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ANALYTICAL SUMMARY OF EXPERIMENTAL DATA
FROM TWO YEARS OF HOURLY SEQUENTIAL
PRECIPITATION SAMPLES AT
BROOKHAVEN NATIONAL LABORATORY

GILBERT S. RAYNOR AND JANET V. HAYES

May 1979

ATMOSPHERIC SCIENCES DIVISION
DEPARTMENT OF ENERGY AND ENVIRONMENT

BROOKHAVEN NATIONAL LABORATORY
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ABSTRACT

Hourly precipitation samples were collected at Brookhaven National Laboratory from June 1976 through May 1978 with the Brookhaven Automatic Sequential Precipitation Sampler. Conventional meteorological data were recorded for each sample period. The samples were analyzed for pH, conductivity, and concentrations of sulfate, nitrogen, ammonium, sodium, and chloride ions. Ratios of selected ions, excess conductivity above the H^+ contribution, and excess sulfate and chloride above the seawater ratio were calculated and treated as additional variables. Statistical analyses were performed of the relationships between selected chemical variables and between them and meteorological conditions. Rainfall rate was also analyzed in terms of other meteorological variables. Because a number of units were changed after publication of an earlier report (BNL 50826), the results (presented in a series of tables) are given for each year separately and for both years jointly.

INTRODUCTION

An earlier report ¹ presented a statistical analysis of the first year (June 1, 1976, to May 31, 1977) of experimental data obtained from the sequential precipitation sampling program at Brookhaven National Laboratory (BNL). Because of significant seasonal variation in precipitation chemistry, data are analyzed only in increments of complete years. This report contains an analysis of the first two years of data (June 1, 1976, to May 31, 1978). Results from the two years are presented both separately and jointly for two reasons: (1) Units have been changed since the earlier report, ¹ which makes direct comparisons difficult. (2) Comparison of the separate data from the two years gives some indication of the variability from year to year both in the frequency of meteorological conditions and in concentrations of precipitation contaminants.

This report again presents the relationships among selected chemical variables and also those between the chemical and meteorological variables. During the second year, improved analytical techniques made it possible to obtain at least some measurements from smaller samples. Thus, the number of cases in the second year was larger but the number of actual precipitation hours, although also larger, did not increase in the same proportion. Only a few precipitation hours were lost in both years because of mechanical, electrical, or laboratory problems; therefore, the data base includes nearly all possible hours during the period having precipitation amounts great enough for chemical analysis of the samples. This report has been prepared for the benefit of other users and as a data base for further analytical studies, which will be presented elsewhere. These include an analysis of hourly variability in precipitation chemistry compared with event averages, and a study of temporal changes in precipitation chemistry within events and their relationship to meteorological changes.

BNL is a station in the MAP3S precipitation chemistry network, and samples have been taken on an event basis also with a Battelle Precipitation Collector² since February 1978. A comparison of results from the two samplers is in preparation and will be published separately.

EXPERIMENTAL METHODS

Precipitation samples were taken with the Brookhaven Automatic Sequential Precipitation Sampler previously described.^{3,4} Sampling techniques were not changed.

Samples continued to be analyzed by the Analytical Chemistry Group, Division of Environmental Chemistry, Department of Energy and Environment, by the procedures described earlier¹ except for the following modification. Since February 6, 1978, all SO_4^{2-} analyses have been made with the methylthymol blue colorimetric procedure, which is more sensitive than the turbidimetric procedure.

The methylthymol blue procedure for SO_4^{2-} is automated and run on the Auto Analyzer II. The rain sample is passed through a cation exchange column to remove interfering cations. The sulfate in the solution then reacts with barium chloride at a pH of 2.5 to 3.0 to form barium sulfate. The pH is adjusted to 12.5 to 13.0, and the excess barium reacts with methylthymol blue. Initially, the barium chloride and methylthymol blue are equimolar and equivalent to the highest concentration of sulfate ion expected. Thus the amount of uncomplexed methylthymol blue, whose absorbance is measured at 460 nm, is equal to the amount of sulfate present in the sample.

DATA

Data recorded for each hourly sample included date, sample number, time of beginning and end of sample, duration of period with the cover open, precipitation

event number within the month, precipitation amount, precipitation type, cloud type, synoptic type causing the precipitation, wind direction and speed at a height of 108 m, air temperature, pH and conductivity of the sample, and concentrations of nitrate plus nitrite, sulfate, ammonium, chloride, and sodium ions. The sum of the nitrate and nitrite ions is referred to below as nitrogen (N). In the earlier report,¹ "nitrate" as used in table headings also included nitrite and should be considered nitrogen.

The meteorological parameters are self-explanatory except for the following cases. In precipitation type, thunderstorm hours include all hours in which a thunderstorm occurred even though the thunderstorm did not last the entire hour. They also include hours with hail whether or not thunder or lightning was observed. Snow includes all completely frozen precipitation such as snow showers. Sleet includes mixed snow and sleet and freezing rain. Mixed precipitation includes rain and snow, rain and sleet, rain, and freezing rain and rainshowers plus snow showers in the same hour. Hours with drizzle and freezing drizzle seldom give a sample large enough to analyze and would be added to rain or freezing rain respectively if they occurred.

Under synoptic type, low includes all cases in which the precipitation could not be attributed to a specific type of front. Cold front precipitation includes precipitation both ahead of and behind the front. Squall lines include pre-cold-frontal troughs.

Measurements of temperature were converted from °F to °C, and a new temperature classification, based on 5°C instead of 10°F intervals, was selected. Measurements of precipitation were converted from inches to mm. The new precipitation amount classification selected is nearly equivalent to the one used earlier.¹

Units of concentration of the ions SO_4^{2-} , $\text{NO}_2^- + \text{NO}_3^-$, NH_4^+ , Cl^- , and Na^+ were converted from ppm to microequivalents/liter by using the following multiplication

factors: SO_4^{2-} , 20.82; N, 71.38; NH_4^+ , 55.46; Cl^- , 28.21; Na^+ , 43.48. Units of H^+ previously calculated from pH were converted from molar concentration to $\mu\text{eq/l}$ by multiplying by 10^6 . These conversions allow easier comparisons of ionic concentrations and facilitate computations of ion balance.

Certain derived parameters were calculated from the original data. The following ratios of ionic species were computed: $\text{SO}_4^{2-}/\text{Cl}^-$, $\text{SO}_4^{2-}/\text{Na}^+$, $\text{N}/\text{SO}_4^{2-}$, NH_4^+/N , $\text{NH}_4^+/\text{SO}_4^{2-}$, Cl^-/Na^+ .

Excess conductivity was calculated to give a measure of conductivity attributable to constituents other than H^+ . In computing conductivity of the measured constituents, the following values of conductivity ($\mu\text{mhos/cm}$) were assigned for each $\mu\text{eq/l}$ of the ion: H^+ , 0.329; SO_4^{2-} , 0.073; N, 0.064; NH_4^+ , 0.068; Cl^- , 0.068; Na^+ , 0.046. In about 9% of all cases, for reasons not apparent, a deficit (usually small) was found instead of an excess. This is contrary to expectations since not all the possible ions in the samples are even measured. Reasons for these discrepancies are being sought.

Excess sulfate and excess chloride, that is, the non-seawater contributions of these of these ions, were calculated by using the $\text{SO}_4^{2-}/\text{Na}^+$ and Cl^-/Na^+ ratios in seawater to compute the seawater contribution. Sodium was used as a reference because the Cl^-/Na^+ ratios in the precipitation samples are usually higher than the ratio in seawater, suggesting sources of Cl^- other than the ocean. In addition, this area, in contrast to some inland locations, is thought to have no other significant sources of sodium. Seawater ratios were obtained from the composition of seawater as given in a standard reference⁵ in units of g/kg as follows: $\text{SO}_4^{2-}/\text{Na}^+ = 0.252$, $\text{Cl}^-/\text{Na}^+ = 1.800$. In units of $\mu\text{eq/l}$, these ratios are 0.121 and 1.167 respectively.

In two of 1346 cases, a deficit rather than an excess of SO_4^{2-} was found with reference to the seawater ratio. In 21% of all cases, a deficit of Cl^- rather than an excess was found but it was usually small.

In computing excesses, ratios, and correlation and regression relationships, values in $\mu\text{eq/l}$ less than the following were excluded because they are near the lower limit of the measurement capability: SO_4^{2-} , 20; N, 4; NH_4^+ , 3; Cl^- , 17; Na^+ , 4. In ppm these values are about 1.0, 0.1, 0.06, 0.6, and 0.1 respectively.

DATA ANALYSIS

Analytical procedures and methods of data presentation were selected so that the results would have maximum usefulness to the greatest number of potential users. Statistical analyses were made by an electronic computer with extensive use of the Statistical Package for the Social Sciences,⁶ which eliminated much programming and facilitated computations.

Chemical parameters of the samples and ratios between them were related by standard linear correlation and regression techniques. The relationship of chemical species to meteorological conditions was determined by categorizing the chemical data by meteorological parameters and computing the mean, standard deviation, and other statistics of the resulting distributions.

For these same categories, a weighted mean was computed by weighting the value of each chemical parameter by the amount of precipitation in that hour. In the few cases of samples representing greater or less than one hour of collection, the data were normalized by time also. The weighted mean values approximate the values that would be obtained if all samples taken under a selected condition were mixed and a single analysis performed. These means are most

appropriate for relating precipitation chemistry to long-term effects such as effects on soils or groundwater. The unweighted means give greater importance to extreme events and are more appropriate for relating the chemistry of a category to short-term effects such as plant damage by "acid rain."

An analysis of hourly average precipitation rate in terms of other meteorological variables is also included.

Nearly all data were used except for a few cases removed because of probable errors in chemical measurements. Several hours of data during the peak of Hurricane Belle were removed from all analyses because they had concentrations of chloride and sodium about three orders of magnitude above normal.

Many samples were too small for all the desired chemical analyses, and some analyses require greater volumes of water than others; therefore, the number of cases differs from one measurement to another.

RESULTS

Results are presented here in tabular form. Units are all in $\mu\text{eq/l}$ except pH and conductivity ($\mu\text{mhos/cm}$). Ratios are nondimensional. Graphical presentation of selected results will be included in future analytical papers. The tables are largely self-explanatory but are described briefly below.

Relationships between chemical parameters

The relationships between selected chemical parameters are shown in Table 1, which gives the slope and intercept of the linear regression equations relating the variables and the linear correlation coefficient between the variables. Where one variable could be considered dependent and the other independent, the former was used as the y variable and the latter as the x variable; where no such relationship was presumed, the choice of x and y variables was arbitrary. Some pairs of variables show varying degrees of

positive correlation. This does not necessarily imply a physical cause and effect since both may be related to some other variable. Other pairs show no correlation; the results are included to document this.

The variability of selected chemical parameters by pH class is shown in Table 2. Included for each class are weighted mean, mean, standard deviation, minimum, maximum, and number of cases. The negative values in Tables 2b, 2d, and 2i are due to cases in which deficits rather than the expected excesses occurred. In the earlier report,¹ cases with negative values were interpreted as having no excess and assigned a zero value.

Relationship of chemical to meteorological parameters

Tables 3 through 19 present the means and statistics of the chemical variables for all cases combined and for cases classified by the following meteorological variables: season, synoptic type, precipitation type, precipitation rate, wind speed, wind direction, and air temperature. The negative values in Tables 4, 8, and 13 have the same explanation as those in Table 2.

Relationship of rainfall rate to other meteorological parameters

Table 20 presents the means and statistics of precipitation rate classified by other meteorological variables.

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TABLE 1 Correlation and Regression Analyses
of Relationships between Chemical Variables
(see text for units)

Variable y	Variable x	Year	Intercept	Slope	Correlation Coefficient
Cond.	H^+	1	17.09	0.28	0.67
		2	16.20	0.30	0.60
		1&2	16.62	0.29	0.63
Cond.	SO_4^{2-}	1	-1.67	0.39	0.85
		2	5.82	0.37	0.84
		1&2	3.00	0.37	0.84
Cond.	$(NO_3^- + NO_2^-)$	1	12.35	0.50	0.71
		2	16.18	0.43	0.65
		1&2	14.86	0.45	0.67
Cond.	NH_4^+	1	16.30	0.65	0.51
		2	18.95	0.79	0.49
		1&2	18.26	0.71	0.49
Cond.	Na^+	1	21.46	0.18	0.55
		2	20.31	0.12	0.66
		1&2	21.17	0.13	0.60
Cond.	Cl^-	1	21.19	0.13	0.55
		2	20.57	0.12	0.57
		1&2	20.79	0.12	0.56
Cond.	EX. Cl^-	1	32.01	0.27	0.33
		2	34.39	-0.10	-0.17
		1&2	35.72	0.01	0.02
Cond.	Precip. Rate	1	30.14	-0.26	-0.04
		2	35.11	-1.84	-0.17
		1&2	32.65	-0.94	-0.11
EX. Cond.	SO_4^{2-}	1	5.14	0.12	0.35
		2	6.62	0.13	0.37
		1&2	5.98	0.12	0.36
EX. Cond.	$(NO_3^- + NO_2^-)$	1	9.90	0.14	0.28
		2	9.85	0.16	0.29
		1&2	9.83	0.15	0.29
EX. Cond.	NH_4^+	1	11.46	0.19	0.20
		2	10.00	0.35	0.27
		1&2	10.72	0.27	0.24

TABLE 1 (continued) Chemical Variables

Variable y	Variable x	Year	Intercept	Slope	Correlation Coefficient
H^+	SO_4^{2-}	1	-12.55	0.64	0.67
		2	2.43	0.67	0.70
		1&2	-3.20	0.64	0.67
H^+	EX. SO_4^{2-}	1	-16.79	0.76	0.74
		2	0.51	0.82	0.78
		1&2	-6.15	0.77	0.74
H^+	$(NO_3^- + NO_2^-)$	1	11.46	0.78	0.56
		2	21.66	0.73	0.56
		1&2	17.80	0.75	0.56
H^+	NH_4^+	1	26.20	0.66	0.29
		2	30.95	1.08	0.36
		1&2	30.76	0.77	0.31
H^+	Na^+	1	45.56	-0.01	-0.02
		2	50.62	-0.03	-0.08
		1&2	48.46	-0.02	-0.05
H^+	Cl^-	1	45.15	-0.01	-0.03
		2	53.34	-0.05	-0.11
		1&2	49.65	-0.03	-0.07
H^+	EX. Cl^-	1	52.68	-0.08	-0.04
		2	50.03	0.05	0.04
		1&2	50.28	0.01	0.01
H^+	$(NO_3^- + NO_2^-)/SO_4^{2-}$	1	36.06	24.96	0.14
		2	49.98	17.69	0.11
		1&2	43.46	21.23	0.13
H^+	NH_4^+/SO_4^{2-}	1	55.38	-22.56	-0.09
		2	80.94	-86.92	-0.21
		1&2	65.94	-41.80	-0.14
H^+	$NH_4^+/(NO_3^- + NO_2^-)$	1	58.50	-9.12	-0.14
		2	76.13	-30.21	-0.26
		1&2	64.72	-14.35	-0.18
H^+	SO_4^{2-}/Na^+	1	25.37	3.72	0.40
		2	34.95	5.63	0.49
		1&2	31.78	4.23	0.42
H^+	SO_4^{2-}/Cl^-	1	8.36	18.58	0.63
		2	15.86	24.48	0.70
		1&2	14.16	20.28	0.65
H^+	Cl^-/Na^+	1	54.22	-1.49	-0.03
		2	44.12	4.08	0.07
		1&2	49.36	0.59	0.01

TABLE 1 (continued) Chemical Variables

Variable y	Variable x	Year	Intercept	Slope	Correlation Coefficient
H^+	Precip. Rate	1	40.56	1.08	0.06
		2	41.26	2.08	0.10
		1&2	41.31	1.50	0.08
SO_4^{2-}	$(NO_3^- + NO_2^-)$	1	45.73	0.98	0.67
		2	39.84	0.99	0.66
		1&2	42.22	0.99	0.66
SO_4^{2-}	NH_4^+	1	49.93	1.45	0.61
		2	36.95	2.21	0.68
		1&2	44.11	1.75	0.64
SO_4^{2-}	Precip. Rate	1	91.85	-1.65	-0.09
		2	87.89	-5.01	-0.19
		1&2	88.34	-2.92	-0.13
EX. SO_4^{2-}	$(NO_3^- + NO_2^-)$	1	43.01	0.94	0.64
		2	29.06	1.11	0.73
		1&2	35.45	1.03	0.69
EX. SO_4^{2-}	NH_4^+	1	39.72	1.73	0.61
		2	31.39	2.24	0.65
		1&2	36.38	1.91	0.63
$(NO_3^- + NO_2^-)$	NH_4^+	1	16.00	1.01	0.61
		2	17.42	0.96	0.50
		1&2	16.87	0.98	0.55
$(NO_3^- + NO_2^-)$	Precip. Rate	1	46.87	-2.24	-0.18
		2	42.82	-3.74	-0.22
		1&2	43.66	-2.83	-0.19
Na^+	Cl^-	1	-1.49	0.71	0.97
		2	0.27	0.91	0.94
		1&2	0.92	0.81	0.94
$(NO_3^- + NO_2^-)/SO_4^{2-}$	Precip. Rate	1	0.52	-0.02	-0.14
		2	0.53	-0.02	-0.13
		1&2	0.53	-0.02	-0.13
$H^+ + NH_4^+$	SO_4^{2-}	1	-11.16	0.93	0.79
		2	1.70	0.90	0.80
		1&2	-3.54	0.90	0.79
$H^+ + NH_4^+$	$(NO_3^- + NO_2^-)$	1	20.58	1.19	0.68
		2	28.24	1.03	0.66
		1&2	25.15	1.10	0.67
$H^+ + NH_4^+$	$SO_4^{2-} + (NO_3^- + NO_2^-)$	1	-10.70	0.63	0.82
		2	4.93	0.58	0.81
		1&2	-1.68	0.60	0.81

TABLE 2 Variation in Other Chemical Measurements by pH

pH	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. Conductivity ($\mu\text{mhos/cm}$)							
3.00-3.99	1	75.19	88.86	38.03	38.70	228.00	35
	2	53.29	66.12	32.64	23.50	199.00	84
	1&2	66.34	72.81	35.70	23.50	228.00	119
4.00-4.99	1	21.36	28.03	20.32	3.20	163.00	201
	2	19.37	26.24	27.15	3.20	355.00	384
	1&2	19.97	26.86	25.02	3.20	355.00	585
5.00-5.99	1	11.92	14.51	16.62	2.00	120.00	106
	2	17.16	23.52	22.18	1.60	109.00	148
	1&2	14.26	19.76	20.50	1.60	120.00	254
6.00-6.99	1	15.95	19.33	13.34	4.60	52.50	20
	2	19.48	21.91	5.57	13.90	27.60	7
	1&2	16.29	20.00	11.77	4.60	52.50	27
All	1	35.53	29.47	29.48	2.00	228.00	362
	2	24.57	30.96	30.12	1.60	355.00	624
	1&2	29.33	30.42	29.88	1.60	355.00	986
b. Excess Conductivity ($\mu\text{mhos/cm}$)							
3.00-3.99	1	23.10	21.00	48.66	-119.79	186.58	35
	2	2.09	10.70	18.59	-27.45	59.24	84
	1&2	14.61	13.73	30.78	119.79	186.58	119
4.00-4.99	1	8.63	14.71	17.35	-13.37	138.03	201
	2	5.74	12.95	25.65	-13.69	333.25	384
	1&2	6.61	13.55	23.13	-13.69	333.25	585
5.00-5.99	1	10.23	12.89	16.66	1.11	119.08	106
	2	14.94	21.68	22.42	-0.84	108.38	148
	1&2	12.34	18.01	20.65	-0.84	119.08	254
6.00-6.99	1	15.75	19.13	13.34	4.27	52.30	20
	2	19.19	21.64	5.59	13.60	27.30	7
	1&2	16.08	19.78	11.77	4.27	52.30	27
All	1	13.85	15.03	22.04	-119.79	186.58	362
	2	6.85	14.82	24.22	-27.45	333.25	623
	1&2	9.89	14.89	23.43	-119.79	333.25	985

TABLE 2 (continued) pH

pH	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
c. Sulfate Concentration ($\mu\text{eq}/\ell$)							
3.00-3.99	1	163.23	223.18	123.13	56.20	562.10	49
	2	118.80	161.57	92.29	20.80	420.60	79
	1&2	146.24	185.16	108.93	20.80	562.10	128
4.00-4.99	1	60.96	77.47	45.69	41.60	305.40	228
	2	47.23	61.17	45.51	4.20	308.10	332
	1&2	52.00	67.81	46.24	4.20	308.10	560
5.00-5.99	1	48.21	58.91	34.99	23.10	318.50	127
	2	31.85	47.43	36.90	4.20	285.20	116
	1&2	42.12	53.43	36.30	4.20	318.50	243
6.00-6.99	1	52.61	74.63	57.31	41.60	287.30	36
	2	60.26	74.45	32.63	31.20	119.30	6
	1&2	53.03	74.61	54.16	31.20	287.30	42
All	1	90.19	88.11	75.54	23.10	562.10	440
	2	59.17	77.67	73.99	4.20	674.60	594
	1&2	74.13	82.12	74.79	4.20	674.60	1034
d. Excess Sulfate Concentration ($\mu\text{eq}/\ell$)							
3.00-3.99	1	175.46	227.76	118.29	57.82	561.21	38
	2	115.68	159.22	88.90	18.59	417.13	63
	1&2	137.08	185.01	105.79	18.59	561.21	101
4.00-4.99	1	57.52	71.60	43.47	17.29	297.20	191
	2	47.59	53.81	36.76	4.18	199.35	248
	1&2	51.36	61.55	40.74	4.18	297.20	439
5.00-5.99	1	43.44	53.18	28.70	10.91	183.53	97
	2	23.35	33.15	33.06	-16.02	280.41	83
	1&2	36.02	43.94	32.29	-16.02	280.41	180
6.00-6.99	1	43.12	60.53	37.30	10.23	156.83	29
	2	54.14	68.68	37.33	25.94	117.51	5
	1&2	43.73	61.73	36.85	10.23	156.83	34
All	1	70.29	82.38	73.58	10.23	561.21	355
	2	58.88	67.08	63.58	-16.02	417.13	414
	1&2	63.94	74.14	68.76	-16.02	561.21	769

TABLE 2 (continued) pH

pH	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
e. Nitrogen Concentration ($\mu\text{eq}/\ell$)							
3.00-3.99	1	54.88	117.44	79.27	9.30	306.90	50
	2	51.19	84.36	62.75	10.00	359.80	84
	1&2	53.45	96.70	70.92	9.30	359.80	134
4.00-4.99	1	24.65	40.87	39.64	1.40	246.30	228
	2	16.28	29.84	36.39	1.40	230.60	396
	1&2	18.87	33.87	37.95	1.40	246.30	624
5.00-5.99	1	5.47	16.02	20.06	1.40	117.80	123
	2	11.68	20.47	38.15	1.40	431.10	167
	1&2	8.30	18.58	31.79	1.40	431.10	290
6.00-6.99	1	13.05	30.17	40.29	2.90	184.20	34
	2	37.68	36.83	20.07	10.00	70.00	12
	1&2	15.17	31.91	36.02	2.90	184.20	46
All	1	28.60	41.76	51.20	1.40	306.90	436
	2	21.81	35.75	45.53	1.40	431.10	777
	1&2	24.77	37.91	47.71	1.40	431.10	1213
f. Ammonium Concentration ($\mu\text{eq}/\ell$)							
3.00-3.99	1	24.74	53.30	39.00	13.30	194.10	48
	2	23.71	32.86	27.40	2.80	178.60	83
	1&2	24.37	40.35	33.48	2.80	194.10	131
4.00-4.99	1	13.75	21.21	20.02	2.80	201.90	230
	2	8.17	12.17	16.22	0.60	190.20	392
	1&2	9.89	15.51	18.23	0.60	201.90	622
5.00-5.99	1	5.96	17.02	23.83	1.10	143.10	127
	2	6.74	13.29	18.54	0.60	178.60	162
	1&2	6.31	14.93	21.07	0.60	178.60	289
6.00-6.99	1	22.90	49.98	60.12	4.40	299.50	36
	2	29.46	31.67	15.02	16.60	62.10	9
	1&2	23.53	46.31	54.50	4.40	299.50	45
All	1	15.29	25.84	31.38	1.10	299.50	441
	2	10.98	20.60	27.28	0.60	190.20	760
	1&2	12.88	22.53	28.95	0.60	299.50	1201

TABLE 2 (continued) pH

pH	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
g. Sodium Concentration ($\mu\text{eq}/\ell$)							
3.00-3.99	1	13.32	47.30	128.65	2.60	891.30	47
	2	28.72	41.48	69.41	1.70	434.80	74
	1&2	19.20	43.74	96.35	1.70	891.30	121
4.00-4.99	1	33.25	47.00	79.20	0.40	669.60	220
	2	46.46	78.19	205.04	0.40	2543.60	354
	1&2	42.29	66.24	168.90	0.40	2543.60	574
5.00-5.99	1	37.58	38.73	88.97	0.90	765.20	120
	2	78.30	103.85	146.50	0.40	730.50	131
	1&2	55.35	72.72	126.45	0.40	765.20	251
6.00-6.99	1	66.15	78.53	197.31	3.90	1078.30	30
	2	41.66	37.82	16.99	14.80	61.70	6
	1&2	64.21	71.75	180.37	3.90	1078.30	36
All	1	28.85	46.92	101.01	0.40	1078.30	417
	2	49.62	78.74	176.84	0.40	2543.60	589
	1&2	40.25	65.55	150.88	0.40	2543.60	1006
h. Chloride Concentration ($\mu\text{eq}/\ell$)							
3.00-3.99	1	23.87	69.82	197.89	5.60	1396.40	48
	2	27.33	45.55	60.25	5.60	378.00	81
	1&2	25.20	54.58	129.56	5.60	1396.40	129
4.00-4.99	1	49.80	74.12	143.11	5.60	1317.40	226
	2	50.51	73.73	126.07	5.60	1458.50	376
	1&2	50.29	73.88	132.60	5.60	1458.50	602
5.00-5.99	1	55.87	66.73	115.12	5.60	894.30	121
	2	87.51	111.31	158.14	5.60	860.40	140
	1&2	69.98	90.64	141.36	5.60	894.30	261
6.00-6.99	1	91.11	111.55	234.65	5.60	1311.80	35
	2	35.40	37.60	14.25	19.70	56.40	6
	1&2	88.02	100.73	218.01	5.60	1311.80	41
All	1	44.23	74.87	152.35	5.60	1396.40	431
	2	54.48	82.63	132.07	5.60	1458.50	666
	1&2	49.94	79.58	140.37	5.60	1458.50	1097

TABLE 2 (continued) pH

pH	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
i. Excess Chloride Concentration ($\mu\text{eq/l}$)							
3.00-3.99	1	8.23	20.19	63.31	-29.26	353.58	35
	2	-13.87	-8.41	33.68	-178.62	37.58	44
	1&2	-6.39	4.26	50.76	-178.62	353.58	79
4.00-4.99	1	13.68	15.97	49.05	-151.67	329.07	144
	2	-6.13	-12.26	60.42	-360.99	265.18	205
	1&2	0.31	-0.62	57.64	-360.99	329.07	349
5.00-5.99	1	14.71	19.61	28.10	-68.14	133.72	66
	2	10.61	-8.32	48.00	-296.37	232.64	93
	1&2	0.91	3.28	43.10	-296.37	232.64	159
6.00-6.99	1	12.61	16.50	18.69	-4.26	64.35	21
	2	-13.00	-8.89	18.01	-31.20	10.88	5
	1&2	10.86	11.62	20.87	-31.20	64.35	26
All	1	13.29	17.47	45.12	-151.67	353.58	266
	2	-7.80	-10.01	54.73	-360.99	265.18	360
	1&2	0.04	1.66	52.62	-360.99	353.58	626
j. Nitrogen/Sulfate Ratio							
3.00-3.99	1	0.35	0.65	0.67	0.04	3.59	48
	2	0.44	0.59	0.52	0.08	4.08	79
	1&2	0.38	0.61	0.58	0.04	4.08	127
4.00-4.99	1	0.41	0.54	0.41	0.10	2.48	212
	2	0.40	0.49	0.38	0.10	2.53	276
	1&2	0.40	0.51	0.40	0.10	2.53	488
5.00-5.99	1	0.23	0.33	0.24	0.06	1.31	88
	2	0.34	0.41	0.37	0.05	1.90	80
	1&2	0.27	0.37	0.31	0.05	1.90	168
6.00-6.99	1	0.25	0.36	0.22	0.10	0.99	29
	2	0.83	0.72	0.49	0.37	1.68	6
	1&2	0.29	0.42	0.31	0.10	1.68	35
All	1	0.35	0.49	0.43	0.04	3.59	377
	2	0.42	0.50	0.41	0.05	4.08	491
	1&2	0.38	0.50	0.42	0.04	4.08	868

TABLE 2 (continued) pH

pH	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
k. Ammonium/Sulfate Ratio							
3.00-3.99	1	0.15	0.30	0.40	0.05	2.85	47
	2	0.19	0.21	0.12	0.07	0.64	77
	1&2	0.17	0.24	0.27	0.05	2.85	124
4.00-4.99	1	0.24	0.27	0.14	0.06	0.89	212
	2	0.21	0.22	0.14	0.04	0.94	252
	1&2	0.22	0.24	0.14	0.04	0.94	464
5.00-5.99	1	0.21	0.34	0.31	0.08	2.15	86
	2	0.30	0.32	0.19	0.03	0.90	74
	1&2	0.24	0.33	0.26	0.03	2.15	160
6.00-6.99	1	0.38	0.60	0.51	0.11	2.51	34
	2	0.71	0.58	0.36	0.20	1.19	6
	1&2	0.40	0.59	0.49	0.11	2.51	40
All	1	0.20	0.32	0.29	0.05	2.85	379
	2	0.22	0.27	0.26	0.03	2.88	461
	1&2	0.21	0.29	0.28	0.03	2.88	840
l. Ammonium/Nitrate Ratio							
3.00-3.99	1	0.50	0.76	1.18	0.16	6.71	48
	2	0.49	0.44	0.26	0.07	1.25	82
	1&2	0.50	0.56	0.76	0.07	6.71	130
4.00-4.99	1	0.75	0.67	0.43	0.07	3.08	204
	2	0.71	0.59	0.44	0.05	2.86	289
	1&2	0.73	0.62	0.44	0.05	3.08	493
5.00-5.99	1	1.28	1.30	1.86	0.22	15.49	80
	2	0.84	0.95	0.81	0.06	4.19	103
	1&2	1.04	1.11	1.38	0.06	15.49	183
6.00-6.99	1	2.10	1.97	1.32	0.37	6.61	27
	2	1.36	1.22	0.77	0.27	2.55	9
	1&2	2.00	1.78	1.24	0.27	6.61	36
All	1	0.73	0.92	1.16	0.07	15.49	359
	2	0.69	0.84	1.07	0.05	9.54	576
	1&2	0.71	0.87	1.10	0.05	15.49	935

TABLE 2 (continued) pH

pH	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
m. Sulfate/Sodium Ratio							
3.00-3.99	1	13.47	14.13	19.09	0.33	78.64	38
	2	8.49	9.36	10.23	0.36	44.30	63
	1&2	10.27	11.15	14.32	0.33	78.64	101
4.00-4.99	1	4.35	4.70	5.08	0.21	30.58	191
	2	2.86	2.96	3.74	0.14	18.50	248
	1&2	3.43	3.72	4.45	0.14	30.58	439
5.00-5.99	1	3.99	4.18	4.17	0.14	20.97	97
	2	0.85	1.11	2.06	0.08	13.29	83
	1&2	2.83	2.76	3.69	0.08	20.97	180
6.00-6.99	1	2.29	3.47	3.23	0.16	13.67	29
	2	1.92	3.02	3.08	0.72	8.06	5
	1&2	2.27	3.41	3.17	0.16	13.67	34
All	1	5.54	5.47	8.16	0.14	78.64	355
	2	3.76	3.55	5.64	0.08	44.30	414
	1&2	4.55	4.43	6.98	0.08	78.64	769
n. Sulfate/Chloride Ratio							
3.00-3.99	1	5.97	6.72	5.24	0.21	24.35	36
	2	3.98	4.35	3.30	0.37	12.55	51
	1&2	4.64	5.33	4.35	0.21	24.35	87
4.00-4.99	1	1.43	1.69	1.40	0.16	7.99	151
	2	1.09	1.21	1.19	0.13	6.01	190
	1&2	1.21	1.42	1.31	0.13	7.99	341
5.00-5.99	1	0.96	1.34	1.32	0.08	6.55	72
	2	0.54	0.56	0.45	0.10	2.35	82
	1&2	0.76	0.93	1.04	0.08	6.55	154
6.00-6.99	1	0.97	1.51	1.22	0.11	4.89	24
	2	1.82	2.17	1.22	0.92	4.23	6
	1&2	1.03	1.64	1.23	0.11	4.89	30
All	1	1.80	2.22	2.83	0.08	24.35	283
	2	1.47	1.57	1.99	0.10	12.55	352
	1&2	1.60	1.86	2.42	0.08	24.35	635

TABLE 2 (continued) pH

pH	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
o. Chloride/Sodium Ratio							
3.00-3.99	1	1.51	2.04	2.08	0.79	11.75	35
	2	0.99	1.35	0.91	0.41	5.26	44
	1&2	1.16	1.66	1.57	0.41	11.75	79
4.00-4.99	1	1.87	1.89	1.69	0.45	13.56	144
	2	1.35	1.37	1.45	0.41	13.33	205
	1&2	1.52	1.58	1.57	0.41	13.56	349
5.00-5.99	1	2.21	2.19	2.25	0.84	16.54	66
	2	1.11	1.23	0.60	0.33	5.26	93
	1&2	1.61	1.63	1.59	0.33	16.54	159
6.00-6.99	1	1.44	1.65	0.88	1.06	5.00	21
	2	0.94	1.11	0.55	0.45	1.91	5
	1&2	1.40	1.55	0.85	0.45	5.00	26
All	1	1.91	1.96	1.85	0.45	16.54	266
	2	1.24	1.32	1.19	0.33	13.33	360
	1&2	1.49	1.59	1.53	0.33	16.54	626

TABLE 3 Variation in Conductivity ($\mu\text{mhos/cm}$)

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	35.53	29.47	29.48	2.00	228.00	362
	2	24.57	30.96	30.12	1.60	355.00	624
	1&2	29.33	30.42	29.88	1.60	355.00	986
b. Season							
Winter	1	17.21	28.51	35.18	3.00	228.00	76
	2	14.06	19.91	17.99	1.60	105.00	201
	1&2	14.92	22.27	24.20	1.60	228.00	277
Spring	1	21.32	26.28	19.50	3.20	98.70	118
	2	20.72	27.65	21.63	4.10	110.00	114
	1&2	21.01	26.95	20.54	3.20	110.00	232
Summer	1	56.35	43.75	44.08	2.00	170.00	62
	2	37.81	41.76	32.27	7.00	199.00	108
	1&2	49.49	42.48	36.90	2.00	199.00	170
Fall	1	18.18	25.36	20.07	2.50	100.00	106
	2	29.87	38.10	37.91	3.40	355.00	201
	1&2	26.26	33.70	33.38	2.50	355.00	307
c. Synoptic Type							
Low	1	19.45	25.60	24.29	3.30	120.00	61
	2	26.95	22.48	11.95	8.00	56.00	42
	1&2	22.84	24.33	20.17	3.30	120.00	103
Warm Front	1	16.79	24.77	25.10	2.50	228.00	210
	2	19.57	28.29	24.21	1.60	168.00	310
	1&2	18.49	26.87	24.61	1.60	228.00	520
Cold Front	1	63.39	46.46	35.55	4.80	170.00	54
	2	26.68	29.81	23.92	2.90	107.00	123
	1&2	48.00	34.89	29.92	2.90	170.00	177
Occluded Front	1	19.74	17.98	15.90	4.60	58.90	12
	2	29.33	41.81	57.47	4.40	355.00	53
	1&2	27.78	37.41	53.04	4.40	355.00	65
Stationary Front	1	75.00	75.00	-	75.00	75.00	1
	2	35.24	35.18	30.31	6.70	147.60	79
	1&2	35.93	35.68	30.45	6.70	147.60	80
Squall Line	1	62.63	59.14	44.10	12.00	170.00	14
	2	40.08	50.53	47.94	15.50	199.00	16
	1&2	49.60	54.54	45.60	12.00	199.00	30
Hurricane	1	28.00	27.79	40.31	2.00	120.00	10
	2	-	-	-	-	-	0
	1&2	28.00	27.79	40.31	2.00	120.00	10

TABLE 3 (continued) Conductivity

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	18.27	24.32	24.77	2.50	228.00	257
	2	21.35	29.82	30.21	1.60	355.00	410
	1&2	20.15	27.70	28.34	1.60	355.00	667
Rainshower	1	30.92	47.22	33.39	7.90	170.00	35
	2	49.75	54.98	36.91	9.60	199.00	66
	1&2	41.84	52.29	35.76	7.90	199.00	101
Thundershower	1	60.02	53.77	44.70	2.00	170.00	34
	2	34.15	33.90	25.40	3.20	107.00	31
	1&2	50.22	44.29	37.85	2.00	170.00	65
Mixed	1	29.66	28.75	9.78	20.00	42.00	4
	2	10.53	16.00	11.45	4.50	50.60	19
	1&2	12.72	18.22	12.03	4.50	50.60	23
Sleet	1	44.00	44.00	-	44.00	44.00	1
	2	13.38	14.25	8.10	2.90	30.30	20
	1&2	14.09	15.66	10.22	2.90	44.00	21
Snow	1	20.96	25.10	21.52	3.10	82.00	31
	2	20.75	23.39	18.82	3.20	105.00	78
	1&2	20.80	23.88	19.54	3.10	105.00	109
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	34.99	35.09	30.40	3.10	170.00	158
	2	38.93	38.87	36.31	3.10	355.00	290
	1&2	37.52	37.54	34.36	3.10	355.00	448
1.1 - 2.5	1	27.02	28.61	30.56	2.00	228.00	113
	2	27.41	28.36	24.18	2.90	137.30	174
	1&2	27.26	28.46	26.83	2.00	228.00	287
2.6 - 6.0	1	17.06	17.63	16.69	3.60	100.00	56
	2	20.11	20.23	16.38	1.60	86.60	110
	1&2	19.11	19.35	16.48	1.60	100.00	166
6.1 - 12.0	1	50.42	25.03	33.22	2.50	120.00	26
	2	15.40	15.05	12.09	2.70	53.30	41
	1&2	35.92	18.92	23.03	2.50	120.00	67
>12.0	1	27.99	28.04	31.08	3.00	80.00	9
	2	32.64	30.43	26.19	4.90	80.50	9
	1&2	30.58	29.24	27.91	3.00	80.50	18

TABLE 3 (continued) Conductivity

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (m sec ⁻¹) at 108 m							
0 - 2	1	18.40	26.87	18.85	9.70	69.50	18
	2	29.12	36.62	24.49	11.30	96.60	19
	1&2	22.45	31.87	22.18	9.70	96.60	37
3 - 5	1	50.01	31.10	31.21	2.00	170.00	134
	2	31.90	35.41	30.98	1.60	199.00	164
	1&2	44.55	33.47	31.11	1.60	199.00	298
6 - 9	1	28.48	30.95	32.07	3.10	228.00	131
	2	26.46	31.18	33.65	2.70	355.00	282
	1&2	26.97	31.10	33.12	2.70	355.00	413
≥ 10	1	17.01	24.85	23.23	3.00	120.00	79
	2	19.28	26.84	22.05	2.90	106.00	140
	1&2	18.35	26.12	22.45	2.90	120.00	219
g. Wind Direction at 108 m							
N	1	19.05	21.66	13.23	4.70	54.00	29
	2	26.29	28.00	17.18	8.50	107.00	33
	1&2	22.13	25.03	15.66	4.70	107.00	62
NE	1	15.24	23.52	21.49	2.00	100.00	47
	2	18.01	23.49	20.79	1.60	107.00	210
	1&2	17.59	23.50	20.88	1.60	107.00	257
E	1	19.22	25.21	23.06	3.10	120.00	70
	2	27.02	33.67	24.61	6.20	128.30	131
	1&2	23.38	30.72	24.36	3.10	128.30	201
SE	1	49.20	35.42	39.55	2.50	228.00	64
	2	28.31	42.84	38.88	4.50	235.00	76
	1&2	42.22	39.45	39.22	2.50	235.00	140
S	1	20.53	28.37	29.30	4.80	170.00	54
	2	17.58	30.83	45.44	2.90	355.00	83
	1&2	18.49	29.86	39.76	2.90	355.00	137
SW	1	39.73	44.32	34.38	3.30	170.00	43
	2	35.67	34.04	25.45	3.40	106.00	62
	1&2	36.83	38.25	29.71	3.30	170.00	105
W	1	48.99	31.41	31.79	7.60	120.00	15
	2	51.61	44.26	44.23	4.80	199.00	18
	1&2	50.70	38.42	39.04	4.80	199.00	33
NW	1	49.02	24.86	25.68	3.10	120.00	40
	2	28.20	30.04	19.34	9.00	57.40	11
	1&2	45.02	25.97	24.37	3.10	120.00	51

TABLE 3 (continued) Conductivity

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	63.00	63.00	-	63.00	63.00	1
	2	77.30	77.30	-	77.30	77.30	1
	1&2	63.09	70.15	10.11	63.00	77.30	2
-5.0 to -0.1	1	27.25	30.26	21.31	8.00	82.00	21
	2	16.58	18.31	12.44	2.90	70.40	79
	1&2	18.33	20.82	15.42	2.90	82.00	100
0.0 to 4.9	1	19.01	23.83	16.38	3.10	90.00	56
	2	17.21	21.35	17.88	4.50	105.00	100
	1&2	17.92	22.24	17.35	3.10	105.00	156
5.0 to 9.9	1	15.14	23.25	26.81	3.20	228.00	96
	2	21.29	36.06	42.44	1.60	355.00	126
	1&2	18.78	30.52	36.99	1.60	355.00	222
10.0 to 14.9	1	24.23	31.12	27.58	3.00	163.00	75
	2	20.62	27.65	22.22	2.90	128.30	176
	1&2	21.59	28.69	23.94	2.90	163.00	251
15.0 to 19.9	1	23.47	35.59	30.59	2.00	100.00	34
	2	30.18	41.35	29.86	3.40	147.60	76
	1&2	28.08	39.57	30.07	2.00	147.60	110
20.0 to 24.9	1	52.74	34.93	38.99	2.50	170.00	77
	2	41.64	44.31	32.42	8.00	168.00	62
	1&2	49.44	39.11	36.38	2.50	170.00	139
25.0 to 29.9	1	56.91	84.70	49.92	49.40	120.00	2
	2	49.92	90.70	73.47	43.30	199.00	4
	1&2	53.81	88.70	61.21	43.30	199.00	6

TABLE 4 Variation in Excess Conductivity ($\mu\text{mhos/cm}$)

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	13.85	15.03	22.04	-119.79	186.58	362
	2	6.85	14.82	24.22	-27.45	333.25	623
	1&2	9.89	14.89	24.43	-119.79	333.25	985
b. Season							
Winter	1	11.19	19.62	28.88	1.23	186.58	76
	2	6.98	11.88	16.22	-10.27	88.12	201
	1&2	8.11	14.01	20.72	-10.27	186.58	277
Spring	1	7.15	11.38	13.49	-7.28	56.33	118
	2	-0.32	6.87	18.40	-27.45	82.00	114
	1&2	3.31	9.16	16.22	-27.45	82.00	232
Summer	1	19.36	14.36	35.24	-119.79	119.08	62
	2	2.64	11.31	14.84	-16.16	73.10	108
	1&2	13.18	12.42	24.28	-119.79	119.08	170
Fall	1	11.30	16.19	10.84	2.11	55.45	106
	2	14.36	24.18	33.44	-10.71	333.25	200
	1&2	13.41	21.41	28.01	-10.71	333.25	306
c. Synoptic Type							
Low	1	8.75	11.14	16.41	-82.86	50.22	61
	2	14.23	12.13	10.72	-1.38	47.75	41
	1&2	11.22	11.54	14.35	-82.86	50.22	102
Warm Front	1	8.61	14.44	20.67	-7.28	186.58	210
	2	6.39	14.21	21.31	-27.45	108.38	310
	1&2	7.25	14.31	21.03	-27.45	186.58	520
Cold Front	1	21.42	18.46	28.80	-119.79	78.83	54
	2	6.05	11.71	15.19	-16.16	73.10	123
	1&2	14.97	13.77	20.48	-119.79	78.83	177
Occluded Front	1	11.67	11.38	8.95	0.56	28.90	12
	2	14.61	29.56	56.14	-22.99	333.25	53
	1&2	14.13	26.20	51.24	-22.99	333.25	65
Stationary Front	1	16.50	16.50	-	16.50	16.50	1
	2	10.88	15.61	12.05	-10.71	54.89	79
	1&2	10.98	15.62	11.97	-10.71	54.89	80
Squall Line	1	14.16	21.93	22.18	-13.37	79.39	14
	2	-1.10	4.87	10.66	-7.55	29.32	16
	1&2	5.34	12.83	18.82	-13.37	79.39	30
Hurricane	1	27.19	26.96	40.37	1.15	119.08	10
	2	-	-	-	-	-	0
	1&2	27.19	26.96	40.37	1.15	119.08	10

TABLE 4 (continued) Excess Conductivity

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	9.05	14.45	19.44	-7.28	186.58	257
	2	8.35	16.85	27.16	-27.45	333.25	409
	1&2	8.62	15.92	24.48	-27.45	333.25	666
Rainshower	1	13.84	23.43	16.77	-0.50	79.39	35
	2	8.69	16.75	18.43	-16.16	73.10	66
	1&2	10.85	19.07	18.07	-16.16	79.39	101
Thundershower	1	20.33	10.89	42.03	-119.79	83.88	34
	2	1.47	3.94	12.10	-11.13	45.74	31
	1&2	13.19	7.57	31.49	-119.79	83.88	65
Mixed	1	6.63	6.54	5.35	-0.82	12.00	4
	2	2.33	6.03	7.42	-4.70	28.93	19
	1&2	2.82	6.12	7.00	-4.70	28.93	23
Sleet	1	37.29	37.29	-	37.29	37.29	1
	2	2.27	2.90	8.30	-10.27	22.35	20
	1&2	3.09	4.54	11.03	-10.27	37.29	21
Snow	1	12.24	15.25	14.91	0.56	65.58	31
	2	10.02	12.05	17.87	-22.99	88.12	78
	1&2	10.60	12.96	17.08	-22.99	88.12	109
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	18.06	18.50	23.46	-119.79	138.03	158
	2	22.76	22.92	30.12	-27.45	333.25	289
	1&2	21.08	21.36	28.00	-119.79	333.25	447
1.1 - 2.5	1	14.35	15.64	24.99	-82.86	186.58	113
	2	10.93	11.58	16.63	-19.08	88.12	174
	1&2	12.24	13.18	20.39	-82.86	186.58	287
2.6 - 6.0	1	7.10	7.47	8.56	-5.44	34.90	56
	2	4.30	4.83	10.76	-22.99	45.30	110
	1&2	5.22	5.72	10.12	-22.99	45.30	166
6.1 - 12.0	1	17.80	10.13	18.11	-7.28	83.64	26
	2	1.57	1.89	6.51	-10.18	25.73	41
	1&2	11.08	5.09	12.90	-10.18	83.64	67
>12.0	1	7.41	7.35	7.16	-3.04	17.33	9
	2	-2.14	-1.82	5.19	-11.13	4.70	9
	1&2	2.09	2.76	7.69	-11.13	17.33	18

TABLE 4 (continued) Excess Conductivity

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (m sec^{-1}) at 108 m							
0 - 2	1	5.46	11.47	9.93	-4.97	32.74	18
	2	-1.23	13.06	19.34	-22.99	54.42	19
	1&2	2.93	12.25	15.31	-22.99	54.42	37
3 - 5	1	15.88	13.31	16.66	-82.86	79.39	134
	2	6.61	13.76	16.34	-19.08	80.88	163
	1&2	13.09	13.56	16.46	-82.86	80.88	297
6 - 9	1	13.04	15.62	27.62	-119.79	186.58	131
	2	6.76	15.51	29.73	-16.16	333.25	282
	1&2	8.34	15.54	29.04	-119.79	333.25	413
≥ 10	1	11.79	17.76	21.55	-5.44	119.08	79
	2	8.31	16.51	21.17	-27.45	104.57	140
	1&2	9.74	16.96	21.27	-27.45	119.08	219
g. Wind Direction at 108 m							
N	1	13.54	15.10	9.20	4.11	50.22	29
	2	13.36	15.89	15.04	1.92	80.88	33
	1&2	13.46	15.52	12.56	1.92	80.88	62
NE	1	6.51	11.07	11.77	-7.28	41.90	47
	2	6.41	12.58	18.00	-22.99	94.54	210
	1&2	6.43	12.30	17.02	-22.99	94.54	257
E	1	10.03	12.87	19.96	-27.98	119.08	70
	2	9.62	18.07	23.94	-27.45	108.38	131
	1&2	9.81	16.26	22.72	-27.98	119.08	201
SE	1	17.96	20.56	31.01	-3.04	186.58	64
	2	8.03	18.33	30.45	-12.24	221.28	75
	1&2	14.64	19.35	30.62	-12.24	221.28	139
S	1	11.48	16.49	17.69	-4.78	79.39	54
	2	4.68	15.41	38.49	-9.11	333.25	83
	1&2	6.79	15.83	31.87	-9.11	333.25	137
SW	1	12.90	14.85	35.13	-119.79	83.88	43
	2	4.62	12.18	16.24	-16.16	73.10	62
	1&2	6.98	13.28	25.59	-119.79	83.88	105
W	1	19.52	16.98	15.02	0.56	55.85	15
	2	4.66	13.11	13.44	-10.68	49.30	18
	1&2	9.81	14.87	14.09	-10.68	55.85	33
NW	1	12.42	12.04	9.26	0.62	40.58	40
	2	1.63	4.84	9.94	-8.86	22.95	11
	1&2	10.35	10.49	9.78	-8.86	40.58	51

TABLE 4 (continued) Excess Conductivity

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	33.69	33.69	-	33.69	33.69	1
	2	49.30	49.30	-	49.30	49.30	1
	1&2	33.78	41.49	11.04	33.69	49.30	2
-5.0 to -0.1	1	16.34	18.85	15.58	3.90	65.58	21
	2	9.03	9.22	11.16	-10.27	52.73	79
	1&2	10.23	11.24	12.76	-10.27	65.58	100
0.0 to 4.9	1	10.31	14.32	12.63	-0.90	57.86	56
	2	4.68	10.61	17.59	-22.99	88.12	100
	1&2	6.89	11.94	16.04	-22.99	88.12	156
5.0 to 9.9	1	5.10	11.32	21.45	-7.28	186.58	96
	2	7.51	21.82	41.93	-27.45	333.25	126
	1&2	6.53	17.28	34.92	-27.45	333.25	222
10.0 to 14.9	1	12.41	17.94	20.51	-4.78	138.03	75
	2	9.00	14.84	17.87	-10.18	108.38	176
	1&2	9.91	15.77	18.71	-10.18	138.03	251
15.0 to 19.9	1	13.29	20.48	17.71	1.15	83.88	34
	2	5.63	14.49	16.36	-16.16	59.24	75
	1&2	8.02	16.36	16.94	-16.16	83.88	109
20.0 to 24.9	1	18.41	13.10	30.53	-119.79	119.08	77
	2	3.06	13.96	16.44	-11.13	73.10	62
	1&2	13.85	13.49	25.16	-119.79	119.08	139
25.0 to 29.9	1	19.30	35.40	28.92	14.95	55.85	2
	2	8.15	19.25	15.13	0.31	33.36	4
	1&2	14.36	24.63	19.34	0.31	55.85	6

TABLE 5 Variation in pH

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	4.18	4.37	-	3.21	7.00	506
	2	4.28	4.34	-	3.25	6.30	699
	1&2	4.23	4.35	-	3.21	7.00	1205
b. Season							
Winter	1	4.66	4.49	-	3.74	6.30	119
	2	4.67	4.62	-	3.88	6.10	218
	1&2	4.67	4.57	-	3.74	6.30	337
Spring	1	4.37	4.36	-	3.64	6.70	148
	2	4.20	4.21	-	3.57	6.30	122
	1&2	4.27	4.28	-	3.57	6.70	270
Summer	1	3.95	4.06	-	3.21	6.70	90
	2	3.97	4.06	-	3.25	6.05	120
	1&2	3.96	4.06	-	3.21	6.70	210
Fall	1	4.68	4.63	-	3.68	7.00	149
	2	4.34	4.44	-	3.41	6.10	239
	1&2	4.42	4.50	-	3.41	7.00	388
c. Synoptic Type							
Low	1	4.45	4.39	-	3.21	7.00	87
	2	4.43	4.62	-	3.98	6.10	52
	1&2	4.44	4.46	-	3.21	7.00	139
Warm Front	1	4.57	4.46	-	3.32	6.70	286
	2	4.40	4.38	-	3.40	6.10	336
	1&2	4.46	4.42	-	3.32	6.70	622
Cold Front	1	3.90	4.17	-	3.26	6.52	78
	2	4.21	4.30	-	3.62	6.10	143
	1&2	4.01	4.25	-	3.26	6.52	221
Occluded Front	1	4.69	4.80	-	4.04	6.70	19
	2	4.35	4.45	-	3.85	6.30	58
	1&2	4.40	4.51	-	3.85	6.70	77
Stationary Front	1	3.75	3.75	-	3.75	3.75	1
	2	4.14	4.27	-	3.53	6.10	89
	1&2	4.13	4.26	-	3.53	6.10	90
Squall Line	1	3.84	4.02	-	3.48	6.52	25
	2	3.90	3.92	-	3.25	5.11	20
	1&2	3.88	3.97	-	3.25	6.52	45
Hurricane	1	5.61	5.60	-	5.36	5.96	10
	2	-	-	-	-	-	0
	1&2	5.61	5.60	-	5.36	5.96	10

TABLE 5 (continued) pH

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	4.53	4.50	-	3.32	7.00	346
	2	4.41	4.44	-	3.55	6.10	458
	1&2	4.45	4.46	-	3.32	7.00	804
Rainshower	1	4.28	4.17	-	3.56	6.70	59
	2	3.92	3.99	-	3.25	6.30	80
	1&2	4.04	4.06	-	3.25	6.70	139
Thundershower	1	3.92	3.89	-	3.21	5.96	35
	2	4.00	4.04	-	3.63	4.88	31
	1&2	3.95	3.95	-	3.21	5.96	66
Mixed	1	4.18	4.26	-	4.04	5.16	5
	2	4.61	4.53	-	3.90	5.92	21
	1&2	4.53	4.46	-	3.90	5.92	26
Sleet	1	4.69	4.69	-	4.69	4.69	1
	2	4.47	4.46	-	4.11	5.54	20
	1&2	4.48	4.47	-	4.11	5.54	21
Snow	1	4.52	4.50	-	3.82	6.10	60
	2	4.52	4.49	-	3.85	5.64	89
	1&2	4.52	4.49	-	3.82	6.10	149
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	4.32	4.36	-	3.26	7.00	291
	2	4.34	4.37	-	3.25	6.30	361
	1&2	4.33	4.37	-	3.25	7.00	652
1.1 - 2.5	1	4.38	4.36	-	3.21	6.40	122
	2	4.30	4.30	-	3.41	5.64	176
	1&2	4.33	4.32	-	3.21	6.40	298
2.6 - 6.0	1	4.52	4.51	-	3.66	6.70	57
	2	4.33	4.34	-	3.69	5.46	112
	1&2	4.38	4.39	-	3.66	6.70	169
6.1 - 12.0	1	4.00	4.34	-	3.48	5.96	26
	2	4.38	4.40	-	3.77	5.28	41
	1&2	4.12	4.38	-	3.48	5.96	67
>12.0	1	4.17	4.16	-	3.72	5.46	10
	2	3.98	4.01	-	3.63	5.12	9
	1&2	4.05	4.08	-	3.63	5.46	19

TABLE 5 (continued) pH

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	4.43	4.43	-	3.80	6.70	23
	2	4.06	4.22	-	3.65	6.05	25
	1&2	4.25	4.30	-	3.65	6.70	48
3 - 5	1	3.99	4.29	-	3.21	7.00	202
	2	4.13	4.26	-	3.25	6.30	205
	1&2	4.03	4.27	-	3.21	7.00	407
6 - 9	1	4.33	4.34	-	3.26	6.52	185
	2	4.23	4.34	-	3.40	6.10	308
	1&2	4.25	4.34	-	3.26	6.52	493
≥ 10	1	4.79	4.69	-	3.98	6.70	96
	2	4.49	4.51	-	3.57	5.89	142
	1&2	4.59	4.57	-	3.57	6.70	238
g. Wind Direction at 108 m							
N	1	4.78	4.75	-	4.00	6.10	42
	2	4.43	4.49	-	4.02	6.05	43
	1&2	4.60	4.60	-	4.00	6.10	85
NE	1	4.59	4.49	-	3.68	6.70	68
	2	4.46	4.51	-	3.65	6.10	239
	1&2	4.48	4.51	-	3.65	6.70	307
E	1	4.54	4.44	-	3.41	7.00	93
	2	4.28	4.34	-	3.55	6.30	139
	1&2	4.39	4.38	-	3.41	7.00	232
SE	1	4.02	4.23	-	3.32	6.70	83
	2	4.21	4.15	-	3.41	6.10	80
	1&2	4.07	4.19	-	3.32	6.70	163
S	1	4.53	4.43	-	3.56	6.70	67
	2	4.41	4.33	-	3.40	5.89	86
	1&2	4.44	4.37	-	3.40	6.70	153
SW	1	4.11	4.14	-	3.21	6.52	66
	2	4.03	4.23	-	3.59	6.10	73
	1&2	4.06	4.19	-	3.21	6.52	139
W	1	4.01	4.45	-	3.71	6.40	27
	2	3.86	4.12	-	3.25	6.05	25
	1&2	3.93	4.26	-	3.25	6.40	52
NW	1	3.98	4.44	-	3.48	6.10	60
	2	4.10	4.18	-	3.77	5.52	14
	1&2	4.00	4.38	-	3.48	6.10	74

TABLE 5 (continued) pH

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	4.25	4.30	-	3.98	4.97	6
	2	4.07	4.07	-	4.07	4.07	1
	1&2	4.25	4.26	-	3.98	4.97	7
-5.0 to -0.1	1	4.50	4.51	-	3.82	6.10	44
	2	4.66	4.57	-	3.88	5.64	91
	1&2	4.62	4.55	-	3.82	6.10	135
0.0 to 4.9	1	4.53	4.45	-	3.74	5.92	80
	2	4.43	4.53	-	3.85	6.10	115
	1&2	4.47	4.50	-	3.74	6.10	195
5.0 to 9.9	1	4.52	4.48	-	3.80	6.70	120
	2	4.38	4.39	-	3.57	6.10	141
	1&2	4.43	4.43	-	3.57	6.70	261
10.0 to 14.9	1	4.45	4.44	-	3.64	6.70	94
	2	4.45	4.43	-	3.55	6.30	191
	1&2	4.45	4.43	-	3.55	6.70	285
15.0 to 19.9	1	4.36	4.38	-	3.66	6.40	53
	2	4.13	4.13	-	3.53	6.10	84
	1&2	4.20	4.21	-	3.53	6.40	137
20.0 to 24.9	1	3.98	4.17	-	3.21	7.00	107
	2	3.94	4.08	-	3.40	6.05	71
	1&2	3.97	4.13	-	3.21	7.00	178
25.0 to 29.9	1	3.94	3.82	-	3.71	3.98	2
	2	3.89	3.69	-	3.25	4.52	5
	1&2	3.92	3.73	-	3.25	4.52	7

TABLE 6 Variation in Hydrogen Ion ($\mu\text{eq}/\ell$)

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	65.61	42.74	71.11	0.10	616.60	506
	2	52.98	45.55	57.98	0.50	562.30	699
	1&2	58.60	44.37	63.81	0.10	616.60	1205
b. Season							
Winter	1	21.82	32.49	37.25	0.50	182.00	119
	2	21.22	23.73	23.67	0.80	131.80	218
	1&2	21.40	26.82	29.44	0.50	182.00	337
Spring	1	42.85	44.00	41.94	0.20	229.10	148
	2	63.66	61.48	53.56	0.50	269.20	122
	1&2	53.39	51.89	48.25	0.20	269.20	270
Summer	1	112.39	86.60	137.59	0.20	616.60	90
	2	106.16	86.57	82.11	0.90	562.30	120
	1&2	110.15	86.59	109.09	0.20	616.60	210
Fall	1	20.68	23.18	37.11	0.10	208.90	149
	2	46.06	36.71	55.00	0.80	389.00	239
	1&2	38.03	31.52	49.30	0.10	389.00	388
c. Synoptic Type							
Low	1	35.60	40.96	85.83	0.10	616.60	87
	2	37.40	24.11	23.30	0.80	104.70	52
	1&2	36.37	34.66	69.70	0.10	616.60	139
Warm Front	1	26.61	34.47	49.79	0.20	478.60	286
	2	39.48	41.32	48.63	0.80	398.10	336
	1&2	34.35	38.17	49.25	0.20	478.60	622
Cold Front	1	125.69	68.01	102.01	0.30	549.50	78
	2	61.63	49.56	54.79	0.80	239.90	143
	1&2	98.76	56.07	75.22	0.30	549.50	221
Occluded Front	1	20.19	15.71	23.18	0.20	91.20	19
	2	44.44	35.50	37.24	0.50	141.30	58
	1&2	39.77	30.61	35.23	0.20	141.30	77
Stationary Front	1	177.80	177.80	-	177.80	177.80	1
	2	71.63	53.20	72.10	0.80	295.10	89
	1&2	73.39	54.58	72.89	0.80	295.10	90
Squall Line	1	143.21	95.93	94.51	0.30	331.10	25
	2	124.51	121.59	122.79	7.80	562.30	20
	1&2	133.13	107.33	107.46	0.30	562.30	45
Hurricane	1	2.45	2.52	1.22	1.10	4.40	10
	2	-	-	-	-	-	0
	1&2	2.45	2.52	1.22	1.10	4.40	10

TABLE 6 (continued) H Ion

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	29.48	31.53	50.24	0.10	478.60	346
	2	39.08	36.50	44.26	0.80	281.80	458
	1&2	35.26	34.36	46.96	0.10	478.60	804
Rainshower	1	52.91	67.02	76.12	0.20	275.40	59
	2	120.85	101.24	102.62	0.50	562.30	80
	1&2	91.21	86.72	93.55	0.20	562.30	139
Thundershower	1	120.71	130.12	165.29	1.10	616.60	35
	2	99.34	91.06	60.22	13.20	234.40	31
	1&2	112.77	111.77	127.87	1.10	616.60	66
Mixed	1	65.95	55.38	33.33	6.90	91.20	5
	2	24.80	29.55	26.78	1.20	125.90	21
	1&2	29.74	34.52	29.32	1.20	125.90	26
Sleet	1	20.40	20.40	-	20.40	20.40	1
	2	33.76	34.48	28.82	2.90	77.60	20
	1&2	33.45	33.81	28.26	2.90	77.60	21
Snow	1	30.31	31.86	31.86	0.80	151.40	60
	2	30.38	32.43	34.88	2.30	141.30	89
	1&2	30.36	32.20	33.59	0.80	151.40	149
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	47.39	43.71	76.94	0.10	549.50	291
	2	46.19	42.21	62.93	0.50	562.30	361
	1&2	46.69	42.88	69.48	0.10	562.30	652
1.1 - 2.5	1	41.90	43.32	67.40	0.40	616.60	122
	2	49.89	50.69	56.57	2.30	389.00	176
	1&2	46.72	47.68	61.23	0.40	616.60	298
2.6 - 6.0	1	30.22	30.77	38.26	0.20	218.80	57
	2	47.14	46.03	44.07	3.50	204.20	112
	1&2	41.61	40.89	42.70	0.20	218.80	169
6.1 - 12.0	1	99.13	45.28	75.11	1.10	331.10	26
	2	42.04	40.01	37.24	5.20	169.80	41
	1&2	75.50	42.06	54.63	1.10	331.10	67
>12.0	1	68.23	68.91	73.73	3.50	190.50	10
	2	105.71	98.04	82.77	7.60	234.40	9
	1&2	88.19	82.71	77.37	3.50	234.40	19

TABLE 6 (continued) H Ion

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	37.26	37.50	44.50	0.20	158.50	23
	2	86.41	60.86	63.55	0.90	223.90	25
	1&2	56.20	49.67	55.93	0.20	223.90	48
3 - 5	1	101.25	51.65	87.21	0.10	616.60	202
	2	73.70	55.30	73.86	0.50	562.30	205
	1&2	93.11	53.49	80.68	0.10	616.60	407
6 - 9	1	47.28	45.32	68.56	0.30	549.50	185
	2	59.42	45.21	52.54	0.80	398.10	308
	1&2	56.21	45.25	58.99	0.30	549.50	493
> 10	1	16.05	20.27	23.07	0.20	104.70	96
	2	32.70	31.00	40.05	1.30	269.20	142
	1&2	25.87	26.68	34.57	0.20	269.20	238
g. Wind Direction at 108 m							
N	1	16.52	17.84	18.62	0.80	100.00	42
	2	37.19	32.24	26.39	0.90	95.50	43
	1&2	25.08	25.12	23.88	0.80	100.00	85
NE	1	25.80	32.70	40.56	0.20	208.90	68
	2	34.33	30.74	37.99	0.80	223.90	239
	1&2	32.96	31.17	38.51	0.20	223.90	307
E	1	28.68	35.97	49.67	0.10	389.00	93
	2	52.21	45.24	53.14	0.50	281.80	139
	1&2	40.98	41.52	51.87	0.10	389.00	232
SE	1	95.49	59.46	87.47	0.20	478.60	83
	2	61.52	71.18	71.84	0.80	389.00	80
	1&2	84.25	65.21	80.15	0.20	478.60	163
S	1	29.75	37.19	52.77	0.20	275.40	67
	2	39.27	47.12	67.52	1.30	398.10	86
	1&2	36.23	42.77	61.50	0.20	398.10	153
SW	1	77.32	72.07	123.21	0.30	616.60	66
	2	92.44	58.23	57.87	0.80	257.00	73
	1&2	87.89	64.81	94.58	0.30	616.60	139
W	1	96.97	35.14	55.91	0.40	195.00	27
	2	138.84	75.62	119.76	0.90	562.30	25
	1&2	118.67	54.60	93.60	0.40	562.30	52
NW	1	105.16	36.24	58.22	0.80	331.10	60
	2	79.14	66.36	61.97	3.00	169.80	14
	1&2	100.45	41.94	59.71	0.80	331.10	74

TABLE 6 (continued) H Ion

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	56.58	49.85	38.62	10.70	104.70	6
	2	85.10	85.10	-	85.10	85.10	1
	1&2	56.61	54.89	37.69	10.70	104.70	7
-5.0 to -0.1	1	31.87	30.89	28.49	0.80	151.40	44
	2	21.92	26.66	28.75	2.30	131.80	91
	1&2	24.23	28.04	28.63	0.80	151.40	135
0.0 to 4.9	1	29.36	35.15	37.91	1.20	182.00	80
	2	37.16	29.70	29.03	0.80	141.30	115
	1&2	33.94	31.94	32.98	0.80	182.00	195
5.0 to 9.9	1	30.25	33.42	32.93	0.20	158.50	120
	2	41.68	40.48	48.55	0.80	269.20	141
	1&2	36.96	37.23	42.16	0.20	269.20	261
10.0 to 14.9	1	35.56	36.32	48.09	0.20	229.10	94
	2	35.19	37.32	42.76	0.50	281.80	191
	1&2	35.29	36.99	44.51	0.20	281.80	285
15.0 to 19.9	1	43.41	41.97	57.40	0.40	218.80	53
	2	73.40	73.50	74.23	0.80	295.10	84
	1&2	62.88	61.30	69.71	0.40	295.10	137
20.0 to 24.9	1	104.00	67.35	129.05	0.10	616.60	107
	2	115.80	82.88	84.69	0.90	398.10	71
	1&2	107.48	73.55	113.44	0.10	616.60	178
25.0 to 29.9	1	114.31	149.85	63.85	104.70	195.00	2
	2	127.75	203.32	206.42	30.20	562.30	5
	1&2	120.40	188.04	172.53	30.20	562.30	7

TABLE 7 Variation in Sulfate Concentration ($\mu\text{eq/l}$)

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	90.19	88.11	75.54	23.10	562.10	440
	2	59.17	77.67	73.99	4.20	674.60	594
	1&2	74.13	82.12	74.79	4.20	674.60	1034
b. Season							
Winter	1	59.21	80.12	58.37	41.60	305.40	98
	2	33.43	52.34	48.10	10.40	347.70	157
	1&2	44.20	63.01	53.90	10.40	347.70	255
Spring	1	62.08	80.31	65.93	41.60	547.60	135
	2	49.15	75.48	77.56	10.40	537.20	124
	1&2	55.49	78.00	71.63	10.40	547.60	259
Summer	1	128.54	128.58	120.21	51.80	562.10	74
	2	90.90	111.66	83.98	41.60	420.60	112
	1&2	114.95	118.39	100.01	41.60	562.10	186
Fall	1	58.65	79.40	54.48	23.10	339.20	133
	2	60.23	79.88	75.19	4.20	674.60	201
	1&2	59.73	79.69	67.62	4.20	674.60	334
c. Synoptic Type							
Low	1	62.75	74.76	61.09	23.10	315.40	77
	2	68.17	52.62	29.63	4.20	145.50	43
	1&2	65.10	66.83	52.98	4.20	315.40	120
Warm Front	1	56.64	77.78	59.03	41.60	562.10	251
	2	47.14	74.92	72.77	10.40	537.20	259
	1&2	51.55	76.33	66.31	10.40	562.10	510
Cold Front	1	142.19	128.34	102.72	41.60	547.60	67
	2	68.59	84.20	85.24	10.40	674.60	136
	1&2	111.45	98.77	93.47	10.40	674.60	203
Occluded Front	1	51.66	50.57	12.17	41.60	89.90	15
	2	38.15	53.39	40.95	10.40	203.20	57
	1&2	40.69	52.80	36.78	10.40	203.20	72
Stationary Front	1	149.90	149.90	-	149.90	149.90	1
	2	83.05	95.00	74.79	20.80	397.70	79
	1&2	84.21	95.69	74.57	20.80	397.70	80
Squall Line	1	141.71	177.73	132.14	51.80	479.70	19
	2	86.56	114.10	95.25	41.60	374.80	19
	1&2	111.84	145.92	118.10	41.60	479.70	38
Hurricane	1	57.09	60.43	20.35	51.80	116.20	10
	2	-	-	-	-	-	0
	1&2	57.09	60.43	20.35	51.80	116.20	10

TABLE 7 (continued) Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	58.48	75.28	59.20	23.10	562.10	309
	2	46.32	67.13	61.43	4.20	537.20	406
	1&2	51.39	70.65	60.57	4.20	562.10	715
Rainshower	1	99.23	156.82	120.38	41.80	547.60	46
	2	128.82	154.78	113.79	29.10	674.60	74
	1&2	115.94	155.56	115.86	29.10	674.60	120
Thundershower	1	133.38	129.45	102.21	41.60	372.30	34
	2	86.19	86.37	61.82	15.00	281.10	29
	1&2	116.89	109.62	88.07	15.00	372.30	63
Mixed	1	71.36	70.24	20.81	45.80	89.30	5
	2	103.36	95.11	45.16	37.50	146.60	8
	1&2	80.87	85.55	38.63	37.50	146.60	13
Sleet	1	114.50	114.50	-	114.50	114.50	1
	2	43.98	58.24	36.66	25.00	113.90	7
	1&2	49.57	65.28	39.34	25.00	114.50	8
Snow	1	69.15	76.15	45.85	41.60	276.90	45
	2	42.87	53.66	39.96	12.50	235.30	70
	1&2	52.72	62.46	43.58	12.50	276.90	115
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	102.73	108.40	90.27	23.10	562.10	230
	2	93.91	96.92	86.95	4.20	674.60	312
	1&2	97.56	101.79	88.47	4.20	674.60	542
1.1 - 2.5	1	66.75	68.74	49.97	26.90	291.70	117
	2	62.83	65.97	54.62	4.20	304.00	148
	1&2	64.52	67.19	52.53	4.20	304.00	265
2.6 - 6.0	1	54.11	55.19	25.20	41.60	165.50	57
	2	45.35	45.74	36.94	4.20	187.00	94
	1&2	48.58	49.31	33.23	4.20	187.00	151
6.1 - 12.0	1	116.84	71.49	55.84	41.60	269.80	26
	2	38.25	37.70	27.83	10.40	107.40	32
	1&2	88.70	52.85	45.57	10.40	269.80	58
>12.0	1	82.94	78.94	55.39	41.60	206.10	10
	2	79.96	78.90	56.93	22.50	175.50	8
	1&2	81.42	78.92	54.39	22.50	206.10	18

TABLE 7 (continued) Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	54.85	73.77	40.94	41.60	161.40	21
	2	67.75	96.01	74.41	20.80	308.10	22
	1&2	59.81	85.15	60.77	20.80	308.10	43
3 - 5	1	119.80	101.81	89.81	26.90	562.10	163
	2	77.32	90.58	76.44	4.20	397.70	172
	1&2	107.69	96.04	83.28	4.20	562.10	335
6 - 9	1	78.09	93.76	76.72	23.10	547.60	166
	2	62.09	76.63	77.85	4.20	674.60	268
	1&2	66.53	83.18	77.78	4.20	674.60	434
≥ 10	1	48.74	56.22	26.43	41.60	164.50	90
	2	41.40	58.04	55.57	10.40	360.20	130
	1&2	44.82	57.29	45.86	10.40	360.20	220
g. Wind Direction at 108 m							
N	1	53.61	59.56	23.53	23.10	137.40	35
	2	54.60	67.15	39.46	19.40	159.30	41
	1&2	54.04	63.65	33.10	19.40	159.30	76
NE	1	59.39	75.34	52.12	26.90	274.80	57
	2	41.16	56.05	46.41	4.20	291.50	175
	1&2	44.87	60.79	48.48	4.20	291.50	232
E	1	57.26	75.90	45.52	41.60	315.40	81
	2	54.60	78.59	69.97	4.20	537.20	127
	1&2	55.88	77.54	61.50	4.20	537.20	208
SE	1	114.09	100.11	95.46	41.60	562.10	76
	2	69.22	106.78	92.77	10.40	397.70	73
	1&2	100.65	103.38	93.90	10.40	562.10	149
S	1	65.59	85.48	82.43	41.60	468.50	63
	2	49.69	79.82	87.18	10.40	420.60	75
	1&2	55.70	82.41	84.79	10.40	468.50	138
SW	1	102.62	132.99	103.03	41.80	547.60	54
	2	85.68	96.95	100.23	10.40	674.60	67
	1&2	90.71	113.04	107.65	10.40	674.60	121
W	1	96.93	89.91	69.61	41.60	332.90	24
	2	119.72	96.32	75.43	20.80	374.80	24
	1&2	108.91	93.12	71.88	20.80	374.80	48
NW	1	125.29	78.18	66.20	41.60	339.20	50
	2	72.20	83.98	55.27	31.20	192.80	12
	1&2	115.48	79.30	63.85	31.20	339.20	62

TABLE 7 (continued) Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	128.41	123.90	57.42	83.30	164.50	2
	2	101.82	115.87	18.97	95.80	133.50	3
	1&2	123.53	119.08	31.99	83.30	164.50	5
-5.0 to -0.1	1	75.97	80.71	47.80	41.60	276.90	33
	2	40.53	51.83	40.73	12.50	235.30	55
	1&2	52.53	62.66	45.47	12.50	276.90	88
0.0 to 4.9	1	60.13	75.22	49.45	41.60	305.40	68
	2	45.81	64.22	66.13	10.40	537.20	92
	1&2	53.21	68.90	59.69	10.40	537.20	160
5.0 to 9.9	1	53.65	73.35	53.01	41.60	295.60	110
	2	39.92	64.18	60.09	10.40	360.20	127
	1&2	45.69	68.44	56.98	10.40	360.20	237
10.0 to 14.9	1	63.37	80.34	54.52	23.10	266.50	86
	2	54.27	75.93	75.27	10.40	674.60	174
	1&2	57.08	77.39	69.02	10.40	674.60	260
15.0 to 19.9	1	70.00	113.56	107.35	41.80	547.60	47
	2	68.78	104.59	86.90	20.80	397.70	75
	1&2	69.21	108.04	94.97	20.80	547.60	122
20.0 to 24.9	1	123.82	108.53	104.94	41.80	562.10	92
	2	93.96	108.54	84.29	4.20	420.60	64
	1&2	115.05	108.53	96.71	4.20	562.10	156
25.0 to 29.9	1	133.27	221.20	157.97	109.50	332.90	2
	2	139.71	219.40	114.26	127.00	374.80	4
	1&2	136.12	220.00	113.25	109.50	374.80	6

TABLE 8 Variation in Excess Sulfate Concentration ($\mu\text{eq/l}$)

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	70.29	82.38	73.58	10.23	561.21	355
	2	58.88	67.08	63.58	-16.02	417.13	414
	1&2	63.94	74.14	68.76	-16.02	561.21	769
b. Season							
Winter	1	57.61	79.76	56.02	27.87	297.20	65
	2	33.80	41.59	40.18	-16.02	312.97	95
	1&2	45.16	57.10	50.71	-16.02	312.97	160
Spring	1	55.57	67.36	48.52	17.29	285.97	110
	2	58.24	65.87	51.32	17.47	350.38	60
	1&2	56.60	66.03	49.38	17.29	350.38	170
Summer	1	102.84	125.74	128.03	10.91	561.21	60
	2	83.78	100.45	78.87	28.61	417.13	96
	1&2	92.33	110.17	101.02	10.91	561.21	156
Fall	1	57.95	75.89	54.16	10.23	338.62	120
	2	51.01	62.73	60.85	-2.08	394.23	163
	1&2	53.10	68.31	58.37	-2.08	394.23	283
c. Synoptic Type							
Low	1	58.65	70.29	63.78	19.94	311.46	69
	2	67.94	51.24	25.64	18.05	141.21	38
	1&2	62.51	63.52	54.07	18.05	311.46	107
Warm Front	1	53.39	71.35	55.54	10.23	561.21	195
	2	44.44	58.90	58.80	-2.08	417.13	182
	1&2	48.85	65.34	57.40	-2.08	561.21	377
Cold Front	1	119.55	130.14	95.89	39.55	434.42	52
	2	66.88	75.72	63.45	3.84	350.38	86
	1&2	80.02	96.22	81.37	3.84	434.42	138
Occluded Front	1	45.23	43.52	13.38	17.29	72.80	14
	2	29.08	31.86	22.87	-16.02	86.38	32
	1&2	34.22	35.41	21.01	-16.02	86.38	46
Stationary Front	1	148.58	148.58	-	148.58	148.58	1
	2	79.55	95.49	77.18	18.07	394.23	59
	1&2	80.84	96.37	76.82	18.07	394.23	60
Squall Line	1	139.43	164.98	133.45	49.96	478.96	16
	2	83.25	102.43	91.60	40.23	372.74	16
	1&2	109.04	133.71	116.99	40.23	478.96	32
Hurricane	1	36.56	39.54	14.71	10.91	53.26	8
	2	-	-	-	-	-	0
	1&2	36.56	39.54	14.71	10.91	53.26	8

TABLE 8 (continued) Excess Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	53.62	66.76	55.74	10.23	561.21	263
	2	45.93	57.71	52.03	-2.08	394.23	294
	1&2	49.37	61.98	53.96	-2.08	561.21	557
Rainshower	1	94.88	147.07	105.71	39.33	478.96	38
	2	120.57	140.43	94.97	34.91	417.13	47
	1&2	108.37	143.40	99.36	34.91	478.96	85
Thundershower	1	113.36	145.74	111.65	10.91	369.36	25
	2	84.85	87.71	60.66	20.35	272.90	24
	1&2	97.24	117.32	94.10	10.91	369.36	49
Mixed	1	70.24	73.77	21.49	48.95	86.26	3
	2	110.85	88.81	62.68	18.62	139.18	3
	1&2	82.98	81.29	42.71	18.62	139.18	6
Sleet	1	-	-	-	-	-	0
	2	37.98	54.30	40.47	14.63	112.74	6
	1&2	37.98	54.30	40.47	14.63	112.74	6
Snow	1	81.71	85.87	50.95	35.91	271.06	26
	2	32.98	37.67	30.00	-16.02	128.28	40
	1&2	52.67	56.66	45.84	-16.02	271.06	66
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	98.42	101.41	87.70	10.23	561.21	186
	2	78.48	77.96	74.90	-16.02	417.13	204
	1&2	87.17	89.14	82.00	-16.02	561.21	390
1.1 - 2.5	1	61.39	63.16	48.35	14.75	283.15	98
	2	60.07	61.53	54.78	7.65	300.26	119
	1&2	60.67	62.26	51.86	7.65	300.26	217
2.6 - 6.0	1	49.64	51.01	23.35	29.39	164.08	47
	2	50.31	50.42	36.87	-2.08	168.58	63
	1&2	50.02	50.67	31.68	-2.08	168.58	110
6.1 - 12.0	1	69.11	69.45	65.37	10.91	266.96	16
	2	44.18	43.44	29.09	7.13	105.83	22
	1&2	54.87	54.39	48.80	7.13	266.96	38
>12.0	1	91.48	85.59	59.98	38.33	205.00	8
	2	72.59	68.97	58.36	20.35	174.87	6
	1&2	81.76	78.46	57.61	20.35	205.00	14

TABLE 8 (continued) Excess Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	54.22	75.11	42.85	39.02	158.56	15
	2	84.83	91.27	63.87	20.01	210.72	11
	1&2	61.20	81.94	52.21	20.01	210.72	26
3 - 5	1	102.30	105.56	96.75	26.38	561.21	122
	2	85.51	91.25	81.43	14.63	394.23	105
	1&2	95.58	98.94	90.08	14.63	561.21	227
6 - 9	1	73.81	84.51	62.58	19.94	434.42	138
	2	61.86	64.89	56.69	-2.08	417.13	196
	1&2	65.53	73.00	59.89	-2.08	434.42	334
> 10	1	40.97	44.71	22.85	10.23	161.03	80
	2	37.81	42.96	42.59	-16.02	312.97	101
	1&2	39.36	43.73	35.18	-16.02	312.97	181
g. Wind Direction at 108 m							
N	1	47.52	52.99	22.19	19.94	136.46	29
	2	40.02	48.33	34.65	-16.02	158.09	31
	1&2	44.36	50.58	29.15	-16.02	158.09	60
NE	1	61.12	73.98	56.48	26.38	272.65	44
	2	38.23	46.37	42.35	5.01	272.90	115
	1&2	43.05	54.01	48.12	5.01	272.90	159
E	1	52.34	69.83	44.67	10.91	311.46	69
	2	49.64	41.33	50.50	-2.08	254.73	98
	1&2	50.96	64.84	48.22	-2.08	311.46	167
SE	1	58.97	86.86	94.62	27.86	561.21	64
	2	77.28	108.81	86.19	9.97	394.23	49
	1&2	67.75	96.37	91.32	9.97	561.21	113
S	1	62.33	81.86	83.38	10.23	455.98	55
	2	50.50	66.40	76.23	9.11	417.13	53
	1&2	55.55	74.27	79.96	9.11	455.98	108
SW	1	96.33	117.95	82.89	38.22	369.36	43
	2	80.82	88.96	68.01	3.84	350.38	46
	1&2	85.50	102.97	76.53	3.84	369.36	89
W	1	101.90	106.62	83.92	35.91	330.95	14
	2	132.87	104.83	95.08	20.22	372.74	13
	1&2	117.68	105.76	87.72	20.22	372.74	27
NW	1	140.92	81.31	75.92	17.29	338.62	37
	2	70.48	69.42	46.13	15.56	163.56	9
	1&2	126.56	78.98	70.80	15.56	338.62	46

TABLE 8 (continued) Excess Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	125.29	120.82	56.86	80.61	161.03	2
	2	91.64	77.30	20.97	62.47	99.12	2
	1&2	120.41	99.06	43.08	62.47	161.03	4
-5.0 to -0.1	1	87.97	88.93	53.82	39.02	271.06	19
	2	31.87	36.94	32.35	-16.02	128.28	33
	1&2	52.10	55.94	48.15	-16.02	271.06	52
0.0 to 4.9	1	54.18	64.97	44.00	17.29	297.20	56
	2	40.70	49.25	33.82	14.63	139.18	46
	1&2	48.92	57.88	40.32	14.63	297.20	102
5.0 to 9.9	1	50.92	66.48	44.63	30.02	285.97	85
	2	38.84	44.15	32.72	4.18	165.99	90
	1&2	44.45	55.00	40.43	4.18	285.97	175
10.0 to 14.9	1	60.61	76.35	53.89	19.94	264.77	76
	2	52.91	64.41	56.57	-2.08	312.97	128
	1&2	55.48	68.86	55.76	-2.08	312.97	204
15.0 to 19.9	1	67.48	97.60	88.03	10.23	434.42	38
	2	65.37	91.24	81.36	19.52	394.23	60
	1&2	66.08	93.71	83.62	10.23	434.42	98
20.0 to 24.9	1	96.26	104.88	109.78	10.91	561.21	78
	2	90.97	109.32	82.92	36.65	417.13	51
	1&2	93.83	106.64	99.70	10.91	561.21	129
25.0 to 29.9	1	330.95	330.95	-	330.95	330.95	1
	2	137.68	216.40	115.23	126.21	372.74	4
	1&2	160.43	239.31	112.18	126.21	372.74	5

TABLE 9 Variation in Nitrogen Concentration ($\mu\text{eq/l}$)

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	28.60	41.76	51.20	1.40	306.90	436
	2	21.81	35.75	45.53	1.40	431.10	777
	1&2	24.77	37.91	47.71	1.40	431.10	1213
b. Season							
Winter	1	27.25	57.55	64.77	1.40	306.90	97
	2	14.79	26.89	36.84	1.40	431.10	280
	1&2	18.17	34.78	47.52	1.40	431.10	377
Spring	1	22.40	37.71	47.89	1.40	252.00	136
	2	17.33	35.42	44.31	1.40	282.70	136
	1&2	19.81	36.56	46.06	1.40	282.70	272
Summer	1	36.23	43.09	58.44	1.40	292.70	74
	2	36.58	52.53	48.67	2.90	319.80	114
	1&2	36.35	48.82	52.78	1.40	319.80	188
Fall	1	18.44	33.39	33.43	1.40	184.20	129
	2	23.17	38.22	51.07	1.40	359.80	247
	1&2	21.69	36.56	45.80	1.40	359.80	376
c. Synoptic Type							
Low	1	29.31	43.05	63.28	1.40	257.00	79
	2	26.91	25.93	19.42	1.40	88.50	58
	1&2	28.24	35.81	50.27	1.40	257.00	137
Warm Front	1	17.26	37.44	47.82	1.40	306.90	246
	2	13.69	26.35	39.60	1.40	431.10	367
	1&2	15.07	30.80	43.39	1.40	431.10	613
Cold Front	1	46.19	60.29	50.62	3.60	252.00	66
	2	28.01	37.93	37.17	1.40	234.10	164
	1&2	38.49	44.35	42.59	1.40	252.00	230
Occluded Front	1	25.43	22.80	32.15	2.90	138.50	16
	2	38.52	53.51	51.53	3.60	230.60	68
	1&2	36.14	47.66	49.77	2.90	230.60	84
Stationary Front	1	62.80	62.80	-	62.80	62.80	1
	2	43.56	53.77	62.23	2.90	359.80	98
	1&2	43.88	53.86	61.92	2.90	359.80	99
Squall Line	1	41.10	64.01	40.92	7.10	138.50	18
	2	33.95	65.36	77.42	12.10	319.80	21
	1&2	37.23	64.74	62.48	7.10	319.80	39
Hurricane	1	3.68	3.72	2.26	1.40	7.90	10
	2	-	-	-	-	-	0
	1&2	3.68	3.72	2.26	1.40	7.90	10

TABLE 9 (continued) Nitrogen

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	16.26	29.87	38.92	1.40	292.70	304
	2	15.01	29.86	45.74	1.40	431.10	506
	1&2	15.50	29.86	43.28	1.40	431.10	810
Rainshower	1	39.13	73.30	64.76	2.10	252.00	44
	2	58.26	72.82	55.06	5.70	319.80	81
	1&2	50.02	73.00	58.40	2.10	319.80	125
Thundershower	1	39.32	57.27	63.38	1.40	243.10	35
	2	30.76	35.53	29.78	1.40	139.20	31
	1&2	36.14	47.06	51.28	1.40	234.10	66
Mixed	1	42.97	40.38	27.35	1.40	78.50	5
	2	7.18	24.38	27.84	1.40	79.90	25
	1&2	11.36	27.05	27.95	1.40	79.90	30
Sleet	1	44.30	44.30	-	44.30	44.30	1
	2	11.67	16.34	20.16	2.10	81.40	22
	1&2	12.41	17.56	20.54	2.10	81.40	23
Snow	1	61.05	77.64	66.87	3.60	306.90	47
	2	36.49	41.95	31.66	4.30	178.50	112
	1&2	42.96	52.50	47.67	3.60	306.90	159
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	53.16	57.00	56.66	1.40	306.90	225
	2	47.90	47.85	53.07	1.40	431.10	433
	1&2	49.85	50.98	54.46	1.40	431.10	658
1.1 - 2.5	1	31.57	33.95	47.14	1.40	257.00	118
	2	25.19	26.50	31.76	1.40	178.50	181
	1&2	27.66	29.44	38.67	1.40	257.00	299
2.6 - 6.0	1	12.59	13.43	15.59	1.40	83.50	57
	2	14.25	14.46	18.05	1.40	92.80	112
	1&2	13.71	14.11	17.22	1.40	92.80	169
6.1 - 12.0	1	31.80	16.28	24.63	1.40	94.90	26
	2	11.55	10.77	17.15	1.40	89.20	42
	1&2	23.31	12.88	20.34	1.40	94.90	68
>12.0	1	16.49	18.63	23.16	1.40	62.80	10
	2	20.98	20.46	22.52	1.40	61.40	9
	1&2	18.88	19.50	22.24	1.40	62.80	19

TABLE 9 (continued) Nitrogen

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	26.76	59.12	69.55	1.40	246.30	19
	2	52.91	64.70	60.77	8.60	282.70	34
	1&2	37.85	62.70	63.44	1.40	282.70	53
3 - 5	1	37.82	46.96	50.91	1.40	292.70	163
	2	33.88	46.62	48.95	1.40	359.80	227
	1&2	36.62	46.76	49.72	1.40	359.80	390
6 - 9	1	32.86	47.43	53.44	1.40	306.90	165
	2	23.90	34.35	47.22	1.40	431.10	333
	1&2	26.21	38.68	49.70	1.40	431.10	498
≥ 10	1	8.19	18.02	33.60	1.40	214.10	89
	2	11.86	18.74	22.99	1.40	155.60	159
	1&2	10.37	18.48	27.21	1.40	214.10	248
g. Wind Direction at 108 m							
N	1	27.13	41.36	38.06	1.40	173.50	36
	2	31.01	41.52	42.28	6.40	234.10	48
	1&2	28.89	41.45	40.29	1.40	234.10	84
NE	1	20.52	37.90	43.34	1.40	196.30	57
	2	19.12	30.55	40.40	1.40	431.10	269
	1&2	19.33	31.83	40.96	1.40	431.10	326
E	1	12.60	28.85	45.01	1.40	306.90	83
	2	16.71	30.46	45.75	1.40	359.80	154
	1&2	14.78	29.90	45.41	1.40	359.80	237
SE	1	32.20	38.87	54.55	1.40	292.70	74
	2	23.24	48.08	60.19	1.40	253.40	91
	1&2	29.21	43.95	57.74	1.40	292.70	165
S	1	21.69	38.22	57.88	2.10	257.00	62
	2	13.95	33.59	45.93	1.40	207.00	91
	1&2	16.41	35.46	50.98	1.40	257.00	153
SW	1	56.64	74.08	56.34	2.10	234.10	51
	2	36.68	41.75	36.08	1.40	148.50	78
	1&2	42.58	54.54	47.69	1.40	234.10	129
W	1	47.60	52.07	49.31	13.60	214.10	22
	2	50.41	47.18	56.64	2.10	319.80	32
	1&2	49.10	49.17	53.34	2.10	319.80	54
NW	1	42.99	39.08	47.92	3.60	214.10	51
	2	36.20	48.23	33.56	5.00	118.50	14
	1&2	41.73	41.05	45.14	3.60	214.10	65

TABLE 9 (continued) Nitrogen

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	192.37	188.20	22.50	173.50	214.10	3
	2	24.59	22.65	6.42	15.00	30.70	4
	1&2	137.92	93.60	89.55	16.00	214.10	7
-5.0 to -0.1	1	66.96	76.89	49.84	12.10	204.90	34
	2	29.87	38.36	34.33	1.40	178.50	111
	1&2	36.64	47.40	41.69	1.40	204.90	145
0.0 to 4.9	1	24.10	43.11	60.06	1.40	306.90	70
	2	19.37	31.58	33.92	2.10	234.10	150
	1&2	21.22	35.25	44.14	1.40	306.90	220
5.0 to 9.9	1	17.06	35.74	42.76	1.40	246.30	107
	2	13.94	30.98	52.99	1.40	431.10	160
	1&2	15.22	32.89	49.12	1.40	431.10	267
10.0 to 14.9	1	20.56	32.57	40.10	1.40	252.00	81
	2	14.04	26.84	37.61	1.40	359.80	198
	1&2	15.79	28.50	38.37	1.40	359.80	279
15.0 to 19.9	1	22.77	38.76	37.30	1.40	178.50	45
	2	26.93	50.59	59.40	1.40	253.40	83
	1&2	25.47	46.43	52.84	1.40	253.40	128
20.0 to 24.9	1	33.62	38.11	56.15	1.40	292.70	94
	2	37.91	53.05	43.85	1.40	198.40	67
	1&2	34.88	44.33	51.77	1.40	292.70	161
25.0 to 29.9	1	78.65	110.65	57.49	70.00	151.30	2
	2	81.95	166.13	109.86	59.20	319.80	4
	1&2	80.12	147.63	93.40	59.20	319.80	6

TABLE 10 Variation in Ammonium Concentration ($\mu\text{eq/l}$)

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	15.29	25.84	31.38	1.10	299.50	441
	2	10.98	20.60	27.28	0.60	190.20	760
	1&2	12.88	22.53	28.95	0.60	299.50	1201
b. Season							
Winter	1	11.62	21.52	18.73	1.10	82.60	95
	2	6.46	18.32	27.83	0.60	152.00	285
	1&2	7.85	19.12	25.87	0.60	152.00	380
Spring	1	14.73	23.95	31.17	2.80	201.90	137
	2	10.65	19.37	27.50	2.80	186.90	135
	1&2	12.65	21.68	29.44	2.80	201.90	272
Summer	1	17.35	26.25	36.44	2.80	210.70	75
	2	18.04	27.77	34.69	2.80	190.20	111
	1&2	17.59	27.16	35.32	2.80	210.70	186
Fall	1	14.22	30.61	35.18	2.80	299.50	134
	2	12.34	20.70	21.34	2.80	125.90	229
	1&2	12.93	24.36	27.65	2.80	299.50	363
c. Synoptic Type							
Low	1	14.46	22.49	24.30	1.10	160.80	77
	2	15.37	18.13	17.24	2.80	75.40	50
	1&2	14.86	20.77	21.82	1.10	160.80	127
Warm Front	1	11.14	22.94	27.69	1.10	299.50	250
	2	8.14	18.50	29.24	0.60	190.20	370
	1&2	9.30	20.29	28.69	0.60	299.50	620
Cold Front	1	19.82	42.34	42.07	2.80	201.90	68
	2	14.47	23.07	27.00	2.80	178.60	161
	1&2	17.56	28.79	33.31	2.80	201.90	229
Occluded Front	1	8.24	8.60	6.74	2.80	27.70	16
	2	8.45	13.74	16.78	2.80	107.00	62
	1&2	8.41	12.69	15.37	2.80	107.00	78
Stationary Front	1	24.40	24.40	-	24.40	24.40	1
	2	20.21	29.42	27.36	11.10	178.60	99
	1&2	20.28	29.37	27.22	11.10	178.60	100
Squall Line	1	29.02	44.47	47.59	3.90	210.70	19
	2	15.83	22.74	29.09	2.80	91.00	17
	1&2	22.88	34.21	40.90	2.80	210.70	36
Hurricane	1	5.08	4.40	2.15	2.80	8.90	10
	2	-	-	-	-	-	0
	1&2	5.08	4.40	2.15	2.80	8.90	10

TABLE 10 (continued) Ammonium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	11.30	21.32	25.91	1.10	299.50	309
	2	8.72	19.39	26.88	0.60	186.90	491
	1&2	9.73	20.13	26.51	0.60	299.50	800
Rainshower	1	25.32	56.58	51.48	1.10	210.70	46
	2	30.98	40.87	38.45	2.80	190.20	78
	1&2	28.54	46.70	44.20	1.10	210.70	124
Thundershower	1	18.52	28.23	35.39	2.80	160.80	34
	2	14.77	16.31	18.50	0.60	83.20	30
	1&2	17.23	22.64	29.15	0.60	160.80	64
Mixed	1	19.99	19.42	4.60	13.90	23.80	5
	2	6.64	19.57	23.58	0.60	97.60	28
	1&2	8.18	19.55	21.72	0.60	97.60	33
Sleet	1	22.20	22.20	-	22.20	22.20	1
	2	6.02	8.83	9.79	2.80	41.60	22
	1&2	6.39	9.41	9.96	2.80	41.60	23
Snow	1	20.28	24.50	18.58	2.80	69.90	46
	2	10.93	15.50	16.72	3.90	95.40	111
	1&2	13.37	18.14	17.71	2.80	95.40	157
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	30.89	37.44	37.91	2.80	299.50	231
	2	22.60	28.99	32.16	0.60	190.20	418
	1&2	25.69	32.00	34.53	0.60	299.50	649
1.1 - 2.5	1	15.42	15.80	15.24	1.10	89.80	117
	2	11.57	12.98	17.71	0.60	115.40	180
	1&2	13.05	14.09	16.81	0.60	115.40	297
2.6 - 6.0	1	8.47	8.75	7.12	1.10	32.70	57
	2	7.49	7.53	6.86	0.60	40.50	112
	1&2	7.81	7.94	6.95	0.60	40.50	169
6.1 - 12.0	1	14.01	10.41	11.27	2.80	42.70	26
	2	5.74	5.76	6.17	0.60	23.80	42
	1&2	10.55	7.54	8.71	0.60	42.70	68
>12.0	1	13.29	12.98	16.53	1.10	54.40	10
	2	14.84	15.14	17.10	0.60	52.70	8
	1&2	15.07	13.94	16.32	0.60	54.40	18

TABLE 10 (continued) Ammonium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	11.44	25.52	26.39	2.80	99.80	21
	2	24.08	41.02	38.36	2.80	186.90	30
	1&2	16.63	34.64	34.52	2.80	186.90	51
3 - 5	1	18.72	29.36	31.01	2.80	210.70	165
	2	18.74	24.89	26.68	0.60	178.60	221
	1&2	18.72	26.80	28.66	0.60	210.70	386
6 - 9	1	19.19	29.93	36.87	1.10	299.50	165
	2	11.33	19.43	25.99	0.60	190.20	324
	1&2	13.42	22.97	30.47	0.60	299.50	489
≥ 10	1	6.24	11.98	13.70	1.10	66.60	90
	2	6.38	15.05	27.15	0.60	152.00	164
	1&2	6.32	13.96	23.30	0.60	152.00	254
g. Wind Direction at 108 m							
N	1	13.98	19.16	11.77	2.80	56.00	36
	2	10.21	15.93	19.56	2.80	100.40	46
	1&2	12.28	17.35	16.58	2.80	100.40	82
NE	1	12.40	24.30	24.21	2.80	99.80	58
	2	9.49	18.67	24.71	2.80	178.60	263
	1&2	9.93	19.69	24.68	2.80	178.60	321
E	1	9.84	19.49	22.64	2.80	160.80	82
	2	11.08	20.24	28.22	2.80	186.90	152
	1&2	10.50	19.98	26.35	2.80	186.90	234
SE	1	14.25	21.45	26.89	2.20	201.90	75
	2	10.49	22.76	32.00	0.60	190.20	85
	1&2	13.00	22.15	29.63	0.60	201.90	160
S	1	14.88	33.03	42.78	1.10	299.50	64
	2	8.04	22.99	32.93	0.60	152.00	94
	1&2	10.22	27.06	37.43	0.60	299.50	158
SW	1	27.44	45.94	45.48	1.10	210.70	52
	2	14.09	21.74	26.01	0.60	178.60	72
	1&2	18.57	31.89	37.31	0.60	210.70	124
W	1	22.44	33.64	37.48	5.00	143.10	23
	2	31.65	26.22	24.73	2.80	104.80	32
	1&2	27.38	29.32	30.61	2.80	143.10	55
NW	1	27.44	15.98	14.91	2.80	69.90	51
	2	21.98	27.42	24.19	2.80	75.40	16
	1&2	26.40	18.71	18.04	2.80	75.40	67

TABLE 10 (continued) Ammonium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	32.71	31.60	14.14	21.60	41.60	2
	2	24.02	24.52	15.60	10.00	50.50	5
	1&2	29.23	26.54	14.41	10.00	50.50	7
-5.0 to -0.1	1	23.53	26.61	17.58	2.80	69.90	34
	2	9.53	12.77	13.16	2.80	75.40	106
	1&2	12.09	16.13	15.48	2.80	75.40	140
0.0 to 4.9	1	13.52	18.79	15.98	2.80	77.60	68
	2	12.26	27.68	31.14	0.60	150.30	156
	1&2	12.75	24.98	27.70	0.60	150.30	224
5.0 to 9.9	1	10.89	20.99	21.65	2.80	143.10	109
	2	7.45	15.22	24.81	0.60	186.90	151
	1&2	8.86	17.64	23.67	0.60	186.90	260
10.0 to 14.9	1	14.80	27.37	31.52	1.10	201.90	86
	2	8.77	17.90	24.26	0.60	152.00	196
	1&2	10.40	20.78	26.98	0.60	201.90	282
15.0 to 19.9	1	12.28	32.58	38.68	2.80	194.10	47
	2	12.66	22.83	24.96	2.80	109.80	78
	1&2	12.53	26.50	31.05	2.80	194.10	125
20.0 to 24.9	1	17.17	30.47	44.64	2.80	299.50	93
	2	19.01	31.65	40.22	2.80	190.20	64
	1&2	17.66	30.95	42.76	2.80	299.50	157
25.0 to 29.9	1	37.68	72.40	62.37	28.30	116.50	2
	2	32.48	62.95	30.59	19.40	91.00	4
	1&2	35.37	66.10	36.92	19.40	116.50	6

TABLE 11 Variation in Sodium Concentration ($\mu\text{eq}/\ell$)

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	28.85	46.92	101.01	0.40	1078.30	417
	2	49.62	78.74	176.84	0.40	2543.60	589
	1&2	40.25	65.55	150.88	0.40	2543.60	1006
b. Season							
Winter	1	33.96	52.79	130.54	1.30	891.30	89
	2	49.39	74.42	115.86	0.40	634.80	207
	1&2	45.02	67.92	120.65	0.40	891.30	296
Spring	1	37.42	54.15	68.68	0.40	334.80	124
	2	30.93	47.15	79.82	1.70	456.50	89
	1&2	34.32	51.23	73.44	0.40	456.50	213
Summer	1	22.99	53.62	158.07	2.60	1078.30	75
	2	26.69	32.38	45.84	0.90	383.10	103
	1&2	24.32	41.33	108.48	0.90	1078.30	178
Fall	1	27.70	32.04	46.25	3.50	287.80	129
	2	76.60	123.37	273.67	0.40	2543.60	190
	1&2	60.96	86.44	217.70	0.40	2543.60	319
c. Synoptic Type							
Low	1	39.74	47.42	60.69	3.00	334.80	74
	2	74.23	52.10	45.01	3.50	164.40	42
	1&2	54.73	49.12	55.36	3.00	334.80	116
Warm Front	1	29.84	44.22	92.44	0.40	891.30	236
	2	50.22	85.43	130.06	0.90	730.50	287
	1&2	41.98	66.83	116.35	0.40	891.30	523
Cold Front	1	8.82	25.74	30.98	0.90	174.80	61
	2	40.88	52.94	91.50	0.40	587.00	116
	1&2	22.05	43.56	77.24	0.40	587.00	177
Occluded Front	1	54.15	59.60	73.94	3.90	235.70	15
	2	123.97	223.84	478.42	1.70	2543.60	49
	1&2	110.61	185.35	424.88	1.70	2543.60	64
Stationary Front	1	10.90	10.90	-	10.90	10.90	1
	2	29.47	28.58	37.10	1.70	230.40	77
	1&2	29.15	28.35	36.92	1.70	230.40	78
Squall Line	1	20.22	80.79	236.52	3.90	1078.30	20
	2	19.43	19.46	19.92	2.60	87.00	17
	1&2	19.79	52.61	175.10	2.60	1078.30	37
Hurricane	1	148.54	153.18	258.49	3.90	765.20	10
	2	-	-	-	-	-	0
	1&2	148.54	153.18	258.49	3.90	765.20	10

TABLE 11 (continued) Sodium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	35.20	50.62	97.43	0.40	891.30	296
	2	56.44	91.40	205.10	0.40	2543.60	391
	1&2	47.84	73.83	168.54	0.40	2543.60	687
Rainshower	1	32.78	55.43	161.48	0.90	1078.30	44
	2	39.22	45.99	73.61	2.20	383.10	52
	1&2	36.29	50.32	121.38	0.90	1078.30	96
Thundershower	1	21.35	34.55	83.56	2.20	482.60	33
	2	29.41	28.77	39.79	0.90	164.40	30
	1&2	24.32	31.80	65.98	0.90	482.60	63
Mixed	1	6.14	9.38	10.09	1.30	26.50	5
	2	27.66	38.43	45.11	2.60	195.70	18
	1&2	25.07	32.12	41.72	1.30	195.70	23
Sleet	1	-	-	-	-	-	0
	2	25.35	27.83	25.59	1.70	85.70	21
	1&2	25.35	27.83	25.59	1.70	85.70	21
Snow	1	19.38	24.57	39.72	2.60	231.70	39
	2	69.68	79.35	132.58	0.90	634.80	77
	1&2	54.73	60.93	113.19	0.90	634.80	116
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	48.81	52.37	113.75	0.90	1078.30	206
	2	113.92	108.08	242.72	0.90	2543.60	264
	1&2	87.31	83.66	198.64	0.90	2543.60	470
1.1 - 2.5	1	47.65	51.71	103.31	2.60	891.30	118
	2	65.59	70.83	106.94	0.40	634.80	170
	1&2	58.43	62.99	105.71	0.40	891.30	288
2.6 - 6.0	1	26.17	27.93	35.03	0.40	190.40	57
	2	44.82	44.84	63.06	0.40	326.10	105
	1&2	38.43	38.89	55.33	0.40	326.10	162
6.1 - 12.0	1	22.55	37.97	95.53	0.90	482.60	26
	2	22.61	23.79	25.38	0.90	113.00	41
	1&2	22.58	29.29	62.41	0.90	482.60	67
>12.0	1	9.65	9.96	7.72	2.60	28.70	10
	2	15.33	13.52	11.81	0.90	37.40	9
	1&2	12.68	11.65	9.75	0.90	37.40	19

TABLE 11 (continued) Sodium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	11.49	13.08	9.90	1.30	32.20	19
	2	16.56	23.22	67.99	2.20	294.40	18
	1&2	13.43	18.02	47.52	1.30	294.40	37
3 - 5	1	9.57	26.74	89.18	0.40	1078.30	158
	2	28.08	39.72	74.37	0.40	521.80	152
	1&2	14.70	33.10	82.38	0.40	1078.30	310
6 - 9	1	33.80	43.10	94.24	0.90	891.30	155
	2	48.85	88.12	234.06	0.40	2543.60	256
	1&2	44.83	71.14	194.64	0.40	2543.60	411
≥ 10	1	63.03	98.99	124.74	2.20	765.20	85
	2	66.90	117.55	142.98	1.70	730.50	143
	1&2	65.35	110.63	136.48	1.70	765.20	228
g. Wind Direction at 108 m							
N	1	40.69	44.39	78.38	3.50	334.80	33
	2	79.91	77.40	106.69	0.40	521.80	36
	1&2	57.49	61.61	95.00	0.40	521.80	69
NE	1	15.51	19.21	18.40	0.40	87.80	52
	2	44.70	70.68	113.45	0.90	634.80	200
	1&2	40.08	60.06	103.48	0.40	634.80	252
E	1	40.90	44.92	104.12	1.30	765.20	79
	2	71.51	98.25	144.98	2.20	730.50	121
	1&2	56.71	77.18	132.69	1.30	765.20	200
SE	1	20.96	78.36	147.52	2.20	891.30	75
	2	60.06	104.42	287.95	1.70	2243.60	67
	1&2	33.08	90.66	224.51	1.70	2243.60	142
S	1	38.21	45.79	53.31	0.90	260.90	61
	2	37.39	86.61	291.10	0.90	2543.60	78
	1&2	37.65	68.70	221.20	0.90	2543.60	139
SW	1	32.99	52.20	155.65	3.50	1078.30	47
	2	36.16	45.56	78.43	0.40	418.30	60
	1&2	35.24	48.48	118.10	0.40	1078.30	107
W	1	24.00	15.22	18.61	0.90	70.00	19
	2	11.01	49.82	139.65	0.90	587.00	17
	1&2	17.29	31.56	96.96	0.90	587.00	36
NW	1	27.90	41.99	54.18	2.60	235.70	51
	2	21.10	23.60	41.72	1.70	140.00	10
	1&2	26.67	38.97	52.48	1.70	235.70	61

TABLE 11 (continued) Sodium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	25.81	25.45	4.60	22.20	28.70	2
	2	39.52	308.70	393.58	30.40	587.00	2
	1&2	27.80	167.08	279.97	22.20	587.00	4
-5.0 to -0.1	1	24.49	29.79	47.14	2.60	231.70	26
	2	56.22	58.82	77.09	0.90	352.20	78
	1&2	50.28	51.56	71.70	0.90	352.20	104
0.0 to 4.9	1	41.91	56.92	68.91	1.30	334.80	68
	2	35.76	44.72	94.20	0.40	634.80	99
	1&2	38.29	49.69	84.80	0.40	634.80	167
5.0 to 9.9	1	24.57	41.60	101.20	0.40	891.30	100
	2	72.59	142.04	273.05	0.90	2543.60	118
	1&2	52.61	95.97	217.69	0.40	2543.60	218
10.0 to 14.9	1	43.02	51.89	99.28	0.90	669.60	82
	2	58.46	91.27	206.46	0.90	2243.60	161
	1&2	54.12	77.98	178.41	0.90	2243.60	243
15.0 to 19.9	1	26.99	33.48	54.66	3.50	260.90	45
	2	29.34	43.38	57.59	0.40	294.40	67
	1&2	28.49	39.41	56.39	0.40	294.40	112
20.0 to 24.9	1	24.22	53.58	144.17	2.60	1078.30	92
	2	27.45	38.07	57.92	0.90	383.10	60
	1&2	25.16	47.46	117.87	0.90	1078.30	152
25.0 to 29.9	1	5.20	10.00	8.63	3.90	16.10	2
	2	16.76	24.80	25.31	6.50	62.20	4
	1&2	10.33	19.87	21.40	3.90	62.20	6

TABLE 12 Variation in Chloride Concentration ($\mu\text{eq/l}$)

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	44.23	74.87	152.35	5.60	1396.40	431
	2	54.48	82.63	132.07	5.60	1458.50	666
	1&2	49.94	79.58	140.37	5.60	1458.50	1097
b. Season							
Winter	1	53.16	80.23	193.46	5.60	1396.40	96
	2	57.15	81.98	118.52	5.60	674.20	228
	1&2	56.00	81.46	144.50	5.60	1396.40	324
Spring	1	50.80	84.17	145.71	5.60	1317.40	133
	2	39.11	61.10	88.87	11.30	431.60	114
	1&2	44.87	73.52	123.10	5.60	1317.40	247
Summer	1	34.54	70.22	187.36	14.10	1311.80	74
	2	29.66	37.81	47.51	5.60	369.60	106
	1&2	32.79	51.14	126.08	5.60	1311.80	180
Fall	1	52.19	63.89	89.99	14.10	665.80	128
	2	78.41	116.38	176.59	5.60	1458.50	218
	1&2	70.32	96.96	152.45	5.60	1458.50	346
c. Synoptic Type							
Low	1	61.72	83.30	112.20	8.50	536.00	76
	2	65.13	51.81	40.59	5.60	174.90	44
	1&2	63.25	71.75	93.60	5.60	536.00	120
Warm Front	1	48.35	74.97	162.23	5.60	1396.40	242
	2	58.98	98.92	141.11	5.60	860.40	316
	1&2	54.78	88.53	150.96	5.60	1396.40	558
Cold Front	1	20.07	41.55	36.41	5.60	169.30	66
	2	47.45	67.96	99.65	5.60	462.60	143
	1&2	31.52	59.62	85.70	5.60	462.60	209
Occluded Front	1	83.01	78.99	75.06	5.60	222.90	16
	2	106.82	155.38	239.56	11.30	1458.50	53
	1&2	102.24	137.66	214.91	5.60	1458.50	69
Stationary Front	1	14.10	14.10	-	14.10	14.10	1
	2	34.51	34.70	38.97	5.60	290.60	91
	1&2	34.17	34.47	38.82	5.60	290.60	92
Squall Line	1	26.16	100.57	286.70	14.10	1311.80	20
	2	16.01	20.04	17.32	5.60	67.70	18
	1&2	20.69	62.43	209.78	5.60	1311.80	38
Hurricane	1	163.16	176.60	290.98	14.10	894.30	10
	2	-	-	-	-	-	0
	1&2	163.16	176.60	290.98	14.10	894.30	10

TABLE 12 (continued) Chloride

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	54.30	83.98	161.50	5.60	1396.40	303
	2	61.06	95.32	148.21	5.60	1458.50	430
	1&2	58.39	90.63	153.84	5.60	1458.50	733
Rainshower	1	47.19	73.23	187.80	8.50	1311.80	47
	2	58.68	64.08	89.76	5.60	442.90	67
	1&2	53.56	67.85	138.15	5.60	1311.80	114
Thundershower	1	32.24	48.12	87.01	5.60	496.50	34
	2	26.60	27.38	31.35	5.60	129.80	31
	1&2	30.14	38.23	66.88	5.60	496.50	65
Mixed	1	8.48	8.47	2.85	5.60	11.30	3
	2	44.18	47.58	73.76	8.50	301.80	23
	1&2	40.70	43.07	70.36	5.60	301.80	26
Sleet	1	141.10	141.10	-	141.10	141.10	1
	2	38.95	43.35	62.14	8.50	301.80	22
	1&2	41.28	47.60	64.04	8.50	301.80	23
Snow	1	33.41	36.75	49.13	8.50	265.20	43
	2	74.49	73.72	112.15	8.50	674.20	93
	1&2	62.40	62.03	98.08	8.50	674.20	136
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	75.46	87.16	174.09	5.60	1317.40	222
	2	107.04	103.85	162.11	5.60	1458.50	331
	1&2	94.56	97.15	167.06	5.60	1458.50	553
1.1 - 2.5	1	71.23	77.50	155.05	5.60	1396.40	117
	2	72.02	77.39	106.63	5.60	674.20	176
	1&2	71.71	77.43	127.93	5.60	1396.40	293
2.6 - 6.0	1	42.49	43.63	45.48	5.60	234.10	56
	2	52.09	51.89	65.92	5.60	301.80	109
	1&2	48.93	49.09	59.76	5.60	301.80	165
6.1 - 12.0	1	33.25	47.97	97.35	5.60	496.50	26
	2	28.45	30.62	38.07	5.60	222.90	41
	1&2	31.26	37.35	67.38	5.60	496.50	67
>12.0	1	16.18	16.36	11.59	5.60	48.00	10
	2	14.84	14.10	7.47	5.60	25.40	9
	1&2	15.47	15.29	9.66	5.60	48.00	19

TABLE 12 (continued) Chloride

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	15.02	21.98	13.59	5.60	48.00	19
	2	33.75	54.10	84.07	5.60	335.70	28
	1&2	22.72	41.12	66.89	5.60	335.70	47
3 - 5	1	20.93	42.37	106.42	5.60	1311.80	161
	2	33.21	50.16	80.75	5.60	437.30	186
	1&2	24.51	46.54	93.48	5.60	1311.80	347
6 - 9	1	54.59	79.40	182.95	5.60	1396.40	160
	2	54.39	80.55	152.64	5.60	1458.50	281
	1&2	54.44	85.23	164.14	5.60	1458.50	441
≥ 10	1	82.57	135.48	159.24	5.60	894.30	91
	2	69.27	122.81	143.80	8.50	806.80	150
	1&2	74.76	127.59	149.62	5.60	894.30	241
g. Wind Direction at 108 m							
N	1	60.41	65.13	105.45	8.50	479.60	35
	2	72.83	75.74	87.14	5.60	437.30	39
	1&2	65.82	70.72	95.71	5.60	479.60	74
NE	1	30.66	33.90	26.59	5.60	112.80	52
	2	52.68	75.52	116.71	5.60	677.00	223
	1&2	49.40	67.65	106.93	5.60	677.00	275
E	1	56.39	86.80	188.31	5.60	1317.40	82
	2	82.86	118.53	165.17	5.60	860.40	137
	1&2	70.37	106.65	174.45	5.60	1317.40	219
SE	1	36.70	122.64	230.93	5.60	1396.40	76
	2	56.79	96.68	190.55	5.60	1458.50	81
	1&2	43.37	109.25	210.78	5.60	1458.50	157
S	1	52.93	63.36	71.23	5.60	369.60	61
	2	40.78	71.20	88.81	5.60	423.20	80
	1&2	44.68	67.81	81.49	5.60	423.20	141
SW	1	50.53	74.22	179.86	5.60	1311.80	52
	2	35.87	57.93	90.82	5.60	442.90	73
	1&2	40.10	64.71	134.76	5.60	1311.80	125
W	1	44.95	61.94	111.83	5.60	536.00	23
	2	14.47	43.47	72.39	5.60	332.90	22
	1&2	28.94	52.91	94.03	5.60	536.00	45
NW	1	35.81	52.82	55.85	8.50	222.90	50
	2	22.24	26.15	39.42	5.60	141.10	11
	1&2	33.31	48.01	53.98	5.60	222.90	61

TABLE 12 (continued) Chloride

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	22.60	22.60	0.00	22.60	22.60	2
	2	68.67	134.73	132.32	62.10	332.90	4
	1&2	40.13	97.35	117.72	22.60	332.90	6
-5.0 to -0.1	1	37.93	40.78	54.29	8.50	265.20	31
	2	61.29	58.39	70.03	8.50	355.40	89
	1&2	56.56	53.84	66.55	8.50	355.40	120
0.0 to 4.9	1	61.32	97.80	175.49	5.60	1317.40	66
	2	48.72	58.57	110.37	5.60	674.20	117
	1&2	53.76	72.72	138.27	5.60	1317.40	183
5.0 to 9.9	1	38.92	65.39	157.11	5.60	1396.40	107
	2	77.80	148.82	199.44	8.50	1458.50	137
	1&2	61.61	112.23	186.41	5.60	1458.50	244
10.0 to 14.9	1	64.93	88.93	155.87	5.60	1066.30	84
	2	59.87	83.49	124.70	5.60	860.40	178
	1&2	61.23	85.24	135.20	5.60	1066.30	262
15.0 to 19.9	1	46.40	57.77	76.40	14.10	369.60	46
	2	40.83	58.05	78.17	5.60	426.00	73
	1&2	42.74	57.94	77.17	5.60	426.00	119
20.0 to 24.9	1	36.88	78.99	176.65	14.10	1311.80	93
	2	26.19	44.34	58.92	5.60	369.60	64
	1&2	33.74	64.86	141.76	5.60	1311.80	157
25.0 to 29.9	1	10.60	18.35	13.93	8.50	28.20	2
	2	14.28	30.33	22.53	5.60	50.80	4
	1&2	12.23	26.33	19.54	5.60	50.80	6

TABLE 13 Variation in Excess Chloride Concentration ($\mu\text{eq}/\ell$)

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	13.29	17.47	45.12	-151.67	353.58	266
	2	-7.80	-10.01	54.73	-360.99	265.18	360
	1&2	0.04	1.66	52.62	-360.99	353.58	626
b. Season							
Winter	1	19.53	27.15	67.13	-40.71	353.58	51
	2	-6.79	-15.81	76.68	-360.99	265.18	116
	1&2	0.73	-2.69	76.32	-360.99	353.58	167
Spring	1	5.63	6.67	36.94	-151.67	175.76	86
	2	-3.83	-4.63	58.05	-178.62	231.13	44
	1&2	1.57	2.85	45.29	-178.62	231.13	130
Summer	1	7.04	10.35	32.57	-68.14	133.72	40
	2	-3.30	-2.66	33.61	-78.63	184.29	56
	1&2	1.09	2.76	33.63	-78.63	184.29	96
Fall	1	23.46	25.55	39.06	-3.86	329.07	89
	2	-12.10	-9.85	35.86	-173.21	110.65	144
	1&2	-2.04	3.67	40.85	-173.21	329.07	233
c. Synoptic Type							
Low	1	12.12	14.48	27.83	-28.93	138.08	54
	2	-27.41	-11.96	20.51	-62.55	43.43	29
	1&2	-7.68	5.24	28.37	-62.55	138.08	83
Warm Front	1	19.05	22.85	51.93	-46.26	353.58	146
	2	-3.79	-8.45	58.23	-360.99	265.18	182
	1&2	5.29	5.48	57.58	-360.99	353.58	328
Cold Front	1	5.22	10.42	29.31	-88.82	105.49	39
	2	-3.89	-11.01	61.28	-353.89	184.29	61
	1&2	-1.61	-2.65	52.16	-353.89	184.29	100
Occluded Front	1	22.40	3.79	77.59	-151.67	175.76	10
	2	-25.35	-23.96	71.78	-296.37	232.64	39
	1&2	-15.01	-18.30	73.05	-296.37	232.64	49
Stationary Front	1	-	-	-	-	-	0
	2	-4.42	-1.49	19.28	-52.65	43.66	41
	1&2	-4.42	-1.49	19.28	-52.65	43.66	41
Squall Line	1	4.00	13.71	18.86	-13.90	50.19	10
	2	-14.71	-6.14	20.73	-34.09	30.91	7
	1&2	-8.80	5.54	21.50	-34.09	50.19	17
Hurricane	1	-20.00	-7.53	27.03	-68.14	8.64	7
	2	-	-	-	-	-	0
	1&2	-20.00	-7.53	27.03	-68.14	8.64	7

TABLE 13 (continued) Excess Chloride

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	15.59	20.33	48.05	-151.67	353.58	198
	2	-8.03	-9.34	50.13	-360.99	232.64	245
	1&2	1.37	3.92	51.33	-360.99	353.58	443
Rainshower	1	8.61	10.02	25.28	-88.82	66.26	33
	2	19.75	-2.30	42.30	-78.63	184.29	32
	1&2	14.70	3.96	35.00	-88.82	184.29	65
Thundershower	1	2.56	5.39	40.35	-68.14	133.72	15
	2	-20.32	-14.68	21.58	-62.55	8.47	14
	1&2	-11.98	-4.30	33.68	-68.14	133.72	29
Mixed	1	-	-	-	-	-	0
	2	25.36	15.90	76.23	-38.67	265.18	13
	1&2	25.36	15.90	76.23	-38.67	265.18	13
Sleet	1	-	-	-	-	-	0
	2	12.46	15.07	73.30	-39.13	264.13	14
	1&2	12.46	15.07	73.30	-39.13	264.13	14
Snow	1	18.83	10.47	42.84	-40.71	175.76	20
	2	-28.60	-34.63	72.53	-353.89	43.66	42
	1&2	-16.45	-20.08	67.52	-353.89	175.76	62
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	15.44	18.32	46.82	-151.67	329.07	146
	2	-22.96	-12.57	50.07	-296.37	232.64	169
	1&2	-7.45	1.75	50.91	-296.37	329.07	315
1.1 - 2.5	1	17.46	19.84	49.75	-28.93	353.58	76
	2	-8.55	-11.57	65.48	-360.99	264.13	111
	1&2	1.83	1.19	61.42	-360.99	353.58	187
2.6 - 6.0	1	15.32	13.54	25.98	-9.38	133.72	34
	2	-3.86	-4.04	48.33	-167.14	265.18	60
	1&2	2.93	2.32	42.35	-167.14	265.18	94
6.1 - 12.0	1	0.11	-1.17	34.75	-68.14	55.76	9
	2	2.75	4.16	48.54	-42.81	184.29	17
	1&2	1.74	2.32	43.60	-68.14	184.29	26
>12.0	1	14.51	14.42	-	14.42	14.42	1
	2	-11.38	-8.28	8.98	-18.36	-1.13	3
	1&2	-6.06	-2.61	13.51	-18.36	14.42	4

TABLE 13 (continued) Excess Chloride

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	7.90	10.22	14.82	-5.69	36.77	10
	2	3.24	12.95	20.15	-12.97	43.66	7
	1&2	6.54	11.34	16.66	-12.97	43.66	17
3 - 5	1	16.75	12.54	27.32	-88.82	133.72	78
	2	-3.54	1.91	46.02	-173.21	232.64	68
	1&2	8.43	7.59	37.46	-173.21	232.64	146
6 - 9	1	14.57	21.40	56.73	-46.26	353.58	109
	2	-4.07	-4.55	52.46	-360.99	264.13	164
	1&2	1.33	5.81	55.58	-360.99	353.58	273
≥ 10	1	10.74	17.88	43.46	151.67	175.76	69
	2	-17.98	-29.03	55.86	-353.89	36.89	112
	1&2	-6.28	-11.15	56.21	-353.89	175.76	181
g. Wind Direction at 108 m							
N	1	16.01	17.86	21.90	-1.27	87.88	22
	2	-30.51	-27.34	68.72	-296.37	43.43	24
	1&2	-5.38	-5.72	56.20	-296.37	87.88	46
NE	1	13.02	9.70	19.84	-29.43	70.27	30
	2	-6.54	-9.84	53.69	-150.41	265.18	113
	1&2	-3.42	-5.74	49.17	-150.41	265.18	143
E	1	6.07	12.42	35.38	-68.14	138.08	46
	2	-0.68	-2.62	49.35	-195.61	231.13	93
	1&2	1.68	2.36	45.63	-195.61	231.13	139
SE	1	24.56	38.51	81.76	-88.82	353.58	51
	2	-27.19	-21.95	63.31	-360.99	26.83	41
	1&2	-2.39	11.56	79.67	-360.99	353.58	92
S	1	11.92	12.95	21.39	-32.88	64.42	44
	2	5.52	-1.15	40.74	-178.62	184.29	47
	1&2	8.19	5.67	33.43	-178.62	184.29	91
SW	1	10.16	14.16	21.15	-23.89	70.09	35
	2	-12.92	-6.39	35.53	-78.63	110.65	32
	1&2	-6.37	4.35	30.50	-78.63	110.65	67
W	1	35.22	36.86	51.51	7.39	175.76	10
	2	-15.47	-57.69	132.66	-353.89	30.91	7
	1&2	20.18	-2.08	101.94	-353.89	175.76	17
NW	1	1.23	-0.24	33.00	-151.67	50.78	28
	2	-4.97	-10.17	11.70	-22.70	0.46	3
	1&2	-0.21	-1.20	31.59	-151.67	50.78	31

TABLE 13 (continued) Excess Chloride

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	-7.52	-7.18	5.38	-10.98	-3.37	2
	2	37.04	-155.23	280.95	-353.89	43.43	2
	1&2	-1.07	-81.20	183.38	-353.89	43.43	4
-5.0 to -0.1	1	0.51	0.59	20.19	-40.71	32.79	14
	2	-17.85	-19.13	62.86	-296.37	264.13	48
	1&2	-15.17	-14.68	56.57	-296.37	264.13	62
0.0 to 4.9	1	8.34	6.78	39.66	-151.67	175.76	49
	2	20.66	17.54	74.26	-68.52	265.18	39
	1&2	14.04	11.55	57.49	-151.67	265.18	88
5.0 to 9.9	1	16.49	21.22	65.98	-88.82	353.58	58
	2	-9.71	-21.09	49.03	-195.61	147.39	83
	1&2	-2.10	-3.69	60.14	-195.61	353.58	141
10.0 to 14.9	1	17.52	28.08	45.22	-29.26	282.87	60
	2	-15.98	-12.16	45.23	-360.99	97.25	109
	1&2	-4.76	2.13	49.05	-360.99	282.87	169
15.0 to 19.9	1	23.08	26.67	25.62	-1.06	105.49	26
	2	12.86	3.89	35.28	-80.03	184.29	44
	1&2	16.37	12.35	33.71	-80.03	184.29	70
20.0 to 24.9	1	8.21	12.53	30.63	-68.14	138.08	56
	2	-12.52	-4.93	31.52	-78.63	110.65	33
	1&2	-1.53	6.06	31.93	-78.63	138.08	89
25.0 to 29.9	1	9.41	9.36	-	9.36	9.36	1
	2	-20.80	3.07	39.38	-24.77	30.91	2
	1&2	-8.19	5.17	28.08	-24.77	30.91	3

TABLE 14 Variation in Nitrogen/Sulfate Ratio

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	0.35	0.49	0.43	0.04	3.59	377
	2	0.42	0.50	0.41	0.05	4.08	491
	1&2	0.38	0.50	0.42	0.04	4.08	868
b. Season							
Winter	1	0.59	0.73	0.62	0.10	3.59	82
	2	0.64	0.66	0.57	0.08	4.08	114
	1&2	0.62	0.69	0.59	0.08	4.08	196
Spring	1	0.37	0.46	0.39	0.04	3.11	122
	2	0.35	0.44	0.30	0.11	1.62	95
	1&2	0.36	0.45	0.35	0.04	3.11	217
Summer	1	0.29	0.30	0.21	0.06	0.99	60
	2	0.43	0.45	0.26	0.11	2.14	109
	1&2	0.34	0.40	0.26	0.06	2.14	169
Fall	1	0.37	0.45	0.29	0.10	2.11	113
	2	0.36	0.46	0.40	0.05	2.53	173
	1&2	0.36	0.45	0.36	0.05	2.53	286
c. Synoptic Type							
Low	1	0.43	0.53	0.49	0.04	2.13	68
	2	0.40	0.50	0.38	0.11	1.68	38
	1&2	0.41	0.52	0.45	0.04	2.13	106
Warm Front	1	0.37	0.48	0.43	0.06	3.59	208
	2	0.31	0.35	0.25	0.05	1.90	204
	1&2	0.34	0.42	0.36	0.05	3.59	412
Cold Front	1	0.33	0.52	0.40	0.10	3.11	65
	2	0.46	0.55	0.38	0.11	2.49	107
	1&2	0.37	0.54	0.38	0.10	3.11	172
Occluded Front	1	0.44	0.43	0.39	0.10	1.54	14
	2	0.88	0.88	0.60	0.23	4.08	46
	1&2	0.77	0.78	0.65	0.10	4.08	60
Stationary Front	1	0.42	0.42	-	0.42	0.42	1
	2	0.48	0.60	0.44	0.11	2.53	76
	1&2	0.48	0.60	0.44	0.11	2.53	77
Squall Line	1	0.32	0.46	0.29	0.14	1.08	17
	2	0.47	0.51	0.42	0.24	2.14	19
	1&2	0.40	0.49	0.36	0.14	2.14	36
Hurricane	1	0.12	0.12	0.03	0.09	0.15	4
	2	-	-	-	-	-	0
	1&2	0.12	0.12	0.03	0.09	0.15	4

TABLE 14 (continued) Nitrogen/Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	0.31	0.39	0.27	0.06	2.11	262
	2	0.33	0.41	0.34	0.05	2.53	321
	1&2	0.32	0.40	0.31	0.05	2.53	583
Rainshower	1	0.40	0.61	0.58	0.04	3.11	41
	2	0.45	0.53	0.27	0.14	1.56	69
	1&2	0.43	0.56	0.41	0.04	3.11	110
Thundershower	1	0.32	0.46	0.24	0.10	1.11	25
	2	0.44	0.49	0.37	0.24	2.14	27
	1&2	0.37	0.48	0.31	0.10	2.14	52
Mixed	1	0.66	0.66	0.19	0.48	0.90	4
	2	0.48	0.50	0.16	0.29	0.73	8
	1&2	0.60	0.56	0.18	0.29	0.90	12
Sleet	1	0.39	0.39	-	0.39	0.39	1
	2	0.46	0.55	0.15	0.33	0.76	7
	1&2	0.45	0.53	0.15	0.33	0.76	8
Snow	1	0.82	0.98	0.70	0.12	3.59	44
	2	0.99	0.98	0.62	0.11	4.08	59
	1&2	0.91	0.98	0.65	0.11	4.08	103
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	0.56	0.58	0.50	0.04	3.59	208
	2	0.53	0.56	0.42	0.05	2.53	288
	1&2	0.55	0.57	0.46	0.04	3.59	496
1.1 - 2.5	1	0.42	0.43	0.30	0.09	1.70	109
	2	0.44	0.46	0.43	0.07	4.08	123
	1&2	0.43	0.45	0.38	0.07	4.08	232
2.6 - 6.0	1	0.26	0.27	0.15	0.06	0.70	43
	2	0.34	0.33	0.21	0.12	1.33	59
	1&2	0.31	0.30	0.19	0.06	1.33	102
6.1 - 12.0	1	0.29	0.29	0.13	0.12	0.64	12
	2	0.48	0.45	0.52	0.14	2.14	15
	1&2	0.35	0.38	0.40	0.12	2.14	27
>12.0	1	0.30	0.34	0.26	0.14	0.77	5
	2	0.28	0.29	0.05	0.24	0.36	6
	1&2	0.29	0.31	0.17	0.14	0.77	11

TABLE 14 (continued) Nitrogen/Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	0.48	0.78	0.56	0.10	2.11	18
	2	0.83	0.79	0.38	0.20	1.45	21
	1&2	0.62	0.78	0.47	0.10	2.11	39
3 - 5	1	0.34	0.50	0.38	0.04	1.90	145
	2	0.46	0.59	0.50	0.11	4.08	157
	1&2	0.37	0.55	0.45	0.04	4.08	302
6 - 9	1	0.40	0.50	0.45	0.09	3.59	154
	2	0.40	0.46	0.36	0.05	2.53	222
	1&2	0.40	0.47	0.40	0.05	3.59	376
≥ 10	1	0.28	0.35	0.36	0.10	2.13	60
	2	0.35	0.39	0.32	0.07	1.90	89
	1&2	0.32	0.38	0.34	0.07	2.13	149
g. Wind Direction at 108 m							
N	1	0.47	0.61	0.44	0.14	1.90	33
	2	0.59	0.68	0.46	0.19	2.24	39
	1&2	0.52	0.64	0.45	0.14	2.24	72
NE	1	0.38	0.58	0.56	0.04	2.48	52
	2	0.47	0.54	0.43	0.11	2.49	146
	1&2	0.45	0.55	0.47	0.04	2.49	198
E	1	0.31	0.41	0.48	0.10	3.59	59
	2	0.31	0.40	0.46	0.05	4.08	105
	1&2	0.31	0.40	0.47	0.05	4.08	164
SE	1	0.30	0.38	0.29	0.10	1.60	61
	2	0.36	0.49	0.42	0.08	2.53	59
	1&2	0.31	0.44	0.37	0.08	2.53	120
S	1	0.32	0.41	0.38	0.06	2.11	55
	2	0.33	0.39	0.19	0.11	0.98	51
	1&2	0.33	0.40	0.30	0.06	2.11	106
SW	1	0.54	0.62	0.44	0.24	3.11	48
	2	0.57	0.57	0.39	0.12	2.14	57
	1&2	0.53	0.60	0.41	0.12	3.11	105
W	1	0.57	0.52	0.18	0.27	0.86	21
	2	0.45	0.52	0.25	0.11	1.19	22
	1&2	0.51	0.52	0.22	0.11	1.19	43
NW	1	0.39	0.49	0.38	0.12	2.13	48
	2	0.48	0.54	0.30	0.16	1.30	12
	1&2	0.40	0.50	0.36	0.12	2.13	60

TABLE 14 (continued) Nitrogen/Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	1.67	1.71	0.58	1.30	2.13	2
	2	0.32	0.22	0.15	0.11	0.32	2
	1&2	1.47	0.97	0.93	0.11	2.13	4
-5.0 to -0.1	1	0.89	0.99	0.55	0.23	2.48	33
	2	1.01	1.03	0.66	0.40	4.08	45
	1&2	0.96	1.02	0.61	0.23	4.08	78
0.0 to 4.9	1	0.39	0.52	0.55	0.12	3.59	62
	2	0.63	0.62	0.42	0.11	2.49	84
	1&2	0.50	0.58	0.48	0.11	3.59	146
5.0 to 9.9	1	0.40	0.50	0.30	0.10	2.11	93
	2	0.29	0.37	0.28	0.08	1.62	95
	1&2	0.34	0.43	0.30	0.08	2.11	188
10.0 to 14.9	1	0.34	0.43	0.40	0.04	3.11	75
	2	0.31	0.37	0.26	0.05	2.03	135
	1&2	0.32	0.39	0.32	0.04	3.11	210
15.0 to 19.9	1	0.44	0.41	0.22	0.10	1.08	35
	2	0.34	0.45	0.35	0.11	2.53	68
	1&2	0.37	0.44	0.31	0.10	2.53	103
20.0 to 24.9	1	0.27	0.31	0.21	0.06	0.99	75
	2	0.45	0.50	0.34	0.12	2.14	58
	1&2	0.33	0.39	0.29	0.06	2.14	133
25.0 to 29.9	1	0.62	0.55	0.13	0.45	0.64	2
	2	0.57	0.73	0.23	0.47	0.98	4
	1&2	0.60	0.67	0.21	0.45	0.98	6

TABLE 15 Variation in Ammonium/Sulfate Ratio

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	0.20	0.32	0.29	0.05	2.85	379
	2	0.22	0.27	0.26	0.03	2.88	461
	1&2	0.21	0.29	0.28	0.03	2.88	840
b. Season							
Winter	1	0.27	0.30	0.17	0.07	0.89	81
	2	0.25	0.32	0.37	0.04	2.88	115
	1&2	0.26	0.31	0.30	0.04	2.88	196
Spring	1	0.25	0.30	0.32	0.07	2.85	122
	2	0.21	0.23	0.16	0.07	1.09	87
	1&2	0.23	0.27	0.27	0.07	2.85	209
Summer	1	0.14	0.21	0.17	0.05	0.86	59
	2	0.18	0.23	0.14	0.05	0.75	100
	1&2	0.15	0.22	0.15	0.05	0.86	159
Fall	1	0.30	0.41	0.34	0.08	2.51	117
	2	0.25	0.30	0.27	0.03	2.59	159
	1&2	0.27	0.34	0.31	0.03	2.59	276
c. Synoptic Type							
Low	1	0.25	0.30	0.17	0.07	0.87	66
	2	0.22	0.31	0.27	0.05	1.14	37
	1&2	0.24	0.30	0.21	0.05	1.14	103
Warm Front	1	0.25	0.32	0.28	0.07	2.51	215
	2	0.22	0.25	0.21	0.03	2.03	183
	1&2	0.24	0.29	0.25	0.03	2.51	398
Cold Front	1	0.15	0.38	0.43	0.05	2.85	64
	2	0.21	0.26	0.19	0.04	1.19	106
	1&2	0.17	0.30	0.31	0.04	2.85	170
Occluded Front	1	0.23	0.22	0.14	0.11	0.54	10
	2	0.21	0.27	0.43	0.06	2.88	44
	1&2	0.21	0.26	0.39	0.06	2.88	54
Stationary Front	1	0.16	0.16	-	0.16	0.16	1
	2	0.31	0.36	0.33	0.08	2.59	77
	1&2	0.31	0.36	0.33	0.08	2.59	78
Squall Line	1	0.20	0.28	0.22	0.08	0.86	18
	2	0.17	0.18	0.07	0.09	0.31	13
	1&2	0.19	0.24	0.18	0.08	0.86	31
Hurricane	1	0.11	0.11	0.04	0.08	0.17	5
	2	-	-	-	-	-	0
	1&2	0.11	0.11	0.04	0.08	0.17	5

TABLE 15 (continued) Ammonium/Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	0.24	0.31	0.26	0.05	2.51	264
	2	0.23	0.28	0.30	0.03	2.88	296
	1&2	0.23	0.29	0.28	0.03	2.88	560
Rainshower	1	0.26	0.46	0.51	0.08	2.85	42
	2	0.23	0.26	0.15	0.07	0.74	68
	1&2	0.24	0.34	0.35	0.07	2.85	110
Thundershower	1	0.14	0.22	0.17	0.10	0.89	25
	2	0.20	0.21	0.09	0.09	0.41	24
	1&2	0.16	0.22	0.13	0.09	0.89	49
Mixed	1	0.28	0.28	0.03	0.25	0.33	5
	2	0.26	0.25	0.10	0.12	0.36	8
	1&2	0.28	0.26	0.08	0.12	0.36	13
Sleet	1	0.19	0.19	-	0.19	0.19	1
	2	0.18	0.32	0.34	0.12	0.98	6
	1&2	0.18	0.30	0.31	0.12	0.98	7
Snow	1	0.28	0.31	0.17	0.08	0.75	42
	2	0.27	0.28	0.21	0.06	1.14	59
	1&2	0.27	0.29	0.20	0.06	1.14	101
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	0.33	0.39	0.35	0.05	2.85	215
	2	0.26	0.31	0.31	0.03	2.88	277
	1&2	0.29	0.34	0.33	0.03	2.88	492
1.1 - 2.5	1	0.25	0.25	0.17	0.08	1.48	104
	2	0.22	0.22	0.15	0.06	1.06	112
	1&2	0.23	0.24	0.16	0.06	1.48	216
2.6 - 6.0	1	0.19	0.20	0.11	0.07	0.47	41
	2	0.20	0.20	0.15	0.04	0.94	53
	1&2	0.20	0.20	0.13	0.04	0.94	94
6.1 - 12.0	1	0.14	0.21	0.10	0.10	0.46	12
	2	0.22	0.23	0.11	0.09	0.49	13
	1&2	0.16	0.22	0.10	0.09	0.49	25
>12.0	1	0.17	0.16	0.09	0.06	0.30	7
	2	0.22	0.24	0.07	0.13	0.30	6
	1&2	0.20	0.20	0.09	0.06	0.30	13

TABLE 15 (continued) Ammonium/Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	0.19	0.31	0.19	0.08	0.78	20
	2	0.30	0.38	0.20	0.07	0.98	19
	1&2	0.23	0.34	0.20	0.07	0.98	39
3 - 5	1	0.18	0.33	0.30	0.06	2.51	140
	2	0.27	0.33	0.37	0.07	2.88	151
	1&2	0.20	0.33	0.34	0.06	2.88	291
6 - 9	1	0.27	0.33	0.31	0.05	2.85	155
	2	0.21	0.26	0.20	0.03	1.09	206
	1&2	0.23	0.29	0.25	0.03	2.85	361
≥ 10	1	0.20	0.26	0.23	0.07	1.48	64
	2	0.19	0.20	0.14	0.03	0.85	83
	1&2	0.20	0.23	0.19	0.03	1.48	147
g. Wind Direction at 108 m							
N	1	0.28	0.34	0.15	0.07	0.70	33
	2	0.18	0.25	0.25	0.05	1.14	37
	1&2	0.24	0.29	0.21	0.05	1.14	70
NE	1	0.22	0.31	0.20	0.08	0.87	50
	2	0.27	0.32	0.35	0.05	2.88	137
	1&2	0.26	0.32	0.32	0.05	2.88	187
E	1	0.23	0.28	0.15	0.07	0.75	61
	2	0.25	0.29	0.27	0.03	2.03	97
	1&2	0.24	0.29	0.23	0.03	2.03	158
SE	1	0.15	0.26	0.18	0.06	1.10	63
	2	0.18	0.20	0.12	0.04	0.85	57
	1&2	0.15	0.23	0.16	0.04	1.10	120
S	1	0.27	0.43	0.44	0.05	2.51	59
	2	0.19	0.22	0.11	0.06	0.53	52
	1&2	0.23	0.33	0.34	0.05	2.51	111
SW	1	0.27	0.39	0.42	0.12	2.85	48
	2	0.17	0.27	0.20	0.08	1.05	49
	1&2	0.21	0.33	0.33	0.08	2.85	97
W	1	0.25	0.34	0.42	0.12	2.15	21
	2	0.26	0.30	0.25	0.08	1.19	21
	1&2	0.26	0.32	0.34	0.08	2.15	42
NW	1	0.22	0.22	0.10	0.08	0.50	44
	2	0.28	0.22	0.12	0.08	0.41	11
	1&2	0.23	0.22	0.11	0.08	0.50	55

TABLE 15 (continued) Ammonium/Sulfate

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	0.26	0.26	0.01	0.25	0.26	2
	2	0.25	0.23	0.18	0.08	0.43	3
	1&2	0.25	0.24	0.13	0.08	0.43	5
-5.0 to -0.1	1	0.32	0.34	0.17	0.08	0.72	30
	2	0.28	0.29	0.23	0.09	1.14	44
	1&2	0.30	0.31	0.21	0.08	1.14	74
0.0 to 4.9	1	0.26	0.27	0.16	0.07	0.75	60
	2	0.36	0.46	0.48	0.06	2.88	84
	1&2	0.31	0.38	0.39	0.06	2.88	144
5.0 to 9.9	1	0.26	0.29	0.23	0.08	2.15	94
	2	0.20	0.20	0.15	0.04	1.05	80
	1&2	0.23	0.25	0.20	0.04	2.15	174
10.0 to 14.9	1	0.26	0.35	0.34	0.08	2.85	80
	2	0.20	0.22	0.13	0.03	0.85	134
	1&2	0.22	0.27	0.24	0.03	2.85	214
15.0 to 19.9	1	0.26	0.35	0.28	0.05	1.48	37
	2	0.21	0.23	0.14	0.07	0.63	60
	1&2	0.22	0.28	0.21	0.05	1.48	97
20.0 to 24.9	1	0.14	0.33	0.40	0.06	2.51	74
	2	0.19	0.27	0.18	0.07	0.82	52
	1&2	0.16	0.31	0.33	0.06	2.51	126
25.0 to 29.9	1	0.27	0.30	0.07	0.26	0.35	2
	2	0.22	0.30	0.14	0.15	0.49	4
	1&2	0.25	0.30	0.12	0.15	0.49	6

TABLE 16 Variation in Ammonium/Nitrogen Ratio

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	0.73	0.92	1.16	0.07	15.49	359
	2	0.69	0.84	1.07	0.05	9.54	576
	1&2	0.71	0.87	1.10	0.05	15.49	935
b. Season							
Winter	1	0.69	0.63	0.54	0.12	2.88	77
	2	0.57	0.82	1.04	0.05	7.28	197
	1&2	0.60	0.77	0.93	0.05	7.28	274
Spring	1	0.91	0.91	1.02	0.07	6.91	117
	2	0.75	0.65	0.42	0.07	2.43	100
	1&2	0.84	0.79	0.81	0.07	6.91	217
Summer	1	0.54	0.81	0.61	0.16	3.51	55
	2	0.59	0.61	0.42	0.11	2.10	99
	1&2	0.55	0.68	0.50	0.11	3.51	154
Fall	1	1.14	1.19	1.67	0.17	15.49	110
	2	0.85	1.08	1.47	0.05	9.54	180
	1&2	0.94	1.12	1.55	0.05	15.49	290
c. Synoptic Type							
Low	1	0.86	0.98	1.17	0.12	6.71	67
	2	0.76	0.91	0.77	0.11	3.20	44
	1&2	0.82	0.95	1.02	0.11	6.71	111
Warm Front	1	0.96	0.95	1.28	0.13	15.49	196
	2	0.78	0.85	0.98	0.06	9.54	244
	1&2	0.85	0.89	1.12	0.06	15.49	440
Cold Front	1	0.46	0.85	0.93	0.16	6.91	63
	2	0.56	0.76	0.92	0.07	8.51	124
	1&2	0.49	0.79	0.92	0.07	8.51	187
Occluded Front	1	1.06	0.92	1.03	0.07	3.51	10
	2	0.30	0.55	1.21	0.05	7.13	59
	1&2	0.40	0.60	1.19	0.05	7.13	69
Stationary Front	1	0.39	0.39	-	0.39	0.39	1
	2	0.88	1.13	1.46	0.05	8.18	91
	1&2	0.88	1.12	1.45	0.05	8.18	92
Squall Line	1	0.74	0.63	0.35	0.18	1.52	18
	2	0.56	0.43	0.16	0.21	0.86	13
	1&2	0.67	0.55	0.30	0.18	1.52	31
Hurricane	1	1.07	0.99	0.39	0.56	1.39	4
	2	-	-	-	-	-	0
	1&2	1.07	0.99	0.39	0.56	1.39	4

TABLE 16 (continued) Ammonium/Nitrogen

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	0.98	0.99	1.19	0.07	15.49	246
	2	0.85	1.02	1.22	0.05	9.54	345
	1&2	0.91	1.01	1.21	0.05	15.49	591
Rainshower	1	0.91	1.24	1.56	0.18	6.91	43
	2	0.55	0.58	0.41	0.18	2.51	74
	1&2	0.69	0.82	1.04	0.18	6.91	117
Thundershower	1	0.48	0.52	0.24	0.29	1.23	23
	2	0.56	0.52	0.25	0.21	1.16	23
	1&2	0.51	0.52	0.24	0.21	1.23	46
Mixed	1	0.44	0.43	0.11	0.30	0.53	4
	2	1.19	1.04	0.86	0.19	2.79	13
	1&2	0.86	0.90	0.79	0.19	2.79	17
Sleet	1	0.50	0.50	-	0.50	0.50	1
	2	0.45	0.52	0.29	0.18	1.30	14
	1&2	0.45	0.52	0.28	0.18	1.30	15
Snow	1	0.57	0.46	0.46	0.12	2.88	42
	2	0.43	0.52	0.90	0.05	7.45	107
	1&2	0.47	0.50	0.80	0.05	7.45	149
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	0.86	0.94	1.02	0.12	6.91	206
	2	0.71	0.94	1.28	0.05	9.54	363
	1&2	0.77	0.94	1.19	0.05	9.54	569
1.1 - 2.5	1	0.89	0.90	1.59	0.07	15.49	100
	2	0.62	0.62	0.52	0.11	3.23	133
	1&2	0.73	0.74	1.12	0.07	15.49	233
2.6 - 6.0	1	0.90	0.91	0.59	0.16	2.88	37
	2	0.69	0.71	0.40	0.15	2.58	61
	1&2	0.77	0.78	0.53	0.15	2.88	98
6.1 - 12.0	1	0.50	0.85	0.50	0.38	1.75	11
	2	0.77	0.77	0.45	0.28	1.65	14
	1&2	0.57	0.81	0.46	0.28	1.75	25
>12.0	1	0.86	0.70	0.38	0.39	1.23	5
	2	0.75	0.79	0.26	0.49	1.04	5
	1&2	0.80	0.75	0.31	0.39	1.23	10

TABLE 16 (continued) Ammonium/Nitrogen

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	0.48	0.49	0.38	0.13	1.48	17
	2	0.57	1.11	1.63	0.13	7.45	28
	1&2	0.52	0.87	1.33	0.13	7.45	45
3 - 5	1	0.61	0.91	1.07	0.17	6.71	135
	2	0.79	0.90	1.26	0.05	9.54	190
	1&2	0.66	0.90	1.18	0.05	9.54	325
6 - 9	1	0.83	0.86	0.74	0.16	6.91	151
	2	0.69	0.82	0.89	0.05	8.51	250
	1&2	0.74	0.83	0.83	0.05	8.51	401
≥ 10	1	1.12	1.24	2.06	0.07	15.49	58
	2	0.63	0.74	0.92	0.06	7.28	96
	1&2	0.81	0.92	1.46	0.06	15.49	152
g. Wind Direction at 108 m							
N	1	0.77	0.70	0.38	0.17	1.55	33
	2	0.39	0.46	0.34	0.06	1.51	42
	1&2	0.59	0.57	0.37	0.06	1.55	75
NE	1	0.83	0.93	1.18	0.17	6.71	49
	2	0.73	1.01	1.42	0.05	9.54	210
	1&2	0.75	0.99	1.38	0.05	9.54	259
E	1	0.99	0.98	0.83	0.18	4.30	58
	2	0.88	0.90	0.86	0.06	5.38	114
	1&2	0.92	0.93	0.85	0.06	5.38	172
SE	1	0.53	0.90	0.64	0.16	2.27	55
	2	0.64	0.62	0.53	0.05	2.72	56
	1&2	0.55	0.76	0.60	0.05	2.72	111
S	1	1.32	1.55	2.23	0.17	15.49	53
	2	0.67	0.71	0.61	0.17	3.23	59
	1&2	0.94	1.11	1.64	0.17	15.49	112
SW	1	0.56	0.62	0.41	0.18	2.47	46
	2	0.50	0.79	1.15	0.12	8.51	56
	1&2	0.52	0.72	0.90	0.12	8.51	102
W	1	0.49	0.82	1.45	0.18	6.91	20
	2	0.64	0.81	0.77	0.07	2.98	26
	1&2	0.56	0.81	1.10	0.07	6.91	46
NW	1	0.82	0.64	0.47	0.07	2.88	45
	2	0.59	0.56	0.47	0.12	1.96	13
	1&2	0.78	0.62	0.47	0.07	2.88	58

TABLE 16 (continued) Ammonium/Nitrogen

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	0.16	0.16	0.05	0.12	0.19	2
	2	0.91	0.81	0.26	0.60	1.18	4
	1&2	0.45	0.59	0.39	0.12	1.18	6
-5.0 to -0.1	1	0.47	0.42	0.43	0.13	2.47	31
	2	0.46	0.44	0.43	0.05	2.77	94
	1&2	0.46	0.43	0.43	0.05	2.77	125
0.0 to 4.9	1	0.92	0.76	0.49	0.07	2.88	60
	2	0.75	1.33	1.80	0.11	9.54	121
	1&2	0.83	1.14	1.52	0.07	9.54	181
5.0 to 9.9	1	0.79	0.73	0.77	0.17	6.91	86
	2	0.82	0.81	1.03	0.07	8.51	98
	1&2	0.81	0.77	0.92	0.07	8.51	184
10.0 to 14.9	1	0.92	1.08	1.01	0.17	6.71	75
	2	0.81	0.82	0.61	0.06	3.41	139
	1&2	0.85	0.91	0.78	0.06	6.71	214
15.0 to 19.9	1	1.04	1.28	2.53	0.16	15.49	36
	2	0.74	0.71	0.62	0.05	3.13	63
	1&2	0.82	0.91	1.61	0.05	15.49	99
20.0 to 24.9	1	0.61	1.21	1.13	0.22	6.61	67
	2	0.57	0.72	0.66	0.12	3.20	53
	1&2	0.60	0.99	0.98	0.12	6.61	120
25.0 to 29.9	1	0.44	0.59	0.26	0.40	0.77	2
	2	0.37	0.40	0.11	0.29	0.51	4
	1&2	0.41	0.46	0.17	0.29	0.77	6

TABLE 17 Variation in Sulfate/Sodium Ratio

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	5.54	5.47	8.16	0.14	78.64	355
	2	3.76	3.55	5.64	0.08	44.30	414
	1&2	4.55	4.43	6.98	0.08	78.64	769
b. Season							
Winter	1	3.88	4.09	3.36	0.27	16.36	65
	2	1.25	1.45	2.26	0.08	13.29	95
	1&2	2.51	2.52	3.04	0.08	16.36	160
Spring	1	3.90	3.65	3.73	0.21	18.64	110
	2	3.05	3.17	3.53	0.33	17.09	60
	1&2	3.57	3.48	3.66	0.21	18.64	170
Summer	1	8.78	8.57	14.28	0.14	78.64	60
	2	7.12	7.27	8.75	0.39	44.30	96
	1&2	7.87	7.77	11.18	0.14	78.64	156
Fall	1	4.86	6.33	8.28	0.16	70.67	120
	2	2.61	2.72	4.15	0.11	22.66	163
	1&2	3.29	4.25	6.48	0.11	70.67	283
c. Synoptic Type							
Low	1	4.20	3.75	3.91	0.27	18.64	69
	2	2.05	2.56	3.92	0.29	21.85	38
	1&2	3.31	3.33	3.94	0.27	21.85	107
Warm Front	1	4.24	4.98	6.89	0.16	75.96	195
	2	2.62	2.62	5.40	0.11	44.30	182
	1&2	3.42	3.84	6.32	0.11	75.96	377
Cold Front	1	6.81	8.46	10.43	0.45	70.67	52
	2	3.65	4.30	5.82	0.14	36.95	86
	1&2	4.44	5.87	8.10	0.14	70.67	138
Occluded Front	1	2.11	2.38	2.22	0.21	7.40	14
	2	1.01	0.90	1.77	0.08	10.19	32
	1&2	1.36	1.35	2.02	0.08	10.19	46
Stationary Front	1	13.75	13.75	-	13.75	13.75	1
	2	5.89	6.11	5.79	0.35	22.66	59
	1&2	6.04	6.24	5.83	0.35	22.66	60
Squall Line	1	13.08	13.05	19.52	0.27	78.64	16
	2	8.16	7.88	8.89	1.92	33.75	16
	1&2	10.42	10.46	15.15	0.27	78.64	32
Hurricane	1	2.45	1.94	2.98	0.14	9.09	8
	2	-	-	-	-	-	0
	1&2	2.45	1.94	2.98	0.14	9.09	8

TABLE 17 (continued) Sulfate/Sodium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	4.18	4.57	6.39	0.15	75.96	263
	2	2.64	2.88	4.94	0.11	44.30	294
	1&2	3.33	3.68	5.73	0.11	75.96	557
Rainshower	1	5.73	10.18	16.33	0.27	78.64	38
	2	6.71	7.52	7.67	0.36	36.95	47
	1&2	6.25	8.71	12.30	0.27	78.64	85
Thundershower	1	10.06	8.94	7.74	0.14	30.58	25
	2	6.82	6.34	8.12	0.89	33.75	24
	1&2	8.22	7.66	7.95	0.14	33.75	49
Mixed	1	7.74	6.77	4.00	3.37	11.18	3
	2	3.23	3.88	4.59	0.22	9.03	3
	1&2	6.32	5.32	4.16	0.22	11.18	6
Sleet	1	-	-	-	-	-	0
	2	1.48	2.67	4.52	0.29	11.87	6
	1&2	1.48	2.67	4.52	0.29	11.87	6
Snow	1	4.30	4.19	2.50	0.69	10.91	26
	2	1.82	2.21	3.58	0.08	17.09	40
	1&2	2.82	2.99	3.32	0.08	17.09	66
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	6.53	6.63	10.17	0.15	78.64	186
	2	3.14	3.94	5.83	0.08	44.30	204
	1&2	4.62	5.22	8.29	0.08	78.64	390
1.1 - 2.5	1	3.87	3.97	5.14	0.18	30.58	98
	2	2.86	3.03	5.92	0.14	43.81	119
	1&2	3.31	3.46	5.59	0.14	43.81	217
2.6 - 6.0	1	3.49	3.41	2.93	0.34	14.15	47
	2	3.13	2.92	3.59	0.11	19.54	63
	1&2	3.28	3.13	3.32	0.11	19.54	110
6.1 - 12.0	1	4.85	4.80	3.65	0.14	11.48	16
	2	3.38	3.08	3.50	0.18	15.08	22
	1&2	4.01	3.81	3.62	0.14	15.08	38
>12.0	1	11.27	10.21	7.88	1.46	22.65	8
	2	7.97	8.82	12.61	1.26	33.75	6
	1&2	9.57	9.62	9.75	1.26	33.75	14

TABLE 17 (continued) Sulfate/Sodium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	4.90	6.44	4.34	1.95	15.98	15
	2	13.04	11.17	10.13	0.27	36.95	11
	1&2	6.75	8.44	7.57	0.27	36.95	26
3 - 5	1	10.25	9.25	12.24	0.27	78.64	122
	2	8.90	6.31	8.18	0.21	44.30	105
	1&2	9.71	7.89	10.64	0.21	78.64	227
6 - 9	1	4.08	4.17	3.56	0.33	19.01	138
	2	3.07	2.88	3.69	0.11	21.85	196
	1&2	3.38	3.42	3.69	0.11	21.85	334
≥ 10	1	2.68	1.76	2.18	0.14	8.40	80
	2	1.86	1.12	1.90	0.08	15.08	101
	1&2	2.26	1.40	2.05	0.08	15.08	181
g. Wind Direction at 108 m							
N	1	4.19	4.41	4.28	0.32	17.62	29
	2	1.99	2.60	3.88	0.08	15.93	31
	1&2	3.26	3.47	4.14	0.08	17.62	60
NE	1	5.19	5.89	5.99	1.02	26.14	44
	2	3.25	2.74	3.86	0.14	17.85	115
	1&2	3.66	3.62	4.74	0.14	26.14	159
E	1	5.62	5.13	4.97	0.14	23.23	69
	2	3.10	3.44	7.81	0.11	44.30	98
	1&2	4.33	4.14	6.81	0.11	44.30	167
SE	1	4.49	5.85	13.40	0.27	78.64	64
	2	2.98	4.41	4.89	0.14	21.54	49
	1&2	3.77	5.23	10.57	0.14	78.64	113
S	1	2.71	3.35	3.15	0.16	19.01	55
	2	2.23	2.31	3.11	0.17	14.76	53
	1&2	2.43	2.84	3.16	0.16	19.01	108
SW	1	5.40	6.31	5.31	0.27	20.97	43
	2	3.68	4.26	4.03	0.14	17.43	46
	1&2	4.20	5.25	4.78	0.14	20.97	89
W	1	6.68	9.88	8.67	0.89	30.58	14
	2	22.69	10.04	10.91	0.23	33.75	13
	1&2	14.84	9.96	9.62	0.23	33.75	27
NW	1	11.83	6.26	12.04	0.21	70.67	37
	2	6.06	7.87	6.22	0.23	21.09	9
	1&2	10.66	6.57	11.10	0.21	70.67	46

TABLE 17 (continued) Sulfate/Sodium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	4.85	4.74	1.40	3.75	5.73	2
	2	3.10	1.69	2.07	0.23	3.15	2
	1&2	4.60	3.22	2.28	0.23	5.73	4
-5.0 to -0.1	1	4.12	4.08	2.45	0.69	10.91	19
	2	1.57	1.98	3.43	0.08	17.09	33
	1&2	2.49	2.75	3.25	0.08	17.09	52
0.0 to 4.9	1	3.34	2.90	3.09	0.21	16.36	56
	2	2.70	3.61	4.27	0.18	18.50	46
	1&2	3.09	3.22	3.67	0.18	18.50	102
5.0 to 9.9	1	4.99	4.53	3.58	0.33	14.94	85
	2	1.27	1.45	2.21	0.15	13.29	90
	1&2	2.99	2.94	3.33	0.15	14.94	175
10.0 to 14.9	1	3.67	5.45	6.17	0.27	26.14	76
	2	2.78	3.10	6.20	0.11	44.30	128
	1&2	3.07	3.97	6.28	0.11	44.30	204
15.0 to 19.9	1	5.32	8.14	11.92	0.16	70.67	38
	2	5.04	4.96	4.82	0.25	15.93	60
	1&2	5.13	6.19	8.42	0.16	70.67	98
20.0 to 24.9	1	8.25	7.21	12.76	0.14	78.64	78
	2	7.03	6.84	8.09	0.38	36.95	51
	1&2	7.69	7.06	11.12	0.14	78.64	129
25.0 to 29.9	1	20.68	20.68	-	20.68	20.68	1
	2	16.43	15.32	8.91	2.26	22.05	4
	1&2	16.93	16.39	8.08	2.26	22.05	5

TABLE 18 Variation in Sulfate/Chloride Ratio

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	1.80	2.22	2.83	0.08	24.35	283
	2	1.47	1.57	1.99	0.10	12.55	352
	1&2	1.60	1.86	2.42	0.08	24.35	635
b. Season							
Winter	1	1.42	1.88	1.66	0.19	7.28	58
	2	0.75	0.96	1.31	0.11	6.11	82
	1&2	1.06	1.34	1.53	0.11	7.28	140
Spring	1	1.51	1.92	2.55	0.08	16.15	94
	2	1.50	1.49	1.92	0.21	12.55	53
	1&2	1.51	1.77	2.34	0.08	16.15	147
Summer	1	3.10	4.28	5.12	0.13	24.35	40
	2	2.78	2.92	2.40	0.39	9.95	61
	1&2	2.92	3.46	3.76	0.13	24.35	101
Fall	1	1.36	1.85	1.73	0.11	8.13	91
	2	1.12	1.40	1.93	0.10	11.97	156
	1&2	1.19	1.57	1.86	0.10	11.97	247
c. Synoptic Type							
Low	1	1.70	1.96	2.63	0.08	13.53	58
	2	1.05	1.03	0.49	0.35	2.25	28
	1&2	1.40	1.66	2.22	0.08	13.53	86
Warm Front	1	1.31	1.73	1.74	0.11	15.32	153
	2	0.98	1.18	1.57	0.10	9.95	161
	1&2	1.13	1.45	1.68	0.10	15.32	314
Cold Front	1	3.36	4.04	3.67	0.30	16.15	45
	2	1.63	1.74	1.97	0.15	12.55	71
	1&2	2.11	2.63	2.97	0.15	16.15	116
Occluded Front	1	0.95	0.89	0.75	0.19	2.29	10
	2	0.63	0.73	0.77	0.11	3.38	35
	1&2	0.72	0.76	0.76	0.11	3.38	45
Stationary Front	1	-	-	-	-	-	0
	2	2.66	2.93	2.76	0.27	11.72	48
	1&2	2.66	2.93	2.76	0.27	11.72	48
Squall Line	1	6.94	5.43	7.22	0.22	24.35	10
	2	3.77	4.19	2.11	2.11	7.43	8
	1&2	4.76	4.88	5.46	0.22	24.35	18
Hurricane	1	0.60	0.79	0.73	0.13	2.21	7
	2	-	-	-	-	-	0
	1&2	0.60	0.79	0.73	0.13	2.21	7

TABLE 18 (continued) Sulfate/Chloride

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	1.32	1.59	1.77	0.08	15.32	206
	2	1.08	1.22	1.54	0.10	11.72	243
	1&2	1.18	1.39	1.66	0.08	15.32	449
Rainshower	1	2.86	4.32	4.91	0.22	24.35	36
	2	3.56	3.55	3.23	0.37	12.55	45
	1&2	3.23	3.89	4.05	0.22	24.35	81
Thundershower	1	3.27	5.09	4.40	0.14	11.81	16
	2	2.43	2.26	1.10	0.66	4.28	15
	1&2	2.73	3.72	3.53	0.14	11.81	31
Mixed	1	-	-	-	-	-	0
	2	3.74	3.97	2.38	0.17	6.11	5
	1&2	3.74	3.97	2.38	0.17	6.11	5
Sleet	1	0.81	0.81	-	0.81	0.81	1
	2	1.18	1.69	1.61	0.23	5.04	7
	1&2	1.15	1.58	1.52	0.23	5.04	8
Snow	1	2.70	2.71	2.02	0.21	7.28	24
	2	0.50	0.90	1.13	0.17	5.19	37
	1&2	1.37	1.61	1.77	0.17	7.28	61
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	2.84	2.81	3.35	0.08	24.35	163
	2	1.52	1.78	2.14	0.11	12.55	192
	1&2	2.07	2.25	2.81	0.08	24.35	355
1.1 - 2.5	1	1.36	1.37	1.49	0.13	8.13	76
	2	1.39	1.37	2.11	0.14	11.97	96
	1&2	1.37	1.37	1.86	0.13	11.97	172
2.6 - 6.0	1	1.34	1.41	1.73	0.26	6.52	34
	2	1.25	1.22	1.08	0.10	5.55	48
	1&2	1.29	1.30	1.14	0.10	6.52	82
6.1 - 12.0	1	2.23	2.14	3.26	0.14	10.62	9
	2	1.25	1.20	1.09	0.22	3.19	13
	1&2	1.69	1.58	2.23	0.14	10.62	22
>12.0	1	0.07	0.87	-	0.07	0.87	1
	2	2.74	2.17	1.57	1.14	3.98	3
	1&2	2.36	1.84	1.44	0.87	3.98	4

TABLE 18 (continued) Sulfate/Chloride

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	2.40	2.72	1.02	1.65	5.21	10
	2	2.86	3.13	2.55	0.23	8.36	12
	1&2	2.59	2.94	1.97	0.23	8.36	22
3 - 5	1	3.75	3.65	3.90	0.22	24.35	80
	2	2.67	2.75	2.93	0.11	12.55	79
	1&2	3.30	3.20	3.47	0.11	24.35	159
6 - 9	1	1.88	2.15	2.33	0.16	16.15	119
	2	1.60	1.37	1.54	0.10	9.95	165
	1&2	1.69	1.70	1.95	0.10	16.15	284
≥ 10	1	0.77	0.73	0.98	0.00	7.28	74
	2	0.82	0.68	0.56	0.13	2.46	94
	1&2	0.80	0.70	0.77	0.08	7.28	168
g. Wind Direction at 108 m							
N	1	1.33	1.49	1.23	0.23	4.22	23
	2	0.81	1.01	0.90	0.18	3.77	24
	1&2	1.09	1.25	1.09	0.18	4.22	47
NE	1	1.98	2.54	2.69	0.53	13.53	32
	2	0.81	1.15	1.53	0.11	8.36	89
	1&2	1.09	1.52	1.99	0.11	13.53	121
E	1	1.36	1.72	1.59	0.13	9.30	49
	2	0.94	1.24	1.44	0.10	8.34	94
	1&2	1.10	1.40	1.50	0.10	9.30	143
SE	1	1.35	2.22	4.09	0.19	24.35	51
	2	1.86	2.44	2.89	0.14	11.97	45
	1&2	1.61	2.32	3.56	0.14	24.35	96
S	1	1.39	1.72	1.87	0.11	11.91	45
	2	1.51	1.76	2.37	0.15	9.95	48
	1&2	1.46	1.75	2.13	0.11	11.91	93
SW	1	2.68	3.48	3.49	0.22	16.15	40
	2	2.73	2.09	2.19	0.16	12.55	38
	1&2	2.71	2.80	2.99	0.16	16.15	78
W	1	2.39	2.72	2.86	0.08	11.81	16
	2	1.81	2.41	2.34	0.40	7.38	10
	1&2	2.21	2.60	2.63	0.08	11.81	26
NW	1	3.97	2.09	2.62	0.19	10.62	27
	2	3.34	3.26	2.78	0.23	5.69	4
	1&2	3.82	2.24	2.62	0.19	10.62	31

TABLE 18 (continued) Sulfate/Chloride

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	5.68	5.48	2.54	3.69	7.28	2
	2	1.20	0.81	0.57	0.40	1.21	2
	1&2	5.03	3.15	3.09	0.40	7.28	4
-5.0 to -0.1	1	2.58	2.55	1.92	0.30	6.98	19
	2	0.60	1.03	1.23	0.18	5.19	30
	1&2	1.35	1.62	1.69	0.18	6.98	49
0.0 to 4.9	1	1.39	1.38	1.16	0.16	4.68	48
	2	0.90	1.47	1.77	0.11	6.11	31
	1&2	1.24	1.42	1.42	0.11	6.11	79
5.0 to 9.9	1	1.45	1.74	1.29	0.21	5.21	66
	2	0.97	0.84	0.93	0.13	6.01	89
	1&2	1.13	1.22	1.18	0.13	6.01	155
10.0 to 14.9	1	1.25	1.75	2.32	0.08	13.53	64
	2	1.09	1.31	1.32	0.10	8.34	117
	1&2	1.14	1.47	1.75	0.08	13.53	181
15.0 to 19.9	1	1.84	3.09	3.80	0.11	16.15	28
	2	2.08	2.98	3.40	0.19	12.55	47
	1&2	2.00	3.02	3.53	0.11	16.15	75
20.0 to 24.9	1	2.59	3.25	4.34	0.13	24.35	55
	2	3.19	2.88	2.42	0.35	11.97	34
	1&2	2.87	3.11	3.71	0.13	24.35	89
25.0 to 29.9	1	11.80	11.81	-	11.81	11.81	1
	2	3.23	5.15	3.15	2.93	7.38	2
	1&2	6.81	7.37	4.44	2.93	11.81	3

TABLE 19 Variation in Chloride/Sodium Ratio

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
a. All Cases							
All	1	1.91	1.96	1.85	0.45	16.54	266
	2	1.24	1.32	1.19	0.33	13.33	360
	1&2	1.49	1.59	1.53	0.33	16.54	626
b. Season							
Winter	1	1.59	1.74	0.88	0.45	4.71	51
	2	1.44	1.30	1.26	0.33	9.64	116
	1&2	1.48	1.44	1.17	0.33	9.64	167
Spring	1	1.50	1.51	1.28	0.53	12.09	86
	2	1.07	1.15	0.46	0.41	2.94	44
	1&2	1.31	1.39	1.08	0.41	12.09	130
Summer	1	2.34	2.01	2.64	0.84	16.54	40
	2	1.25	1.34	1.04	0.68	6.76	56
	1&2	1.72	1.62	1.90	0.68	16.54	96
Fall	1	2.31	2.48	2.16	1.03	13.56	89
	2	1.15	1.39	1.33	0.41	13.30	144
	1&2	1.48	1.81	1.77	0.41	13.56	233
c. Synoptic Type							
Low	1	1.56	1.71	1.25	0.79	8.79	54
	2	0.97	1.11	0.38	0.78	2.60	29
	1&2	1.26	1.50	1.07	0.78	8.79	83
Warm Front	1	2.12	2.05	1.95	0.45	16.54	146
	2	1.31	1.31	1.05	0.41	9.64	182
	1&2	1.63	1.64	1.56	0.41	16.54	328
Cold Front	1	1.66	2.06	1.93	0.66	11.75	39
	2	1.39	1.44	1.75	0.45	13.33	61
	1&2	1.46	1.68	1.84	0.45	13.33	100
Occluded Front	1	2.67	2.23	3.47	0.53	12.09	10
	2	0.98	1.03	0.43	0.33	3.34	39
	1&2	1.35	1.27	1.63	0.33	12.09	49
Stationary Front	1	-	-	-	-	-	0
	2	1.29	1.69	1.53	0.41	8.33	41
	1&2	1.29	1.69	1.53	0.41	8.33	41
Squall Line	1	1.33	1.74	0.84	1.04	3.23	10
	2	0.80	1.28	0.89	0.68	2.99	7
	1&2	0.96	1.55	0.87	0.68	3.23	17
Hurricane	1	1.17	1.18	0.11	1.03	1.30	7
	2	-	-	-	-	-	0
	1&2	1.17	1.18	0.11	1.03	1.30	7

TABLE 19 (continued) Chloride/Sodium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type							
Rain	1	1.77	1.91	1.50	0.53	13.56	198
	2	1.21	1.29	1.01	0.41	13.33	245
	1&2	1.43	1.57	1.29	0.41	13.56	443
Rainshower	1	1.70	2.05	1.92	0.66	11.75	33
	2	1.98	1.36	1.14	0.74	6.76	32
	1&2	1.85	1.71	1.61	0.66	11.75	65
Thundershower	1	2.58	2.22	3.97	0.84	16.54	15
	2	0.90	1.01	0.35	0.68	2.05	14
	1&2	1.51	1.64	2.88	0.68	16.54	29
Mixed	1	-	-	-	-	-	0
	2	2.07	1.75	2.38	0.74	9.64	13
	1&2	2.07	1.75	2.38	0.74	9.64	13
Sleet	1	-	-	-	-	-	0
	2	1.65	1.82	2.23	0.61	9.37	14
	1&2	1.65	1.82	2.23	0.61	9.37	14
Snow	1	2.54	2.07	2.50	0.45	12.09	20
	2	1.03	1.29	1.34	0.33	8.33	42
	1&2	1.42	1.54	1.81	0.33	12.09	62
e. Precipitation Rate (mm/hr)							
0.0 - 1.0	1	2.05	2.14	1.88	0.45	13.56	146
	2	1.19	1.38	1.27	0.33	13.33	169
	1&2	1.54	1.73	1.62	0.33	13.56	315
1.1 - 2.5	1	1.64	1.63	1.33	0.80	12.09	76
	2	1.19	1.23	0.95	0.41	9.37	111
	1&2	1.37	1.39	1.13	0.41	12.09	187
2.6 - 6.0	1	2.18	1.98	2.64	1.06	16.54	34
	2	1.35	1.33	1.31	0.56	9.64	60
	1&2	1.64	1.57	1.91	0.56	16.54	94
6.1 - 12.0	1	1.79	1.67	1.49	0.84	5.60	9
	2	1.35	1.40	1.39	0.71	6.76	17
	1&2	1.52	1.49	1.40	0.71	6.76	26
>12.0	1	1.67	1.67	-	1.67	1.67	1
	2	0.84	0.91	0.22	0.68	1.11	3
	1&2	1.01	1.10	0.42	0.68	1.67	4

TABLE 19 (continued) Chloride/Sodium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
f. Wind Speed (msec^{-1}) at 108 m							
0 - 2	1	2.66	2.61	2.02	0.91	5.91	10
	2	2.25	3.41	2.71	0.74	8.33	7
	1&2	2.54	2.94	2.29	0.74	8.33	17
3 - 5	1	2.80	2.50	2.73	0.45	16.54	78
	2	1.37	1.61	1.69	0.45	13.33	68
	1&2	2.21	2.08	2.34	0.45	16.54	146
6 - 9	1	1.85	1.80	1.09	0.70	7.21	109
	2	1.29	1.29	0.94	0.41	9.37	164
	1&2	1.45	1.49	1.03	0.41	9.37	273
≥ 10	1	1.50	1.50	1.33	0.53	12.09	69
	2	1.04	1.03	0.27	0.33	2.30	112
	1&2	1.23	1.21	0.87	0.33	12.09	181
g. Wind Direction at 108 m							
N	1	1.69	1.77	0.67	1.11	3.71	22
	2	1.00	1.18	0.75	0.33	4.23	24
	1&2	1.37	1.46	0.77	0.33	4.23	46
NE	1	1.81	1.73	0.96	0.84	5.26	30
	2	1.33	1.33	1.26	0.53	9.64	113
	1&2	1.41	1.41	1.21	0.53	9.64	143
E	1	2.29	2.23	2.59	0.45	16.54	46
	2	1.33	1.41	1.12	0.41	8.33	93
	1&2	1.67	1.68	1.78	0.41	16.54	139
SE	1	1.99	1.99	1.70	0.66	8.79	51
	2	1.03	1.10	0.30	0.41	1.81	41
	1&2	1.49	1.60	1.35	0.41	8.79	92
S	1	1.59	1.75	1.89	0.80	13.56	44
	2	1.44	1.31	0.88	0.56	6.76	47
	1&2	1.50	1.52	1.47	0.56	13.56	91
SW	1	1.67	1.77	0.82	0.84	4.09	35
	2	0.99	1.53	2.20	0.68	13.33	32
	1&2	1.18	1.66	1.62	0.68	13.33	67
W	1	3.14	3.62	3.19	1.29	12.09	10
	2	0.95	1.11	0.88	0.45	2.99	7
	1&2	2.49	2.58	2.77	0.45	12.09	17
NW	1	1.38	1.80	2.09	0.53	11.75	28
	2	1.01	1.01	0.18	0.82	1.19	3
	1&2	1.30	1.72	2.00	0.53	11.75	31

TABLE 19 (continued) Chloride/Sodium

Variable	Year	Wt. Mean	Mean	S.D.	Min.	Max.	n.
h. Temperature (°C)							
-10.0 to -5.1	1	0.89	0.90	0.16	0.79	1.02	2
	2	2.57	1.58	1.44	0.57	2.60	2
	1&2	1.13	1.24	0.92	0.57	2.60	4
-5.0 to -0.1	1	1.55	1.60	0.94	0.45	3.69	14
	2	1.15	1.18	1.25	0.33	9.37	48
	1&2	1.21	1.28	1.19	0.33	9.37	62
0.0 to 4.9	1	1.63	1.61	1.61	0.53	12.09	49
	2	1.82	1.89	1.95	0.45	9.64	39
	1&2	1.72	1.74	1.76	0.45	12.08	88
5.0 to 9.9	1	1.61	1.70	0.77	0.66	4.71	58
	2	1.22	1.18	0.64	0.53	6.38	83
	1&2	1.33	1.39	0.74	0.53	6.38	141
10.0 to 14.9	1	2.08	2.39	2.16	0.89	13.56	60
	2	1.10	1.18	0.58	0.41	5.26	109
	1&2	1.43	1.61	1.48	0.41	13.56	169
15.0 to 19.9	1	1.82	2.41	2.26	1.13	11.75	26
	2	1.71	1.47	0.99	0.41	6.76	44
	1&2	1.75	1.82	1.64	0.41	11.75	70
20.0 to 24.9	1	2.23	1.99	2.35	0.84	16.54	56
	2	0.95	1.47	2.17	0.68	13.33	33
	1&2	1.63	1.80	2.29	0.68	16.54	89
25.0 to 29.9	1	1.75	1.75	-	1.75	1.75	1
	2	0.92	1.88	1.57	0.77	2.99	2
	1&2	1.27	1.84	1.11	0.77	2.99	3

TABLE 20 Variation in Precipitation Rate (mm/hr)
by Meteorological Variables

Variable	Year	Mean	S.D.	Min.	Max.	n.
a. All Cases						
All	1	2.02	3.83	0.10	48.55	506
	2	1.78	2.61	0.10	31.00	840
	1&2	1.87	3.13	0.10	48.55	1346
b. Season						
Winter	1	1.70	2.59	0.30	17.30	119
	2	1.71	2.17	0.10	14.00	297
	1&2	1.71	2.29	0.10	17.30	416
Spring	1	1.81	2.02	0.10	11.40	148
	2	1.92	2.34	0.10	11.28	151
	1&2	1.86	2.18	0.10	11.40	299
Summer	1	3.97	7.53	0.10	48.55	90
	2	2.31	4.08	0.10	31.00	123
	1&2	3.01	5.84	0.10	48.55	213
Fall	1	1.31	1.90	0.10	11.90	149
	2	1.53	2.28	0.10	16.80	269
	1&2	1.45	2.16	0.10	16.80	418
c. Synoptic Type						
Low	1	1.16	1.10	0.15	5.10	87
	2	1.04	0.94	0.10	3.80	60
	1&2	1.11	1.04	0.10	5.10	147
Warm Front	1	1.95	2.60	0.10	17.30	286
	2	2.19	2.54	0.10	15.00	398
	1&2	2.09	2.57	0.10	17.30	684
Cold Front	1	1.56	2.40	0.10	12.70	78
	2	1.44	2.03	0.10	14.00	184
	1&2	1.47	2.15	0.10	14.00	262
Occluded Front	1	0.93	0.59	0.10	2.00	19
	2	1.13	1.30	0.10	7.40	69
	1&2	1.08	1.18	0.10	7.40	88
Stationary Front	1	48.55		48.55	48.55	1
	2	0.95	1.78	0.10	16.80	106
	1&2	1.40	4.93	0.10	48.55	107
Squall Line	1	5.10	9.66	0.10	40.11	25
	2	5.17	8.17	0.10	31.00	22
	1&2	5.13	8.89	0.10	40.11	47
Hurricane	1	4.73	3.69	0.80	10.90	10
	2	-	-	-	-	0
	1&2	4.73	3.69	0.80	10.90	10

TABLE 20 (continued) Precipitation Rate

Variable	Year	Mean	S.D.	Min.	Max.	n.
d. Precipitation Type						
Rain	1	1.72	2.19	0.10	14.00	346
	2	1.69	2.13	0.10	16.80	548
	1&2	1.70	2.15	0.10	16.80	894
Rainshower	1	1.68	5.50	0.10	40.11	59
	2	0.91	1.15	0.10	6.40	94
	1&2	1.21	3.54	0.10	40.11	153
Thundershower	1	7.38	9.22	0.30	48.55	35
	2	7.85	6.94	0.73	31.00	31
	1&2	7.60	8.17	0.30	48.55	66
Mixed	1	1.56	1.06	0.50	3.30	5
	2	2.14	2.45	0.10	7.60	28
	1&2	2.05	2.29	0.10	7.60	33
Sleet	1	0.80	-	0.80	0.80	1
	2	1.56	0.90	0.30	3.80	22
	1&2	1.53	0.89	0.30	3.80	23
Snow	1	1.01	0.54	0.30	3.00	60
	2	1.26	1.38	0.10	6.90	117
	1&2	1.17	1.17	0.10	6.90	177
e. Wind Speed (msec^{-1}) at 108 m						
0 - 2	1	2.67	8.21	0.30	40.11	23
	2	0.76	1.20	0.10	5.60	36
	1&2	1.50	5.23	0.10	40.11	59
3 - 5	1	1.96	4.48	0.10	48.55	202
	2	1.06	2.03	0.10	16.80	249
	1&2	1.46	3.38	0.10	48.55	451
6 - 9	1	1.41	1.64	0.10	9.90	185
	2	1.90	2.80	0.10	31.00	363
	1&2	1.73	2.48	0.10	31.00	548
≥ 10	1	3.18	3.56	0.10	17.30	96
	2	2.70	2.81	0.10	14.00	168
	1&2	2.87	3.10	0.10	17.30	264

TABLE 20 (continued) Precipitation Rate

Variable	Year	Mean	S.D.	Min.	Max.	n.
f. Wind Direction at 108 m						
N	1	1.19	1.03	0.10	5.10	42
	2	0.76	0.55	0.10	2.30	54
	1&2	0.95	0.82	0.10	5.10	96
NE	1	1.26	1.45	0.10	6.90	68
	2	1.66	2.15	0.10	16.80	282
	1&2	1.58	2.04	0.10	16.80	350
E	1	2.80	3.16	0.10	15.00	93
	2	1.80	2.21	0.10	9.90	163
	1&2	2.16	2.63	0.10	15.00	256
SE	1	2.71	3.70	0.10	17.30	83
	2	2.14	3.79	0.10	31.00	98
	1&2	2.40	3.75	0.10	31.00	181
S	1	2.06	5.09	0.10	40.11	67
	2	2.47	2.85	0.10	14.00	101
	1&2	2.31	3.89	0.10	40.11	168
SW	1	1.25	1.67	0.10	8.40	66
	2	1.86	3.26	0.10	23.29	88
	1&2	1.60	2.71	0.10	23.29	154
W	1	1.37	2.79	0.10	13.73	27
	2	1.19	2.75	0.10	16.00	38
	1&2	1.26	2.75	0.10	16.00	65
NW	1	2.40	6.98	0.10	48.55	60
	2	1.45	1.70	0.10	5.60	16
	1&2	2.20	6.25	0.10	48.55	76

TABLE 20 (continued) Precipitation Rate

Variable	Year	Mean	S.D.	Min.	Max.	n.
g. Temperature (°C)						
-10.0 to -5.1	1	0.73	0.20	0.50	1.00	6
	2	0.64	0.77	0.10	2.00	5
	1&2	0.69	0.51	0.10	2.00	11
-5.0 to -0.1	1	0.96	0.45	0.30	2.30	44
	2	1.37	1.36	0.10	6.90	114
	1&2	1.25	1.19	0.10	6.90	158
0.0 to 4.9	1	1.52	1.58	0.10	8.90	80
	2	1.13	1.65	0.10	9.40	166
	1&2	1.25	1.63	0.10	9.40	246
5.0 to 9.9	1	1.74	2.28	0.10	14.00	120
	2	1.80	2.22	0.10	11.28	172
	1&2	1.78	2.24	0.10	14.00	292
10.0 to 14.9	1	1.72	2.66	0.10	17.30	94
	2	1.95	2.46	0.10	14.00	217
	1&2	1.88	2.52	0.10	17.30	311
15.0 to 19.9	1	2.85	7.07	0.10	48.55	53
	2	2.18	2.99	0.10	16.80	88
	1&2	2.43	4.92	0.10	48.55	141
20.0 to 24.9	1	3.02	5.37	0.10	40.11	107
	2	2.92	5.11	0.10	31.00	73
	1&2	2.98	5.25	0.10	40.11	180
25.0 to 29.9	1	4.70	5.23	1.00	8.40	2
	2	1.73	2.20	0.30	5.60	5
	1&2	2.58	3.14	0.30	8.40	7

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