP	1.20	2.00	NAP	NAP
13 JUL 1977	WHITEFACE	1800.00	103.00	NAP	6.00	8.00	NAP	NAP
	PENN STATE	1725.00	23.50	NAP	.67	2.00	NAP	NAP
18 JUL 1977	ITHACA	1400.00	121.00	NAP	6.00	23.00	NAP	NAP
	PENN STATE	1308.00	23.50	NAP	1.33	8.00	NAP	NAP
20 JUL 1977	ITHACA	1300.00	47.00	NAP	12.00	NAP	NAP	NAP
	PENN STATE	1253.00	23.50	NAP	2.67	2.00	NAP	NAP
21 JUL 1977	WHITEFACE	1800.00	192.00	NAP	9.00	14.00	NAP	NAP
22 JUL 1977	ITHACA	2100.00	56.00	NAP	2.00	15.00	NAP	NAP
	VIRGINIA	1400.00	263.00	NAP	6.00	NAP	NAP	NAP
25 JUL 1977	WHITEFACE	1800.00	96.00	NAP	1.00	5.00	NAP	NAP
26 JUL 1977	WHITEFACE	1800.00	24.00	NAP	1.00	1.00	NAP	NAP
	VIRGINIA	2100.00	115.00	NAP	10.00	NAP	NAP	NAP
31 JUL 1977	WHITEFACE	1800.00	120.00	NAP	10.00	9.00	NAP	NAP
1 AUG 1977	ITHACA	1400.00	157.00	NAP	10.00	NAP	NAP	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		<div> <div> <div>E</div> <div>M</div> <div>D</div> <div>V</div> <div>H</div> <div>R</div> </div> <div> <div>E</div> <div>M</div> <div>I</div> <div>T</div> </div> </div>	<div> <div> <div>P</div> <div>A</div> <div>S</div> </div> <div> <div>H</div> <div>M</div> <div>A</div> </div> </div>	<div> <div> <div>N</div> <div>W</div> <div>O</div> </div> <div> <div>D</div> </div> </div>	<div> <div> <div>C</div> <div>E</div> <div>P</div> </div> <div> <div>K</div> </div> </div>	<div> <div> <div>E</div> <div>N</div> <div>P</div> <div>U</div> </div> <div> <div>D</div> <div>L</div> </div> </div>	<div> <div> <div>R</div> <div>A</div> </div> <div> <div>D</div> <div>A</div> </div> </div>		
		Z	HOURS	HOURS	HOURS		MO.OA		
2 AUG 1977	WHITEFACE	1800.00	48.00	NAP	1.00	1.00	NAP	NAP	
3 AUG 1977	VIRGINIA	1330.00	184.50	NAP	5.00	NAP	NAP	NAP	
4 AUG 1977	VIRGINIA	1230.00	23.00	NAP	5.00	NAP	NAP	NAP	
5 AUG 1977	ITHACA	2000.00	102.00	NAP	1.00	5.00	NAP	NAP	
6 AUG 1977	WHITEFACE	2430.00	102.00	NAP	8.00	8.00	NAP	NAP	
8 AUG 1977	WHITEFACE	1800.00	42.00	NAP	4.00	3.00	NAP	NAP	
	ITHACA	1500.00	67.00	NAP	58.00	76.00	NAP	NAP	
	PENN STATE	1706.00	436.50	NAP	2.90	6.00	NAP	NAP	
9 AUG 1977	PENN STATE	1321.00	19.80	NAP	.33	3.00	NAP	NAP	
	VIRGINIA	1900.00	126.50	NAP	3.00	NAP	NAP	NAP	
11 AUG 1977	WHITEFACE	1700.00	71.00	NAP	5.00	12.00	NAP	NAP	
	PENN STATE	1306.00	47.50	NAP	2.60	12.00	NAP	NAP	
14 AUG 1977	VIRGINIA	2100.00	122.00	NAP	4.00	NAP	NAP	NAP	
15 AUG 1977	WHITEFACE	1700.00	96.00	NAP	7.00	NAP	NAP	NAP	
	ITHACA	1500.00	168.00	NAP	7.00	60.00	NAP	NAP	
	PENN STATE	1259.00	95.50	NAP	1.30	4.00	NAP	NAP	
17 AUG 1977	WHITEFACE	1230.00	43.00	NAP	18.00	7.00	NAP	NAP	
	ITHACA	1600.00	49.00	NAP	8.00	4.00	NAP	NAP	
18 AUG 1977	PENN STATE	1342.00	72.50	NAP	2.60	6.00	NAP	NAP	
	VIRGINIA	1900.00	94.00	NAP	2.00	NAP	NAP	NAP	
19 AUG 1977	WHITEFACE	1700.00	53.00	NAP	6.00	18.00	NAP	NAP	
22 AUG 1977	WHITEFACE	1700.00	72.00	NAP	9.00	12.00	NAP	NAP	
	ITHACA	2000.00	124.00	NAP	8.00	14.00	NAP	NAP	

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		Z	HOURS	HOURS	HOURS		MU.DA	
	PENN STATE	1405.00	49.00	NAP	2.30	2.00	NAP	NAP
24 AUG 1977	WHITEFACE	1700.00	48.00	NAP	10.00	4.00	NAP	NAP
	ITHACA	2200.00	50.00	NAP	23.00	22.00	NAP	NAP
	VIRGINIA	1400.00	139.00	NAP	1.50	NAP	NAP	NAP
25 AUG 1977	PENN STATE	1410.00	72.00	NAP	.20	4.00	NAP	NAP
27 AUG 1977	PENN STATE	1721.00	51.00	NAP	.25	2.00	NAP	NAP
30 AUG 1977	WHITEFACE	1700.00	144.00	NAP	7.00	19.00	NAP	NAP
	ITHACA	1800.00	140.00	NAP	8.00	41.00	NAP	NAP
31 AUG 1977	PENN STATE	1435.00	95.00	NAP	.20	NAP	NAP	NAP
1 SEP 1977	PENN STATE	1306.00	22.50	NAP	.08	2.00	NAP	NAP
	VIRGINIA	1800.00	124.00	NAP	2.00	4.00	NAP	NAP
2 SEP 1977	ITHACA	1100.00	41.00	NAP	14.00	38.00	NAP	NAP
6 SEP 1977	WHITEFACE	1930.00	170.00	NAP	HQE	11.00	NAP	NAP
	ITHACA	2000.00	105.00	NAP	8.00	78.00	NAP	NAP
	VIRGINIA	1230.00	118.30	NAP	3.50	NAP	NAP	NAP
8 SEP 1977	VIRGINIA	1200.00	48.00	NAP	1.00	NAP	NAP	NAP
10 SEP 1977	VIRGINIA	1400.00	50.00	0.00	6.00	NAP	9.21	NAP
13 SEP 1977	PENN STATE	1949.00	295.00	NAP	1.10	12.00	NAP	NAP
14 SEP 1977	WHITEFACE	1300.00	186.00	0.00	42.00	45.00	9.28	NAP
	ITHACA	2000.00	192.00	NAP	22.00	0.00	NAP	NAP
	PENN STATE	1528.00	19.50	NAP	2.50	NAP	NAP	NAP
15 SEP 1977	WHITEFACE	1300.00	24.00	0.00	10.00	9.00	9.28	NAP
17 SEP 1977	ITHACA	1400.00	66.00	NAP	16.00	23.00	NAP	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^E ^H ^I ^T Z	^P ^H ^A ^S HOURS	^N ^W ^D ^O HOURS	^C ^E ^R ^P HOURS	^D ^I ^L ^A HOURS	^R ^K ^A ^M MODA	
	PENN STATE	1407.00	71.00	NAP	7.70	13.00	NAP	NAP
18 SEP 1977	VIRGINIA	1609.00	194.00	0.00	40.00	NAP	10.21	NAP
19 SEP 1977	WHITEFACE	1700.00	100.00	0.00	13.00	30.00	9.28	NAP
	ITHACA	1400.00	48.00	0.00	10.00	3.00	NAP	NAP
	PENN STATE	1934.00	53.50	NAP	1.90	7.00	NAP	NAP
20 SEP 1977	PENN STATE	1904.00	23.50	NAP	9.30	7.00	NAP	NAP
21 SEP 1977	WHITEFACE	1700.00	48.00	0.00	18.00	2.00	9.28	NAP
	ITHACA	2200.00	56.00	0.00	7.00	12.00	10.10	NAP
24 SEP 1977	PENN STATE	1405.00	91.00	0.00	.20	3.00	10.07	NAP
26 SEP 1977	ITHACA	1200.00	110.00	0.00	52.00	14.00	10.10	NAP
	VIRGINIA	2200.00	198.00	0.00	1.00	NAP	10.21	NAP
27 SEP 1977	PENN STATE	1220.00	70.00	0.00	19.30	19.00	10.07	NAP
28 SEP 1977	WHITEFACE	1300.00	164.00	0.00	48.00	21.00	10.12	NAP
29 SEP 1977	WHITEFACE	1300.00	24.00	0.00	13.00	17.00	10.12	NAP
2 OCT 1977	VIRGINIA	2030.00	143.00	0.00	8.00	NAP	10.21	NAP
3 OCT 1977	WHITEFACE	1300.00	96.00	0.00	55.00	34.00	10.12	NAP
	PENN STATE	1200.00	144.00	0.00	8.30	9.00	10.07	NAP
4 OCT 1977	WHITEFACE	1300.00	24.00	0.00	15.00	6.00	10.12	NAP
	ITHACA	1600.00	196.00	0.00	58.00	22.00	10.10	NAP
6 OCT 1977	ITHACA	1450.00	46.00	0.00	3.00	6.00	10.19	NAP
7 OCT 1977	PENN STATE	1710.00	101.00	0.00	2.60	5.00	10.17	NAP
10 OCT 1977	ITHACA	1300.00	95.00	0.00	20.00	NAP	10.19	NAP
	VIRGINIA	1200.00	184.00	0.00	27.00	NAP	10.21	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		<div> <div> <div>E</div> <div>M</div> <div>T</div> </div> <div> <div>R</div> <div>V</div> <div>D</div> </div> </div>	<div> <div> <div>E</div> <div>M</div> <div>T</div> </div> <div> <div>P</div> <div>A</div> <div>S</div> </div> </div>	<div> <div> <div>N</div> <div>W</div> <div>D</div> </div> <div> <div>I</div> <div>T</div> </div> </div>	<div> <div> <div>E</div> <div>M</div> <div>T</div> </div> <div> <div>C</div> <div>E</div> <div>P</div> </div> </div>	<div> <div> <div>N</div> <div>P</div> <div>U</div> </div> <div> <div>L</div> <div>I</div> </div> </div>	<div> <div> <div>E</div> <div>T</div> <div>A</div> </div> <div> <div>R</div> <div>D</div> </div> </div>		
		Z	HOURS	HOURS	HOURS		MU.OA		
11 OCT 1977	WHITEFACE	1300.00	168.00	0.00	20.00	29.00	10.24	NAP	
	PENN STATE	1850.00	97.00	0.00	19.90	6.00	10.17	NAP	
16 OCT 1977	VIRGINIA	1400.00	146.00	0.00	7.50	NAP	10.26	NAP	
17 OCT 1977	ITHACA	2200.00	177.00	0.00	37.00	17.00	10.25	NAP	
	PENN STATE	1820.00	125.00	19.00	12.70	6.00	10.25	NAP	
	VIRGINIA	1330.00	24.00	0.00	6.00	NAP	10.26	NAP	
18 OCT 1977	WHITEFACE	1330.00	168.00	0.00	48.00	44.00	10.24	NAP	
20 OCT 1977	ITHACA	1400.00	64.00	0.00	14.00	12.00	10.25	NAP	
	PENN STATE	1215.00	48.00	18.00	17.00	6.00	10.25	NAP	
24 OCT 1977	WHITEFACE	1300.00	144.00	0.00	5.00	12.00	11.15	NAP	
27 OCT 1977	PENN STATE	1240.00	168.00	0.00	2.40	MDE	11.11	NAP	
	VIRGINIA	1900.00	246.00	0.00	39.00	NAP	11.04	NAP	
3 NOV 1977	PENN STATE	1310.00	173.00	0.00	.20	NAP	11.11	NAP	
5 NOV 1977	WHITEFACE	1400.00	289.00	0.00	14.00	1.80	11.15	NAP	
	PENN STATE	1750.00	53.00	0.00	16.50	15.00	11.11	NAP	
6 NOV 1977	ITHACA	1103.00	405.00	0.00	18.00	19.00	11.16	NAP	
7 NOV 1977	WHITEFACE	1400.00	48.00	0.00	12.00	9.00	11.15	NAP	
8 NOV 1977	PENN STATE	1330.00	67.50	0.00	15.90	7.00	11.18	NAP	
	VIRGINIA	2100.00	290.00	0.00	146.00	MDE	11.22	NAP	
9 NOV 1977	WHITEFACE	1400.00	48.00	0.00	14.00	8.00	11.15	NAP	
10 NOV 1977	PENN STATE	1330.00	48.00	0.00	.20	NAP	11.18	NAP	
11 NOV 1977	WHITEFACE	1400.00	48.00	0.00	12.00	13.00	11.30	NAP	
	PENN STATE	1330.00	24.50	0.00	3.00	27.00	11.18	NAP	

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^E ^H ^I Z	^E ^H ^P ^A S HOURS	^E ^H ^I D HOURS	^E ^H ^C ^R P HOURS	^E ^H ^N ^D L HOURS	^E ^H ^A ^R M.G.D.A	
13 NOV 1977	ITHACA	1350.00	91.00	79.00	1.10	NAP	11.16	NAP
14 NOV 1977	PENN STATE	1330.00	72.00	0.00	2.40	20.00	11.18	NAP
15 NOV 1977	WHITEFACE	1900.00	96.00	0.00	9.00	30.00	11.30	NAP
	VIRGINIA	2100.00	168.00	0.00	4.00	NAP	12.21	NAP
18 NOV 1977	ITHACA	1600.00	123.00	0.00	16.00	NAP	12.01	NAP
	PENN STATE	1400.00	96.50	0.00	6.20	26.00	12.05	NAP
20 NOV 1977	WHITEFACE	1900.00	120.00	0.00	23.00	54.00	12.05	NAP
	VIRGINIA	1730.00	116.50	0.00	8.00	NAP	12.21	NAP
	ILLINOIS	1730.00	91.50	0.00	2.50	NAP	12.16	NAP
21 NOV 1977	ILLINOIS	1700.00	23.00	0.00	1.00	NAP	12.16	NAP
22 NOV 1977	PENN STATE	1430.00	96.50	0.00	1.90	13.00	12.05	NAP
23 NOV 1977	ILLINOIS	1750.00	48.00	0.00	1.00	2.00	12.16	NAP
24 NOV 1977	VIRGINIA	1600.00	94.50	0.00	53.50	NAP	12.21	NAP
25 NOV 1977	PENN STATE	1400.00	71.50	0.00	.30	NAP	12.05	NAP
27 NOV 1977	ITHACA	1600.00	122.00	94.00	22.00	6.00	12.01	NAP
	PENN STATE	1700.00	46.00	0.00	8.80	1.00	12.05	NAP
28 NOV 1977	WHITEFACE	1300.00	186.00	0.00	25.00	29.00	12.05	NAP
29 NOV 1977	VIRGINIA	1300.00	117.00	0.00	22.00	NAP	12.21	NAP
1 DEC 1977	WHITEFACE	1300.00	72.00	0.00	14.00	29.00	12.21	NAP
	ITHACA	1600.00	96.00	0.00	12.00	6.00	12.13	NAP
	PENN STATE	1500.00	93.50	0.00	25.00	47.00	12.15	NAP
	ILLINOIS	1730.00	46.00	147.00	NAP	NAP	12.16	NAP
2 DEC 1977	VIRGINIA	1300.00	72.00	0.00	24.50	13.00	12.21	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^E ^M ^I ^T ^R ^H ^V ^D ^U ^S	^E ^M ^I ^T ^R ^H ^V ^D ^U ^S	^E ^M ^I ^T ^R ^H ^V ^D ^U ^S	^E ^M ^I ^T ^R ^H ^V ^D ^U ^S	^E ^M ^I ^T ^R ^H ^V ^D ^U ^S	^E ^M ^I ^T ^R ^H ^V ^D ^U ^S	^E ^M ^I ^T ^R ^H ^V ^D ^U ^S	^E ^M ^I ^T ^R ^H ^V ^D ^U ^S
		Z	HOURS	HOURS	HOURS			MO.0A	
3 DEC 1977	ILLINOIS	1700.00	47.50	0.00	NAP	NAP		12.16	NAP
5 DEC 1977	WHITEFACE	1300.00	96.00	0.00	23.00	NAP		12.21	NAP
6 DEC 1977	PENN STATE	1330.00	119.00	0.00	15.80	39.00		12.15	NAP
	VIRGINIA	2100.00	108.00	0.00	95.50	11.00		12.21	NAP
7 DEC 1977	WHITEFACE	1300.00	48.00	0.00	28.00	1.00		12.21	NAP
	ITHACA	1900.00	147.00	0.00	28.00	NAP		12.13	NAP
	PENN STATE	2100.00	31.00	0.00	2.00	31.00		12.15	NAP
	ILLINOIS	2100.00	100.00	0.00	33.00	3.00		12.16	NAP
9 DEC 1977	PENN STATE	1930.00	46.50	0.00	11.80	30.00		12.15	NAP
10 DEC 1977	ILLINOIS	2230.00	73.00	0.00	20.00	38.00		2.03	NAP
11 DEC 1977	ITHACA	1200.00	89.00	0.00	28.00	17.00		1.10	NAP
12 DEC 1977	WHITEFACE	1300.00	120.00	0.00	19.00	16.00		1.04	NAP
13 DEC 1977	PENN STATE	1730.00	93.50	0.00	.20	NAP		12.28	NAP
14 DEC 1977	ILLINOIS	2100.00	94.50	0.00	19.00	18.00		2.03	NAP
15 DEC 1977	ITHACA	1800.00	102.00	0.00	48.00	12.00		1.10	NAP
	PENN STATE	1500.00	45.00	0.00	5.10	MUE		12.28	NAP
16 DEC 1977	WHITEFACE	1300.00	96.00	0.00	33.00	21.00		1.04	NAP
	VIRGINIA	1730.00	236.50	0.00	21.50	9.00		2.14	NAP
18 DEC 1977	ILLINOIS	1900.00	94.00	0.00	NAP	NAP		15A	NAP
19 DEC 1977	PENN STATE	1730.00	98.50	0.00	19.50	18.00		12.28	NAP
	VIRGINIA	1900.00	73.50	0.00	41.00	13.00		2.14	NAP
21 DEC 1977	ITHACA	1700.00	143.00	0.00	66.00	8.00		1.10	NAP
	PENN STATE	2100.00	51.50	0.00	12.70	19.00		1.18	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		<div>U V H R E M I</div>	<div>P A M S</div>	<div>E H D</div>	<div>C E R P</div>	<div>T I M F</div>	<div>P E N D</div>	<div>A R D T E</div>	
		Z	HOURS	HOURS	HOURS		MO.DA		
	VIRGINIA	1730.00	46.50	0.00	10.00		2.14	NAP	
24 DEC 1977	WHITEFACE	1230.00	191.50	0.00	10.00	17.00	2.02	NAP	
26 DEC 1977	PENN STATE	2100.00	120.00	0.00	2.80	12.00	1.18	NAP	
27 DEC 1977	VIRGINIA	2200.00	144.00	0.00	4.00		2.14	NAP	
3 JAN 1978	ITHACA	1700.00	312.00	0.00	19.00	7.00	1.10	NAP	
	VIRGINIA	2130.00	167.50	0.00	8.00		2.14	NAP	
4 JAN 1978	PENN STATE	1700.00	212.00	0.00	5.80	15.00	1.18	NAP	
6 JAN 1978	PENN STATE	1900.00	50.00	0.00	.40	9.00	1.18	NAP	
7 JAN 1978	WHITEFACE	1530.00	339.00	0.00	12.00	137.00	2.02	NAP	
	PENN STATE	2000.00	25.00	0.00	2.60	7.00	1.18	NAP	
9 JAN 1978	PENN STATE	1800.00	46.00	0.00	17.40	9.00	1.25	NAP	
11 JAN 1978	ITHACA	1400.00	189.00	0.00	29.00	11.00	2.08	NAP	
12 JAN 1978	VIRGINIA	2230.00	313.00	0.00	29.50	6.00	2.14	NAP	
13 JAN 1978	WHITEFACE	1400.00	142.50	0.00	21.00	21.00	2.02	NAP	
15 JAN 1978	ITHACA	1200.00	94.00	0.00	14.00	8.00	2.08	NAP	
	PENN STATE	1600.00	94.50	0.00	20.70	29.00	1.25	NAP	
16 JAN 1978	VIRGINIA	2230.00	96.50	0.00	54.00	6.00	4.10	NAP	
18 JAN 1978	PENN STATE	1800.00	73.50	0.00	26.80	37.00	1.26	NAP	
19 JAN 1978	WHITEFACE	1130.00	141.50	0.00	23.00	12.00	2.02	NAP	
	ITHACA	1800.00	102.00	0.00	33.00	9.00	1.31	NAP	
	VIRGINIA	2100.00	70.50	0.00	32.00	10.00	4.10	NAP	
21 JAN 1978	PENN STATE	1800.00	72.00	0.00	28.80	5.00	1.26	NAP	
	VIRGINIA	1500.00	42.00	0.00	18.50		4.10	NAP	

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^E ^M ^I ^T	^E ^M ^A ^S	^E ^M ^W ^D	^E ^M ^C ^P ^R	^E ^M ^D ^L	^E ^A ^R ^K	
		L	HOURS	HOURS	HOURS		MU.DA	
22 JAN 1978	ITHACA	1200.00	66.00	0.00	29.00	7.00	1.31	NAP
26 JAN 1978	WHITEFACE	1100.00	167.50	0.00	NAP	NAP	2.02	NAP
	PENN STATE	2000.00	122.00	0.00	22.70	60.00	2.22	NAP
	VIRGINIA	2130.00	126.50	42.00	21.50	4.00	4.10	NAP
27 JAN 1978	ITHACA	2030.00	120.00	0.00	37.00	6.00	2.14	NAP
31 JAN 1978	WHITEFACE	14300.00	123.50	0.00	9.00	NAP	2.14	NAP
	PENN STATE	1400.00	114.00	0.00	MUE	15.00	2.22	NAP
1 FEB 1978	ILLINOIS	2130.00	96.50	915.00	15A	15.00	15A	NAP
8 FEB 1978	WHITEFACE	900.00	186.50	0.00	21.00	NAP	2.14	NAP
	ITHACA	1400.00	210.00	0.00	23.00	NAP	2.14	NAP
	PENN STATE	1600.00	96.00	98.00	23.80	10.00	2.22	NAP
9 FEB 1978	BROOKHAVEN	1500.00	240.00	0.00	32.00	MUE	2.22	NAP
14 FEB 1978	PENN STATE	1530.00	143.50	0.00	12.00	6.00	2.27	NAP
	ILLINOIS	2100.00	311.50	0.00	24.00	83.00	2.24	NAP
	BROOKHAVEN	2100.00	7.00	9.50	13.50	1.00	2.22	NAP
15 FEB 1978	VIRGINIA	1930.00	478.00	0.00	3.00	NAP	4.10	NAP
19 FEB 1978	ITHACA	1800.00	95.00	168.00	7.00	6.00	3.09	NAP
	PENN STATE	1530.00	120.00	0.00	7.80	25.00	2.27	NAP
24 FEB 1978	ILLINOIS	1630.00	234.00	0.00	NAP	94.00	15A	NAP
25 FEB 1978	VIRGINIA	2300.00	243.50	0.00	8.00	NAP	4.10	NAP
27 FEB 1978	PENN STATE	1500.00	191.00	0.00	.70	3.00	3.13	NAP
1 MAR 1978	ITHACA	1400.00	236.00	0.00	10.00	8.00	3.09	NAP
	ILLINOIS	2200.00	125.50	0.00	4.00	27.00	15A	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		LEWES DE	PENN STATE	ILLINOIS	ITHACA	LEWES DE	VIRGINIA	WHITEFACE	PENN STATE	BROOKHAVEN	VIRGINIA	ILLINOIS	BROOKHAVEN	LEWES DE	VIRGINIA	PENN STATE	VIRGINIA	BROOKHAVEN	ITHACA	PENN STATE	LEWES DE	WHITEFACE	BROOKHAVEN	LEWES DE
		1900.00	1630.00	1850.00	1800.00	1500.00	1730.00	1130.00	1600.00	1400.00	2130.00	1700.00	1900.00	1400.00	1600.00	1630.00	2200.00	1600.00	1600.00	1630.00	1400.00	1000.00	1800.00	1200.00
		192.00	73.50	44.00	66.00	68.00	186.50	627.00	95.50	473.00	76.00	119.00	125.00	167.00	90.50	168.50	54.00	69.00	262.00	48.00	96.00	238.50	74.00	46.00
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		24.00	.25	6.00	21.60	NAP	58.00	6.00	4.90	15.60	28.00	16.00	8.70	NAP	10.50	2.10	6.50	8.00	15.00	3.30	NAP	5.00	21.00	NAP
		50.00	4.00	38.00	3.00	NAP	NAP	8.00	20.00	1.00	NAP	2.00	1.00	NAP	1.00	5.00	5.00	3.00	7.00	18.00	62.00	1.00	NAP	
		4.21	3.13	3.14	3.22	4.21	4.10	3.22	3.13	3.30	4.10	1.5A	1.5A	4.21	4.10	3.28	6.08	3.30	3.22	3.28	3.22	3.30	4.21	
		NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^E ^M ^T ^I ^R ^H ^V ^D ^U ^E	^E ^M ^T ^I ^R ^H ^P ^A ^S	^E ^M ^T ^I ^R ^H ^N ^D	^E ^M ^T ^I ^R ^H ^C ^E ^P	^E ^M ^T ^I ^R ^H ^P ^U ^D ^L	^E ^T ^A ^D ^R ^A ^{MU.DA}	
		Z	HOURS	HOURS	HOURS			
10 MAR 1978	PENN STATE	1500.00	70.50	0.00	7.30	11.00	3.28	NAP
20 MAR 1978	WHITEFACE	1000.00	96.00	0.00	17.00	NAP	4.04	NAP
22 MAR 1978	ITHACA	1900.00	171.00	0.00	6.00	6.00	4.04	NAP
	PENN STATE	1400.00	95.00	0.00	4.10	2.00	3.28	NAP
	BROOKHAVEN	1900.00	121.00	0.00	5.00	1.00	3.30	NAP
24 MAR 1978	WHITEFACE	1000.00	96.00	0.00	22.00	36.00	4.04	NAP
	VIRGINIA	1430.00	232.50	0.00	1.50	NAP	6.08	NAP
27 MAR 1978	BROOKHAVEN	1830.00	119.50	0.00	30.00	7.00	3.30	NAP
28 MAR 1978	ITHACA	2000.00	145.00	0.00	42.00	13.00	4.04	NAP
	PENN STATE	1400.00	96.50	0.00	24.70	10.00	4.10	NAP
	VIRGINIA	2100.00	102.50	0.00	20.00	NAP	6.08	NAP
29 MAR 1978	WHITEFACE	1330.00	123.50	0.00	23.00	41.00	4.04	NAP
31 MAR 1978	LEWES DE	1830.00	342.50	0.00	72.00	NAP	4.21	NAP
2 APR 1978	ITHACA	1400.00	114.00	0.00	7.00	6.00	4.10	NAP
3 APR 1978	WHITEFACE	1400.00	115.50	0.00	19.00	NAP	4.14	NAP
4 APR 1978	PENN STATE	1330.00	119.50	0.00	8.30	3.00	4.10	NAP
	BROOKHAVEN	1830.00	192.00	0.00	4.00	3.00	6.01	NAP
5 APR 1978	ITHACA	2000.00	78.00	0.00	10.00	6.00	4.10	NAP
	PENN STATE	1330.00	24.00	0.00	5.50	4.00	4.10	NAP
6 APR 1978	WHITEFACE	1400.00	72.00	0.00	14.00	NAP	4.14	NAP
7 APR 1978	ITHACA	1400.00	42.00	NAP	11.00	10.00	4.27	NAP
	PENN STATE	1400.00	48.00	0.00	4.70	18.00	4.27	NAP
8 APR 1978	LEWES DE	1500.00	188.50	0.00	24.00	NAP	4.21	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2	HOURS	HOURS	HOURS		HOURS	
10 APR 1978	WHITEFACE	1400.00	96.00	0.00	19.00	NAP	5.02	NAP
11 APR 1978	WHITEFACE	1900.00	29.00	0.00	12.00	37.00	5.02	NAP
12 APR 1978	PENN STATE	1330.00	119.50	0.00	2.30	4.00	4.27	NAP
	LEWES DE	1300.00	NAP	NAP	12.00	NAP	6.29	NAP
13 APR 1978	WHITEFACE	1330.00	42.50	0.00	6.00	34.00	5.02	NAP
	ITHACA	2000.00	144.00	0.00	13.00	15.00	4.27	NAP
14 APR 1978	VIRGINIA	2000.00	401.50	0.00	1.00	NAP	6.08	NAP
17 APR 1978	WHITEFACE	2030.00	103.00	0.00	19.00	89.00	5.02	NAP
18 APR 1978	ILLINOIS	1800.00	168.00	817.00	5.00	42.00	5.05	NAP
20 APR 1978	ILLINOIS	1630.00	46.50	0.00	11.00	196.00	5.05	NAP
21 APR 1978	PENN STATE	1400.00	416.50	0.00	22.20	27.00	4.27	NAP
	VIRGINIA	1930.00	167.50	0.00	33.00	9.00	6.08	NAP
22 APR 1978	ITHACA	1400.00	216.00	0.00	46.00	22.00	4.27	NAP
23 APR 1978	PENN STATE	1600.00	50.00	0.00	.10	4.00	4.27	NAP
	ILLINOIS	2100.00	76.50	0.00	2.50	94.00	5.05	NAP
24 APR 1978	WHITEFACE	1700.00	164.50	0.00	16.00	65.00	5.02	NAP
	PENN STATE	2000.00	28.00	0.00	1.20	2.00	5.30	NAP
	ILLINOIS	1700.00	20.00	0.00	.10	8.00	15A	NAP
25 APR 1978	ILLINOIS	1430.00	21.50	0.00	3.50	162.00	5.05	NAP
28 APR 1978	VIRGINIA	1300.00	161.50	0.00	41.50	10.00	6.08	NAP
	LEWES DE	1200.00	383.00	0.00	48.00	NAP	6.29	NAP
5 MAY 1978	ILLINOIS	1600.00	241.50	0.00	21.50	126.00	5.25	NAP
	LEWES DE	1330.00	169.50	0.00	20.00	NAP	6.29	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^E ^M ^I ^T Z	^P ^M ^A ^S HOURS	^N ^W ^O ^D HOURS	^E ^M ^I ^T HOURS	^N ^P ^U ^L HOURS	^E ^A ^D ^R MU.DA	
7 MAY 1978	ITHACA	1800.00	364.00	0.00	39.00	15.00	5.22	NAP
	PENN STATE	2400.00	243.50	0.00	32.70	13.00	5.30	NAP
8 MAY 1978	VIRGINIA	230.00	229.50	0.00	32.00	12.00	6.08	NAP
	BROOKHAVEN	1500.00	234.50	0.00	19.00	4.00	6.01	NAP
9 MAY 1978	WHITEFACE	2100.00	364.00	0.00	9.00	8.00	5.31	NAP
	PENN STATE	1300.00	3.70	0.00	13.70	9.00	5.30	NAP
	VIRGINIA	2330.00	45.00	0.00	15.00	3.00	6.08	NAP
10 MAY 1978	ITHACA	1800.00	72.00	0.00	22.00	11.00	5.22	NAP
	BROOKHAVEN	1430.00	47.50	0.00	29.00	1.00	6.01	NAP
12 MAY 1978	ILLINOIS	1230.00	117.00	47.50	7.50	28.00	5.25	NAP
13 MAY 1978	WHITEFACE	1600.00	91.00	0.00	12.00	12.00	5.31	NAP
14 MAY 1978	PENN STATE	1330.00	120.50	0.00	12.30	9.00	5.30	NAP
	ILLINOIS	1700.00	52.50	0.00	19.50	58.00	5.25	NAP
15 MAY 1978	PENN STATE	1300.00	23.50	0.00	12.70	6.00	5.30	NAP
	ILLINOIS	1800.00	25.00	0.00	3.50	26.00	5.25	NAP
	BROOKHAVEN	1600.00	145.50	0.00	15.00	1.00	6.01	NAP
17 MAY 1978	ITHACA	1900.00	169.00	0.00	49.00	21.00	5.22	NAP
	VIRGINIA	2100.00	125.00	0.00	95.00	11.00	6.08	NAP
	LEWES DE	1800.00	292.50	0.00	72.00	NAP	6.29	NAP
19 MAY 1978	WHITEFACE	1300.00	141.00	0.00	22.00	25.00	5.31	NAP
	PENN STATE	1300.00	90.00	0.00	28.30	25.00	5.31	NAP
21 MAY 1978	ITHACA	1800.00	95.00	0.00	5.00	NAP	6.13	NAP
22 MAY 1978	WHITEFACE	1300.00	72.00	0.00	10.00	9.00	5.31	NAP

		2	HOURS	HOURS	HOURS		MU.DA	
	PENN STATE	1500.00	74.00	0.00	.30	NAP	5.31	NAP
25 MAY 1978	PENN STATE	1400.00	71.00	0.00	15.30	NAP	6.05	NAP
	VIRGINIA	2130.00	48.50	144.00	2.25	3.00	7.18	NAP
27 MAY 1978	LEWES DE	1800.00	240.00	0.00	NAP	NAP	6.29	NAP
1 JUN 1978	VIRGINIA	2100.00	167.50	0.00	1.50	3.00	7.18	NAP
	LEWES DE	2000.00	122.00	0.00	1SA	1SA	1SA	NAP
2 JUN 1978	VIRGINIA	2200.00	25.00	0.00	1.00	2.00	1SA	0.00
3 JUN 1978	ITHACA	1800.00	312.00	0.00	9.00	6.00	6.13	NAP
4 JUN 1978	PENN STATE	1400.00	312.50	0.00	5.00	15.00	6.13	NAP
	ILLINOIS	1500.00	477.00	0.00	10.00	15.00	6.14	NAP
	LEWES DE	1600.00	68.00	0.00	8.00	1.00	6.29	NAP
5 JUN 1978	ITHACA	1700.00	50.00	0.00	2.00	3.00	1SA	NAP
6 JUN 1978	WHITEFACE	1300.00	360.00	0.00	17.00	21.00	6.26	NAP
8 JUN 1978	WHITEFACE	1500.00	50.00	0.00	22.00	8.00	6.26	NAP
	ILLINOIS	1800.00	99.00	0.00	13.00	21.00	6.14	NAP
9 JUN 1978	ITHACA	1900.00	98.00	0.00	12.00	7.00	6.20	NAP
	PENN STATE	1300.00	119.00	0.00	5.80	26.00	6.14	NAP
	BROOKHAVEN	1500.00	599.00	0.00	8.70	6.00	8.11	0.00
	LEWES DE	1800.00	122.00	0.00	NAP	NAP	6.29	NAP
10 JUN 1978	VIRGINIA	2000.00	190.00	0.00	6.00	7.00	7.18	0.00
12 JUN 1978	ILLINOIS	1630.00	94.50	0.00	.10	30.00	6.26	0.00
13 JUN 1978	PENN STATE	1400.00	97.00	0.00	1.50	1.00	6.20	NAP
	VIRGINIA	2330.00	75.50	0.00	2.00	2.00	1SA	0.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^E ^H ^I ^T	^E ^P ^A ^S	^E ^N ^D ^O	^E ^C ^R ^P	^E ^N ^D ^L	^E ^R ^A	
		Z	HOURS	HOURS	HOURS		MU.DA	
15 JUN 1978	WHITEFACE	1400.00	167.00	0.00	21.00	28.00	6.26	NAP
16 JUN 1978	ILLINOIS	1700.00	96.50	0.00	4.00	29.00	6.26	0.00
18 JUN 1978	PENN STATE	1430.00	119.50	0.00	1.60	8.00	6.22	0.00
	ILLINOIS	2130.00	52.50	0.00	5.50	17.00	6.26	NAP
19 JUN 1978	WHITEFACE	1400.00	95.00	0.00	2.00	3.00	7.06	NAP
	ITHACA	1900.00	150.00	0.00	6.00	8.00	7.06	0.00
20 JUN 1978	VIRGINIA	2130.00	166.00	0.00	7.50	7.00	7.18	0.00
	ILLINOIS	2230.00	49.00	0.00	NAP	1.00	6.26	NAP
	LEWIS DE	1400.00	260.00	0.00	12.00	13.00	6.29	NAP
21 JUN 1978	VIRGINIA	2100.00	23.50	0.00	1.50	9.00	7.18	0.00
22 JUN 1978	WHITEFACE	1500.00	73.00	0.00	15.00	16.00	7.06	NAP
	ITHACA	1200.00	65.00	0.00	9.00	4.00	7.06	0.00
	PENN STATE	1330.00	94.50	0.00	1.30	8.00	6.26	NAP
	BRUOKHAVEN	1630.00	190.50	0.00	2.50	3.00	8.11	0.00
	LEWIS DE	1400.00	48.00	0.00	4.00	11.00	6.29	NAP
23 JUN 1978	VIRGINIA	1500.00	42.00	0.00	1.50	4.00	7.18	0.00
27 JUN 1978	PENN STATE	1300.00	118.50	0.00	1.60	6.00	7.06	NAP
	VIRGINIA	2130.00	102.50	0.00	6.00	5.00	7.18	0.00
28 JUN 1978	WHITEFACE	2030.00	149.50	0.00	3.00	11.00	7.06	NAP
	PENN STATE	1500.00	23.00	0.00	1.00	11.00	7.06	0.00
29 JUN 1978	VIRGINIA	2300.00	49.50	0.00	15A	1.00	15A	0.00
30 JUN 1978	PENN STATE	1400.00	47.00	0.00	.33	3.00	7.07	NAP
	ILLINOIS	2230.00	240.00	0.00	.50	10.00	7.17	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

2	HOURS	HOURS	HOURS		MO.DA
T	S	D	P	L	A
I	A	I	R	I	R
H	M	W	E	D	R
E	P	N	C	U	-
R	.	T	.	P	D
M		I	I	E	A
V		M	M	N	I
U		E	L		E

NSC MEANS NO SAMPLE COLLECTED
 ISA MEANS INSUFF. SAMPLE FOR ANALYSIS
 NAP MEANS NO ANALYSIS PERFORMED
 MUE MEANS MALFUNCTION OR OPERATOR ERROR
 RPC MEANS REJECTED--PROB. CONTAMINATION

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		ML	ML	C	F	L	UNHL/L	UNHL/CH
1 JUL 1977	PENN STATE	102.00	110.00	NAP	3.89	ISA	ISA	ISA
5 JUL 1977	PENN STATE	334.00	350.00	NAP	4.00	RPC	RPC	NAP
6 JUL 1977	WHITEFACE	240.00	270.00	NAP	3.96	4.05	89.00	41.00
7 JUL 1977	PENN STATE	218.00	260.00	NAP	3.80	3.85	140.00	67.00
8 JUL 1977	PENN STATE	467.00	1480.00	NAP	3.72	3.80	160.00	74.00
9 JUL 1977	WHITEFACE	700.00	910.00	NAP	4.29	4.47	34.00	15.00
10 JUL 1977	PENN STATE	194.00	300.00	NAP	4.00	4.01	98.00	41.00
11 JUL 1977	VIRGINIA	100.00	NAP	NAP	3.49	3.59	260.00	110.00
12 JUL 1977	PENN STATE	190.00	240.00	NAP	4.01	4.08	83.00	34.00
13 JUL 1977	WHITEFACE	533.00	520.00	NAP	3.96	4.18	66.00	32.00
	PENN STATE	284.00	550.00	NAP	3.59	3.68	210.00	80.00
18 JUL 1977	ITHACA	370.00	390.00	NAP	3.74	3.68	210.00	90.00
	PENN STATE	550.00	990.00	NAP	3.57	3.55	280.00	110.00
20 JUL 1977	ITHACA	480.00	510.00	NAP	3.47	3.46	350.00	140.00
	PENN STATE	525.00	920.00	NAP	3.59	3.59	260.00	100.00
21 JUL 1977	WHITEFACE	750.00	700.00	NAP	3.85	4.02	96.00	46.00
22 JUL 1977	ITHACA	320.00	340.00	NAP	4.09	NAP	NAP	NAP
	VIRGINIA	628.00	NAP	NAP	3.64	3.68	210.00	80.00
25 JUL 1977	WHITEFACE	115.00	130.00	NAP	3.52	3.70	200.00	85.00
26 JUL 1977	WHITEFACE	202.00	200.00	NAP	3.89	4.06	87.00	38.00
	VIRGINIA	226.00	NAP	NAP	3.96	4.02	96.00	37.00
31 JUL 1977	WHITEFACE	670.00	640.00	NAP	3.85	3.96	110.00	45.00
1 AUG 1977	ITHACA	1150.00	1210.00	NAP	3.70	3.74	180.00	71.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		ML	ML	C			UMDL/L	UMHD/CM
2 AUG 1977	WHITEFACE	1100.00	1300.00	NAP	4.16	4.23	59.00	22.00
3 AUG 1977	VIRGINIA	171.00	200.00	NAP	4.00	NAP	NAP	53.00
4 AUG 1977	VIRGINIA	622.00	620.00	NAP	4.12	NAP	NAP	33.00
5 AUG 1977	ITHACA	580.00	480.00	NAP	3.89	3.96	110.00	45.00
6 AUG 1977	WHITEFACE	1120.00	1010.00	NAP	4.16	NAP	NAP	29.00
8 AUG 1977	WHITEFACE	240.00	260.00	NAP	3.96	NAP	NAP	46.00
	ITHACA	1310.00	1280.00	NAP	4.28	4.18	66.00	25.00
	PENN STATE	645.00	2230.00	NAP	4.10	NAP	NAP	24.00
9 AUG 1977	PENN STATE	46.00	74.00	NAP	3.60	NAP	NAP	15A
	VIRGINIA	200.00	200.00	NAP	4.05	NAP	NAP	31.00
11 AUG 1977	WHITEFACE	690.00	460.00	NAP	4.01	NAP	NAP	44.00
	PENN STATE	386.00	460.00	NAP	3.72	NAP	NAP	81.00
14 AUG 1977	VIRGINIA	710.00	580.00	NAP	3.92	NAP	NAP	48.00
15 AUG 1977	WHITEFACE	479.00	490.00	NAP	4.11	NAP	NAP	36.00
	ITHACA	480.00	310.00	NAP	3.96	NAP	NAP	49.00
	PENN STATE	309.00	340.00	NAP	3.89	NAP	NAP	48.00
17 AUG 1977	WHITEFACE	NAP	3900.00	NAP	4.07	NAP	NAP	31.00
	ITHACA	840.00	780.00	NAP	4.04	NAP	NAP	41.00
18 AUG 1977	PENN STATE	925.00	1040.00	NAP	4.00	NAP	NAP	47.00
	VIRGINIA	65.00	NAP	NAP	3.96	NAP	NAP	52.00
19 AUG 1977	WHITEFACE	248.00	230.00	NAP	4.28	NAP	NAP	24.00
22 AUG 1977	WHITEFACE	542.00	490.00	NAP	4.16	NAP	NAP	29.00
	ITHACA	620.00	470.00	NAP	4.08	NAP	NAP	38.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		ML	ML	C			UMOL/L	UMHNO/CM
	PENN STATE	125.00	140.00	NAP	3.70	ISA	ISA	ISA
24 AUG 1977	WHITEFACE	725.00	670.00	NAP	4.43	4.38	42.00	10.00
	ITHACA	1010.00	1080.00	NAP	3.92	NAP	NAP	52.00
	VIRGINIA	352.00	350.00	NAP	4.00	NAP	NAP	44.00
25 AUG 1977	PENN STATE	11.00	25.00	NAP	ISA	ISA	ISA	ISA
27 AUG 1977	PENN STATE	89.00	100.00	NAP	3.60	NAP	NAP	110.00
30 AUG 1977	WHITEFACE	250.00	280.00	NAP	4.18	NAP	NAP	29.00
	ITHACA	440.00	350.00	NAP	4.48	NAP	NAP	18.00
31 AUG 1977	PENN STATE	51.00	50.00	NAP	3.92	NAP	NAP	NAP
1 SEP 1977	PENN STATE	11.00	13.00	NAP	ISA	ISA	ISA	ISA
	VIRGINIA	204.00	200.00	NAP	3.85	NAP	NAP	73.00
2 SEP 1977	ITHACA	550.00	390.00	NAP	3.96	NAP	NAP	50.00
6 SEP 1977	WHITEFACE	141.00	321.00	NAP	4.01	NAP	NAP	43.00
	ITHACA	1120.00	1100.00	NAP	4.17	NAP	NAP	NAP
	VIRGINIA	256.00	260.00	NAP	3.77	NAP	NAP	95.00
8 SEP 1977	VIRGINIA	133.00	140.00	NAP	3.42	NAP	NAP	NAP
10 SEP 1977	VIRGINIA	683.00	700.00	20.00	4.68	NAP	21.00	NAP
13 SEP 1977	PENN STATE	187.00	240.00	NAP	3.80	NAP	NAP	NAP
14 SEP 1977	WHITEFACE	2100.00	2535.00	19.00	4.10	4.14	72.00	35.00
	ITHACA	0.00	2420.00	NAP	MUE	MUE	MUE	MUE
	PENN STATE	844.00	790.00	NAP	4.11	NAP	NAP	NAP
15 SEP 1977	WHITEFACE	433.00	390.00	20.00	4.27	4.36	44.00	20.00
17 SEP 1977	ITHACA	1550.00	1870.00	NAP	4.29	NAP	NAP	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		ML	ML	C			UMDL/L	UMH0/CM
	PENN STATE	1254.00	1320.00	NAP	4.11	NAP	NAP	NAP
18 SEP 1977	VIRGINIA	455.00	330.00	23.00	4.04	4.03	93.00	47.00
19 SEP 1977	WHITEFACE	288.00	290.00	20.00	4.25	RPC	RPC	RPC
	ITHACA	150.00	1270.00	22.00	3.95	NAP	NAP	NAP
	PENN STATE	195.00	320.00	NAP	3.89	NAP	NAP	NAP
20 SEP 1977	PENN STATE	561.00	640.00	NAP	3.92	NAP	NAP	NAP
21 SEP 1977	WHITEFACE	1076.00	920.00	20.00	4.20	4.27	54.00	26.00
	ITHACA	440.00	470.00	21.00	3.92	3.91	120.00	59.00
24 SEP 1977	PENN STATE	14.00	25.00	15A	15A	15A	15A	15A
26 SEP 1977	ITHACA	1940.00	2350.00	14.00	4.18	4.17	68.00	32.00
	VIRGINIA	136.00	150.00	22.00	3.87	3.85	140.00	74.00
27 SEP 1977	PENN STATE	2691.00	2900.00	25.00	4.18	4.14	72.00	35.00
28 SEP 1977	WHITEFACE	1960.00	2160.00	20.00	4.30	4.28	52.00	23.00
29 SEP 1977	WHITEFACE	680.00	670.00	20.00	4.60	4.62	24.00	10.00
2 OCT 1977	VIRGINIA	133.00	130.00	23.00	4.00	3.97	110.00	52.00
3 OCT 1977	WHITEFACE	2100.00	2400.00	20.00	4.11	4.14	72.00	31.00
	PENN STATE	966.00	1080.00	25.00	4.33	4.24	58.00	28.00
4 OCT 1977	WHITEFACE	680.00	620.00	19.00	5.02	5.00	10.00	3.90
	ITHACA	2110.00	2250.00	18.00	4.53	RPC	RPC	RPC
6 OCT 1977	ITHACA	120.00	115.00	20.00	3.82	3.79	160.00	82.00
7 OCT 1977	PENN STATE	255.00	280.00	25.00	4.01	3.98	100.00	52.00
10 OCT 1977	ITHACA	940.00	930.00	18.00	4.40	4.36	44.00	19.00
	VIRGINIA	612.00	670.00	20.00	4.33	4.26	55.00	25.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		ML	ML	C			UMH/L	UMH/CM
11 OCT 1977	WHITEFACE	1250.00	1170.00	19.00	4.51	5.05	8.90	9.10
	PENN STATE	1809.00	2110.00	25.00	4.22	4.21	62.00	29.00
16 OCT 1977	VIRGINIA	291.00	330.00	22.00	4.18	4.16	69.00	34.00
17 OCT 1977	ITHACA	2490.00	2690.00	14.00	4.08	4.15	71.00	35.00
	PENN STATE	2242.00	3120.00	25.00	4.27	4.26	55.00	27.00
	VIRGINIA	181.00	410.00	22.00	4.22	4.20	63.00	29.00
18 OCT 1977	WHITEFACE	3300.00	4850.00	20.00	NDE	4.48	33.00	16.00
20 OCT 1977	ITHACA	860.00	790.00	16.00	4.38	4.42	38.00	22.00
	PENN STATE	674.00	650.00	25.00	4.10	4.11	78.00	37.00
24 OCT 1977	WHITEFACE	110.00	130.00	19.00	3.70	3.79	160.00	91.00
27 OCT 1977	PENN STATE	430.00	420.00	25.00	4.47	4.52	30.00	14.00
	VIRGINIA	584.00	2100.00	19.00	4.61	4.78	17.00	9.10
3 NOV 1977	PENN STATE	23.00	32.00	ISA	ISA	ISA	ISA	ISA
5 NOV 1977	WHITEFACE	1220.00	1130.00	19.00	5.19	5.03	9.30	3.60
	PENN STATE	635.00	860.00	25.00	4.47	4.52	30.00	15.00
6 NOV 1977	ITHACA	1115.00	1120.00	17.00	4.67	4.62	24.00	12.00
7 NOV 1977	WHITEFACE	1470.00	1330.00	18.00	4.48	4.54	29.00	13.00
8 NOV 1977	PENN STATE	2046.00	2870.00	25.00	4.70	4.71	20.00	9.10
	VIRGINIA	2135.00	6860.00	20.00	4.64	4.60	25.00	15.00
9 NOV 1977	WHITEFACE	790.00	720.00	19.00	5.02	5.00	10.00	4.20
10 NOV 1977	PENN STATE	27.00	32.00	25.00	3.52	ISA	300.00	ISA
11 NOV 1977	WHITEFACE	1096.00	1030.00	21.00	4.26	4.36	44.00	20.00
	PENN STATE	1280.00	1340.00	25.00	4.26	4.34	46.00	23.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^S _A ^H ^P ^L ^V	^S _R ^E ^D ^V	^F ^I ^E ^L ^P ^H	^F ^I ^E ^L ^P ^H	^L ^A ^B ^P ^H	⁽ ^H ⁺ ⁾	^C ^U ^N ^D ^U ^C ^T
		ML	ML	C			UMDL/L	UMHD/CM
13 NOV 1977	ITHACA	2450.00	2390.00	16.00	4.38	4.44	36.00	17.00
14 NOV 1977	PENN STATE	13.00	15A	15A	15A	15A	15A	15A
15 NOV 1977	WHITEFACE	277.00	240.00	20.00	4.30	4.38	42.00	21.00
	VIRGINIA	312.00	410.00	23.00	4.52	4.50	32.00	19.00
18 NOV 1977	ITHACA	620.00	620.00	14.00	4.12	4.20	63.00	36.00
	PENN STATE	419.00	400.00	25.00	4.10	4.20	63.00	35.00
20 NOV 1977	WHITEFACE	770.00	800.00	20.00	4.12	4.14	72.00	34.00
	VIRGINIA	1130.00	1030.00	25.00	4.47	4.51	31.00	16.00
	ILLINOIS	114.00	140.00	25.00	4.04	4.24	58.00	40.00
21 NOV 1977	ILLINOIS	110.00	140.00	25.00	3.98	4.51	31.00	23.00
22 NOV 1977	PENN STATE	94.00	110.00	25.00	3.88	4.02	96.00	46.00
23 NOV 1977	ILLINOIS	60.00	75.00	25.00	3.89	4.04	91.00	54.00
24 NOV 1977	VIRGINIA	1410.00	1460.00	25.00	4.21	4.24	58.00	26.00
25 NOV 1977	PENN STATE	61.00	49.00	25.00	3.69	15A	200.00	15A
27 NOV 1977	ITHACA	520.00	630.00	21.00	4.29	3.72	190.00	92.00
	PENN STATE	442.00	400.00	25.00	4.10	4.17	68.00	33.00
28 NOV 1977	WHITEFACE	1150.00	1030.00	19.00	4.50	4.61	25.00	12.00
29 NOV 1977	VIRGINIA	552.00	610.00	24.00	3.85	3.91	120.00	58.00
1 DEC 1977	WHITEFACE	470.00	370.00	19.00	4.58	4.70	20.00	10.00
	ITHACA	780.00	1000.00	18.00	4.37	4.44	36.00	18.00
	PENN STATE	1272.00	1010.00	25.00	4.27	4.23	59.00	29.00
	ILLINOIS	886.00	NAP	25.00	4.31	4.14	72.00	35.00
2 DEC 1977	VIRGINIA	830.00	1030.00	22.00	4.41	4.39	41.00	21.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^L ^O ^V	^L ^U ^V	^T ^H ^P	^H ^P	^H ^P	^H ^P	^H ^P
		^A ^M ^S	^D ^E ^K ^P	^D ^L ^E ^F	^D ^L ^E ^F	^B ^A ^L	^H ⁺ ^I	^C ^U ^N ^O ^C
		ML	ML	C			UMOL/L	UMOL/CM
3 DEC 1977	ILLINOIS	246.00	NAP	25.00	4.19	4.18	66.00	47.00
5 DEC 1977	WHITEFACE	410.00	430.00	20.00	4.19	4.28	52.00	28.00
6 DEC 1977	PENN STATE	1268.00	1290.00	25.00	4.28	4.28	52.00	26.00
	VIRGINIA	1035.00	1130.00	22.00	4.15	4.18	66.00	34.00
7 DEC 1977	WHITEFACE	1320.00	1120.00	21.00	4.70	4.75	18.00	8.40
	ITHACA	1620.00	1540.00	21.00	4.64	4.57	27.00	12.00
	PENN STATE	104.00	150.00	25.00	4.38	4.38	42.00	20.00
	ILLINOIS	1006.00	NAP	25.00	4.96	4.89	13.00	9.90
9 DEC 1977	PENN STATE	505.00	550.00	25.00	4.31	4.30	50.00	26.00
10 DEC 1977	ILLINOIS	246.00	320.00	25.00	4.38	4.30	50.00	23.00
11 DEC 1977	ITHACA	420.00	480.00	17.00	4.45	4.40	40.00	17.00
12 DEC 1977	WHITEFACE	190.00	240.00	20.00	4.34	4.37	43.00	18.00
13 DEC 1977	PENN STATE	30.00	32.00	ISA	ISA	ISA	ISA	ISA
14 DEC 1977	ILLINOIS	586.00	970.00	25.00	4.13	4.13	74.00	32.00
15 DEC 1977	ITHACA	1220.00	1360.00	16.00	4.18	4.18	66.00	27.00
	PENN STATE	552.00	370.00	25.00	4.27	4.22	60.00	37.00
16 DEC 1977	WHITEFACE	1414.00	2010.00	22.00	4.48	4.40	40.00	16.00
	VIRGINIA	650.00	730.00	20.00	4.54	4.45	35.00	16.00
18 DEC 1977	ILLINOIS	ISA	ISA	ISA	ISA	ISA	ISA	ISA
19 DEC 1977	PENN STATE	1340.00	1110.00	25.00	4.32	4.31	49.00	25.00
	VIRGINIA	1690.00	1720.00	16.00	4.25	4.21	62.00	25.00
21 DEC 1977	ITHACA	1840.00	2020.00	16.00	4.63	4.63	23.00	9.80
	PENN STATE	551.00	560.00	25.00	4.30	4.21	62.00	27.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^S _A ^H ^P ^L ^V	^P ^K ^F ^D ^V	^F ^I ^L ^D ^H ^T	^F ^I ^L ^D ^H	^L ^A ^B ^P ^H	^L ^H ^T	^C ^N ^D ^U ^C ^T
		ML	ML	C	F	L	UMDL/L	UMHD/CM
	VIRGINIA	285.00	330.00	16.00	4.02	3.97	110.00	48.00
24 DEC 1977	WHITEFACE	490.00	570.00	20.00	4.81	4.66	22.00	8.70
26 DEC 1977	PENN STATE	247.00	210.00	25.00	4.17	4.06	87.00	40.00
27 DEC 1977	VIRGINIA	85.00	92.00	16.00	4.16	4.14	72.00	31.00
3 JAN 1978	ITHACA	260.00	300.00	17.00	4.20	4.18	66.00	31.00
	VIRGINIA	267.00	320.00	20.00	4.42	4.30	50.00	20.00
4 JAN 1978	PENN STATE	178.00	230.00	25.00	4.11	4.04	91.00	38.00
6 JAN 1978	PENN STATE	29.00	25.00	15A	15A	15A	15A	15A
7 JAN 1978	WHITEFACE	360.00	370.00	20.00	4.11	3.94	110.00	46.00
	PENN STATE	134.00	110.00	25.00	3.71	3.77	170.00	74.00
9 JAN 1978	PENN STATE	2150.00	1970.00	25.00	4.42	4.40	40.00	16.00
11 JAN 1978	ITHACA	1980.00	2320.00	17.50	4.49	4.43	37.00	16.00
12 JAN 1978	VIRGINIA	2100.00	NAP	8.00	4.63	4.55	28.00	14.00
13 JAN 1978	WHITEFACE	1550.00	1390.00	19.00	4.67	4.85	14.00	6.20
15 JAN 1978	ITHACA	890.00	940.00	16.00	4.61	4.79	16.00	10.00
	PENN STATE	496.00	560.00	25.00	4.70	4.61	25.00	11.00
16 JAN 1978	VIRGINIA	400.00	1530.00	22.00	4.59	NAP	26.00	NAP
18 JAN 1978	PENN STATE	1244.00	1370.00	25.00	4.60	4.51	31.00	12.00
19 JAN 1978	WHITEFACE	1470.00	1900.00	18.00	4.76	4.87	13.00	4.90
	ITHACA	1390.00	1530.00	16.00	4.72	4.70	20.00	7.60
	VIRGINIA	450.00	1410.00	24.00	4.30	4.22	60.00	23.00
21 JAN 1978	PENN STATE	984.00	1170.00	25.00	4.81	4.96	11.00	4.90
	VIRGINIA	340.00	2210.00	24.00	4.10	4.04	91.00	35.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^P ^A ^S ML	^D ^E ^R ML	^L ^E ^I C	^D ^L ^E F	^H ^P ^L A	^I ^H ^I UMOL/L	^C ^U ^N UMOL/CM
22 JAN 1978	ITHACA	770.00	1870.00	18.00	4.97	4.86	14.00	5.20
26 JAN 1978	WHITEFACE	1460.00	1590.00	19.00	4.55	4.53	30.00	12.00
	PENN STATE	2276.00	1830.00	25.00	4.54	4.45	35.00	17.00
	VIRGINIA	822.00	873.00	24.00	4.92	4.80	16.00	5.90
27 JAN 1978	ITHACA	540.00	1110.00	14.00	4.33	4.35	45.00	20.00
31 JAN 1978	WHITEFACE	235.00	220.00	20.00	4.34	4.39	41.00	23.00
	PENN STATE	77.00	MDE	25.00	4.72	1SA	19.00	1SA
1 FEB 1978	ILLINOIS	7.60	1SA	25.00	4.62	1SA	24.00	1SA
4 FEB 1978	WHITEFACE	340.00	710.00	20.00	4.83	4.86	14.00	6.40
	ITHACA	370.00	1090.00	16.00	4.20	4.15	71.00	31.00
	PENN STATE	420.00	510.00	25.00	4.12	4.09	81.00	31.00
9 FEB 1978	BROOKHAVEN	381.00	2690.00	22.00	3.67	4.12	76.00	92.00
14 FEB 1978	PENN STATE	451.00	460.00	25.00	4.20	4.17	68.00	46.00
	ILLINOIS	210.00	120.00	25.00	4.00	3.98	100.00	46.00
	BROOKHAVEN	42.00	310.00	22.00	3.65	1SA	1SA	1SA
15 FEB 1978	VIRGINIA	45.00	50.00	24.00	3.67	1SA	210.00	1SA
19 FEB 1978	ITHACA	130.00	250.00	17.00	4.06	3.97	110.00	47.00
	PENN STATE	228.00	190.00	25.00	3.90	3.85	140.00	52.00
24 FEB 1978	ILLINOIS	1.60	1.00	25.00	3.42	1SA	380.00	1SA
25 FEB 1978	VIRGINIA	30.00	170.00	24.00	3.65	1SA	220.00	1SA
27 FEB 1978	PENN STATE	39.00	39.00	25.00	3.79	3.73	190.00	71.00
1 MAR 1978	ITHACA	110.00	230.00	16.00	3.73	1SA	190.00	1SA
	ILLINOIS	37.00	20.00	25.00	3.64	1SA	230.00	1SA

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		ML	ML	C	F	L	UMOL/L	UMHOL/CM
	LEWES DE	72.00	NAP	16.00	3.80	ISA	160.00	ISA
2 MAR 1978	PENN STATE	29.00	13.00	ISA	ISA	3.80	160.00	67.00
3 MAR 1978	ILLINOIS	54.00	40.00	25.00	4.06	ISA	87.00	ISA
4 MAR 1978	ITHACA	140.00	280.00	19.00	4.13	4.01	98.00	34.00
	LEWES DE	928.00	NAP	18.00	4.45	4.44	36.00	18.00
5 MAR 1978	VIRGINIA	770.00	950.00	24.00	4.14	4.04	91.00	36.00
6 MAR 1978	WHITEFACE	205.00	160.00	20.00	4.54	4.45	35.00	14.00
	PENN STATE	124.00	170.00	25.00	4.20	4.12	76.00	30.00
	BROOKHAVEN	373.00	920.00	22.00	3.95	4.41	39.00	18.00
8 MAR 1978	VIRGINIA	205.00	890.00	24.00	4.03	3.95	110.00	42.00
	ILLINOIS	5.00	10.00	25.00	6.01	ISA	NAP	ISA
11 MAR 1978	BROOKHAVEN	18.00	24.00	22.00	3.39	ISA	400.00	ISA
	LEWES DE	4340.00	NAP	15.00	4.14	4.50	32.00	29.00
12 MAR 1978	VIRGINIA	1040.00	1150.00	24.00	4.49	4.41	39.00	14.00
13 MAR 1978	PENN STATE	8.50	15.00	ISA	ISA	ISA	ISA	ISA
14 MAR 1978	VIRGINIA	415.00	450.00	23.00	4.16	4.12	76.00	42.00
	BROOKHAVEN	788.00	780.00	24.00	4.03	4.16	69.00	33.00
15 MAR 1978	ITHACA	360.00	220.00	14.00	3.94	3.89	130.00	50.00
	PENN STATE	530.00	440.00	25.00	3.96	3.91	120.00	49.00
	LEWES DE	736.00	NAP	15.00	4.59	4.69	20.00	17.00
16 MAR 1978	WHITEFACE	90.00	160.00	20.00	3.93	ISA	ISA	ISA
17 MAR 1978	BROOKHAVEN	576.00	700.00	24.00	3.92	4.03	93.00	36.00
	LEWES DE	259.00	NAP	14.00	3.71	3.71	190.00	150.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		<div>U L V P A S HL</div>	<div>U L V P R HL</div>	<div>T H P D L E F C</div>	<div>H P D L E F</div>	<div>H P B L A</div>	<div>I h UMOL /L</div>	<div>C U N O C UMH0/CM</div>
18 MAR 1978	PENN STATE	277.00	270.00	25.00	4.11	4.04	91.00	37.00
20 MAR 1978	WHITEFACE	210.00	430.00	20.00	4.50	4.31	49.00	26.00
22 MAR 1978	ITHACA	370.00	370.00	15.00	4.04	4.00	100.00	39.00
	PENN STATE	239.00	240.00	25.00	4.01	3.99	100.00	44.00
	BROOKHAVEN	108.00	105.00	22.00	3.98	1SA	100.00	1SA
24 MAR 1978	WHITEFACE	710.00	990.00	19.00	4.28	4.15	71.00	29.00
	VIRGINIA	70.00	90.00	23.00	4.19	1SA	65.00	1SA
27 MAR 1978	BROOKHAVEN	1560.00	1240.00	22.00	4.26	4.39	41.00	29.00
28 MAR 1978	ITHACA	1490.00	2020.00	15.00	4.45	4.44	36.00	14.00
	PENN STATE	1512.00	1310.00	25.00	4.32	4.23	59.00	22.00
	VIRGINIA	1890.00	2420.00	23.00	4.25	4.21	62.00	33.00
29 MAR 1978	WHITEFACE	980.00	10.70	20.00	4.62	4.71	19.00	8.90
31 MAR 1978	LEWES DE	2895.00	NAP	21.00	4.54	4.65	22.00	45.00
2 APR 1978	ITHACA	120.00	100.00	12.00	4.05	4.13	74.00	59.00
3 APR 1978	WHITEFACE	900.00	780.00	20.00	4.15	4.18	66.00	36.00
4 APR 1978	PENN STATE	187.00	370.00	25.00	3.78	3.67	210.00	79.00
	BROOKHAVEN	51.00	35.00	21.00	3.99	1SA	1SA	1SA
5 APR 1978	ITHACA	860.00	760.00	16.00	4.07	4.02	96.00	38.00
	PENN STATE	855.00	690.00	25.00	4.18	4.16	69.00	29.00
6 APR 1978	WHITEFACE	685.00	600.00	17.00	3.99	3.90	130.00	53.00
7 APR 1978	ITHACA	270.00	360.00	17.00	3.95	3.98	100.00	51.00
	PENN STATE	401.00	350.00	25.00	3.98	4.03	93.00	45.00
8 APR 1978	LEWES DE	1000.00	NAP	21.00	4.05	4.11	78.00	45.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^L V	^L V	^H P	^H P	^H P		
		^P A S	^D K P	^D L F	^D L F	^B A L	^I H C	^I H C
		ML	ML	C			UMH/L	UMH/CM
10 APR 1978	WHITEFACE	685.00	600.00	20.00	4.36	4.46	35.00	17.00
11 APR 1978	WHITEFACE	664.00	480.00	17.00	4.26	4.29	51.00	24.00
12 APR 1978	PENN STATE	206.00	200.00	25.00	4.17	1SA	68.00	1SA
	LEWES DE	55.00	NAP	22.00	4.00	1SA	100.00	1SA
13 APR 1978	WHITEFACE	595.00	520.00	19.00	4.15	4.12	76.00	37.00
	ITHACA	280.00	300.00	18.00	3.88	3.95	110.00	53.00
14 APR 1978	VIRGINIA	133.00	92.00	22.00	4.28	4.13	74.00	42.00
17 APR 1978	WHITEFACE	220.00	260.00	22.00	4.28	4.34	46.00	25.00
18 APR 1978	ILLINOIS	737.00	760.00	25.00	3.98	4.15	71.00	59.00
20 APR 1978	ILLINOIS	412.00	430.00	25.00	4.65	4.73	19.00	23.00
21 APR 1978	PENN STATE	1160.00	1130.00	25.00	4.01	4.05	89.00	40.00
	VIRGINIA	502.00	550.00	18.00	4.03	4.00	100.00	51.00
22 APR 1978	ITHACA	970.00	710.00	19.00	4.18	4.21	62.00	29.00
23 APR 1978	PENN STATE	11.00	13.00	1SA	1SA	1SA	1SA	1SA
	ILLINOIS	273.00	290.00	25.00	4.05	4.14	72.00	43.00
24 APR 1978	WHITEFACE	650.00	510.00	19.00	4.28	4.47	34.00	18.00
	PENN STATE	69.00	74.00	25.00	3.78	1SA	170.00	1SA
	ILLINOIS	20.00	35.00	25.00	4.55	1SA	1SA	1SA
25 APR 1978	ILLINOIS	185.00	190.00	25.00	4.21	4.46	35.00	29.00
28 APR 1978	VIRGINIA	2090.00	3100.00	23.00	4.22	4.21	62.00	29.00
	LEWES DE	764.00	NAP	23.00	4.80	4.93	12.00	140.00
5 MAY 1978	ILLINOIS	1306.00	1380.00	25.00	4.38	4.39	41.00	24.00
	LEWES DE	1194.00	NAP	14.00	4.42	4.51	31.00	81.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		ML	ML	C	F	L	UMOL/L	UMOL/CM
7 MAY 1978	ITHACA	685.00	980.00	16.00	3.70	3.77	170.00	70.00
	PENN STATE	955.00	910.00	25.00	4.19	4.20	63.00	32.00
8 MAY 1978	VIRGINIA	2050.00	2000.00	24.00	4.31	4.28	52.00	25.00
	BROOKHAVEN	880.00	890.00	21.00	4.62	RPC	RPC	KPC
9 MAY 1978	WHITEFACE	242.00	250.00	20.00	4.82	4.84	14.00	8.60
	PENN STATE	616.00	640.00	25.00	4.10	4.12	76.00	35.00
	VIRGINIA	1120.00	1330.00	22.00	4.11	4.05	89.00	36.00
10 MAY 1978	ITHACA	410.00	490.00	13.00	3.92	4.00	100.00	51.00
	BROOKHAVEN	1420.00	1750.00	23.00	4.21	4.57	27.00	18.00
12 MAY 1978	ILLINOIS	416.00	410.00	25.00	3.97	4.06	87.00	49.00
13 MAY 1978	WHITEFACE	529.00	230.00	19.00	4.27	4.41	39.00	19.00
14 MAY 1978	PENN STATE	2012.00	1980.00	25.00	4.80	5.07	8.50	12.00
	ILLINOIS	1912.00	2010.00	25.00	4.65	4.76	17.00	10.00
15 MAY 1978	PENN STATE	1859.00	1850.00	25.00	4.28	4.33	47.00	22.00
	ILLINOIS	50.00	49.00	25.00	3.44	ISA	360.00	ISA
	BROOKHAVEN	1930.00	1200.00	22.00	4.15	4.51	31.00	22.00
17 MAY 1978	ITHACA	1410.00	1530.00	17.00	4.14	4.22	60.00	29.00
	VIRGINIA	2100.00	3600.00	24.00	4.33	4.26	55.00	25.00
	LEWES DE	747.00	NAP	23.00	4.49	4.49	32.00	27.00
19 MAY 1978	WHITEFACE	746.00	770.00	8.00	4.69	4.65	22.00	12.00
	PENN STATE	1505.00	1620.00	25.00	4.12	4.16	69.00	34.00
21 MAY 1978	ITHACA	385.00	430.00	10.00	3.79	3.84	140.00	63.00
22 MAY 1978	WHITEFACE	530.00	520.00	20.00	3.99	4.19	65.00	36.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^S _A ^H ^P ^V ^L	^P ^K ^E ^V ^L	^F ^I ^E ^P ^H ^T	^F ^I ^E ^P ^H	^L ^A ^B ^P ^H	^I ^H ⁺	^C ^D ^N ^U ^C ^I
		ML	ML	C			UMOL/L	UMHO/CM
	PENN STATE	32.00	39.00	ISA	ISA	ISA	ISA	ISA
25 MAY 1978	PENN STATE	1985.00	1920.00	25.00	4.08	4.16	69.00	31.00
	VIRGINIA	36.00	14.00	24.00	3.89	ISA	130.00	ISA
27 MAY 1978	LEWES DE	904.00	NAP	16.00	4.29	4.02	96.00	50.00
1 JUN 1978	VIRGINIA	164.00	180.00	25.00	3.50	3.63	230.00	100.00
	LEWES DE	1.20	ISA	25.00	4.54	ISA	ISA	ISA
2 JUN 1978	VIRGINIA	0.00	60.00	ISA	ISA	ISA	ISA	ISA
3 JUN 1978	ITHACA	340.00	500.00	11.00	3.63	3.65	220.00	99.00
4 JUN 1978	PENN STATE	1023.00	950.00	25.00	3.60	3.61	250.00	110.00
	ILLINOIS	333.00	120.00	25.00	4.43	6.72	RPC	RPC
	LEWES DE	441.00	NAP	19.00	4.01	3.98	100.00	69.00
5 JUN 1978	ITHACA	55.00	90.00	20.00	3.74	ISA	180.00	ISA
6 JUN 1978	WHITEFACE	914.00	890.00	16.00	3.96	3.98	100.00	52.00
8 JUN 1978	WHITEFACE	554.00	480.00	18.00	4.02	4.25	56.00	25.00
	ILLINOIS	137.00	170.00	25.00	4.69	ISA	ISA	ISA
9 JUN 1978	ITHACA	490.00	810.00	21.00	3.86	4.01	98.00	47.00
	PENN STATE	762.00	790.00	25.00	3.90	4.02	96.00	55.00
	BROOKHAVEN	460.00	440.00	23.00	4.19	NAP	65.00	26.00
	LEWES DE	273.00	NAP	25.00	4.11	4.24	58.00	30.00
10 JUN 1978	VIRGINIA	156.00	340.00	25.00	4.68	ISA	ISA	ISA
12 JUN 1978	ILLINOIS	88.00	84.00	25.00	6.26	5.86	1.40	14.00
13 JUN 1978	PENN STATE	521.00	570.00	25.00	4.09	4.12	76.00	38.00
	VIRGINIA	14.00	600.00	25.00	4.21	MDE	MDE	MDE

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		^S ^A ^H ^P ML	^V ^U ^E ^R ML	^V ^U ^E ^R C	^P ^H ^L ^E F	^P ^H ^L ^E F	^L ^A ^B ^P L	^H ⁺ ^H ^L UMH/L	^C ^U ^N ^D UMH/CH
15 JUN 1978	WHITEFACE	1227.00	1270.00	15.00	3.87	4.49	32.00	17.00	
16 JUN 1978	ILLINOIS	29.00	19.00	25.00	3.51	15A	15A	15A	
18 JUN 1978	PENN STATE	283.00	290.00	25.00	3.71	3.73	190.00	83.00	
	ILLINOIS	1397.00	1390.00	25.00	4.22	4.27	54.00	30.00	
19 JUN 1978	WHITEFACE	291.00	300.00	20.00	4.01	4.03	93.00	50.00	
	ITHACA	140.00	120.00	21.00	3.87	3.93	120.00	58.00	
20 JUN 1978	VIRGINIA	436.00	400.00	25.00	4.03	4.08	83.00	42.00	
	ILLINOIS	1545.00	NAP	25.00	4.20	4.26	55.00	24.00	
	LEWES DE	739.00	2660.00	23.00	4.04	4.11	78.00	40.00	
21 JUN 1978	VIRGINIA	52.00	390.00	24.00	3.76	15A	170.00	15A	
22 JUN 1978	WHITEFACE	751.00	300.00	22.00	4.04	4.07	85.00	43.00	
	ITHACA	460.00	350.00	19.00	3.77	3.83	150.00	66.00	
	PENN STATE	1386.00	1320.00	25.00	4.10	4.14	72.00	34.00	
	BROOKHAVEN	124.00	120.00	22.00	3.70	NAP	200.00	83.00	
	LEWES DE	81.00	180.00	25.00	4.02	15A	15A	15A	
23 JUN 1978	VIRGINIA	910.00	930.00	24.00	3.85	3.94	110.00	44.00	
27 JUN 1978	PENN STATE	400.00	390.00	25.00	3.91	3.95	110.00	55.00	
	VIRGINIA	559.00	840.00	25.00	4.16	4.40	40.00	22.00	
28 JUN 1978	WHITEFACE	695.00	660.00	22.00	3.98	4.17	68.00	37.00	
	PENN STATE	253.00	260.00	25.00	3.72	3.74	180.00	76.00	
29 JUN 1978	VIRGINIA	15A	15A	15A	15A	15A	15A	15A	
30 JUN 1978	PENN STATE	255.00	270.00	25.00	3.75	3.80	160.00	73.00	
	ILLINOIS	204.00	660.00	25.00	3.74	3.65	220.00	110.00	

Figure 1 consists of six line graphs arranged in two rows of three. Each graph plots the percentage of total protein (Y-axis, 0 to 100) against time in minutes (X-axis, 0 to 120). The graphs represent different treatments: ML, ML, C, F, L, and UMHL/UL (top row), and UMHL/CH (bottom row). The fractions measured are S (supernatant), A (albumin), H (heavy metal), P (protein), V (vacuole), L (lysosome), E (enzyme), D (debris), B (bacteria), I (infectious), F (fungal), C (cell), N (nucleus), U (ultrafiltrate), and H (heavy metal). In all cases, the percentage of total protein in the supernatant (S) and albumin (A) fractions increases over time, while the percentage in the other fractions decreases. The UMHL/CH treatment shows the highest percentage of total protein in the supernatant (S) and albumin (A) fractions at 120 minutes.

UNCL /L UNCL /CH

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 0 5	4 0 5	2 0 N	3 0 N	1 0 C	4 0 P	0 N A
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
1 JUL 1977	PENN STATE	NAP	58.00	NAP	34.00	3.60	< .40	NAP
5 JUL 1977	PENN STATE	NAP	RPC	NAP	RPC	RPC	RPC	NAP
6 JUL 1977	WHITEFACE	NAP	45.00	NAP	27.00	11.00	< .40	NAP
7 JUL 1977	PENN STATE	NAP	74.00	NAP	83.00	17.00	< .40	NAP
8 JUL 1977	PENN STATE	NAP	83.00	NAP	54.00	23.00	< .40	NAP
9 JUL 1977	WHITEFACE	NAP	14.00	NAP	8.10	22.00	< .40	NAP
10 JUL 1977	PENN STATE	NAP	44.00	NAP	32.00	5.60	< .40	NAP
11 JUL 1977	VIRGINIA	NAP	123.00	NAP	90.00	15.00	< .40	NAP
12 JUL 1977	PENN STATE	NAP	32.00	NAP	32.00	7.80	< .40	NAP
13 JUL 1977	WHITEFACE	NAP	32.00	NAP	28.00	15.00	< .40	NAP
	PENN STATE	NAP	99.00	NAP	51.00	12.00	< .40	NAP
18 JUL 1977	ITHACA	NAP	130.00	NAP	54.00	13.00	< .40	NAP
	PENN STATE	NAP	130.00	NAP	61.00	19.00	< .40	NAP
20 JUL 1977	ITHACA	NAP	230.00	NAP	60.00	18.00	< .40	NAP
	PENN STATE	NAP	120.00	NAP	56.00	15.00	< .40	NAP
21 JUL 1977	WHITEFACE	NAP	70.00	NAP	39.00	5.40	< .40	NAP
22 JUL 1977	ITHACA	NAP	41.00	NAP	35.00	8.60	< .40	NAP
	VIRGINIA	NAP	140.00	NAP	37.00	30.00	< .40	NAP
25 JUL 1977	WHITEFACE	NAP	91.00	NAP	58.00	21.00	1.10	NAP
26 JUL 1977	WHITEFACE	NAP	51.00	NAP	19.00	18.00	< .40	NAP
	VIRGINIA	NAP	30.00	NAP	38.00	5.90	< .40	NAP
31 JUL 1977	WHITEFACE	NAP	48.00	NAP	27.00	27.00	< .40	NAP
1 AUG 1977	ITHACA	NAP	76.00	NAP	60.00	8.60	< .40	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		1 2 0 5 L	1 4 0 5 L	1 2 0 N L	1 3 0 N L	1 L C L	1 4 0 P L	1 0 N A L
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEU/L
2 AUG 1977	WHITEFACE	NAP	25.00	NAP	10.00	6.40	< .40	NAP
3 AUG 1977	VIRGINIA	NAP	54.00	NAP	39.00	8.10	< .20	NAP
4 AUG 1977	VIRGINIA	NAP	31.00	NAP	23.00	1.80	< .20	NAP
5 AUG 1977	ITHACA	NAP	52.00	NAP	23.00	7.90	< .40	NAP
6 AUG 1977	WHITEFACE	NAP	29.00	NAP	23.00	3.20	< .20	NAP
8 AUG 1977	WHITEFACE	NAP	50.00	NAP	35.00	< 2.00	< .20	NAP
	ITHACA	NAP	27.00	NAP	17.00	< .40	< .40	NAP
	PENN STATE	NAP	35.00	NAP	25.00	21.00	< .40	NAP
9 AUG 1977	PENN STATE	NAP	110.00	NAP	87.00	13.00	< .40	NAP
	VIRGINIA	NAP	38.00	NAP	25.00	11.00	< .20	NAP
11 AUG 1977	WHITEFACE	NAP	48.00	NAP	33.00	NAP	< .20	NAP
	PENN STATE	NAP	86.00	NAP	70.00	28.00	< .40	NAP
14 AUG 1977	VIRGINIA	NAP	49.00	NAP	37.00	10.00	< .20	NAP
15 AUG 1977	WHITEFACE	NAP	36.00	NAP	26.00	20.00	< .20	NAP
	ITHACA	NAP	51.00	NAP	37.00	13.00	< .20	NAP
	PENN STATE	NAP	46.00	NAP	29.00	8.90	< .20	NAP
17 AUG 1977	WHITEFACE	NAP	29.00	NAP	17.00	13.00	< .20	NAP
	ITHACA	< .15	45.00	NAP	27.00	< 2.00	< .20	NAP
18 AUG 1977	PENN STATE	NAP	43.00	NAP	32.00	2.90	< .20	NAP
	VIRGINIA	NAP	50.00	NAP	38.00	8.10	< .20	NAP
19 AUG 1977	WHITEFACE	NAP	29.00	NAP	11.00	< 2.00	< .20	NAP
22 AUG 1977	WHITEFACE	NAP	30.00	NAP	21.00	6.00	< .20	NAP
	ITHACA	< .15	35.00	NAP	5.00	4.60	< .20	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 0 S	4 0 S	2 0 N	3 0 N	1 0 C	4 0 P	0 N A
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
	PENN STATE	NAP	93.00	NAP	69.00	11.00	< .20	NAP
24 AUG 1977	WHITEFACE	NAP	11.00	NAP	6.50	9.80	< .20	NAP
	ITHACA	< .15	55.00	NAP	35.00	18.00	< .20	NAP
	VIRGINIA	NAP	48.00	NAP	35.00	7.80	< .20	NAP
25 AUG 1977	PENN STATE	ISA	65.00	NAP	92.00	8.60	< .20	NAP
27 AUG 1977	PENN STATE	NAP	110.00	NAP	80.00	6.00	< .20	NAP
30 AUG 1977	WHITEFACE	NAP	28.00	NAP	19.00	48.00	< .20	NAP
	ITHACA	< .15	17.00	NAP	12.00	9.00	< .20	NAP
31 AUG 1977	PENN STATE	NAP	64.00	NAP	65.00	19.00	< .20	NAP
1 SEP 1977	PENN STATE	ISA	120.00	NAP	92.00	48.00	< .20	NAP
	VIRGINIA	< .15	71.00	NAP	42.00	11.00	< .20	NAP
2 SEP 1977	ITHACA	< .15	57.00	NAP	21.00	12.00	< .20	NAP
6 SEP 1977	WHITEFACE	NAP	37.00	NAP	35.00	21.00	< .20	NAP
	ITHACA	.35	38.00	NAP	25.00	53.00	< .20	NAP
	VIRGINIA	< .15	94.00	NAP	70.00	17.00	< .20	NAP
8 SEP 1977	VIRGINIA	< .15	180.00	NAP	150.00	37.00	< .20	NAP
10 SEP 1977	VIRGINIA	< .15	12.00	NAP	7.40	13.00	< .20	44.00
13 SEP 1977	PENN STATE	NAP	90.00	NAP	52.00	12.00	.95	NAP
14 SEP 1977	WHITEFACE	NAP	32.00	NAP	35.00	2.40	< .20	100.00
	ITHACA	MUE	MUE	NAP	MUE	MUE	MUE	NAP
	PENN STATE	NAP	34.00	NAP	20.00	20.00	< .20	NAP
15 SEP 1977	WHITEFACE	NAP	NAP	NAP	8.40	1.00	< .20	NAP
17 SEP 1977	ITHACA	< .15	21.00	NAP	17.00	3.10	< .20	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		1 2 3 4 5 6 UMOL/L	1 2 3 4 5 6 UMOL/L	1 2 3 4 5 6 UMOL/L	1 2 3 4 5 6 UMOL/L	1 2 3 4 5 6 UMOL/L	1 2 3 4 5 6 UMOL/L	1 2 3 4 5 6 UMOL/L
	PENN STATE	NAP	33.00	NAP	24.00	11.00	< .20	NAP
10 SEP 1977	VIRGINIA	< .15	43.00	.23	35.00	26.00	< .20	150.00
19 SEP 1977	WHITEFACE	RPC	RPC	NAP	RPC	RPC	RPC	RPC
	ITHACA	NAP	NAP	NAP	NAP	NAP	NAP	NAP
	PENN STATE	NAP	62.00	NAP	58.00	8.50	< .20	NAP
20 SEP 1977	PENN STATE	NAP	42.00	NAP	59.00	5.20	< .20	NAP
21 SEP 1977	WHITEFACE	NAP	23.00	NAP	23.00	NAP	< .20	NAP
	ITHACA	< .15	48.00	NAP	57.00	6.20	< .20	160.00
24 SEP 1977	PENN STATE	ISA	84.00	NAP	124.00	15.00	< .20	310.00
26 SEP 1977	ITHACA	.45	31.00	NAP	21.00	1.60	7.20	110.00
	VIRGINIA	< .15	73.00	< .08	73.00	20.00	< .20	240.00
27 SEP 1977	PENN STATE	NAP	33.00	NAP	29.00	NAP	< .20	NAP
28 SEP 1977	WHITEFACE	NAP	24.00	NAP	14.00	5.00	< .20	67.00
29 SEP 1977	WHITEFACE	NAP	11.00	NAP	4.60	4.10	< .20	31.00
2 OCT 1977	VIRGINIA	< .15	49.00	.29	48.00	7.20	< .20	150.00
3 OCT 1977	WHITEFACE	NAP	26.00	.10	29.00	1.60	< .20	83.00
	PENN STATE	NAP	28.00	NAP	19.00	1.70	< .20	77.00
4 OCT 1977	WHITEFACE	NAP	3.10	.12	2.30	.74	< .20	9.40
	ITHACA	NAP	RPC	RPC	RPC	RPC	RPC	RPC
6 OCT 1977	ITHACA	7.30	64.00	.44	120.00	4.50	< .20	270.00
7 OCT 1977	PENN STATE	7.20	44.00	.24	50.00	4.80	< .20	160.00
10 OCT 1977	ITHACA	2.10	17.00	.18	14.00	5.90	< .20	58.00
	VIRGINIA	< .15	23.00	.31	25.00	8.00	< .20	79.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 0 S (	4 0 S (	2 0 N (	3 0 N (	1 0 C (	4 0 P (	4 0 N A
		UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UEG/L
11 OCT 1977	WHITEFACE	NAP	23.00	< .08	9.40	5.20	< .20	61.00
	PENN STATE	.20	23.00	.19	27.00	3.20	< .20	77.00
16 OCT 1977	VIRGINIA	< .20	37.00	< .08	19.00	4.40	< .20	97.00
17 OCT 1977	ITHACA	1.20	29.00	.20	39.00	3.90	< .20	100.00
	PENN STATE	1.90	23.00	.19	25.00	2.70	< .20	76.00
	VIRGINIA	< .20	25.00	.24	23.00	1.20	< .20	74.00
18 OCT 1977	WHITEFACE	NAP	9.40	.10	23.00	3.60	< .20	46.00
20 OCT 1977	ITHACA	2.50	15.00	.19	40.00	5.70	< .20	78.00
	PENN STATE	8.30	24.00	.16	43.00	6.70	< .20	110.00
24 OCT 1977	WHITEFACE	NAP	80.00	.08	130.00	11.00	< .20	300.00
27 OCT 1977	PENN STATE	2.30	13.00	.18	9.30	2.70	< .20	43.00
	VIRGINIA	< .10	5.10	.24	5.90	16.00	< .20	32.00
3 NOV 1977	PENN STATE	15A	80.00	.42	150.00	84.00	< .20	390.00
5 NOV 1977	WHITEFACE	NAP	2.00	.17	1.80	< .50	< .20	6.00
	PENN STATE	< .15	10.00	.29	16.00	5.20	< .20	42.00
6 NOV 1977	ITHACA	< .15	9.40	.17	10.00	< .50	< .20	29.00
7 NOV 1977	WHITEFACE	NAP	10.00	.12	9.90	7.20	< .20	37.00
8 NOV 1977	PENN STATE	2.30	6.40	.13	6.70	.90	< .20	21.00
	VIRGINIA	< .10	11.00	.17	9.50	6.40	< .20	38.00
9 NOV 1977	WHITEFACE	NAP	1.90	< .08	2.80	.74	< .20	7.30
10 NOV 1977	PENN STATE	15A	130.00	15A	67.00	19.00	< .20	350.00
11 NOV 1977	WHITEFACE	NAP	18.00	.11	16.00	11.00	< .20	63.00
	PENN STATE	.85	22.00	.27	12.00	2.70	< .20	59.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 0 S	4 0 S	2 0 N	3 0 N	1 0 C	4 0 P	0 N A
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
13 NOV 1977	ITHACA	.88	12.00	.15	10.00	1.00	< .20	35.00
14 NOV 1977	PENN STATE	2.40	61.00	1SA	88.00	21.00	< .20	230.00
15 NOV 1977	WHITEFACE	NAP	9.20	< .08	36.00	2.70	< .20	57.00
	VIRGINIA	< .20	21.00	.27	14.00	2.90	< .20	59.00
18 NOV 1977	ITHACA	1.70	23.00	.23	44.00	3.50	< .20	94.00
	PENN STATE	2.70	25.00	.36	39.00	1.40	< .20	91.00
20 NOV 1977	WHITEFACE	NAP	25.00	.14	44.00	2.90	< .40	97.00
	VIRGINIA	.90	12.00	.33	13.00	3.60	< .20	41.00
	ILLINOIS	NAP	59.00	.35	30.00	7.50	< .20	160.00
21 NOV 1977	ILLINOIS	NAP	31.00	.47	23.00	1.60	< .20	87.00
22 NOV 1977	PENN STATE	5.40	34.00	1SA	57.00	6.30	.39	140.00
23 NOV 1977	ILLINOIS	NAP	1.60	.58	49.00	4.40	< .20	57.00
24 NOV 1977	VIRGINIA	.96	22.00	.28	27.00	3.20	< .40	75.00
25 NOV 1977	PENN STATE	1SA	1SA	1SA	1SA	1SA	1SA	1SA
27 NOV 1977	ITHACA	1.20	7.50	< .08	27.00	14.00	< .20	56.00
	PENN STATE	< .10	27.00	.12	42.00	3.00	< .40	99.00
28 NOV 1977	WHITEFACE	NAP	7.70	.11	12.00	2.10	< .40	30.00
29 NOV 1977	VIRGINIA	.63	36.00	.37	72.00	8.20	< .40	150.00
1 DEC 1977	WHITEFACE	NAP	7.50	.19	10.00	2.90	< .20	28.00
	ITHACA	.30	15.00	.17	13.00	4.80	< .40	48.00
	PENN STATE	2.10	22.00	.36	22.00	4.80	< .40	71.00
	ILLINOIS	1.20	35.00	.23	11.00	1.30	< .20	83.00
2 DEC 1977	VIRGINIA	3.40	17.00	.23	13.00	5.90	< .40	53.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 0 5 UMDL/L	4 0 5 UMDL/L	2 0 N UMDL/L	3 0 N UMDL/L	1 L C UMDL/L	4 0 P UMDL/L	4 N A UEQ/L
3 DEC 1977	ILLINOIS	< .20	25.00	.62	120.00	10.00	< .20	180.00
5 DEC 1977	WHITEFACE	NAP	19.00	.12	46.00	2.90	< .20	87.00
6 DEC 1977	PENN STATE	< .20	19.00	.17	28.00	5.00	< .40	71.00
	VIRGINIA	.97	30.00	.31	30.00	11.00	< .40	100.00
7 DEC 1977	WHITEFACE	NAP	4.70	.09	12.00	< 1.00	< .20	22.00
	ITHACA	.30	7.30	.16	16.00	< .20	< .40	31.00
	PENN STATE	< .20	8.50	.20	37.00	4.60	< .40	59.00
	ILLINOIS	1.70	12.00	.15	14.00	2.30	< .20	41.00
9 DEC 1977	PENN STATE	< .10	13.00	.20	43.00	6.70	< .20	76.00
10 DEC 1977	ILLINOIS	1.60	24.00	.10	16.00	13.00	< .40	77.00
11 DEC 1977	ITHACA	NAP	6.40	< .08	32.00	2.60	< .40	47.00
12 DEC 1977	WHITEFACE	NAP	10.00	.08	28.00	6.10	< .40	54.00
13 DEC 1977	PENN STATE	3.70	57.00	.58	77.00	23.00	< .40	210.00
14 DEC 1977	ILLINOIS	2.60	28.00	.17	24.00	15.00	< .40	95.00
15 DEC 1977	ITHACA	4.80	20.00	< .08	25.00	8.90	< .40	74.00
	PENN STATE	6.80	26.00	.61	32.00	8.50	< .40	93.00
16 DEC 1977	WHITEFACE	NAP	10.00	.14	18.00	2.20	< .40	40.00
	VIRGINIA	< .15	14.00	.24	8.30	15.00	< .40	52.00
18 DEC 1977	ILLINOIS	1SA	1SA	1SA	1SA	1SA	1SA	1SA
19 DEC 1977	PENN STATE	9.80	18.00	.34	23.00	6.50	< .40	68.00
	VIRGINIA	1.90	19.00	.30	22.00	13.00	< .40	73.00
21 DEC 1977	ITHACA	.41	7.10	< .08	13.00	1.70	< .40	29.00
	PENN STATE	1.30	18.00	.22	43.00	7.10	< .40	86.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 0 5	4 0 5	2 0 N	3 0 N	1 0 C	4 0 P	N 0 I A
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
	VIRGINIA	.14	38.00	.47	51.00	12.00	< .40	140.00
24 DEC 1977	WHITEFACE	NAP	6.40	< .08	9.10	2.70	< .40	25.00
26 DEC 1977	PENN STATE	3.60	36.00	.28	41.00	10.00	< .40	120.00
27 DEC 1977	VIRGINIA	NAP	27.00	.22	34.00	15.00	< .40	100.00
1 JAN 1978	ITHACA	1.20	19.00	.22	55.00	4.90	< .40	98.00
	VIRGINIA	3.00	12.00	.56	20.00	7.30	< .40	48.00
4 JAN 1978	PENN STATE	.34	20.00	< .05	64.00	9.30	< .40	110.00
6 JAN 1978	PENN STATE	< .10	10.00	.27	100.00	8.70	< .40	130.00
7 JAN 1978	WHITEFACE	NAP	15.00	< .08	91.00	6.40	< .40	130.00
	PENN STATE	.87	44.00	.54	130.00	12.00	< .40	230.00
9 JAN 1978	PENN STATE	.81	14.00	.18	16.00	6.50	< .40	51.00
11 JAN 1978	ITHACA	2.80	13.00	.17	15.00	< .25	NAP	41.00
12 JAN 1978	VIRGINIA	< .15	11.00	< .15	9.40	20.00	< .40	51.00
13 JAN 1978	WHITEFACE	NAP	4.70	< .08	5.80	2.90	< .40	18.00
15 JAN 1978	ITHACA	1.00	5.30	< .08	20.00	4.10	< .40	35.00
	PENN STATE	< .25	4.00	NAP	20.00	1.10	< .40	29.00
16 JAN 1978	VIRGINIA	2.10	7.80	< .08	19.00	1.80	< .20	36.00
18 JAN 1978	PENN STATE	< .10	4.50	.08	18.00	2.50	< .40	30.00
19 JAN 1978	WHITEFACE	< .10	1.90	NAP	2.20	2.30	< .40	8.30
	ITHACA	.41	2.90	< .08	12.00	2.20	< .40	20.00
	VIRGINIA	.46	22.00	< .08	9.30	12.00	< .20	65.00
21 JAN 1978	PENN STATE	< .10	2.10	.09	8.30	1.10	< .40	14.00
	VIRGINIA	< .10	3.70	.11	74.00	5.80	< .20	87.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 B S (	4 D S (	2 B N (	3 B N (	1 C (	4 D P (	4 N A
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
22 JAN 1978	ITHACA	< .10	2.80	.14	4.20	1.70	< .40	12.00
26 JAN 1978	WHITEFACE	.66	8.40	.19	12.00	5.20	< .40	34.00
	PENN STATE	8.80	8.70	.18	20.00	7.90	< .40	44.00
	VIRGINIA	< .10	4.10	< .08	3.20	15.00	< .20	26.00
27 JAN 1978	ITHACA	3.60	22.00	.10	22.00	3.80	< .40	70.00
31 JAN 1978	WHITEFACE	4.80	37.00	< .05	27.00	25.00	< .40	130.00
	PENN STATE	1.80	4.60	.14	16.00	18.00	< .40	43.00
1 FEB 1978	ILLINOIS	ISA	ISA	ISA	ISA	ISA	ISA	ISA
8 FEB 1978	WHITEFACE	< .15	3.60	.09	6.90	8.10	< .40	22.00
	ITHACA	.12	5.70	.10	65.00	8.70	< .40	85.00
	PENN STATE	< .15	5.30	.25	65.00	9.90	.92	87.00
9 FEB 1978	BROOKHAVEN	< .15	38.00	.20	53.00	430.00	< .40	560.00
14 FEB 1978	PENN STATE	< .10	7.30	.15	48.00	11.00	< .40	74.00
	ILLINOIS	< .10	38.00	.32	59.00	9.60	< .40	150.00
	BROOKHAVEN	NAP	16.00	ISA	87.00	45.00	< .40	160.00
15 FEB 1978	VIRGINIA	ISA	86.00	ISA	130.00	30.00	< .20	330.00
19 FEB 1978	ITHACA	1.80	26.00	.13	94.00	42.00	< .40	190.00
	PENN STATE	< .10	15.00	.21	31.00	18.00	< .40	79.00
24 FEB 1978	ILLINOIS	ISA	ISA	ISA	ISA	ISA	ISA	ISA
25 FEB 1978	VIRGINIA	ISA	59.00	ISA	150.00	23.00	< .20	290.00
27 FEB 1978	PENN STATE	.96	98.00	ISA	200.00	28.00	3.40	430.00
1 MAR 1978	ITHACA	1.40	46.00	ISA	190.00	33.00	< .40	310.00
	ILLINOIS	ISA	ISA	ISA	ISA	ISA	ISA	ISA

DATA FROM 1 JUL 1977 TO 30 JUN 1979 (CONT.)

		2 U S	4 O S	2 U N	3 O N	1 C	4 O P	1 O N
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UFU/L
	LEWES DE	.29	27.00	< .08	190.00	37.00	< .20	280.00
2 MAR 1978	PENN STATE	.31	12.00	1SA	160.00	38.00	2.50	230.00
3 MAR 1978	ILLINOIS	NAP	21.00	.22	49.00	6.20	< .40	97.00
4 MAR 1978	ITHACA	1.60	12.00	.16	63.00	6.60	NAP	94.00
	LEWES DE	1.30	14.00	< .08	19.00	30.00	< .20	77.00
5 MAR 1978	VIRGINIA	< .10	18.00	.08	53.00	5.00	< .20	94.00
6 MAR 1978	WHITEFACE	< .10	7.10	< .08	25.00	5.30	< .40	45.00
	PENN STATE	< .20	7.80	< .08	59.00	15.00	< .40	90.00
	BRUOKHAVEN	NAP	7.00	.08	12.00	22.00	< .20	48.00
8 MAR 1978	VIRGINIA	< .10	29.00	.23	44.00	11.00	< .20	110.00
	ILLINOIS	1SA	1SA	1SA	1SA	1SA	1SA	1SA
11 MAR 1978	BRUOKHAVEN	1SA	1SA	1SA	1SA	1SA	1SA	1SA
	LEWES DE	.77	19.00	.22	13.00	92.00	< .20	140.00
12 MAR 1978	VIRGINIA	.40	12.00	.26	8.40	1.50	< .20	34.00
13 MAR 1978	PENN STATE	11.00	1SA	1SA	1SA	1SA	1SA	1SA
14 MAR 1978	VIRGINIA	< .10	45.00	< .08	28.00	14.00	< .20	130.00
	BRUOKHAVEN	< .10	32.00	.16	14.00	44.00	< .20	120.00
15 MAR 1978	ITHACA	< .10	44.00	1SA	46.00	11.00	NAP	150.00
	PENN STATE	< .15	54.00	.28	27.00	3.00	< .20	140.00
	LEWES DE	< .10	21.00	.12	12.00	41.00	< .20	95.00
16 MAR 1978	WHITEFACE	< .10	42.00	1SA	110.00	16.00	1SA	210.00
17 MAR 1978	BRUOKHAVEN	< .10	23.00	.12	37.00	8.00	< .20	91.00
	LEWES DE	.65	120.00	.15	120.00	620.00	< .20	980.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UEQ/L
18 MAR 1978	PENN STATE	< .15	12.00	.17	67.00	NAP	< .20	91.00
20 MAR 1978	WHITEFACE	< .10	15.00	.13	37.00	41.00	.26	110.00
22 MAR 1978	ITHACA	.91	NAP	.31	41.00	4.10	< .20	NAP
	PENN STATE	1.30	45.00	.32	50.00	9.00	< .20	150.00
	BROOKHAVEN	1.80	ISA	ISA	ISA	ISA	ISA	ISA
24 MAR 1978	WHITEFACE	1.20	22.00	.14	39.00	3.70	< .20	87.00
	VIRGINIA	< .10	73.00	< .08	93.00	48.00	< .20	290.00
27 MAR 1978	BROOKHAVEN	< .10	8.00	< .08	11.00	81.00	< .20	110.00
28 MAR 1978	ITHACA	< .10	13.00	.11	13.00	2.20	< .20	41.00
	PENN STATE	< .10	18.00	.21	14.00	1.30	< .20	52.00
	VIRGINIA	< .10	27.00	< .08	24.00	12.00	< .20	90.00
29 MAR 1978	WHITEFACE	< .10	6.40	.15	11.00	4.80	3.90	40.00
31 MAR 1978	LEWES DE	< .10	27.00	< .08	12.00	280.00	< .20	350.00
2 APR 1978	ITHACA	< .10	92.00	.83	100.00	7.40	< .20	290.00
3 APR 1978	WHITEFACE	< .10	40.00	.30	46.00	4.10	.39	130.00
4 APR 1978	PENN STATE	1.00	89.00	.68	63.00	6.10	.35	250.00
	BROOKHAVEN	< .10	ISA	ISA	ISA	ISA	ISA	ISA
5 APR 1978	ITHACA	2.80	33.00	.16	34.00	8.10	.52	110.00
	PENN STATE	1.50	23.00	.18	29.00	13.00	< .20	88.00
6 APR 1978	WHITEFACE	.86	55.00	< .08	51.00	6.50	< .20	170.00
7 APR 1978	ITHACA	.37	52.00	.16	58.00	2.10	< .20	160.00
	PENN STATE	1.10	47.00	.20	44.00	3.20	.84	140.00
8 APR 1978	LEWES DE	< .10	42.00	.26	48.00	40.00	< .20	170.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 U S (	4 O S (	2 U N (	3 O N (	L C (	4 O P (	N I A (
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
10 APR 1978	WHITEFACE	.29	17.00	< .08	11.00	< .10	< .20	45.00
11 APR 1978	WHITEFACE	< .10	28.00	.11	22.00	4.10	< .20	82.00
12 APR 1978	PENN STATE	< .10	30.00	.18	23.00	.85	< .20	84.00
	LEWES DE	ISA	57.00	ISA	74.00	29.00	< .20	220.00
13 APR 1978	WHITEFACE	.12	41.00	.20	52.00	7.20	< .20	140.00
	ITHACA	< .10	63.00	.14	62.00	9.80	< .20	230.00
14 APR 1978	VIRGINIA	< .10	35.00	< .08	57.00	7.80	< .20	130.00
17 APR 1978	WHITEFACE	< .10	26.00	.15	9.00	< .10	< .20	61.00
18 APR 1978	ILLINOIS	< .10	76.00	.33	76.00	9.60	< .20	240.00
20 APR 1978	ILLINOIS	.45	29.00	.34	46.00	5.80	< .20	110.00
21 APR 1978	PENN STATE	< .10	34.00	.16	56.00	1.40	< .20	130.00
	VIRGINIA	< .10	49.00	< .08	46.00	23.00	< .20	170.00
22 APR 1978	ITHACA	1.90	28.00	.23	35.00	9.70	< .20	100.00
23 APR 1978	PENN STATE	.79	39.00	ISA	52.00	5.80	< .20	140.00
	ILLINOIS	< .10	45.00	.41	45.00	3.70	< .20	140.00
24 APR 1978	WHITEFACE	< .10	17.00	.16	15.00	5.60	< .20	55.00
	PENN STATE	.19	53.00	.11	28.00	6.90	< .20	140.00
	ILLINOIS	ISA	ISA	ISA	ISA	ISA	ISA	ISA
25 APR 1978	ILLINOIS	2.40	31.00	.19	42.00	12.00	5.30	130.00
28 APR 1978	VIRGINIA	< .10	28.00	< .08	23.00	25.00	< .20	100.00
	LEWES DE	< .10	48.00	< .08	6.10	330.00	< .20	440.00
5 MAY 1978	ILLINOIS	5.10	26.00	.27	18.00	2.40	< .20	73.00
	LEWES DE	< .10	44.00	.11	11.00	650.00	< .20	750.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 U S (	4 O S (	2 U N (	3 O N (	1 L C (	4 O P (	1 N A
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L
7 MAY 1978	ITHACA	< .10	56.00	.31	70.00	1.10	.21	180.00
	PENN STATE	2.50	25.00	.23	31.00	1.80	< .20	83.00
8 MAY 1978	VIRGINIA	NAP	21.00	< .08	20.00	12.00	< .20	74.00
	BROOKHAVEN	RPC	RPC	RPC	RPC	RPC	RPC	RPC
9 MAY 1978	WHITEFACE	< .10	9.90	< .08	11.00	1.80	< .20	33.00
	PENN STATE	< .10	28.00	.14	37.00	< .10	< .20	93.00
	VIRGINIA	< .10	31.00	NAP	28.00	NAP	< .20	NAP
10 MAY 1978	ITHACA	< .10	44.00	< .08	40.00	< .10	< .20	130.00
	BROOKHAVEN	< .10	17.00	.09	9.60	54.00	.54	99.00
12 MAY 1978	ILLINOIS	< .10	56.00	.42	44.00	9.50	< .20	170.00
13 MAY 1978	WHITEFACE	< .10	23.00	.13	11.00	4.90	< .20	62.00
14 MAY 1978	PENN STATE	< .10	14.00	.21	8.70	< .10	1.30	41.00
	ILLINOIS	< .10	8.50	.18	8.40	< .10	< .20	26.00
15 MAY 1978	PENN STATE	< .10	17.00	.11	18.00	< .10	< .20	52.00
	ILLINOIS	< .10	170.00	.26	120.00	5.80	< .20	470.00
	BROOKHAVEN	< .10	17.00	< .08	9.30	NAP	< .20	NAP
17 MAY 1978	ITHACA	< .10	27.00	.12	18.00	13.00	< .20	85.00
	VIRGINIA	< .10	24.00	< .08	19.00	3.80	< .20	71.00
	LEWES DE	< .10	27.00	.14	25.00	85.00	< .20	160.00
19 MAY 1978	WHITEFACE	< .10	12.00	.14	13.00	6.60	< .20	44.00
	PENN STATE	< .10	26.00	.20	32.00	.40	< .20	85.00
21 MAY 1978	ITHACA	< .10	62.00	.20	58.00	8.10	< .20	190.00
22 MAY 1978	WHITEFACE	< .10	37.00	.19	30.00	8.60	< .20	110.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 0 5	4 0 5	2 0 N	3 0 N	1 0 C	4 0 P	3 0 N
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
	PENN STATE	.48	65.00	.18	72.00	15.00	.23	220.00
25 MAY 1978	PENN STATE	< .10	32.00	.25	26.00	3.30	< .20	94.00
	VIRGINIA	< .10	76.00	1SA	70.00	30.00	< .20	250.00
27 MAY 1978	LEWES DE	< .10	50.00	< .08	32.00	7.80	< .20	140.00
1 JUN 1978	VIRGINIA	< .10	130.00	.13	74.00	17.00	.84	360.00
	LEWES DE	1SA	1SA	1SA	1SA	1SA	1SA	1SA
2 JUN 1978	VIRGINIA	1SA	1SA	1SA	1SA	1SA	1SA	1SA
3 JUN 1978	ITHACA	< .10	120.00	.21	85.00	36.00	.13	360.00
4 JUN 1978	PENN STATE	< .10	110.00	.21	75.00	9.10	< .20	300.00
	ILLINOIS	RPC	RPC	RPC	RPC	RPC	RPC	RPC
	LEWES DE	< .10	58.00	.17	38.00	150.00	< .20	310.00
5 JUN 1978	ITHACA	1SA	1SA	1SA	1SA	1SA	1SA	1SA
6 JUN 1978	WHITEFACE	< .10	66.00	.09	60.00	12.00	< .20	200.00
8 JUN 1978	WHITEFACE	< .10	28.00	.17	24.00	2.60	< .20	83.00
	ILLINOIS	1SA	1SA	1SA	1SA	1SA	1SA	1SA
9 JUN 1978	ITHACA	.17	64.00	< .08	40.00	8.00	< .20	180.00
	PENN STATE	< .10	51.00	< .08	40.00	19.00	< .20	160.00
	BROOKHAVEN	< .20	23.00	.14	21.00	27.00	< .20	94.00
	LEWES DE	NAP	33.00	.11	28.00	22.00	< .20	120.00
10 JUN 1978	VIRGINIA	< .10	1SA	1SA	1SA	1SA	1SA	1SA
12 JUN 1978	ILLINOIS	NAP	32.00	1.40	44.00	8.30	< .20	120.00
13 JUN 1978	PENN STATE	< .10	53.00	.10	20.00	8.50	< .20	130.00
	VIRGINIA	MOE	MOE	MOE	MOE	MOE	MOE	MOE

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		2 0 5 (	4 0 5 (	2 0 N (	3 0 N (	1 C (	4 0 P (	0 N A
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
15 JUN 1978	WHITEFACE	< .10	18.00	< .08	11.00	7.60	< .20	55.00
16 JUN 1978	ILLINOIS	NAP	280.00	15A	15A	15A	15A	15A
18 JUN 1978	PENN STATE	.17	78.00	.14	51.00	6.60	< .20	210.00
	ILLINOIS	< .10	53.00	.57	35.00	8.50	< .20	150.00
19 JUN 1978	WHITEFACE	< .10	54.00	.58	43.00	7.50	< .20	160.00
	ITHACA	< .10	66.00	.21	47.00	5.40	< .20	180.00
20 JUN 1978	VIRGINIA	< .10	38.00	.45	29.00	4.80	< .20	110.00
	ILLINOIS	< .10	28.00	.19	15.00	10.00	< .20	81.00
	LEWES DE	< .10	41.00	.66	28.00	6.80	< .20	120.00
21 JUN 1978	VIRGINIA	< .10	100.00	.08	91.00	15.00	< .20	310.00
22 JUN 1978	WHITEFACE	4.10	43.00	.15	25.00	4.40	< .20	120.00
	ITHACA	< .10	63.00	.17	38.00	4.30	< .20	170.00
	PENN STATE	1.10	30.00	.14	15.00	4.20	< .20	79.00
	BROOKHAVEN	< .20	83.00	.14	69.00	18.00	< .20	250.00
	LEWES DE	15A	15A	15A	15A	15A	15A	15A
23 JUN 1978	VIRGINIA	< .10	48.00	.44	33.00	5.40	< .20	130.00
27 JUN 1978	PENN STATE	.49	48.00	.30	33.00	3.50	< .20	130.00
	VIRGINIA	< .10	24.00	.24	20.00	4.50	< .20	73.00
28 JUN 1978	WHITEFACE	< .10	35.00	.33	24.00	48.00	< .20	140.00
	PENN STATE	< .20	79.00	.24	68.00	11.00	< .20	240.00
29 JUN 1978	VIRGINIA	15A	15A	15A	15A	15A	15A	15A
30 JUN 1978	PENN STATE	< .20	73.00	.30	60.00	8.20	< .20	210.00
	ILLINOIS	< .10	130.00	.53	140.00	13.00	< .20	410.00

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NSC MEANS NO SAMPLE COLLECTED
ISA MEANS INSUFF. SAMPLE FOR ANALYSIS
NAP MEANS NO ANALYSIS PERFORMED
MIE MEANS MALFUNCTION OR OPERATION ERROR
RPC MEANS REJECTED--PROB. CONTAMINATION

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Figure 1 consists of seven scatter plots, labeled (A) through (G), each showing the relationship between a different parameter and UMDL/L. The y-axis for all plots is labeled 'UMDL / L'. The x-axis for each plot is labeled with a parameter: (A) A, (B) S, (C) C, (D) N, (E) L, (F) P, and (G) U. Each plot contains five data points, numbered 1 through 5. The plots show varying degrees of correlation and distribution of points.

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NSC MEANS NO SAMPLE COLLECTED
ISA MEANS INSUFF. SAMPLE FOR ANALYSIS
NAP MEANS NO ANALYSIS PERFORMED
MIE MEANS MALFUNCTION OR OPERATION ERROR
RPC MEANS REJECTED--PROB. CONTAMINATION

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DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

			H N (	A N (	K (	A L (	A C (	G M (	A T C
			UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UEQ/L
1 JUL 1977	PENN STATE	20.00		NAP	NAP	NAP	NAP	NAP	NAP
5 JUL 1977	PENN STATE	RPC		NAP	NAP	NAP	NAP	NAP	NAP
6 JUL 1977	WHITEFACE	7.60		NAP	NAP	NAP	NAP	NAP	NAP
7 JUL 1977	PENN STATE	26.00		NAP	NAP	NAP	NAP	NAP	NAP
8 JUL 1977	PENN STATE	30.00		NAP	NAP	NAP	NAP	NAP	NAP
9 JUL 1977	WHITEFACE	1.50		NAP	NAP	NAP	NAP	NAP	NAP
10 JUL 1977	PENN STATE	16.00		NAP	NAP	NAP	NAP	NAP	NAP
11 JUL 1977	VIRGINIA	50.00		NAP	NAP	NAP	NAP	NAP	NAP
12 JUL 1977	PENN STATE	9.90		NAP	NAP	NAP	NAP	NAP	NAP
13 JUL 1977	WHITEFACE	13.00		NAP	NAP	NAP	NAP	NAP	NAP
	PENN STATE	31.00		NAP	NAP	NAP	NAP	NAP	NAP
18 JUL 1977	ITHACA	18.00		NAP	NAP	NAP	NAP	NAP	NAP
	PENN STATE	26.00		NAP	NAP	NAP	NAP	NAP	NAP
20 JUL 1977	ITHACA	45.00		NAP	NAP	NAP	NAP	NAP	NAP
	PENN STATE	31.00		NAP	NAP	NAP	NAP	NAP	NAP
21 JUL 1977	WHITEFACE	31.00		NAP	NAP	NAP	NAP	NAP	NAP
22 JUL 1977	ITHACA	26.00		NAP	NAP	NAP	NAP	NAP	NAP
	VIRGINIA	24.00		NAP	NAP	NAP	NAP	NAP	NAP
25 JUL 1977	WHITEFACE	28.00		NAP	NAP	NAP	NAP	NAP	NAP
26 JUL 1977	WHITEFACE	27.00		NAP	NAP	NAP	NAP	NAP	NAP
	VIRGINIA	5.70		NAP	NAP	NAP	NAP	NAP	NAP
31 JUL 1977	WHITEFACE	18.00		NAP	NAP	NAP	NAP	NAP	NAP
1 AUG 1977	ITHACA	23.00		NAP	NAP	NAP	NAP	NAP	NAP

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		H N	A N	K K	L A	A C	G M	T A
		(UMOL/L	(UMOL /L	(UMOL /L	(UMOL /L	(UMOL /L	(UMOL /L	C UEQ/L
2 AUG 1977	WHITEFACE	8.50	NAP	NAP	NAP	NAP	NAP	NAP
3 AUG 1977	VIRGINIA	12.00	NAP	NAP	NAP	3.10	NAP	NAP
4 AUG 1977	VIRGINIA	1.40	NAP	NAP	NAP	5.50	NAP	NAP
5 AUG 1977	ITHACA	17.00	NAP	NAP	NAP	NAP	NAP	NAP
6 AUG 1977	WHITEFACE	13.00	NAP	NAP	NAP	2.50	NAP	NAP
8 AUG 1977	WHITEFACE	33.00	NAP	NAP	NAP	1.00	NAP	NAP
	ITHACA	11.00	NAP	NAP	NAP	NAP	NAP	NAP
	PENN STATE	8.60	NAP	NAP	NAP	NAP	NAP	NAP
9 AUG 1977	PENN STATE	26.00	NAP	NAP	NAP	NAP	NAP	NAP
	VIRGINIA	15.00	NAP	NAP	NAP	12.00	NAP	NAP
11 AUG 1977	WHITEFACE	19.00	NAP	NAP	NAP	1.00	NAP	NAP
	PENN STATE	21.00	NAP	NAP	NAP	NAP	NAP	NAP
14 AUG 1977	VIRGINIA	16.00	NAP	NAP	NAP	7.40	NAP	NAP
15 AUG 1977	WHITEFACE	9.10	NAP	NAP	NAP	< .30	NAP	NAP
	ITHACA	13.00	NAP	NAP	NAP	.75	NAP	NAP
	PENN STATE	7.00	NAP	NAP	NAP	< .30	NAP	NAP
17 AUG 1977	WHITEFACE	10.00	.51	.54	NAP	1.80	NAP	NAP
	ITHACA	18.00	NAP	NAP	NAP	.75	NAP	NAP
18 AUG 1977	PENN STATE	19.00	.73	.31	NAP	3.50	NAP	NAP
	VIRGINIA	10.00	1.50	.27	NAP	1.5A	NAP	NAP
19 AUG 1977	WHITEFACE	12.00	.44	.86	NAP	6.00	NAP	NAP
22 AUG 1977	WHITEFACE	15.00	.49	.24	NAP	1.00	NAP	NAP
	ITHACA	NAP	NAP	NAP	NAP	NAP	NAP	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
	PENN STATE	55.00	.51	.46	NAP	4.60	NAP	NAP
24 AUG 1977	WHITEFACE	5.30	< .40	< .25	NAP	.65	NAP	NAP
	ITHACA	48.00	.84	.94	NAP	2.80	NAP	NAP
	VIRGINIA	43.00	.69	1.80	NAP	4.30	NAP	NAP
25 AUG 1977	PENN STATE	7.00	.50	.38	NAP	1.5A	NAP	NAP
27 AUG 1977	PENN STATE	35.00	.82	.58	NAP	8.90	NAP	NAP
30 AUG 1977	WHITEFACE	8.70	1.10	.36	NAP	1.90	NAP	NAP
	ITHACA	1.90	.71	1.90	NAP	1.10	NAP	NAP
31 AUG 1977	PENN STATE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
1 SEP 1977	PENN STATE	NAP	2.70	1.80	NAP	1.5A	NAP	NAP
	VIRGINIA	16.00	2.80	.41	NAP	3.80	NAP	NAP
2 SEP 1977	ITHACA	17.00	1.50	.42	NAP	1.10	NAP	NAP
6 SEP 1977	WHITEFACE	10.00	2.30	9.30	NAP	2.00	NAP	NAP
	ITHACA	38.00	1.10	.44	NAP	1.30	NAP	NAP
	VIRGINIA	38.00	3.80	1.00	NAP	5.10	NAP	NAP
8 SEP 1977	VIRGINIA	83.00	.13	1.70	NAP	4.10	NAP	NAP
10 SEP 1977	VIRGINIA	NAP	NAP	NAP	NAP	< .30	NAP	NAP
13 SEP 1977	PENN STATE	27.00	2.10	3.30	NAP	9.10	NAP	NAP
14 SEP 1977	WHITEFACE	19.00	.42	.28	NAP	2.70	1.50	100.00
	ITHACA	MDE	MDE	MDE	NAP	MDE	NAP	NAP
	PENN STATE	20.00	2.80	1.30	NAP	NAP	NAP	NAP
15 SEP 1977	WHITEFACE	11.00	< .40	< .25	NAP	.12	.25	56.00
17 SEP 1977	ITHACA	5.50	.51	< .20	NAP	.55	NAP	NAP

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UEQ/L
	PENN STATE	9.40	3.20	.81	NAP	.68	NAP	NAP
18 SEP 1977	VIRGINIA	14.00	20.00	.67	NAP	.85	2.80	140.00
19 SEP 1977	WHITEFACE	RPC	RPC	RPC	NAP	RPC	RPC	RPC
	ITHACA	NAP	NAP	NAP	NAP	NAP	NAP	NAP
	PENN STATE	13.00	2.10	1.10	NAP	3.50	NAP	NAP
20 SEP 1977	PENN STATE	7.90	3.50	3.90	NAP	2.80	NAP	NAP
21 SEP 1977	WHITEFACE	21.00	1.50	.69	NAP	.45	.25	79.00
	ITHACA	38.00	2.30	.65	NAP	1.90	.45	170.00
24 SEP 1977	PENN STATE	57.00	3.00	1.40	NAP	16.00	3.90	NAP
26 SEP 1977	ITHACA	22.00	.85	.97	NAP	.42	.33	93.00
	VIRGINIA	55.00	1.30	.56	NAP	1.20	2.30	200.00
27 SEP 1977	PENN STATE	28.00	.63	.30	NAP	.80	.29	103.00
28 SEP 1977	WHITEFACE	9.30	.70	.73	NAP	.37	NAP	63.00
29 SEP 1977	WHITEFACE	1.40	< .40	.28	NAP	< .03	< .25	26.00
2 OCT 1977	VIRGINIA	21.00	2.70	.59	NAP	2.00	.95	140.00
3 OCT 1977	WHITEFACE	17.00	.60	< .25	NAP	.35	< .25	90.00
	PENN STATE	9.00	.42	.28	NAP	.20	< .25	68.00
4 OCT 1977	WHITEFACE	1.90	.44	.63	NAP	.10	< .25	13.00
	ITHACA	RPC	RPC	RPC	NAP	RPC	RPC	RPC
6 OCT 1977	ITHACA	50.00	1.70	1.30	NAP	5.60	2.50	230.00
7 OCT 1977	PENN STATE	30.00	1.10	.77	NAP	2.50	1.10	140.00
10 OCT 1977	ITHACA	3.80	< .40	.34	NAP	.52	.21	50.00
	VIRGINIA	11.00	3.50	.55	NAP	.55	.70	73.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		⁴ H N	³ A N	² K K	¹ A L	¹ A C	¹ G H	¹ I A N
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	JEQ/L
11 OCT 1977	WHITEFACE	3.10	< .40	< .25	NAP	3.50	4.60	28.00
	PENN STATE	19.00	2.00	.84	NAP	.32	.29	85.00
16 OCT 1977	VIRGINIA	8.80	1.80	.86	NAP	1.70	.66	85.00
17 OCT 1977	ITHACA	19.00	.56	.44	NAP	1.00	.53	94.00
	PENN STATE	12.00	< .40	.33	NAP	.62	.29	69.00
	VIRGINIA	7.50	.73	.62	NAP	1.10	.29	75.00
18 OCT 1977	WHITEFACE	3.30	5.10	.48	NAP	.80	.53	43.00
20 OCT 1977	ITHACA	6.30	.89	< .25	NAP	4.30	3.20	60.00
	PENN STATE	12.00	.87	.64	NAP	1.10	.41	95.00
24 OCT 1977	WHITEFACE	84.00	2.80	2.90	NAP	5.70	2.80	270.00
27 OCT 1977	PENN STATE	3.10	.94	< .25	NAP	.90	.37	37.00
	VIRGINIA	1.90	13.00	.34	NAP	.25	1.60	36.00
3 NOV 1977	PENN STATE	60.00	120.00	5.50	NAP	9.40	10.00	NAP
5 NOV 1977	WHITEFACE	2.20	.67	.40	NAP	.05	< .25	13.00
	PENN STATE	2.70	.94	< .25	NAP	.40	< .25	34.00
6 NOV 1977	ITHACA	4.20	1.80	.30	NAP	.35	.45	32.00
7 NOV 1977	WHITEFACE	4.80	1.80	.26	NAP	< .03	< .25	36.00
8 NOV 1977	PENN STATE	3.40	2.50	.25	NAP	.10	.41	27.00
	VIRGINIA	3.50	19.00	.48	NAP	.35	2.60	54.00
9 NOV 1977	WHITEFACE	4.40	1.50	< .25	NAP	< .03	< .25	16.00
10 NOV 1977	PENN STATE	62.00	21.00	2.10	NAP	1SA	1SA	1SA
11 NOV 1977	WHITEFACE	7.50	1.20	< .20	NAP	< .10	.29	53.00
	PENN STATE	12.00	.45	.36	NAP	.77	.33	61.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UEG/L
13 NOV 1977	ITHACA	6.80	.99	.14	NAP	.12	.16	44.00
14 NOV 1977	PENN STATE	39.00	2.50	2.00	NAP	11.00	2.50	15A
15 NOV 1977	WHITEFACE	5.80	2.30	.50	NAP	1.60	.58	55.00
	VIRGINIA	24.00	1.90	1.10	NAP	.87	.74	62.00
16 NOV 1977	ITHACA	12.00	1.30	.34	NAP	3.30	.78	85.00
	PENN STATE	16.00	1.90	.59	NAP	6.30	1.20	97.00
20 NOV 1977	WHITEFACE	15.00	.97	.85	NAP	1.20	.62	93.00
	VIRGINIA	4.80	1.80	.39	NAP	.52	.37	40.00
	ILLINOIS	59.00	5.80	1.90	NAP	13.00	1.90	150.00
21 NOV 1977	ILLINOIS	44.00	1.50	.81	NAP	3.80	.62	86.00
22 NOV 1977	PENN STATE	8.00	2.30	.76	NAP	3.00	1.00	120.00
23 NOV 1977	ILLINOIS	61.00	3.70	1.30	NAP	5.60	1.20	170.00
24 NOV 1977	VIRGINIA	14.00	1.50	.46	NAP	.35	.33	75.00
25 NOV 1977	PENN STATE	15A	15A	15A	NAP	15A	15A	15A
27 NOV 1977	ITHACA	5.30	< .40	.25	NAP	.17	.25	NAP
	PENN STATE	9.70	.71	.47	NAP	1.50	.41	83.00
28 NOV 1977	WHITEFACE	4.20	.40	< .20	NAP	< .10	.21	30.00
29 NOV 1977	VIRGINIA	9.10	2.80	.77	NAP	1.70	.70	140.00
1 DEC 1977	WHITEFACE	1.80	1.60	1.10	NAP	.22	.16	25.00
	ITHACA	7.50	3.20	.28	NAP	.47	1.10	50.00
	PENN STATE	4.40	1.50	.34	NAP	.82	.49	67.00
	ILLINOIS	4.10	.52	.20	NAP	.47	.16	78.00
2 DEC 1977	VIRGINIA	3.70	3.50	.44	NAP	.37	.70	51.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
3 DEC 1977	ILLINOIS	46.00	2.90	1.80	NAP	29.00	3.20	180.00
5 DEC 1977	WHITEFACE	17.00	1.20	.61	NAP	3.00	1.20	79.00
6 DEC 1977	PENN STATE	11.00	1.70	.52	NAP	1.20	.49	69.00
	VIRGINIA	15.00	2.80	.38	NAP	1.10	.45	87.00
7 DEC 1977	WHITEFACE	.90	1.20	.69	NAP	< .10	.21	21.00
	ITHACA	3.70	< .40	< .20	NAP	< .10	.25	31.00
	PENN STATE	17.00	2.10	1.10	NAP	.80	.58	65.00
	ILLINOIS	2.90	.94	.45	NAP	9.00	1.90	41.00
9 DEC 1977	PENN STATE	9.80	3.50	.70	NAP	5.50	1.20	77.00
10 DEC 1977	ILLINOIS	.96	2.80	.74	NAP	5.10	.58	66.00
11 DEC 1977	ITHACA	1.10	1.90	.34	NAP	2.70	.62	50.00
12 DEC 1977	WHITEFACE	4.10	1.90	1.40	NAP	1.90	.49	55.00
13 DEC 1977	PENN STATE	25.00	12.00	1.40	NAP	24.00	3.00	15A
14 DEC 1977	ILLINOIS	10.00	1.70	.69	NAP	3.90	.41	95.00
15 DEC 1977	ITHACA	3.30	1.20	.30	NAP	1.60	.53	75.00
	PENN STATE	11.00	4.50	.95	NAP	1.60	1.20	82.00
16 DEC 1977	WHITEFACE	1.90	< .40	< .25	NAP	.17	.12	42.00
	VIRGINIA	3.30	6.70	.71	NAP	.20	.86	48.00
18 DEC 1977	ILLINOIS	15A	15A	15A	NAP	15A	15A	15A
19 DEC 1977	PENN STATE	4.10	1.30	.60	NAP	1.00	.45	58.00
	VIRGINIA	5.10	4.60	2.00	NAP	.92	.49	77.00
21 DEC 1977	ITHACA	1.50	.94	< .25	NAP	.80	.29	28.00
	PENN STATE	6.20	2.50	.60	NAP	5.70	.74	84.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UEU/L
	VIRGINIA	25.00	4.50	1.60	NAP	5.80	1.20	160.00
24 DEC 1977	WHITEFACE	1.50	1.30	.56	NAP	1.50	< .15	28.00
26 DEC 1977	PENN STATE	25.00	4.10	.86	NAP	4.20	.95	130.00
27 DEC 1977	VIRGINIA	12.00	12.00	1.40	NAP	3.10	1.40	110.00
3 JAN 1978	ITHACA	9.20	3.60	.52	NAP	7.60	1.30	97.00
	VIRGINIA	1.50	.65	.40	NAP	.70	.21	54.00
4 JAN 1978	PENN STATE	17.00	.90	.48	NAP	3.20	.53	120.00
6 JAN 1978	PENN STATE	8.20	2.40	.58	NAP	2.40	1SA	1SA
7 JAN 1978	WHITEFACE	20.00	2.20	1.70	NAP	3.10	.53	140.00
	PENN STATE	38.00	11.00	4.00	NAP	3.70	1.30	230.00
9 JAN 1978	PENN STATE	4.40	1.80	.60	NAP	.82	.25	49.00
11 JAN 1978	ITHACA	2.20	2.50	.34	NAP	2.10	.45	47.00
12 JAN 1978	VIRGINIA	7.90	11.00	1.20	NAP	.27	1.50	52.00
13 JAN 1978	WHITEFACE	.43	.57	.26	NAP	3.40	< .15	22.00
15 JAN 1978	ITHACA	.31	4.40	1.40	NAP	15.00	1.00	54.00
	PENN STATE	1.50	2.00	.47	NAP	4.10	.21	38.00
16 JAN 1978	VIRGINIA	2.60	.55	.39	NAP	< .10	< .20	30.00
18 JAN 1978	PENN STATE	1.40	1.00	.53	NAP	.97	< .15	36.00
19 JAN 1978	WHITEFACE	.41	.30	< .20	NAP	.77	< .15	15.00
	ITHACA	.67	.26	< .20	NAP	1.50	< .15	24.00
	VIRGINIA	5.20	3.10	.52	NAP	.62	.29	71.00
21 JAN 1978	PENN STATE	.35	2.10	2.30	NAP	3.30	< .15	22.00
	VIRGINIA	.95	.59	.52	NAP	1.40	.29	97.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		1 4 H N	1 A N	1 K	1 L A	1 A C	1 G M	1 T A C
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
22 JAN 1978	ITHACA	.46	.26	< .20	NAP	.87	< .15	17.00
26 JAN 1978	WHITEFACE	1.10	1.90	.20	NAP	.87	< .15	35.00
	PENN STATE	1.40	.78	.60	NAP	.52	< .20	39.00
	VIRGINIA	2.30	1.40	.20	NAP	.52	< .20	21.00
27 JAN 1978	ITHACA	1.40	1.50	1.40	NAP	2.60	1.00	56.00
31 JAN 1978	WHITEFACE	19.00	23.00	8.20	NAP	5.20	1.30	100.00
	PENN STATE	2.80	14.00	7.30	NAP	2.50	.62	49.00
1 FEB 1978	ILLINOIS	1SA	1SA	1SA	NAP	1SA	1SA	1SA
8 FEB 1978	WHITEFACE	1.00	5.10	2.20	NAP	1.80	.58	27.00
	ITHACA	1.80	1.60	.75	NAP	1.20	.41	78.00
	PENN STATE	5.50	1.40	.51	NAP	3.00	.45	95.00
9 FEB 1978	BROOKHAVEN	11.00	380.00	8.40	NAP	11.00	36.00	570.00
14 FEB 1978	PENN STATE	5.80	2.70	2.40	NAP	3.50	.41	87.00
	ILLINOIS	14.00	2.50	1.40	NAP	11.00	3.60	150.00
	BROOKHAVEN	6.10	35.00	3.70	NAP	3.90	4.60	1SA
15 FEB 1978	VIRGINIA	49.00	22.00	3.60	NAP	14.00	3.30	320.00
19 FEB 1978	ITHACA	4.60	10.00	1.70	NAP	11.00	.33	150.00
	PENN STATE	4.80	2.00	1.10	NAP	4.20	.66	160.00
24 FEB 1978	ILLINOIS	1SA	1SA	1SA	NAP	1SA	1SA	1SA
25 FEB 1978	VIRGINIA	18.00	6.70	2.40	NAP	9.20	1.70	270.00
27 FEB 1978	PENN STATE	RPL	9.50	3.20	NAP	19.00	3.70	370.00
1 MAR 1978	ITHACA	26.00	12.00	1.30	NAP	14.00	4.70	270.00
	ILLINOIS	1SA	1SA	1SA	NAP	1SA	1SA	1SA

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMDL /L	UMDL /L	UMDL /L	UMDL /L	UMDL /L	UMDL /L	JEQ /L
	LEWES DE	8.70	23.00	1.20	NAP	16.00	5.00	230.00
2 MAR 1978	PENN STATE	4.40	10.00	2.20	NAP	21.00	3.00	220.00
3 MAR 1978	ILLINOIS	4.30	4.00	1.30	NAP	2.50	.45	100.00
4 MAR 1978	ITHACA	1.30	2.30	.55	NAP	2.20	.53	110.00
	LEWES DE	3.50	24.00	.61	NAP	1.70	2.60	73.00
5 MAR 1978	VIRGINIA	5.80	2.40	.41	NAP	3.40	.70	110.00
6 MAR 1978	WHITEFACE	1.70	2.90	.93	NAP	1.90	.58	46.00
	PENN STATE	1.40	1.10	< .40	NAP	3.00	.41	85.00
	BROOKHAVEN	1.80	4.80	.52	NAP	1.90	4.70	59.00
8 MAR 1978	VIRGINIA	1.20	1.50	.35	NAP	3.00	.45	120.00
	ILLINOIS	1SA	1SA	1SA	NAP	1SA	1SA	1SA
11 MAR 1978	BROOKHAVEN	1SA	1SA	1SA	NAP	1SA	1SA	1SA
	LEWES DE	2.90	91.00	3.40	NAP	5.80	9.60	160.00
12 MAR 1978	VIRGINIA	2.80	.28	.22	NAP	1.00	< .20	44.00
13 MAR 1978	PENN STATE	1SA	1SA	1SA	NAP	1SA	1SA	1SA
14 MAR 1978	VIRGINIA	29.00	14.00	3.60	NAP	2.10	1.50	130.00
	BROOKHAVEN	14.00	51.00	1.40	NAP	1.60	4.70	150.00
15 MAR 1978	ITHACA	19.00	8.30	1.90	NAP	4.50	1.40	170.00
	PENN STATE	29.00	6.40	1.30	NAP	2.60	.86	160.00
	LEWES DE	19.00	40.00	1.30	NAP	3.60	4.60	97.00
16 MAR 1978	WHITEFACE	29.00	6.30	5.80	NAP	1SA	1SA	1SA
17 MAR 1978	BROOKHAVEN	11.00	3.10	.84	NAP	1.90	.82	110.00
	LEWES DE	6.00	470.00	11.00	NAP	24.00	46.00	820.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UEQ/L
18 MAR 1978	PENN STATE	10.00	.91	< .40	NAP	2.60	.53	110.00
20 MAR 1978	WHITEFACE	18.00	20.00	3.40	NAP	7.80	1.70	110.00
22 MAR 1978	ITHACA	21.00	2.60	.46	NAP	4.60	1.10	140.00
	PENN STATE	23.00	8.30	1.10	NAP	23.00	3.40	190.00
	BROOKHAVEN	15A	15A	15A	NAP	15A	15A	15A
24 MAR 1978	WHITEFACE	15.00	2.60	.64	NAP	3.30	.78	97.00
	VIRGINIA	61.00	37.00	24.00	NAP	30.00	11.00	270.00
27 MAR 1978	BROOKHAVEN	9.70	74.00	1.30	NAP	3.70	9.10	150.00
28 MAR 1978	ITHACA	5.40	.56	.20	NAP	1.90	.53	47.00
	PENN STATE	7.40	1.70	.46	NAP	1.50	.41	72.00
	VIRGINIA	7.50	9.80	.64	NAP	2.90	1.80	89.00
29 MAR 1978	WHITEFACE	6.60	1.00	.49	NAP	.57	NAP	NAP
31 MAR 1978	LEWES DE	30.00	250.00	4.40	NAP	6.50	25.00	370.00
2 APR 1978	ITHACA	120.00	6.40	3.70	NAP	42.00	5.60	300.00
3 APR 1978	WHITEFACE	.54	2.50	1.70	NAP	9.00	1.70	92.00
4 APR 1978	PENN STATE	47.00	4.40	1.50	NAP	12.00	2.80	290.00
	BROOKHAVEN	15A	15A	15A	NAP	15A	15A	15A
5 APR 1978	ITHACA	.28	1.60	.49	NAP	2.30	.53	100.00
	PENN STATE	17.00	5.80	2.90	NAP	2.00	.62	100.00
6 APR 1978	WHITEFACE	39.00	7.50	1.10	NAP	5.30	1.20	190.00
7 APR 1978	ITHACA	31.00	2.70	1.20	NAP	9.10	1.60	160.00
	PENN STATE	29.00	2.70	1.00	NAP	9.30	1.70	150.00
8 APR 1978	LEWES DE	29.00	38.00	2.50	NAP	7.10	5.30	170.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L
10 APR 1978	WHITEFACE	6.20	1.30	.44	NAP	1.10	< .40	45.00
11 APR 1978	WHITEFACE	16.00	2.10	1.20	NAP	2.00	.66	75.00
12 APR 1978	PENN STATE	5.60	1.30	.99	NAP	4.40	.74	86.00
	LEWES DE	20.00	22.00	7.20	NAP	18.00	4.90	200.00
13 APR 1978	WHITEFACE	34.00	3.30	1.30	NAP	9.30	2.00	140.00
	ITHACA	40.00	5.20	2.30	NAP	13.00	2.30	190.00
14 APR 1978	VIRGINIA	5.20	3.80	4.60	NAP	12.00	3.50	120.00
17 APR 1978	WHITEFACE	6.70	1.50	3.50	NAP	3.10	.95	60.00
18 APR 1978	ILLINOIS	80.00	6.10	3.00	NAP	34.00	7.40	240.00
20 APR 1978	ILLINOIS	52.00	1.20	2.80	NAP	14.00	2.50	110.00
21 APR 1978	PENN STATE	17.00	1.20	.59	NAP	5.00	.91	120.00
	VIRGINIA	29.00	5.50	1.30	NAP	4.80	1.30	150.00
22 APR 1978	ITHACA	16.00	1.30	.79	NAP	4.70	1.20	92.00
23 APR 1978	PENN STATE	12.00	1.00	.52	NAP	2.10	.66	15A
	ILLINOIS	17.00	1.60	1.00	NAP	16.00	2.40	130.00
24 APR 1978	WHITEFACE	4.60	1.90	1.50	NAP	3.50	.74	50.00
	PENN STATE	15.00	1.40	.85	NAP	4.50	.74	200.00
	ILLINOIS	15A	15A	15A	NAP	15A	15A	15A
25 APR 1978	ILLINOIS	60.00	2.00	6.00	NAP	3.80	.95	110.00
28 APR 1978	VIRGINIA	6.80	1.70	.84	NAP	2.10	.74	77.00
	LEWES DE	NAP	720.00	15.00	NAP	18.00	76.00	NAP
5 MAY 1978	ILLINOIS	22.00	3.70	2.60	NAP	6.10	1.80	85.00
	LEWES DE	9.10	470.00	9.60	NAP	13.00	55.00	660.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		4 H N	A N	K	A L	A C	G M	I A N
		UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UEU/L
7 MAY 1978	ITHACA	8.00	1.50	.35	NAP	1.80	.49	180.00
	PENN STATE	12.00	.76	.34	NAP	3.00	1.20	85.00
8 MAY 1978	VIRGINIA	6.60	1.20	1.10	NAP	2.20	.58	67.00
	BROOKHAVEN	KPC	RPC	KPC	NAP	KPC	RPC	KPC
9 MAY 1978	WHITEFACE	4.90	3.00	.97	NAP	4.30	1.30	34.00
	PENN STATE	8.80	.86	.32	NAP	1.00	< .40	88.00
	VIRGINIA	7.60	1.00	1.20	NAP	2.00	.62	100.00
10 MAY 1978	ITHACA	18.00	1.30	1.20	NAP	3.70	.99	130.00
	BROOKHAVEN	4.10	50.00	1.30	NAP	1.70	4.90	96.00
12 MAY 1978	ILLINOIS	33.00	4.60	2.30	NAP	17.00	2.20	170.00
13 MAY 1978	WHITEFACE	10.00	.68	.47	NAP	1.80	.45	55.00
14 MAY 1978	PENN STATE	26.00	1.10	3.80	NAP	1.20	.74	43.00
	ILLINOIS	5.00	1.30	.90	NAP	NAP	NAP	NAP
15 MAY 1978	PENN STATE	3.60	.50	< .25	NAP	.47	< .40	52.00
	ILLINOIS	39.00	1.50	1.80	NAP	3.10	.78	410.00
	BROOKHAVEN	7.30	58.00	1.60	NAP	2.50	5.60	110.00
17 MAY 1978	ITHACA	12.00	7.30	.50	NAP	2.70	1.40	90.00
	VIRGINIA	11.00	7.00	.88	NAP	1.40	1.10	79.00
	LEWES DE	12.00	68.00	2.80	NAP	3.20	9.40	140.00
19 MAY 1978	WHITEFACE	8.20	4.90	.59	NAP	2.40	.82	42.00
	PENN STATE	4.00	.95	< .25	NAP	1.20	< .40	76.00
21 MAY 1978	ITHACA	35.00	2.00	1.50	NAP	7.40	2.30	200.00
22 MAY 1978	WHITEFACE	17.00	.67	1.10	NAP	3.00	.91	92.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
	PENN STATE	21.00	2.70	3.10	NAP	12.00	2.70	15A
25 MAY 1978	PENN STATE	13.00	1.10	.60	NAP	.77	.21	85.00
	VIRGINIA	9.20	38.00	27.00	NAP	12.00	3.30	230.00
27 MAY 1978	LEWES DE	24.00	12.00	6.00	NAP	1.20	1.10	140.00
1 JUN 1978	VIRGINIA	93.00	9.60	5.30	NAP	12.00	3.60	370.00
	LEWES DE	15A	15A	15A	NAP	15A	15A	15A
2 JUN 1978	VIRGINIA	15A	15A	15A	NAP	15A	15A	15A
3 JUN 1978	ITHACA	69.00	2.50	4.20	NAP	17.00	5.10	340.00
4 JUN 1978	PENN STATE	55.00	1.30	1.40	NAP	11.00	2.60	330.00
	ILLINOIS	RPC	RPC	RPC	NAP	RPC	RPC	RPC
	LEWES DE	27.00	120.00	2.90	NAP	4.90	16.00	290.00
5 JUN 1978	ITHACA	15A	15A	15A	NAP	15A	15A	15A
6 JUN 1978	WHITEFACE	43.00	1.00	2.00	NAP	11.00	3.70	180.00
6 JUN 1978	WHITEFACE	9.30	< .40	< .25	NAP	.82	< .20	67.00
	ILLINOIS	15A	15A	15A	NAP	15A	15A	15A
9 JUN 1978	ITHACA	50.00	1.50	5.70	NAP	5.60	2.30	170.00
	PENN STATE	21.00	.62	.96	NAP	4.20	.91	130.00
	BROOKHAVEN	9.80	21.00	.96	NAP	2.00	2.90	110.00
	LEWES DE	21.00	12.00	.83	NAP	3.00	2.60	100.00
10 JUN 1978	VIRGINIA	15A	15A	15A	NAP	15A	15A	15A
12 JUN 1978	ILLINOIS	43.00	1.00	2.10	NAP	28.00	3.90	110.00
13 JUN 1978	PENN STATE	31.00	.79	1.70	NAP	6.30	1.10	130.00
	VIRGINIA	MOE	MOE	MOE	NAP	MOE	MOE	MOE

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

		UMDL/L (⁴ _N)	UMDL/L (⁴ _N)	UMDL/L (⁴ _K)	UMDL/L (⁴ _A)	UMDL/L (⁴ _C)	UMDL/L (⁴ _M)	UEQ/L (⁴ _C)
15 JUN 1978	WHITEFACE	9.50	3.90	3.60	NAP	1.60	.41	53.00
16 JUN 1978	ILLINOIS	15A	15A	15A	NAP	15A	15A	15A
18 JUN 1978	PENN STATE	41.00	1.50	1.60	NAP	4.70	1.20	240.00
	ILLINOIS	30.00	1.20	1.00	NAP	12.00	1.90	110.00
19 JUN 1978	WHITEFACE	39.00	2.00	2.80	NAP	8.60	3.30	160.00
	ITHACA	40.00	1.60	2.70	NAP	6.00	2.40	180.00
20 JUN 1978	VIRGINIA	23.00	2.50	1.50	NAP	6.80	1.60	130.00
	ILLINOIS	8.50	< .40	< .25	NAP	1.70	.29	67.00
	LEWES DE	34.00	3.30	.78	NAP	3.00	1.30	120.00
21 JUN 1978	VIRGINIA	84.00	5.60	8.30	NAP	11.00	5.20	300.00
22 JUN 1978	WHITEFACE	26.00	1.40	.70	NAP	2.00	.49	120.00
	ITHACA	18.00	1.20	.87	NAP	1.80	.58	170.00
	PENN STATE	11.00	.90	.33	NAP	1.40	.29	88.00
	BROOKHAVEN	37.00	9.80	4.60	NAP	2.80	2.10	260.00
	LEWES DE	24.00	17.00	1.70	NAP	3.10	3.50	150.00
23 JUN 1978	VIRGINIA	31.00	1.00	.97	NAP	3.10	.66	160.00
27 JUN 1978	PENN STATE	13.00	1.00	.40	NAP	3.50	.62	130.00
	VIRGINIA	12.00	1.10	18.00	NAP	5.20	2.20	86.00
28 JUN 1978	WHITEFACE	23.00	.94	43.00	NAP	4.20	1.10	150.00
	PENN STATE	33.00	3.50	.90	NAP	10.00	2.00	240.00
29 JUN 1978	VIRGINIA	15A	15A	15A	NAP	15A	15A	15A
30 JUN 1978	PENN STATE	37.00	2.30	1.60	NAP	6.40	2.20	220.00
	ILLINOIS	68.00	3.70	2.90	NAP	57.00	9.20	430.00

DATA FROM 1 JUL 1977 TO 30 JUN 1978 (CONT.)

NSC MEANS NO SAMPLE COLLECTED
 ISA MEANS INSUFF. SAMPLE FOR ANALYSIS
 NAP MEANS NO ANALYSIS PERFORMED
 MUE MEANS MALFUNCTION OR OPERATOR ERROR
 RPC MEANS REJECTED--PROB. CONTAMINATION

QUALITY CONTROL SAMPLE LISTINGS

NUMBER IN COLUMN 7 (FIRST TABLE)

AB.CD

A = 1 FOR INTERNAL, 2 FOR EXTERNAL (EML)

B = 1 FOR ANALYST BLIND, 2 FOR ANALYST NOT BLIND

C = 1 FOR BLANK, 2 FOR STANDARD SOLUTION(S),
3 FOR DUPLICATE, 4 FOR NON-NETWORK SITE SAMPLE

D = SITE NUMBER (SOURCE OF SAMPLE)

1 WHITEFACE, 2 ITHACA, 3 PENN STATE, 4 VIRGINIA,
5 ILLINOIS, 6 BROOKHAVEN, 7 LEWES DE, 8 OXFORD OH,
D LABORATORY MADE

00.00 OR NAP IN COLUMN 7 MEANS A NORMAL OR NON-QUALITY CONTROL SAMPLE

S
A
M
P
L
E

2

5

0

100

DATA FROM 21 SEP 1977 TO 31 JAN 1978

		2	HOURS	HOURS	HOURS		HOURS	
21 SEP 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.31
26 SEP 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
11 OCT 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
13 NOV 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
20 NOV 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.34
1 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.31
3 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.35
7 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.35
11 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
15 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
24 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.31
4 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
6 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
15 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
18 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	11.33
21 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.34
26 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.34
27 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
31 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.31

NSC MEANS NO SAMPLE COLLECTED
 ISA MEANS INSUFF. SAMPLE FOR ANALYSIS
 NAP MEANS NO ANALYSIS PERFORMED
 MUE MEANS MALFUNCTION OR OPERATOR ERROR
 RPC MEANS REJECTED--PROB. CONTAMINATION

	Z	HOURS	HOURS	HOURS		MO. DA	
3 FEB 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.36
14 FEB 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.36
19 FEB 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
27 FEB 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
1 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
5 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.36
6 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
12 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.36
15 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
19 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
20 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.31
22 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	4.04	11.32
24 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	4.04	11.31
27 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.36
29 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
29 MAR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.31
2 APR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
3 APR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.31
4 APR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
5 APR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
7 APR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
8 APR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.37
12 APR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
22 APR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.32
24 APR 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
28 APR 1978 QC SAMPLE	1300.00	161.50	0.00	41.50	10.00	6.08	21.36
5 MAY 1978 QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.35

21 APR 1978 1400. 916.5 0.00 22.2 27.00 4.27 21.33

		7	HOURLY	HOURLY	HOURLY		40.00	
7 MAY 1976	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
9 MAY 1976	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.31
12 MAY 1976	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.35
14 MAY 1976	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.33
19 MAY 1976	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.31
22 MAY 1976	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	12.31
13 JUN 1976	10 SAMPLE	1500.00	90.00	0.00	9.00	6.00	7.06	21.32

NO SAMPLE COLLECTED
INSUFF. SAMPLE FOR ANALYSIS
NO ANALYTICAL REFORMER
DEFLECTION OF OPERATOR ERROR
DETECTED--FUEL CONTAMINATION

DATA FROM 21 SEP 1977 TO 31 JAN 1978 (CONT.)

		HL	HL	C	F	L	UKOL /L	UMHON/CH
21 SEP 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
26 SEP 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
11 OCT 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
13 NOV 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
20 NOV 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
1 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
3 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
7 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
11 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
15 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
24 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
4 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
6 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
15 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
18 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
21 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
26 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
27 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
31 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP

NSC MEANS NO SAMPLE COLLECTED
 ISA MEANS INSUFF. SAMPLE FOR ANALYSIS
 NAP MEANS NO ANALYSIS PERFORMED
 MUE MEANS MALFUNCTION OR OPERATOR ERROR
 RPC MEANS REJECTED--PROB. CONTAMINATION

		HL	HL	C			JHOL/L	UMHO/CH
9 FEB 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
14 FEB 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
18 FEB 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
27 FEB 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
1 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
5 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
6 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
12 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
15 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
18 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
20 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
22 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	4.01	36.00	39.00
24 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	4.10	71.00	29.00
27 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
29 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
29 MAR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
2 APR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
3 APR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
4 APR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
5 APR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
7 APR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
9 APR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
12 APR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
22 APR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
24 APR 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
25 APR 1976	QC SAMPLE	2090.00	3100.00	23.00	4.22	4.19	65.00	30.00
5 MAY 1976	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
R 27 APR 1976		1160.	1130.	25.	4.05	4.05	87.00	41.00

		ML	ML	U			UHOL/L	UHOL/CH
7 MAY 1975	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
9 MAY 1975	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
12 MAY 1975	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
14 MAY 1975	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
19 MAY 1975	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
22 MAY 1975	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
14 JUN 1975	10 SAMPLE	465.00	700.00	11.00	4.00	4.11	78.00	40.00

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NSD MEANS NO SAMPLE COLLECTED
ISA MEANS INSUFF. SAMPLE FOR ANALYSIS
NAP MEANS NO ANALYSIS PERFORMED
ICE MEANS MALFUNCTION OF OPERATOR OR/OR
RPS MEANS REJECTED--PROB. CONTAMINATION

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DATA FROM 21 SEP 1977 TO 31 JAN 1978 (CONT.)

		2 U S	4 3 S	2 U N	3 0 N	1 C	4 0 P	0 I N A
		UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UMDL/L	UEU/L
21 SEP 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
26 SEP 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
11 OCT 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
13 NOV 1977	QC SAMPLE	NAP	NAP	NAP	13.00	1.30	NAP	NAP
20 NOV 1977	QC SAMPLE	NAP	NAP	NAP	NAP	4.30	NAP	NAP
1 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
3 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
7 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
11 DEC 1977	QC SAMPLE	NAP	5.90	NAP	35.00	NAP	NAP	NAP
15 DEC 1977	QC SAMPLE	NAP	21.00	NAP	NAP	NAP	NAP	NAP
24 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
4 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
6 JAN 1978	QC SAMPLE	< .10	11.00	NAP	NAP	NAP	NAP	NAP
15 JAN 1978	QC SAMPLE	NAP	3.80	NAP	20.00	NAP	NAP	NAP
18 JAN 1978	QC SAMPLE	NAP	4.60	< .05	18.00	3.90	< .40	31.00
21 JAN 1978	QC SAMPLE	NAP	4.60	NAP	74.00	NAP	NAP	NAP
26 JAN 1978	QC SAMPLE	NAP	4.90	NAP	5.20	NAP	NAP	NAP
27 JAN 1978	QC SAMPLE	NAP	23.00	NAP	22.00	NAP	NAP	NAP
31 JAN 1978	QC SAMPLE	NAP	NAP	NAP	28.00	25.00	NAP	NAP

NSC MEANS NO SAMPLE COLLECTED
 ISA MEANS INSUFF. SAMPLE FOR ANALYSIS
 NAP MEANS NO ANALYSIS PERFORMED
 MJE MEANS MALFUNCTION OR OPERATOR ERROR
 RPC MEANS REJECTED--PROB. CONTAMINATION

		1 2 0 S	4 0 S
		UMOL/L	UMOL/L
9 FEB 1978	QC SAMPLE	NAP	NAP
14 FEB 1978	QC SAMPLE	NAP	17.00
19 FEB 1978	QC SAMPLE	NAP	27.00
27 FEB 1978	QC SAMPLE	NAP	NAP
1 MAR 1978	QC SAMPLE	NAP	NAP
5 MAR 1978	QC SAMPLE	NAP	11.00
6 MAR 1978	QC SAMPLE	NAP	NAP
12 MAR 1978	QC SAMPLE	NAP	12.00
13 MAR 1978	QC SAMPLE	NAP	55.00
14 MAR 1978	QC SAMPLE	NAP	12.00
20 MAR 1978	QC SAMPLE	NAP	NAP
22 MAR 1978	QC SAMPLE	NAP	31.00
24 MAR 1978	QC SAMPLE	NAP	23.00
27 MAR 1978	QC SAMPLE	NAP	6.10
28 MAR 1978	QC SAMPLE	NAP	12.00
29 MAR 1978	QC SAMPLE	NAP	6.60
2 APR 1978	QC SAMPLE	NAP	91.00
3 APR 1978	QC SAMPLE	NAP	42.00
4 APR 1978	QC SAMPLE	NAP	NAP
5 APR 1978	QC SAMPLE	NAP	32.00
7 APR 1978	QC SAMPLE	NAP	53.00

	2 0 N	3 0 N		4 0 P	0 I N
	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
	NAP	NAP	NAP	NAP	NAP
	NAP	NAP	NAP	NAP	NAP
	NAP	NAP	NAP	NAP	NAP
	NAP	NAP	NAP	NAP	NAP
	NAP	NAP	NAP	NAP	NAP
	NAP	54.00	NAP	NAP	NAP
	NAP	NAP	NAP	NAP	NAP
	NAP	7.00	NAP	NAP	NAP
	NAP	21.00	3.40	NAP	NAP
	NAP	67.00	NAP	NAP	NAP
	NAP	NAP	NAP	NAP	NAP
	.20	41.00	9.50	< .20	110.00
	.17	39.00	3.1	< .20	86.00
	NAP	12.00	NAP	NAP	NAP
	NAP	14.00	2.60	NAP	NAP
	NAP	12.00	NAP	1.20	NAP
	NAP	57.00	NAP	NAP	NAP
	NAP	46.00	4.70	NAP	NAP
	NAP	NAP	NAP	NAP	NAP
	NAP	34.00	4.70	NAP	NAP
	NAP	61.00	3.00	NAP	NAP

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DATA FROM 21 SEP 1977 TO 31 JAN 1978 (CONT.)

		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
21 SEP 1977	QC SAMPLE	22.00	NAP	NAP	NAP	NAP	NAP	NAP
26 SEP 1977	QC SAMPLE	NAP	NAP	NAP	NAP	.50	NAP	NAP
11 OCT 1977	QC SAMPLE	NAP	NAP	NAP	NAP	.30	NAP	NAP
13 NOV 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
20 NOV 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
1 DEC 1977	QC SAMPLE	1.90	1.20	1.10	NAP	NAP	NAP	NAP
3 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
7 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
11 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
15 DEC 1977	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
24 DEC 1977	QC SAMPLE	1.30	.62	.34	NAP	NAP	NAP	NAP
4 JAN 1978	QC SAMPLE	NAP	7.10	4.00	NAP	NAP	NAP	NAP
6 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
15 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
16 JAN 1978	QC SAMPLE	2.90	.75	.54	NAP	1.00	< .15	NAP
21 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
26 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
27 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
31 JAN 1978	QC SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP

NSC MEANS NO SAMPLE COLLECTED
 ISA MEANS INSUFF. SAMPLE FOR ANALYSIS
 NAP MEANS NO ANALYSIS PERFORMED
 MUE MEANS MALFUNCTION OR OPERATOR ERROR
 RPC MEANS REJECTED--PROB. CONTAMINATION

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		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
9 FEB 1978	10 SAMPLE	10.30	NAP	8.30	NAP	NAP	NAP	NAP
14 FEB 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
19 FEB 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
27 FEB 1978	10 SAMPLE	NAP	13.10	3.40	NAP	NAP	NAP	NAP
1 MAR 1978	10 SAMPLE	NAP	NAP	1.00	NAP	NAP	NAP	NAP
5 MAR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
6 MAR 1978	10 SAMPLE	NAP	1.00	NAP	NAP	NAP	NAP	NAP
12 MAR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
15 MAR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
18 MAR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
20 MAR 1978	10 SAMPLE	NAP	NAP	1.50	NAP	NAP	NAP	NAP
22 MAR 1978	10 SAMPLE	22.10	2.70	.57	NAP	4.60	1.10	130.00
24 MAR 1978	10 SAMPLE	19.10	2.10	.37	NAP	3.3	.78	97.00
27 MAR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
29 MAR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
29 MAR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
2 APR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
3 APR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
4 APR 1978	10 SAMPLE	NAP	4.70	1.00	NAP	NAP	NAP	NAP
5 APR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
7 APR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
8 APR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
12 APR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
22 APR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
24 APR 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
25 APR 1978	10 SAMPLE	6.60	1.80	.80	NAP	2.10	.66	79.00
5 MAY 1978	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP

4 21 APR 1978 31.00 2.70 1.20 NAP 4.90 .99 140.00

		UNOL/L	UNOL/L	UNOL/L	UNOL/L	UNOL/L	UNOL/L	UNOL/L
7 MAY 1975	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
9 MAY 1975	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
12 MAY 1975	10 SAMPLE	NAP	4.70	2.60	NAP	NAP	NAP	NAP
14 MAY 1975	10 SAMPLE	NAP	4.95	3.60	NAP	NAP	NAP	NAP
17 MAY 1975	10 SAMPLE	NAP	NAP	NAP	NAP	NAP	NAP	NAP
22 MAY 1975	10 SAMPLE	NAP	4.30	1.20	NAP	NAP	NAP	NAP
13 JUN 1975	10 SAMPLE	24.00	1.60	4.60	NAP	3.40	4.02	120.03

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 ICA MEANS INSUFF. SAMPLE FOR ANALYSIS
 NAP MEANS NO ANALYSIS PERFORMED
 NOL MEANS MALFUNCTION OR OPERATOR ERROR
 NOL MEANS REQUESTED--FROM CONTAMINATION

DATA FROM 13 JUN 1978 TO 27 JUN 1978

		Z	HOURS	HOURS	HOURS		MO.DA	
13 JUN 1978	ITHAC WKLY	1300.00	168.00	0.00	21.00	NAP	6.20	0.00
	VIRGI WKLY	2330.00	171.50	0.00	0.00	NAP	7.14	77.74
20 JUN 1978	ITHAC WKLY	1300.00	168.00	0.00	14.00	NAP	7.06	0.00
	VIRGI WKLY	2130.00	168.00	0.00	7.50	NAP	7.14	77.74
27 JUN 1978	ITHAC WKLY	1300.00	168.00	0.00	9.00	NAP	7.14	77.72

DATA FROM 13 JUN 1978 TO 27 JUN 1978 (CONT.)

		ML	ML	C			UHOL/L	UMHO/CH
13 JUN 1978	ITHAC WKLY	1070.00	2010.00	11.00	3.96	4.00	100.00	41.00
	VIRGI WKLY	650.00	1240.00	25.00	4.02	4.15	71.00	34.00
20 JUN 1978	ITHAC WKLY	240.00	150.00	22.00	3.79	3.81	150.00	78.00
	VIRGI WKLY	310.00	530.00	25.00	3.91	4.08	83.00	37.00
27 JUN 1978	ITHAC WKLY	640.00	1400.00	14.00	3.87	3.72	190.00	77.00

NSC MEANS NO SAMPLE COLLECTED
 ISA MEANS INSUFF. SAMPLE FOR ANALYSIS
 NAP MEANS NO ANALYSIS PERFORMED
 MOE MEANS MALFUNCTION OR OPERATOR ERROR
 RPO MEANS REJECTED--PROB. CONTAMINATION

DATA FROM 13 JUN 1978 TO 27 JUN 1978 (CONT.)

		0 2 S	0 4 S	0 2 N	0 3 N	0 L C	0 4 P	0 N I
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
13 JUN 1978	ITHAC WKLY	< .10	45.00	.17	27.00	7.10	< .20	120.00
	VIRGI WKLY	< .10	31.00	.10	27.00	7.20	< .20	100.00
20 JUN 1978	ITHAC WKLY	< .10	78.00	.10	55.00	5.90	< .20	220.00
	VIRGI WKLY	< .10	55.00	.69	46.00	14.00	< .20	170.00
27 JUN 1978	ITHAC WKLY	< .10	62.00	.11	41.00	5.20	< .20	180.00

DATA FROM 13 JUN 1978 TO 27 JUN 1978 (CONT.)

		0 4 N	0 4 N	0 4 K	0 4 L	0 4 C	0 4 M	0 4 A
		UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UMOL/L	UEQ/L
13 JUN 1978	ITHAC WKLY	26.00	.91	.97	NAP	2.90	.74	140.00
	VIRGI WKLY	24.00	3.00	2.00	NAP	4.50	1.60	110.00
20 JUN 1978	ITHAC WKLY	41.00	1.50	1.40	NAP	8.40	2.60	220.00
	VIRGI WKLY	33.00	7.40	6.20	NAP	10.00	3.10	160.00
27 JUN 1978	ITHAC WKLY	15.00	< .50	.50	NAP	1.90	.33	210.00

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Figure 3. Monthly Mean Deposition-Weighted Concentrations (MMDWC) for H⁺, SO₂, and SO₄⁼

Figure 4. MMDWC for NO₃⁻ and NH₄⁺

Figure 5. Relative MMDWC for Sites 1-3. Each Species Curve is Drawn Relative to the Highest Concentration for that Species

Figure 6. Relative MMDWC for Sites 4-6. Each Species Curve is Drawn Relative to the Highest Concentration for that Species

Figure 7. Relative MMDWC for Site 7. Each Species Curve is Drawn Relative to the Highest Concentration for that Species

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