18-10

Appendices A-N
New York Research Corp Report
(Question III. 20)

5 volumes

REPORT

YORK RESEARCH CORPORATION
ONE RESEARCH DRIVE
STAMFORD, CONN. 06906

APPENDIX A

QUALITY ASSURANCE PROGRAM

E. Program CHMAIN

1. Purpose: CHMAIN is a quality control program specifically designed to check data from meteorological tower #4 at the Con Edison Indian Point Power Plant. With the use of Subroutines CHECK and DIRT, CHMAIN will check for the following conditions and display an appropriate message.

   1) Which parameter is being worked on
   2) Invalid alphanumeric data which cannot be read
   3) A variation between consecutive numbers which is greater than a specified constant
   4) A number which is not evenly divisible by a specified constant
   5) Wind directions which are equal to 0 degrees.

Special codes in the data are exceptions to the above conditions and will not be flagged.

2. Constants Used in CHMAIN:

VAR = Maximum variation between consecutive numbers
DIV = Constant used for division check
NUMB = First special number excluded from stated tests
NUMB1 = Second special number excluded from stated tests

AMBIENT TEMPERATURE

VAR = 50
DIV = 5
Numb = 999
Numb1 = 999

AVERAGE DIRECTION

No Variance
DIV - 5
Numb = 444
Numb1 = 999
000 is always printed out

DELTA - T

VAR = 5
DIV = 1
Numb = 999
Numb1 = 999

RADIATION

VAR = 100
DIV = 5
Numb = 999
Numb1 = 999

DEW POINT

VAR = 50
DIV = 5
Numb = 999
Numb1 = 999

SPEED

VAR = 50
DIV = 5
Numb = 999
Numb1 = 999

3. Order of Data Input

Line 1 Number of rows of data for a parameter.
Line 2 Parameter 11 first day in the following format

Month, Day, Year, Parameter Code, 24 data values, e.g., 01017411
24-3 digit values

Line 3 Parameter 11 second day.

Each day will thus be entered on a line until one months worth of data is present. At this point the next parameter is entered in a similar manner. All 16 parameters are entered in the following order.

11 Ambient Temperature - 33 ft.
12 Delta-t #200-33 ft.
13 Delta-t #399-33 ft.
14 Dew Point - 33 ft .
15 Dew Point - 200 ft.
16 Dew Point - 399 ft.
21 Speed - 33 ft.
22 Average Direction - 33 ft.
31 Speed - 125 ft.
32 Average Direction - 125 ft.
41 Speed - 283 ft.
42 Average Direction - 283 ft.
51 Speed - 400 ft.
52 Average Direction - 400 ft.
61 Visibility
71 Radiation

4. Execution of CHMAIN in the IP4CPS System

```
!EDIT JADATA
 .1 31
 .2 Q
!DEVECES,QUEUE 1
!COPY,IN,LIST,ONLY FLPROG-UNP/$TAR SORTER-XQT,WRITE2-XQT,
CHMAIN-XQT
!EDIT,NEW JAOUT
  Q
!EQUATE 1 JADATA
!EQUATE 7 JAOUT
!SORTER
!EDIT,NEW JADAT1
  C 1:JADATA 1-
  C 1:JAOUT
  L 184-187
  Q
!EQUATE 1 JADAT1
!CHMAIN
```

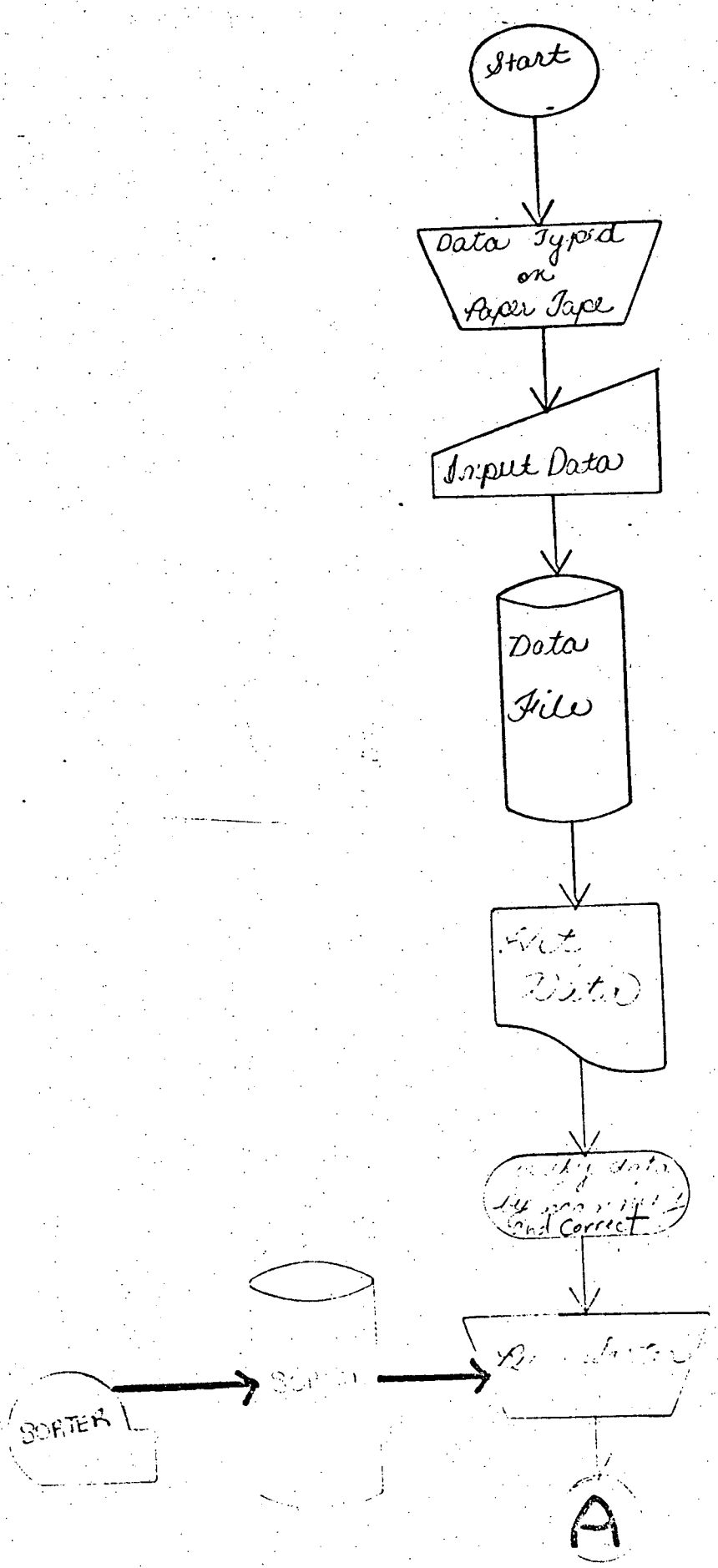
At this point the output from CHMAIN is matched against a listing of JADAT1. Corrections are made to JADAT1 while JADATA is held as a back up file. Proceed as follows after JADAT1 has been corrected:

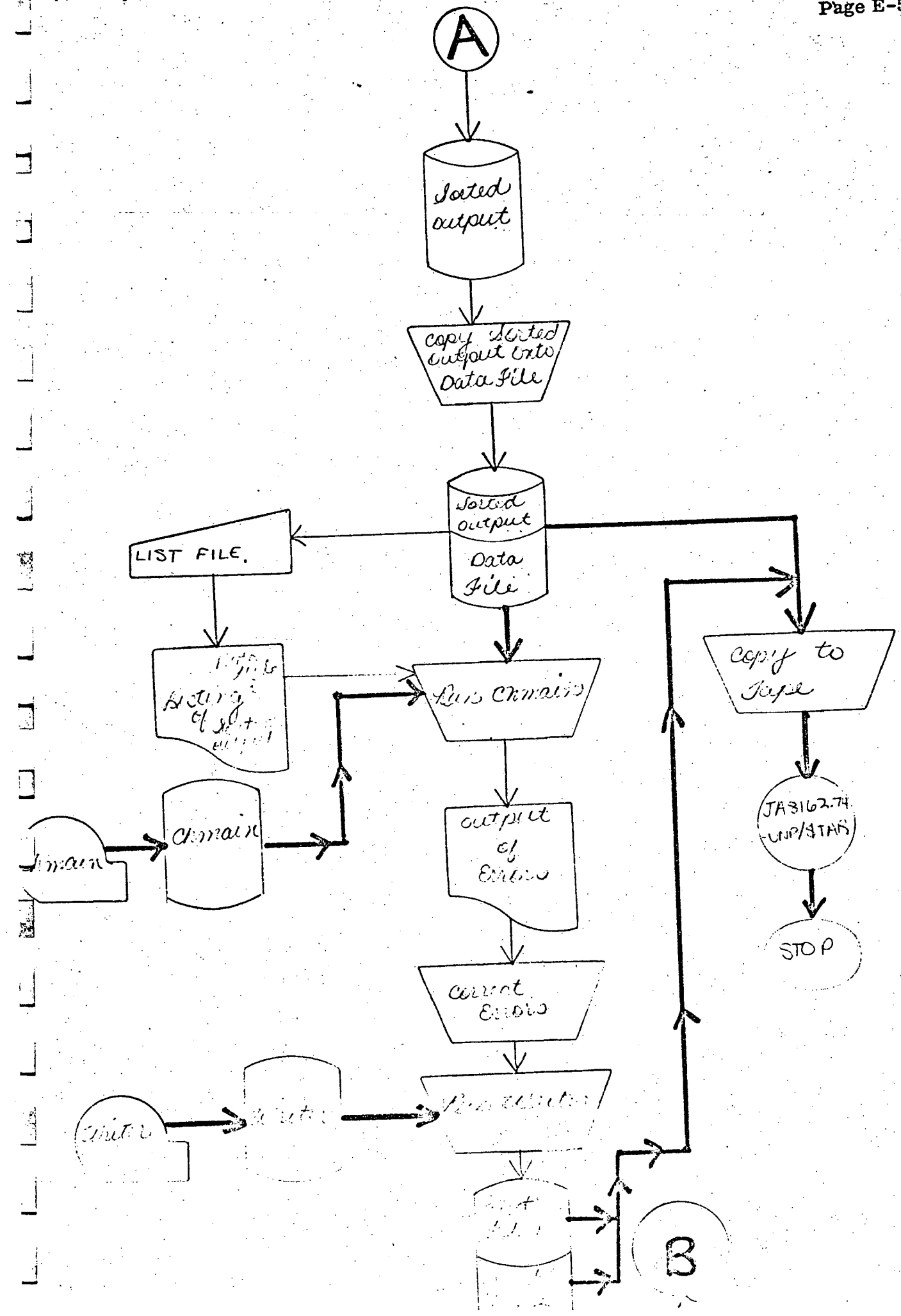
```
!EQUATE 1 JADAT1
!EQUATE 7 JACRD1
!EQUATE 8 JACRD2
!WRITE2
!OUTPUT JACRD1 9149040079 FORM:STD2
!OUTPUT JACRD1 9149040079,PUNCH
!OUTPUT JACRD2 9149040079 FORM:STD2
!OUTPUT JACRD2 9149040079,PUNCH
!DROP WRITE2,SORTER,JAOUT,CHMAIN
```

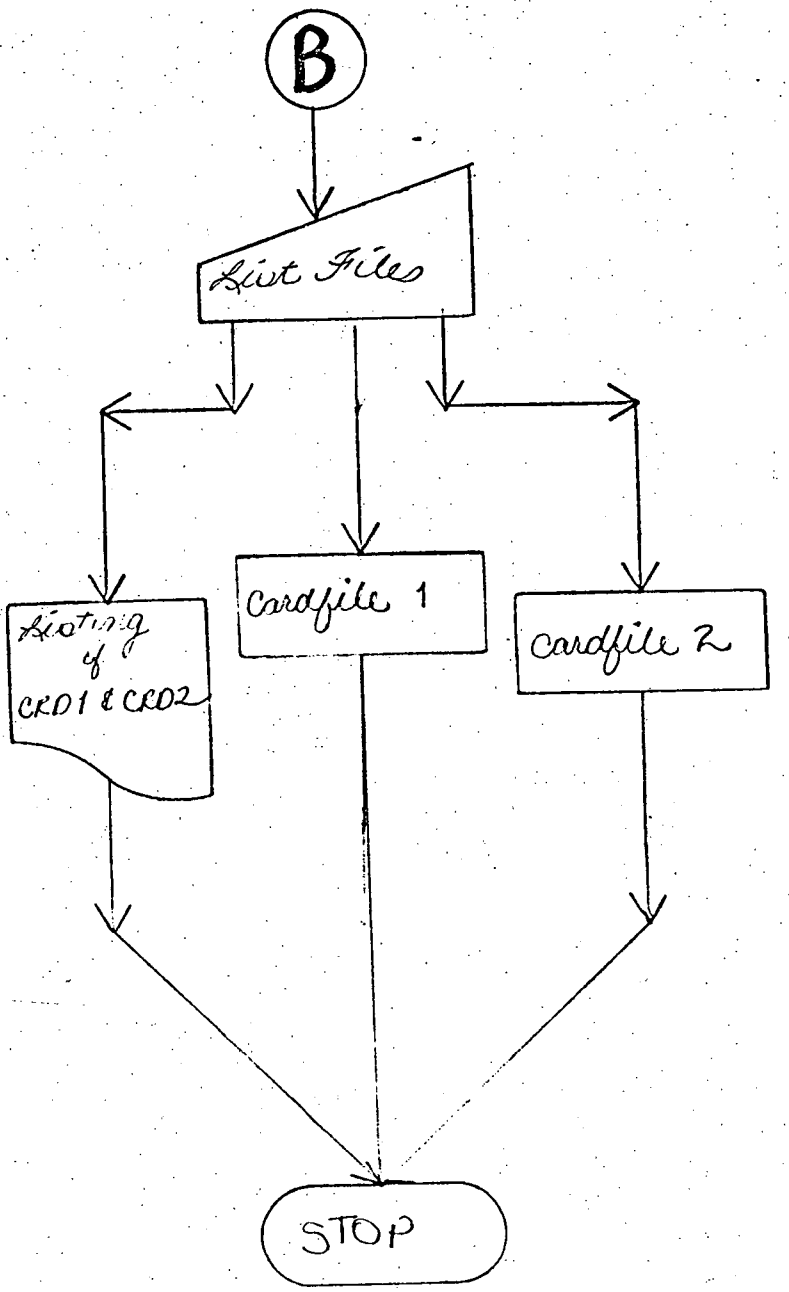
At this point JADAT1, JACRD1, and JACRD2 are copied to magnetic tape. Use the following commands:

```
!DEVICES,QUEUE 1
!DEFINE JA8162.74-UNP KINO:TAPE,9 VOLUME:EPAPRO-UNP/$TAR
!COPY,OUT,LIST JADAT1,JACRD1,JACRD2 JA8162.74-UNP
!COPY,IN JA8162.74-UNP/$TAR
!DEVICES,DROP 1
!DROP JADAT1
!OFF
```

5. Modified System Flow Diagram


Start
Data Typed
or
Paper Tape
Input Data
Data
File
SORTER
A


A
Sorted output
copy Sorted output onto Data File
Sorted output
Data File
LIST FILE.
Run Cmain
copy to tape
JA3162.74 FUNP/STAR
STOP
Cmain
output of Errors
current Errors
B


B
List Files
Listing of CRD1 & CRD2
Cardfile 1
Cardfile 2
STOP

APPENDIX B

TWO STATION WIND CORRELATION
IP3 (100') and IP4 (125')

YORK RESEARCH CORPORATION JOB NUMBER : Y-8162
ONE RESEARCH DRIVE, STAMFORD, CONNECTICUT 06906

TWO STATION WIND CORRELATION

FOR : CON EDISON
SITE 1 : I P 4 125 FT
SITE 2 : I P 3 105 FT

OCT 01, 1973 - OCT 31, 1973

SITE 1 WIND DIRECTION

SITE 2 WIND DIRECTION	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
N	6	30	32	8	1	0	0	0	1	0	0	0	0	1	1	-1	81
NNE	1	8	33	8	0	0	0	1	1	2	0	0	0	0	0	0	54
NE	0	2	5	21	6	3	1	1	0	0	0	0	0	0	0	1	40
ENE	1	0	0	4	2	2	0	0	1	1	0	0	0	0	0	0	11
E	0	0	0	0	2	3	5	1	0	0	0	0	0	0	0	0	11
ESE	0	0	0	0	0	2	4	2	1	1	0	0	1	0	0	1	12
SE	0	0	0	0	0	1	0	1	4	2	0	0	0	0	0	0	8
SSE	0	0	0	0	1	0	0	3	11	5	2	0	2	0	0	0	24
S	0	0	0	0	0	0	0	2	8	15	16	0	3	0	0	1	45
SSW	0	0	0	0	0	0	0	0	2	4	3	2	1	1	0	0	13
SW	0	0	0	0	0	0	0	0	0	0	1	4	1	2	0	0	8
WSW	0	0	0	0	0	0	0	1	1	0	1	2	1	5	1	1	13
W	0	0	0	1	0	0	0	0	0	0	2	1	3	20	19	0	46
WNW	0	0	0	0	0	0	0	0	0	0	1	0	1	1	12	6	26
NW	5	0	0	0	0	0	0	0	0	0	0	0	1	0	3	12	24
NNW	5	2	1	0	0	1	0	0	0	0	0	1	1	0	2	3	28
TOTAL	11	9	1	0	0	0	0	0	0	0	0	1	1	0	2	3	
	29	51	72	42	12	12	10	12	30	30	26	10	14	30	38	26	

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TWO STATION WIND CORRELATION

FOR : CON EDISON
SITE 1 : I P 4 125 FT
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NOV 01, 1973 - NOV 30, 1973

SITE 1 WIND DIRECTION

SITE 2 WIND DIRECTION	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
N	2	15	10	3	0	0	0	0	0	0	0	0	0	1	1	1	33
NNE	2	14	11	7	0	0	0	0	0	0	1	0	0	0	0	0	35
NE	1	4	7	3	0	1	0	0	0	0	0	0	0	0	0	0	16
ENE	2	0	1	1	0	0	0	1	0	0	0	0	0	0	1	0	5
E	0	0	0	0	1	2	0	1	2	0	0	0	0	0	0	0	7
ESE	0	0	1	0	0	0	2	0	0	0	2	0	0	0	0	0	5
SE	0	0	0	0	0	2	0	3	7	0	0	0	1	0	0	0	13
SSE	0	0	0	0	0	1	0	4	23	6	1	1	0	0	0	0	36
S	0	0	0	0	0	1	0	4	14	35	17	1	3	0	0	0	75
SSW	0	0	0	0	0	0	0	2	6	20	30	12	1	0	0	0	71
SW	0	0	0	0	0	0	0	0	1	1	9	10	2	0	0	0	23
WSW	0	0	0	0	0	0	0	1	2	0	3	9	7	8	3	1	34
W	0	0	0	0	0	0	0	1	0	1	2	4	12	29	14	0	64
WNW	1	0	0	0	0	0	0	1	0	0	0	0	2	24	73	25	124
NW	0	0	0	0	0	0	0	0	0	0	0	0	1	2	14	30	61
NNW	11	2	0	0	0	1	0	0	0	0	1	0	1	0	2	5	15
	2	4	0	0	0	0	0	0	0	0	1	0	1	0	2	5	15
TOTAL	21	39	30	14	1	8	2	17	55	63	66	37	30	64	108	62	

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

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ONE RESEARCH DRIVE, STAMFORD, CONNECTICUT 06906

TWO STATION WIND CORRELATION

FOR : CON EDISON
SITE 1 : I P 4 125 FT
SITE 2 : I P 3 105 FT

DEC 01, 1973 - DEC 31, 1973

SITE 1 WIND DIRECTION

SITE 2 WIND DIRECTION	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
N	33	30	8	1	1	0	0	0	0	0	0	0	1	0	0	0	74
NNE	30	65	34	6	2	2	0	0	0	0	0	0	0	0	0	0	139
NE	3	5	26	8	1	1	2	0	0	0	0	0	0	0	0	1	47
ENE	0	0	4	4	1	1	0	0	1	1	0	0	0	0	0	0	12
E	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	3
ESE	0	0	1	0	1	1	1	0	0	1	0	0	0	0	0	0	5
SE	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2
SSE	0	0	0	0	1	0	0	10	8	4	0	0	0	0	0	0	23
S	0	0	0	0	0	0	0	3	13	17	4	0	1	2	0	0	40
SSW	0	0	0	0	0	1	0	0	4	18	16	5	1	0	0	0	45
SW	0	0	0	0	0	0	0	0	1	3	10	4	4	0	0	1	24
WSW	1	0	0	0	0	0	0	0	1	1	0	2	5	12	6	0	27
W	0	0	0	0	0	0	0	0	1	1	0	2	5	12	6	0	27
WNW	0	0	0	0	0	0	0	0	0	0	0	1	3	20	48	4	77
NW	1	0	0	0	0	0	0	0	0	1	0	0	2	2	47	23	78
NNW	3	0	0	0	0	0	0	1	0	0	0	0	0	0	7	20	51
TOTAL	91	104	73	20	8	6	4	15	30	50	32	22	20	39	108	49	

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TWO STATION WIND CORRELATION

FOR : CON EDISON
SITE 1 : I P 4 125 FT
SITE 2 : I P 3 105 FT

OCT 01, 1973 - OCT 31, 1973

WIND AT I P 3 105 FT

DIRECTION SITE 1	RESULTANT WIND DIR	SPD	UCOM	VCOM	MEAN WIND DIR	SPD	PERSIST
N	329.	6.9	-102.10	172.79	333.	7.5	.9186
NNE	357.	6.0	-18.45	307.47	359.	6.3	.9611
NE	15.	6.1	105.25	393.27	14.	6.2	.9751
ENE	44.	8.1	212.89	222.00	34.	8.5	.9508
E	61.	7.5	78.53	43.57	59.	8.2	.9164
ESE	89.	3.6	42.93	.94	74.	4.1	.8675
SE	91.	6.5	64.66	-.87	95.	6.9	.9372
SSE	138.	3.1	24.82	-27.09	138.	5.7	.5403
S	161.	5.2	49.64	-147.33	161.	6.7	.7735
SSW	175.	5.7	15.06	-169.00	171.	6.6	.8547
SW	190.	6.2	-27.64	-158.86	192.	6.9	.8958
WSW	230.	4.2	-32.31	-27.03	233.	4.9	.8687
W	206.	2.6	-16.08	-32.34	217.	4.3	.6020
WNW	267.	9.2	-275.58	-14.45	265.	9.5	.9666
NW	283.	9.9	-366.06	83.85	285.	10.4	.9507
NNW	313.	8.7	-164.56	155.55	313.	9.6	.9058

WIND AT I P 4 125 FT

DIRECTION SITE 2	RESULTANT WIND DIR	SPD	UCOM	VCOM	MEAN WIND DIR	SPD	PERSIST
N	32.	7.0	282.75	455.74	33.	7.6	.9204
NNE	47.	5.8	208.22	196.70	47.	6.9	.8527
NE	72.	8.9	337.63	108.53	72.	9.8	.9026
ENE	87.	7.5	82.08	3.84	91.	10.0	.7505
E	124.	7.0	64.33	-43.16	124.	7.4	.9459
ESE	150.	3.6	21.27	-36.98	154.	5.6	.6348
SE	171.	7.1	8.85	-55.80	177.	7.9	.8940
SSE	189.	5.9	-21.85	-140.36	189.	6.9	.8547
S	211.	8.6	-197.84	-332.84	211.	9.4	.9182
SSW	220.	7.0	-58.13	-69.48	223.	8.0	.8753
SW	256.	6.4	-49.49	-12.31	258.	6.9	.9222
WSW	274.	5.0	-64.73	4.83	274.	6.6	.7530
W	302.	10.9	-426.88	263.83	300.	11.6	.9406
WNW	323.	9.0	-140.32	186.37	322.	9.5	.9396
NW	343.	10.4	-71.66	238.58	347.	11.2	.9271
NNW	3.	8.0	11.51	224.61	359.	8.3	.9117

YORK RESEARCH CORPORATION JOB NUMBER : Y-8162
ONE RESEARCH DRIVE, STAMFORD, CONNECTICUT 06906

TWO STATION WIND CORRELATION

FOR : CON EDISON
SITE 1 : I P 4 125 FT
SITE 2 : I P 3 105 FT

NOV 01, 1973 - NOV 30, 1973

WIND AT I P 3 105 FT

DIRECTION SITE 1	RESULTANT WIND DIR	SPD	UCOM	VCOM	MEAN WIND DIR	SPD	PERSIST
N	330.	11.2	-118.73	203.94	340.	12.3	.9129
NNE	7.	8.4	39.87	324.04	9.	8.9	.9409
NE	18.	7.2	68.12	205.01	23.	7.6	.9517
ENE	21.	4.7	23.26	60.97	23.	4.9	.9526
E	85.	3.0	2.99	.26	85.	3.0	*****
ESE	121.	1.8	12.64	-7.65	113.	2.9	.6421
SE	109.	3.5	6.56	-2.29	112.	3.5	.9930
SSE	165.	3.3	14.64	-53.73	166.	4.3	.7576
S	168.	5.9	68.53	-318.86	167.	6.4	.9252
SSW	185.	6.9	-39.49	-430.77	186.	7.1	.9688
SW	201.	6.9	-166.67	-427.00	202.	7.6	.9158
WSW	228.	7.3	-202.03	-180.62	226.	8.0	.9155
W	259.	9.1	-268.34	-52.83	253.	9.9	.9240
WNW	278.	10.8	-686.84	100.67	277.	11.2	.9688
NW	293.	12.9	*******	543.69	293.	13.2	.9789
NNW	306.	12.3	-616.22	444.16	307.	12.6	.9689

WIND AT I P 4 125 FT

DIRECTION SITE 2	RESULTANT WIND DIR	SPD	UCOM	VCOM	MEAN WIND DIR	SPD	PERSIST
N	29.	9.2	146.01	266.76	28.	9.9	.9271
NNE	38.	11.0	237.32	301.22	39.	11.9	.9214
NE	46.	8.4	96.82	93.63	45.	8.8	.9525
ENE	46.	4.4	15.94	15.17	44.	6.9	.6414
E	146.	2.8	11.16	-16.48	138.	5.5	.5168
ESE	119.	3.0	13.06	-7.38	161.	8.3	.3633
SE	170.	6.6	15.33	-84.46	170.	8.1	.8191
SSE	183.	7.4	-13.27	-265.67	182.	7.9	.9399
S	204.	8.8	-265.09	-605.02	203.	9.4	.9392
SSW	218.	8.6	-374.77	-480.45	217.	9.1	.9451
SW	235.	9.5	-179.26	-124.98	235.	10.1	.9399
WSW	265.	7.3	-245.67	-21.42	266.	8.9	.8123
W	289.	11.2	-675.92	231.55	288.	12.2	.9118
WNW	316.	12.5	*******	1100.36	314.	12.9	.9729
NW	339.	12.8	-274.71	732.58	337.	13.8	.9277
NNW	344.	8.0	-33.25	115.44	344.	9.7	.8296

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TWO STATION WIND CORRELATION

FOR : CON EDISON
SITE 1 : I P 4 125 FT
SITE 2 : I P 3 105 FT

DEC 01, 1973 - DEC 31, 1973

WIND AT I P 3 105 FT

DIRECTION SITE 1	RESULTANT WIND DIR	RESULTANT WIND SPD	UCOM	VCOM	MEAN WIND DIR	MEAN WIND SPD	PERSIST
N	5.	12.8	97.51	1163.35	1.	13.4	.9577
NNE	15.	8.7	235.16	859.99	16.	8.8	.9824
NE	29.	6.2	218.19	391.17	30.	6.4	.9674
ENE	42.	4.6	61.12	68.23	41.	4.9	.9444
E	51.	3.1	19.20	15.48	60.	4.3	.7256
ESE	46.	2.4	10.34	10.15	61.	3.5	.6900
SE	103.	4.2	16.38	-3.81	87.	5.5	.7643
SSE	155.	7.5	46.60	-101.68	159.	8.7	.8538
S	177.	8.1	10.67	-242.15	182.	8.7	.9287
SSW	191.	7.1	-68.99	-348.02	195.	7.8	.9085
SW	203.	6.5	-80.02	-193.10	210.	6.9	.9480
WSW	243.	5.6	-109.70	-55.02	236.	6.3	.8925
W	271.	5.5	-109.23	1.77	261.	6.3	.8636
WNW	282.	8.9	-338.82	72.13	280.	9.6	.9300
NW	304.	13.8	-988.48	676.54	304.	14.1	.9738
NNW	324.	11.2	-313.19	424.11	324.	11.6	.9691

WIND AT I P 4 125 FT

DIRECTION SITE 2	RESULTANT WIND DIR	RESULTANT WIND SPD	UCOM	VCOM	MEAN WIND DIR	MEAN WIND SPD	PERSIST
N	13.	9.3	157.90	666.52	16.	9.5	.9748
NNE	20.	9.6	455.06	1229.35	27.	10.0	.9612
NE	45.	5.6	184.49	184.80	48.	6.0	.9221
ENE	69.	2.5	28.08	10.53	73.	3.5	.7123
E	56.	2.5	6.27	4.26	55.	2.9	.8812
ESE	98.	1.8	8.78	-1.17	108.	2.6	.6763
SE	150.	8.0	7.97	-13.80	150.	8.0	.9962
SSE	178.	8.3	5.64	-189.99	174.	8.8	.9410
S	197.	8.9	-104.84	-340.02	196.	9.6	.9242
SSW	209.	7.6	-164.57	-300.08	213.	8.0	.9462
SW	232.	4.0	-75.79	-59.77	235.	4.6	.8704
WSW	248.	4.3	-95.46	-38.95	243.	4.8	.8950
W	290.	9.3	-234.59	85.83	286.	9.9	.9325
WNW	307.	11.3	-566.55	426.75	308.	11.6	.9674
NW	322.	11.1	-470.08	605.33	320.	11.5	.9667
NNW	344.	9.6	-135.77	470.46	347.	10.2	.9406

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TWO STATION WIND CORRELATION

FOR : CON EDISON
SITE 1 : I P 4 125 FT
SITE 2 : I P 3 105 FT

OCT 01, 1973 - OCT 31, 1973

TOTALS FOR INDICATED DATA

SITE	RESULT. WIND DIR	WIND SPD	MEAN WIND DIR	WIND SPD	PERSIST
1	359.	2.3	13.	8.7	.2636
2	333.	2.1	348.	7.3	.2830

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TWO STATION WIND CORRELATION

FOR : CON EDISON
SITE 1 : I P 4 125 FT
SITE 2 : I P 3 105 FT

NOV 01, 1973 - NOV 30, 1973

TOTALS FOR INDICATED DATA

SITE	RESULT. WIND DIR	WIND SPD	MEAN WIND DIR	WIND SPD	PERSIST
1	296.	4.7	282.	10.8	.4359
2	277.	5.1	263.	9.4	.5432

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TWO STATION WIND CORRELATION

FOR : CON EDISON
SITE 1 : I P 4 125 FT
SITE 2 : I P 3 105 FT

DEC 01, 1973 - DEC 31, 1973

TOTALS FOR INDICATED DATA

SITE	RESULT. WIND DIR	RESULT. WIND SPD	MEAN WIND DIR	MEAN WIND SPD	PERSIST
1	340.	4.5	343.	9.2	.4924
2	335.	4.7	335.	9.6	.4904

APPENDIX C

DIURNAL WIND ANALYSES

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

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DIURNAL WIND ANALYSIS

Y-8162

FOR: CON EDISON
I P 4 33 FT WINTER

OCT 01, 1973 - APR 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	357.	2.4	-27.36	464.47	8.	4.0	.6122	190
2	358.	2.4	-14.25	455.58	4.	4.0	.6061	188
3	359.	2.7	-7.51	510.92	5.	4.0	.6795	188
4	360.	2.6	-.67	484.38	10.	4.0	.6511	186
5	1.	2.5	10.58	489.53	14.	4.0	.6310	194
6	0.	2.5	1.22	488.65	11.	4.0	.6265	195
7	1.	2.5	9.44	478.77	14.	4.0	.6368	188
8	357.	2.6	-27.00	493.08	7.	4.0	.6430	192
9	352.	2.8	-74.91	522.84	355.	5.0	.5560	190
10	343.	2.9	-159.32	537.71	342.	5.0	.5782	194
11	335.	2.9	-238.23	511.34	329.	5.0	.5786	195
12	329.	3.1	-294.67	499.90	325.	5.0	.6141	189
13	327.	3.3	-341.79	527.91	322.	5.0	.6517	193
14	323.	3.1	-350.11	471.73	319.	5.0	.6151	191
15	322.	2.8	-344.51	443.24	313.	5.0	.5699	197
16	316.	2.7	-378.90	399.11	305.	5.0	.5476	201
17	321.	2.6	-333.30	405.47	301.	5.0	.5249	200
18	327.	2.2	-243.51	368.77	311.	5.0	.4486	197
19	330.	2.2	-211.49	373.69	321.	4.0	.5422	198
20	340.	2.3	-155.03	428.57	342.	4.0	.5784	197
21	345.	2.2	-110.72	424.44	352.	4.0	.5624	195
22	347.	2.4	-99.50	442.03	359.	5.0	.4898	185
23	351.	2.4	-76.40	463.39	3.	5.0	.4842	194
24	354.	2.2	-41.83	411.95	5.	4.0	.5392	192

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 125 FT WINTER

OCT 01, 1973 - APR 30, 1974

HOUR	RESULTANT WINDS DIR	RESULTANT WINDS SPD MPH	UCOM	VCOM	MEAN WIND DIR	MEAN WIND SPD MPH	PERSIST	VALID HOURS
1	339.	3.8	-246.73	656.70	351.	8.0	.4740	185
2	340.	4.1	-257.16	701.25	343.	7.0	.5799	184
3	341.	4.2	-251.66	743.33	346.	7.0	.6060	185
4	345.	4.1	-195.22	740.98	350.	7.0	.5792	189
5	347.	4.2	-170.70	759.61	354.	8.0	.5261	185
6	346.	4.5	-198.52	791.38	348.	8.0	.5635	181
7	345.	4.3	-201.11	750.73	346.	8.0	.5338	182
8	346.	4.3	-191.82	754.54	348.	8.0	.5347	182
9	342.	4.3	-249.39	746.68	344.	8.0	.5407	182
10	335.	4.5	-355.56	763.19	335.	8.0	.5598	188
11	326.	4.2	-439.11	655.16	328.	9.0	.4612	190
12	321.	4.5	-533.98	664.01	325.	9.0	.5036	188
13	319.	4.8	-592.34	681.01	318.	10.0	.4801	188
14	315.	4.8	-635.10	628.21	314.	10.0	.4803	186
15	313.	4.5	-634.87	582.03	310.	10.0	.4509	191
16	308.	4.2	-638.59	497.53	305.	10.0	.4238	191
17	308.	3.7	-571.31	446.71	299.	10.0	.3738	194
18	308.	3.4	-527.10	413.63	305.	9.0	.3798	196
19	317.	3.4	-449.13	481.67	318.	9.0	.3831	191
20	323.	3.5	-403.35	542.44	321.	9.0	.3871	194
21	331.	3.4	-323.72	572.60	325.	8.0	.4305	191
22	334.	3.7	-295.13	614.47	334.	8.0	.4581	186
23	333.	3.8	-319.98	637.94	335.	8.0	.4745	188
24	336.	3.5	-271.08	601.64	344.	8.0	.4319	191

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DIURNAL WIND ANALYSIS

Y-8162

FOR: CON EDISON
I P 4 280 FT WINTER

OCT 01, 1973 - APR 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	333.	4.1	-352.88	702.41	329.	9.0	.4597	190
2	332.	4.5	-397.92	752.54	327.	9.0	.4978	190
3	333.	4.9	-420.72	831.38	335.	9.0	.5449	190
4	337.	4.8	-359.47	830.10	336.	9.0	.5346	188
5	340.	4.9	-314.91	862.88	338.	9.0	.5400	189
6	337.	4.9	-361.32	856.69	330.	9.0	.5466	189
7	339.	5.0	-329.83	872.32	338.	10.0	.4961	188
8	340.	4.7	-299.90	839.62	336.	10.0	.4668	191
9	342.	4.6	-266.33	826.55	344.	10.0	.4644	187
10	337.	4.6	-346.83	821.45	348.	10.0	.4644	192
11	329.	4.7	-468.05	766.68	328.	10.0	.4678	192
12	324.	5.2	-583.92	799.45	322.	11.0	.4712	191
13	321.	5.5	-664.69	810.23	317.	11.0	.4962	192
14	317.	5.6	-729.77	794.72	314.	11.0	.5135	191
15	317.	5.5	-724.58	782.06	310.	12.0	.4556	195
16	312.	5.2	-763.97	685.44	305.	12.0	.4342	197
17	309.	4.6	-696.02	570.77	300.	12.0	.3808	197
18	304.	4.3	-699.66	474.78	297.	12.0	.3577	197
19	310.	4.3	-641.44	539.67	302.	11.0	.3948	193
20	316.	4.4	-596.13	627.65	307.	10.0	.4439	195
21	321.	4.1	-503.29	628.88	312.	10.0	.4068	198
22	324.	4.2	-482.26	668.66	310.	10.0	.4228	195
23	326.	4.3	-464.93	689.42	314.	10.0	.4331	192
24	330.	4.2	-403.12	692.97	327.	9.0	.4639	192

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DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 400 FT WINTER

OCT 01, 1973 - APR 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	327.	4.7	-498.40	761.09	315.	10.0	.4665	195
2	328.	4.8	-496.97	796.83	315.	10.0	.4816	195
3	329.	4.9	-491.12	817.00	317.	10.0	.4939	193
4	334.	5.0	-423.33	870.08	326.	10.0	.4988	194
5	335.	5.1	-416.52	884.27	324.	10.0	.5065	193
6	336.	5.1	-398.82	895.74	322.	10.0	.5107	192
7	339.	4.8	-323.50	842.82	326.	10.0	.4751	190
8	340.	5.1	-333.93	913.22	327.	10.0	.5145	189
9	337.	4.9	-364.48	856.84	330.	11.0	.4432	191
10	336.	5.0	-386.27	886.53	340.	11.0	.4508	195
11	325.	5.2	-573.32	832.85	325.	12.0	.4366	193
12	320.	5.8	-728.12	878.80	320.	12.0	.4803	198
13	319.	5.8	-728.98	839.47	317.	12.0	.4801	193
14	316.	6.1	-810.91	850.80	311.	13.0	.4709	192
15	313.	5.5	-782.16	733.99	306.	13.0	.4253	194
16	306.	5.4	-852.48	626.05	297.	13.0	.4151	196
17	307.	5.0	-794.05	591.54	302.	13.0	.3847	198
18	303.	4.8	-796.93	511.56	301.	13.0	.3661	199
19	308.	5.0	-776.04	603.63	301.	12.0	.4159	197
20	313.	4.8	-679.45	624.10	300.	12.0	.3963	194
21	315.	4.7	-643.16	653.97	308.	11.0	.4233	197
22	319.	5.0	-649.02	738.89	305.	11.0	.4561	196
23	321.	4.9	-596.23	747.96	306.	11.0	.4459	195
24	321.	4.5	-550.12	687.05	305.	10.0	.4468	197

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 33 FT SUMMER

MAY 01, 1974 - AUG 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	51.	1.6	132.93	109.43	64.	2.0	.7756	111
2	54.	1.5	130.49	93.53	67.	2.0	.7297	110
3	50.	1.8	153.19	130.59	65.	3.0	.6156	109
4	42.	1.7	124.76	137.29	55.	3.0	.5571	111
5	48.	1.7	135.51	121.63	70.	3.0	.5726	106
6	50.	1.7	136.54	115.38	67.	3.0	.5729	104
7	42.	1.4	95.06	107.21	68.	3.0	.4506	106
8	17.	.8	26.04	85.23	21.	3.0	.2829	105
9	337.	.8	-31.29	73.34	300.	3.0	.2531	105
10	293.	.8	-81.16	35.24	273.	3.0	.2633	112
11	258.	.9	-95.14	-20.16	239.	4.0	.2171	112
12	246.	1.4	-143.78	-63.79	237.	4.0	.3480	113
13	246.	1.9	-195.60	-88.59	236.	4.0	.4709	114
14	246.	1.7	-169.46	-74.55	235.	4.0	.4132	112
15	233.	1.9	-168.07	-128.94	226.	4.0	.4645	114
16	228.	1.7	-152.35	-136.24	224.	4.0	.4367	117
17	230.	1.6	-141.34	-118.69	223.	4.0	.4012	115
18	226.	1.1	-92.96	-89.25	217.	3.0	.3703	116
19	232.	.6	-56.24	-44.06	203.	3.0	.2071	115
20	290.	.1	-10.79	3.94	187.	2.0	.0495	116
21	49.	.6	42.99	37.64	105.	2.0	.2857	100
22	49.	.5	43.47	38.45	96.	2.0	.2738	106
23	55.	.8	70.31	49.83	81.	2.0	.3813	113
24	45.	1.1	87.46	88.61	60.	2.0	.5659	110

YORK RESEARCH CORPORATION
STAMFORD, CONNECTICUT

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 125 FT SUMMER

MAY 01, 1974 - AUG 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM.	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	33.	2.0	128.83	195.49	37.	5.0	.3902	120
2	43.	1.7	139.96	150.47	49.	5.0	.3454	119
3	36.	2.3	160.39	224.06	49.	5.0	.4631	119
4	22.	2.4	106.37	265.16	36.	5.0	.4884	117
5	36.	2.5	173.53	241.75	48.	5.0	.5087	117
6	34.	2.4	158.72	232.49	51.	5.0	.4771	118
7	29.	2.0	109.73	196.37	64.	5.0	.3912	115
8	11.	1.4	32.24	164.13	51.	5.0	.2859	117
9	339.	1.5	-62.38	163.89	321.	5.0	.2923	120
10	307.	1.1	-109.99	82.03	278.	5.0	.2268	121
11	260.	1.0	-121.61	-20.98	230.	6.0	.1714	120
12	235.	1.7	-164.03	-114.18	229.	7.0	.2379	120
13	239.	2.1	-217.16	-132.76	230.	7.0	.2980	122
14	241.	2.2	-232.63	-131.47	232.	8.0	.2760	121
15	221.	2.6	-208.41	-236.29	220.	8.0	.1 .3310	119
16	217.	2.8	-206.74	-275.66	223.	8.0	.3530	122
17	215.	2.6	-182.90	-261.45	218.	8.0	.3296	121
18	212.	2.1	-136.52	-222.17	215.	7.0	.3029	123
19	216.	1.5	-105.30	-146.82	206.	6.0	.2489	121
20	260.	.6	-67.56	-12.10	226.	6.0	.0945	121
21	57.	.2	23.33	15.40	123.	5.0	.0491	114
22	350.	.7	-14.01	83.19	32.	5.0	.1406	120
23	11.	1.2	27.26	140.40	28.	5.0	.2487	115
24	19.	1.5	59.27	170.10	34.	5.0	.3002	120

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DIURNAL WIND ANALYSIS

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FOR: CON EDISON
I P 4 280 FT SUMMER

MAY 01, 1974 - AUG 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	8.	1.2	20.84	144.10	18.	6.0	.2006	121
2	29.	1.0	60.41	109.90	57.	6.0	.1727	121
3	24.	1.6	73.00	167.68	63.	6.0	.2628	116
4	6.	1.9	22.16	223.41	33.	6.0	.3198	117
5	24.	2.0	97.20	221.19	37.	6.0	.3384	119
6	22.	2.1	91.66	232.50	34.	6.0	.3471	120
7	23.	2.0	89.72	215.48	64.	6.0	.3354	116
8	16.	2.2	72.57	255.05	98.	6.0	.3745	118
9	356.	2.1	-16.46	243.32	115.	7.0	.2953	118
10	332.	1.4	-80.52	152.99	244.	7.0	.2058	120
11	272.	1.1	-127.65	3.35	215.	8.0	.1330	120
12	240.	1.8	-185.01	-108.85	224.	8.0	.2199	122
13	250.	2.6	-294.70	-106.02	227.	9.0	.2900	120
14	247.	2.8	-304.85	-128.52	228.	10.0	.2757	120
15	231.	3.3	-305.60	-243.14	227.	10.0	.3310	118
16	225.	3.6	-303.02	-304.77	225.	11.0	.3229	121
17	224.	3.8	-326.64	-333.46	225.	10.0	.3826	122
18	222.	3.6	-290.20	-324.67	222.	10.0	.3569	122
19	217.	2.6	-189.10	-250.14	210.	9.0	.2680	121
20	263.	1.7	-195.05	-24.87	229.	9.0	.1867	117
21	282.	.9	-108.38	22.68	226.	8.0	.1163	119
22	265.	1.2	-143.37	-13.11	245.	6.0	.2000	120
23	310.	1.0	-87.16	73.77	272.	6.0	.1599	119
24	337.	1.5	-68.51	163.30	289.	6.0	.2459	120

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 400 FT SUMMER

MAY 01, 1974 - AUG 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	351.	1.3	-23.10	144.58	292.	7.0	.1835	114
2	8.	1.0	15.78	112.41	320.	7.0	.1423	114
3	7.	1.5	22.41	173.06	10.	7.0	.2168	115
4	355.	2.0	-19.16	223.95	354.	7.0	.2893	111
5	4.	2.0	14.32	223.50	354.	7.0	.2909	110
6	7.	2.3	29.83	245.83	345.	7.0	.3245	109
7	11.	2.1	43.62	224.67	28.	7.0	.3000	109
8	12.	1.9	41.67	204.59	67.	7.0	.2736	109
9	350.	1.6	-29.86	172.31	202.	7.0	.2251	111
10	317.	1.1	-88.48	93.78	221.	7.0	.1588	116
11	260.	1.5	-166.96	-28.46	225.	8.0	.1841	115
12	241.	2.4	-243.99	-134.15	227.	9.0	.2690	115
13	248.	2.9	-309.47	-124.46	230.	9.0	.3195	116
14	246.	3.3	-351.15	-154.45	232.	10.0	.3336	115
15	233.	4.1	-360.14	-275.60	229.	11.0	.3714	111
16	221.	4.5	-344.03	-391.10	222.	11.0	.4047	117
17	223.	4.4	-349.47	-373.70	223.	11.0	.4010	116
18	222.	4.3	-339.69	-371.07	226.	11.0	.3943	116
19	233.	3.6	-327.89	-247.02	221.	10.0	.3601	114
20	248.	2.8	-297.42	-119.04	234.	9.0	.3122	114
21	259.	2.0	-222.35	-44.48	245.	8.0	.2508	113
22	277.	2.1	-234.44	28.56	251.	7.0	.3012	112
23	297.	1.5	-152.53	77.46	240.	8.0	.1927	111
24	317.	1.6	-122.34	133.05	283.	8.0	.2035	111

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DIURNAL WIND ANALYSIS

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FOR: CON EDISON
I P 4 033 FT

OCT 01, 1973 - OCT 31, 1973

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	34.	2.1	31.49	47.17	44.	3.0	.7002	27
2	36.	2.1	36.17	50.02	46.	3.0	.7095	29
3	37.	2.1	35.85	48.06	44.	3.0	.6892	29
4	50.	1.9	41.98	35.35	55.	3.0	.6309	29
5	57.	2.1	51.81	33.46	70.	3.0	.7089	29
6	47.	2.0	43.13	39.93	60.	3.0	.6757	29
7	48.	2.0	43.15	38.47	65.	3.0	.6645	29
8	46.	1.3	27.58	26.77	68.	3.0	.4417	29
9	19.	1.3	12.50	35.86	22.	3.0	.4365	29
10	351.	1.3	-5.87	38.33	352.	3.0	.4457	29
11	354.	1.8	-5.56	48.98	349.	4.0	.4401	28
12	332.	1.9	-24.31	46.65	328.	4.0	.4697	28
13	334.	1.8	-22.60	46.38	324.	4.0	.4607	28
14	313.	1.4	-28.95	26.76	293.	4.0	.3399	29
15	300.	1.4	-34.97	20.20	287.	4.0	.3481	29
16	321.	.9	-16.27	20.22	265.	4.0	.2238	29
17	12.	.5	2.99	14.28	262.	3.0	.1677	29
18	18.	.6	5.38	16.54	318.	3.0	.2000	29
19	19.	1.1	10.53	29.95	34.	3.0	.3649	29
20	19.	1.4	12.91	38.53	31.	3.0	.4670	29
21	26.	1.9	24.45	50.46	37.	3.0	.6445	29
22	23.	2.2	25.07	57.82	33.	4.0	.5432	29
23	32.	2.5	37.89	60.30	40.	4.0	.6139	29
24	33.	2.3	33.99	52.02	34.	4.0	.5801	27

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 033 FT

NOV 01, 1973 - NOV 30, 1973

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	314.	2.3	-47.96	46.28	306.	5.0	.4597	29
2	313.	2.2	-47.44	43.85	304.	5.0	.4455	29
3	329.	2.9	-42.16	71.11	332.	5.0	.5701	29
4	327.	2.6	-41.28	64.34	340.	5.0	.5272	29
5	319.	2.2	-42.14	49.34	317.	6.0	.3729	29
6	331.	2.1	-29.27	52.59	343.	5.0	.4151	29
7	321.	2.3	-40.65	50.98	310.	6.0	.3881	28
8	323.	2.6	-45.08	60.21	319.	6.0	.4323	29
9	314.	3.1	-64.39	61.98	306.	6.0	.5136	29
10	313.	2.8	-58.92	54.78	290.	5.0	.5548	29
11	307.	4.1	-95.85	71.76	286.	6.0	.6881	29
12	306.	4.0	-94.05	67.59	290.	6.0	.6056	29
13	302.	4.3	-106.39	66.97	291.	6.0	.7225	29
14	304.	4.2	-98.58	65.71	299.	6.0	.7052	28
15	301.	4.0	-99.89	60.10	293.	6.0	.6700	29
16	301.	4.3	-109.99	67.37	301.	6.0	.7166	30
17	306.	3.7	-89.92	65.53	286.	6.0	.6182	30
18	312.	2.9	-63.61	57.90	281.	5.0	.5734	30
19	304.	3.1	-78.07	52.13	287.	5.0	.6259	30
20	306.	2.7	-66.76	48.29	300.	5.0	.5493	30
21	310.	2.6	-59.61	50.18	290.	6.0	.4329	30
22	311.	3.2	-71.77	63.17	315.	6.0	.5312	30
23	300.	2.8	-73.12	42.26	314.	6.0	.4692	30
24	301.	1.9	-48.77	29.50	298.	5.0	.3800	30

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Y-8162

DEC 01, 1973 - DEC 31, 1973

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	6.	3.3	9.86	90.92	16.	5.0	.6533	28
2	10.	3.5	15.71	90.48	11.	6.0	.5887	26
3	4.	3.8	6.75	94.05	11.	6.0	.6286	25
4	358.	3.4	-2.62	97.20	10.	5.0	.6706	29
5	2.	3.5	4.03	97.30	18.	5.0	.6956	28
6	1.	3.7	1.47	102.34	9.	5.0	.7311	28
7	2.	3.6	3.97	97.63	8.	6.0	.6031	27
8	3.	3.6	4.77	104.69	6.	6.0	.6023	29
9	7.	4.0	13.08	114.07	15.	6.0	.6599	29
10	351.	4.4	-19.15	127.50	353.	6.0	.7410	29
11	350.	3.6	-18.21	98.27	341.	6.0	.5949	28
12	350.	4.2	-19.38	107.71	346.	5.0	.8418	26
13	341.	4.3	-38.38	112.68	341.	5.0	.8502	28
14	343.	4.1	-32.07	106.26	343.	6.0	.6852	27
15	342.	3.5	-29.75	94.11	342.	6.0	.5875	28
16	341.	2.9	-26.53	79.21	345.	5.0	.5761	29
17	331.	2.9	-33.53	69.12	329.	6.0	.4885	27
18	352.	2.6	-9.49	68.60	2.	5.0	.5130	27
19	2.	2.1	2.36	57.32	12.	5.0	.4250	27
20	357.	2.3	-3.17	61.95	351.	4.0	.5744	27
21	16.	1.9	14.35	50.57	8.	5.0	.3894	27
22	19.	1.9	15.92	47.52	34.	5.0	.3855	26
23	2.	1.8	1.32	49.95	25.	5.0	.3569	28
24	1.	1.8	1.05	48.87	17.	4.0	.4526	27

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JAN 01,1974 - JAN 31,1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	358.	2.5	-2.31	63.60	15.	4.0	.6365	25
2	2.	1.9	1.40	46.69	14.	3.0	.6229	25
3	0.	2.3	.08	53.89	341.	3.0	.7810	23*
4	10.	2.3	8.21	44.63	21.	3.0	.7563	20*
5	5.	2.5	5.31	61.28	7.	3.0	.8201	25
6	349.	2.3	-10.68	55.26	345.	3.0	.7504	25
7	10.	2.2	10.13	57.28	7.	3.0	.7458	26
8	4.	1.9	3.14	45.81	15.	3.0	.6377	24*
9	3.	2.3	2.81	51.10	7.	3.0	.7753	22*
10	1.	2.5	.58	55.25	358.	3.0	.8372	22*
11	352.	2.5	-8.79	63.53	339.	3.0	.8222	26
12	345.	2.0	-12.59	46.35	336.	4.0	.5003	24*
13	342.	2.4	-17.21	54.15	339.	4.0	.5918	24*
14	327.	2.2	-29.69	46.06	321.	4.0	.5480	25
15	317.	2.0	-34.96	37.12	308.	4.0	.4903	26
16	309.	1.8	-36.92	29.37	294.	3.0	.6048	26
17	311.	1.9	-36.41	31.44	294.	3.0	.6167	26
18	303.	1.6	-31.50	20.14	266.	3.0	.5194	24*
19	320.	1.5	-24.25	29.26	285.	3.0	.5067	25
20	343.	2.4	-16.52	54.09	359.	4.0	.5891	24*
21	344.	2.5	-15.99	54.64	347.	3.0	.8251	23*
22	352.	2.5	-8.05	57.74	19.	4.0	.6337	23*
23	350.	2.3	-9.71	52.68	0.	4.0	.5823	23*
24	355.	2.2	-4.64	55.73	6.	4.0	.5592	25

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FEB 01, 1974 - FEB 28, 1974

	RESULTANT	WINDS			MEAN WIND			
HOUR	DIR	SPD MPH	UCOM	VCOM	DIR	SPD MPH	PERSIST	VALID HOURS
1	0.	3.5	.25	87.37	3.	5.0	.6939	25
2	7.	3.9	10.08	85.20	8.	5.0	.7720	23
3	9.	3.4	13.61	87.70	12.	5.0	.6827	26
4	7.	3.6	10.92	90.15	7.	5.0	.7265	25
5	16.	3.9	28.43	98.30	17.	5.0	.7372	26
6	16.	3.9	28.74	101.78	20.	5.0	.7834	27
7	9.	3.8	15.85	101.15	17.	5.0	.7564	27
8	11.	4.2	21.12	105.35	17.	5.0	.8492	26
9	357.	4.3	-5.37	115.90	355.	5.0	.8595	27
10	351.	4.4	-19.70	120.65	344.	6.0	.7277	28
11	344.	4.0	-30.13	107.31	345.	6.0	.6634	28
12	338.	4.0	-37.63	92.33	339.	7.0	.5697	25
13	329.	3.8	-55.00	91.32	320.	7.0	.5439	28
14	336.	3.7	-42.43	94.22	329.	6.0	.6151	28
15	347.	3.4	-20.67	95.67	342.	6.0	.5713	28
16	331.	3.4	-45.98	82.94	317.	5.0	.6774	28
17	341.	3.5	-32.22	92.34	325.	6.0	.5822	28
18	350.	2.9	-13.67	75.24	348.	6.0	.4895	26
19	342.	2.7	-23.39	71.25	342.	5.0	.5357	28
20	351.	3.1	-12.37	81.57	350.	5.0	.6111	27
21	353.	3.2	-9.71	82.99	357.	5.0	.6427	26
22	355.	3.2	-9.10	75.41	354.	5.0	.6330	24
23	6.	3.6	10.25	101.42	9.	5.0	.7231	28
24	358.	3.4	-3.13	91.24	358.	5.0	.6778	27

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DIURNAL WIND ANALYSIS

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MAR 01, 1974 - MAR 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	350.	3.0	-14.63	79.84	6.	4.0	.7516	27
2	342.	3.1	-26.13	78.94	344.	4.0	.7699	27
3	350.	3.3	-16.12	88.16	349.	4.0	.8298	27
4	348.	3.3	-19.14	92.55	358.	4.0	.8147	29
5	340.	2.6	-26.09	70.32	341.	4.0	.6466	29
6	342.	2.9	-25.29	79.41	345.	4.0	.7184	29
7	343.	2.9	-21.00	67.47	353.	5.0	.5889	24*
8	340.	3.0	-27.09	73.13	344.	5.0	.5999	26
9	342.	3.3	-27.54	85.74	348.	4.0	.8338	27
10	333.	3.3	-41.63	82.66	342.	5.0	.6611	28
11	327.	3.4	-50.09	78.32	333.	5.0	.6762	27
12	324.	3.8	-64.20	89.15	333.	6.0	.6314	29
13	325.	4.1	-65.57	95.04	323.	6.0	.6873	28
14	329.	4.1	-55.57	92.30	327.	6.0	.6906	26
15	326.	4.1	-60.82	97.28	318.	6.0	.6829	28
16	320.	3.9	-72.46	85.97	304.	6.0	.6462	29
17	320.	3.6	-60.67	90.37	308.	6.0	.6070	30
18	325.	3.7	-65.76	92.48	306.	6.0	.6101	31
19	337.	3.9	-43.66	103.36	325.	5.0	.7736	29
20	339.	4.3	-48.69	124.39	328.	5.0	.8618	31
21	336.	4.3	-48.65	120.77	326.	5.0	.8630	30
22	345.	4.4	-30.51	114.47	346.	5.0	.8776	27
23	343.	4.1	-33.99	109.60	346.	5.0	.8196	28
24	351.	2.9	-12.25	81.06	6.	4.0	.7320	28

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APR 01, 1974 - APR 30, 1974

	RESULTANT WINDS				MEAN WIND			
HOUR	DIR	SPD MPH	UCOM	VCOM	DIR	SPD MPH	PERSIST	VALID HOURS
1	355.	1.7	-4.05	49.29	338.	3.0	.5684	29
2	356.	2.0	-4.04	57.40	317.	3.0	.6614	29
3	355.	2.4	-5.52	67.95	7.	3.0	.7836	29
4	1.	2.4	1.26	60.16	354.	4.0	.6018	25
5	352.	2.9	-10.76	79.53	0.	4.0	.7166	28
6	353.	2.1	-6.88	57.33	347.	3.0	.6874	28
7	355.	2.4	-2.02	65.80	3.	4.0	.6095	27
8	351.	2.6	-11.44	74.13	331.	4.0	.6466	29
9	354.	2.2	-6.00	58.19	331.	4.0	.5416	27
10	346.	2.1	-14.62	55.54	311.	4.0	.5201	29
11	327.	1.9	-29.61	45.16	299.	5.0	.3724	29
12	320.	2.3	-42.50	50.12	291.	5.0	.4624	28
13	329.	2.6	-36.65	61.38	312.	6.0	.4255	28
14	303.	2.7	-62.82	40.41	314.	6.0	.4446	28
15	303.	2.6	-63.26	40.76	294.	6.0	.4325	29
16	296.	2.6	-70.76	34.03	272.	6.0	.4352	30
17	298.	3.0	-78.54	41.87	275.	6.0	.4944	30
18	300.	2.5	-65.46	37.86	280.	6.0	.4201	30
19	299.	2.1	-55.00	30.41	263.	5.0	.4190	30
20	314.	1.0	-20.42	19.76	223.	4.0	.2450	29
21	314.	.7	-15.56	14.84	200.	4.0	.1791	30
22	321.	1.3	-21.05	25.90	232.	4.0	.3209	26
23	349.	1.7	-9.03	47.13	299.	4.0	.4289	28
24	357.	1.9	-3.10	52.93	355.	4.0	.4734	28

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MAY 01, 1974 - MAY 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	25.	1.6	21.36	40.27	44.	3.0	.5241	29
2	36.	1.2	20.01	28.02	53.	2.0	.5936	29
3	33.	1.6	26.34	33.24	66.	2.0	.7354	27
4	20.	1.4	13.45	37.70	45.	2.0	.7146	28
5	23.	1.1	11.21	26.73	74.	2.0	.5376	27
6	23.	1.5	13.01	31.38	81.	3.0	.4923	23*
7	4.	1.6	2.91	46.99	51.	3.0	.5411	29
8	333.	1.6	-21.20	41.53	312.	3.0	.5933	26
9	317.	1.8	-36.40	39.12	306.	4.0	.4606	29
10	296.	1.7	-45.27	21.67	231.	4.0	.4182	30
11	261.	1.5	-45.96	-1.63	254.	5.0	.3066	30
12	260.	2.0	-54.53	-9.29	242.	4.0	.4939	28
13	250.	2.3	-67.55	-11.83	243.	5.0	.4572	30
14	275.	1.2	-33.59	2.66	221.	5.0	.2407	26
15	236.	1.4	-33.14	-20.54	209.	4.0	.3610	27
16	232.	1.1	-27.35	-21.75	219.	4.0	.2818	31
17	222.	1.1	-22.21	-24.59	205.	4.0	.2672	31
18	247.	.9	-24.30	-16.53	211.	4.0	.2329	29
19	306.	1.2	-23.03	22.03	203.	3.0	.3965	30
20	317.	.7	-14.54	15.71	166.	3.0	.2301	31
21	339.	.6	-5.54	14.77	57.	3.0	.1878	28
22	355.	.6	-.52	18.40	92.	2.0	.3174	29
23	28.	.7	9.34	17.50	150.	2.0	.3420	29
24	30.	.9	9.19	25.75	81.	2.0	.4557	30

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JUN 01, 1974 - JUN 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	58.	1.4	29.29	18.16	61.	2.0	.7179	24
2	56.	1.9	38.06	26.10	60.	2.0	.9614	24
3	47.	2.1	40.47	37.78	54.	2.0	*****	26
4	48.	1.5	28.04	25.09	68.	2.0	.7526	25
5	53.	2.1	43.13	32.98	64.	2.0	*****	26
6	57.	1.5	33.14	21.18	61.	2.0	.7563	26
7	70.	1.1	20.85	7.46	120.	3.0	.3515	21*
8	141.	.3	4.75	-5.87	201.	3.0	.0968	26
9	204.	.3	-2.85	-6.28	212.	3.0	.1000	23*
10	213.	.6	-8.24	-12.83	205.	3.0	.1383	27
11	215.	.9	-12.67	-17.93	218.	4.0	.2236	24
12	219.	1.7	-26.67	-33.08	218.	4.0	.4250	25
13	213.	2.1	-28.89	-44.67	204.	4.0	.5320	25
14	207.	2.8	-33.90	-65.45	204.	4.0	.7037	26
15	209.	2.8	-38.29	-67.71	204.	4.0	.6945	28
16	199.	2.8	-24.96	-71.25	192.	4.0	.6990	27
17	203.	2.5	-22.65	-52.29	197.	4.0	.6194	23*
18	193.	1.5	-8.79	-38.64	189.	3.0	.4893	27
19	176.	1.4	2.54	-37.50	168.	3.0	.4640	27
20	173.	.7	2.32	-18.99	186.	2.0	.3679	26
21	106.	.5	9.22	-2.67	160.	2.0	.2285	21*
22	93.	.5	11.18	-.50	150.	1.0	.4362	24
23	70.	.8	18.83	7.00	71.	2.0	.3864	26
24	45.	.9	14.96	14.23	46.	2.0	.4407	23*

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HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	58.	1.8	41.55	25.84	80.	3.0	.6041	27
2	52.	1.4	28.94	22.83	81.	2.0	.6826	27
3	49.	1.6	34.07	30.12	66.	3.0	.5414	28
4	33.	2.1	31.34	48.36	32.	3.0	.6860	28
5	40.	2.1	36.57	43.76	59.	3.0	.7040	27
6	47.	1.9	37.11	34.65	57.	3.0	.6268	27
7	42.	1.5	27.80	30.78	51.	3.0	.5121	27
8	26.	1.4	16.08	32.78	38.	3.0	.4681	26
9	16.	1.0	6.90	24.24	62.	3.0	.3232	26
10	329.	.9	-11.88	19.53	281.	3.0	.2930	26
11	319.	.7	-12.59	14.52	249.	3.0	.2209	29
12	279.	.9	-27.54	4.55	266.	4.0	.2326	30
13	259.	1.6	-43.52	-8.65	252.	4.0	.3962	28
14	271.	2.0	-58.70	.93	262.	4.0	.5061	29
15	256.	1.9	-50.98	-13.04	254.	4.0	.4699	28
16	258.	1.9	-53.39	-11.41	262.	4.0	.4706	29
17	256.	1.7	-49.10	-12.20	254.	4.0	.4216	30
18	248.	1.3	-36.98	-14.65	252.	3.0	.4420	30
19	245.	.7	-19.33	-8.81	246.	2.0	.3663	29
20	296.	.3	-7.62	3.71	271.	2.0	.1461	29
21	61.	.8	18.18	10.24	97.	2.0	.3864	27
22	25.	.5	5.26	11.25	69.	3.0	.1656	25
23	62.	.6	14.06	7.60	112.	2.0	.2756	29
24	44.	1.4	27.30	28.22	45.	2.0	.7011	28

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AUG 01, 1974 - AUG 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	58.	1.5	40.72	25.16	63.	2.0	.7720	31
2	69.	1.6	43.48	16.58	76.	3.0	.5171	30
3	61.	2.1	52.31	29.45	77.	3.0	.7147	28
4	63.	1.9	51.93	26.14	75.	3.0	.6460	30
5	68.	1.9	44.60	18.12	82.	3.0	.6172	26
6	62.	2.2	53.29	28.17	72.	3.0	.7175	28
7	63.	1.7	43.49	21.98	69.	3.0	.5601	29
8	58.	1.2	26.49	16.79	56.	3.0	.3872	27
9	4.	.6	1.06	16.26	347.	3.0	.2011	27
10	294.	.6	-15.78	6.87	330.	3.0	.1978	29
11	238.	1.0	-23.92	-15.12	238.	3.0	.3253	29
12	233.	1.5	-35.04	-25.97	233.	4.0	.3634	30
13	247.	1.9	-55.63	-23.44	243.	4.0	.4868	31
14	254.	1.6	-43.27	-12.68	252.	4.0	.3887	29
15	239.	1.7	-45.66	-27.65	245.	3.0	.5740	31
16	236.	1.9	-46.65	-31.84	235.	4.0	.4706	30
17	238.	1.8	-47.38	-29.61	236.	3.0	.6008	31
18	221.	1.1	-22.30	-25.43	221.	3.0	.3758	30
19	210.	.8	-11.42	-19.83	209.	2.0	.3946	29
20	69.	.3	9.05	3.51	152.	2.0	.1617	30
21	54.	1.1	21.13	15.31	87.	2.0	.5435	24*
22	71.	1.0	27.55	9.30	81.	2.0	.5192	28
23	58.	1.1	28.07	17.73	56.	2.0	.5725	29
24	60.	1.4	36.01	20.42	65.	2.0	.7137	29

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OCT 01, 1973 - OCT 31, 1973

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	12.	3.3	14.04	64.01	37.	7.0	.4681	20*
2	15.	4.3	22.27	83.29	24.	6.0	.7184	20*
3	8.	3.8	11.38	76.15	26.	7.0	.5499	20*
4	15.	3.9	20.31	75.78	23.	7.0	.5604	20*
5	29.	3.6	34.81	62.54	37.	7.0	.5113	20*
6	26.	4.3	37.04	76.61	34.	8.0	.5319	20*
7	23.	3.9	28.75	68.58	34.	9.0	.4349	19*
8	21.	3.2	21.48	57.17	29.	8.0	.4018	19*
9	4.	2.7	3.45	50.53	19.	7.0	.3808	19*
10	349.	2.1	-8.39	41.61	1.	7.0	.3032	20*
11	350.	2.3	-8.27	44.80	358.	8.0	.2847	20*
12	330.	2.5	-25.99	45.22	334.	8.0	.3104	21*
13	334.	2.7	-24.92	50.57	329.	7.0	.3835	21*
14	297.	2.0	-38.00	19.77	281.	7.0	.2914	21*
15	305.	2.5	-46.35	32.27	284.	8.0	.3069	23*
16	302.	1.0	-19.60	12.33	234.	8.0	.1259	23*
17	148.	1.9	22.38	-35.50	158.	9.0	.2119	22*
18	240.	.8	-14.89	-8.73	251.	8.0	.0938	23*
19	8.	1.2	3.67	26.80	23.	9.0	.1366	22*
20	344.	1.8	-11.76	39.72	355.	8.0	.2252	23*
21	351.	2.8	-9.58	61.92	1.	8.0	.3560	22*
22	353.	2.9	-7.87	61.39	358.	9.0	.3275	21*
23	8.	3.9	11.43	76.87	16.	8.0	.4857	20*
24	24.	3.1	27.12	59.91	33.	7.0	.4474	21*

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NOV 01, 1973 - NOV 30, 1973

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	311.	3.8	-85.34	74.44	298.	9.0	.4194	30
2	310.	4.2	-97.26	80.82	308.	9.0	.4683	30
3	319.	4.2	-81.47	95.17	307.	9.0	.4640	30
4	324.	4.1	-71.92	99.73	327.	9.0	.4554	30
5	322.	4.1	-75.79	95.36	315.	9.0	.4512	30
6	324.	4.1	-73.02	99.73	302.	10.0	.4120	30
7	318.	4.1	-81.90	91.66	298.	10.0	.4097	30
8	319.	3.8	-73.97	85.02	292.	10.0	.3756	30
9	313.	4.5	-98.43	90.50	285.	10.0	.4457	30
10	311.	5.6	-126.81	112.02	294.	10.0	.5640	30
11	293.	5.5	-151.02	65.13	281.	11.0	.4984	30
12	291.	6.3	-175.35	68.38	288.	10.0	.6274	30
13	295.	6.7	-181.76	86.00	285.	12.0	.5585	30
14	296.	7.3	-190.92	91.71	293.	11.0	.6640	29
15	292.	7.0	-193.54	78.59	287.	11.0	.6330	30
16	295.	6.6	-178.55	84.87	292.	10.0	.6590	30
17	292.	6.2	-172.82	68.19	282.	10.0	.6193	30
18	286.	4.6	-133.00	38.06	272.	10.0	.4611	30
19	287.	4.1	-119.01	36.44	276.	11.0	.3772	30
20	293.	4.3	-117.88	49.66	286.	11.0	.3876	30
21	303.	3.8	-95.84	63.04	290.	11.0	.3476	30
22	319.	4.9	-97.81	110.71	317.	11.0	.4477	30
23	307.	4.1	-98.19	73.83	305.	11.0	.3723	30
24	300.	3.6	-94.42	54.73	297.	8.0	.4547	30

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DEC 01, 1973 - DEC 31, 1973

HOUR	RESULTANT WINDS DIR	RESULTANT WINDS SPD MPH	UCOM	VCOM	MEAN WIND DIR	MEAN WIND SPD MPH	PERSIST	VALID HOURS
1	339.	3.8	-40.71	105.61	351.	8.0	.4716	30
2	342.	4.8	-39.22	122.55	343.	8.0	.5957	27
3	336.	4.8	-56.28	127.46	338.	8.0	.6006	29
4	338.	4.6	-53.63	132.51	345.	8.0	.5764	31
5	344.	5.2	-41.30	145.57	349.	9.0	.5798	29
6	346.	6.2	-40.04	162.45	352.	10.0	.6197	27
7	348.	5.6	-34.90	158.94	348.	9.0	.6235	29
8	344.	5.6	-47.30	160.89	347.	9.0	.6211	30
9	345.	5.8	-43.87	161.02	351.	9.0	.6394	29
10	343.	6.5	-57.91	186.41	341.	9.0	.7230	30
11	335.	6.0	-73.42	156.46	334.	9.0	.6622	29
12	335.	6.5	-74.14	159.92	334.	9.0	.7254	27
13	329.	6.1	-87.81	147.85	329.	9.0	.6824	28
14	334.	6.2	-72.22	150.14	343.	9.0	.6856	27
15	331.	5.5	-73.05	134.15	339.	10.0	.5455	28
16	336.	4.8	-56.82	127.68	344.	9.0	.5355	29
17	329.	4.4	-68.58	113.69	340.	9.0	.4917	30
18	332.	3.9	-55.31	105.99	353.	9.0	.4285	31
19	337.	4.4	-47.56	114.78	351.	9.0	.4931	28
20	329.	3.2	-47.64	79.69	337.	8.0	.4002	29
21	342.	3.6	-30.00	93.42	346.	9.0	.4038	27
22	347.	2.6	-17.25	77.21	346.	8.0	.3190	31
23	325.	3.1	-53.23	76.18	328.	8.0	.3872	30
24	331.	3.2	-44.90	79.57	340.	8.0	.3938	29

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JAN 01,1974 - JAN 31,1974

HOUR	RESULTANT WINDS DIR	RESULTANT WINDS SPD MPH	UCOM	VCOM	MEAN WIND DIR	MEAN WIND SPD MPH	PERSIST	VALID HOURS
1	342.	4.1	-27.36	85.85	356.	6.0	.6826	22*
2	340.	3.5	-29.05	79.00	329.	5.0	.7014	24*
3	344.	3.8	-26.43	92.00	352.	5.0	.7658	25
4	345.	2.9	-18.54	70.16	348.	5.0	.5806	25
5	354.	3.4	-8.20	84.32	7.	5.0	.6778	25
6	341.	3.6	-29.12	84.13	331.	6.0	.5935	25
7	357.	3.8	-5.25	91.06	347.	5.0	.7601	24*
8	345.	3.1	-19.05	71.38	346.	5.0	.6156	24*
9	344.	2.8	-18.29	64.35	355.	5.0	.5575	24*
10	351.	4.0	-14.25	95.10	0.	6.0	.6678	24*
11	344.	3.9	-28.78	102.49	335.	6.0	.6571	27
12	339.	3.0	-28.15	75.11	336.	6.0	.4951	27
13	334.	3.3	-36.07	73.50	327.	7.0	.4678	25
14	310.	3.3	-62.78	53.52	320.	7.0	.4714	25
15	312.	3.2	-62.46	55.49	308.	7.0	.4591	26
16	300.	2.9	-57.61	32.73	291.	7.0	.4116	23*
17	298.	3.0	-68.39	36.85	296.	6.0	.4980	26
18	296.	3.2	-72.57	34.62	290.	7.0	.4595	25
19	302.	2.9	-60.79	38.64	285.	6.0	.4802	25
20	340.	3.8	-32.56	90.24	340.	7.0	.5482	25
21	332.	3.4	-39.63	74.42	312.	6.0	.5621	25
22	340.	3.7	-31.60	86.33	340.	6.0	.6133	25
23	332.	3.3	-39.31	73.87	340.	6.0	.5578	25
24	334.	3.1	-33.89	68.94	353.	6.0	.5121	25

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FEB 01, 1974 - FEB 28, 1974

	RESULTANT WINDS				MEAN WIND			
HOUR	DIR	SPD MPH	UCOM	VCOM	DIR	SPD MPH	PERSIST	VALID HOURS
1	348.	6.6	-37.08	168.18	0.	9.0	.7350	26
2	346.	6.1	-34.29	168.12	358.	8.0	.7660	28
3	351.	5.9	-25.90	163.22	353.	8.0	.7378	28
4	355.	5.7	-13.07	160.41	1.	8.0	.7172	28
5	1.	6.4	3.38	179.18	6.	8.0	.8000	28
6	356.	6.8	-6.34	183.38	357.	9.0	.7551	27
7	354.	6.8	-19.96	181.86	353.	9.0	.7521	27
8	357.	7.2	-10.07	180.44	357.	9.0	.8032	25
9	350.	7.1	-33.03	189.18	351.	9.0	.7903	27
10	346.	6.6	-44.02	178.79	352.	9.0	.7307	28
11	333.	6.0	-80.97	150.46	347.	11.0	.5466	27
12	335.	5.8	-65.41	141.49	340.	11.0	.5248	27
13	328.	5.5	-82.89	130.71	326.	11.0	.5025	28
14	333.	5.9	-75.89	145.82	327.	11.0	.5337	28
15	343.	5.2	-42.28	134.13	341.	11.0	.4735	27
16	325.	4.8	-74.88	106.51	323.	10.0	.4322	27
17	338.	4.8	-50.41	123.79	327.	11.0	.4340	28
18	345.	4.1	-30.04	111.52	350.	10.0	.4125	28
19	337.	3.7	-39.88	95.89	353.	9.0	.4113	28
20	340.	4.4	-41.48	115.72	355.	9.0	.4878	28
21	345.	5.0	-38.46	135.36	349.	9.0	.5563	28
22	343.	4.6	-27.10	126.18	353.	7.0	.6828	27
23	348.	5.9	-33.42	158.21	357.	9.0	.6574	27
24	347.	5.7	-36.52	154.20	352.	8.0	.7074	28

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MAR 01, 1974 - MAR 31, 1974

	RESULTANT WINDS				MEAN WIND			
HOUR	DIR	SPD MPH	UCOM	VCOM	DIR	SPD MPH	PERSIST	VALID HOURS
1	338.	4.3	-42.83	106.53	352.	7.0	.6078	27
2	331.	4.4	-53.01	96.89	335.	7.0	.6311	25
3	340.	4.7	-40.81	114.17	341.	7.0	.6662	26
4	337.	4.5	-46.91	111.67	341.	7.0	.6409	27
5	334.	3.7	-38.38	79.49	336.	7.0	.5254	24*
6	333.	4.5	-50.92	99.06	329.	7.0	.6365	25
7	322.	3.1	-47.56	61.97	325.	7.0	.4464	25
8	341.	4.1	-32.86	96.87	338.	7.0	.5845	25
9	344.	5.2	-36.13	123.66	351.	8.0	.6442	25
10	328.	4.0	-52.20	83.10	334.	9.0	.4436	26
11	321.	4.4	-74.65	93.92	333.	9.0	.4942	27
12	320.	5.2	-87.23	103.97	336.	10.0	.5217	26
13	319.	5.4	-99.56	115.11	321.	10.0	.5435	28
14	321.	5.7	-100.31	124.33	309.	10.0	.5719	28
15	317.	5.4	-102.00	109.91	315.	10.0	.5355	28
16	309.	5.6	-127.18	101.28	298.	10.0	.5606	29
17	315.	5.0	-100.43	98.72	295.	11.0	.4572	28
18	315.	5.1	-104.99	105.18	298.	11.0	.4659	29
19	333.	5.8	-75.50	146.87	328.	9.0	.6396	29
20	332.	6.4	-86.46	164.36	321.	9.0	.7132	29
21	333.	5.6	-73.56	144.46	323.	9.0	.6211	29
22	336.	6.3	-67.00	150.65	336.	9.0	.7054	26
23	332.	5.6	-70.09	133.03	331.	9.0	.6136	27
24	336.	4.9	-56.76	125.[illegible]	341.	7.0	.7045	26

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APR 01, 1974 - APR 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	332.	2.0	-27.45	52.03	339.	6.0	.3268	30
2	339.	2.5	-26.61	70.60	313.	6.0	.4191	30
3	337.	3.0	-32.15	75.17	334.	7.0	.4326	27
4	353.	3.3	-11.45	91.01	334.	6.0	.5460	28
5	336.	4.2	-45.24	113.14	339.	7.0	.6002	29
6	337.	3.5	-36.12	88.02	350.	7.0	.4936	27
7	337.	3.7	-40.30	96.87	345.	7.0	.5353	28
8	344.	3.7	-30.06	102.77	342.	7.0	.5275	29
9	341.	2.5	-23.09	67.44	329.	8.0	.3182	28
10	328.	2.6	-41.97	66.15	300.	8.0	.3264	30
11	315.	2.0	-41.81	41.90	306.	9.0	.2192	30
12	312.	3.5	-77.71	70.03	299.	10.0	.3487	30
13	314.	4.0	-79.33	77.28	317.	11.0	.3596	28
14	294.	3.7	-94.99	42.40	317.	11.0	.3377	28
15	280.	4.2	-115.19	37.50	292.	11.0	.3798	29
16	285.	4.3	-123.94	32.13	276.	11.0	.3880	30
17	287.	4.6	-133.05	40.97	276.	11.0	.4219	30
18	283.	4.0	-116.31	26.99	286.	10.0	.3980	30
19	281.	3.9	-110.09	20.45	277.	10.0	.3861	29
20	272.	2.2	-65.58	2.55	269.	8.0	.2735	30
21	270.	1.3	-30.64	-.02	218.	7.0	.1340	30
22	272.	1.8	-46.31	1.80	208.	7.0	.2547	26
23	322.	2.1	-37.17	47.96	261.	7.0	.2939	29
24	331.	2.2	-31.71	58.40	321.	7.0	.3164	30

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MAY 01, 1974 - MAY 31, 1974

	RESULTANT	WINDS			MEAN WIND			
HOUR	DIR	SPD MPH	UCOM	VCOM	DIR	SPD MPH	PERSIST	VALID HOURS
1	9.	2.0	9.27	60.65	0.	5.0	.4090	30
2	30.	1.0	14.49	24.72	36.	4.0	.2470	29
3	21.	1.9	19.92	50.72	45.	5.0	.3758	29
4	10.	2.2	10.97	61.53	23.	5.0	.4465	28
5	15.	1.6	13.64	50.32	46.	5.0	.3655	29
6	11.	2.1	11.32	57.79	73.	5.0	.4206	28
7	0.	2.7	.47	62.16	48.	5.0	.5301	31
8	338.	2.7	-30.72	77.62	328.	6.0	.4491	31
9	322.	3.2	-53.54	75.49	313.	6.0	.5307	30
10	305.	2.2	-56.33	39.63	305.	7.0	.3193	31
11	274.	2.2	-67.33	5.24	273.	8.0	.2743	31
12	247.	2.0	-56.47	-23.54	228.	8.0	.2549	30
13	257.	1.9	-57.70	-12.95	241.	8.0	.2388	31
14	235.	1.6	-38.67	-27.30	154.	9.0	.1759	30
15	190.	1.8	-8.92	-45.25	147.	9.0	.1947	28
16	187.	2.2	-8.64	-68.64	166.	10.0	.2236	31
17	171.	2.5	12.05	-72.22	165.	10.0	.2525	29
18	187.	1.9	-6.93	-50.95	176.	10.0	.1915	31
19	298.	1.0	-27.72	14.54	197.	9.0	.1159	30
20	313.	.9	-20.29	19.14	216.	7.0	.1328	30
21	344.	.7	-5.47	19.49	99.	7.0	.0964	30
22	352.	1.5	-6.35	44.95	27.	6.0	.2522	30
23	27.	1.5	21.01	35.13	47.	5.0	.2903	30
24	15.	1.7	13.37	50.03	37.	5.0	.3452	30

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JUN 01, 1974 - JUN 30, 1974

	RESULTANT WINDS				MEAN WIND			
HOUR	DIR	SPD MPH	UCOM	VCOM	DIR	SPD MPH	PERSIST	VALID HOURS
1	58.	2.0	46.69	28.76	51.	4.0	.4096	28
2	50.	2.8	62.93	53.23	42.	5.0	.5695	29
3	36.	2.6	52.72	68.34	45.	5.0	.5649	30
4	37.	2.5	44.16	58.59	44.	4.0	.6324	29
5	45.	3.1	64.63	62.79	54.	5.0	.6214	29
6	45.	2.3	45.91	49.60	48.	4.0	.5805	30
7	53.	1.7	34.39	25.65	113.	4.0	.4126	26
8	62.	.8	20.55	10.93	142.	4.0	.2078	28
9	93.	.3	8.34	-.44	202.	4.0	.0720	29
10	149.	.7	10.11	-17.01	172.	5.0	.1319	30
11	175.	1.1	2.56	-31.15	176.	5.0	.2155	29
12	200.	2.3	-21.95	-61.94	203.	6.0	.3777	29
13	196.	2.9	-23.69	-61.25	191.	7.0	.4169	29
14	199.	3.5	-34.43	-100.51	195.	7.0	.5059	30
15	197.	4.3	-38.35	-125.12	193.	8.0	.5373	30
16	185.	4.8	-13.29	-145.86	184.	8.0	.6021	30
17	194.	3.9	-29.32	-114.77	190.	8.0	.4936	30
18	187.	2.9	-10.53	-85.34	185.	7.0	.4095	30
19	171.	3.0	12.94	-85.70	164.	6.0	.4981	29
20	178.	1.9	1.71	-65.09	191.	5.0	.3063	29
21	139.	.9	16.29	-18.28	135.	4.0	.2233	28
22	113.	.8	15.51	-6.71	147.	3.0	.1373	30
23	71.	1.1	28.01	9.39	65.	4.0	.2735	27
24	59.	1.0	25.77	15.57	52.	4.0	.2510	30

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DIURNAL WIND ANALYSIS

Y-8162

FOR: CON EDISON
I P 4 125 FT

JUL 01, 1974 - JUL 31, 1974

HOUR	RESULTANT WINDS DIR	RESULTANT WINDS SPD MPH	UCOM	VCOM	MEAN WIND DIR	MEAN WIND SPD MPH	PERSIST	VALID HOURS
1	31.	2.0	32.53	54.06	42.	5.0	.4070	31
2	21.	1.5	16.41	42.62	90.	5.0	.3045	30
3	28.	2.2	30.61	57.05	53.	5.0	.4316	30
4	1.	3.4	1.83	100.87	21.	7.0	.4804	30
5	28.	2.9	39.79	73.71	48.	6.0	.4814	29
6	24.	2.4	29.20	64.48	34.	5.0	.4881	29
7	21.	1.9	18.39	48.31	53.	5.0	.3829	27
8	11.	2.1	11.52	59.49	33.	5.0	.4179	29
9	354.	2.2	-7.15	67.80	34.	5.0	.4398	31
10	324.	2.1	-35.39	47.96	288.	5.0	.4111	29
11	323.	1.3	-23.09	30.74	257.	6.0	.2136	30
12	295.	1.7	-46.31	21.14	290.	7.0	.2424	30
13	271.	2.0	-62.69	1.57	275.	7.0	.2890	31
14	285.	3.3	-99.98	27.15	282.	8.0	.4177	31
15	263.	2.9	-89.32	-11.53	266.	7.0	.4150	31
16	262.	3.4	-102.25	-13.85	271.	8.0	.4299	30
17	258.	3.2	-96.20	-20.27	265.	8.0	.3964	31
18	254.	2.4	-70.25	-20.37	258.	7.0	.3371	31
19	245.	2.0	-56.97	-26.13	248.	6.0	.3370	31
20	295.	1.6	-45.03	21.37	286.	6.0	.2680	31
21	347.	.8	-5.60	23.75	33.	6.0	.1402	29
22	308.	1.5	-37.80	29.39	312.	6.0	.2574	31
23	330.	2.3	-34.67	60.56	335.	6.0	.3877	30
24	360.	2.0	-.04	60.87	358.	6.0	.3381	30

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DIURNAL WIND ANALYSIS

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FOR: CON EDISON
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AUG 01, 1974 - AUG 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	38.	2.1	40.35	52.03	37.	4.0	.5309	31
2	57.	1.8	46.13	29.91	58.	5.0	.3547	31
3	49.	2.5	57.14	49.94	53.	5.0	.5060	30
4	48.	2.2	49.41	44.18	54.	5.0	.4418	30
5	44.	2.5	52.48	54.92	44.	5.0	.5064	30
6	49.	3.0	69.30	60.62	53.	5.0	.5940	31
7	55.	2.2	56.48	40.25	58.	4.0	.5593	31
8	63.	1.2	30.89	16.03	66.	4.0	.3001	29
9	347.	.7	-5.03	21.04	358.	4.0	.1803	30
10	292.	1.0	-27.88	11.45	321.	5.0	.1945	31
11	232.	1.4	-33.25	-25.81	243.	5.0	.2806	30
12	218.	2.0	-39.30	-49.84	221.	5.0	.4095	31
13	241.	2.7	-73.00	-40.13	234.	7.0	.3839	31
14	243.	2.2	-59.35	-30.82	244.	7.0	.3184	30
15	233.	3.0	-71.82	-53.39	237.	7.0	.4261	30
16	239.	3.1	-82.56	-49.08	241.	7.0	.4426	31
17	232.	2.8	-69.43	-54.20	234.	6.0	.4735	31
18	220.	2.4	-48.81	-57.51	227.	6.0	.4056	31
19	214.	1.9	-33.55	-49.54	218.	5.0	.3860	31
20	311.	.2	-3.95	3.38	228.	4.0	.0419	31
21	116.	.7	18.12	-8.85	149.	4.0	.1867	27
22	43.	.7	14.62	15.56	50.	4.0	.1841	29
23	22.	1.2	12.91	32.32	27.	4.0	.3107	28
24	25.	1.6	20.15	43.65	29.	4.0	.4006	30

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DIURNAL WIND ANALYSIS

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FOR: CON EDISON
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OCT 01, 1973 - OCT 31, 1973

HOUR	RESULTANT WINDS DIR	RESULTANT WINDS SPD MPH	UCOM	VCOM	MEAN WIND DIR	MEAN WIND SPD MPH	PERSIST	VALID HOURS
1	14.	3.1	19.92	81.65	29.	7.0	.4447	27
2	15.	3.6	25.14	91.43	19.	7.0	.5210	26
3	355.	3.9	-8.71	100.85	2.	7.0	.5562	26
4	1.	3.6	.89	92.73	0.	7.0	.5095	26
5	27.	3.7	45.77	88.82	36.	7.0	.5287	27
6	17.	3.8	29.93	98.59	15.	8.0	.4770	27
7	7.	4.2	14.41	111.45	15.	9.0	.4625	27
8	15.	3.0	21.31	78.59	18.	8.0	.3770	27
9	32.	3.1	43.69	69.06	34.	8.0	.3929	26
10	33.	2.6	37.24	58.10	47.	7.0	.3652	27
11	13.	2.9	18.22	76.92	14.	8.0	.3660	27
12	350.	1.9	-8.78	50.21	331.	8.0	.2360	27
13	342.	2.3	-20.94	62.68	345.	7.0	.3256	29
14	313.	1.9	-40.09	37.82	285.	7.0	.2715	29
15	320.	2.0	-37.58	44.54	261.	8.0	.2512	29
16	334.	1.1	-13.73	28.16	260.	8.0	.1398	28
17	133.	.4	8.76	-8.23	228.	8.0	.0518	29
18	323.	.4	-7.09	9.26	252.	8.0	.0503	29
19	2.	1.1	.91	29.13	284.	9.0	.1199	27
20	2.	1.6	1.22	43.52	342.	8.0	.2016	27
21	3.	1.5	2.41	42.12	0.	7.0	.2078	29
22	359.	2.5	-1.74	66.45	335.	8.0	.3077	27
23	17.	2.3	17.81	58.44	16.	8.0	.2828	27
24	16.	2.7	20.17	70.58	30.	7.0	.3884	27

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 280 FT

NOV 01, 1973 - NOV 30, 1973

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	298.	5.4	-142.48	76.94	280.	9.0	.5997	30
2	300.	6.5	-169.57	98.67	291.	10.0	.6540	30
3	311.	6.6	-150.19	128.66	306.	10.0	.6592	30
4	315.	6.1	-129.58	127.41	307.	10.0	.6057	30
5	313.	5.4	-119.51	111.08	314.	10.0	.5439	30
6	305.	4.6	-112.93	77.99	288.	10.0	.4575	30
7	300.	4.8	-121.13	70.02	274.	11.0	.4386	29
8	299.	5.1	-129.12	71.81	280.	11.0	.4631	29
9	301.	5.6	-141.12	83.16	280.	11.0	.5135	29
10	305.	6.5	-158.45	112.71	288.	11.0	.5892	30
11	303.	7.4	-179.11	116.42	281.	12.0	.6139	29
12	303.	7.7	-188.51	121.85	286.	13.0	.5954	29
13	307.	8.1	-188.46	139.57	286.	12.0	.6739	29
14	310.	8.2	-177.05	146.92	294.	12.0	.6847	28
15	302.	9.5	-216.24	135.98	296.	13.0	.6550	30
16	306.	8.4	-196.09	142.80	294.	12.0	.6971	29
17	303.	6.4	-161.85	105.71	283.	11.0	.5858	30
18	297.	5.7	-151.77	77.41	285.	11.0	.5163	30
19	297.	6.2	-163.77	85.14	287.	11.0	.5593	30
20	296.	6.3	-170.03	83.19	279.	11.0	.5736	30
21	298.	6.6	-176.44	92.38	281.	12.0	.5532	30
22	303.	7.2	-181.07	117.53	296.	12.0	.5996	30
23	301.	6.5	-167.19	98.53	294.	11.0	.5881	30
24	298.	6.1	-160.49	85.37	290.	10.0	.6060	30

YORK RESEARCH CORPORATION
STAMFORD, CONNECTICUT

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 280 FT

DEC 01, 1973 - DEC 31, 1973

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	336.	3.2	-35.18	79.76	348.	10.0	.3229	27
2	329.	3.3	-45.13	74.36	332.	9.0	.3717	26
3	321.	5.3	-86.36	108.18	321.	10.0	.5324	26
4	327.	4.9	-70.88	110.17	329.	11.0	.4411	27
5	330.	5.7	-74.42	128.26	321.	11.0	.5185	26
6	332.	6.3	-76.94	144.26	333.	12.0	.5240	26
7	339.	7.0	-67.30	176.13	331.	12.0	.5820	27
8	345.	6.8	-46.65	176.59	347.	12.0	.5637	27
9	344.	6.7	-48.51	167.11	340.	12.0	.5577	26
10	346.	7.8	-45.75	190.38	351.	12.0	.6527	25
11	335.	7.0	-74.14	159.54	331.	12.0	.5864	25
12	347.	8.0	-42.00	187.18	347.	11.0	.7266	24*
13	335.	8.1	-94.34	198.50	334.	12.0	.6783	27
14	336.	8.1	-86.28	193.38	336.	13.0	.6265	26
15	337.	7.3	-69.54	161.36	329.	14.0	.5229	24*
16	334.	6.3	-74.37	153.02	337.	12.0	.5251	27
17	324.	6.4	-94.86	130.25	322.	13.0	.4958	25
18	322.	5.5	-88.17	113.71	324.	12.0	.4612	26
19	325.	5.5	-78.87	112.39	336.	12.0	.4577	25
20	315.	4.2	-80.72	80.74	312.	11.0	.3844	27
21	330.	3.8	-49.23	84.39	332.	11.0	.3416	26
22	343.	2.9	-20.53	68.70	348.	11.0	.2607	25
23	327.	2.6	-35.28	55.36	322.	10.0	.2626	25
24	319.	2.2	-35.90	41.52	296.	10.0	.2195	25

YORK RESEARCH CORPORATION
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DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 280 FT

JAN 01,1974 - JAN 31,1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	346.	4.5	-26.12	101.15	339.	8.0	.5678	23*
2	340.	4.5	-36.27	97.81	326.	8.0	.5669	23*
3	340.	4.4	-34.56	94.91	336.	8.0	.5490	23*
4	341.	4.3	-30.97	89.62	325.	7.0	.6157	22*
5	347.	4.5	-23.45	101.93	318.	7.0	.6496	23*
6	340.	5.1	-39.40	105.58	329.	8.0	.6403	22*
7	349.	4.8	-18.69	93.21	345.	8.0	.5942	20*
8	336.	3.5	-31.97	73.00	301.	7.0	.4950	23*
9	339.	3.5	-29.45	75.01	314.	7.0	.5005	23*
10	353.	3.5	-10.90	90.00	28.	7.0	.4981	26
11	346.	3.8	-23.11	94.74	332.	8.0	.4683	26
12	334.	2.9	-33.12	68.37	313.	8.0	.3652	26
13	318.	2.7	-42.10	46.81	302.	8.0	.3429	23*
14	291.	3.0	-68.09	26.54	301.	8.0	.3806	24*
15	300.	3.6	-78.39	45.65	312.	8.0	.4535	25
16	291.	3.5	-81.93	30.82	287.	8.0	.4377	25
17	285.	3.8	-92.95	24.77	288.	8.0	.4810	25
18	287.	4.8	-113.67	35.00	285.	8.0	.5947	25
19	291.	4.4	-98.72	38.30	285.	8.0	.5515	24*
20	322.	5.0	-73.80	94.96	312.	8.0	.6264	24*
21	317.	3.6	-61.71	65.99	292.	7.0	.5163	25
22	327.	4.0	-53.98	83.24	297.	8.0	.4960	25
23	329.	4.7	-60.59	100.82	309.	8.0	.5881	25
24	336.	4.3	-43.12	98.27	328.	8.0	.5366	25

YORK RESEARCH CORPORATION
STAMFORD, CONNECTICUT

[illegible] 01, 1974 - [illegible] 28, 1974

HOUR	RESULTANT DIR	SPD MPH	WINDS UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	346.	7.1	-47.23	184.65	345.	10.0	.7059	27
2	348.	7.1	-39.58	187.21	346.	10.0	.7037	27
3	352.	7.1	-27.79	186.73	352.	10.0	.7065	27
4	352.	6.2	-24.32	164.53	350.	9.0	.6844	27
5	357.	7.6	-11.40	197.92	359.	10.0	.7625	26
6	357.	7.0	-9.49	186.73	354.	10.0	.6999	27
7	354.	7.8	-23.51	211.51	349.	10.0	.7600	28
8	359.	7.9	-4.23	212.72	354.	11.0	.7164	27
9	353.	7.6	-26.62	210.26	354.	10.0	.7569	28
10	350.	7.3	-34.67	200.60	356.	12.0	.6059	28
11	344.	6.0	-46.05	161.58	1.	12.0	.5001	28
12	339.	6.2	-60.44	156.96	354.	13.0	.4792	27
13	330.	5.9	-82.28	144.46	330.	13.0	.4567	28
14	333.	6.8	-72.73	178.73	340.	13.0	.5250	28
15	345.	5.5	-39.63	149.63	346.	12.0	.4607	28
16	324.	5.4	-67.24	121.84	320.	12.0	.4460	28
17	335.	5.1	-59.32	129.51	330.	13.0	.3913	28
18	340.	4.3	-41.07	114.48	335.	12.0	.3620	28
19	340.	4.1	-39.60	106.48	345.	11.0	.3339	28
20	339.	5.2	-52.46	135.05	347.	11.0	.4704	28
21	345.	5.7	-42.12	154.47	351.	11.0	.5196	28
22	345.	5.1	-34.81	136.16	340.	9.0	.5654	28
23	346.	6.4	-44.64	173.12	344.	10.0	.6335	28
24	342.	6.3	-54.13	169.00	340.	10.0	.6338	28

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 280 FT

MAR 01, 1974 - MAR 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	320.	5.1	-71.36	116.33	334.	9.0	.5616	27
2	323.	5.3	-92.50	122.95	314.	9.0	.5895	29
3	335.	5.0	-60.18	130.81	332.	9.0	.5517	29
4	331.	5.9	-74.72	135.20	333.	10.0	.5941	26
5	325.	5.0	-71.64	113.71	336.	9.0	.5530	27
6	328.	6.5	-92.00	149.35	312.	10.0	.6497	27
7	329.	4.6	-64.67	105.63	324.	10.0	.4537	27
8	330.	5.0	-69.07	121.49	325.	9.0	.5546	28
9	344.	5.6	-42.26	145.42	0.	10.0	.5609	27
10	313.	5.1	-96.12	90.04	315.	11.0	.4605	26
11	312.	5.7	-114.61	101.86	322.	11.0	.5163	27
12	309.	6.7	-145.96	119.00	325.	13.0	.5174	28
13	312.	6.9	-142.29	129.61	314.	12.0	.5728	28
14	315.	7.9	-157.49	154.91	314.	13.0	.6069	28
15	319.	7.4	-146.83	160.42	320.	13.0	.5729	30
16	316.	7.3	-152.48	155.83	316.	14.0	.5191	30
17	315.	6.5	-135.72	130.10	311.	14.0	.4610	30
18	304.	5.9	-143.45	98.24	298.	14.0	.4241	29
19	324.	6.3	-107.61	147.95	311.	12.0	.5257	29
20	329.	6.9	-103.75	172.51	316.	12.0	.5785	29
21	326.	6.9	-108.55	176.77	323.	11.0	.6286	30
22	332.	7.0	-98.23	166.13	325.	11.0	.6379	30
23	324.	6.7	-113.52	155.06	314.	11.0	.6100	29
24	330.	6.1	-80.84	156.00	325.	10.0	.6059	29

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APR 01, 1974 - APR 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	321.	2.8	-50.44	61.91	275.	9.0	.3060	29
2	333.	3.1	-40.02	80.10	299.	9.0	.3431	29
3	326.	3.3	-52.94	79.24	330.	9.0	.3651	29
4	345.	3.8	-29.90	110.45	345.	8.0	.4768	30
5	334.	4.5	-60.26	121.16	323.	9.0	.5012	30
6	327.	3.7	-60.49	92.20	311.	8.0	.4595	30
7	335.	3.8	-45.94	104.37	332.	9.0	.4270	30
8	339.	3.8	-40.18	105.42	331.	10.0	.3760	30
9	344.	2.8	-22.05	78.52	353.	10.0	.2844	28
10	334.	2.9	-38.19	79.61	340.	10.0	.2943	30
11	316.	2.5	-49.25	55.63	316.	11.0	.2251	30
12	312.	4.7	-105.11	95.39	303.	12.0	.3952	30
13	313.	4.6	-94.08	8[illegible].60	316.	14.0	.3297	28
14	295.	5.0	-128.04	58.41	302.	14.0	.3590	28
15	299.	5.4	-130.37	76.50	304.	14.0	.3851	29
16	289.	5.6	-158.12	52.97	286.	14.0	.3970	30
17	288.	5.8	-160.07	50.67	289.	15.0	.3731	30
18	281.	5.2	-154.46	29.69	287.	14.0	.3745	30
19	276.	5.2	-153.77	20.28	280.	14.0	.3693	30
20	279.	3.9	-116.59	17.39	282.	12.0	.3276	30
21	281.	2.3	-67.65	12.77	273.	10.0	.2295	30
22	275.	3.1	-91.91	8.39	252.	9.0	.3418	30
23	306.	2.7	-61.53	45.10	245.	11.0	.2477	28
24	323.	3.1	-45.62	72.24	290.	10.0	.3114	28

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

DIURNAL WIND ANALYSIS

Y-3162

FOR: CON EDISON
1 P 4 200 FT

MAY 01, 1974 - MAY 31, 1974

	RESULTANT WINDS				MEAN WIND			
HOUR	DIR	SPD MPH	UCOM	VCOM	DIR	SPD MPH	PERSIST	VALID HOURS
1	349.	1.6	-9.39	49.85	289.	7.0	.2342	31
2	333.	.7	-10.08	20.03	265.	6.0	.1205	31
3	14.	1.0	6.36	26.45	123.	6.0	.1619	28
4	340.	1.3	-8.02	39.14	76.	6.0	.2148	31
5	12.	1.3	8.47	39.74	66.	6.0	.2135	31
6	357.	1.9	-2.42	56.41	44.	6.0	.3246	30
7	355.	2.4	-7.00	75.17	66.	7.0	.3387	31
8	338.	2.6	-30.51	75.89	223.	8.0	.3293	31
9	327.	2.7	-44.96	69.44	255.	8.0	.3336	31
10	298.	2.4	-66.15	34.62	252.	9.0	.3011	31
11	263.	2.8	-81.98	-9.39	222.	10.0	.2751	30
12	237.	3.1	-79.31	-51.90	205.	10.0	.3057	31
13	246.	4.3	-119.70	-49.53	220.	11.0	.3926	30
14	237.	2.8	-71.20	-45.40	196.	12.0	.2346	30
15	222.	3.3	-62.23	-66.34	181.	12.0	.2751	28
16	206.	4.1	-53.77	-109.65	202.	13.0	.3131	30
17	201.	4.5	-49.15	-129.11	200.	12.0	.3714	31
18	208.	4.6	-67.39	-124.63	207.	13.0	.3517	31
19	211.	3.2	-49.26	-83.43	193.	12.0	.2691	30
20	270.	2.3	-71.26	-.60	226.	10.0	.2299	31
21	264.	1.5	-46.33	-4.78	179.	9.0	.1669	31
22	290.	1.0	-26.22	10.00	145.	7.0	.1380	31
23	351.	.5	-2.65	16.56	268.	7.0	.0774	31
24	332.	1.5	-22.36	42.43	282.	7.0	.2210	31

PAGE

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 280 FT

JUN 01, 1974 - JUN 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	80.	1.2	35.71	6.11	86.	5.0	.2499	29
2	64.	2.5	66.47	31.81	75.	6.0	.4094	30
3	39.	2.8	50.83	62.79	72.	6.0	.4643	29
4	39.	2.3	40.34	49.69	48.	5.0	.4572	28
5	48.	2.9	59.78	53.76	62.	6.0	.4786	28
6	44.	2.2	44.55	46.65	55.	6.0	.3707	29
7	51.	2.3	46.24	37.55	104.	5.0	.4582	26
8	65.	1.5	39.01	16.39	132.	5.0	.2974	29
9	79.	1.1	28.96	5.39	154.	6.0	.1818	27
10	124.	1.2	29.39	-19.71	161.	6.0	.1966	30
11	166.	1.4	9.93	-39.48	174.	6.0	.2262	30
12	195.	2.9	-22.48	-83.51	201.	8.0	.3603	30
13	193.	3.2	-28.07	-87.83	195.	8.0	.3974	29
14	200.	4.0	-40.93	-113.94	198.	9.0	.4434	30
15	202.	5.1	-58.46	-142.57	203.	9.0	.5707	30
16	189.	6.1	-28.61	-181.72	192.	10.0	.6132	30
17	203.	5.2	-61.53	-142.16	199.	10.0	.5164	30
18	193.	4.2	-37.78	-118.68	196.	9.0	.4613	30
19	188.	4.0	-10.59	-120.11	184.	8.0	.5024	30
20	182.	3.1	-2.80	-89.35	188.	8.0	.3853	29
21	195.	1.6	-12.88	-46.12	196.	7.0	.2270	30
22	179.	1.1	.39	-34.02	208.	5.0	.2268	30
23	133.	.5	8.02	-12.25	156.	5.0	.0913	29
24	39.	.5	12.27	7.12	142.	5.0	.0946	30

YORK RESEARCH CORPORATION
STAMFORD, CONNECTICUT

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

PAGE

DIURNAL WIND ANALYSIS

Y-8162

FOR: CON EDISON
I P 4 280 FT

JUL 01, 1974 - JUL 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	355.	2.1	-6.07	65.91	343.	6.0	.3558	31
2	351.	2.2	-9.75	64.56	311.	7.0	.3109	30
3	358.	1.9	-2.31	57.07	352.	7.0	.2720	30
4	346.	3.8	-26.28	107.85	3.	8.0	.4785	29
5	4.	2.8	6.31	84.08	15.	7.0	.4015	30
6	6.	2.3	6.88	70.09	3.	6.0	.3786	31
7	5.	2.4	5.26	65.71	27.	6.0	.3924	28
8	10.	2.2	11.08	62.69	57.	6.0	.3659	29
9	350.	2.5	-13.19	75.78	349.	6.0	.4135	31
10	330.	2.3	-34.25	58.66	279.	6.0	.3773	30
11	320.	1.6	-31.99	37.58	259.	7.0	.2350	30
12	295.	1.8	-51.53	24.08	293.	8.0	.2293	31
13	270.	2.5	-76.72	-.32	269.	8.0	.3094	31
14	275.	4.4	-132.80	11.61	278.	9.0	.4937	30
15	264.	4.0	-121.87	-12.73	264.	9.0	.4392	31
16	262.	4.1	-125.54	-16.98	267.	9.0	.4541	31
17	257.	4.2	-127.99	-30.58	266.	10.0	.4245	31
18	252.	3.9	-114.50	-37.99	259.	9.0	.4324	31
19	249.	3.4	-99.35	-37.71	246.	8.0	.4285	31
20	277.	2.7	-81.58	10.55	279.	8.0	.3317	31
21	293.	1.7	-47.89	20.57	314.	7.0	.2402	31
22	290.	2.8	-82.56	29.98	287.	8.0	.3542	31
23	315.	3.1	-66.22	65.20	296.	8.0	.3872	30
24	331.	2.7	-40.65	74.15	296.	7.0	.3897	31

APPENDIX II - SUPPLEMENT

DATA RECOVERY LOG (%)

	O	N	D	J	F	M	A	M	J	J	A	S	TOTAL
Ambient Temp. (33')	98.3	97.2	100	89.5	99.6	98.1	100	100	100	100	99.5	100	98.5
Delta-T(200'-33')	34.4	97.2	100	89.5	99.6	98.0	100	100	90.3	100	99.5	100	92.3
Delta-T(400'-33')	98.1	97.2	100	89.4	99.4	97.2	98.5	99.9	90.3	100	99.5	100	97.4
Dew Point (33')	98.3	95.8	96.5	88.4	99.6	98.1	100	100	100	100	97.2	100	97.8
Dew Point (200')	34.4	96.7	100	89.5	99.7	98.0	100	100	100	48.9	0	0	72.0
Dew Point (400')	98.3	96.7	100	89.2	99.6	96.5	99.9	100	100	100	99.5	99.4	98.2
W. S. (33')	92.9	97.8	97.0	87.1	98.8	95.7	99.0	100	89.2	96.0	98.3	100	95.9
W. D. (33')	94.5	99.9	98.5	88.7	100	99.7	100	100	100	100	100	100	98.4
W. S. (125')	94.2	99.9	98.5	84.0	100	89.4	99.6	99.9	100	100	100	100	97.1
W. D. (125')	66.3	99.9	97.7	89.7	100	99.7	99.9	100	100	100	100	100	96.0
W. S. (283')	88.6	99.3	97.3	78.5	100	93.0	100	100	100	100	98.9	96.9	96.0
W. D. (283')	91.3	99.3	87.1	89.8	99.1	99.6	100	100	100	100	96.1	88.5	95.9
W. S. (400')	91.4	99.4	95.0	84.1	100	94.9	100	100	100	100	100	100	97.0
W. D. (400')	92.3	97.2	97.6	88.7	100	87.6	100	80.4	98.6	98.5	96.6	98.6	94.6
Visibility	60.3	99.9	100	90.7	100	95.0	100	96.6	85.0	100	100	100	93.9
Net Radiation	0	0	0	78.8	100	98.1	99.9	100	100	99.9	99.7	100	72.8

Of a possible 129,360 sensor hours, Total Data Recovery = 92.81 % **

** This figure represents the total year's Data Collection Program; 10/1/73-9/30/74

APPENDIX II - SUPPLEMENT

MISSING DATA LOG

	1973			1974								
	O	N	D	J	F	M	A	M	J	J	A	S
TOTAL HOURS	744	720	744	744	672	744	720	744	720	744	744	720
Ambient Temp. (33')	13	20	0	78	3	14	0	0	0	0	4	0
Delta-T (200'-33')	488	20	0	78	3	15	0	0	70	0	4	0
Delta-T (400'-33')	79	4	21	11	1	70	0	4	14	20	0	0
Dew Point (33')	13	30	26	86	3	14	0	0	0	0	21	0
Dew Point (200')	488	24	0	78	2	15	0	0	0	380	744	720
Dew Point (400')	13	24	0	80	3	26	1	0	0	0	4	4
W. S. (33')	53	16	22	96	8	32	7	0	78	30	13	0
W. D. (33')	41	1	11	84	0	2	0	0	0	0	0	0
W. S. (125')	43	1	11	119	0	79	3	1	0	0	0	0
W. D. (125')	251	1	17	77	0	2	1	0	0	0	0	0
W. S. (283')	85	5	20	160	0	52	0	0	0	0	8	22
W. D. (283')	65	5	96	76	6	3	0	0	0	0	29	83
W. S. (400')	64	4	37	118	0	38	0	0	0	0	0	0
W. D. (400')	57	20	18	84	0	92	0	146	10	11	25	10
Visibility	295	1	0	69	0	37	0	25	108	0	0	0
Net Radiation	*	*	*	158	0	14	1	0	0	1	2	0

*Data not evaluated since instrument output incompatible with IP3 instrumentation.

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 33 FT

SEP 01, 1974 - SEP 30, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0333	.0181	.0	.0	.0	.0	.0	.0	.0	.0	.0514
12- 33	NNE	.0403	.0583	.0194	.0	.0	.0	.0	.0	.0	.0	.1181
34- 56	NE	.0875	.1333	.0194	.0	.0	.0	.0	.0	.0	.0	.2403
57- 78	ENE	.0569	.0222	.0	.0	.0	.0	.0	.0	.0	.0	.0792
79-101	E	.0333	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0333
102-123	ESE	.0139	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0139
124-146	SE	.0125	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0125
147-168	SSE	.0125	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0125
169-191	S	.0278	.0014	.0	.0	.0	.0	.0	.0	.0	.0	.0292
192-213	SSW	.0903	.0167	.0	.0	.0	.0	.0	.0	.0	.0	.1069
214-236	SW	.0819	.0389	.0097	.0	.0	.0	.0	.0	.0	.0	.1306
237-258	WSW	.0278	.0042	.0	.0	.0	.0	.0	.0	.0	.0	.0319
259-281	W	.0250	.0014	.0	.0	.0	.0	.0	.0	.0	.0	.0264
282-303	WNW	.0083	.0125	.0	.0	.0	.0	.0	.0	.0	.0	.0208
304-326	NW	.0042	.0083	.0014	.0	.0	.0	.0	.0	.0	.0	.0139
327-348	NNW	.0153	.0083	.0014	.0	.0	.0	.0	.0	.0	.0	.0250
VAR		.0500	.0042	.0	.0	.0	.0	.0	.0	.0	.0	.0542
CALM		.0										.0
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
TOTAL		.0208	.3278	.0514	.0	.0	.0	.0	.0	.0	.0	1.0000

NUMBER OF VALID DATA HOURS = 720
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 125 FT

SEP 01, 1974 - SEP 30, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0139	.0181	.0292	.0139	.0	.0	.0	.0	.0	.0	.0750
12- 33	NNE	.0292	.0278	.0611	.0236	.0	.0	.0	.0	.0	.0	.1417
34- 56	NE	.0500	.1097	.0417	.0042	.0	.0	.0	.0	.0	.0	.2056
57- 78	ENE	.0236	.0167	.0	.0	.0	.0	.0	.0	.0	.0	.0403
79-101	E	.0139	.0097	.0	.0	.0	.0	.0	.0	.0	.0	.0236
102-123	ESE	.0028	.0125	.0	.0	.0	.0	.0	.0	.0	.0	.0153
124-146	SE	.0097	.0069	.0	.0	.0	.0	.0	.0	.0	.0	.0167
147-168	SSE	.0056	.0056	.0014	.0	.0	.0	.0	.0	.0	.0	.0125
169-191	S	.0292	.0528	.0069	.0028	.0	.0	.0	.0	.0	.0	.0917
192-213	SSW	.0181	.0347	.0153	.0	.0	.0	.0	.0	.0	.0	.0681
214-236	SW	.0236	.0444	.0250	.0097	.0	.0	.0	.0	.0	.0	.1028
237-258	WSW	.0125	.0167	.0056	.0	.0	.0	.0	.0	.0	.0	.0347
259-281	W	.0139	.0069	.0028	.0	.0	.0	.0	.0	.0	.0	.0236
282-303	WNW	.0042	.0097	.0014	.0028	.0	.0	.0	.0	.0	.0	.0181
304-326	NW	.0083	.0097	.0097	.0111	.0028	.0	.0	.0	.0	.0	.0417
327-348	NNW	.0069	.0181	.0250	.0097	.0028	.0	.0	.0	.0	.0	.0625
VAR		.0222	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0250
CALM		.0014										.0014
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
TOTAL		.2889	.4028	.2250	.0778	.0056	.0	.0	.0	.0	.0	1.0000

NUMBER OF VALID DATA HOURS = 720
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO.

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 280 FT

Y-8162

SEP 01, 1974 - SEP 30, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0126	.0223	.0335	.0559	.0056	.0	.0	.0	.0	.0	.1299
12- 33	NNE	.0223	.0405	.0335	.0223	.0014	.0	.0	.0	.0	.0042	.1243
34- 56	NE	.0251	.0265	.0042	.0	.0	.0	.0	.0	.0	.0098	.0656
57- 78	ENE	.0140	.0042	.0	.0	.0	.0	.0	.0	.0	.0	.0182
79-101	E	.0084	.0070	.0	.0	.0	.0	.0	.0	.0	.0028	.0182
102-123	ESE	.0028	.0056	.0	.0	.0	.0	.0	.0	.0	.0	.0084
124-146	SE	.0028	.0042	.0042	.0	.0	.0	.0	.0	.0	.0	.0112
147-168	SSE	.0056	.0251	.0084	.0014	.0	.0	.0	.0	.0	.0	.0405
169-191	S	.0223	.0475	.0154	.0070	.0014	.0	.0	.0	.0	.0028	.0964
192-213	SSW	.0182	.0461	.0265	.0126	.0	.0	.0	.0	.0	.0014	.1047
214-236	SW	.0126	.0209	.0237	.0154	.0	.0	.0	.0	.0	.0028	.0754
237-258	WSW	.0112	.0084	.0042	.0014	.0	.0	.0	.0	.0	.0023	.0279
259-281	W	.0028	.0070	.0084	.0028	.0014	.0	.0	.0	.0	.0028	.0251
282-303	WNW	.0056	.0056	.0042	.0042	.0028	.0	.0	.0	.0	.0	.0223
304-326	NW	.0042	.0112	.0126	.0140	.0056	.0028	.0	.0	.0	.0	.0503
327-348	NNW	.0084	.0056	.0182	.0154	.0	.0	.0	.0	.0	.0	.0475
VAR		.0140	.0042	.0	.0	.0	.0	.0	.0	.0	.0014	.0196
CALM		.0										.0
MISS		.0154	.0405	.0223	.0265	.0098	.0	.0	.0	.0		.1201
TOTAL		.2081	.3324	.2193	.1788	.0279	.0028	.0	.0	.0	.0363	1.0000

NUMBER OF VALID DATA HOURS = 716
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 99.4

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YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO. Y-5162 PAGE 6

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 400 FT

SEP 01, 1974 - SEP 30, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0139	.0194	.0236	.0292	.0028	.0014	.0	.0	.0	.0	.0903
12- 33	NNE	.0083	.0292	.0361	.0750	.0111	.0014	.0	.0	.0	.0	.1611
34- 56	NE	.0153	.0167	.0292	.0292	.0	.0	.0	.0	.0	.0	.0903
57- 78	ENE	.0161	.0153	.0083	.0	.0	.0	.0	.0	.0	.0	.0417
79-101	E	.0111	.0153	.0014	.0	.0	.0	.0	.0	.0	.0	.0278
102-123	ESE	.0111	.0125	.0042	.0	.0	.0	.0	.0	.0	.0	.0278
124-146	SE	.0069	.0042	.0056	.0	.0	.0	.0	.0	.0	.0	.0167
147-168	SSE	.0083	.0139	.0042	.0	.0	.0	.0	.0	.0	.0	.0264
169-191	S	.0161	.0278	.0250	.0056	.0028	.0	.0	.0	.0	.0	.0792
192-213	SSW	.0167	.0389	.0167	.0014	.0	.0	.0	.0	.0	.0	.0736
214-236	SW	.0125	.0347	.0569	.0292	.0	.0	.0	.0	.0	.0	.1333
237-258	WSW	.0167	.0125	.0139	.0097	.0	.0	.0	.0	.0	.0	.0528
259-281	W	.0111	.0111	.0042	.0056	.0	.0	.0	.0	.0	.0	.0319
282-303	WNW	.0056	.0042	.0028	.0	.0056	.0	.0	.0	.0	.0	.0181
304-326	NW	.0069	.0056	.0111	.0125	.0083	.0	.0	.0	.0	.0	.0444
327-348	NNW	.0056	.0	.0139	.0153	.0042	.0042	.0	.0	.0	.0	.0431
VAR		.0208	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0208
CALM		.0056										.0056
MISS		.0069	.0083	.0	.0	.0	.0	.0	.0	.0		.0153
TOTAL		.2194	.2694	.2569	.2125	.0347	.0069	.0	.0	.0	.0	1.0000

NUMBER OF VALID DATA HOURS = 720
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 33 FT

SEP 01, 1974 - SEP 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	44.	2.1	43.27	44.25	57.	3.0	.7113	29
2	33.	2.3	35.75	54.86	36.	3.0	.7795	28
3	44.	2.6	47.47	49.89	53.	3.0	.8502	27
4	38.	2.8	48.44	61.86	44.	3.0	.9353	28
5	42.	2.7	50.76	56.98	50.	3.0	.9084	28
6	44.	2.7	52.21	53.34	55.	3.0	.8885	28
7	37.	2.6	43.48	56.96	46.	3.0	.8531	28
8	37.	3.1	51.32	69.09	42.	4.0	.7684	28
9	30.	2.2	30.95	54.19	33.	3.0	.7429	28
10	25.	1.5	18.29	39.56	29.	3.0	.5010	29
11	11.	1.0	5.45	28.37	325.	3.0	.3439	28
12	302.	.9	-21.55	13.27	268.	4.0	.2259	28
13	257.	1.0	-26.78	-0.22	247.	4.0	.2455	28
14	243.	.8	-21.65	-11.21	242.	4.0	.2102	29
15	242.	1.3	-33.41	-17.73	233.	4.0	.3261	29
16	244.	.8	-21.22	-10.33	225.	3.0	.2623	30
17	260.	.3	-9.21	-1.64	213.	3.0	.1075	29
18	326.	.6	-6.87	13.98	242.	3.0	.1639	30
19	22.	.7	7.02	17.66	212.	3.0	.2184	29
20	42.	1.0	20.27	22.18	71.	2.0	.5008	30
21	38.	1.6	27.66	35.83	46.	3.0	.5389	28
22	31.	1.5	20.93	35.49	33.	3.0	.5037	27
23	34.	1.8	29.40	43.17	43.	3.0	.6003	29
24	35.	2.0	30.31	42.71	34.	3.0	.6714	26

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO.

PAGE

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 125 FT

Y-8102

SEP 01, 1974 - SEP 30, 1974

HOUR	RESULTANT WINDS DIR	RESULTANT WINDS SPD MPH	UCOM	VCOM	MEAN WIND DIR	MEAN WIND SPD MPH	PERSIST	VALID HOURS
1	21.	2.9	28.59	74.72	33.	5.0	.5714	28
2	7.	3.4	12.90	100.33	7.	5.0	.6744	30
3	20.	3.5	33.26	93.61	21.	5.0	.7096	28
4	15.	4.6	32.36	123.27	20.	6.0	.7586	28
5	16.	4.5	36.23	129.79	31.	6.0	.7486	30
6	21.	4.2	41.18	109.11	35.	6.0	.6942	28
7	23.	3.6	40.39	97.23	32.	5.0	.7261	29
8	22.	4.2	44.35	111.97	40.	6.0	.6921	29
9	17.	3.4	28.83	94.64	33.	6.0	.5686	29
10	14.	2.4	17.69	70.12	19.	5.0	.4821	30
11	10.	1.8	6.29	48.44	356.	6.0	.2925	28
12	311.	1.6	-35.17	31.09	280.	7.0	.2313	29
13	281.	1.8	-50.53	9.84	260.	7.0	.2536	29
14	257.	1.2	-36.41	-8.66	242.	7.0	.1732	30
15	257.	2.0	-58.35	-13.63	247.	7.0	.2853	30
16	255.	1.4	-40.14	-11.01	219.	7.0	.1932	30
17	253.	.9	-26.10	-6.22	212.	6.0	.1520	30
18	296.	1.7	-45.71	22.31	250.	7.0	.2422	30
19	335.	1.3	-15.56	32.82	252.	6.0	.2086	29
20	12.	1.2	7.27	34.07	49.	5.0	.2323	30
21	9.	2.0	8.90	58.59	22.	5.0	.3951	30
22	359.	2.3	-1.62	64.00	13.	6.0	.3811	28
23	15.	2.5	18.44	71.15	22.	6.0	.4034	30
24	13.	2.7	18.40	80.22	15.	6.0	.4572	30

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 280 FT

SEP 01, 1974 - SEP 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	348.	3.3	-16.74	79.76	339.	7.0	.4657	25
2	333.	3.6	-42.58	83.29	328.	7.0	.5140	26
3	351.	4.4	-18.55	113.05	340.	6.0	.7343	26
4	343.	4.3	-31.34	102.84	357.	6.0	.7167	25
5	347.	4.7	-26.17	110.29	358.	7.0	.6747	24
6	353.	4.2	-11.83	103.10	10.	7.0	.5930	25
7	5.	3.8	7.65	83.01	0.	6.0	.6315	22*
8	3.	4.0	5.26	95.09	27.	6.0	.6614	24
9	2.	3.6	3.37	85.13	28.	7.0	.5074	24
10	10.	2.0	7.96	46.23	14.	6.0	.3258	24
11	3.	2.2	2.53	46.17	18.	7.0	.3132	22*
12	290.	1.9	-39.92	14.84	245.	8.0	.2314	23*
13	264.	2.1	-52.27	-5.81	220.	9.0	.2338	25
14	232.	1.9	-41.25	-32.22	218.	8.0	.2423	27
15	224.	2.5	-43.84	-46.17	215.	9.0	.2830	25
16	226.	2.2	-41.61	-39.99	197.	9.0	.2466	26
17	227.	1.8	-33.52	-30.89	207.	8.0	.2192	26
18	264.	2.5	-64.29	-6.26	219.	10.0	.2484	26
19	294.	2.2	-51.55	23.14	227.	9.0	.2415	26
20	316.	1.5	-26.67	27.54	213.	7.0	.2107	26
21	317.	2.1	-37.56	39.67	297.	7.0	.3002	26
22	309.	1.6	-31.75	25.81	328.	7.0	.2338	25
23	336.	1.9	-19.93	44.75	324.	7.0	.2692	26
24	344.	2.4	-16.40	58.78	325.	7.0	.3437	25

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 400 FT

SEP 01, 1974 - SEP 30, 1974

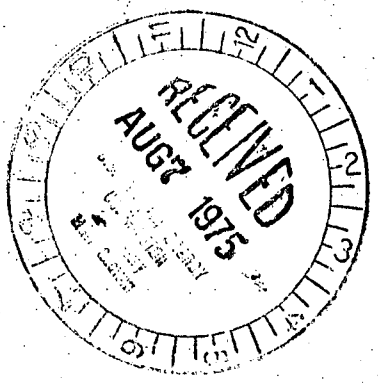
HOUR	RESULTANT WINDS DIR	RESULTANT WINDS SPD MPH	UCOM	VCOM	MEAN WIND DIR	MEAN WIND SPD MPH	PERSIST	VALID HOURS
1	346.	2.9	-21.18	83.56	326.	7.0	.4105	30
2	349.	4.4	-23.19	120.11	336.	8.0	.5461	28
3	7.	4.3	14.79	123.29	2.	7.0	.6117	29
4	1.	6.1	2.44	158.30	0.	9.0	.6759	26
5	0.	6.5	16.44	168.67	14.	9.0	.7242	26
6	12.	5.8	31.11	152.77	14.	8.0	.7216	27
7	13.	4.6	27.75	117.44	22.	8.0	.5602	26
8	22.	5.1	55.00	133.29	40.	8.0	.6437	28
9	21.	4.3	45.77	120.95	41.	7.0	.6158	30
10	26.	3.2	41.17	85.20	71.	7.0	.4506	30
11	16.	1.7	13.72	48.89	118.	7.0	.2418	30
12	313.	2.1	-43.32	40.83	277.	9.0	.2231	29
13	264.	2.3	-66.94	10.83	259.	9.0	.2557	30
14	251.	1.9	-52.76	-17.86	237.	9.0	.2063	30
15	260.	2.0	-75.41	-12.89	251.	9.0	.2033	30
16	256.	2.3	-63.93	-15.47	225.	10.0	.2268	29
17	263.	2.0	-58.09	-7.58	236.	9.0	.2170	30
18	292.	2.6	-73.14	29.11	228.	10.0	.2624	30
19	310.	1.7	-37.68	31.60	230.	10.0	.1696	29
20	316.	1.3	-25.71	26.27	222.	6.0	.1534	29
21	337.	1.9	-22.59	52.54	284.	7.0	.2724	30
22	316.	2.1	-44.79	46.05	280.	8.0	.2677	30
23	339.	2.0	-20.16	53.15	290.	8.0	.2533	26
24	339.	2.5	-27.01	69.81	313.	8.0	.3119	30

FINAL REPORT

METEOROLOGICAL, UPPER AIR, AND AMBIENT SALT STUDIES

for

CONSOLIDATED EDISON COMPANY OF NEW YORK, INC.
4 IRVING PLACE
NEW YORK, NEW YORK 10003



Submitted By

YORK RESEARCH CORPORATION
ONE RESEARCH DRIVE
STAMFORD, CONNECTICUT 06906

Prepared By:

Edward J. Kaplin
Director Atmospheric Sciences

Charles E. Kitson
Project Manager

Michael Kozenko
Environmental Meteorologist

REPORT NOS. Y-8162 & Y-8166-2

October 22, 1974

8431

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SUMMARY

This final report contains the analysis of all data collected during the test year. It includes data and analyses previously transmitted as Report No. 1; Meteorological, Ambient Salt Studies, and Upper Air Studies, January 31, 1974 Kaplin et.al. (1974) .

It covers salient features of the 400' meteorological tower erected on the Indian Point site. The Tower has been designated as IP4. The center of the Tower has been located at N 38 + 31.435 and E 22 + 49.473 on the Indian Point Grid. The Tower tops out at elevation 517.75' M.S.L.. The IP4 complex includes a separate 30' tower designated as IP4A and a trailer-shelter as an operations and data collection center.

The data included in this report, specific to the IP4 and IP4A Towers, cover the period from 1 October, 1973 - 31 August, 1974. Direct reference and discussion is directed to earlier data collected during the preliminary operational phases in September, 1973 and to data collected on the existing 100' meteorological Tower designated as IP3.

Pilot balloon, constant level tetroons and ballon-sondes data included in this report covers the period from July 16, 1973 - July 2, 1974, with reference and documentation of a local study September of 1972.

Ambient salt data included covers the data collection period from July, 1973 - August, 1974.

This report is broken down into three sub-groups whose analyses are directed toward the following objectives:

I. Meteorological Towers - Directed toward providing a data bank whose purpose it is to provide a basis for the Cooling Tower Study.

II. Upper Air Study - Directed toward providing sufficient data to enable definition of the valley flow and terrain induced flow systems in the environs of Indian Point.

III. Ambient Salt Study - Directed toward providing sufficient data to determine the ambient atmospheric salt (NaCl) content in the area.

I. METEOROLOGICAL TOWER STUDY

The purpose of this study was to provide a data bank; whose analysis, in turn, would define the conditions which would be encountered by Cooling Tower plumes.

The data included in this report specific to the 400' (IP4) Tower and the 10 Meter (IP4A) Tower cover the period October 1, 1973 - August 31, 1974, and was collected in accordance with U. S. Atomic Energy Commission Safety Guide 23, Onsite Meteorological Programs.

The total data recovery for the period October 1, 1973 - August 31, 1974 for all sensors on both the IP4 and IP4A Towers was 93.42 %.

NOTE: Data and analysis for September, 1974 are forthcoming as a separate Appendix. The specific data are not expected to alter general or specific conclusions.

Final data analysis leads to the following conclusions:

1. In the Indian Point environs two distinct seasonal wind patterns exist. They are referred to as "Summer" and "Winter". There are no transitional seasons. Seasonal categorizations for each month are based on each month's average diurnal wind pattern.

In the period of data collection, the "Summer" months were May-August, and the "Winter" months were October-April.

2. Wind directions tend to back with altitude to at least 400' (517' MSL). This backing with height represents an attempt at alignment of the local wind directions to parallel the general terrain contours.

With respect to the logarithmic wind profile, it appears that the wind speed at the 400' anemometer (517' MSL) level is directly linked to the surface flow during neutral stability conditions. However, during unstable conditions the 400' (517' MSL) level is independent of the pattern at the lower levels. On the basis of this, it must be noted that while the 400' level follows the characteristics of the surface flow during neutral conditions, it does not say anything about conditions above that level, and certainly, during unstable conditions the 400' level is not representative of levels below but may be an indicator of the upper wind pattern with reservations if there is a counter geostrophic flow field.

3. Wind directions on the IP4 and IP3 Towers do not exactly correlate on an hour-by-hour basis due to terrain deflection.

4. During the Summer season and weak local geostrophic influences, the valley flow system can be distinguished by abrupt transition to nocturnal winds occurring generally at the 33' and 125' levels. Between 1900-2100 EST the upper level winds (283' and 400' levels) lag behind in this transition, and complete it generally by 0200. The actual diurnal pattern is strongly dependent on the directional aspects of the geostrophic field.

5. Valley flow winds are dominant under stable conditions and/or in the absence of a strong geostrophic gradient. The degree of development, particularly in terms of the local diurnal wind variation, is also keyed to the direction of the geostrophic flow. A Northerly flow produces the most distinctive and dramatic diurnal wind shift pattern in the up-valley - down-valley flows. The down-valley flows are somewhat mitigated under Southerly geostrophic conditions.

When the local environ are in a developed valley flow pattern - particularly under stable conditions, the 125' anemometer level on the IP4 Tower (242' MSL) reports higher wind speeds than profile considerations would project. These high speeds are, however, consistent with the assumption of valley flow which projects that the maximum speed should be found at 1/2 the depth of the total flow system. On this premise, the total valley flow depth should be, at least, of the order of 500' MSL. This latter qualification is based on the fact that the next anemometer level above the 125' (242' MSL) is 283' (400' MSL) so that it is possible for true maximum speed to occur between these levels and allow, therefore, for a still higher valley flow depths up to 800' MSL.

The valley flow depth discussed above is not the total effect of the local terrain influences as will be subsequently delineated with regard to the results of the upper air balloon studies.

6. Occurrences of fog are, for the purposes of this study, defined as conditions under which the relative humidity is equal to or greater than 80%, and the visibility less than or equal to 1500' or 4000'. Of the total data hours, the following percentages fell into these categories:

Visibility $\leq$ 1500', 2.0%
Visibility $\leq$ 4000', 3.1%

II. UPPER AIR STUDIES

The purpose of this program was to define the valley flow system in the environs of Indian Point.

The summary statements in this report reflect evaluations of the upper air program conducted over the period of July 16, 1973 - July 2, 1974.

1. Pilot Balloon, Tetroon, and Balloon-Sonde Launches have produced results which indicate extreme terrain-induced flow patterns not predictable by any on-site tower data.

2. Tower temperature-difference data is an indicator only of stability conditions within the height profile of the Tower only, and should not, a priori, be extrapolated to give stability data at levels above 517' MSL.

3. The zone of influence of the valley flow system and/or terrain induced deflections can be as high as 4000 feet.

4. The valey flow system and the over-riding flows are keyed to local macroscale pressure gradients.

In general, geostrophic flow patterns become dominant and wholly controlling at approximately 1500' MSL during periods of weak gradients and/or well developed stable conditions. This feature is most clearly defined under North quadrants, weak, geostrophic winds. It is most probable that inversions in 1000-1500 ft. level, under these North quadrant winds, are abetted by and/or generated by subsidence. Under such conditions of generation, they would present a formidable lid to rising plumes.

During periods of strong geostrophic flow, wind directions in those levels below 1500' MSL are keyed to the configuration of the local terrain and will generally back with elevation for Southerly and Northwesterly quadrant winds but may back or veer with North and Northeasterlies. In most instances, there are little or no significant speed variations above the 500' MSL level. If speed maximums do occur, they are usually found close to the 1000' MSL level.

5. Flow patterns indicate deflections toward the Annsville Creek for Southerly flows and an avoidance of following the natural course of the Hudson River at all vertical levels.

6. Wind reversals with height have been observed. This phenomenon cannot always be detected with Tower data. These reversals are generally keyed to a developed valley flow system under a weak opposing geostrophic flow pattern.

III. AMBIENT SALT STUDY

The purpose of this part of the study was to determine the ambient salt deposition in the Indian Point Generating Station environs.

The testing involved Hi-Volume air samples and dust buckets during the period July, 1973 through August, 1974.

The variations in the ambient salt background were determined by atomic absorption analysis for sodium, since it became apparent that the chloride concentrations sampled at the network of stations were almost too low to measure with any degree of confidence. Both the specific electrode conductivity, and turbidimetric spectrophotometric methods were used to measure the magnitudes of chloride sampled. The sampled concentrations of chloride, however, were not high enough to be distinguished from background variations and interferences.

These interferences resulted in a low confidence level of measured concentrations of chloride. Therefore, a conservative approach to the measurement of ambient sodium chloride concentrations has been adopted: that is to infer the concentration of chloride, stoichiometrically, from the measured concentrations of ambient sodium. The chloride concentration is obtained by multiplying the sodium concentration by "1.54".

It should be noted that in the use of this procedure, the predicted chloride concentrations are greater than those determined from the filters.

The use of this factor yields annual chloride averages from the Hi-Vol analysis of: .735 ug/m^3 at Camp Smith; .496 ug/m^3 at Croton Point and .605 ug/m^3 at IP3. The Winter maximum at Camp Smith is .978 ug/m^3, and the Summer maximum at Croton Point is .545 ug/m^3.

The dust bucket settleable chlorides are 5.535×10^{-3} $mg/cm^2/mo.$ for the total test period average with the Summer total average (of 6.505×10^{-3} $mg/cm^2/mo.$) greater than the Winter average of 4.019×10^{-3} $mg/cm^2/mo.$

Note that the total settleable particulates concentration and portion found to be chloride are not directly related.

For settleable particulates, IP3 and Verplanck were the maximums for the year with Croton Point being the minimum. For the chloride concentrations, the maximum is still IP3 but the minimum is now Verplanck and Croton Point is the intermediate value.

1.0 INTRODUCTION

This is the final report of on-going programs on-site and in the environs of the Consolidated Edison, Indian Point Nuclear Generating Station at Buchanan, New York. The objectives of the programs were to:

1. to develop the micrometeorological climatology
2. a comprehensive knowledge of the three dimensional local valley flow patterns, and
3. the background levels of ambient salt concentrations in order to properly evaluate the impact of cooling towers and provide design criteria as required.

This report includes the results of Report No. 1; Meteorological, Ambient Salt Studies, and Upper Air Studies, January 31, 1974, Kaplin et.al. (1974) .

The studies have been carried out in accordance with U. S. Atomic Energy Commission Safety Guide 23, Onsite Meteorological Programs.

Local meteorological data and valley flow phenomena referenced includes data previously collected and reported from the various meteorological and air quality programs that have been conducted in the local environs Kaplin et.al. (1973) ; Kaplin & Laznow (1972); Kaplin, Laznow & Wurmbrand (1972) . These data have been collected from various meteorological towers that have been operational on and off-site over the past 19 years as well as the operational IP(3) 30.5 M. Meteorological Tower and the new, on-site, meteorological towers: 122M. IP(4) and 10 M. IP (4A). The locations of these stations are shown in Figures 1a and 1d.

The IP(4) and IP4A) Towers were erected specifically for this program during the Summer of 1973 and brought to full operational status during the months of September-October, 1973. The IP(4) has been equipped with suitable instrumentation to provide wind velocities, temperature and dewpoint data from 70M. up to 122 M. above local grade (35.65 M. M.S.L.) as well as net radiation at 10 M. The IP(4A) Tower provides a continuous visibility readout at the 10 M. level. The meteorological data specifically included in this report covers the period from October, 1973-August, 1974.

To supplement the meteorological tower outputs at still higher levels as well as to define the characteristics of the local valley wind systems and its transport potential, a program of upper air studies involving pibal balloons, constant level tetroons and balloon-sondes was conducted. Specific data were collected over the period July, 1973-July, 1974.

The ambient salt concentration program involved the use of hi-volume filter samplers at five different locations. Each Station consisted of two hi-volume samplers, a rain gauge and a dust fall jar. The results of this program for the period from April 23, 1973 to August 31, 1974 are discussed in this report.

The objectives of the programs were to develop the Micrometeorology Data File and Ambient Salt background suitable for the design and impact evaluation of a Cooling Tower at Indian Point and environs. The general environs are shown in Figure 1.

2.0 INSTRUMENT SPECIFICATIONS AND SITING

2.1 Instrument Specifications

On March 31, 1974, the Swissteco Net Radiometer was replaced with a Teledyne Geotech Thermal Radiometer Model TCN-188-01, sensitivity 1.5 mV/g-cal/cm^2 min, response time (63%) 10 sec., accuracy of calibration 2%, accuracy of temperature compensation 1%, blower type 115 VAC 50/60 cycle, span -2 to +3 mV.

The instrument operating characteristics are as follows:

1. Climatronics F460 Wind System

   A. Speed Sensor: Threshold 0.5 mph.; Accuracy ±0.13 mph. or 1%; Distance Constant 5 ft. max.; turning radius 3.75 inches. Cup Anemometer, pulse output proportional to wind speed.

   B. Speed Translator: Accuracy ±0.2%; Range 0-100 mph.

   C. Direction Sensor: Threshold 0.5 mph.; Accuracy ±3°; Distance Constant 3.7 ft. max.; Turning Radius 16.5 inches; Damping ratio 0.4 at 10°. Balanced Vane, Potentiometer output.

   D. Direction Translator: Accuracy ±0.05%; Range 0-540°.

2. E. G. & G. 110S-M Temperature/Dew Point System

   A. Temperature System: Range -80° to +120°F; Accuracy ±0.5°F; Aspirator Air Flow 60 CFM.

   B. Dew Point System: -80° to +120°F; Accuracy ±0.5°F; Aspirator Air Flow 60 CFM.

3. E. G. & G. 207 Forward Scatter Meter: Visual Range 200 to 20,000 feet; measurement volume 1.7 cubic feet; Accuracy ±5%; Time Constant 20 sec.

4. Swissteco Type S-1 New Pyradiometer: Sensitivity 0.504 Mv/Mw Cm^{-2} Short Wave, 0.519 Mv/Mw Cm^{-2} Long Wave; Accuracy ± 2.5%.

2.1.1 Recorders

The four Wind Systems each use a dual Esterline Galvonometric Recorder. Data is recorded on a single roll, double width chart, the right side for wind speed and the left side for wind direction. Capillary pen inking is used.

The temperature recorder is a Westronics, 6-point potentiometric dual range. A single chart is used and both ranges are marked along the width of the chart. Prints 1, 4, 5 and 6 are Range 1, -40 to + 100°F. Prints 2 and 3 are Range 2, -8 to +20°F. Printing is done by a print-wheel with colored pads. This recorder is used to provide the analog record of ambient temperature, dew point and temperature difference.

The forward scatter recorder is a single input potentiometric recorder. A heated stylus is used to create a trace on temperature sensitive paper.

The Radiometer is recorded on a Leeds and Northrup Speedomax H potentiometric recorder. Center zero is used to enable both positive and negative data to be recorded. Capillary inking is utilized.

An updated listing of the instrumentation and operational dates is shown in Table I.

2.2 TOWER SITE

The IP(4) Tower is located approximately 2600 feet S - 800 feet W of the Indian Point Unit 1 Stack and 1725 feet S - 1750 feet W of the existing IP(3) 100 foot (300.5M) meteorological tower. It is 2000 feet East of the Hudson River on a W-E line and 2200 feet South of the Hudson River on a N-S line. In the WNW-NNW quadrants, the tower site is approximately 1500 feet inland of the river (Figure 1d).

The IP(4) Tower base is 116'-11.5" above M.S.L.

The arrangement of the IP(4), IP(4A) and trailer complex are shown in Figure 1e. The plan for the instrument shelter is shown in Figure 1f.

TABLE 1

IP4 AND IP4A INSTRUMENTATION DATA

(Grade Elevation: 116'-11.5" M.S.L.)

INSTRUMENT	FUNCTION	ELEVATION ABOVE GRADE (FEET)	OPERATIONAL DATE
E-Z Way	Tower (IP4)	400	
Rohn	Tower (IP4A)	30	
Climatronics	Wind Speed	33	9/7/73
Climatronics	Wind Direction	33	9/7/73
Climatronics	Wind Speed	125	9/7/73
Climatronics	Wind Direction	125	9/7/73
Climatronics	Wind Speed	283	9/7/73
Climatronics	Wind Direction	283	9/7/73
Climatronics	Wind Speed	400	9/7/73
Climatronics	Wind Direction	400	9/7/73
E.G.&G.	Ambient Temperature	33	9/12/73
E.G.&G.	Temperature Difference	200	9/12/73
E.G.&G.	Temperature Difference	399	9/12/73
E.G.&G.	Dew Point	33	9/12/73
E.G.&G.	Dew Point	200	9/12/73
E.G.&G.	Dew Point	399	9/12/73
Swissteco	Net Radiometer	32	10/2/73-3/31/74
Teledyne-Geotech	Net Radiometer	32	3/31/74
E.G.&G.	Forward Scatter	32.5*	10/1/73

* On IP4A Tower

2.2.1 General Topography

It is the nature of the location of the Indian Point Stations with respect to terrain and water that leads to complex local interrelationships in the development of local micrometeorological climate both at the ground and elevated levels.

Indian Point is located approximately on the East shore of the Hudson River, 27 miles due North of N.Y.C.'s Manhattan Northern boundary and approximately 47 miles due North of N.Y.C's Lower Bay and the Atlantic Ocean.

The complex is located about on the axis at the top of an essential North-South valley. As seen in Figure1, just a mile to a mile and a half North of the site an almost total terrain block occurs in the form of Buckburg and Dunderburg Mountains to the West; Manitou Mountain to the North and the Blue Mountains and Prickly Pear Hill to the East. It should be noted that the Buckberg, Dunderburg and Manitou Mountains are part of a distinct chain which includes Ramapo Range whose basic axis orientation is SW-NE. This system represents a fifteen mile barrier on its N-S axis, separating the Indian Point-Peekskill area on the South from the Newburgh-Beacon area on the North. The elevation of the system's SW-NE axis is in excess of 1000 feet.

The valley to the South at the 100 foot ground contour level (Figure 1a) is approximately 2 miles wide at its Northern end opening to 5 miles wide, 5 miles South in the vicinity of Prickly Pear Hill and South Mountain.

The Hudson River, which flows southward, enters from the valley area from the NW between the Dunderburg and Manitou Mountains. It bends 90° around Dunderburg and flows past the Indian Point complex on a NE-SW line. The Indian Point complex itself is on a peninsula with the same NE-SW orientation. The peninsula's Eastern boundary is defined by the arc line between Lents Cove on the North and Lake Meahagh on the South. After passing the peninsula, the river turns and flows NW-SE into Haverstraw Bay.

It is specifically noted that at the North end of the valley there is a distinct split generated by the Manitou Mountain. The Hudson River flows in from the NW as previously mentioned through a sharply defined valley while a Northeast sub-valley is formed between the Manitou and Blue Mountains formed by the Annsville Creek out flow into Peekskill Bay. The Annsville Creek Valley is generated by the confluence of Spout and Peekskill Hollow Brooks.

It is seen in Figures 1a through 1c, that the terrain feature changes with elevation are most dramatic to the East of the Indian Point complex with the Western wall remaining sharply defined.

3.0 DATA LOG

Included in this report are data from the months of October 1973 to August 1974, inclusive. The data for the month of September 1974 appears as an Appendix but no analysis has been performed for this month.

Data recovery is given in Table 2 and is presented as percent recovery per sensor per month. Total sensor recovery percentage is shown for the year in the right column. An average of all data recovery out of a possible 128,640 sensor hours indicates the year's data recovery at 93.43%.

Table 3 lists the number of missing hours per sensor per month. Examination of this Table shows clearly where data recovery problems have occurred. During the first month (October) most problems were due to start-up and de-bugging difficulties. January shows a relatively great occurrence of missing hours. This is attributable in great part to frozen sensors during periods of snow and/or freezing rain. There was no net radiation data recovered during the months of October, November, and December because of instrument difficulties, improper recorders, etc.

The 200' dew point sensor suffered a breakdown in July that could only be factory repaired. Since the 200' dew point sensor is also an integral part of the delta-temperature system, it was decided to lose the dew point data rather than jeopardize the temperature difference data.

A data log indicating intervals of data loss for the period from October 1, 1973 - August 31, 1974 , is shown in Table 3. Instrumentation failures, equipment component failure are generally expected during early stages of operations with new instrumentation. Many of the failures that occurred were anticipated and outage time kept to a minimum. Other failures were inherent in the instruments and/or the installation and some could be attributed directly to human error.

All major sources of data loss have been corrected or minimized through procedural changes and/or instrument modifications. Frequent lightning strikes and local power failures are still factors which must be dealt with as they occur.

The following is a list of problems that have developed during operational period of IP(4):

1. Climatronics F460 Wind System

   a. Pot burn-out in the direction sensor
   b. Transistor burn-out in the speed translator
   c. Transistor burn-out in the direction translator
   d. Fuse blow out in the direction sensor
   e. Moisture seepage in connectors
   f. Frozen sensors due to snow or freezing rain.

2. E.G.&G. Temperature System

   a. Dew point mirror requires periodic maintenance
   b. Aspirator motor failure
   c. Jamming or slippage in the recorder
   d. Improper adjustment labeling by manufacturer

3. Swissteco Pyranometer

   a. Puncture holes in polyvinyl hemispheres

Items 1B, C and D generally occur at the 400' level and are apparently associated with lightning strikes.

Item 2B, the cause of the major data loss during the record period, has been alleviated by installing ammeter aspirator motor monitors.

All data losses due to instrumentation failure have been minimized by the availability redundant vulnerable components. The downtime of tower mounted instrumentation is generally limited to the availability of ground support personnel for the tower climber.

TABLE 2

DATA RECOVERY LOG (%)

	O	N	D	J	F	M	A	M	J	J	A	TOTAL
Ambient Temp. (33')	98.3	97.2	100	89.5	99.6	98.1	100	100	100	100	99.5	98.4
Delta-T(200'-33')	34.4	97.2	100	89.5	99.6	98.0	100	100	90.3	100	99.5	91.6
Delta-T(400'-33')	98.1	97.2	100	89.4	99.4	97.2	98.5	99.9	90.3	100	99.5	97.2
Dew Point (33')	98.3	95.8	96.5	88.4	99.6	98.1	100	100	100	100	97.2	97.6
Dew Point (200')	34.4	96.7	100	89.5	99.7	98.0	100	100	100	48.9	0	78.5
Dew Point (400')	98.3	96.7	100	89.2	99.6	96.5	99.9	100	100	100	99.5	98.1
W. S. (33')	92.9	97.8	97.0	87.1	98.8	95.7	99.0	100	89.2	96.0	98.3	95.6
W. D. (33')	94.5	99.9	98.5	88.7	100	99.7	100	100	100	100	100	98.3
W. S. (125')	94.2	99.9	98.5	84.0	100	89.4	99.6	99.9	100	100	100	96.8
W. D. (125')	66.3	99.9	97.7	89.7	100	99.7	99.9	100	100	100	100	95.7
W. S. (283')	88.6	99.3	97.3	78.5	100	93.0	100	100	100	100	98.9	95.9
W. D. (283')	91.3	99.3	87.1	89.8	99.1	99.6	100	100	100	100	96.1	96.5
W. S. (400')	91.4	99.4	95.0	84.1	100	94.9	100	100	100	100	100	96.8
W. D. (400')	92.3	97.2	97.6	88.7	100	87.6	100	80.4	98.6	98.5	96.6	94.2
Visibility	60.3	99.9	100	90.7	100	95.0	100	96.6	85.0	100	100	93.3
Net Radiation	0	0	0	78.8	100	98.1	99.9	100	100	99.9	99.7	70.3

Of a possible 128,640 Sensor Hours, Total Data Recovery = 93.42 %

TABLE 3

MISSING DATA LOG

	1973			1974							
	O	N	D	J	F	M	A	M	J	J	A
TOTAL HOURS	744	720	744	744	672	744	720	744	720	744	744
Ambient Temp. (33')	13	20	0	78	3	14	0	0	0	0	4
Delta-T (200'-33')	488	20	0	78	3	15	0	0	70	0	4
Delta-T (400'-33')	79	4	21	11	1	70	0	4	14	20	0
Dew Point (33')	13	30	26	86	3	14	0	0	0	0	21
Dew Point (200')	488	24	0	78	2	15	0	0	0	380	744
Dew Point (400')	13	24	0	80	3	26	1	0	0	0	4
W. S. (33')	53	16	22	96	8	32	7	0	78	30	13
W. D. (33')	41	1	11	84	0	2	0	0	0	0	0
W. S. (125')	43	1	11	119	0	79	3	1	0	0	0
W. D. (125')	251	1	17	77	0	2	1	0	0	0	0
W. S. (283')	85	5	20	160	0	52	0	0	0	0	8
W. D. (283')	65	5	96	76	6	3	0	0	0	0	29
W. S. (400')	64	4	37	118	0	38	0	0	0	0	0
W. D. (400')	57	20	18	84	0	92	0	146	10	11	25
Visibility	295	1	0	69	0	37	0	25	108	0	0
Net Radiation	*	*	*	158	0	14	1	0	0	1	2

*Data not evaluated since instrument output incompatible with IP3 instrumentation.

4.0 ANALYTICAL PROCEDURE

All data prior to December 15, 1973 was read by a semi-automatic reading system. Charts were placed on a circuit table and an operator followed the traces with a sensor. The displacement from a reference point was registered and converted to the desired units. A minimum of six points were averaged for smooth traces, with more points taken as variability increased. One hour averages were taken for each parameter. For ambient temperature, dew points, and temperature differences, readings were rounded to the nearest tenth of a degree. For wind speed, the average was taken to the nearest tenth mile per hour. Wind direction was read to the nearest degree, and maximum and minimum directions were taken for each hour. Forward scatter (visibility) was read on a linear chart scale and readings converted to the logarithmic scale of the instrument. Averages were given to the nearest foot.

Beginning on December 15, 1973, all data was read by hand. One hour averages were taken for each parameter. All data was read in the 20 minute period immediately preceding the hour, with the exception of forward scatter (visibility), which was read in the 30 minute period preceding the hour. Ambient temperature, dew point and temperature difference readings were rounded to the nearest tenth of a degree. For wind speed, the average was taken to the nearest 0.5 degree. For wind speed, the average was taken to the nearest 5 degrees. The reading of maximum and minimum wind directions was eliminated during this period.

All data that was hand-analyzed was subjected to a Quality Assurance Program that was designed to flag anomalous data points by comparison to points immediately preceding and following using a pre-selected variance. The flagged values were then checked with the analog chart recordings and any errors corrected (See Appendix A).

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5.0 DISCUSSION OF DATA

A summary of the data output for the 400' IP4 Tower and the 10 Meter IP4A Tower are presented in Appendix I for the period of October 1973 to September 1974, inclusive.

5.1 IP3:IP4 Wind Correlation

A correlation study was performed between the 100' level of the IP3 Tower and 125' level of the IP4 Tower for the months of October, November, and December (Appendix B). Any variation from exact correlation can be explained by the topographic effects of the locality re-directing the low level wind flow. This correlation is also evident in the monthly diurnal wind analyses (Figures 2-4). The diurnal analysis shows wind directions at IP4 to be veered with respect to those at IP3. This shows up as follows in Appendix B, monthly resultant wind:

Site	Resultant Wind Direction		
	Oct., 1973	Nov., 1973	Dec., 1973
IP4	359	296	340
IP3	333	277	335

Data at IP3 during 1974 was collected and analyzed by Con-Edison and was not available so that comparisons are only possible during these three months.

5.2 Local Wind Patterns

As has been previously pointed out Kaplin and Laznow (1972), Kaplin et.al. (1973), Kaplin et.al. (1974), and Kaplin and Kitson (1974), there exists in the Indian Point Area, winds which fall into two distinct patterns which can be referred to as "Summer" and "Winter". There is no transition period between these seasons. Although the specific months in each category may vary, seasonal categorizations are based on the diurnal wind analysis which show that each individual month will definitely fall into one category or the other. The diurnal wind analysis (Appendix C) and for each month at the 125' level (Appendix C Figures) clearly show that for the period of data collection, the seasons may be classified as follows:

"Summer" May-August
"Winter" September-April.

5.2.1 Seasonal Wind Frequency Distribution

Monthly and seasonal frequency distributions for all levels are given in Appendix D.

Seasonal wind direction frequency distributions for the 125' and 400' anemometer levels are shown in Figures 5 and 6. The frequency roses are, in general, quite similar, between levels for each of the seasons depicted. Most noticeable is the reduced frequency of NE winds and increase in S-WSW winds at the 400' level compared to the 125' level.

In the Summer season, the distribution is bi-nodal with NNE-NE and S-SW directions wholly dominant and of almost equal magnitude. These same quadrants are dominant in the Winter season which is tri-nodal with addition of a strong NW peak frequency. This peak is, primarily, at the expense of a reduction in frequency of the S-SW quadrant winds.

The resultant winds for each exposure level have been calculated on a Winter, Summer and Annual basis. These are shown in Table 4 They reflect the Bi and Tri-Nodal aspects of overall frequency distributions in that the persistence values as defined by the ratio of the resultant wind speed to arithmatic mean wind speed is very small particularly in the Bi-Nodal Summer. The value of the persistence approaches zero due to a small value for the resultant speed if the wind frequency is uniform in all quadrants or of essentially equal frequency and magnitude from opposite quadrants. This latter is most representative of the winds at Indian Point, particularly during the Summer season. The Summer season distribution is a reflection of the diurnal variation.

It is noted that the wind directions as measured on the IP4 Tower back with elevation at least up to the 400' (517' MSL) exposure level. This feature substantiates a dominance of a valley controlled system and the influence of the terrain environs, whose general features have been depicted as a function of elevation by Kaplin, et.al. (1974). The observed backing of winds represents an attempt at alignment of the local wind directions parallel to the general terrain contours which, North of Indian Point Site, form a blockage wall in excess of 1000' MSL on an essentially SW-NE line as seen in Figure 1.

The wind speeds: Resultant and Mean, are found to increase with elevation and increase by 1.5 to 1.3 at lower and upper levels in Winter season as compared to the Summer season.

TABLE 4

ANNUAL AND SEASONAL RESULTANT WINDS

FOR THE IP4 ANEMOMETER LEVELS

	ANEM. LVL. (ABV. 117' MSL)	RESULTANT WIND DIRECT	RESULTANT WIND SPEED (MPH)	SPEED (MPH)	PERSIST.	NO. OF VALID HOURS
A. Annual	33	342	1.3	3.7	.35	7281
	125	330	2.2	7.2	.30	7370
	283	322	2.7	8.9	.31	7288
	400	316	2.9	9.8	.30	7380
B. Winter	33	342	2.4	4.5	.54	4629
	125	331	4.0	8.5	.47	4508
	283	326	4.8	10.2	.47	4421
	400	323	5.0	11.3	.44	4666
C. Summer	33	341	0.2	3.0	.06	2652
	125	317	0.4	5.9	.06	2862
	283	279	0.9	7.6	.12	2867
	400	267	1.4	8.3	.17	2714

5.2.2 Diurnal Resultant Wind Directions

A diurnal wind analysis has been made for each Tower level. These analyses as previously noted, are given per month in Appendix C . Diurnal wind directions per season per Tower level are presented in Figure 7.

The Summer season shows the distinctive characteristics of a valley flow pattern: down valley at night and up valley during the daylight hours. There is a marked absence of an extreme pattern during the Winter months, with the trace appearing with little angular displacement through the day, although there are still indications of more Southerly flow (up valley) during daylight hours.

It is observed that during the Summer season the daytime Southerly quadrant winds make an abrupt transition to nocturnal . Northerlys during the hours commencing at 1900 EST at the 33' and 125' levels. The transition is essentially complete by 2100 EST. The true abruptness of this shift has been previously noted and documented by Kaplin, et.al. (1974). The effect is not as dramatic at the 283' and 400' levels. It is 0200 EST before these upper level winds complete their transition. The Summer diurnal pattern also indicates that there are two hourly periods in which the wind direction at all levels are essentially the same: at 0800 EST - 015° and at 1500 EST - 230°.

In general, it is observed that during the Winter season, the winds back with elevation in each hour except for those at the 125' level which are anomalous during the period from 1000-1700 EST. This implies either a discontinuity between the 125' and 283' levels or anomalous flow at the 125' level.

During the Summer season there is distinct backing from 2300 - 0700 EST; veering between 0900 - 1000 EST and generally anomalous patterns for the remaining hours particularly with reference to the 125' level.

5.2.3 Diurnal Mean Wind Speeds (Figure 8)

The diurnal mean wind speeds are during each season stronger during the daylight hours than those during the night time at each Tower Exposure Level. There is a general tendency for the upper level winds to maximize later than those of the lower levels. All winds are at or near maximum during hours from 1400 - 1800 EST.

At all times, in the mean, the maximum speed is found at the 400' level and the speed increases with elevation. In this

latter statement, particularly during the Summer season, there are 8 daylight hours (not necessarily consecutive)between 0900 and 2100 that the 283' and 400' levels have the same mean speed (within the frame of the nearest whole mile per hour). This is observed at 0700 and 0800 hours EST during the Winter season.

5.2.4 Correlation of Wind Velocity Between Tower Levels

Appendix E shows the results on a monthly basis of specific two-station correlation analyses that related the wind velocity at 400' to each specific lower level. This type of analysis illustrates the differences in wind velocity with height due to shear in the friction layer within the limitation imposed by the condition of the analyses. This condition is that the correlation between the 400' and each lower level, in its turn, used only those valid data hours for which concurrent data was available at the 400' level and the level being correlated. On this basis, the monthly averages for the 400' level are found to vary attributable to the amount of valid data input.

5.2.5 Logarithmic Wind Speed Profiles - General

From the mean wind speeds derived in the above correlation program, logarithmic wind profiles have been constructed (Figure 9 and (Table 5) without regard to atmospheric stability. The data for these points are based solely on hours during which valid points existed for between the levels being correlated. They have been generated by determining the $\overline{U}/\overline{U}400'$ successively from each of the two-station correlations.

The profiles are shown for the total year of data and also seasonally. The seasons chosen are not coincident with the seasons as determined by the wind patterns but rather periods during which the trees would be leafless, and in foliage. This factor would affect the roughness parameter. Figure 9 shows that when the trees are expected to be bare, the profile is lowered. It is not possible to determine Z_o from this profile because the curve becomes non-linear below the 33' level and the equation of this curve cannot be determined from the existing data.

The curves, as drawn, are curious in that in each instance, by ignoring the 125' level, perfect straight lines can be passed through the 33' and 283' levels to incept at the 400' level.

These profiles differ from that which can be obtained from Table 4 which made use of all valid data at each level without regard to concurrence. The annual values are compared in Table 6.

TABLE 5

MONTHLY MEAN WIND SPEED PROFILE

Month	$\bar{U}_{33}/\bar{U}_{400}$	$\bar{U}_{125}/\bar{U}_{400}$	$\bar{U}_{283}/\bar{U}_{400}$
Oct.	0.388	0.814	0.835
Nov.	0.496	0.833	0.936
Dec.	0.469	0.740	0.915
Jan.	0.440	0.761	0.943
Feb.	0.465	0.764	0.921
Mar.	0.431	0.734	0.919
Apr.	0.395	0.710	0.927
May	0.373	0.741	0.944
June	0.402	0.659	0.843
July	0.387	0.728	1.011
Aug.	0.472	0.775	0.903
Year	0.429	0.751	0.918
Seasonal			
Nov.-Mar.	0.460	0.766	0.927
Apr.-Oct.	0.401	0.738	0.911

TABLE 6

COMPARISON OF MONTHLY MEAN WIND SPEED PROFILES

Basis	Season	$\bar{U}_{33}/\bar{U}_{400}$	$\bar{U}_{125}/\bar{U}_{400}$	$\bar{U}_{283}/\bar{U}_{400}$
Two-Station	Annual	0.43	0.75	0.93
All Data	Annual	0.38	0.73	0.91
Two-Station	Nov-Mar	0.46	0.77	0.93
All Data	Winter	0.40	0.75	0.90
Two-Station	Apr-Oct	0.40	0.74	0.91
All Data	Summer	0.36	0.71	0.92

It should be noted that the seasons referred to in this Table are the standards established earlier in this report so that only the Annual values encompass wholly comparable data.

5.2.6 Logarithmic Wind Speed Profiles as a Function of Stability

In both profile derivations previously discussed, local stability was not considered. To evaluate the effect of stability profiles were derived for three stability conditions:

Unstable (Lapse) - °C/100M $<$ -1.0

Neutral or Adiabatic - -1.0 $\geq$ °C/100M $<$ 0

Stable (Inversion) - °C/100M $\geq$ 0.

Profiles were developed separately for each temperature gradient measurement on the IP4 Tower

$$\Delta T = T_{200'} - T_{33'}$$

and: $$\Delta T = T_{399'} - T_{33'}$$

These results are based only on those data hours in which all six (6) data parameters were present concurrently - i.e., four levels of wind speeds and two temperature gradients. The results are shown in Table 7 and Figures 10, 11 and 12. The seasons are based on the leaf and leafless months categorizations.

On an Annual basis Figure 10, a distinct pattern emerges. The profiles are a marked effect of stability with some variation based on choice of on-site temperature gradient.

Under unstable conditions, the profile slope indicates that the 400' level is essentially independent of ground effects and its speeds may be achieved at or near the 300' level as seen by the ΔT399-33.

For neutral conditions, the profile is nearly perfect from the 400' down to the 33' level and the gradient choice is immaterial.

For stable conditions, the profile breaks sharply at the 125' level and no one distinctive profile is implied and again, the gradient choice is immaterial.

During the Winter (leafless) season, Figure 11, the profile patterns show unique difference when compared to the Annuals.

TABLE 7

MEAN WIND SPEED PROFILES AS A FUNCTION OF STABILITY

Stability Category	Temp. Gradient Basis	Season	No. of Obs.	Freq.* %	$\bar{U}_{33}/\bar{U}_{400}$	$\bar{U}_{125}/\bar{U}_{400}$	$\bar{U}_{283}/\bar{U}_{400}$
Unstable	200'-33'	Annual	1885	27.5	0.965	0.79	0.47
"	"	Winter	346	5.1	0.960	0.82	0.48
"	"	Summer	1539	22.5	0.970	0.77	0.46
Neutral	200'-33'	Annual	2768	40.4	0.930	0.74	0.43
"	"	Winter	1655	24.2	0.944	0.79	0.48
"	"	Summer	1113	16.2	0.918	0.71	0.38
Stable	200'-33'	Annual	2197	32.1	0.87	0.73	0.36
"	"	Winter	1172	17.1	0.87	0.72	0.38
"	"	Summer	1025	15.0	0.88	0.74	0.35
Unstable	399'-33'	Annual	1457	21.3	0.990	0.80	0.48
"	"	Winter	575	8.4	0.974	0.81	0.50
"	"	Summer	882	12.9	1.005	0.79	0.47
Neutral	399'-33'	Annual	3612	52.7	0.930	0.75	0.43
"	"	Winter	1793	26.2	0.926	0.78	0.47
"	"	Summer	1819	26.6	0.925	0.72	0.39
Stable	399'-33'	Annual	1781	26.0	0.85	0.72	0.36
"	"	Winter	805	11.8	0.85	0.69	0.35
"	"	Summer	976	14.2	0.86	0.75	0.37

*Based on a total of 6850 concurrent observations of all data.

The unstable and neutral profiles are now essentially the same and the stable profile is now dependent on temperature gradient for Z_o but not for slope below 125'. Under all stability conditions is a profile break above the 125' level.

The Summer (leaf) season profiles shown in Figure 12 present yet another pattern of profiles. It now shows the neutral and stable profiles being similar. The stable profile, however, criss-crosses the neutral profile and has higher speeds at the 125' level. The neutral profiles is nearly perfect from the 400' to 33' levels. The unstable profiles, particularly with respect to the temperature gradient between the 399' and 33' levels indicate that the 400' wind is independent of the lower level wind profile.

In essence, only the profiles under neutral conditions, can be used to generate wind speeds at the 400' level. For unstable conditions, the 400' wind speeds are essentially equivalent to those just above the 283' level and are not represented by the stable profiles.

In so far as the 125' level anomaly is concerned, its higher observed wind speed is most probably related to and a further evidence of the existence of a valley flow whose drainage pattern can be expected to produce a low level speed maximum at a level approximately 1/2 the height of valley depth. The 125' level is 242' MSL which would project a minimum valley drainage flow depth of the order of 500' MSL. This is not inconsistent with observations made by Davidson (1955). Furthermore the valley flow will be most dominant under stable (inversion) conditions whose frequency, on an annual basis, was 26% or 32% for 399'-33' and 200'-33' gradient levels, respectively.

The frequency of occurences of the various stability categories are shown in Table 7. They are found to be rather sensitive to which gradient level is selected. This would suggest that choice of gradient be based on the level of interest and the stability category as well.

5.3 VISIBILITY

5.3.1 Occurrence of Fog

Due to lack of instrumentation that could provide definitive information as to occurrences of fog; as opposed to, for example, heavy precipitation; it is necessary to make some assumptions as to under what conditions restrictions to visibility could be regarded as fog. For the purposes of this study, fog has been assumed to occur at relative humidities equal to or greater than 80%. The degree of restriction to visibility has been broken down into two categories; equal to or less than 4000' and equal to or less than 1500'. There are some occurrences of visibilities within these ranges which have shown up when the relative humidity is in the vicinity of 30-40%. These occurrences can be regarded as being caused by blowing snow, dust, or smog. Table 8 shows the standard visibility categories as used by the weather service and the system which was set up for this study. Table 9 illustrates the number of occurrences in each category.

Cumulative probability distributions of visibilities equal to or less than 20,000' are shown in Figure 13. The percent of probability of occurrence does not represent that fraction of the total month's valid hours, but rather that fraction of the month's total hours in which the visibility was 20,000' or less.

The percent of hours with visibilities less than or equal to 20,000' with respect to the total valid monthly hours is 19.8%.

For relative humidities $\geq$ 80%, 3.1% and 2.0% of the total Annual hours had visibilities $\leq$ 4000' and 1500', respectively. The month of December, 1973, had the highest percentage of reduced visibilities $\leq$ 20,000' in relation to total hours: 2.7%.

Appendix F contains monthly cumulative probability distributions and wind frequency distributions for visibilities $\leq$ 20,000 feet. Appendix G contains frequency distributions for visibility related to relative humidity.

5.3.2 Spiked Visibilities

Examination of forward scatter meter analog charts shows short periods of reduced visibility during periods of otherwise unlimited visibility ($>$20,000'). (Figure 14.) This "spiking is of such short duration so as to not appear in the hourly average. This spiking was given the Code 777, and it is proposed that this is due to blowing dust or smoke plumes from nearby sources. In order to determine these sources, wind direction frequency distributions were performed on all visibility data showing the "777" characteristic (Appendix H). These analyses are shown in graphic form in Figure 15. Since the "777" Code was initiated during the period of time that the analog charts were hand-read, this

TABLE 8

VISIBILITY CATEGORIES

WBAN, CIRCULAR N

MILES	FEET	EQUAL TO OR LESS THAN
1/16	330	
1/8	660	500
3/16	990	1000
1/4	1320	
5/16	1650	1500
3/8	1980	2000
1/2	2640	2500
5/8	3300	3000
3/4	3960	4000
7/8	4620	5000
1	5280	
1 1/8	5940	6000
1 1/4	6600	
1 3/8	7260	
1 1/2	7920	8000
1 5/8	8580	
1 3/4	9240	
1 7/8	9900	10,000
2	10560	
2 1/8	11880	12,000
2 1/4	13200	
2 1/2	15840	15,000
3	21120	20,000

TABLE 9

NUMBER OF HOURS OF LOW VISIBILITY

RELATIVE HUMIDITY ≥ 80%

MONTH	VIS ≤ 4000'		VIS ≤ 1500'		Total Valid Hours
	Hours	%	Hours	%	
Oct.	18	4.00	12	2.67	449
Nov.	37	5.15	20	2.78	719
Dec.	46	6.18	32	4.30	744
Jan.	28	4.15	19	2.81	675
Feb.	4	0.59	2	0.29	672
Mar.	31	4.38	24	3.39	707
Apr.	26	3.61	15	2.08	720
May	15	2.09	7	0.97	719
June	20	3.27	13	2.12	612
July	0	0.00	0	0.00	744
Aug.	9	1.21	2	0.26	744
TOTAL	234	3.12	146	1.95	7505

RELATIVE HUMIDITY > 0%

					VIS ≤ 20,000'	
					Hours	%
Oct.	18	4.00	12	2.67	153	34.08
Nov.	37	5.15	20	2.78	199	27.68
Dec.	51	6.85	37	4.97	205	27.55
Jan.	43	6.37	34	5.04	124	18.37
Feb.	19	2.83	17	2.53	76	11.31
Mar.	36	5.09	29	4.10	113	15.98
Apr.	26	3.61	15	2.08	112	15.56
May	20	2.78	7	0.97	142	19.75
June	20	3.27	13	2.12	133	21.73
July	0	0.00	0	0.00	108	14.52
Aug.	9	1.21	2	0.26	119	15.99
TOTAL	279	3.72	186	2.48	1484	19.77

analysis encompasses the months of January through August, inclusive. All months show predominant sectors of spiking in the NW, NE, and S quadrants. These can be attributed to the following sources.

Direction	Source
NW	Georgia Pacific Gypsum Plant
NE	Indian Point Unit 3 Construction and Local Road Dust
S	Quarry and Road Dust.

The seasonal variation is quite dramatic but the dominant NW Winter frequency may simply reflect the normal seasonal increase in occurrence and strength of winds in this quadrant.

6.0 UPPER AIR TECHNICAL PROGRAM

6.1 Equipment

The balloons used are standard 10 gram and 100 gram neoprene pilot balloons inflated with sufficient helium to provide a free lift of 43 grams and 350 grams respectively. This resulst in an approximate rate of rise for the balloons of 7 fps for pibals (10 gram) and 15 fps for balloon sondes.

The tetroons used are of mylar construction which, super-pressurized inflated, rise and float at a constant level. The altitude at which the tetroon floats can be varies by altering the tetroon size.

The 100 gram balloons carry aloft a transmitter which senses temperature and telemeters (at 403 MHz) data to a portable battery powered ground receiver and strip chart recorder. The data, plotted as temperature vs. height can be used to determine mixing depth and extent of inversions aloft. The light weight transmitter and sensor (140 grams) has a range of 10 miles. The temperature sensor has a resolution of ±0.3°C.

The balloon sondes are tracked from the ground by optical theodolites using the described double theodolite method. The theodolite telescope combines a main telescope and a finder scope, viewed through the same eyepiece. The azimuth and elevation angles of the balloons position are read to 1/10 degree for Model BT 901 Weather Measure theodolites and 1/100 of a degree for the Warren-Knight theodolites.

The alignment between the two telescopes of the theodolites is checked and corrected as necessary according to manufacturer's prescribed procedures and re-checked in the field, by sighting at a target at infinity before each use with adjustments made and/or corrections factors noted to be taken into account during data reduction.

6.2 Procedures

6.2.1 Making the Balloon Observation

Double theodolite observations are made by a minimum of two personnel, an observer with tape recorder at each theodolite. Prior to each balloon-sonde observation, a 10 gm balloon is launched and tracked to familiarize the observer with the winds aloft pattern. At the start of a balloon-sonde run, one observer calibrates and launches the balloon-sonde transmitter and the other observer starts the timing tape recorder and the receiver. A taped launch countdown and short countdown for each time interval, 15 seconds, are heard from a speaker at each site to ensure simultaneous timing of the interval at both theodolites.

A tetroon observation requires the selection of a baseline with a good downwind view for both theodolites since tetroons are tracked much longer (30 min.) than pibals or sondes (5-10 min.). The payload weight and superpressure required to float the tetroon at the desired altitude must be calculated for correct inflation after determining the surface pressure and temperature.

Once the baseline is set out (after surveying) the theodolite at one site (Site A) is oriented with 0° azimuth at Site B, and Site B theodolite is oriented with 180° azimuth on Site A. Both theodolites then point in the same direction in the vertical plane of the baseline when set at 0° azimuth. The balloon and transmitter are then launched and their position angles read into the tape recorders at the specified times at each theodolite. An event marker on the temperature strip chart exactly marks each interval for later data reduction simplification.

The only problems encountered with this method are various causes of low visibility. The most common problem is a low over-cast, when the balloon passes into the cloud base. Sighting on the balloon is then impossible for any more specific elevation points on the temperature vs. height plot. Under these circumstances, an average rate of rise of the balloon, derived from the available preceding data points, is used and extrapolated upwards.

Precipitation also causes problems in this type of field work. Fog and snow reduce visibility but do not affect the balloon in flight. Rain and/or freezing rain however, makes the balloon heavier due to the weight of water or ice, and if the rain is not even, areas of heavy rain actually push the balloon down. All of these forms of weather may affect the transmitter in that the circuit boards may be shorted out, or a wet thermistor would act as a wet bulb thermometer. These forms may therefore cancel operations since accurate theodolite sighting may be precluded.

Topographic effects also present a problem if not anticipated and taken into account. In these situations, however, the double theodolite method is relied on to calculate true heights at given intervals, thereby minimizing the effects of vertical accelerations due to updrafts and down drafts.

6.2.2 Pre-Launch Calibration

All transmitters and sensors are calibrated before being sent out into the field in controlled temperature chambers at York Research. In the field, a calibration is done just prior to launch. The sensor and a calibrated precision thermometer are suspended in a duct through which ambient air passes at approximately 15 feet per second. This calibrates the unit under flight airflow conditions

and also provides an accurate surface temperature determination.

6.2.3 Computations

A computer program is used to determine the balloon's position at each interval. The program is based on a paper by Thyer in Vol. 1 of the Journal of Applied Meteorology. The two angles from each theodolite define a vector ray in three dimensional space. These two rays ideally intersect at the balloons position but due to limitations on the accuracy of the theodolites, one can only give a most probable location for the balloon. (See Tabulated runs in Appendix 10.)

Straight forward vector equations can be easily solved giving the X, Y and Z coordinates of the balloon from Site A as a function of the four (4) angles, the baseline, and the difference in height of one theodolite over the other. The Z coordinate is the true height above Site A and is the third column from the left on the computer output. The first two columns on the computer output represent the horizontal azimuth (From N=0°) and distance for making horizontal trajectory plots using Site A as the origin.

The horizontal wind speed and direction at a given level is determined by taking the mean resultant direction and speed over 2t time period (where t is the time interval between readings) extending from the beginning of the previous interval to the end of the following interval, thus straddling the interval in question.

The wind direction is determined by moving a resultant parallel to itself back to the origin and the direction of the wind reported from North-360°. The wind speed is determined from the length of the resultant divided by two times the time interval t. The velocities obtained in this way are average horizontal velocities only and have no vertical component.

For each balloon observation, an average rate of rise for the balloon is computed and is listed in the heading of the 6th column of the computer output as the number written after "W-". This average is then subtracted from the computed rate of rise for each interval and the result listed (- for a rise rate less than average and + if greater than average).

The remaining three columns represent non-dimensionalized horizontal wind analysis parameters which will be used after a large number of observations have been accumulated.

6.2.4 Temperature vs. Height Tabulation

The temperature data is recorded for each interval mark while the

angles are typed into the computer terminal. A temperature vs. height plot is then made from these data. The temperature chart is the scanned and inflection points in the trace are picked out and the temperature tabulated. The time interval between these points and each preceeding interval is then calculated. The rate of rise between the intervals around these inflection points is known from the computer program. This rate of rise multiplied by the time between the interval preceeding and the inflection point gives the height from the preceeding interval to the inflection point. These data are then plotted on the same temperature vs. height plot. This results in a quite complete and accurate temperature vs. height diagram.

The variation between points is assumed to be linear* and the points on the plot are connected by straight lines.

6.2.5 Errors and Inaccuracies

Once the balloon has travelled away from the launch site and its motion slows down relative to the tracking theodolites, errors as large as 1° are noticeable and correctable. Hence, the largest error we are concerned with, (not readily detectable), is 0.1°. Extensive error analyses have been performed for this double theodolite method and two relevant cases will be discussed here.

If the balloon's true height is 4000 feet and it is 4000 feet distant (condition existing when windspeed = average rate of rise of balloon, 15 fps) an error of 0.1° in one of the azimuth angles will produce a maximum height error of ±25 feet. A 0.1° error in one of the elevation angles produces a maximum height error of ±7 feet. The worst possible error, 0.1° errors in both azimuths and both elevations, produces a maximum possible height error of ±70 feet. Since experienced personnel are used and theodolites that are easily read to 0.1°, it is quite probable that all the angles will be in error by 0.1°. If the balloon's true height is 3000 feet and its distance downwind is 6000 feet, (occurring with 16 mph winds) an error of 0.1° in one of the azimuth angles produces a maximum height error of ±30 feet, and an error of 0.1° in one of the elevation angles produces a maximum height error of ±10 feet. The maximum error case of 0.1° error in all angles produces a maximum height error of ±75 feet.

If the baselines used are surveyed, the baseline errors and any resulting height computation errors will be virtually zero. The determination of the temperature from the strip chart by an ex-

*If the variation was not linear, from experience there would probably be an inflection point that could be plotted, thus making the resulting two smaller variations more closely approach linearity.

perienced person eliminates all but the errors in the accuracy of the sensors and receiver:

1. Temperature Sensor: ±2°C from 0 to 50°C
   ±4°C from -40°C to 0°C
2. System Accuracy: 0.2°C + 1.0% span

6.3 Upper Air Observations

6.3.1 Launch Sites

Launch sites and appropriate baselines have been established for the Indian Point area to allow for good visibility of the balloon or tetroon (See Appendix I). Different sites to the North and South are used depending on the prevailing weather conditions.

This arrangement allows for tracing of a balloon moving Southward in a Northerly wind when launched from a site in Peekskill, or moving Northward when launched from Verplanck. The exact site of launch can be chosen to attempt a flight path over the Indian Point site and/or cooling tower site.

Figure 15 (Appendix I) shows the locations of the major tracking sites in the Indian Point area. Site 1 is close to the old Verplanck 100 ft. tower site. Site 2 is on the shore of Jones Point. Site 3 is at the end of the boat launching dock in Peekskill, and Site 4 is located at the East end of the railroad trestle across Annsville Creek.

In the Spring of 1974, balloon sondes were released from the top of the 400' Tower to provide a more comprehensive view of the temperature profiles above the tower's sensors.

6.3.2 Explanation of Figures

The Weather Maps presented (Figures 16 and 23) are the 0700 EST maps published in the Daily Weather Map Series published weekly by the U. S. Department of Commerce. Their use here is to illustrate the prevailing conditions on the date of each launch, so that the test results can be compared to what should have occurred from the synoptic pattern.

The heights at variouspoints along the horizontal trajectory plots are given in feet above the theodolite of origin (Site A,Appendix I).

The heights shown on the soundings (Figures 17, 18 and 24, 25) are given as height above the Tower base.

The soundings are plots of temperature and dewpoint in °F and are

plotted along a linear height scale. The temperature scale is expanded so as to point out more clearly any small variations in the profile. Because of this scale, it is necessary to plot the temperatures and dewpoints on separate sheets. The sloping lines are lines of neutral lapse rate (-0.55°F/100 ft.) used to determine if the plotted lapse rate is stable or unstable. The run analyses are given in Appendix I.

6.3.3 Test Results

The results of pibal balloon observations are presented in Appendix I. Specific cases are discussed and detailed below.

a. 7/16/73

On Figure 16A, (Appendix I) the altitude of 906 ft. is the altitude where the temperature sound (Figure 16B, Appendix I) goes to stable. The altitude between 2200' and 2900' is also stable. Note that both these stable layers are correlated with a change in wind direction and speed. At the time of launch, the IP3 105' winds were 325 @ 8.5.

b. 7/18/73

In Figure 17B (Appendix I) after an initial isothermal layer, a distinct inversion exists between 400 and 800 feet. Figure 17A (Appendix I) shows a maximum velocity at 174' but between 300-400' (just below the inversion) the horizontal wind becomes very small before slowly increasing as the balloons increases its altitude. At this time the IP3 105' winds were 015 @ 7.5.

c. 8/7/73

A tetroon was launched from the Verplanck shore and its total path is shown in Figure 18A, (Appendix I). At launch, the tetroon was taken onshore before slowly curving Northbound passing almost directly over IP Unit 1 stack. Here it reached a maximum in altitude of 1622'. The altitude then decreased and the tetroon floated near 1300' until its path came ashore. The computer output indicates the tetroon started to rise above 1300' at the exact same time the ground 1300' beneath it started to rise up from the river in the Annsville Creek Valley. Note expecially that the tetroon did not go up the Hudson River and make the turn around Jones Point and continue up the river. The IP3 105 winds were 160 @ 6.5. The balloon sonde run made prior to the tetroon launch is shown in Figure 18B. It noted that there is isothermal layer at 1050 feet and a slight inversion based at 1340'.

The following case studies involve upper air measurements taken by the balloon-sonde technique where the balloons were released

from the top of the 400' Tower. Using this method, the sonde becomes an extension, in a sense, of the Tower in that the Tower measurements are now extended aloft by the balloon's sensors.

6.3.4 Wind Reversal with Height: A Case Study

On May 8, 1974, a sonde was released from the top of the Tower at 1035 EST. The sounding (Figures 17-18) and the accompanying Tower analog traces (Figures 19-22) show a wind reversal with height. The surface map for that day shows an extensive high pressure system centered over the East Coast which would provide light SW'ly geostrophic winds over the Indian Point area. At the time of the launch (1035) the Tower winds are shown to be roughly from the North. At the heights from 750-1100 feet the wind is from the East, while from 1500-2500 feet the winds are from the SW-WNW'ly sector. Examination of the wind traces from Tower instrumentation shows that at about 1018 on the bottom two levels, the wind is varying between North and East at about 1022, the wind rapidly backs to West, then gradually veers to North. While this is happening, the top two levels show the wind to be gradually veering from East through an angular displacement of 270° to North. Throughout this transition, the upper levels seem to lag behind the bottom levels by 2-3 minutes. While it is difficult to account for, this Easterly flow of air in a generally North to West regime, it is probable that it is an eddy that had broken away from the lee of Dunderberg Mountain and/or the breakup of the nocturnal down valley flow whose pattern is broadly indicated by summary of data record log (Tables 10 and 11). The temperature sounding at this times shows a general neutral trend with signs of heating at ground level, creating an unstable layer up to 200 feet. There appears to be one other unstable layer between 1100 to 1225 feet.

At 1415 that afternoon, another sonde was launched. By this time an up valley was well established. The wind arrows show a general S'ly flow up to about 2000 feet where the wind becomes geostrophic. Again the temperature profile shows the same general neutral trend above 800 feet. The sounding shows an unstable layer to 200 feet due to solar heating. Above this level to about 600 feet there exists a stable layer, probably a result of the cooler river air passing over the site in a stream between 200-450 feet.

6.3.5 Temperature Inversion: A Case Study

On July 2, 1974, balloon-sondes were launched at 0546 and 0707. The surface map (Figure 23) shows a W'ly geostrophic wind for this period. Both soundings, Figures 24 and 25, show marked temperature inversions extending from 200 feet to about 2700 feet. The 0707 sounding shows the effect of heating at ground level moving the trace to the right at the bottom and creating an un-

stable situation up to 200 feet and a neutral profile from 400 to 800 feet.

The base of the primary inversions are at approximately 1000 feet and extend to 1500 feet. This is not anticipated based soley on Tower data.

It is further observed that the wind directions above 1000 feet have veered sharply from SW to NW. This indicates, in light of past terrain deflection assumptions, the wind system is now independent of the valley contours and the air is free to take on the geostrophic flow. That this flow never becomes strong enough to effect the surface flow, is evidenced by the IP4 data logs: Tables 12 and 13.

YORK RESEARCH CORPORATION JOB NUMBER: Y-8162
[illegible] RESEARCH DRIVE, STAMFORD, CONNECTICUT 06906

CLIENT: CON. EDISON
PLANT LOCATION: INDIAN POINT, NEW YORK
STATION NAME: INDIAN POINT - 4

METEOROLOGICAL READINGS REPORT

DATE OF DATA : MAY 8, 1974

HOUR ENDING AT	DIFF TEMP DEG F 200-33'	DIFF TEMP DEG F 400-33'	DEW POINT 33'	DEW POINT 200'	DEW POINT 400'	WIND SPEED MPH 33'	WIND DIR DEG 33'	WIND SPEED MPH 125'	WIND DIR DEG 125'	WIND SPEED MPH 283'	WIND DIR DEG 283'	WIND SPEED MPH 400'	WIND DIR DEG 400'	VISIB FT	NET RAD
100	[illegible]	5.0	35.0	33.0	26.0	2.5	60	3.5	45	4.0	325	8.0	325	88888	360
200	[illegible]	4.0	32.0	32.0	30.0	3.0	90	3.5	50	2.0	260	4.0	295	88888	360
300	[illegible]	4.7	31.0	32.0	28.0	2.0	70	2.5	45	3.0	325	6.0	330	88888	360
400	[illegible]	4.5	31.0	30.0	26.5	2.5	60	3.5	15	5.0	310	7.0	320	88888	360
500	[illegible]	2.0	30.0	31.5	29.5	2.0	125	1.5	150	2.0	280	4.0	310	88888	360
600	[illegible]	1.9	30.5	29.5	29.5	1.0	444	3.0	105	2.0	444	2.0	315	88888	395
700	[illegible]	-.7	31.5	30.0	29.5	2.5	45	3.5	20	5.0	355	6.0	345	20000	455
800	[illegible]	-1.5	28.0	27.5	27.0	3.5	444	4.5	20	6.0	5	4.5	10	88888	520
900	[illegible]	-2.5	25.5	23.5	23.0	3.5	295	6.0	290	7.5	290	7.0	295	88888	670
1000	[illegible]	-2.4	23.5	22.5	22.0	4.0	270	5.0	260	6.0	270	5.5	285	88888	750
1100	[illegible]	-2.2	23.0	22.5	22.0	4.0	15	5.0	10	2.5	444	4.5	25	88888	785
1200	[illegible]	-2.2	23.5	22.5	21.5	4.5	235	5.0	205	6.0	205	6.0	200	88888	800
1300	[illegible]	-2.1	21.5	20.5	20.5	3.0	235	3.5	220	5.5	200	4.5	210	88888	785
1400	[illegible]	-3.0	20.5	17.5	17.0	3.0	185	6.5	175	7.0	185	6.5	195	88888	740
1500	[illegible]	-3.5	22.0	19.5	19.0	2.5	190	6.5	175	7.0	180	7.0	190	88888	685
1600	[illegible]	-2.5	34.0	33.0	30.5	4.5	175	11.5	170	16.0	175	16.0	175	88888	485
1700	[illegible]	-2.5	35.0	34.0	33.0	5.5	185	15.5	175	19.0	185	20.5	185	88888	480
1800	[illegible]	-1.5	35.0	34.5	33.5	4.5	180	13.0	170	18.0	180	18.5	180	88888	400
1900	[illegible]	-.5	35.5	35.5	34.0	3.0	180	10.0	170	14.0	175	14.5	180	88888	360
2000	[illegible]	-.5	35.5	35.5	34.5	3.0	180	9.0	175	12.5	180	13.5	185	88888	360
2100	[illegible]	-.2	36.0	35.5	34.5	2.0	190	7.5	185	11.0	195	12.0	195	88888	365
2200	[illegible]	0.	35.5	35.0	32.0	1.5	185	7.5	180	11.5	185	13.0	190	88888	365
2300	[illegible]	-.3	34.5	34.0	33.5	3.0	205	6.5	205	8.0	205	10.0	200	88888	370
2400	[illegible]	.1	33.0	34.5	35.5	1.5	95	2.5	444	4.5	250	4.0	215	88888	385

YORK RESEARCH CORPORATION
[illegible] RESEARCH DRIVE, STAMFORD, CONNECTICUT 06906

JOB NUMBER: Y-8162

CLIENT: CON. EDISON
PLANT LOCATION: INDIAN POINT, NEW YORK
STATION NAME: INDIAN POINT - 4

METEROLOGICAL READINGS REPORT

DATE OF DATA : MAY 9, 1974

HOUR ENDING AT	AIR TEMP DEG F 33'	DIFF TEMP DEG F 200'-33'	DIFF TEMP DEG F 400'-33'	DEW POINT DEG F 33'	DEW POINT DEG F 200'	DEW POINT DEG F 400'	WIND SPEED MPH 33'	WIND DIR DEG 33'	WIND SPEED MPH 125'	WIND DIR DEG 125'	WIND SPEED MPH 283'	WIND DIR DEG 283'	WIND SPEED MPH 400'	WIND DIR DEG 400'	VISIB FT	NET RAD
100	48.0	.5	.3	34.5	36.5	37.5	1.0	135	2.5	170	6.0	185	8.0	190	88888	370
200	47.7	1.1	.9	38.0	38.5	38.5	1.0	165	4.0	150	6.5	170	9.0	180	88888	370
300	47.1	1.6	.8	39.0	39.0	39.0	1.0	180	5.0	175	7.5	175	8.0	180	88888	370
400	45.5	.7	.5	41.5	40.5	40.5	2.0	30	1.5	444	2.0	180	5.5	185	88888	370
500	44.1	.7	.7	41.5	41.5	41.5	1.5	30	2.0	25	2.0	205	3.5	190	88888	370
600	46.5	1.1	1.7	41.0	41.0	41.0	3.5	55	4.5	45	1.5	65	2.5	135	88888	405
700	47.5	-.4	-.3	41.0	41.0	40.5	3.5	40	4.5	40	5.0	50	3.5	90	88888	435
800	50.5	-1.2	-1.5	42.0	42.0	42.0	2.0	295	2.5	280	2.0	270	2.0	255	77777	550
900	55.0	-1.5	-1.0	44.5	44.0	44.0	4.0	235	6.5	205	5.5	220	10.0	195	88888	630
1000	61.5	-2.9	-3.4	45.5	45.0	45.5	5.5	205	11.0	185	10.0	185	12.5	190	88888	720
1100	64.5	-3.5	-3.8	46.5	45.0	44.5	6.5	185	15.5	175	17.0	180	16.5	175	88888	760
1200	62.5	-1.5	-2.2	47.0	47.0	46.5	4.5	180	11.5	170	17.0	170	15.5	175	88888	455
1300	61.0	-1.0	-1.3	47.0	46.5	46.0	4.0	185	11.0	175	15.0	175	18.0	180	88888	440
1400	61.0	-1.0	-1.3	50.0	49.5	48.5	4.0	185	14.0	170	18.0	175	19.0	175	88888	460
1500	62.5	-1.1	-1.5	48.5	48.0	47.0	5.5	185	16.5	175	20.0	175	23.5	180	88888	430
1600	58.4	-.9	-.9	47.5	46.0	45.0	5.0	180	14.0	170	20.0	175	20.0	170	88888	430
1700	55.5	-.7	-1.4	45.5	45.0	44.5	4.0	175	10.0	160	16.0	155	16.0	160	88888	410
1800	56.5	-.5	-1.3	45.5	44.5	44.0	4.5	200	11.0	175	12.0	160	15.0	170	88888	405
1900	53.0	.9	.5	50.5	49.0	47.5	1.5	175	6.0	165	12.0	175	9.5	165	20000	260
2000	51.5	.2	-.5	50.0	48.5	47.5	1.5	160	5.5	145	7.0	155	10.5	145	77777	275
2100	50.0	-.4	-1.2	49.0	48.5	48.0	2.0	444	4.0	135	6.0	125	6.5	130	19000	285
2200	49.5	-.3	-1.1	48.0	48.0	47.5	1.0	444	2.0	444	6.5	95	5.0	100	12000	315
2300	49.0	-.1	-1.1	47.5	47.5	47.0	1.5	444	2.0	444	5.0	80	5.5	145	10000	315
2400	49.6	-.2	-.9	47.5	47.5	47.0	1.5	85	3.0	110	6.0	125	6.0	115	20000	330

YORK RESEARCH CORPORATION
ONE RESEARCH DRIVE, STAMFORD, CONNECTICUT 06906

JOB NUMBER: Y-8162

CLIENT: CON. EDISON
PLANT LOCATION: INDIAN POINT, NEW YORK
STATION NAME: INDIAN POINT - 4

TABLE 12

METEROLOGICAL READINGS REPORT

DATE OF DATA : JULY 2, 1974

HOUR ENDING AT	AMB TEMP DEG F 33'	DIFF TEMP DEG F 200-33	DIFF TEMP DEG F 400-33	DEW POINT 33'	DEW POINT 200'	DEW POINT 400'	WIND SPEED MPH 33'	WIND DIR DEG 33'	WIND SPEED MPH 125'	WIND DIR DEG 125'	WIND SPEED MPH 283'	WIND DIR DEG 283'	WIND SPEED MPH 400'	WIND DIR DEG 400'	VISIB FT	NET RAD
100	67.0	2.9	3.1	61.5	59.0	56.5	.5	170	1.5	195	3.0	230	4.0	265	88888	360
200	64.5	5.4	5.2	62.0	58.5	56.0	.5	360	2.0	190	3.0	225	4.0	255	88888	360
300	63.0	3.5	6.6	61.0	60.5	55.5	1.5	10	1.5	235	4.5	205	4.0	240	88888	360
400	63.5	3.7	4.8	59.0	58.5	55.5	2.5	55	2.5	110	2.0	444	3.5	444	88888	360
500	63.5	2.7	4.0	59.0	59.5	56.5	1.5	444	2.5	125	2.5	160	2.5	444	88888	365
600	64.5	.6	3.6	60.5	60.0	54.5	1.0	25	1.0	265	3.5	245	4.5	240	88888	395
700	69.0	-1.7	1.0	62.0	59.5	54.5	1.0	444	1.5	190	4.5	230	5.0	240	88888	445
800	73.0	-1.4	-.4	60.5	59.5	55.0	2.5	235	2.5	220	4.0	225	4.5	230	77777	465
900	77.0	-2.2	-1.5	61.5	59.5	59.5	2.0	170	2.5	165	4.0	180	4.5	195	88888	710
1000	79.0	-2.3	-1.1	63.0	61.5	60.0	3.5	220	4.5	185	4.5	190	4.5	185	77777	790
1100	83.0	-3.0	-2.3	62.0	60.0	57.5	2.5	195	5.0	165	6.5	180	7.0	195	88888	835
1200	85.5	-2.9	-2.3	62.5	60.0	58.5	3.5	195	7.0	170	9.0	185	10.5	195	88888	830
1300	87.0	-2.4	-1.9	61.5	59.5	58.0	4.5	200	9.5	185	12.0	205	13.0	205	88888	835
1400	88.0	-1.6	-1.3	58.5	57.5	56.0	4.5	235	7.0	245	9.5	250	10.5	255	88888	780
1500	88.0	-1.7	-1.2	61.5	59.5	59.0	6.5	230	11.0	245	15.5	250	17.0	255	88888	705
1600	87.0	-1.4	-1.1	60.0	58.5	57.5	7.5	230	11.5	235	15.0	245	16.0	250	88888	640
1700	87.0	-1.2	-.9	60.0	58.5	58.0	9.0	230	13.5	235	16.5	240	18.0	245	88888	550
1800	85.0	-.5	-.1	61.0	59.5	58.5	8.5	225	13.0	235	17.0	240	18.5	245	88888	420
1900	83.0	-.2	0.	61.0	60.5	60.0	5.0	230	9.0	240	12.5	245	16.0	255	88888	390
2000	81.0	0.	.9	61.0	61.0	59.5	5.5	220	10.5	230	15.5	240	19.0	245	88888	375
2100	80.0	.1	.5	62.0	61.5	61.0	5.0	225	9.5	230	15.0	245	19.0	245	88888	385
2200	79.0	.2	.8	62.0	61.5	60.5	3.5	200	8.5	205	10.5	230	14.0	240	88888	385
2300	79.0	.1	.3	61.5	60.5	59.0	5.0	205	7.5	215	10.0	235	12.0	245	88888	385
2400	77.5	.6	.9	61.0	60.0	59.0	3.5	200	8.0	205	9.5	230	10.0	240	88888	370

YORK RESEARCH CORPORATION JOB NUMBER: Y-8162
ONE RESEARCH DRIVE, STAMFORD, CONNECTICUT 06906

CLIENT: CON. EDISON
PLANT LOCATION: INDIAN POINT, NEW YORK
STATION NAME: INDIAN POINT - 4

METEROLOGICAL READINGS REPORT

DATE OF DATA : JULY 3, 1974

HOUR ENDING AT	AMB TEMP DEG F 33'	DIFF TEMP DEG F 200-33	DIFF TEMP DEG F 400-33	DEW POINT 33'	DEW POINT 200'	DEW POINT 400'	WIND SPEED MPH 33'	WIND DIR DEG 33'	WIND SPEED MPH 125'	WIND DIR DEG 125'	WIND SPEED MPH 283'	WIND DIR DEG 283'	WIND SPEED MPH 400'	WIND DIR DEG 400'	VISIB FT	NET RAD
100	76.0	.1	.3	61.5	61.0	60.0	2.0	220	4.5	215	6.5	235	9.0	245	88888	385
200	75.0	1.4	1.6	62.5	61.0	60.0	1.5	185	8.5	175	10.0	195	9.5	210	88888	385
300	74.5	.2	1.4	63.5	63.0	61.0	1.5	210	6.5	175	12.0	195	13.0	205	88888	390
400	74.0	.7	2.6	64.0	63.0	61.5	1.5	235	3.5	175	9.5	190	11.0	205	88888	385
500	74.5	0.	1.3	64.5	64.0	62.0	3.0	215	9.0	175	13.5	195	13.5	205	88888	395
600	73.5	-.4	.1	65.0	65.0	63.5	2.0	200	5.0	150	7.0	165	8.0	185	88888	405
700	72.5	.8	.5	66.0	64.5	64.0	3.5	25	4.5	444	3.5	444	5.0	444	19900	300
800	71.0	-1.0	-1.1	66.0	66.0	64.0	5.0	50	7.0	45	11.0	45	13.0	40	88888	430
900	72.5	-.8	-.7	66.0	65.5	64.0	2.0	70	2.0	65	2.5	45	3.5	20	88888	515
1000	76.5	-2.1	-2.0	66.5	66.0	65.5	3.0	220	3.5	195	3.5	210	5.0	225	88888	710
1100	79.0	-2.5	-1.7	68.5	67.5	67.0	2.5	215	3.5	190	3.0	205	3.0	235	88888	770
1200	83.5	-1.7	-1.5	65.5	64.5	63.0	5.5	220	9.0	245	12.5	255	14.0	255	88888	815
1300	85.5	-1.7	-1.6	65.5	65.0	64.5	8.5	240	13.0	250	15.5	255	16.5	255	77777	790
1400	86.0	-1.9	-1.6	66.5	66.0	65.5	8.0	240	13.0	245	15.5	245	16.0	250	88888	780
1500	87.0	-1.8	-1.5	70.0	70.0	69.0	7.0	240	11.5	255	14.5	255	16.0	255	77777	690
1600	86.5	-1.5	-1.2	71.0	70.5	70.5	7.0	240	13.0	255	15.0	255	17.0	260	77777	580
1700	86.5	-1.2	-.9	72.5	72.5	71.5	8.5	230	13.0	245	14.5	245	17.0	250	19900	525
1800	86.0	-.9	-.7	73.5	73.5	73.0	5.5	230	9.0	240	10.5	250	11.5	255	77777	435
1900	84.5	.2	.4	74.5	74.0	73.5	2.5	200	6.0	225	7.5	240	9.5	250	20000	400
2000	81.5	.9	1.7	75.0	74.5	73.5	1.0	444	2.0	150	3.5	210	5.5	240	18600	375
2100	81.5	1.8	2.7	75.0	73.5	72.5	1.0	444	2.5	444	4.0	250	6.0	265	15300	315
2200	83.5	0.	.8	59.5	58.5	57.0	4.5	295	13.5	305	19.0	280	23.5	305	88888	375
2300	79.5	.2	.2	61.5	61.0	60.5	3.0	115	4.5	444	4.5	105	5.0	444	88888	375
2400	77.5	1.6	2.3	63.0	63.0	62.0	2.5	55	3.5	30	4.0	350	5.0	305	88888	370

7.0 AMBIENT SALT CONTENT

To determine the local ambient air salt content, a network of up to five sampling stations were set out in the environs of the Indian Point Generating Station. Hi-volume samplers, dust buckets and rain gauges were maintained at each site. The variations in the ambient atmospheric salt background were determined by atomic absorption analysis for sodium and specific electrode conductivity analysis for chloride.

The sampling period for this study was from April 23, 1973 to August 31, 1974.

7.1 Procedures

During the initial evaluation period of the salt sampling program, it was found that the nucleopore filters originally scheduled for use would not be suitable for the program. The large pressure drop associated with nucleopore filters of a D.O.P. rating of 99.97 percent efficiency when used on the hi-volume samplers resulted in very low sampling rates and the mass of material collected was minimal. The ambient salt concentrations encountered in the Indian Point environs proved to be too low to detect at these small sample volumes.

A new filter medium was sought to fulfill certain criteria as follows:

1. a low pressure drop even with high face velocities.
2. a non-clogging nature (no large pressure drop increase when entrapping large amounts of material.)
3. a physical ruggedness necessary to withstand rough usage and high face velocities.
4. a low and consistent level of sodium and chloride
5. be made of materials which will facilitate analysis.
6. exhibit a filtering efficiency of 99.97% as determined by D.O.P. standards for 0.3 micron aerosols.

An extensive literature search was initiated, supplemented by conversations with technical departments of appropriate filter manufacturers in order to determine the availability of a filter media to fulfill the above requirements. Millipore type AA membrane filters have been found more than satisfactory for all the above criteria except the first part of Number 3. When loading the filter on the Hi-Vol during gusty or high wind conditions, the filter may crack. However, this potential problem was almost entirely eliminated by the use of detachable sampling heads. The filters are loaded into the sampling heads in a laboratory environment and then fitted to the Hi-Vol samplers in the field.

It soon became apparent that the chloride concentrations sampled with the Millipore Type AA filters at the network of Stations, were almost too low to measure with any degree of confidence.

Both the specific electrode conductivity, and turbidimetric spectrophotometric methods were used to measure the magnitude of chloride sampled on the Hi-Vol filters. The sampled concentrations of chloride however, were not high enough to be distinguished from background variations and interferences.

These interferences resulted in a low confidence level of the measured concentrations of chloride.

Therefore, a conservative approach to the measurement of ambient sodium chloride concentrations has been adopted: that is to infer the concentrations of chloride, stoichiometrically, from the measured concentrations of ambient sodium. It should be noted that in the use of this procedure, the chloride concentrations predicted are greater than those determined from the filters by approved laboratory techniques. This assumption will continue in effect as exploration continues into the possibility that, and the extent to which, the measured concentrations of sodium are present in other forms of ambient compounds.

Hi-Volume filters were sampled initially for twenty-four hours at the start of this study, however, to increase the mass of material captured on the filter, an operational change was instituted. The sampling time was increased to as much as ninety-six hours per filter.

This procedure involves transferring the filter in its detachable sampling head from one sampler to another at the same location, so that no one sampler operates continuously for more than twenty-four hours. Sampling more than twenty-four hours would result in sampler burn-out.

The filters used to sample at the very onset of the program were Gelman Type A glass-fiber, which have a background level of sodium, comparable in magnitude, to the ambient concentrations at Indian Point.

Starting on July 7, 1973, Type AA membrane filters were used exclusively. The analyses in this final report are based only on the membrane filter data collected from 7/7/73-8/31/74. (See Appendix J.)

In this period, Hi-Volume filters were sampled initially for twenty-four hours at all five stations. Beginning on November 1, 1973, however, two changes were made: 1) no Hi-Vol data was collected at the Buchanan (BUC) and Verplanck (VER) Stations, and

2) the sampling time was increased to as much as ninety-six hours at the remaining three Stations to increase the mass of material captured.

The sodium and chloride concentrations from the settleable particulate collected in dust buckets at all five Stations was also analyzed and the results presented in Appendix K. The precipitation data and the hygrothermograph data collected are presented in Appendices L and M.

7.2 Sampling Station Location

The five sampling Stations which surround the Indian Point facility on the Eastern side of the Hudson River are:

1. IP3 - Located at the Indian Point facility next to a one hundred foot meteorological tower. The approximate elevation of this site is one hundred and ten feet above M.S.L..

2. Verplanck - Located approximately one hundred and twenty feet East of the Hudson River. The approximate elevation of this site is fifteen feet above M.S.L.

3. Buchanan - Located approximately three hundred feet East of Route 9A (Albany Post Road). The approximate elevation of this site is fifty feet above M.S.L..

4. Croton Point - Located approximately one hundred and fifty feet South of the Northern tip of Croton Point. The approximate elevation of this site is fifty feet above M.S.L..

5. Camp Smith - Located on the Camp Smith Military Reservation approximately 1750 feet WNW of the Peekskill traffic circle, at an elevation of approximately one hundred feet above M.S.L..

Each sampling Station consisted of two Hi-Vol samplers, a rain gauge and a dust bucket. In addition, a U. S. Weather Bureau Meteorological Shelter, housing a hygro-thermograph, was initially installed at the Verplanck site and later moved to the Camp Smith site.

The sampling Station locations were chosen so as to maximize their area of representation and also assure accessibility year-round with a minimum amount of travel time.

7.3 Instrument Operation and Calibration Procedures

The Hi-Volume samplers were run at 116 volts by bypassing a 90 volt dropping transformer. This increased the volume of the sample at the expense of increased maintenance due to a shorter brush life.

The Hi-Volume samplers were calibrated by varying the voltage applied to the power input while simultaneously monitoring the Dickson Pressure Recorder, which is standard on the sampler, and a manometer which measures the differential pressure between a General Metal Works Calibration Orifice and the atmosphere. By varying the voltage, a graph was plotted of the Dickson Pressure Recorder readings versus the air flow rate through the Calibration Orifice. All air flow readings were corrected to S.T.P.

In between laboratory calibrations of the hygro-thermograph, a sling psychrometer and a stationary Weather Bureau thermometer were used to check the hygro-thermograph and these readings are noted on each hygro-thermograph chart.

Dust buckets were exposed at each Station for approximately thirty days. During this time an additional dust bucket was kept covered in a nearby trailer and analyzed as a blank when the exposed buckets were analyzed. Initially, two liters of distilled water were added to each bucket to insure complete capture of particulates. Each bucket is six inches in diameter and twelve inches deep. All dust bucket mountings were at least eight feet above ground.

Rain gauges were visited and levels recorded daily, in so far as possible. The gauges are read to the nearest hundredth of an inch. After a reading is recorded, the rainfall accumulated in the gauge is discarded and the rain gauge is exposed again. All rain gauges are mounted at least six feet above ground. The results are presented in Appendix M.

7.4 Discussion of Results

The results of the ambient air sodium concentrations found during the test period are listed in Appendix J. The highest sodium concentration measured within the test period was 2.860 ug/m^3, reported at Camp Smith from a four day sample running from January 14, 1974-January 18, 1974. There have been no additional occurrences of concentrations of 0.0 ug/m^3 after those noted in the first report.

7.4.1 Dust Bucket Analyses

The results of dust bucket analyses are listed in Appendix K.

The highest sodium concentration reported was for December 1, 1973-January 2, 1974, at the Buchanan (BUC) Station. (Note that the suspended particulate from this same sample was quite low.)

Table 14 is the listing of the particulate and sodium averages for Winter, Summer and the total test period from the dust bucket analysis. Figures 26-31 are these values plotted in their respective geographical locations. The settleable particulate at the IP3 site is quite high compared to the other Stations and is probably due to construction dust. The sodium concentrations are also a maximum for the year at IP3 with BUC having the next highest concentrations.

7.4.2 Hi-Vol Filter Analyses

Figure 32 is a plot of the average Hi-Vol sodium concentrations from July 7, 1973 to October 31, 1973 (single days only). Here VER has the highest average concentration with CRO being next highest.

Figure 33 shows the sodium concentrations at IP3 versus the 24-hour resultant wind direction from the 105' IP3 and 125' IP4 Tower levels. The analysis is done on single days only, July 7, 1973-October 31, 1973. The extreme peak in the SSE sector is very apparent. Table 15 shows that the value of this peak is not based on only one point but is the average of 5 points. The low concentrations in the WNW-NE sectors are also averages of at least four points. The resultant winds used are given in Appendix N.

Figure 34 shows the averages of all the sodium concentrations during the entire test period (both single and multiple days) for IP3, CRO and CSM. Note that in this analysis the Camp Smith (CSM) Station has the highest concentration.

Table 16 is a listing of the cumulative frequency analysis for sodium at all Stations for single day samples, 7/7/73-10/31/73. This data is plotted in Figures 35-39. From this analysis it is seen that the Verplanck Station (VER) has more data points in the higher concentrations. (Note from Figure 32 that VER also has the highest average sodium concentration for this time period.)

The cumulative frequency distribution for all single day samples, multiple day samples, and all data combined are listed in Table 17. Figure 40 is the plot of single day cumulative frequencies versus multiple day cumulative frequencies. Figure 41 is the plotted cumulative frequencies of all data for the test period.

In evaluating the average Hi-Vol sodium concentrations shown on Figures 32 and 34, consideration must be given to the seasons of

the year that are involved. Figure 32 represents, essentially, only Summer months while Figure 34 includes fourteen months of data collection. Table 16 shows the average sodium concentrations from the various collection sites on a monthly, seasonal and annual basis. Of the three collection sites that were operative throughout the entire test period, Camp Smith has the highest annual average as was shown in Figure 34. On a seasonal basis, however, it has the lowest "Summer" average (0.214 ug/m^3). Its annual average is wholly bias by its very high "Winter" average (0.635 ug/m^3). Of the three sites only Croton Point maintains uniform Summer and Winter averages: 0.354 and 0.302 ug/m^3, respectively. (Note: This Summer average is somewhat biased by the June averages which are made up of two three-day sampling periods as compared to three three-day periods at IP3 and two three-day periods at Camp Smith. At IP3 the periods consisted of a very high average and very low concentration samples. At Croton Point the average period sample is missing, and at Camp Smith the high sample period is missing.)

The high Winter concentration at Camp Smith seems discordant. The Camp, however, is located just NE of a major road junction and traffic circle complex which includes in its midst a road salt deposit storage area which is used locally during snow and road icing conditions.

In Appendix J Camp Smith is routinely reporting high concentrations from the end of December, 1973 through February, 1974 - a period when maximum salt usage would be expected. It is during this period on a sample collected, 1/12-1/18/74, that Camp Smith records the highest calculated of all Stations: 2.860 ug/m^3 of sodium and 1.420 ug/m^3 of chloride.

For the two days prior to this collection period: 1/10-1/11/74, however, freezing rain drizzle and snow were reported.

On these bases, it can be assumed that the ambient salt levels are reflecting local depositions and not 'a priori' general background levels.

It is concluded that of the sampling sites that were used, Croton Point, is least subject to locally induced depositions and, therefore, most representative of general environs.

TABLE 14

DUST BUCKET AVERAGES
7/1973 - 8/1974

Station	Summer Average mg/cm²/mo.	Winter Average mg/cm²/mo.	Year Average mg/cm²/mo.
	SETTLEABLE PARTICULATES		
IP3	0.6978	0.8195	0.7727
VER	0.4686	0.6157	0.5544
BUC	0.3862	0.3590	0.3695
CRO	0.4148	0.3190	0.3590
CSM	0.4352	0.3128	0.3598
	SODIUM CONCENTRATIONS		
IP3	4.062×10^{-3}	7.909×10^{-3}	6.429×10^{-3}
VER	4.104×10^{-3}	4.396×10^{-3}	4.274×10^{-3}
BUC	4.384×10^{-3}	7.630×10^{-3}	6.382×10^{-3}
CRO	4.216×10^{-3}	6.121×10^{-3}	5.328×10^{-3}
CSM	3.328×10^{-3}	6.469×10^{-3}	5.261×10^{-3}

TABLE 15

FREQUENCY DISTRIBUTION: SINGLE DAYS
SODIUM CONCENTRATION VS. WIND DIRECTION
July 7, 1973 - October 31, 1973

Using 24 Hour Resultant Winds from IP4 & IP3

	SPEEDS			TOTALS	
	0-3	4-7	8-12	Pts.	Avg.
N	.142	.156	.0	1.363/9	.151
NNE	.257	.155	.0	0.721/4	.180
NE	.075	.621	.0	1.939/4	.485
ENE	.270	.0	.0	0.270/1	.270
E	.0	.196	.0	0.196/1	.196
ESE	.535	.398	.0	1.467/3	.489
SE	.0	.0	.0	/0	.0
SSE	.471	.888	.0	4.024/5	.805
S	.076	.637	.0	1.350/3	.450
SSW	.217	.274	.328	1.035/4	.259
SW	.106	.0	.167	0.273/2	.137
WSW	.323	.0	.0	0.323/1	.323
W	.0	.050	.058	0.167/3	.056
WNW	.087	.226	.021	0.560/4	.140
NW	.191	.112	.00	0.718/6	.120
NNW	.124	.094	.0	0.654/6	.109

TABLE 16

CUMULATIVE FREQUENCY ANALYSIS
SODIUM CONCENTRATIONS - SINGLE DAYS
7/7 - 10/31/73

	IP3		BUC		VER		CRO		CSM	
	Pts.	Cum Freq.	Pts.	Cum Freq.	Pts.	Cum Freq.	Pts.	Cum Freq.	Pts.	Cum Freq.
0.2	35	53.0	25	51.0	20	36.4	27	44.3	23	57.5
0.4	23	87.9	16	83.7	19	70.9	22	80.3	10	82.5
0.6	2	90.9	3	89.8	7	83.6	6	90.2	3	90.0
0.8	2	93.9	3	95.9	4	90.9	3	95.1	1	92.5
1.0	0	93.9	0	95.9	0	90.9	1	96.7	1	95.0
1.5	2	97.0	1	98.0	2	94.6	1	98.4	1	97.5
2.0	1	98.5			0	94.6				
2.5					1	96.4				
3.0					1	98.2				
Tot Pts.	65		48		54		60		39	

TABLE 17

CUMULATIVE FREQUENCY DISTRIBUTIONS
HI-VOL SODIUM CONCENTRATIONS (ug/m^3)
7/7/73 - 8/31/74

Na ug/m^3	Single Days		Multiple Days		All Data	
	Pts.	Cum Freq.	Pts.	Cum Freq.	Pts.	Cum Freq.
.2	136	49.5	36	34.9	172	45.6
.4	90	82.2	35	68.9	125	78.8
.6	22	90.2	16	84.5	38	88.9
.8	13	94.9	5	89.3	18	93.6
1.0	2	95.6	2	91.3	4	94.7
1.5	8	98.5	1	92.2	9	97.1
2.0	1	98.90	3	95.1	4	98.1
2.5	1	99.26	3	98.04	4	99.20
3.0	1	99.62	1	99.98	2	99.73
TOT. PTS.	274		102		376	

TABLE 18

MONTHLY AVERAGE OF SODIUM (ug/m^3) FROM HI-VOL SAMPLES
(July, 1973 - August, 1974)

	IP3	Croton Point	Camp Smith	Verplanck	Buchanan
July, 1973	.222	.599**	-	.477	.424
Aug. "	.273	.249	.050**	.242	.190
Sept. "	.217	.205	.207	.414	.224
Oct. "	.280	.297	.268	.459	.196
Nov. "	.149	.252	.149		
Dec. "	.985	.405	.686		
Jan., 1974	.360	.276	.920		
Feb. "	.854	.513	1.281		
Mar. "	.241	.152	.290		
Apr. "	.242	.223	.554*		
May "	.274	.408	.361		
June "	.541	.858	.212		
July "	.247	.189	.135		
Aug. "	.216	.218	.155		
MONTHLY AVERAGE[1]	.364	.326	.424	--	--
SUMMER AVERAGE[1]	.284	.354	.214		
WINTER AVERAGE[1]	.444	.302	.635		
ANNUAL AVERAGE[2]	.393	.322	.477		

* One data period only omitted from monthly average
** Startup 3 samples only omitted from monthly average

[1] Based on average of monthly averages
[2] Based on total number of observations

YORK RESEARCH CORPORATION
STAMFORD, CONNECTICUT

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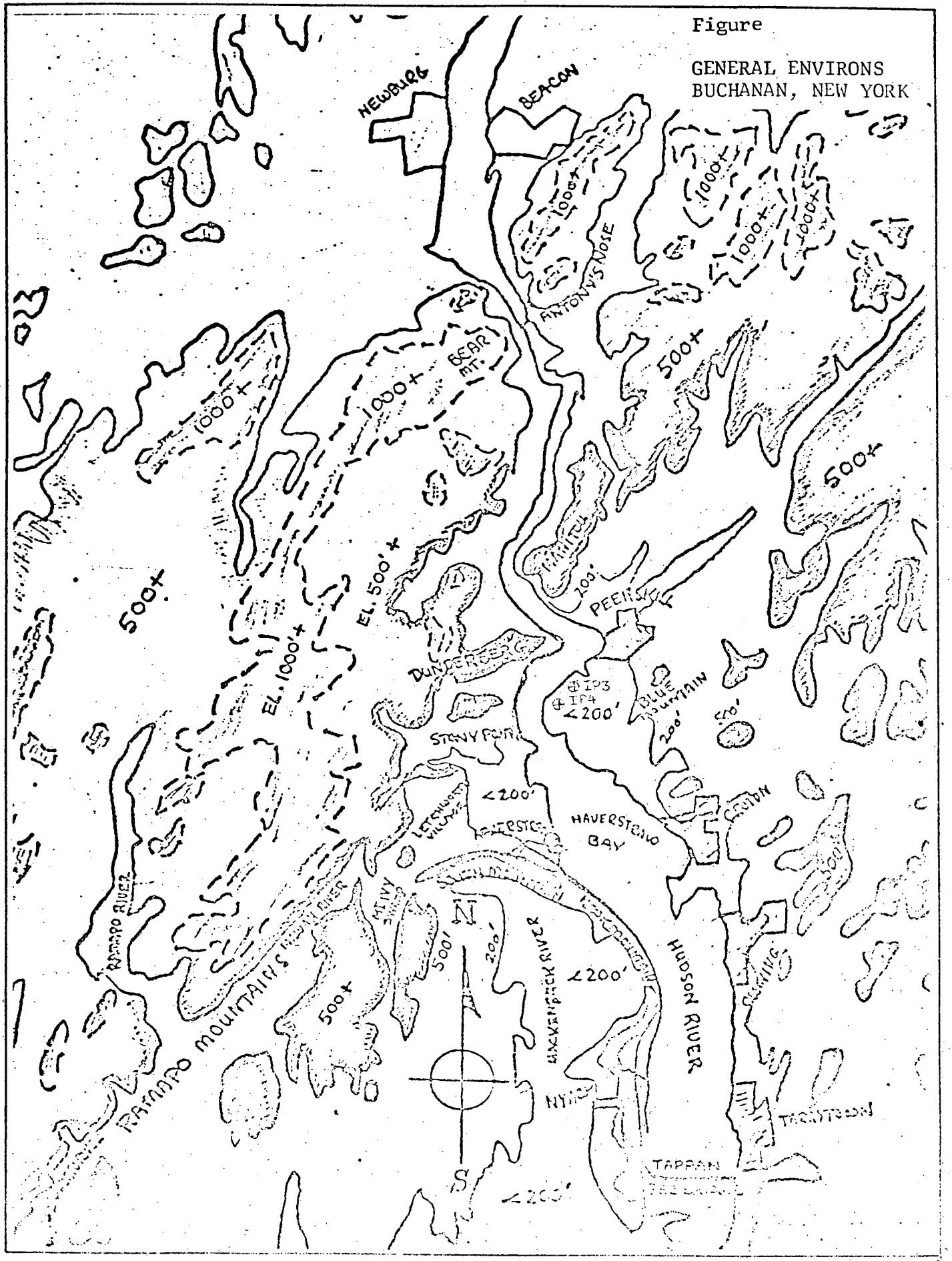


Figure
GENERAL ENVIRONS
BUCHANAN, NEW YORK
NEWBURG
BEACON
ANTONY'S NOSE
1000+
BEAR MT.
500+
EL. 500'+
EL. 1000'+
DUNDERBERG
IP3
IP4
<200'
BLUE MOUNTAIN
STONY POINT
HAVERSTRAW BAY
HAVERSTRAW
HAVERSTRAW
RAMAPO RIVER
RAMAPO MOUNTAINS
HACKENSACK RIVER
HUDSON RIVER
NYACK
TARRYTOWN
TAPPAN
N
S

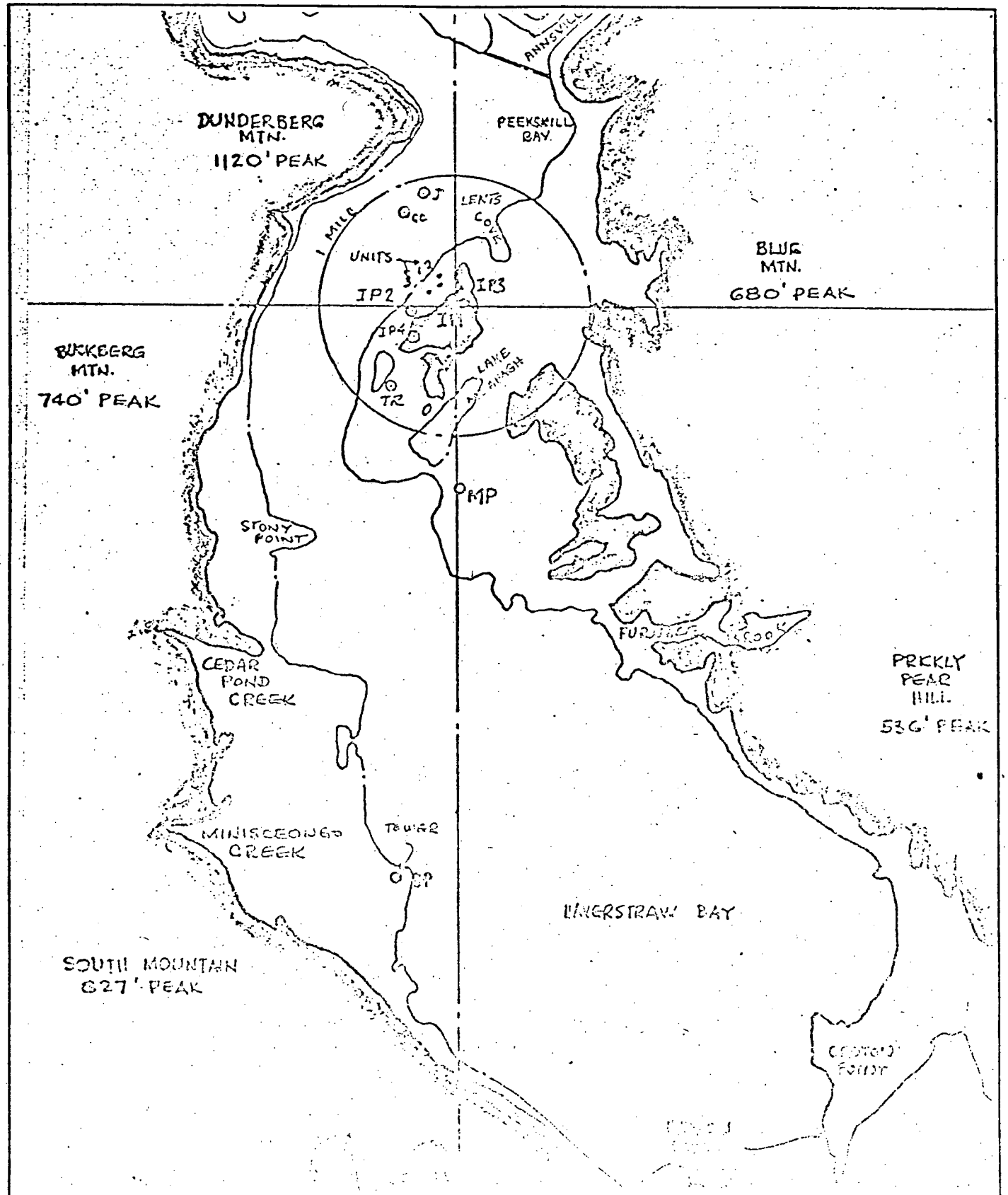


FIGURE 1a

GROUND CONTOURS AT EL. 100 FT

SCALE 1 in = 1000 FT

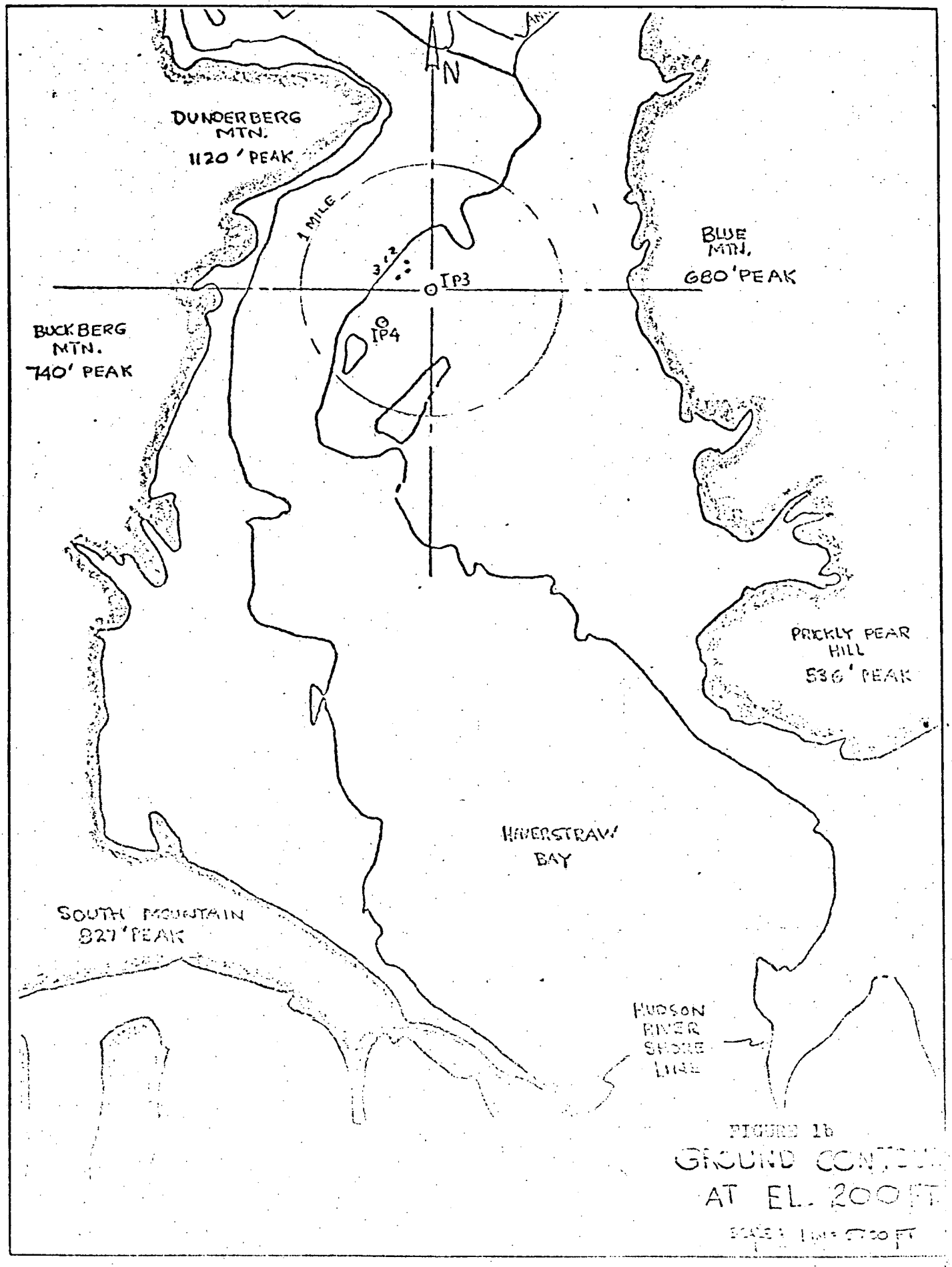


FIGURE 1b
GROUND CONTOURS AT EL. 200 FT

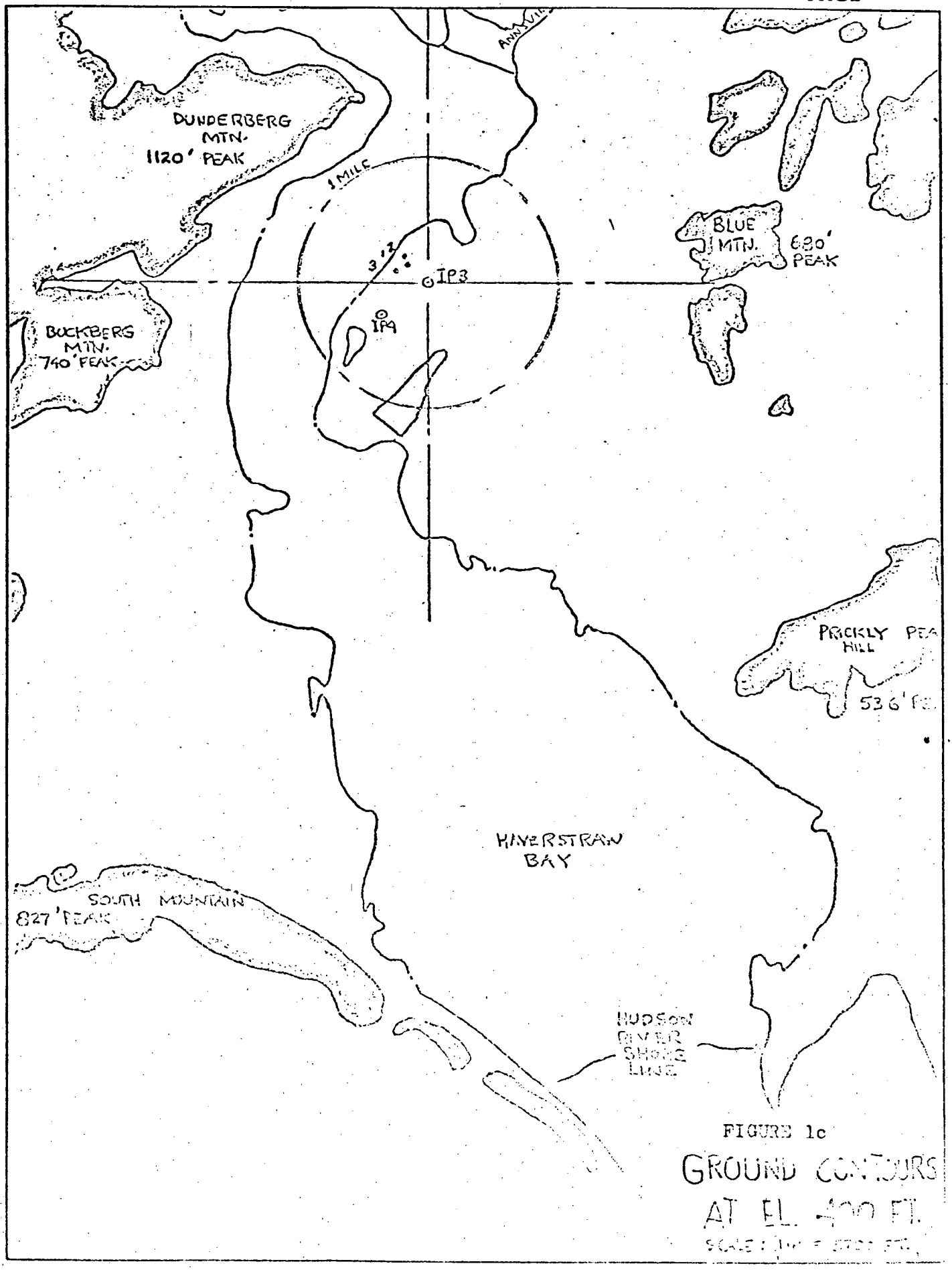
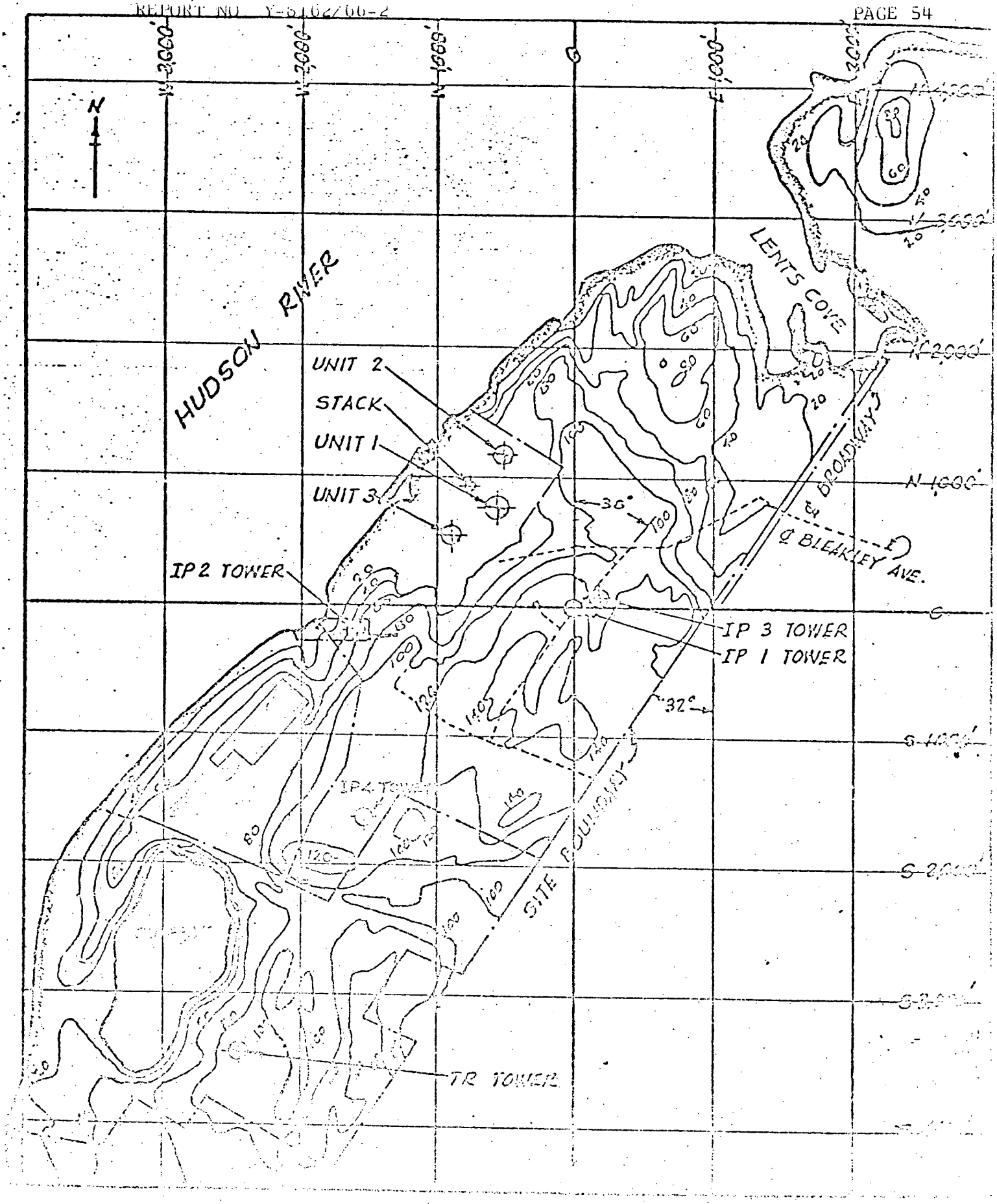


FIGURE 1c
GROUND CONTOURS
AT EL. 400 FT.
SCALE: 1 IN = 8000 FT.


N
E 1000'
E 2000'
N 2000'
N 1000'
HUDSON RIVER
LENTS COVE
UNIT 2
STACK
UNIT 1
UNIT 3
IP 2 TOWER
IP 3 TOWER
IP 1 TOWER
IP 4 TOWER
TR TOWER
BROADWAY
& BLEAKLEY AVE.
SITE BOUNDARY
36°
32°

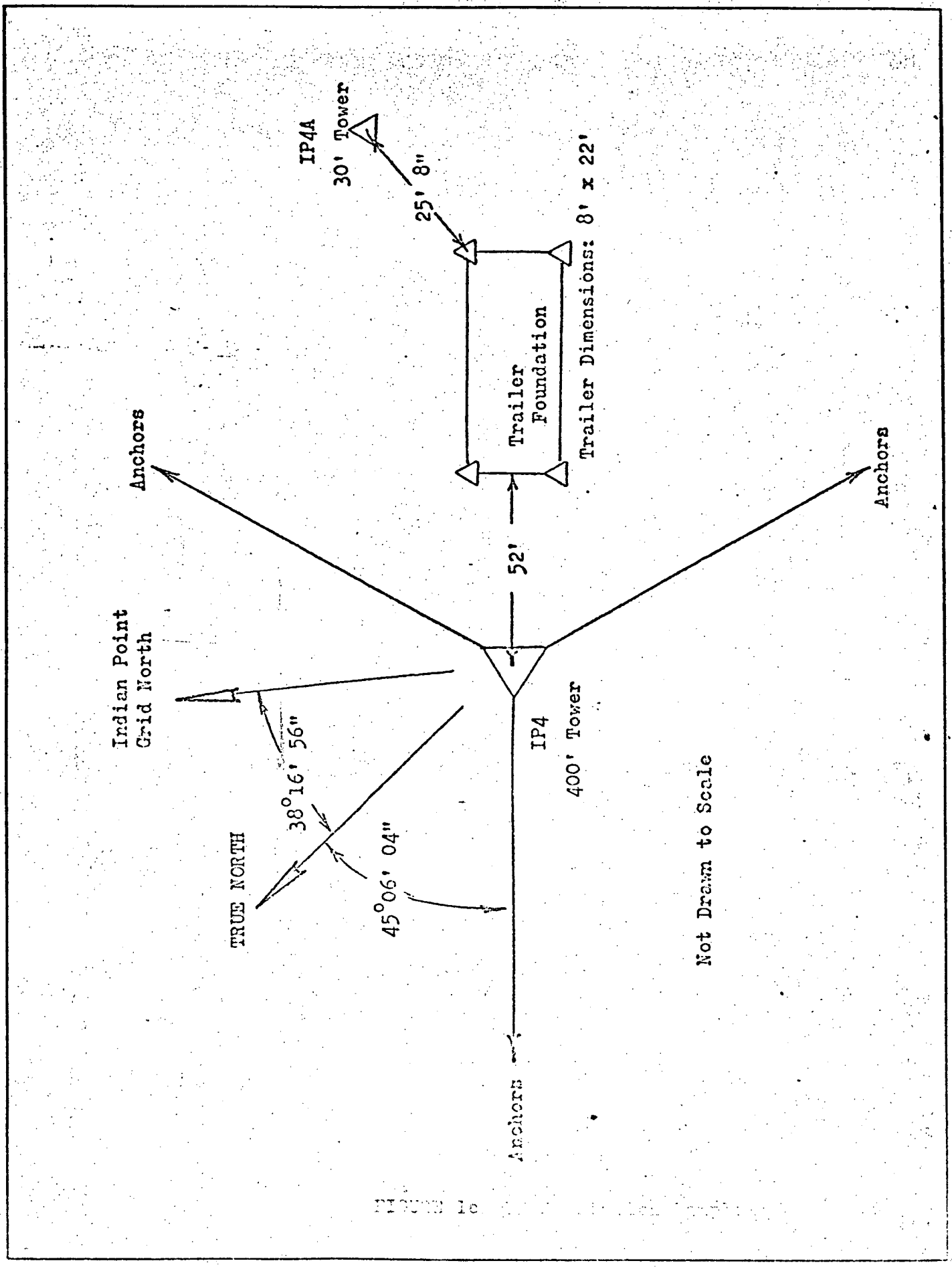

IP4A
30' Tower
25' 8"
Trailer Foundation
Trailer Dimensions: 8' x 22'
Anchors
Anchors
52'
Indian Point Grid North
38°16' 56"
TRUE NORTH
45°06' 04"
IP4
400' Tower
Not Drawn to Scale
Anchors

FIGURE 16

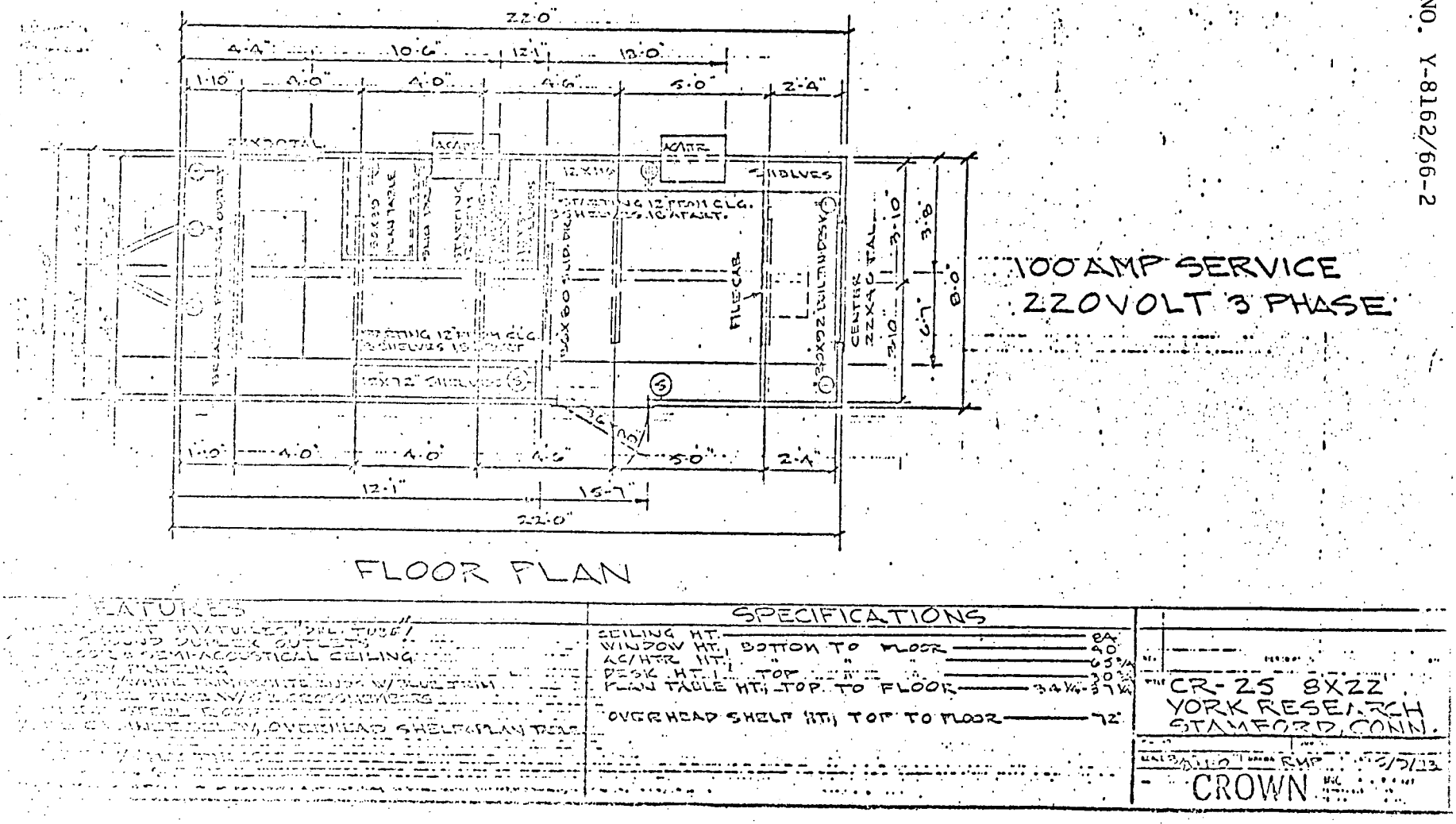


FIGURE 1f : IP 4 Instrument Trailer

FIGURE 2

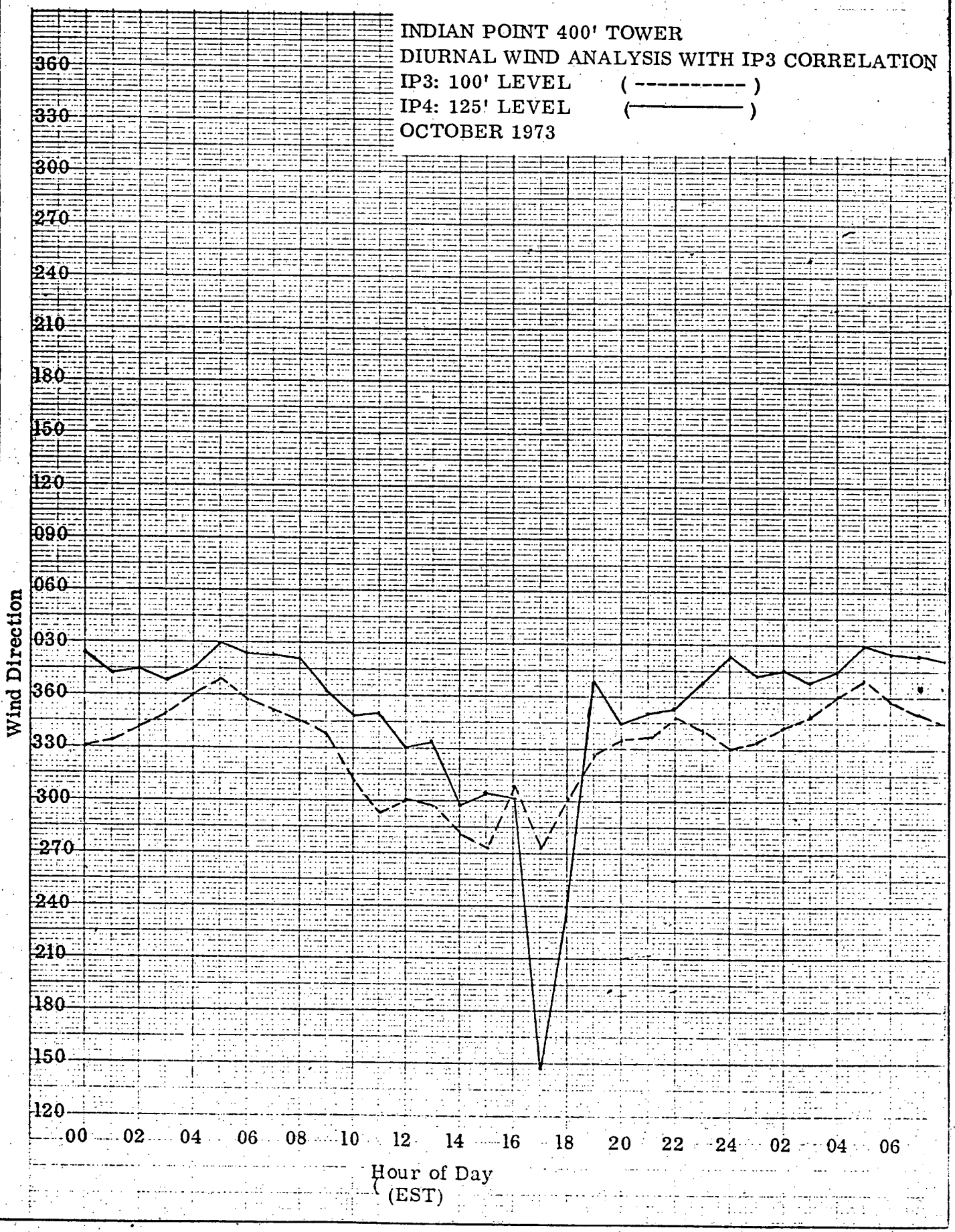

INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS WITH IP3 CORRELATION
IP3: 100' LEVEL (----------)
IP4: 125' LEVEL (————————)
OCTOBER 1973
Wind Direction
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
240
210
180
150
120
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)

FIGURE 3

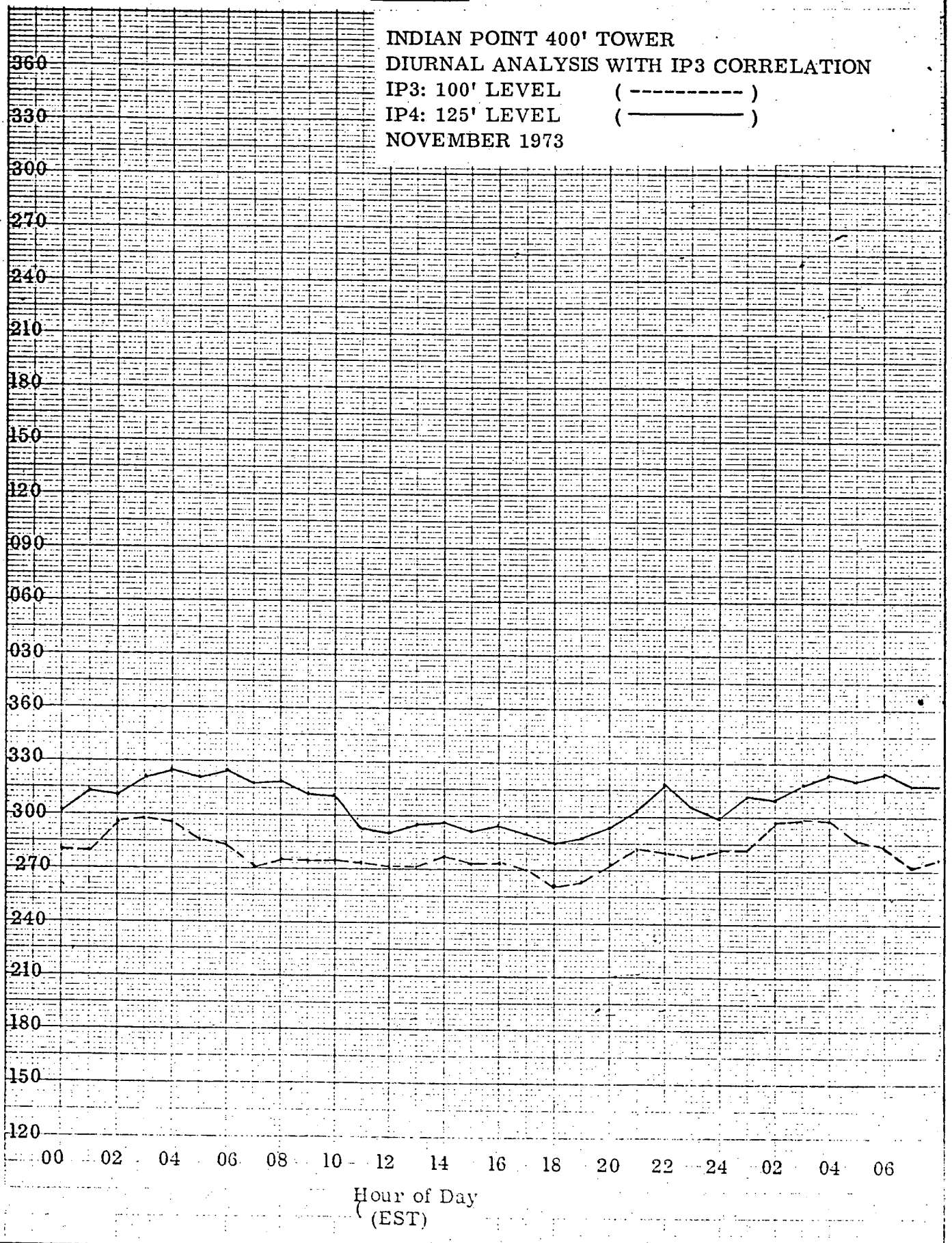
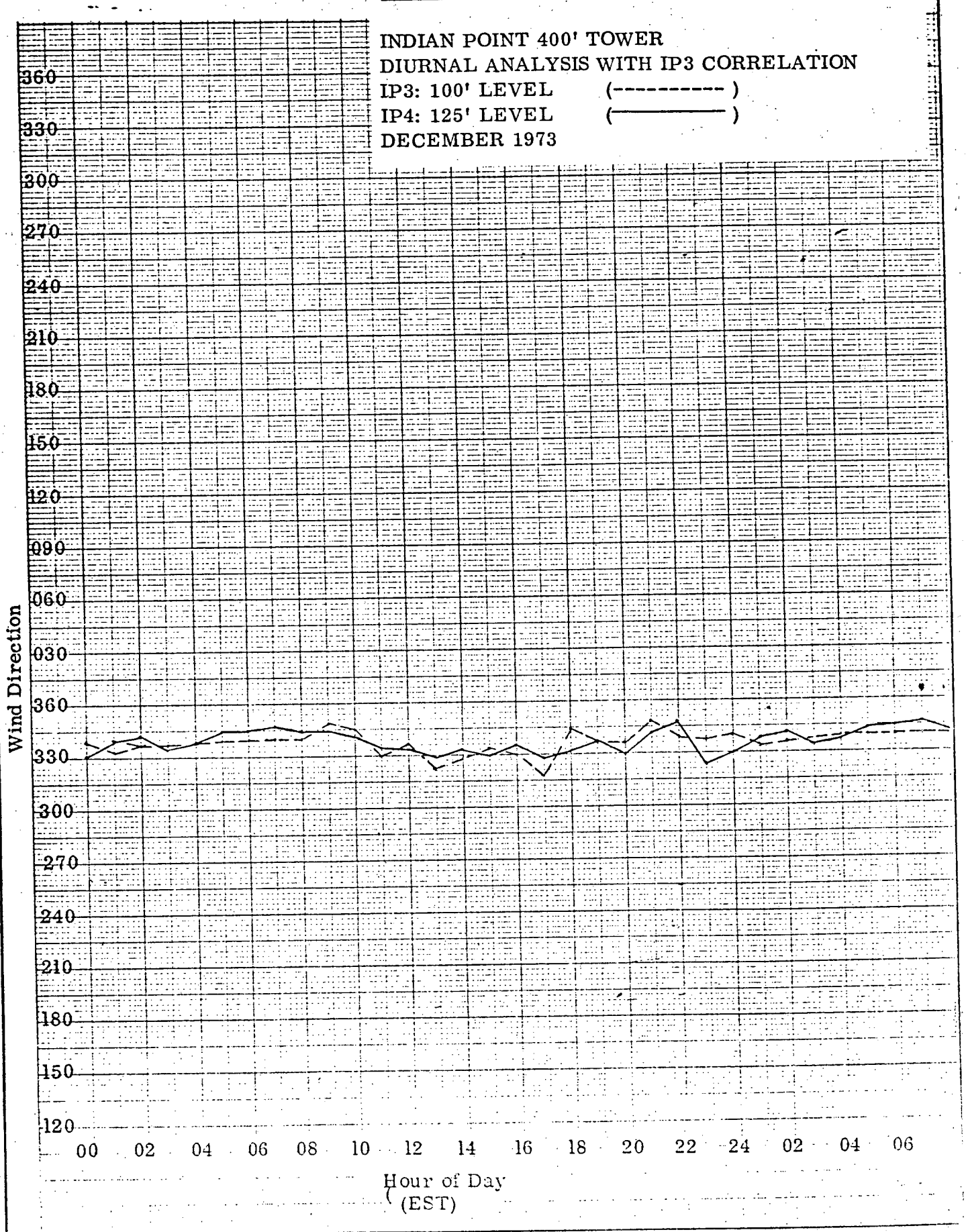

INDIAN POINT 400' TOWER
DIURNAL ANALYSIS WITH IP3 CORRELATION
IP3: 100' LEVEL (----------)
IP4: 125' LEVEL (————)
NOVEMBER 1973
Wind Direction
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
240
210
180
150
120
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)

FIGURE 4


INDIAN POINT 400' TOWER
DIURNAL ANALYSIS WITH IP3 CORRELATION
IP3: 100' LEVEL (----------)
IP4: 125' LEVEL (——————)
DECEMBER 1973
Wind Direction
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
240
210
180
150
120
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)

WIND DIRECTION FREQUENCY DISTRIBUTION
(SEASONAL)

SITE: INDIAN POINT 400' TOWER
DATE: WINTER (SEPT. 1973- APRIL 1974)

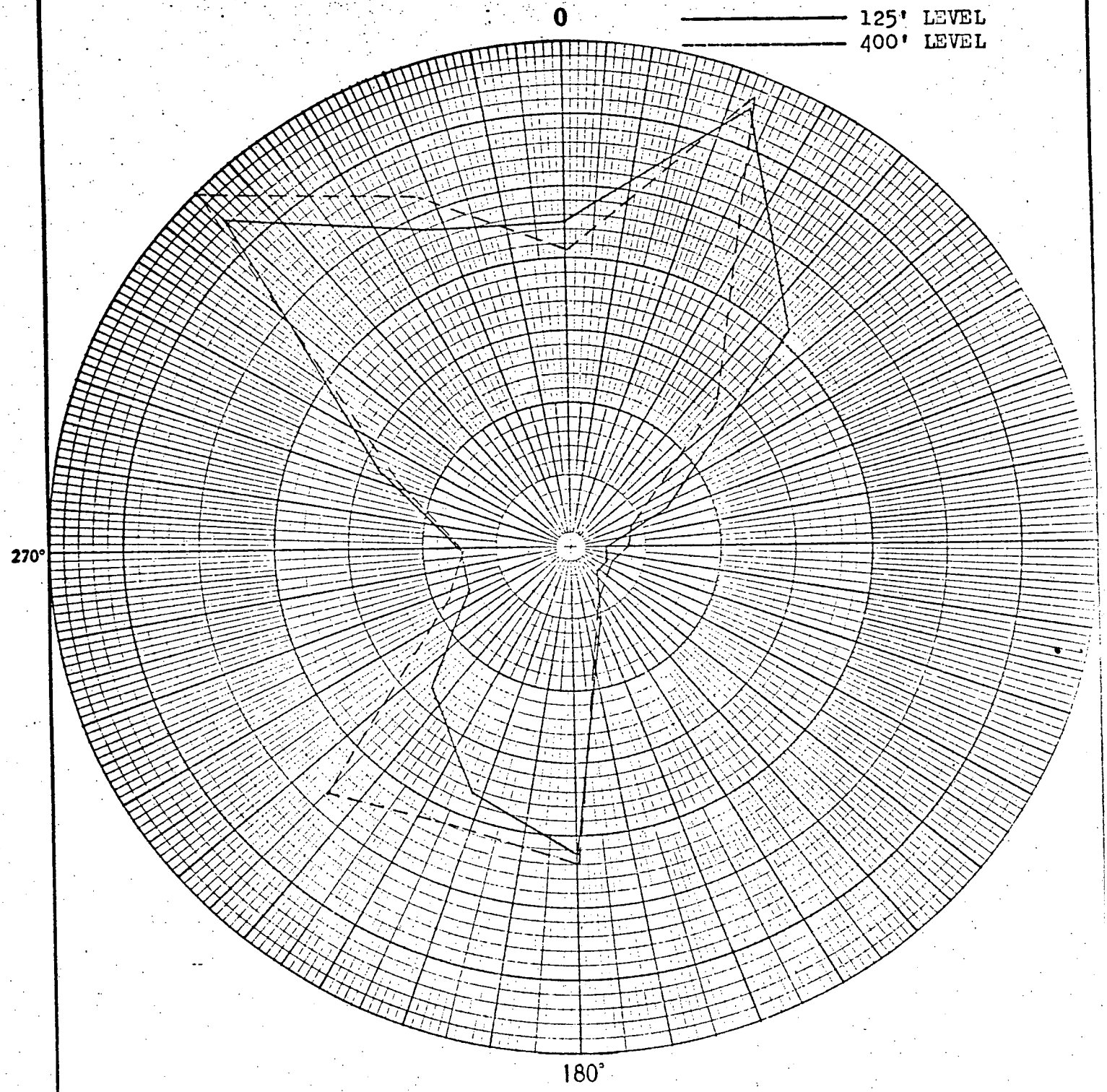


FIGURE 5

Scale: 1 large division = 2.0 %

Figure. 5

WIND DIRECTION FREQUENCY DISTRIBUTION

(SEASONAL)

SITE: INDIAN POINT 400' TOWER
DATE: SUMMER (MAY-AUGUST 1974)

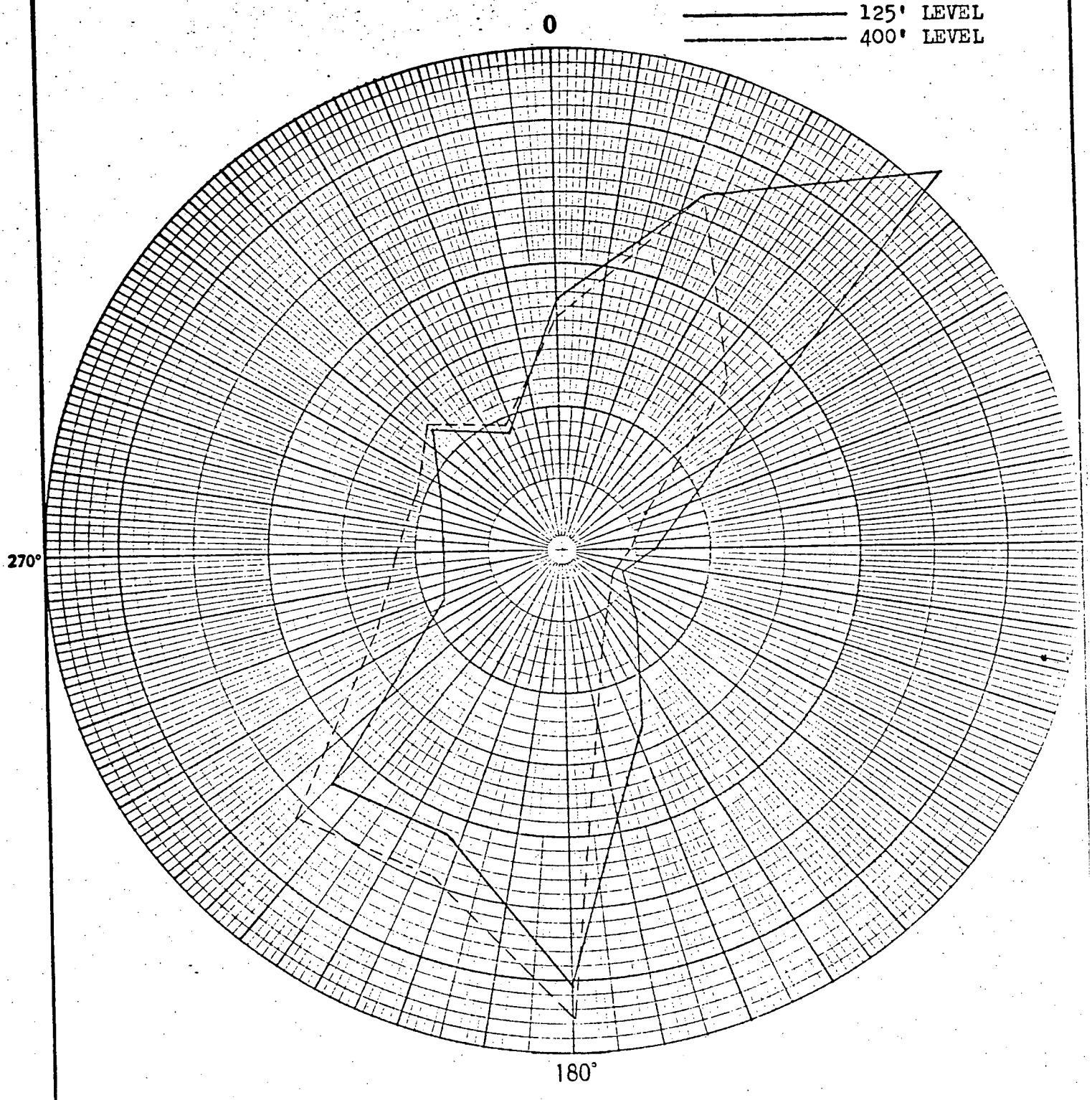
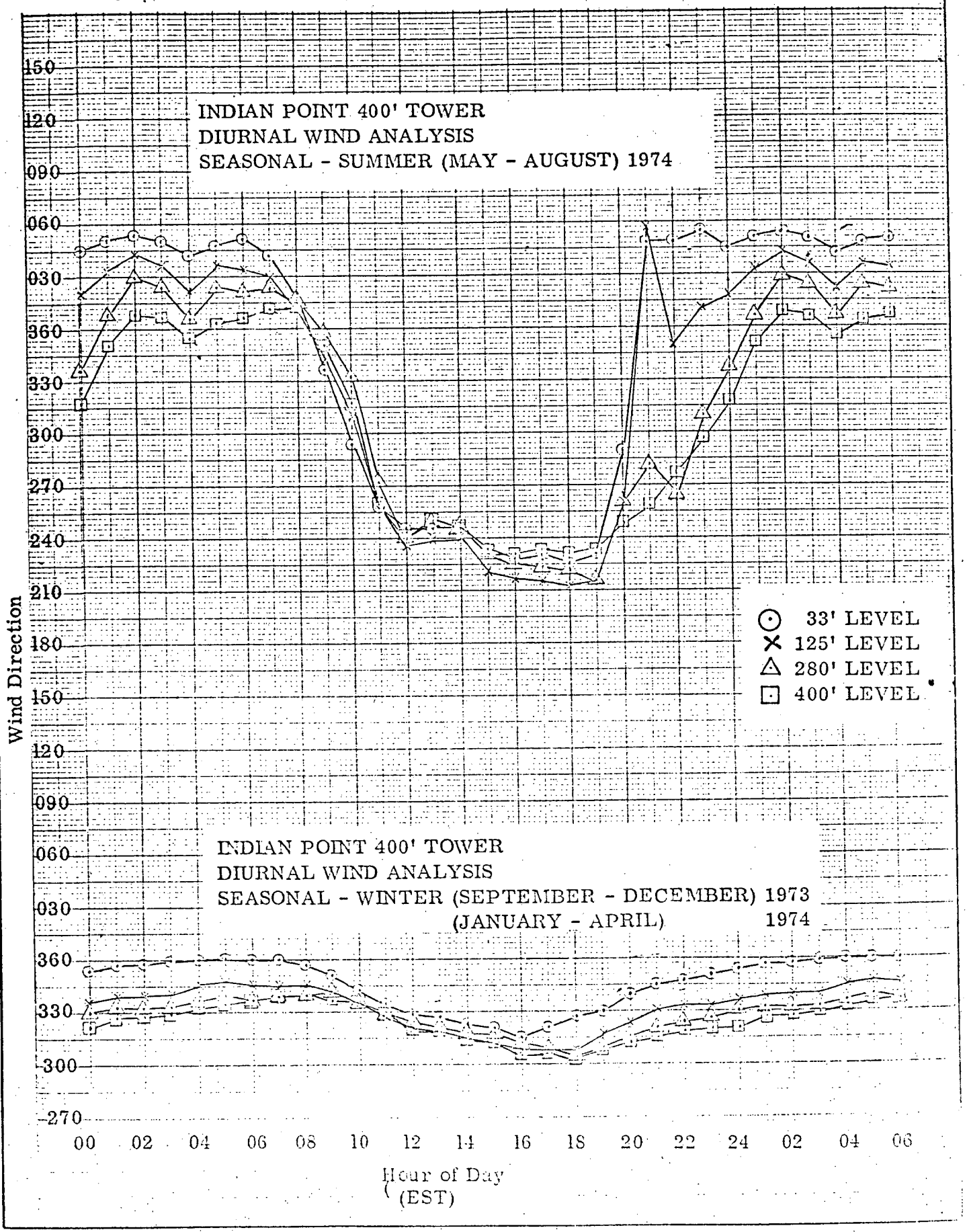


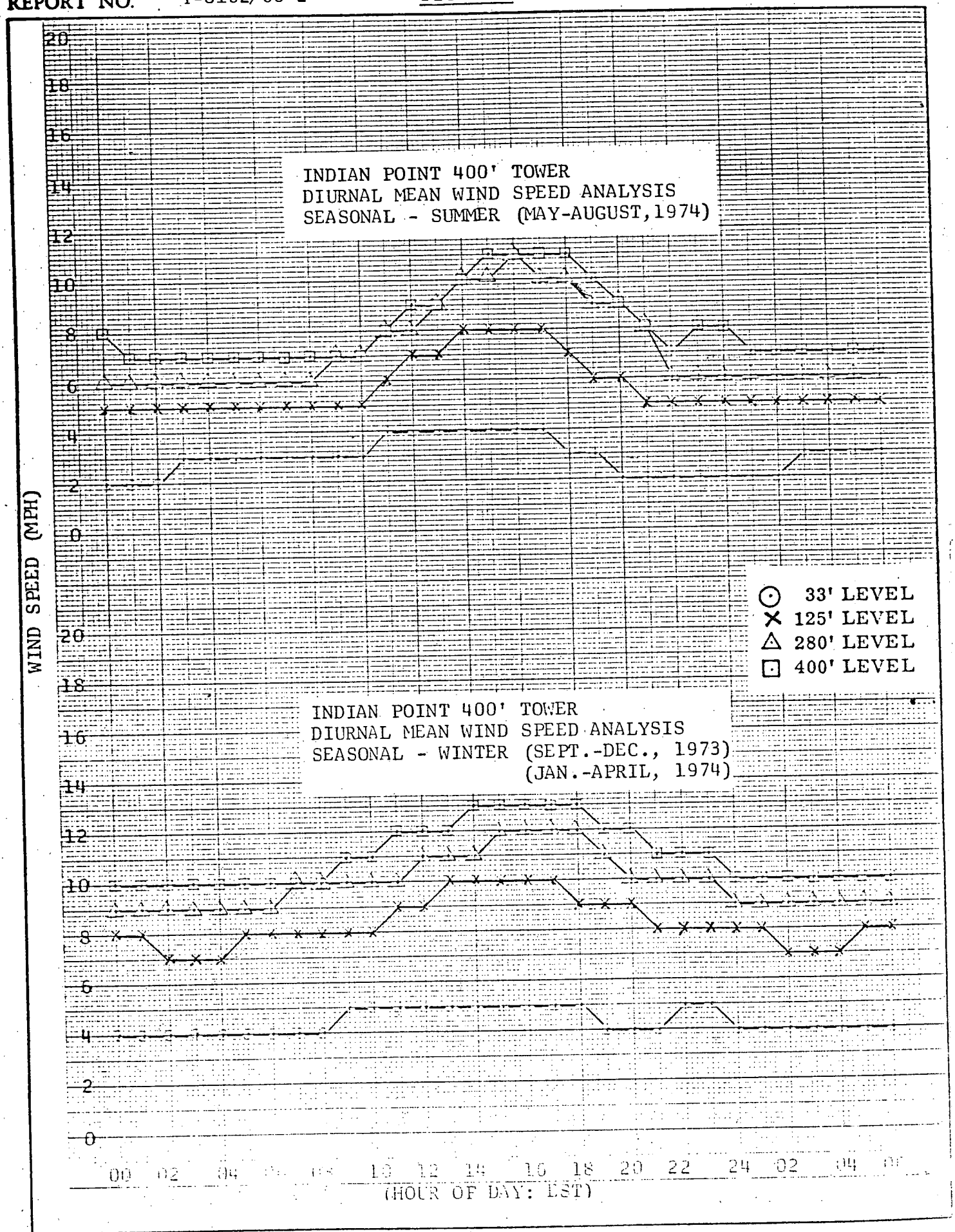
FIGURE 6

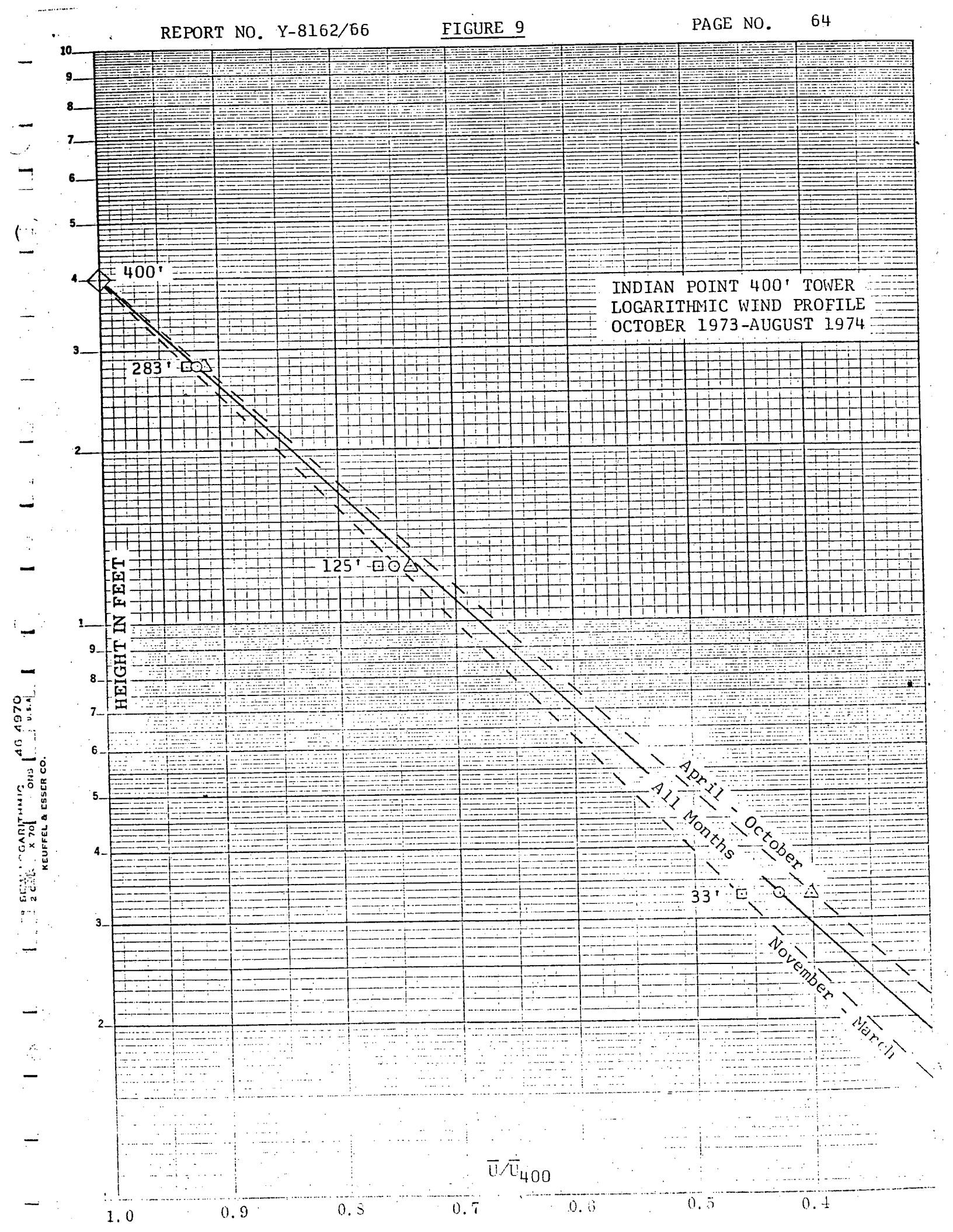
Scale: 1 large division = 2.0

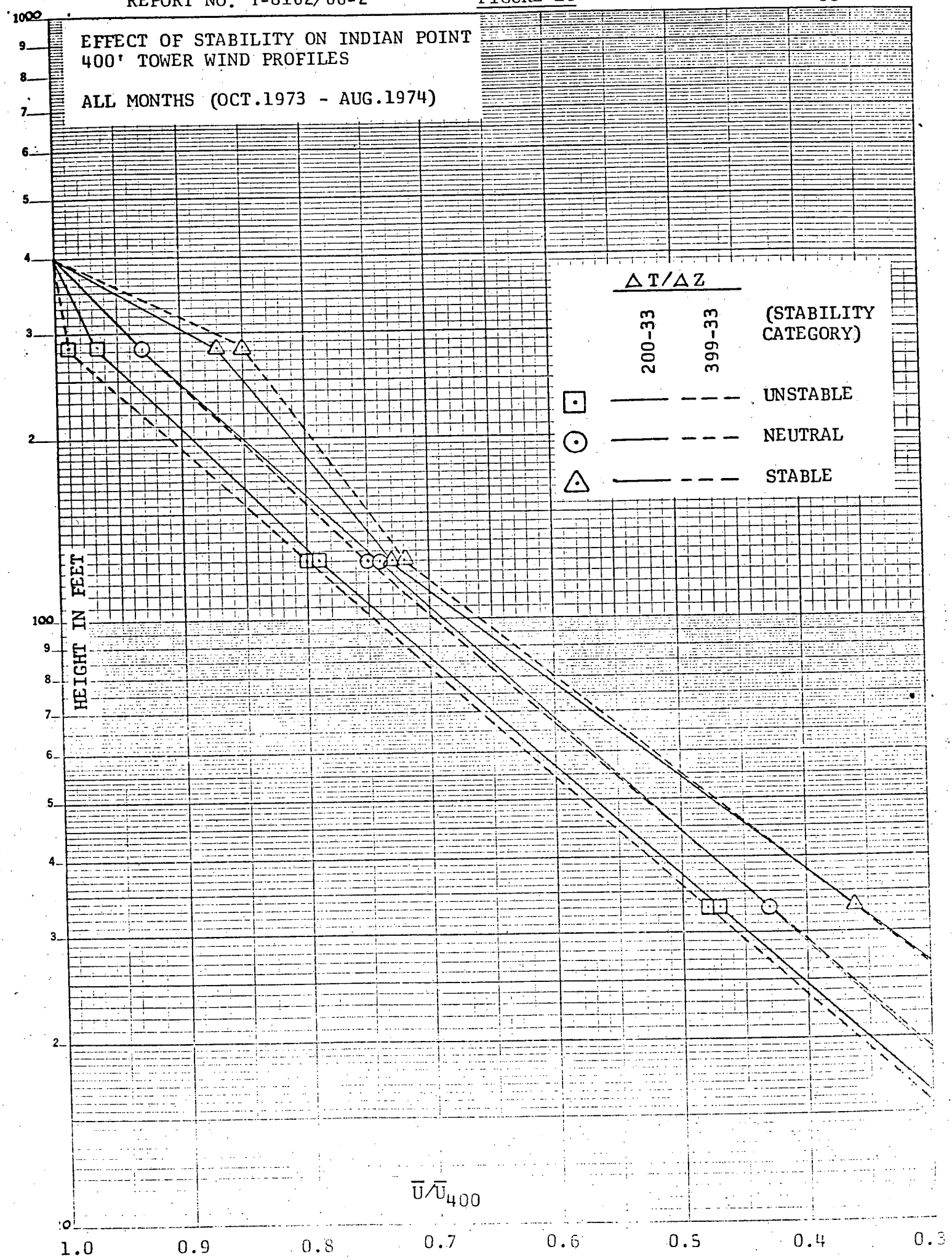
Figure. 6

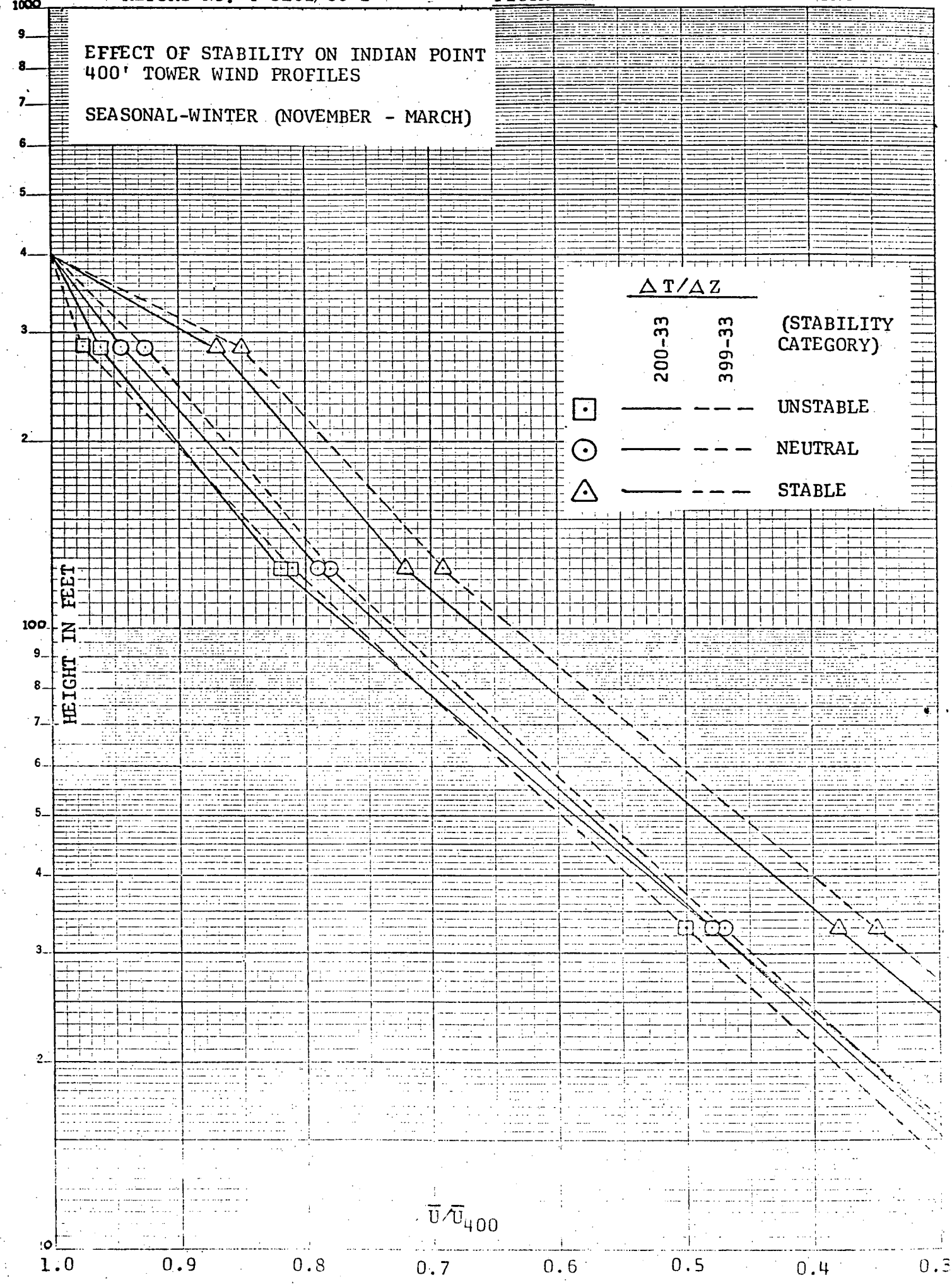
FIGURE 7

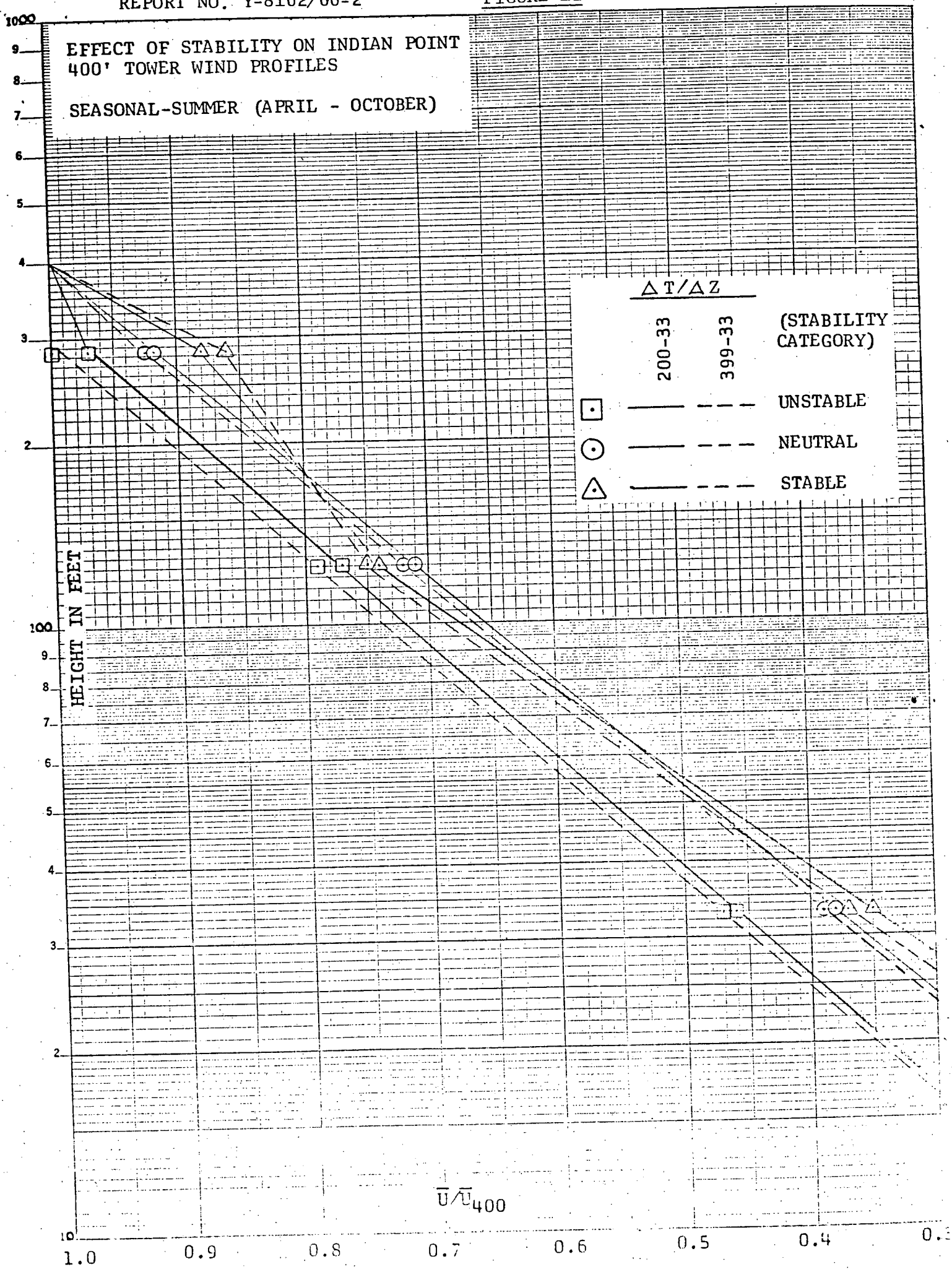

INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS
SEASONAL - SUMMER (MAY - AUGUST) 1974
33' LEVEL
125' LEVEL
280' LEVEL
400' LEVEL
INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS
SEASONAL - WINTER (SEPTEMBER - DECEMBER) 1973
(JANUARY - APRIL) 1974
Wind Direction
150
120
090
060
030
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)

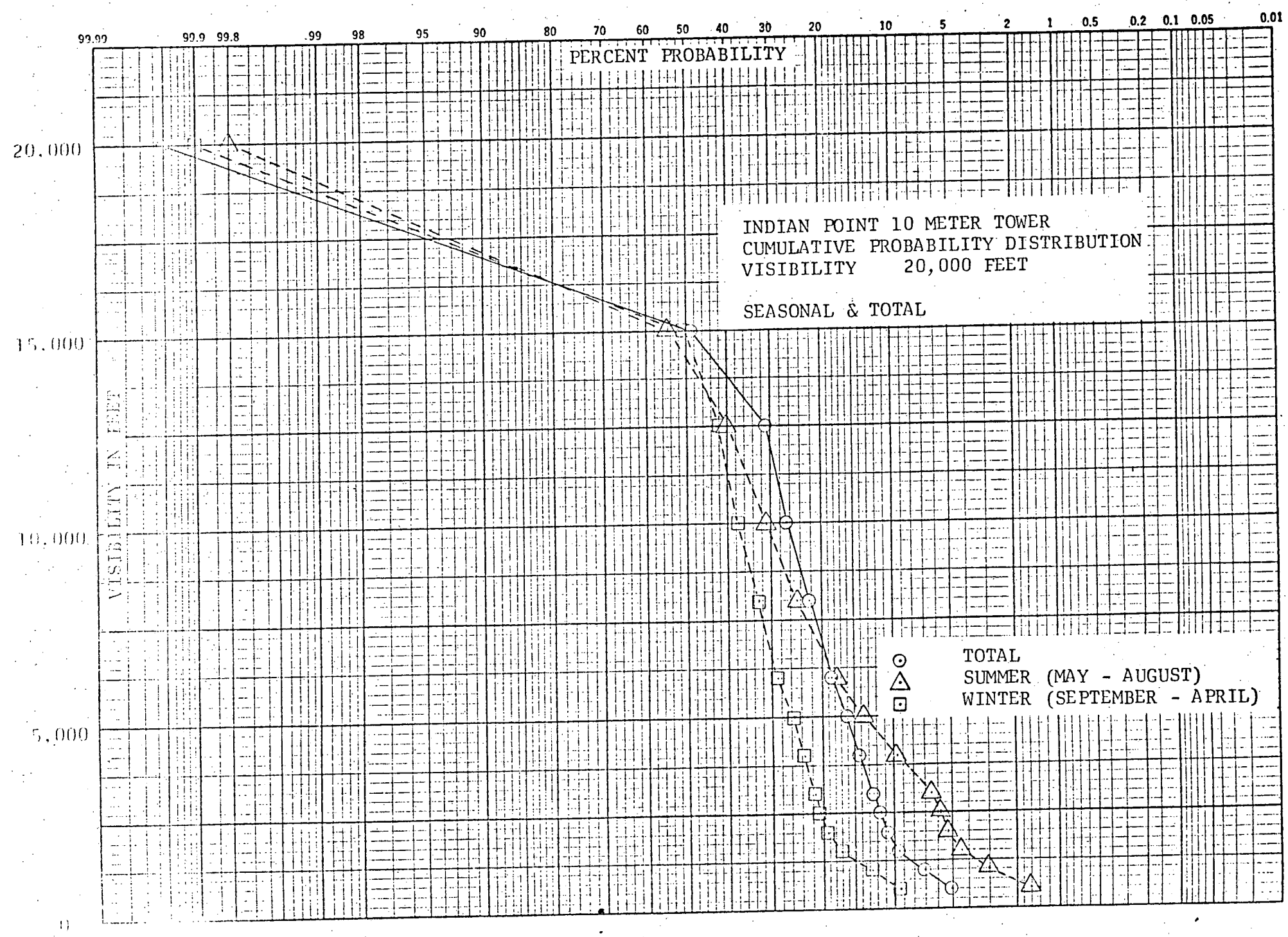

INDIAN POINT 400' TOWER
DIURNAL MEAN WIND SPEED ANALYSIS
SEASONAL - SUMMER (MAY-AUGUST, 1974)
33' LEVEL
125' LEVEL
280' LEVEL
400' LEVEL
INDIAN POINT 400' TOWER
DIURNAL MEAN WIND SPEED ANALYSIS
SEASONAL - WINTER (SEPT.-DEC., 1973)
(JAN.-APRIL, 1974)
WIND SPEED (MPH)
0
2
4
6
8
10
12
14
16
18
20
00 02 04 10 12 14 16 18 20 22 24 02 04
(HOUR OF DAY: EST)

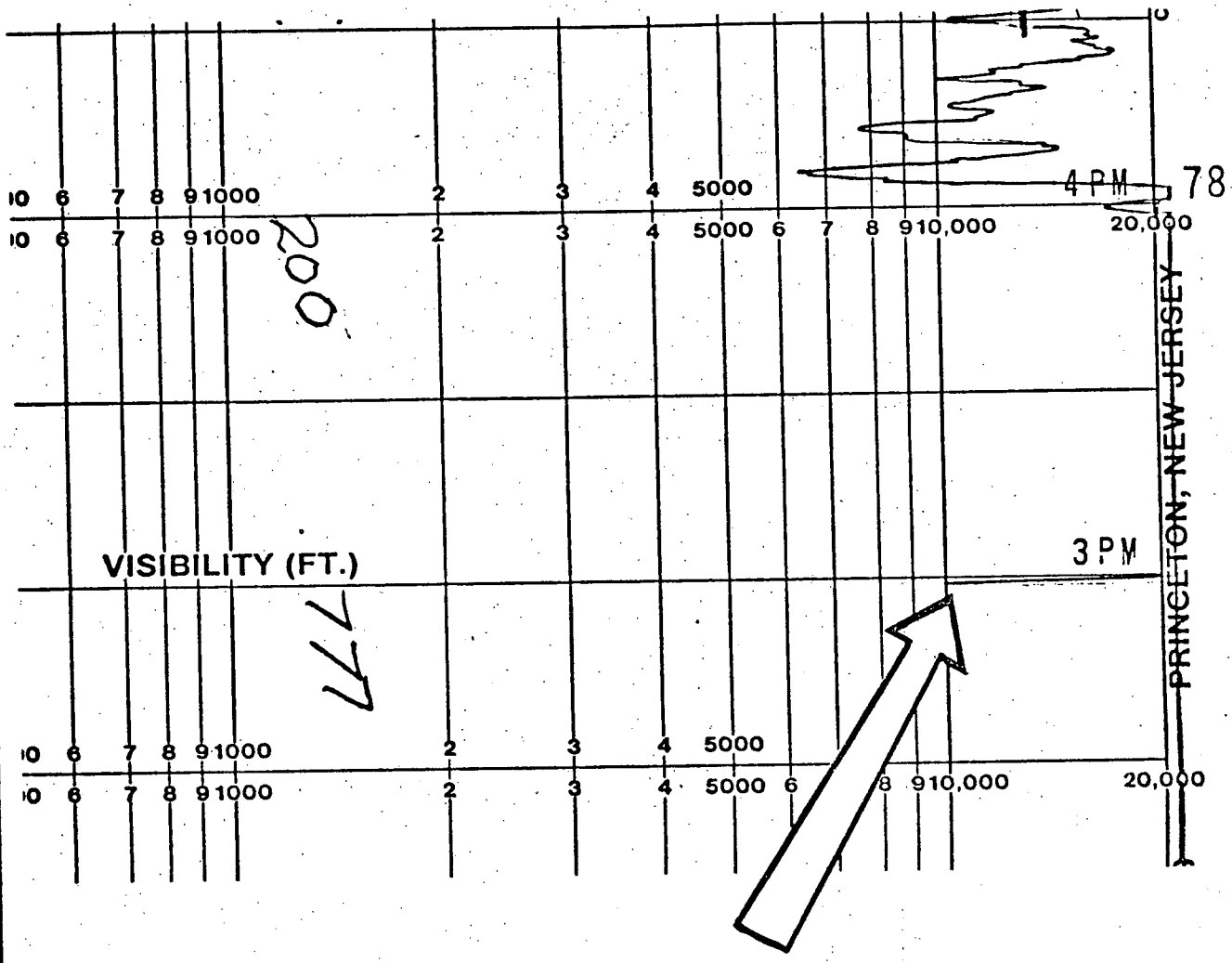

INDIAN POINT 400' TOWER
LOGARITHMIC WIND PROFILE
OCTOBER 1973-AUGUST 1974
400'
283'
125'
33'
HEIGHT IN FEET
April - October
All Months
November - March
$\bar{U}/\bar{U}_{400}$
1.0
0.9
0.8
0.7
0.6
0.5
0.4
KEUFFEL & ESSER CO.


EFFECT OF STABILITY ON INDIAN POINT
400' TOWER WIND PROFILES
ALL MONTHS (OCT.1973 - AUG.1974)
ΔT/ΔZ
200-33
399-33
(STABILITY CATEGORY)
UNSTABLE
NEUTRAL
STABLE
HEIGHT IN FEET
1000
100
10
$\bar{U}/\bar{U}_{400}$
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
KEUFFEL & ESSER CO.


EFFECT OF STABILITY ON INDIAN POINT 400' TOWER WIND PROFILES
SEASONAL-WINTER (NOVEMBER - MARCH)
ΔT/ΔZ
200-33
399-33
(STABILITY CATEGORY)
UNSTABLE
NEUTRAL
STABLE
HEIGHT IN FEET
1000
100
10
$\bar{U}/\bar{U}_{400}$
1.0
0.9
0.8
0.7
0.6
0.5
0.4


EFFECT OF STABILITY ON INDIAN POINT
400' TOWER WIND PROFILES
SEASONAL-SUMMER (APRIL - OCTOBER)
ΔT/ΔZ
200-33
399-33
(STABILITY CATEGORY)
UNSTABLE
NEUTRAL
STABLE
HEIGHT IN FEET
1000
100
10
9
8
7
6
5
4
3
2
$\bar{U}/\bar{U}_{400}$
1.0
0.9
0.8
0.7
0.6
0.5
0.4
KEUFFEL & ESSER CO.


99.99
99.9
99.8
99
98
95
90
80
70
60
50
40
30
20
10
5
2
1
0.5
0.2
0.1
0.05
0.01
PERCENT PROBABILITY
20,000
15,000
10,000
5,000
0
VISIBILITY IN FEET
INDIAN POINT 10 METER TOWER
CUMULATIVE PROBABILITY DISTRIBUTION
VISIBILITY 20,000 FEET
SEASONAL & TOTAL
TOTAL
SUMMER (MAY - AUGUST)
WINTER (SEPTEMBER - APRIL)



SECTION OF FORWARD SCATTER METER ANALOG CHART SHOWING THE "SPIKING" CHARACTERISTIC

FIGURE 14

WIND DIRECTION FREQUENCY DISTRIBUTION
WITH SPIKED (777) VISIBILITY

SITE: INDIAN POINT 10 METER TOWER
DATE: SEASONAL; with 125' LEVEL WINDS

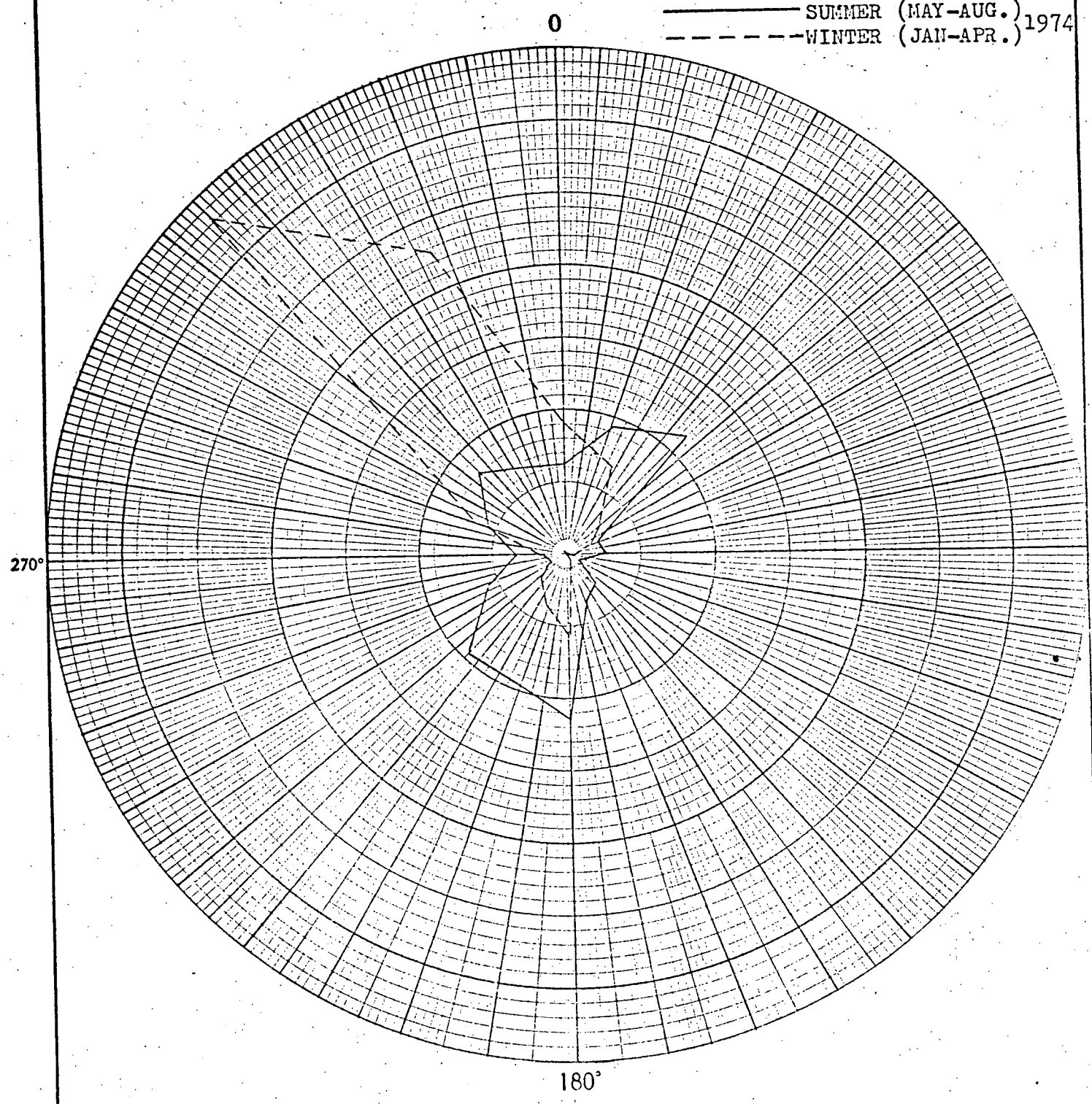


FIGURE 15

Scale: 1 large division = 5.0 %

Figure. 15

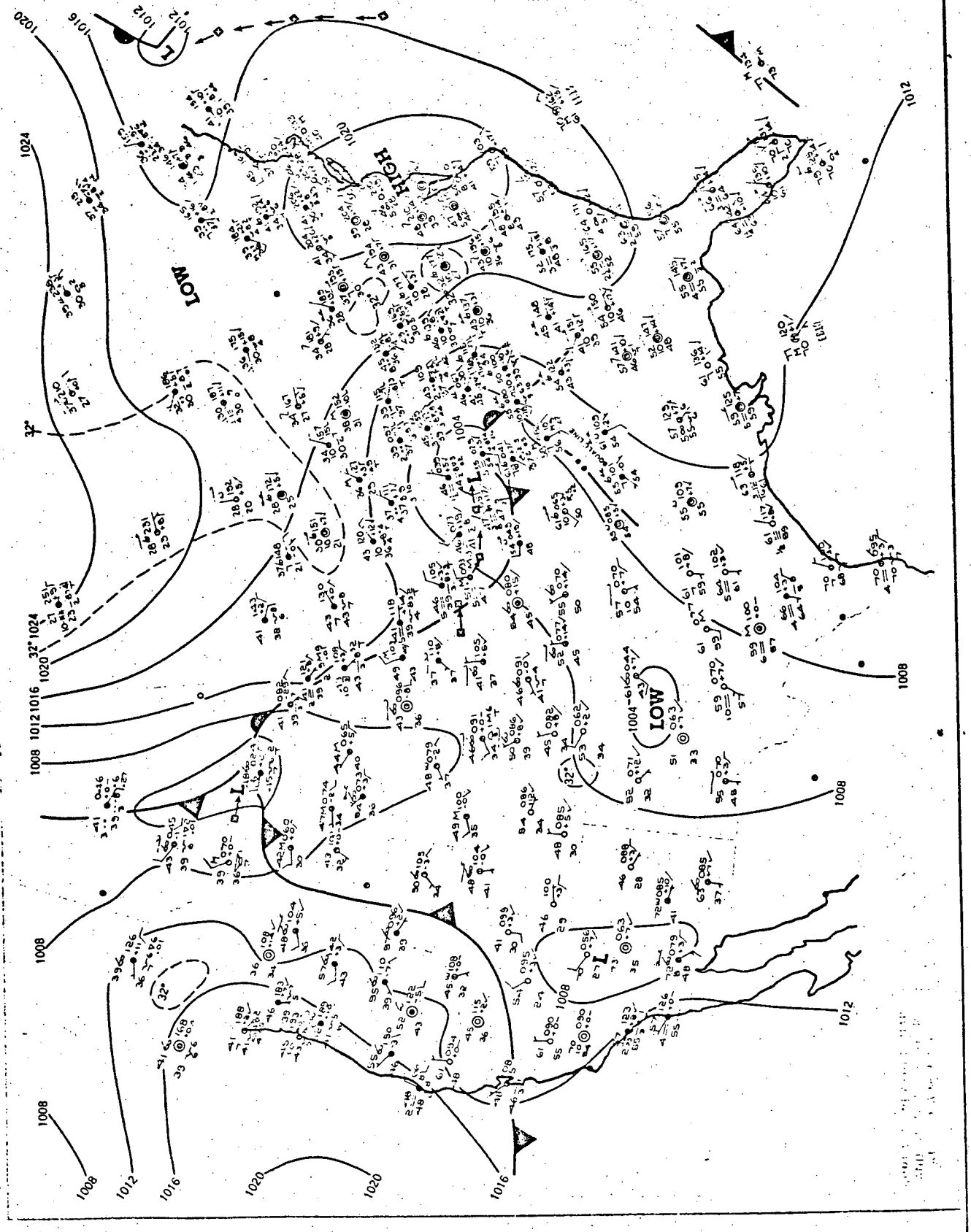

WEDNESDAY, MAY 8, 1974
HIGH
LOW
LOW
1004
1008
1012
1016
1020
1024
32°

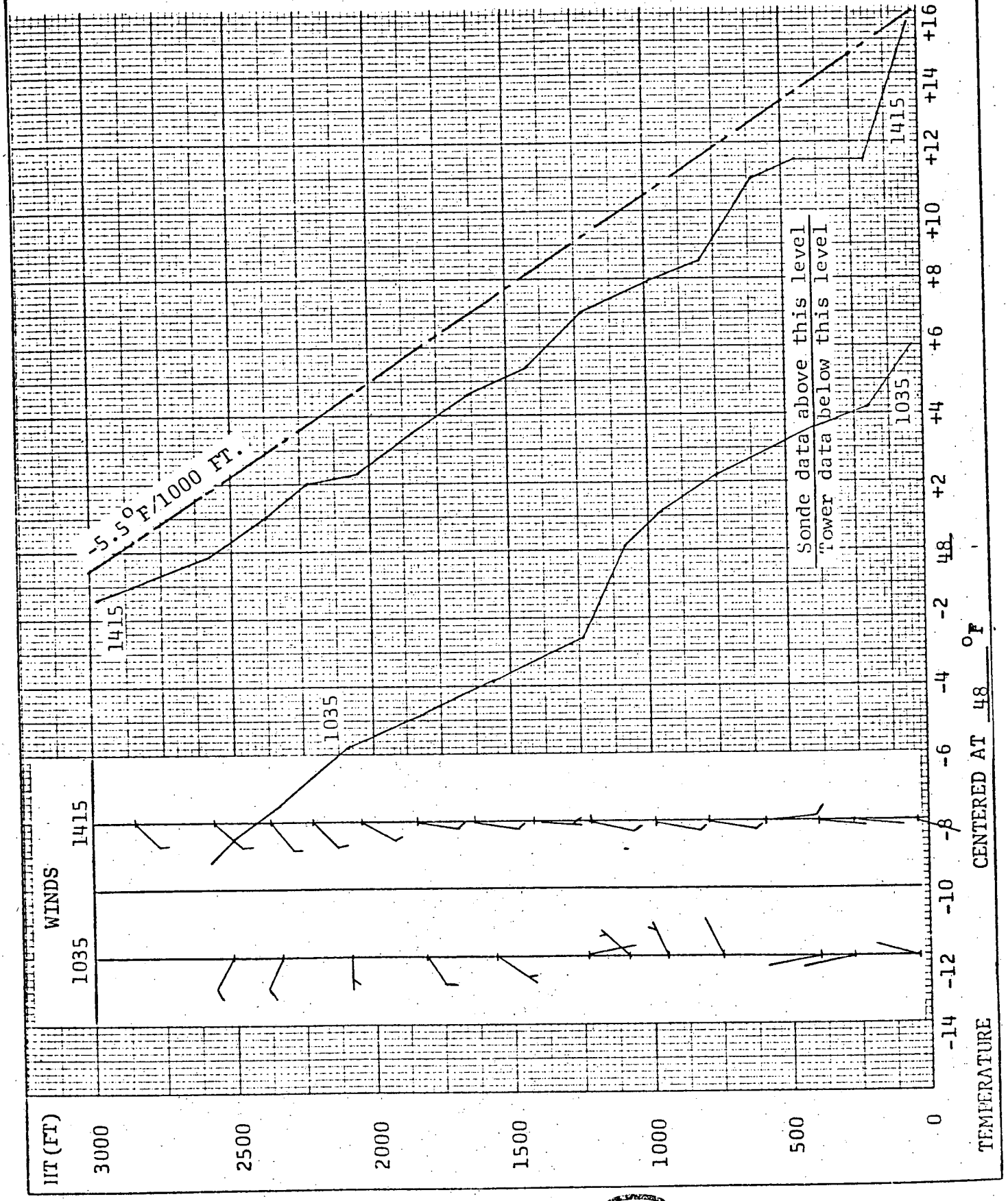
FIGURE 16

FIGURE 17

BALLOON-SONDE SOUNDING

(TEMPERATURE)

SITE: IP4 TOWER
DATE: MAY 8,1974
TIME: 1035;1415 EST

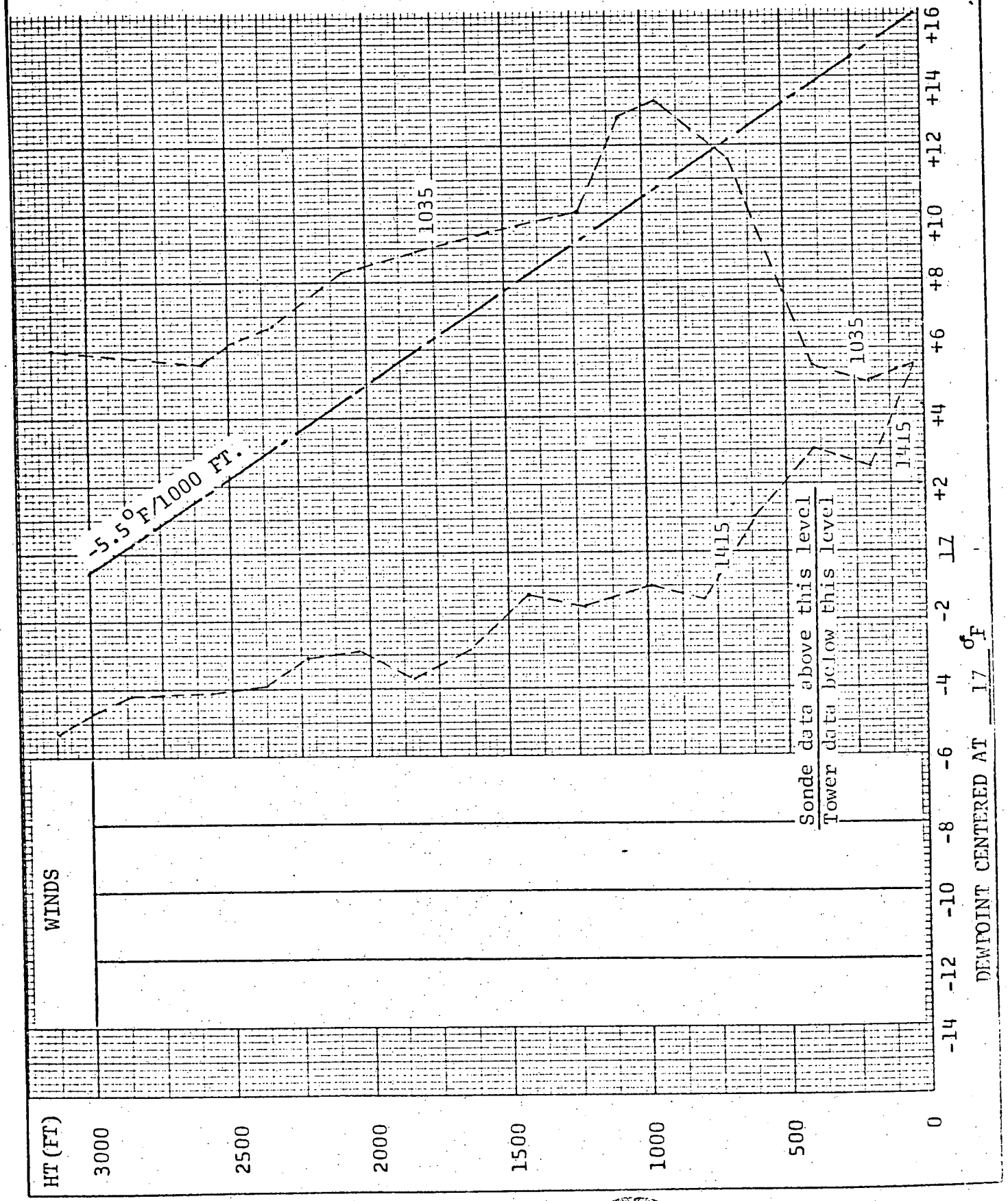


BALLOON-SONDE SOUNDING

FIGURE 18

SITE: IP4 TOWER
DATE: MAY 8, 1974
TIME: 1035;1415 EST

(DEWPOINT)



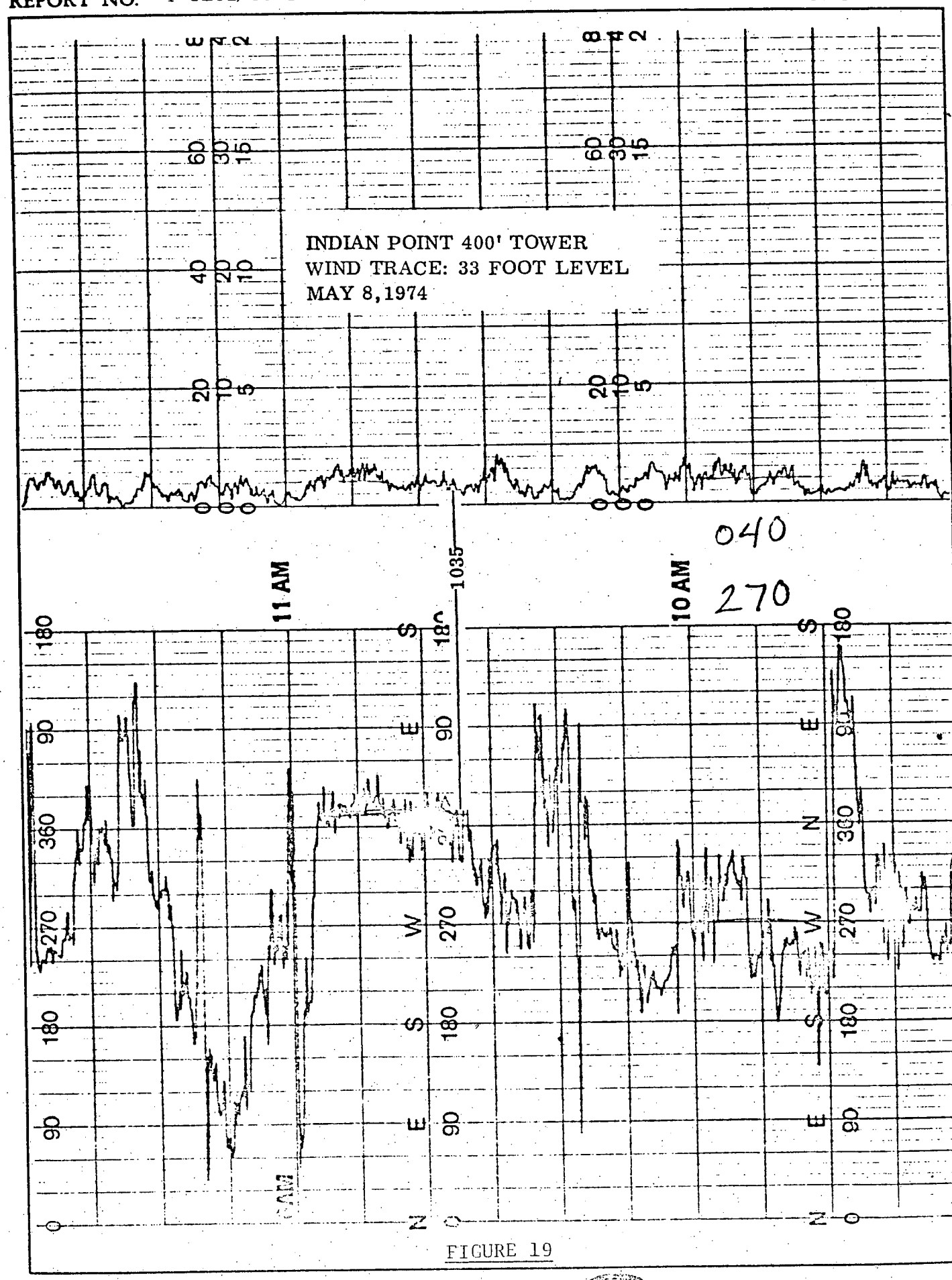

INDIAN POINT 400' TOWER
WIND TRACE: 33 FOOT LEVEL
MAY 8, 1974
040
270
11 AM
10 AM
1035
E
S
W
N
180
90
360
270
60
30
15
40
20
10
5

FIGURE 19

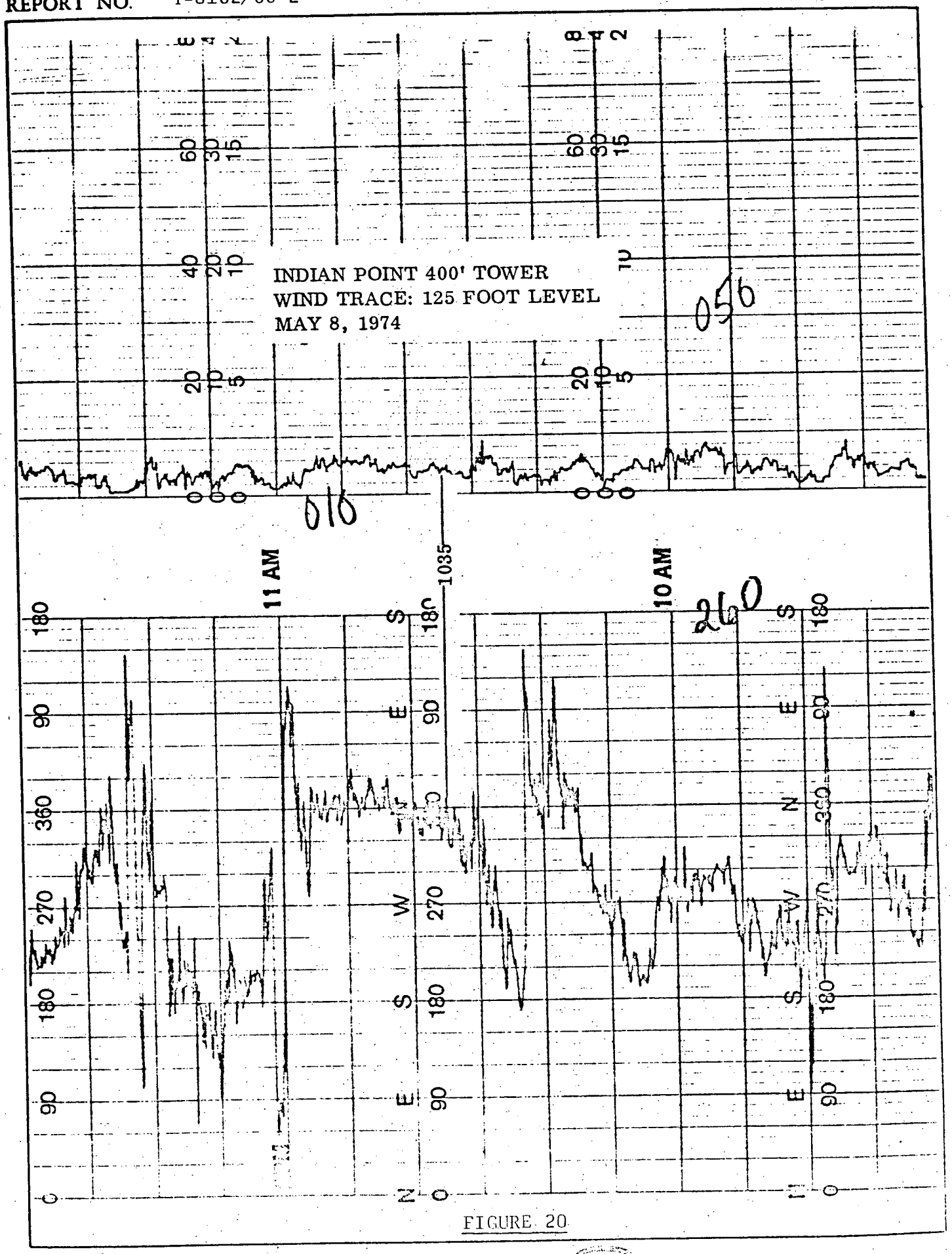

INDIAN POINT 400' TOWER
WIND TRACE: 125 FOOT LEVEL
MAY 8, 1974
056
010
260
11 AM
10 AM
1035
N
E
S
W

FIGURE 20

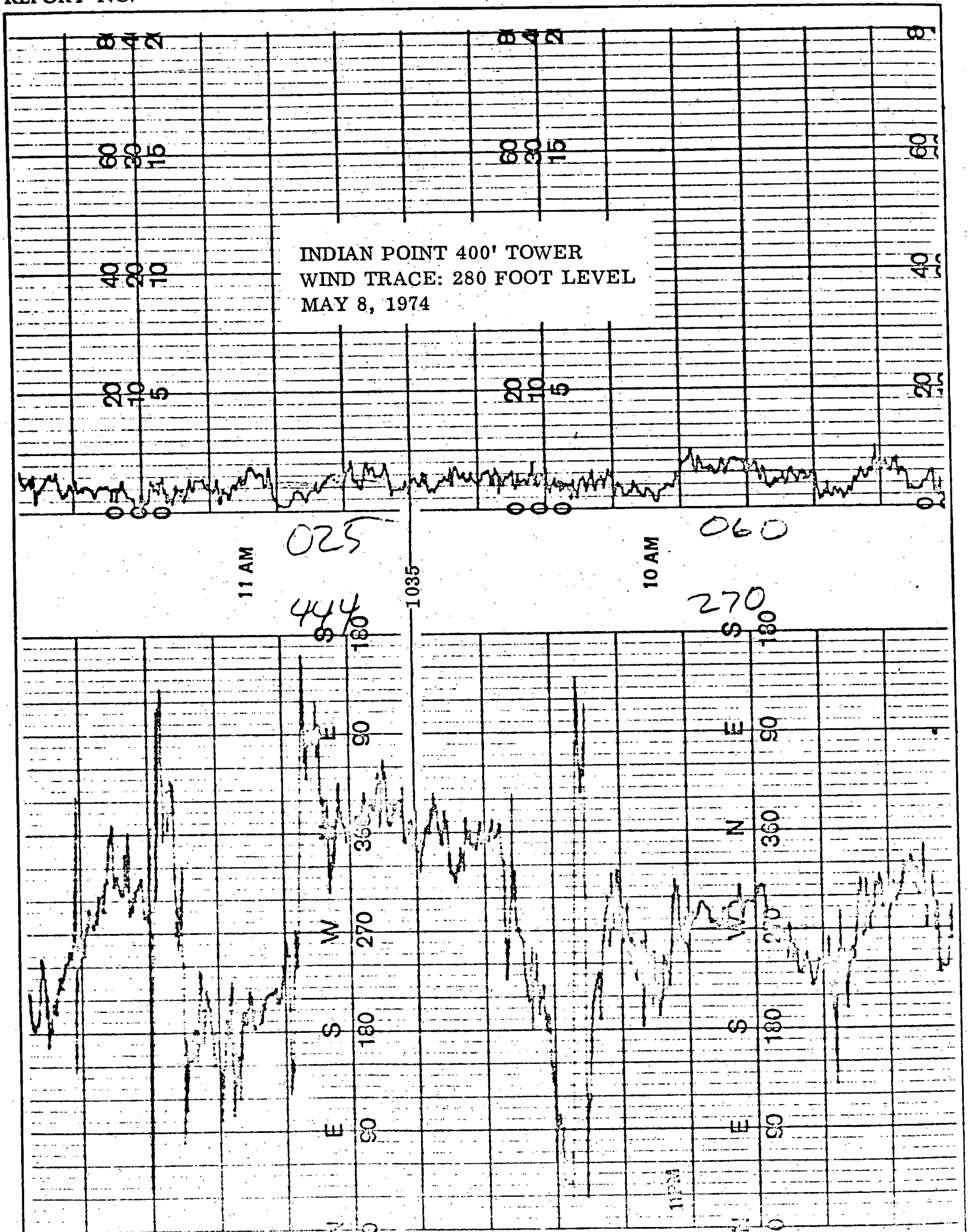

INDIAN POINT 400' TOWER
WIND TRACE: 280 FOOT LEVEL
MAY 8, 1974
11 AM
1035
10 AM
025
060
444
270

FIGURE 21

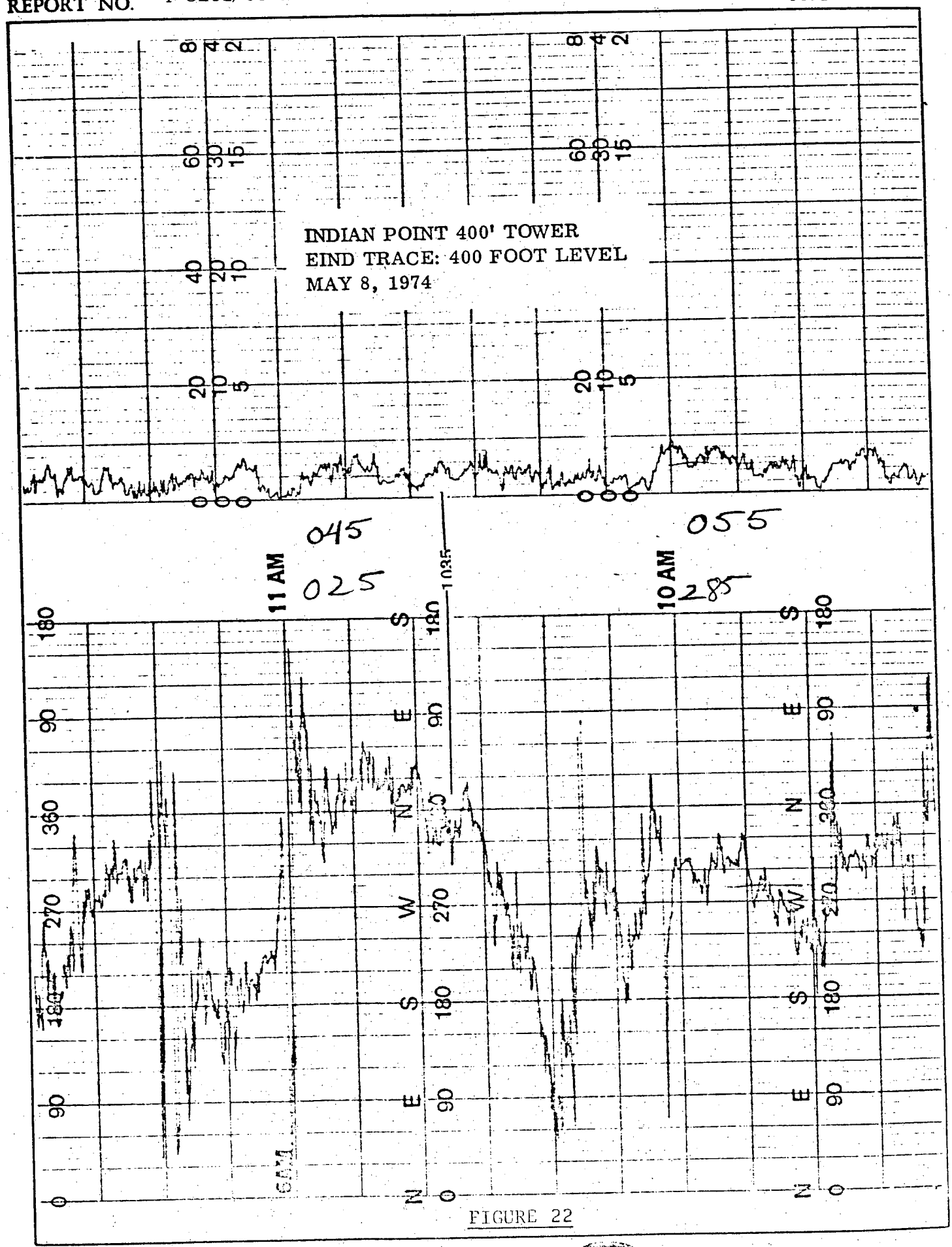
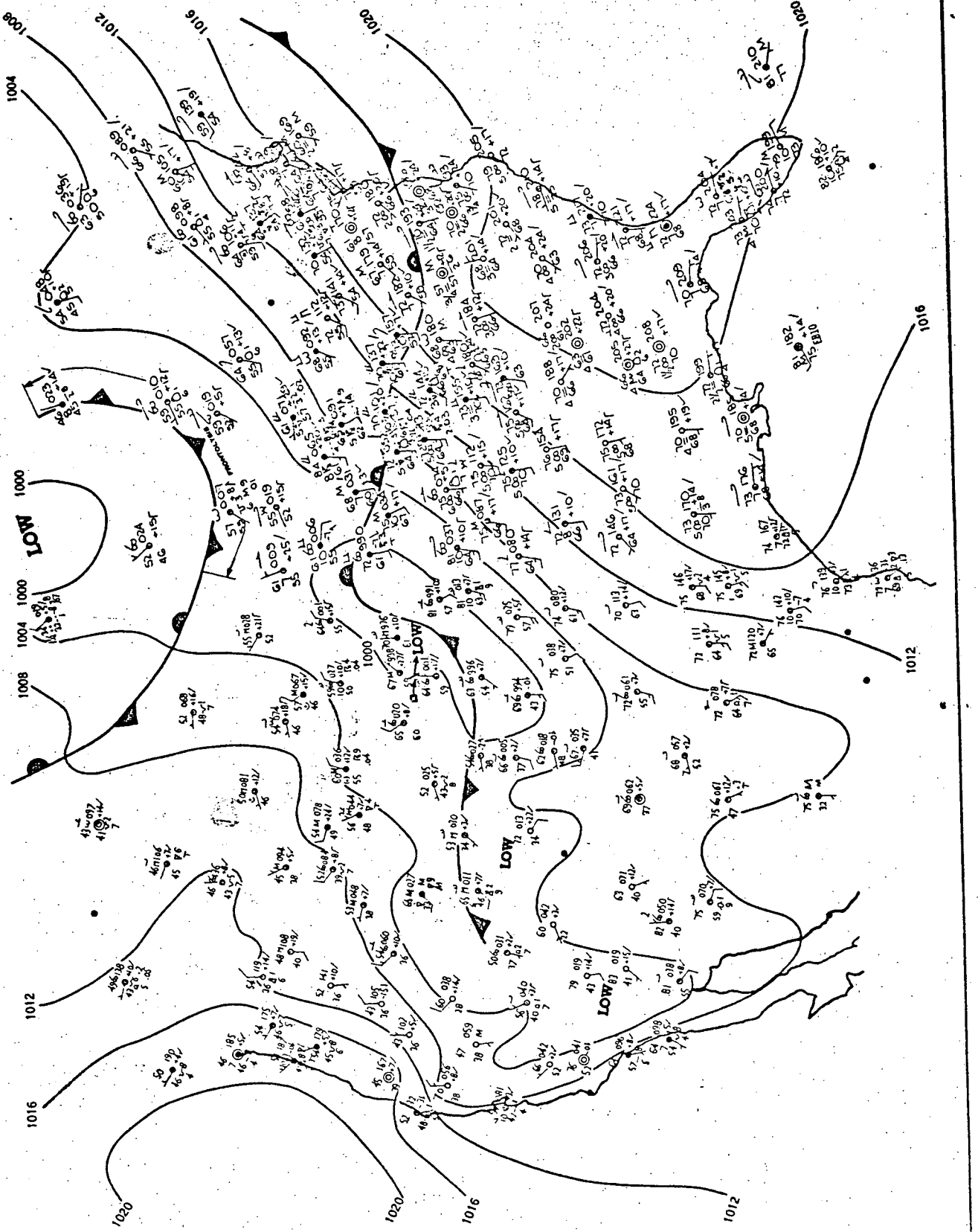

INDIAN POINT 400' TOWER
EIND TRACE: 400 FOOT LEVEL
MAY 8, 1974
045
055
11 AM
025
10 AM
285
1035
N
E
S
W
0
90
180
270
360

FIGURE 22

FIGURE 23

TUESDAY, JULY 2, 1974

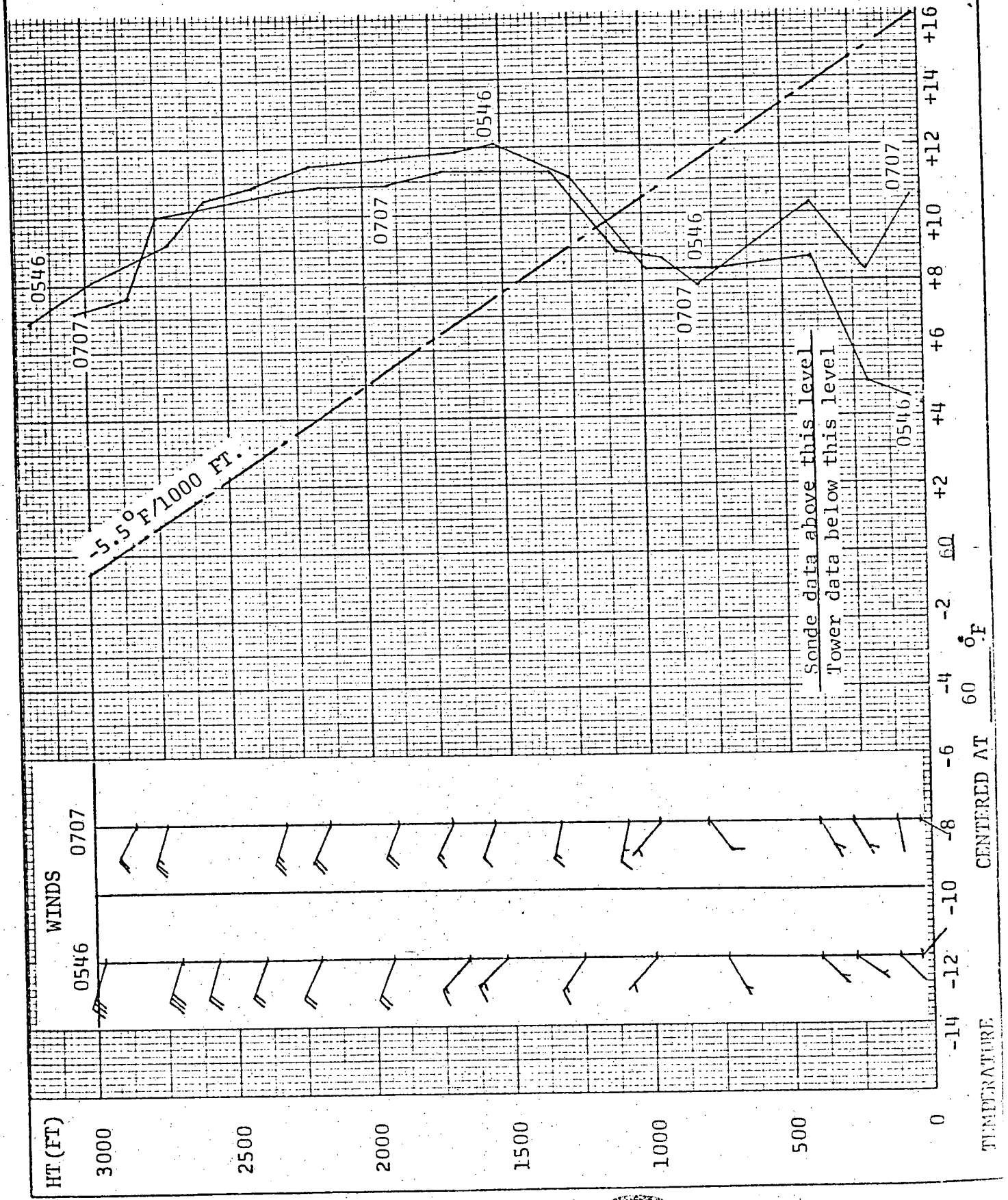


BALLOON-SONDE SOUNDING

(TEMPERATURE)

FIGURE 24

SITE: IP4 TOWER
DATE: JULY 2,1974
TIME: 0546;0707 EST



BALLOON-SONDE SOUNDING

FIGURE 25

(DEWPOINT)

SITE: IP4 TOWER
DATE: JULY 2,1974
TIME: 0546;0707 EST

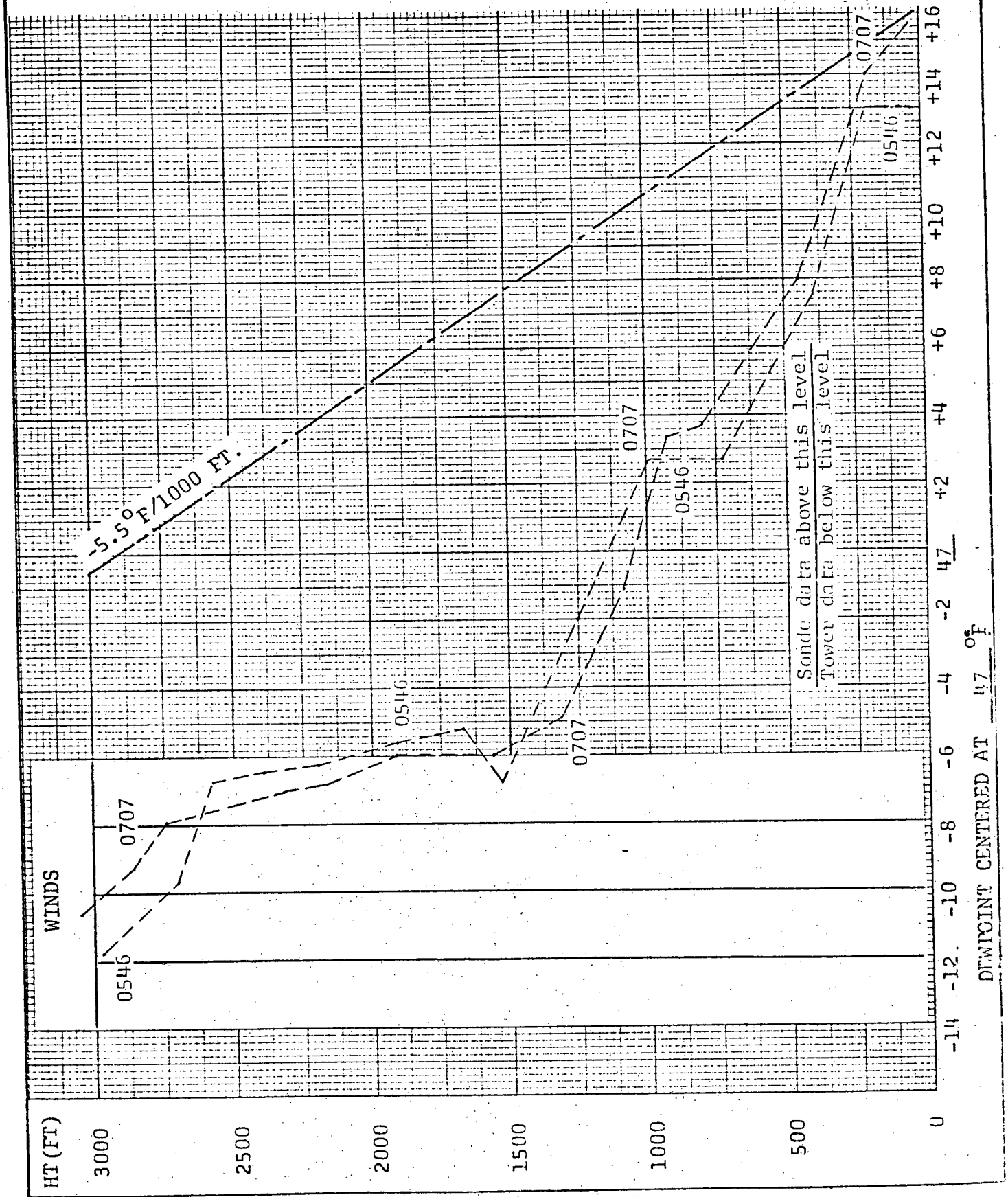


FIGURE 26

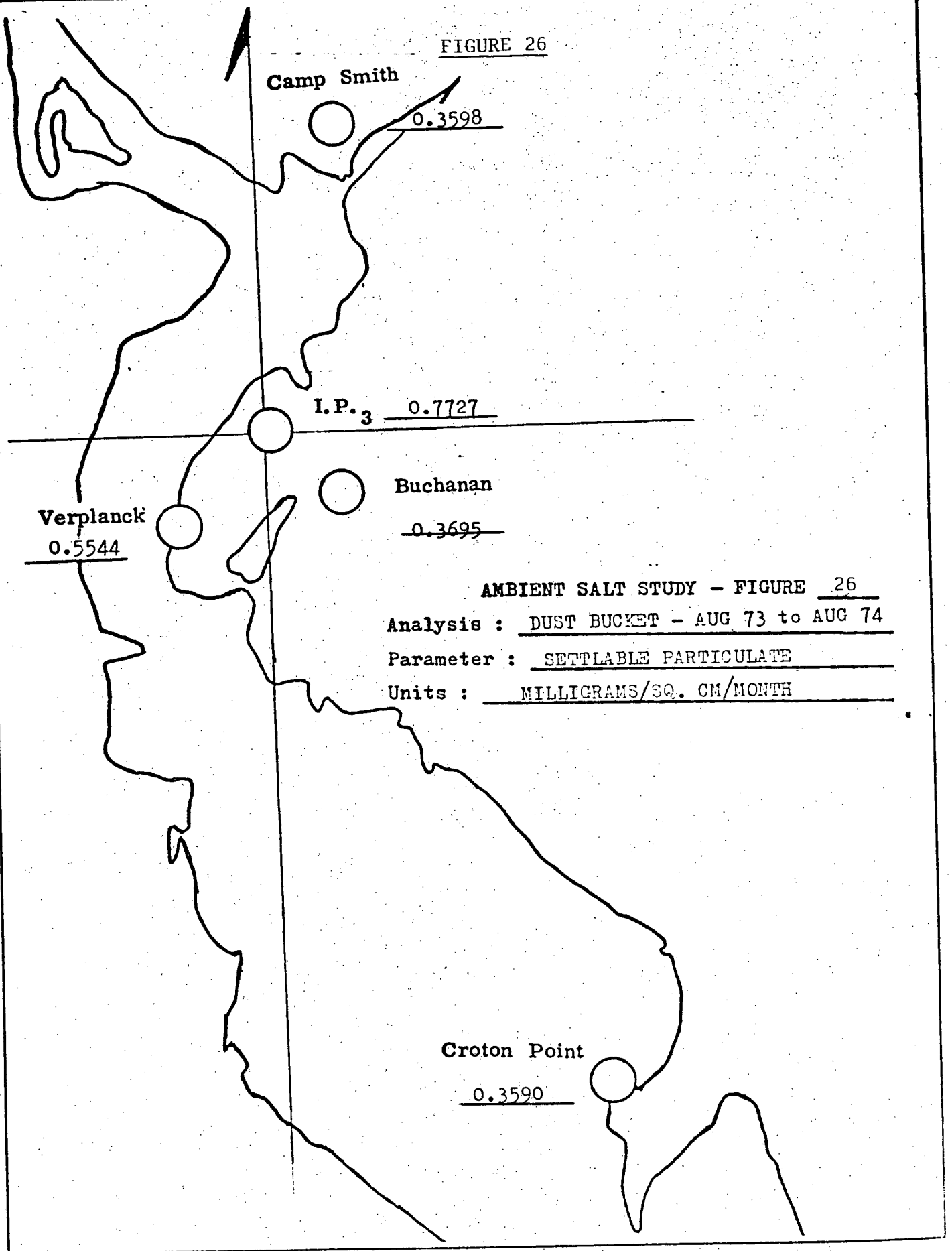

Camp Smith
0.3598
I.P.3 0.7727
Buchanan
0.3695
Verplanck
0.5544
Croton Point
0.3590
AMBIENT SALT STUDY - FIGURE 26
Analysis : DUST BUCKET - AUG 73 to AUG 74
Parameter : SETTLABLE PARTICULATE
Units : MILLIGRAMS/SQ. CM/MONTH

FIGURE 27

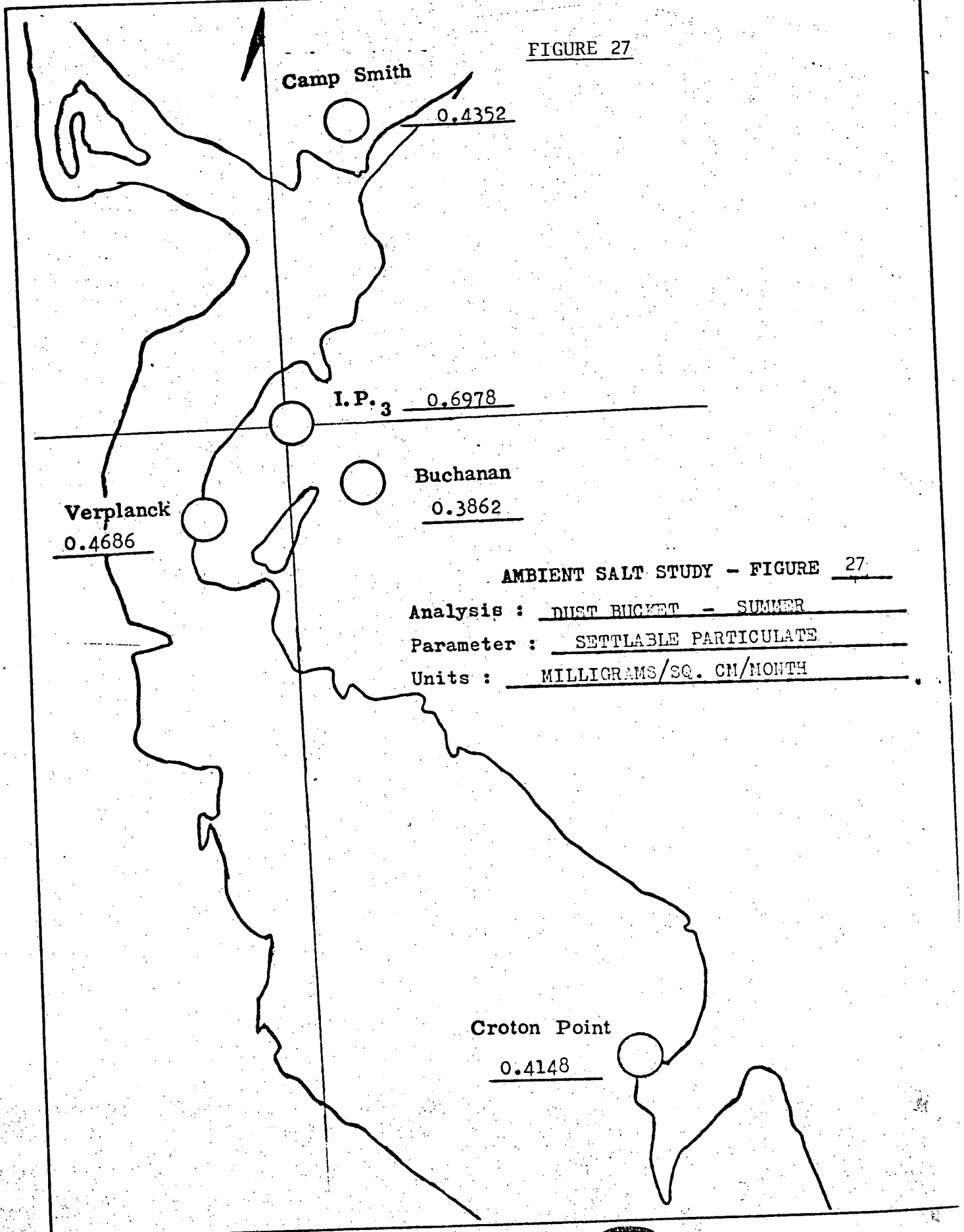

Camp Smith
0.4352
I.P.3 0.6978
Buchanan
0.3862
Verplanck
0.4686
Croton Point
0.4148
AMBIENT SALT STUDY - FIGURE 27
Analysis : DUST BUCKET - SUMMER
Parameter : SETTLABLE PARTICULATE
Units : MILLIGRAMS/SQ. CM/MONTH

FIGURE 28

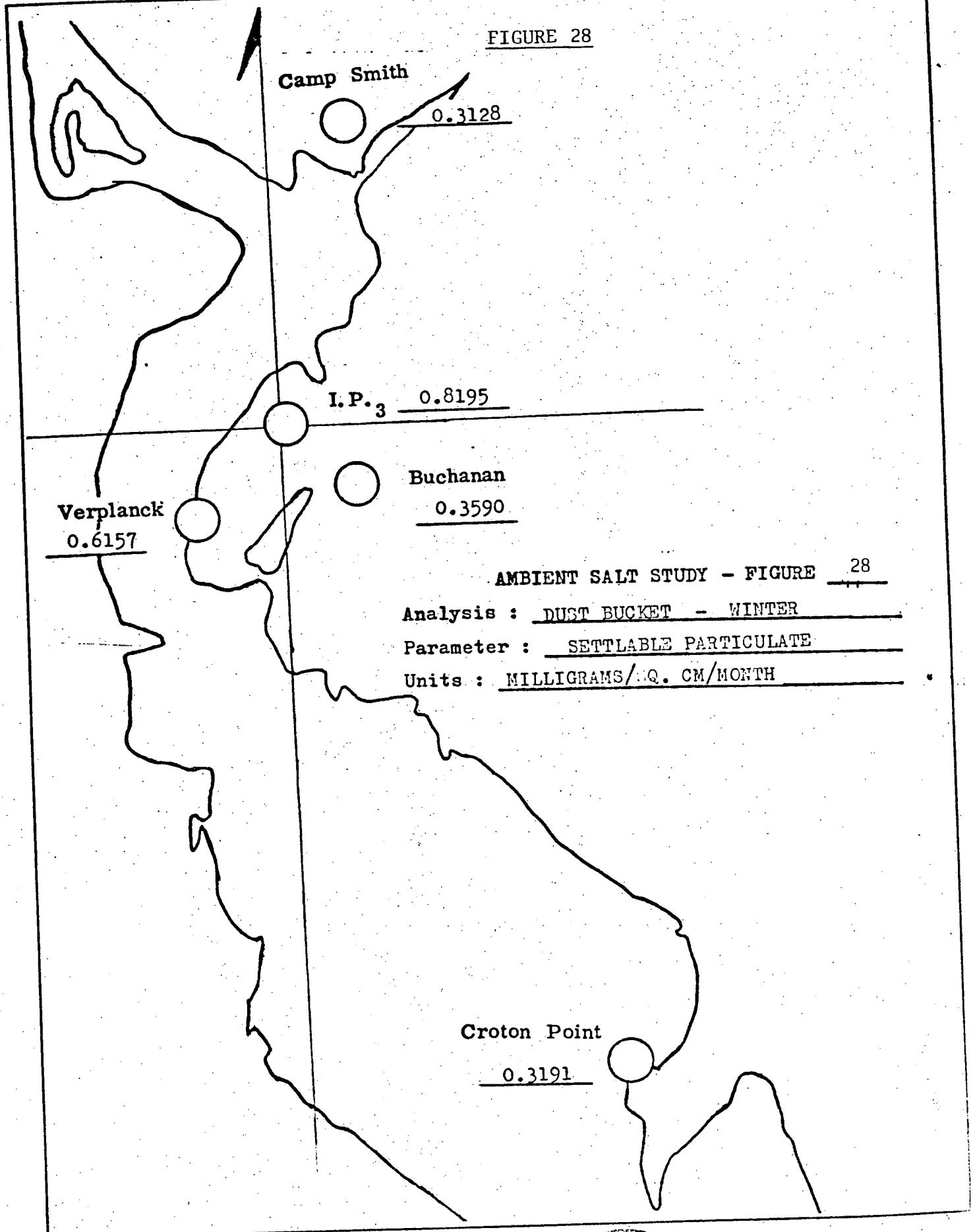

Camp Smith
0.3128
I.P.3 0.8195
Buchanan
0.3590
Verplanck
0.6157
Croton Point
0.3191
AMBIENT SALT STUDY - FIGURE 28
Analysis : DUST BUCKET - WINTER
Parameter : SETTLABLE PARTICULATE
Units : MILLIGRAMS/SQ. CM/MONTH

FIGURE 29

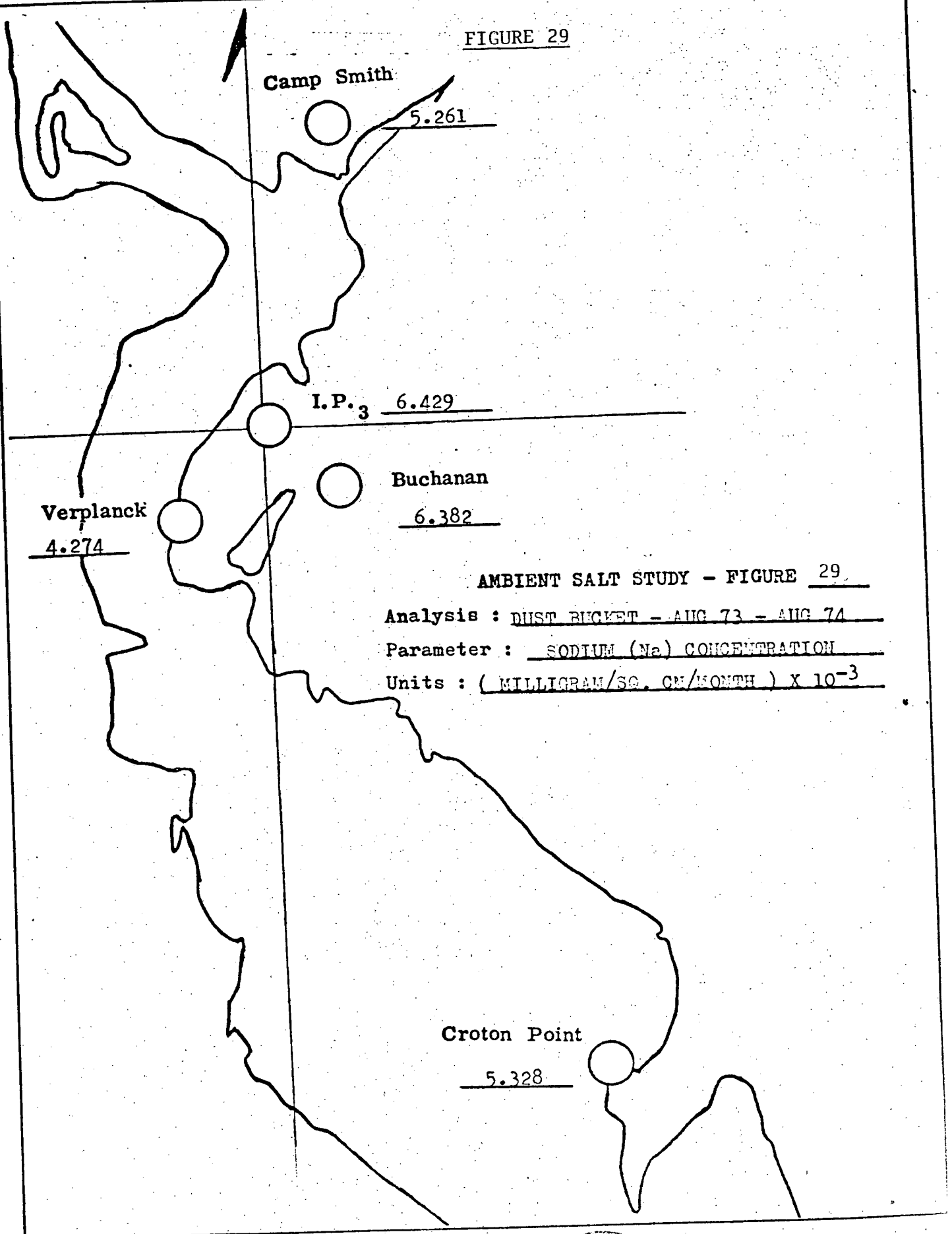
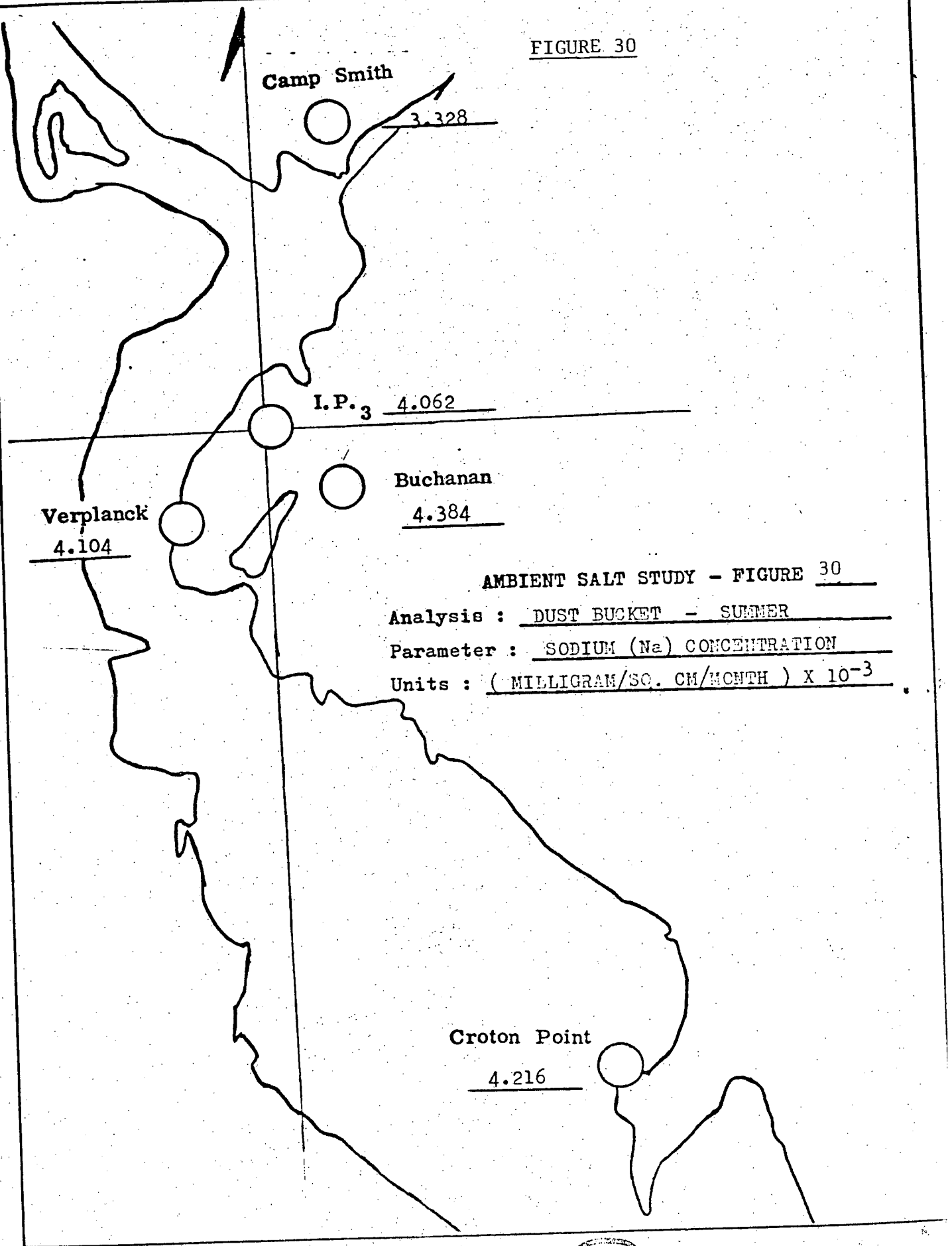
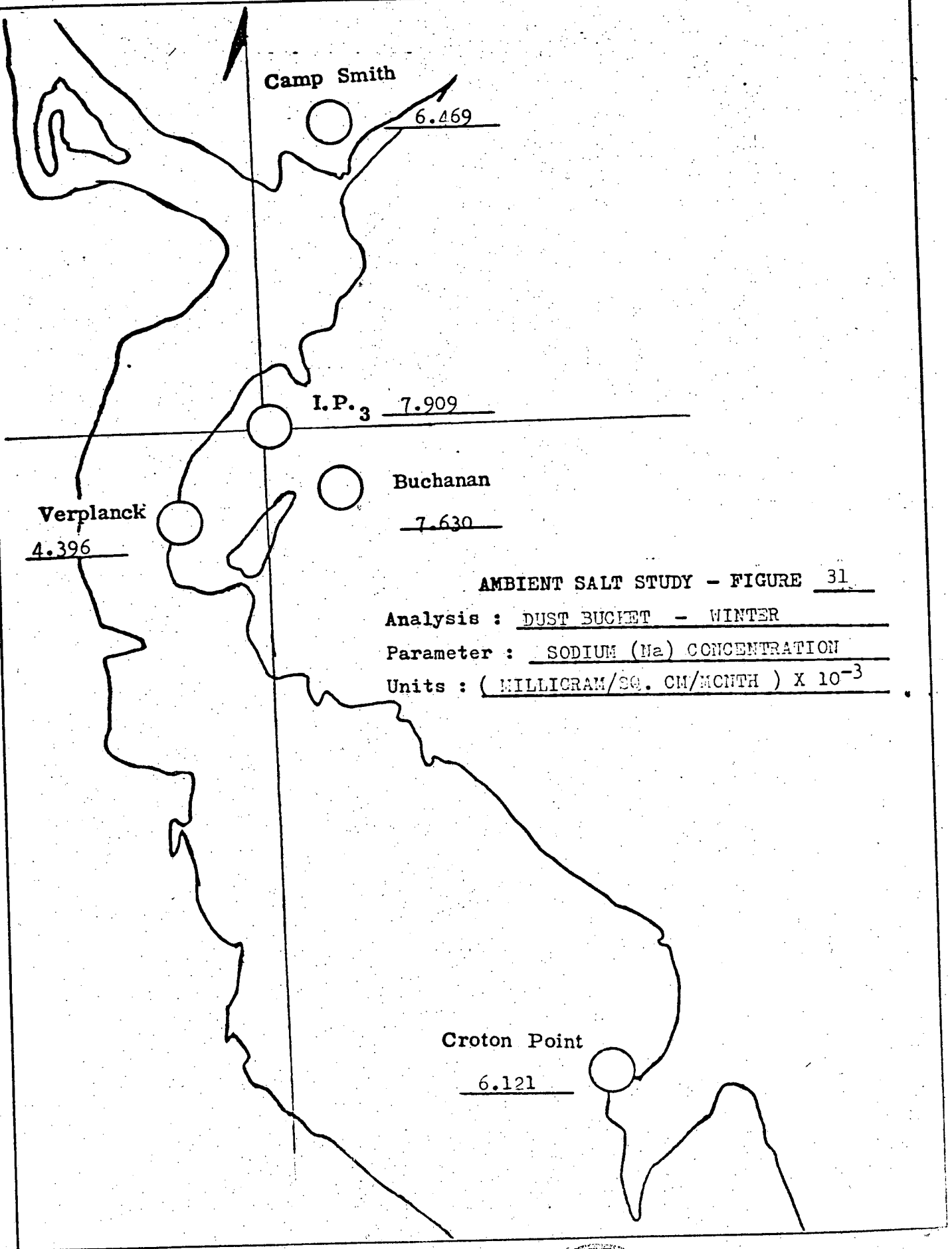

Camp Smith
5.261
I.P.3 6.429
Buchanan
6.382
Verplanck
4.274
Croton Point
5.328
AMBIENT SALT STUDY - FIGURE 29
Analysis : DUST BUCKET - AUG 73 - AUG 74
Parameter : SODIUM (Na) CONCENTRATION
Units : (MILLIGRAM/SQ. CM/MONTH) X 10-3

FIGURE 30


Camp Smith
3.328
I.P.3 4.062
Buchanan
4.384
Verplanck
4.104
Croton Point
4.216
AMBIENT SALT STUDY - FIGURE 30
Analysis : DUST BUCKET - SUMMER
Parameter : SODIUM (Na) CONCENTRATION
Units : (MILLIGRAM/SQ. CM/MONTH) X 10-3

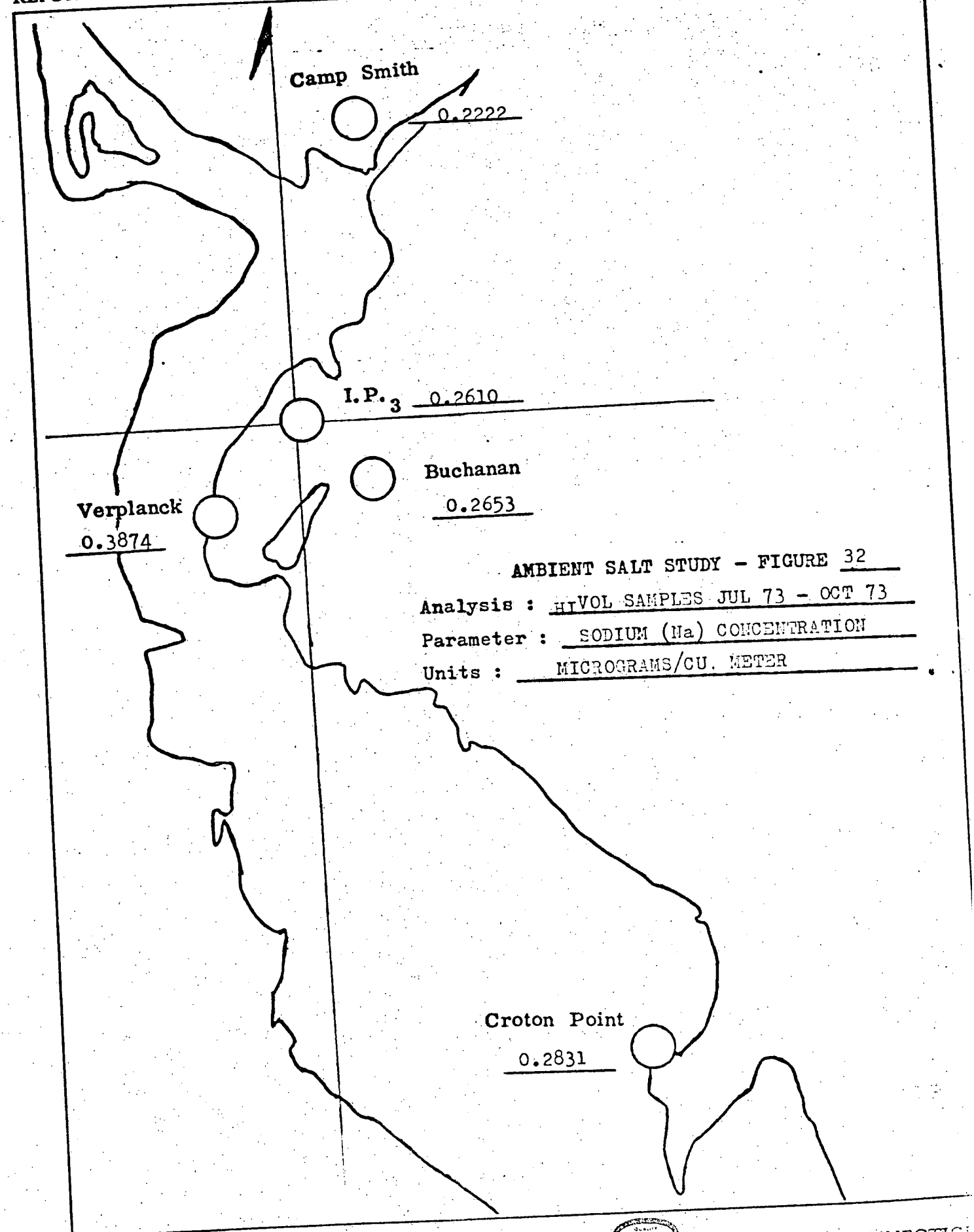


AMBIENT SALT STUDY - FIGURE 31

Analysis : DUST BUCKET - WINTER

Parameter : SODIUM (Na) CONCENTRATION

Units : (MILLIGRAM/SQ. CM/MONTH) X 10^{-3}



AMBIENT SALT STUDY - FIGURE 32

Analysis : HIVOL SAMPLES JUL 73 - OCT 73

Parameter : SODIUM (Na) CONCENTRATION

Units : MICROGRAMS/CU. METER

AMBIENT SALT STUDY FIGURE 33

FREQUENCY DISTRIBUTION : SINGLE DAYS - 7/7/73-10/31/73

SODIUM CONCENTRATION vs WIND DIRECTION

USING 24 HOUR RESULTANT WINDS

(I P 3 & I P 4)

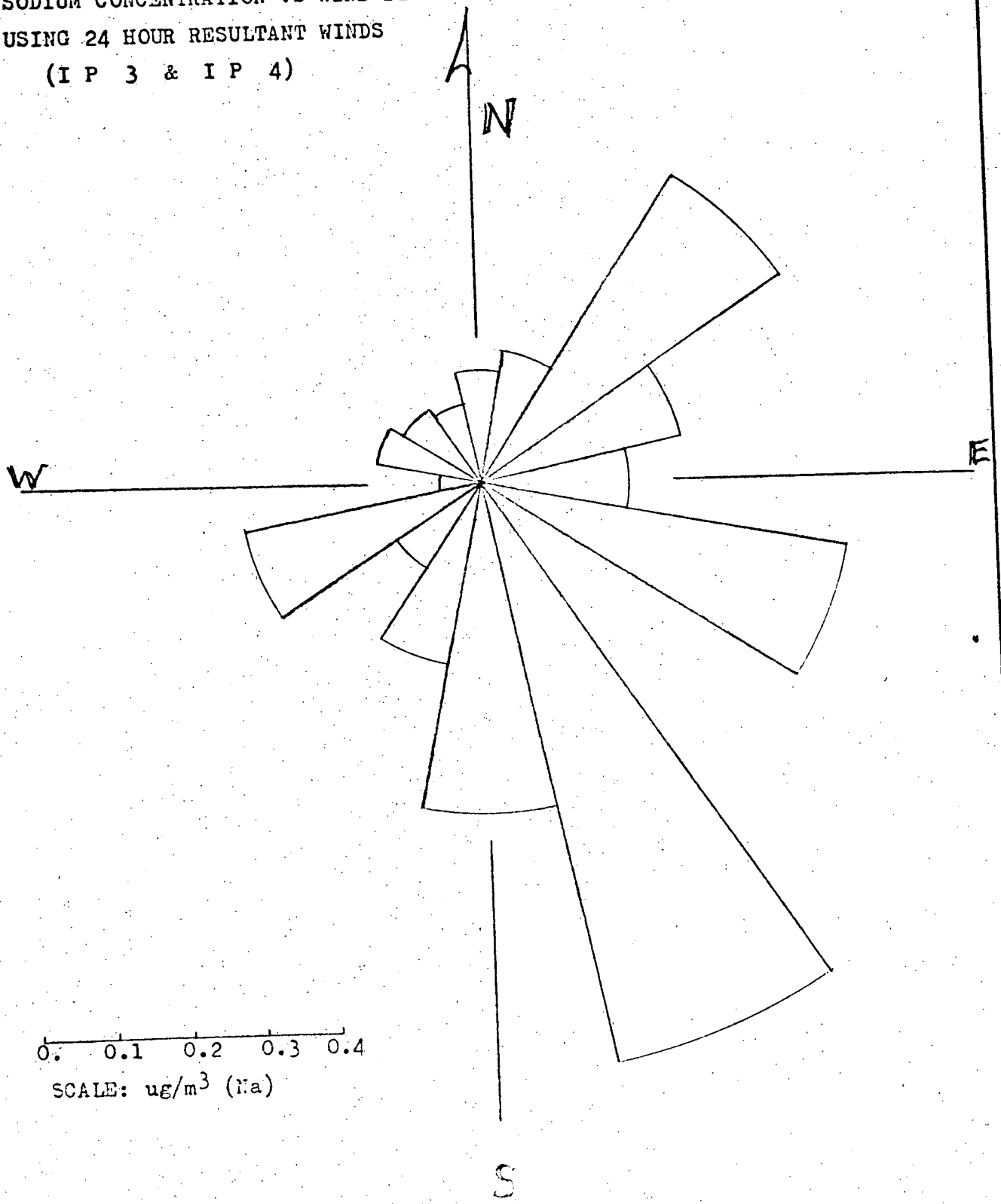
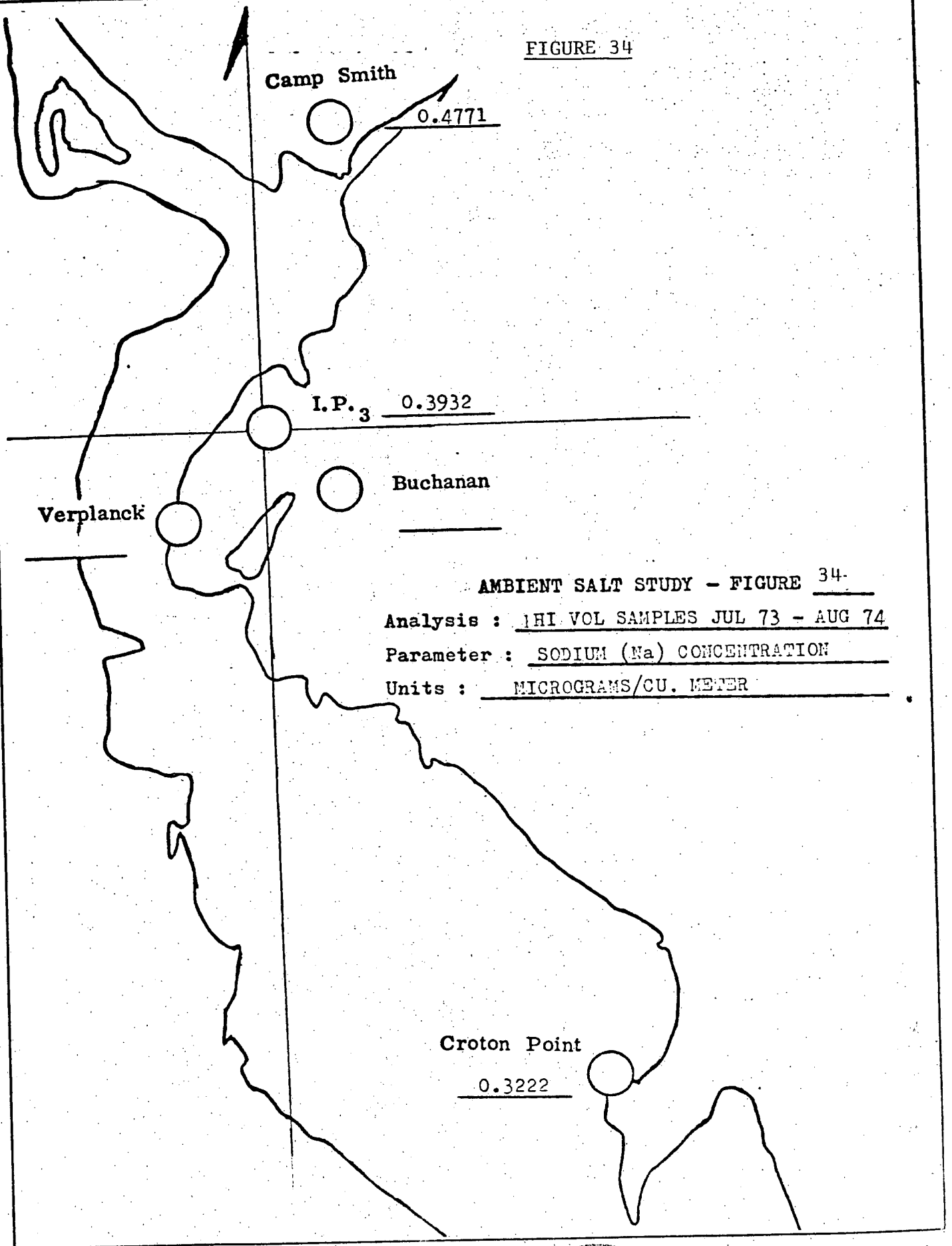
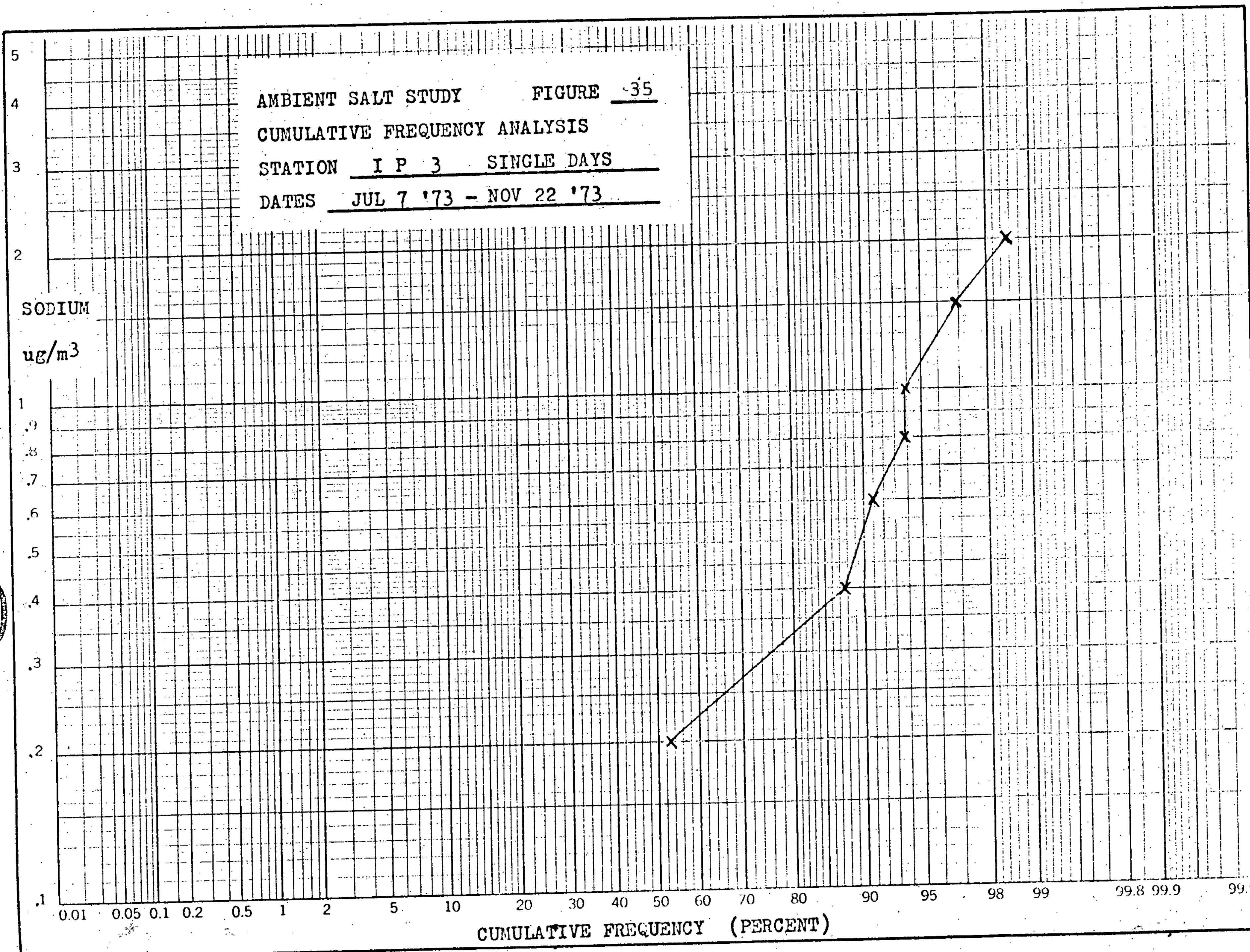


FIGURE 34


Camp Smith
0.4771
I.P.3
0.3932
Buchanan
Verplanck
AMBIENT SALT STUDY - FIGURE 34
Analysis : HI VOL SAMPLES JUL 73 - AUG 74
Parameter : SODIUM (Na) CONCENTRATION
Units : MICROGRAMS/CU. METER
Croton Point
0.3222



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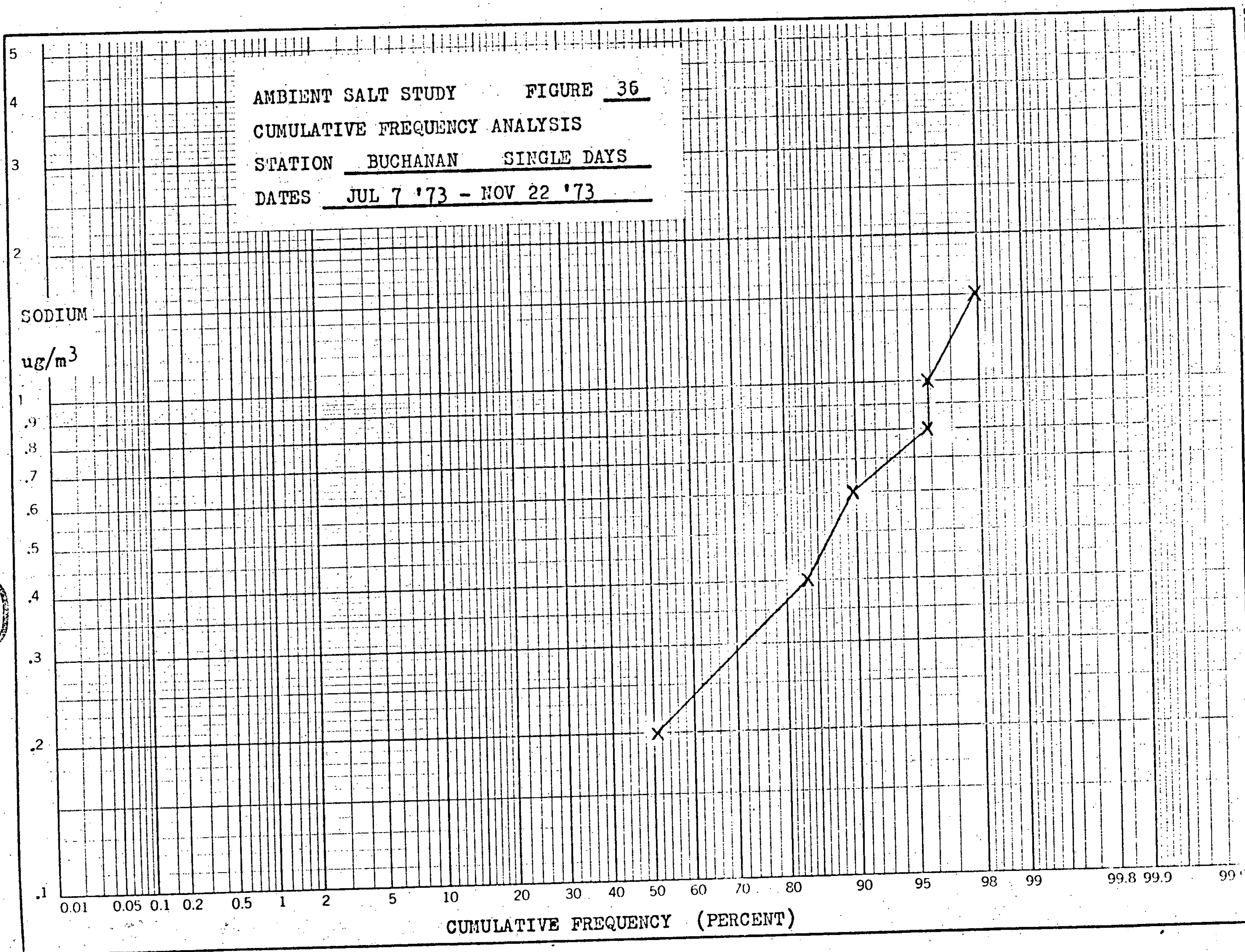

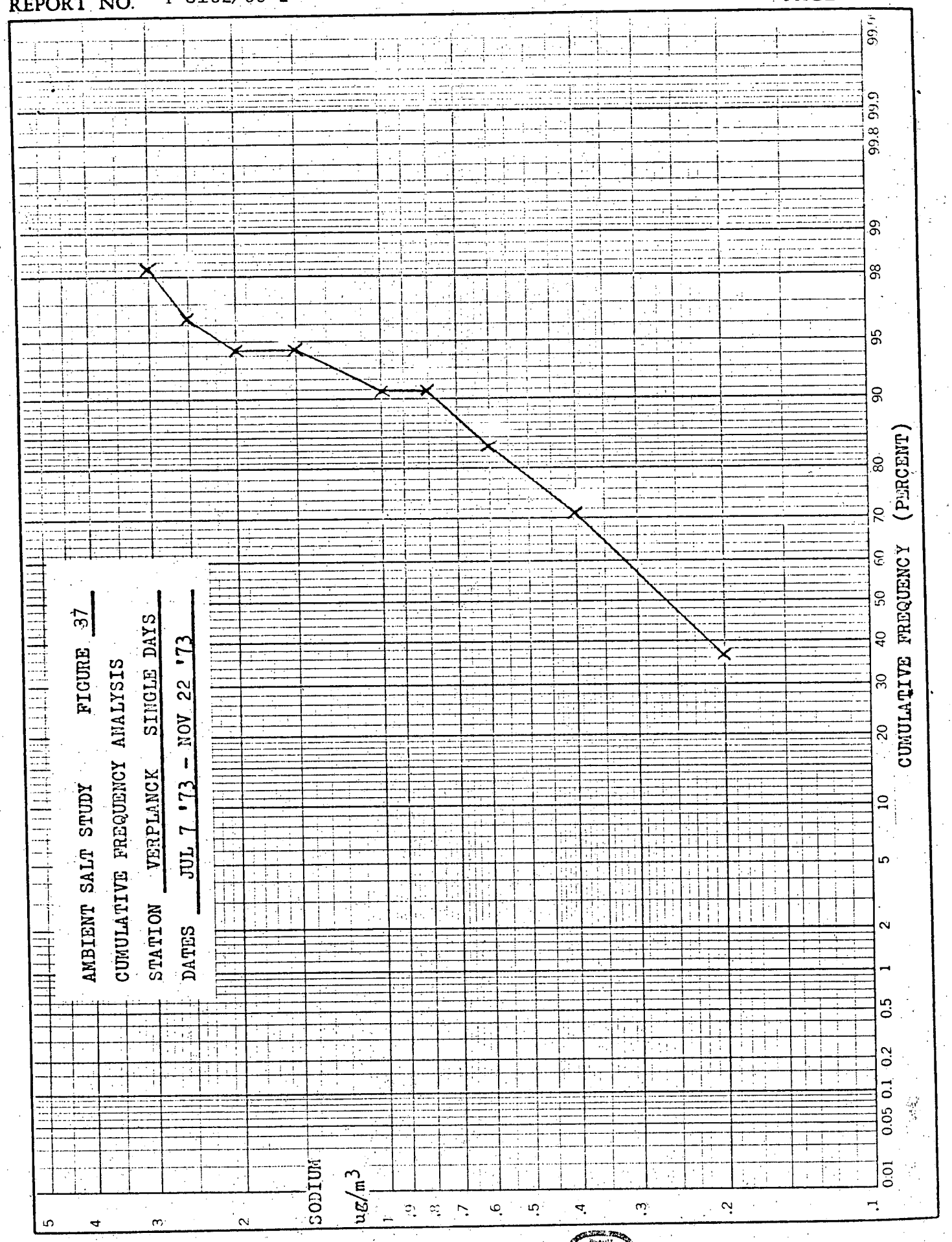
AMBIENT SALT STUDY FIGURE 37
CUMULATIVE FREQUENCY ANALYSIS
STATION VERPLANCK SINGLE DAYS
DATES JUL 7 '73 - NOV 22 '73
SODIUM ug/m3
CUMULATIVE FREQUENCY (PERCENT)
0.01 0.05 0.1 0.2 0.5 1 2 5 10 20 30 40 50 60 70 80 90 95 98 99 99.8 99.9 99.99

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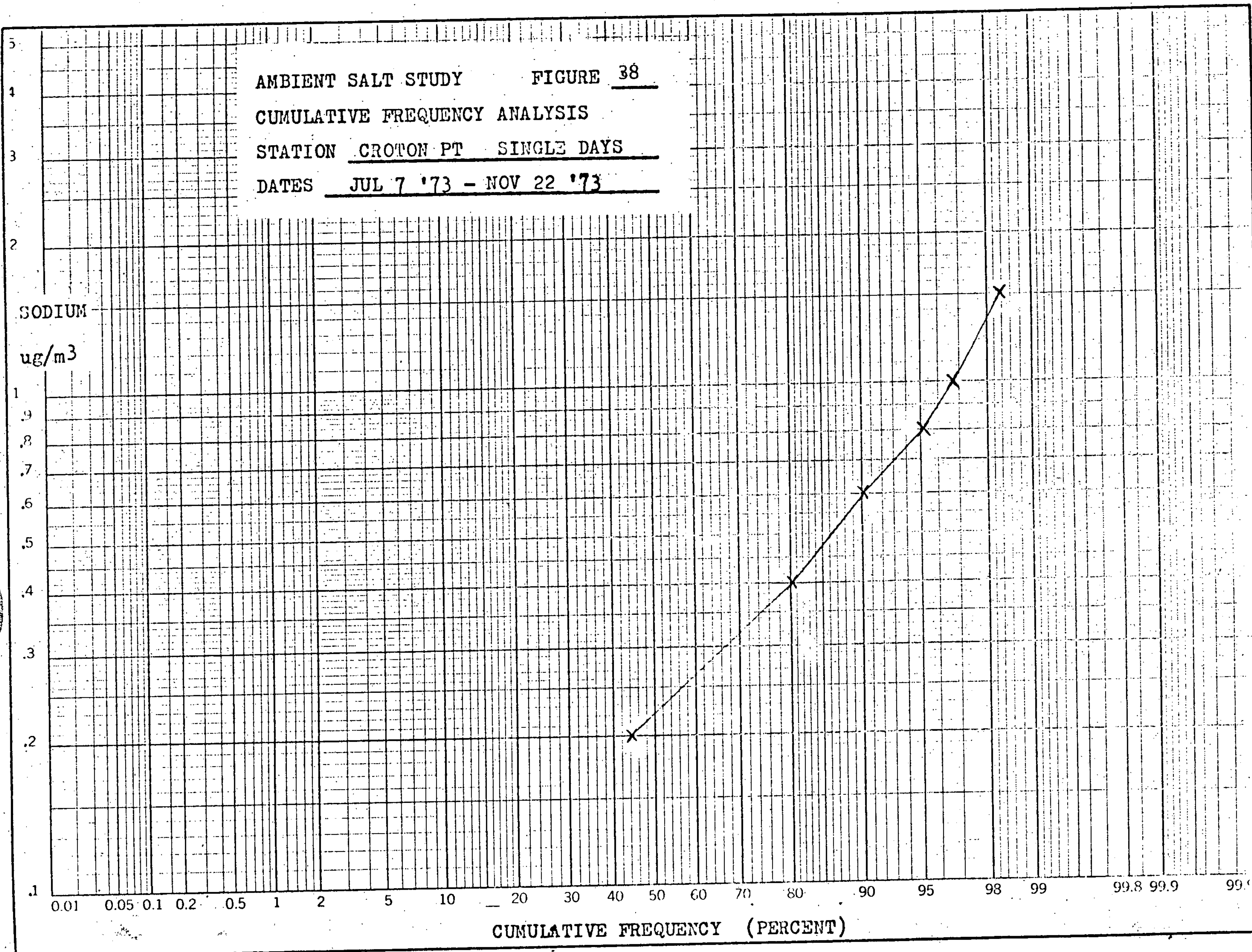
STAMFORD, CONNECTICUT

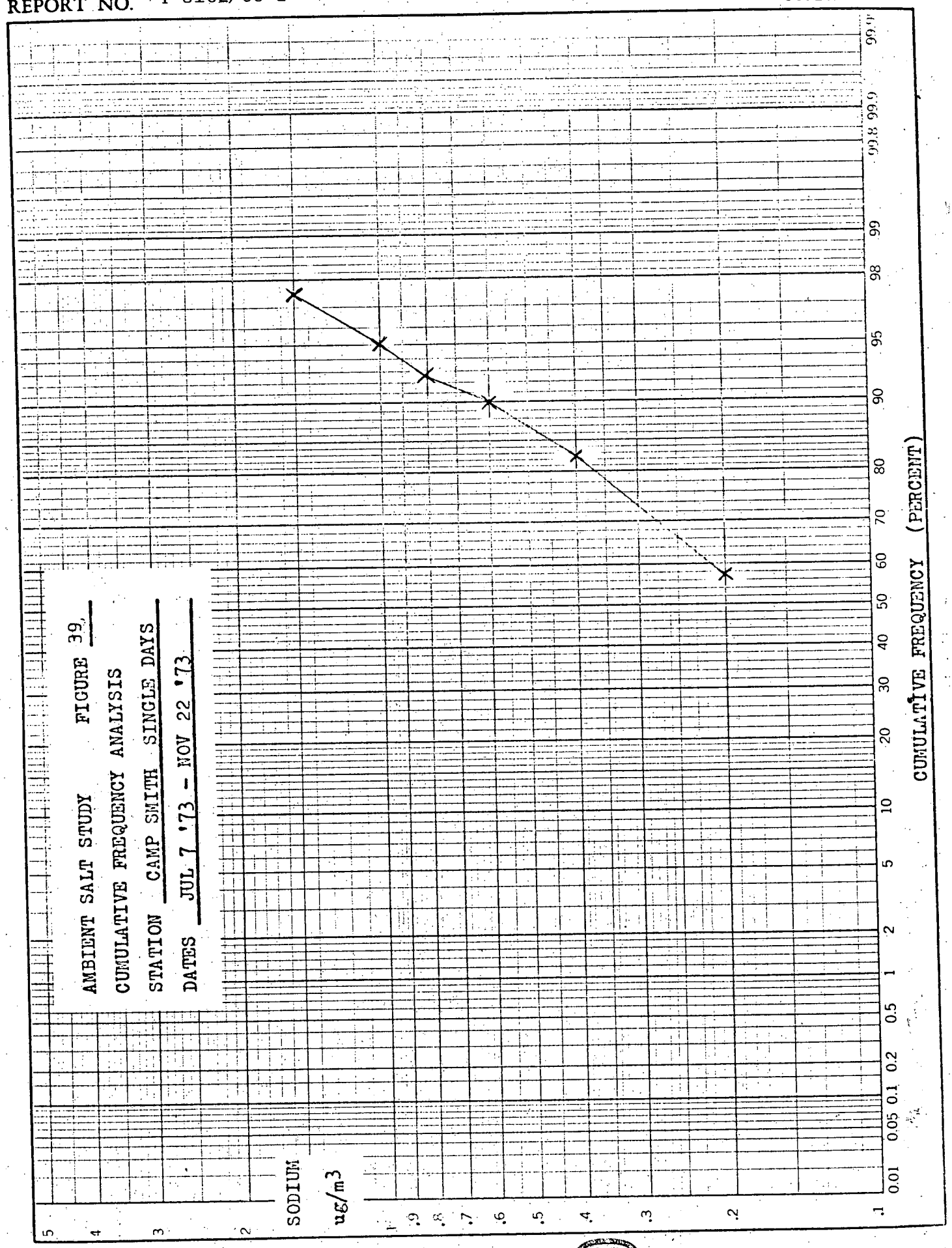
AMBIENT SALT STUDY FIGURE 38

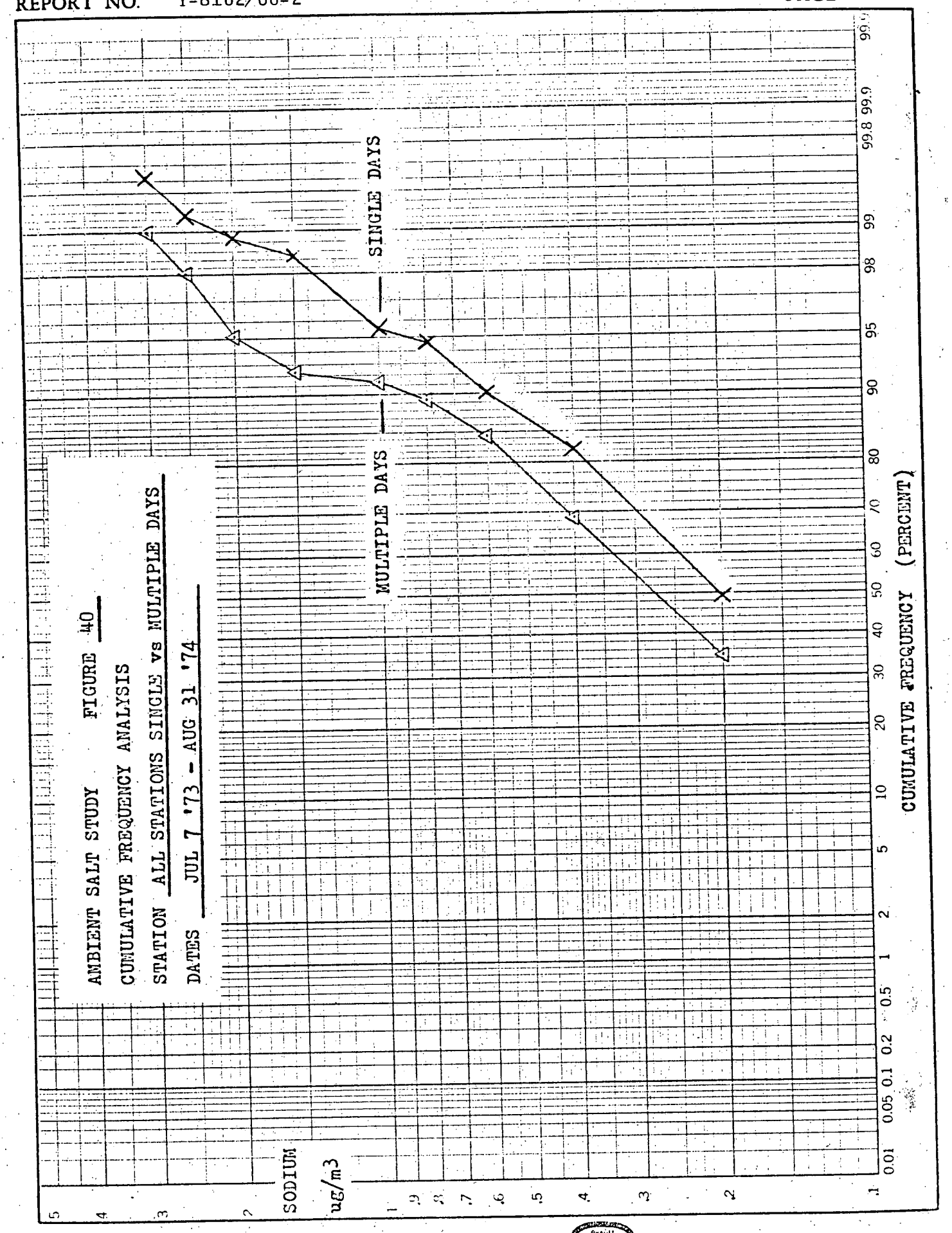
CUMULATIVE FREQUENCY ANALYSIS

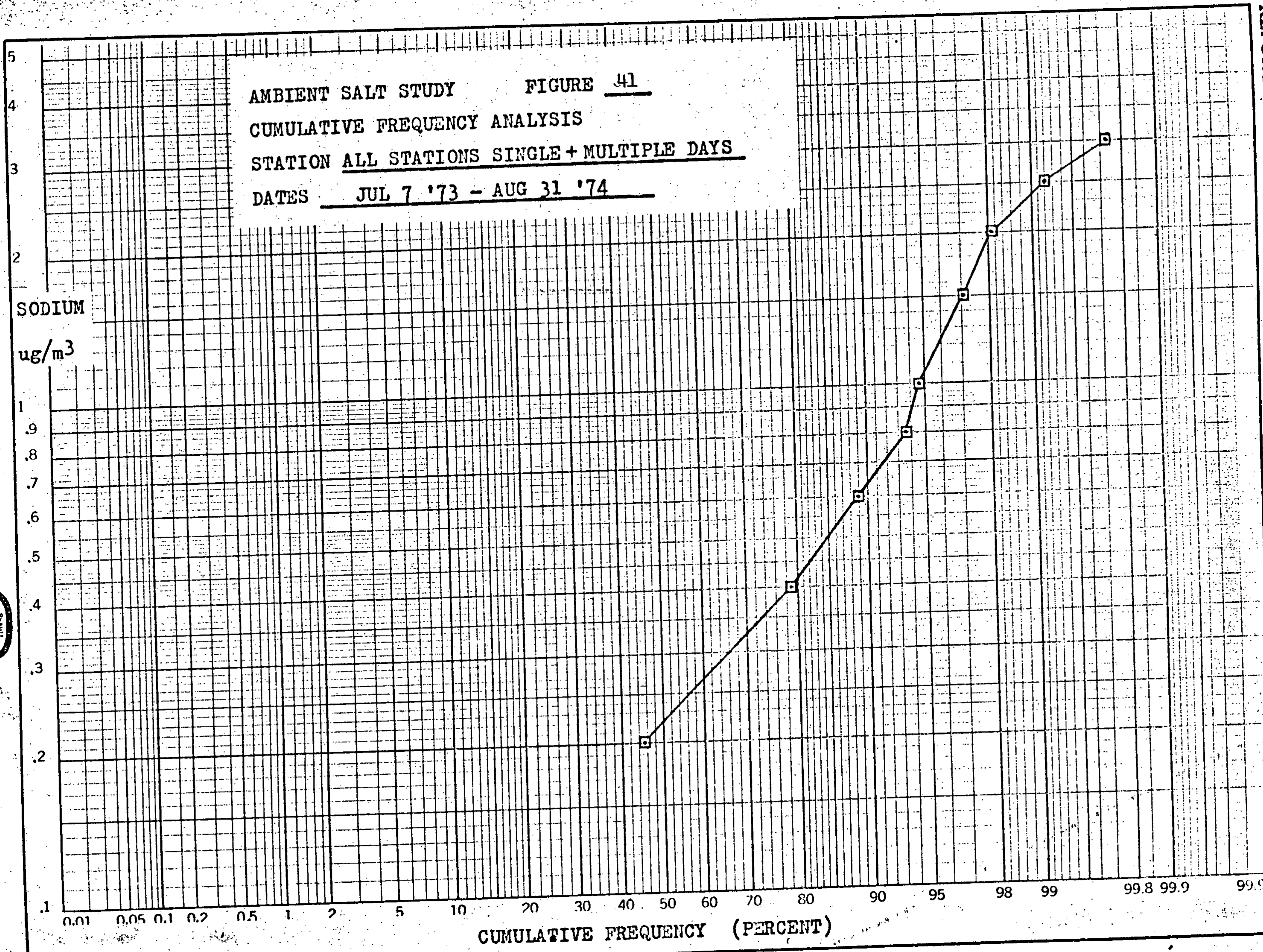
STATION CROTON PT SINGLE DAYS

DATES JUL 7 '73 - NOV 22 '73




AMBIENT SALT STUDY FIGURE 39.
CUMULATIVE FREQUENCY ANALYSIS
STATION CAMP SMITH SINGLE DAYS
DATES JUL 7 '73 - NOV 22 '73
SODIUM ug/m3
CUMULATIVE FREQUENCY (PERCENT)
99.9
99.8
99
98
95
90
80
70
60
50
40
30
20
10
5
2
1
0.5
0.2
0.1
0.05
0.01
.9
.8
.7
.6
.5
.4
.3
.2
.1
5
4
3
2
1


AMBIENT SALT STUDY FIGURE 40
CUMULATIVE FREQUENCY ANALYSIS
STATION ALL STATIONS SINGLE vs MULTIPLE DAYS
DATES JUL 7 '73 - AUG 31 '74
SINGLE DAYS
MULTIPLE DAYS
SODIUM ug/m3
CUMULATIVE FREQUENCY (PERCENT)
99.9
99.8
99
98
95
90
80
70
60
50
40
30
20
10
5
2
1
0.5
0.2
0.1
0.05
0.01



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DIURNAL WIND ANALYSIS

Y-8162

FOR: CON EDISON
I P 4 280 FT

AUG 01, 1974 - AUG 31, 1974

HOUR	RESULTANT WINDS DIR	RESULTANT WINDS SPD MPH	UCOM	VCOM	MEAN WIND DIR	MEAN WIND SPD MPH	PERSIST	VALID HOURS
1	3.	.7	1.09	22.23	28.	5.0	.1484	30
2	115.	.5	13.78	-6.50	71.	4.0	.1269	30
3	40.	1.0	18.11	21.38	55.	5.0	.1933	29
4	31.	1.1	16.12	26.73	47.	5.0	.2153	29
5	27.	1.6	22.63	43.61	24.	5.0	.3276	30
6	37.	2.4	42.65	57.35	39.	5.0	.4765	30
7	49.	1.9	45.22	39.05	62.	5.0	.3855	31
8	49.	1.2	25.26	21.87	74.	5.0	.2304	29
9	2.	.9	1.17	27.12	47.	5.0	.1872	29
10	299.	1.1	-26.75	15.10	336.	6.0	.1765	29
11	235.	1.4	-33.86	-23.61	242.	6.0	.2293	30
12	230.	2.4	-54.14	-45.65	227.	6.0	.3934	30
13	257.	2.9	-83.95	-19.65	240.	8.0	.3592	30
14	249.	2.8	-78.09	-30.68	236.	8.0	.3496	30
15	238.	3.1	-75.96	-47.23	240.	8.0	.3856	29
16	246.	4.0	-108.84	-47.70	242.	8.0	.4952	30
17	238.	3.8	-98.39	-60.36	237.	8.0	.4809	30
18	231.	3.2	-74.93	-59.74	228.	8.0	.3993	30
19	216.	3.0	-52.99	-72.32	216.	7.0	.4269	30
20	241.	1.7	-39.41	-21.97	227.	7.0	.2479	26
21	226.	1.1	-21.90	-20.99	233.	5.0	.2247	27
22	247.	1.3	-32.99	-13.67	265.	4.0	.3188	28
23	292.	.9	-23.31	9.63	346.	5.0	.1740	29
24	301.	.6	-15.11	9.22	73.	5.0	.1264	28

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DIURNAL WIND ANALYSIS

Y-8162

FOR: CON EDISON
I P 4 400 FT

OCT 01, 1973 - OCT 31, 1973

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	345.	2.1	-14.91	56.22	323.	8.0	.2597	28
2	355.	2.4	-5.56	67.30	5.	7.0	.3446	28
3	347.	3.0	-19.27	80.71	344.	8.0	.3704	28
4	339.	2.9	-29.18	77.16	327.	7.0	.4209	28
5	354.	2.0	-5.53	53.21	309.	7.0	.2831	27
6	3.	2.9	3.60	77.22	345.	8.0	.3579	27
7	9.	2.8	10.75	71.46	355.	9.0	.3088	26
8	16.	2.[illegible]	20.53	71.11	6.	9.0	.3163	26
9	16.	2.1	16.20	57.29	19.	8.0	.2658	28
10	30.	2.1	29.32	50.68	53.	9.0	.2323	28
11	357.	2.7	-4.58	76.50	358.	10.0	.2737	28
12	325.	2.9	-48.93	69.07	331.	10.0	.2919	29
13	336.	2.6	-30.76	67.92	353.	10.0	.2571	29
14	309.	2.9	-65.48	53.31	268.	9.0	.3235	29
15	294.	2.3	-60.38	26.81	258.	10.0	.2278	29
16	304.	1.7	-42.37	28.18	267.	10.0	.1696	30
17	220.	.6	-11.67	-13.99	246.	10.0	.0607	30
18	267.	.5	-16.09	-.75	272.	11.0	.0488	30
19	322.	.7	-13.02	16.88	248.	11.0	.0668	29
20	328.	1.1	-16.03	25.48	237.	10.0	.1075	28
21	307.	1.7	-37.97	28.30	261.	11.0	.1537	28
22	314.	2.3	-46.41	44.65	273.	11.0	.2091	28
23	357.	2.2	-3.60	61.20	260.	11.0	.1990	28
24	353.	1.2	-3.96	33.46	252.	9.0	.1337	28

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 400 FT

NOV 01, 1973 - NOV 30, 1973

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	296.	6.9	-180.56	86.83	278.	11.0	.6280	29
2	296.	7.3	-190.35	92.20	286.	11.0	.6630	29
3	309.	6.9	-156.80	126.13	296.	11.0	.6308	29
4	306.	6.5	-152.95	112.22	300.	11.0	.5947	29
5	306.	5.8	-134.48	98.92	304.	10.0	.5757	29
6	300.	5.1	-128.91	75.08	290.	11.0	.4676	29
7	300.	5.6	-135.49	77.73	279.	11.0	.5071	28
8	308.	6.6	-140.98	109.69	296.	12.0	.5513	27
9	311.	7.1	-145.89	126.04	297.	12.0	.5950	27
10	309.	7.3	-158.79	128.03	291.	12.0	.6071	28
11	302.	8.8	-216.55	133.14	283.	13.0	.6743	29
12	301.	9.0	-223.15	135.85	291.	14.0	.6435	29
13	302.	9.0	-221.26	138.94	286.	14.0	.6435	29
14	301.	8.5	-212.45	127.44	285.	14.0	.6102	29
15	300.	8.0	-206.73	121.39	289.	13.0	.6147	30
16	300.	7.3	-190.89	109.69	286.	13.0	.5645	30
17	300.	6.3	-163.23	92.45	285.	12.0	.5211	30
18	291.	6.1	-170.75	66.54	281.	12.0	.5090	30
19	293.	7.4	-203.95	86.92	290.	13.0	.5685	30
20	297.	6.8	-183.42	91.50	286.	12.0	.5694	30
21	302.	7.2	-184.02	115.68	294.	12.0	.6038	30
22	306.	8.0	-195.30	139.43	300.	13.0	.6153	30
23	299.	7.8	-205.16	114.46	292.	13.0	.6024	30
24	296.	6.6	-179.15	86.92	291.	11.0	.6034	30

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DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4 400 FT

Y-8162

DEC 01, 1973 - DEC 31, 1973

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	342.	3.9	-34.07	107.25	339.	11.0	.3528	29
2	344.	3.8	-31.23	109.81	320.	10.0	.3806	30
3	326.	4.3	-65.04	95.56	302.	12.0	.3568	27
4	341.	4.2	-39.91	116.58	325.	12.0	.3541	29
5	341.	5.2	-47.32	137.43	315.	12.0	.4326	28
6	343.	6.3	-51.77	173.87	336.	12.0	.5213	29
7	356.	6.6	-13.26	183.59	346.	12.0	.5478	28
8	351.	6.6	-30.86	188.50	344.	13.0	.5067	29
9	347.	6.1	-40.86	172.97	337.	13.0	.4714	29
10	348.	7.1	-43.81	201.99	345.	13.0	.5482	29
11	340.	6.6	-60.09	167.98	334.	12.0	.5506	27
12	336.	7.1	-65.46	188.64	333.	12.0	.5951	29
13	337.	7.3	-64.06	193.80	333.	12.0	.6070	29
14	336.	7.6	-64.25	186.74	340.	13.0	.5837	27
15	331.	6.5	-86.09	153.59	325.	14.0	.4658	27
16	333.	5.7	-76.27	147.84	332.	13.0	.4413	29
17	323.	6.2	-104.65	139.79	329.	13.0	.4797	28
18	321.	5.1	-91.91	114.28	337.	12.0	.4214	29
19	321.	5.1	-86.81	108.21	324.	13.0	.3952	27
20	309.	3.4	-71.19	57.03	314.	12.0	.2815	27
21	318.	2.8	-56.25	63.36	312.	11.0	.2567	30
22	323.	3.0	-54.23	72.39	314.	11.0	.2741	30
23	325.	3.0	-50.79	72.34	291.	10.0	.3048	29
24	320.	2.5	-47.57	56.38	283.	10.0	.2544	29

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DIURNAL WIND ANALYSIS

Y-8162

FOR: CON EDISON
I P 4 400 FT

JAN 01,1974 - JAN 31,1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	339.	4.8	-44.38	115.34	333.	9.0	.5281	26
2	336.	5.2	-51.48	114.42	329.	9.0	.5809	24*
3	339.	4.4	-38.40	102.29	339.	8.0	.5463	25
4	336.	4.8	-46.94	106.34	334.	8.0	.6054	24*
5	340.	5.0	-41.83	117.02	320.	8.0	.6214	25
6	336.	5.2	-50.69	113.80	314.	8.0	.6488	24*
7	342.	4.1	-30.44	92.43	317.	7.0	.5792	24*
8	326.	4.2	-55.87	83.42	303.	8.0	.5229	24*
9	316.	4.2	-70.23	72.37	300.	7.0	.6002	24*
10	339.	4.1	-38.98	99.73	0.	8.0	.5148	26
11	337.	3.7	-39.09	92.29	340.	8.0	.4640	27
12	335.	3.2	-37.63	80.22	312.	8.0	.3956	28
13	324.	2.8	-41.26	56.52	311.	8.0	.3499	25
14	308.	3.8	-77.55	61.05	307.	9.0	.4218	26
15	302.	3.7	-77.61	49.24	307.	8.0	.4595	25
16	295.	4.3	-97.07	45.72	280.	9.0	.4769	25
17	296.	3.8	-89.64	43.30	297.	8.0	.4786	26
18	294.	4.6	-108.52	47.40	291.	9.0	.5061	26
19	300.	5.0	-117.48	66.47	297.	8.0	.6249	27
20	317.	5.1	-90.52	97.62	301.	9.0	.5689	26
21	320.	4.8	-80.13	95.29	310.	8.0	.5986	26
22	323.	5.1	-80.18	107.08	307.	9.0	.5717	26
23	330.	4.9	-66.25	115.81	322.	8.0	.6177	27
24	329.	5.1	-70.18	118.25	322.	9.0	.5659	27

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P 4   400 FT

Y-8162

FEB 01, 1974 - FEB 28, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	341.	7.6	-70.23	199.69	340.	11.0	.6875	28
2	345.	7.6	-55.51	209.39	342.	11.0	.7049	28
3	345.	7.4	-53.17	198.95	343.	10.0	.7355	28
4	351.	7.6	-31.65	210.98	351.	10.0	.7619	28
5	352.	7.7	-26.18	212.92	353.	11.0	.6973	28
6	355.	8.1	-19.69	217.21	348.	11.0	.7343	27
7	351.	7.7	-34.21	212.94	350.	11.0	.7002	28
8	353.	7.9	-25.72	[illegible]	343.	11.0	.7149	28
9	349.	7.6	-41.70	206.41	351.	11.0	.6901	28
10	350.	7.3	-36.79	201.11	357.	12.0	.6085	28
11	337.	7.2	-76.81	176.91	347.	14.0	.5151	27
12	335.	6.4	-74.11	154.57	349.	14.0	.4532	27
13	330.	6.3	-89.05	152.22	339.	14.0	.4499	28
14	335.	6.3	-81.90	171.31	335.	14.0	.4354	28
15	341.	5.6	-51.75	154.28	344.	13.0	.4471	28
16	316.	5.6	-110.14	112.34	314.	13.0	.4322	28
17	329.	5.6	-80.41	134.52	328.	14.0	.3998	28
18	332.	5.1	-67.82	128.60	323.	13.0	.3921	28
19	330.	5.1	-72.02	124.34	335.	13.0	.3946	28
20	334.	5.7	-69.43	147.13	342.	12.0	.4761	28
21	[illegible]	6.2	-63.75	161.36	345.	12.0	.5164	28
22	342.	5.4	-47.55	142.47	339.	10.0	.5364	28
23	337.	6.7	-73.63	172.14	338.	11.0	.6079	28
24	334.	6.5	-61.21	164.43	330.	11.0	.5954	28

DIURNAL WIND ANALYSIS

FOR: CON EDISON
I P. 4 400 FT

MAR 01, 1974 - MAR 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	324.	6.5	-96.03	131.33	319.	11.0	.5916	25
2	317.	6.2	-108.87	118.70	306.	11.0	.5632	26
3	330.	6.1	-80.36	136.96	316.	11.0	.5552	26
4	331.	6.7	-83.91	152.41	316.	11.0	.6083	26
5	327.	5.8	-82.51	124.89	319.	10.0	.5757	26
6	328.	6.4	-89.53	141.03	315.	11.0	.5841	26
7	323.	4.3	-66.18	89.13	320.	10.0	.4270	26
8	332.	5.8	-67.61	129.45	321.	11.0	.5311	25
9	337.	5.6	-58.07	134.17	333.	11.0	.5112	26
10	324.	6.0	-91.40	125.75	323.	12.0	.4983	26
11	319.	6.9	-111.41	130.37	333.	13.0	.5277	25
12	313.	8.2	-156.25	144.60	323.	14.0	.5349	26
13	311.	8.4	-158.05	137.68	314.	14.0	.5989	25
14	318.	10.1	-161.12	179.76	313.	16.0	.6286	24*
15	321.	9.4	-147.76	181.29	327.	16.0	.5847	25
16	310.	9.0	-165.31	140.14	306.	17.0	.5312	24*
17	307.	8.1	-169.00	127.26	306.	17.0	.4786	26
18	304.	8.5	-183.08	121.78	301.	16.0	.5286	26
19	325.	8.4	-127.26	178.69	315.	14.0	.6027	26
20	327.	9.1	-128.42	197.81	319.	14.0	.6479	26
21	324.	8.6	-131.43	182.00	324.	14.0	.6167	26
22	328.	9.8	-129.75	207.49	319.	15.0	.6526	25
23	324.	8.6	-127.18	174.69	316.	13.0	.6649	25
24	325.	7.5	-112.02	159.25	316.	12.0	.6240	26

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APR 01, 1974 - APR 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	318.	2.9	-58.23	64.44	287.	9.0	.3217	30
2	327.	3.3	-53.96	84.50	286.	9.0	.3713	30
3	314.	3.6	-78.07	76.38	279.	9.0	.4045	30
4	338.	3.4	-38.79	94.39	327.	9.0	.3779	30
5	331.	5.3	-76.66	139.88	321.	10.0	.5317	30
6	328.	3.8	-61.83	97.54	308.	10.0	.3850	30
7	335.	4.3	-54.68	115.55	321.	9.0	.4734	30
8	343.	3.9	-33.43	112.37	344.	10.0	.3908	30
9	344.	3.1	-23.93	85.59	351.	10.0	.3065	29
10	330.	3.1	-45.82	79.25	329.	10.0	.3051	30
11	310.	2.8	-64.79	53.67	307.	11.0	.2549	30
12	317.	4.8	-98.60	105.85	305.	13.0	.3709	30
13	311.	5.0	-104.55	92.37	314.	15.0	.3322	28
14	299.	5.0	-128.26	70.69	317.	14.0	.3807	29
15	287.	5.3	-151.85	47.39	286.	14.0	.3787	30
16	284.	5.9	-170.43	42.13	282.	16.0	.3663	30
17	291.	6.3	-175.44	68.22	292.	16.0	.3922	30
18	283.	5.4	-158.76	36.71	299.	15.0	.3621	30
19	273.	5.2	-155.51	22.12	276.	15.0	.3491	30
20	275.	4.2	-120.44	10.54	279.	12.0	.3474	29
21	275.	3.1	-89.61	1.96	278.	12.0	.2585	29
22	283.	3.4	-95.60	25.39	288.	10.0	.3411	29
23	294.	3.6	-89.62	37.34	292.	12.0	.2351	28
24	341.	3.0	-50.04	6..36	262.	11.0	.2771	29

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MAY 01, 1974 - MAY 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	351.	2.2	-7.91	52.45	278.	9.0	.2456	24*
2	344.	.6	-3.95	13.34	235.	8.0	.0725	24*
3	7.	1.1	3.20	25.13	206.	7.0	.1574	23*
4	342.	1.5	-10.87	33.52	171.	7.0	.2097	24*
5	340.	1.4	-11.54	30.96	240.	7.0	.2053	23*
6	345.	2.9	-16.90	61.09	250.	8.0	.3599	22*
7	349.	3.1	-13.71	72.52	52.	8.0	.3344	24*
8	336.	2.8	-26.09	60.43	180.	8.0	.3471	24*
9	313.	2.7	-45.69	42.22	215.	8.0	.3331	23*
10	293.	2.4	-56.13	24.96	216.	9.0	.2703	26
11	260.	2.7	-69.84	-12.49	204.	10.0	.2729	26
12	249.	3.3	-79.97	-31.13	212.	10.0	.3301	26
13	250.	3.7	-94.35	-34.32	226.	10.0	.3729	27
14	233.	3.4	-72.72	-54.55	180.	12.0	.2306	27
15	214.	5.1	-69.56	-102.74	196.	14.0	.3676	24*
16	196.	6.3	-47.27	-162.22	195.	14.0	.4470	27
17	197.	6.2	-47.24	-154.95	197.	14.0	.4451	26
18	206.	7.1	-82.16	-165.15	212.	15.0	.4730	26
19	249.	4.4	-103.09	-39.33	212.	14.0	.3152	25
20	245.	3.5	-79.06	-37.17	209.	12.0	.2912	25
21	243.	3.0	-67.47	-30.43	206.	10.0	.2961	25
22	262.	2.3	-56.79	-7.42	220.	9.0	.2592	22*
23	253.	.7	-16.25	4.79	221.	9.0	.0734	24*
24	330.	2.1	-25.22	43.31	259.	9.0	.2320	24*

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JUN 01, 1974 - JUN 30, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	9[illegible].	1.3	34.76	-5.11	162.	7.0	.1793	28
2	6[illegible].	2.5	62.37	2[illegible].29	96.	7.0	.3567	30
3	49.	2.3	51.06	44.21	96.	7.0	.3217	30
4	40.	2.0	30.72	45.59	240.	7.0	.2348	30
5	51.	2.6	59.92	46.13	72.	7.0	.4025	27
6	45.	2.3	47.66	4[illegible].12	53.	7.0	.3337	29
7	56.	2.4	53.94	35.62	133.	7.0	.3426	27
8	62.	2.1	55.40	29.75	135.	6.0	.3497	30
9	70.	1.8	3[illegible].48	13.25	165.	7.0	.2037	28
10	95.	1.4	11.40	-1.96	149.	7.0	.1978	30
11	1[illegible].	1.2	-5.66	-35.56	195.	8.0	.1552	29
12	211.	2.5	-39.07	-64.95	204.	9.0	.2607	30
13	215.	2.9	-49.15	-69.73	205.	9.0	.3269	29
14	206.	3.[illegible]	-47.85	-98.73	203.	10.0	.3779	29
15	203.	5.0	-54.73	-129.08	197.	11.0	.4552	28
16	189.	6.0	-26.77	-178.60	198.	11.0	.5413	29
17	201.	5.3	-55.10	-142.54	193.	12.0	.4391	29
18	199.	3.7	-35.31	-100.33	197.	11.0	.3334	29
19	190.	3.9	-20.54	-112.55	182.	10.0	.3945	29
20	20[illegible].	3.2	-34.79	-[illegible]1.16	213.	9.0	.3552	29
21	232.	1.3	-23.07	-22.[illegible]2	214.	8.0	.1586	29
22	229.	.7	-15.01	-12.92	223.	5.0	.1101	30
23	[illegible].	.1	-2.09	-.30	199.	8.0	.0093	30
24	[illegible]7.	.5	8.52	11.31	240.	7.0	.0731	28

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JUL 01, 1974 - JUL 31, 1974

HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	337.	3.0	-36.43	83.97	319.	8.0	.3691	31
2	336.	3.0	-36.32	81.83	312.	8.0	.3730	30
3	341.	2.7	-26.64	78.79	328.	8.0	.3354	31
4	341.	4.3	-41.75	121.57	352.	8.0	.5356	30
5	345.	3.7	-28.61	106.29	328.	8.0	.4586	30
6	348.	2.9	-17.51	82.37	322.	7.0	.4148	29
7	350.	2.7	-13.43	78.06	324.	7.0	.3902	29
8	5.	3.3	7.45	87.50	343.	7.0	.4647	27
9	354.	3.0	-9.98	90.62	318.	7.0	.4341	30
10	339.	2.3	-25.61	67.66	275.	7.0	.3334	31
11	324.	2.2	-39.38	54.48	285.	8.0	.2801	30
12	294.	1.8	-51.43	23.01	293.	9.0	.2020	31
13	281.	2.3	-68.55	13.81	283.	9.0	.2590	30
14	290.	4.7	-129.01	46.73	291.	10.0	.4731	29
15	275.	4.2	-129.12	11.56	278.	10.0	.4182	31
16	268.	4.4	-135.04	-4.88	273.	11.0	.3963	31
17	265.	4.3	-133.63	-11.21	276.	11.0	.3932	31
18	258.	3.9	-119.42	-25.05	266.	10.0	.3936	31
19	259.	4.3	-127.18	-24.24	256.	10.0	.4316	30
20	279.	3.9	-116.81	17.97	272.	9.0	.4377	30
21	286.	3.0	-86.01	24.56	286.	9.0	.3313	30
22	297.	4.3	-115.78	58.26	279.	10.0	.4320	30
23	313.	4.6	-94.14	87.88	290.	10.0	.4600	28
24	319.	3.7	-72.42	82.48	296.	8.0	.4573	30

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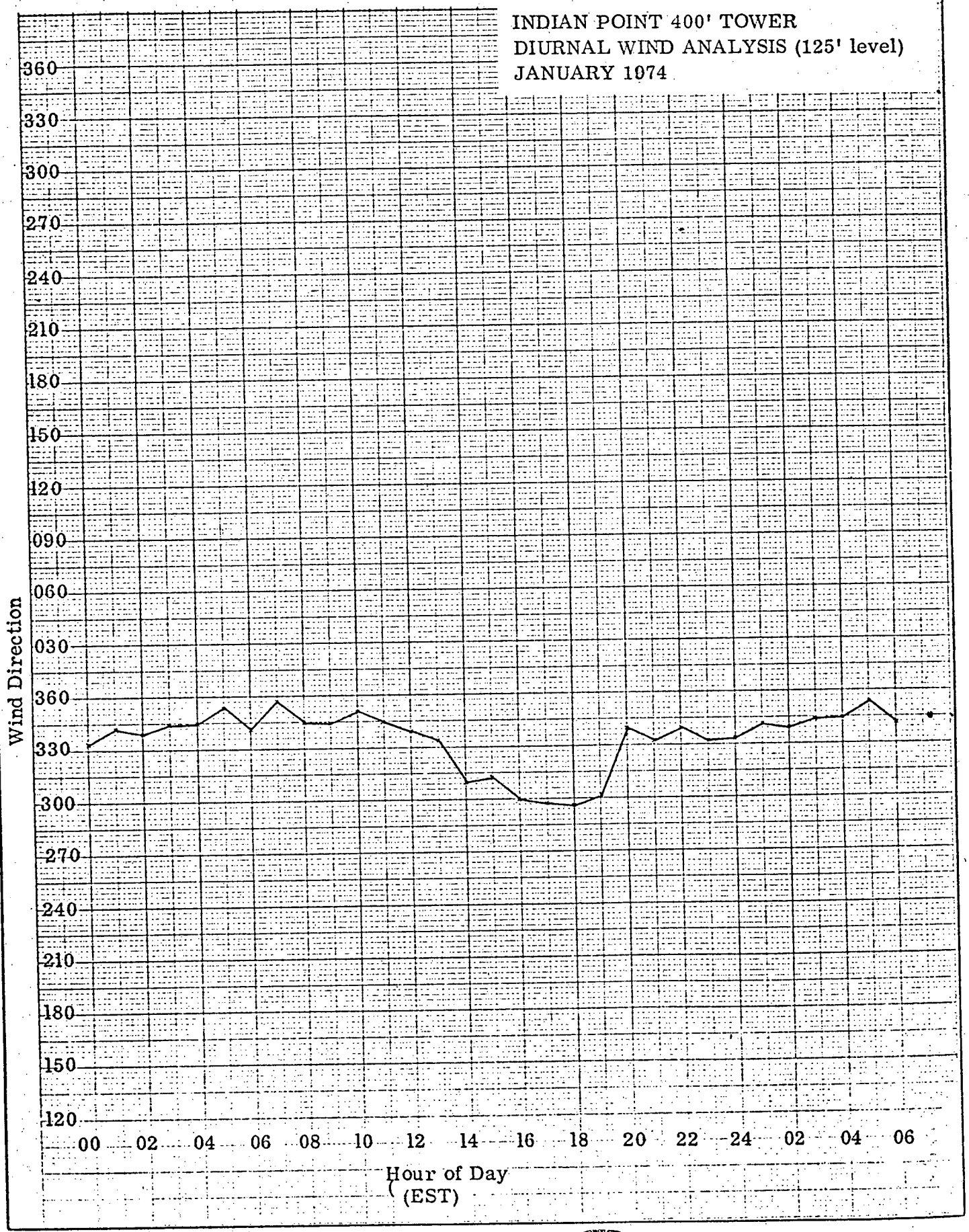
DIURNAL WIND ANALYSIS

Y-8162

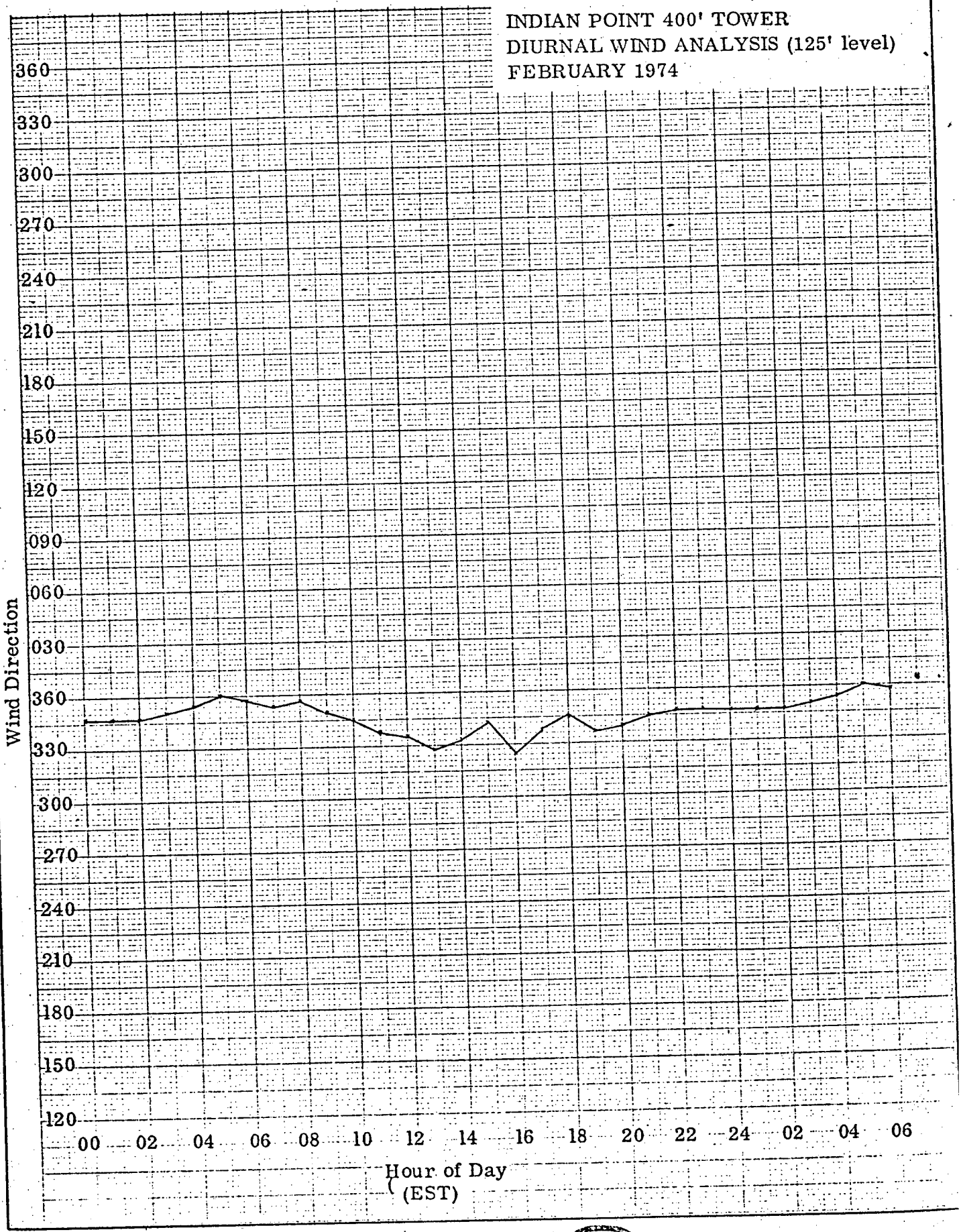
FOR: CON EDISON
I P 4 400 FT

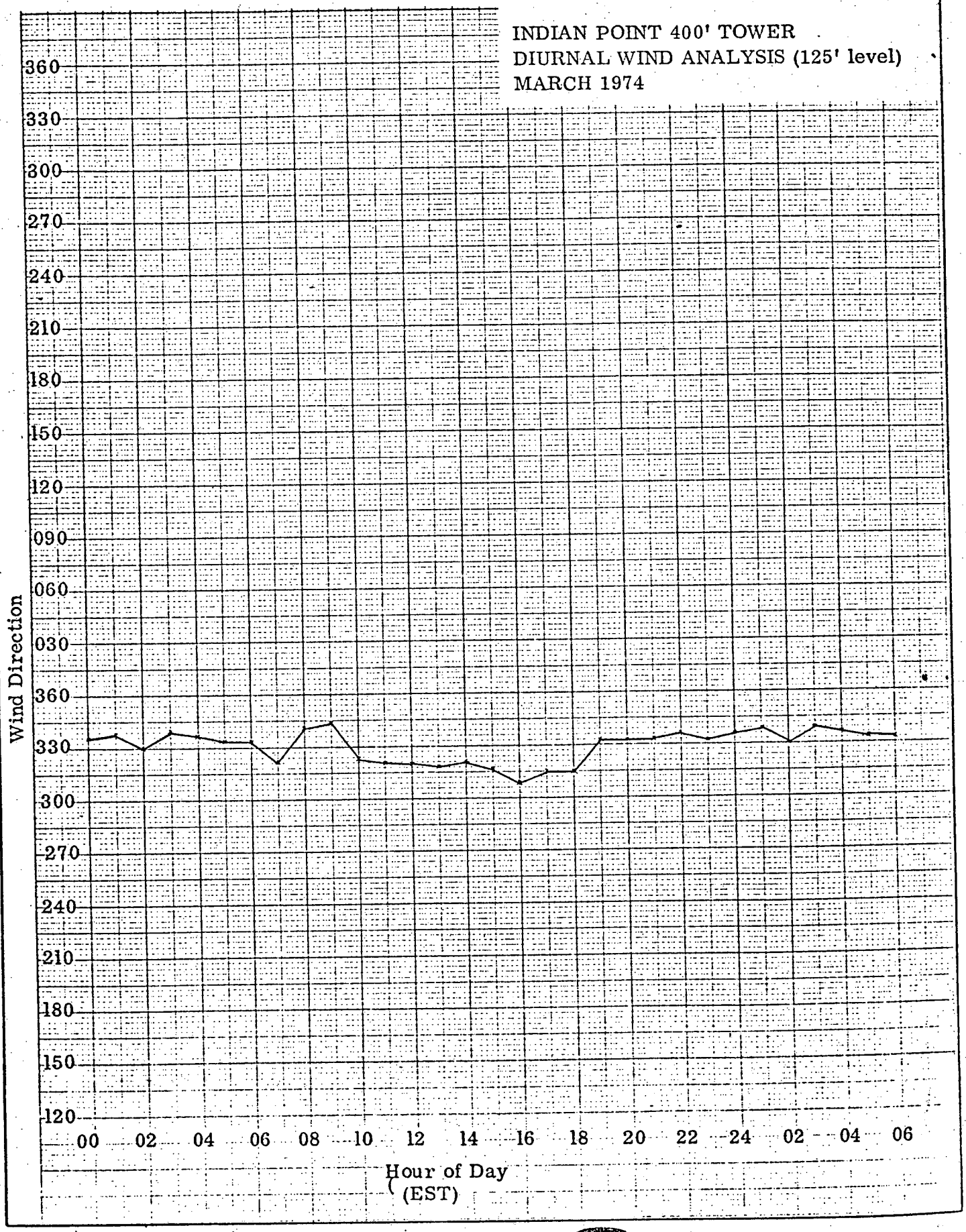
AUG 01, 1974 - AUG 31, 1974

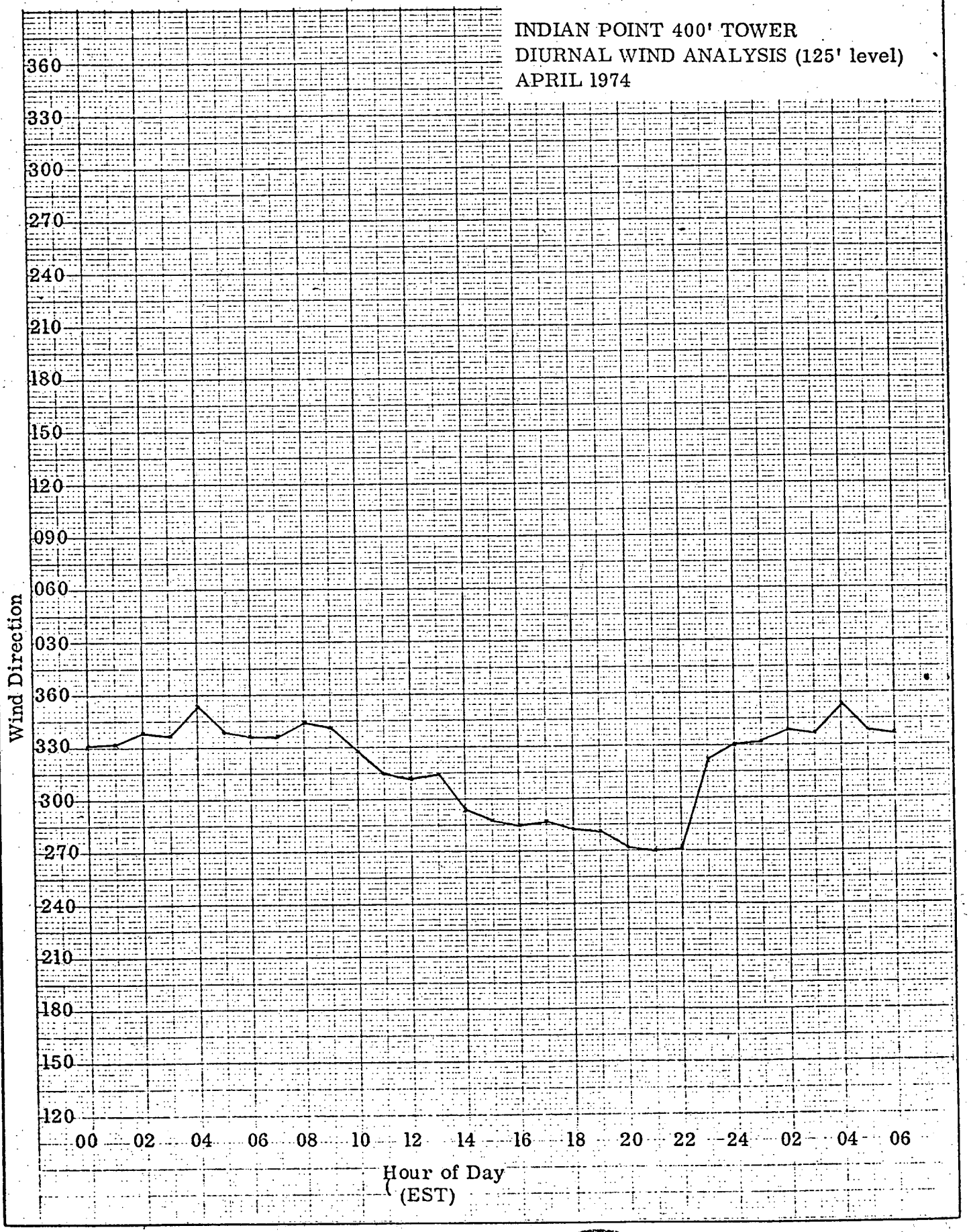
HOUR	RESULTANT WINDS DIR	SPD MPH	UCOM	VCOM	MEAN WIND DIR	SPD MPH	PERSIST	VALID HOURS
1	314.	.6	-13.53	13.27	305.	5.0	.1222	31
2	230.	.6	-13.31	-11.06	346.	5.0	.1154	30
3	348.	.8	-5.23	24.92	30.	5.0	.1643	31
4	347.	.9	-5.25	23.26	2.	6.0	.1472	27
5	353.	1.3	-4.45	38.12	1.	5.0	.2559	30
6	17.	2.0	16.48	54.25	351.	5.0	.3910	29
7	24.	1.4	16.83	38.27	30.	5.0	.2883	29
8	14.	1.0	6.83	26.91	32.	5.0	.1983	28
9	334.	1.0	-12.67	25.62	33.	6.0	.1588	30
10	274.	1.6	-46.22	3.12	287.	6.0	.2662	29
11	236.	2.1	-52.14	-34.88	241.	6.0	.3485	30
12	230.	3.4	-73.52	-61.08	228.	7.0	.4876	28
13	251.	3.4	-97.12	-34.21	237.	8.0	.4290	30
14	245.	3.8	-101.87	-47.89	241.	9.0	.4169	30
15	243.	4.3	-107.73	-55.33	240.	8.0	.5407	28
16	248.	4.8	-134.94	-53.41	242.	8.0	.6047	30
17	240.	4.4	-113.51	-64.99	234.	9.0	.4844	30
18	232.	4.4	-102.79	-80.54	229.	9.0	.4837	30
19	227.	3.5	-77.10	-70.90	230.	8.0	.4364	30
20	252.	2.0	-56.76	-18.68	236.	7.0	.2845	30
21	249.	1.5	-40.00	-15.74	256.	6.0	.2470	29
22	260.	1.8	-52.85	-9.36	259.	5.0	.3578	30
23	250.	1.5	-40.05	-14.40	232.	6.0	.2446	29
24	263.	1.2	-33.21	-4.25	271.	6.0	.1924	29

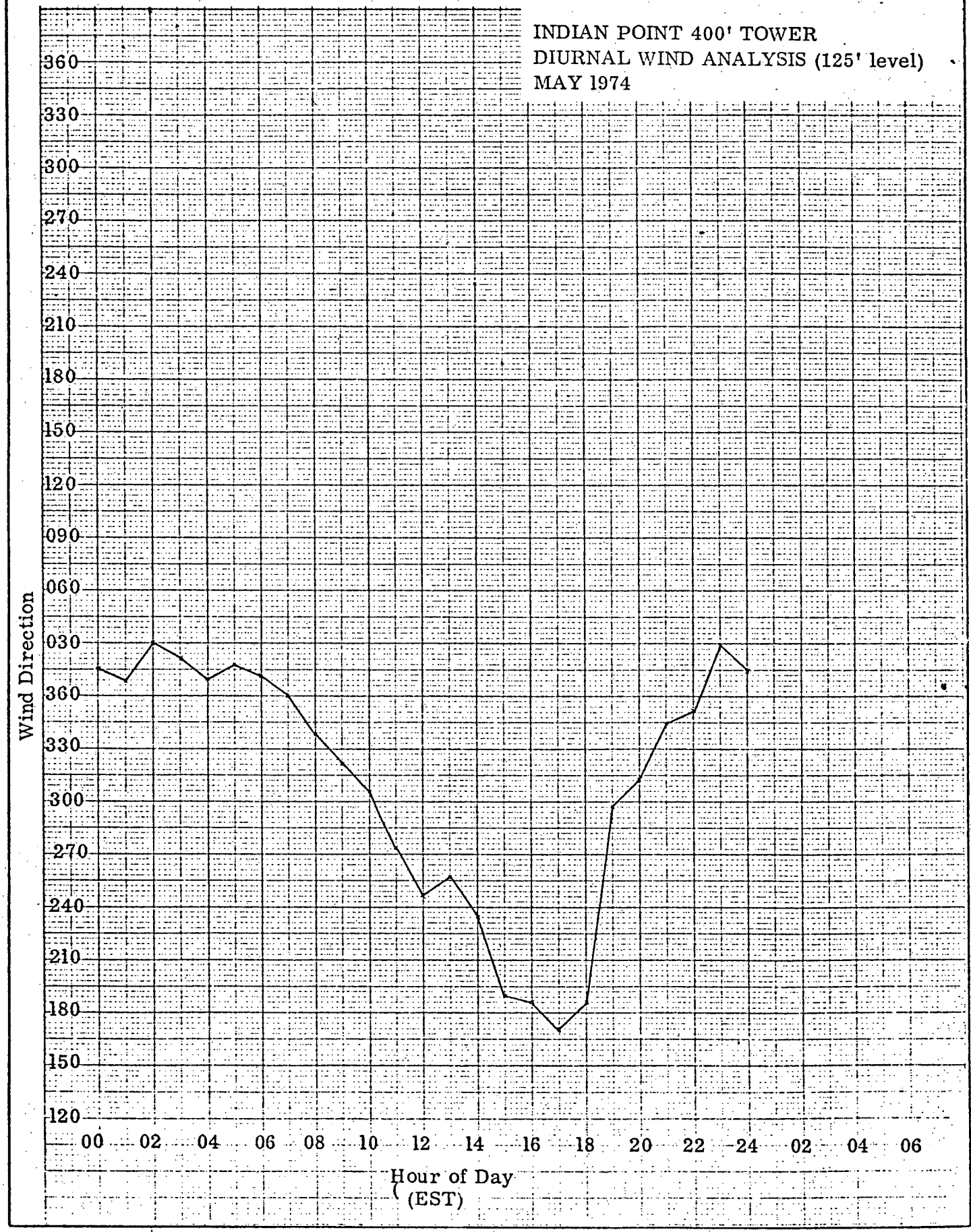

INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS (125' level)
JANUARY 1974
Wind Direction
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
240
210
180
150
120
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)

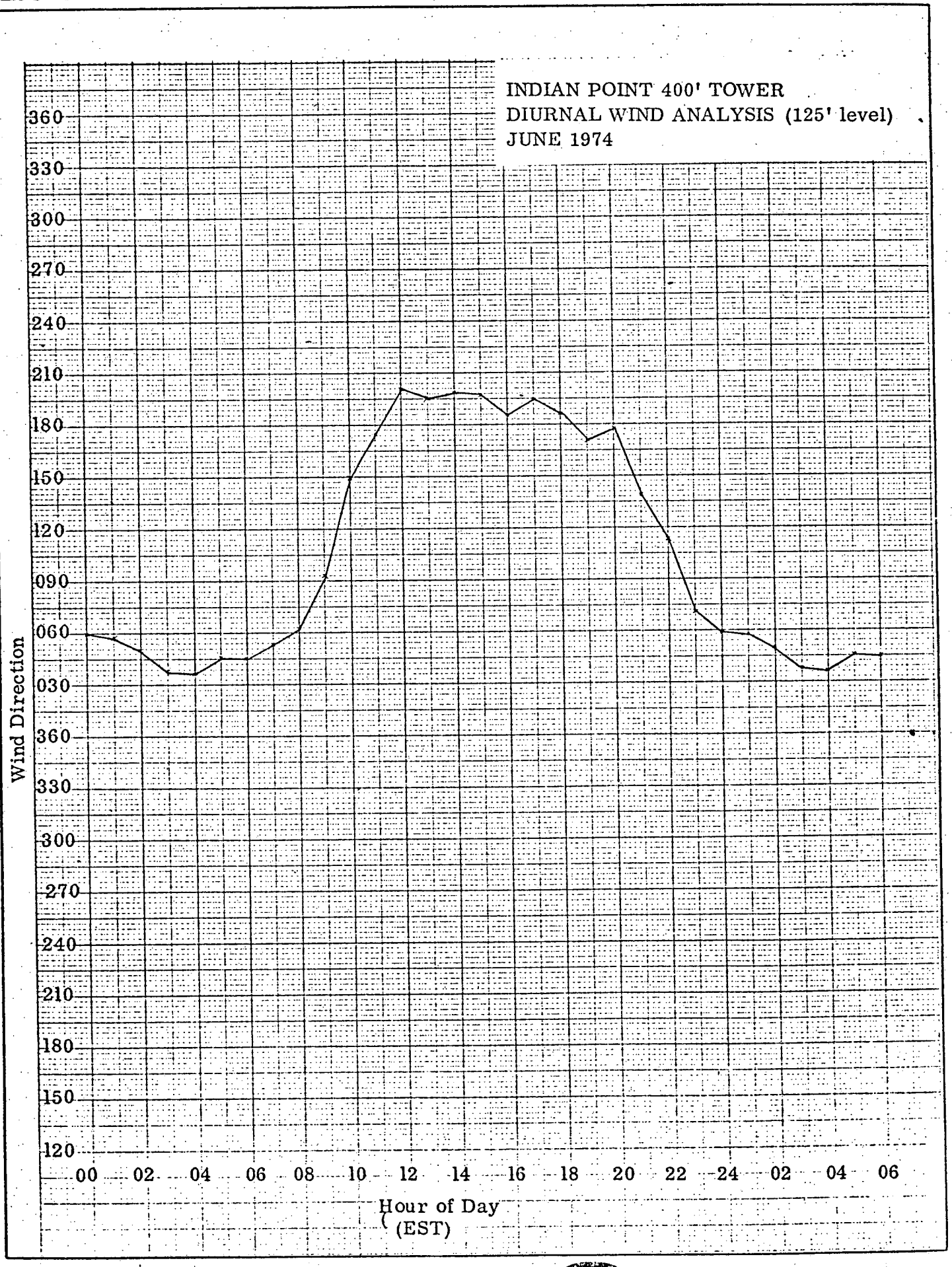
INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS (125' level)
FEBRUARY 1974

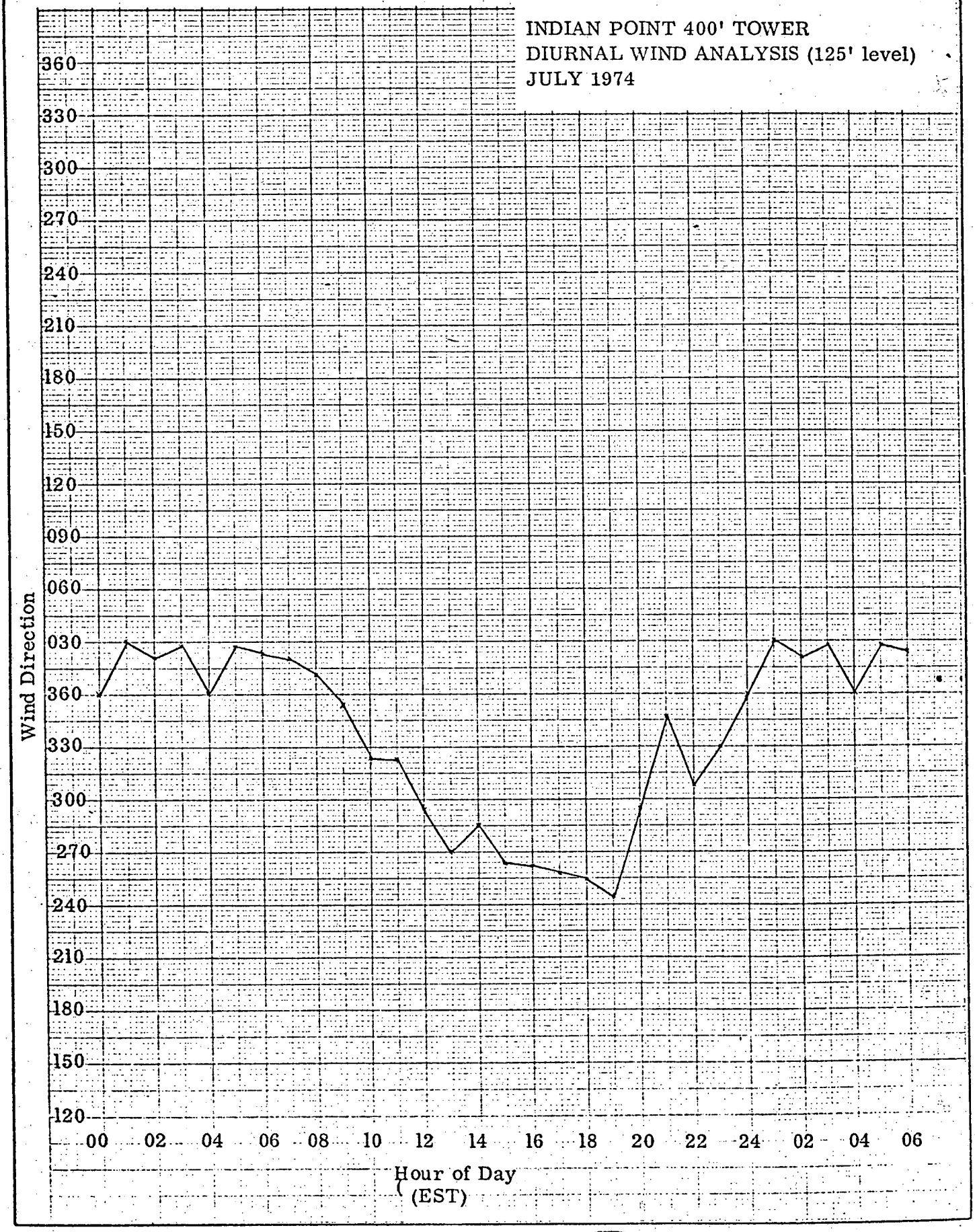


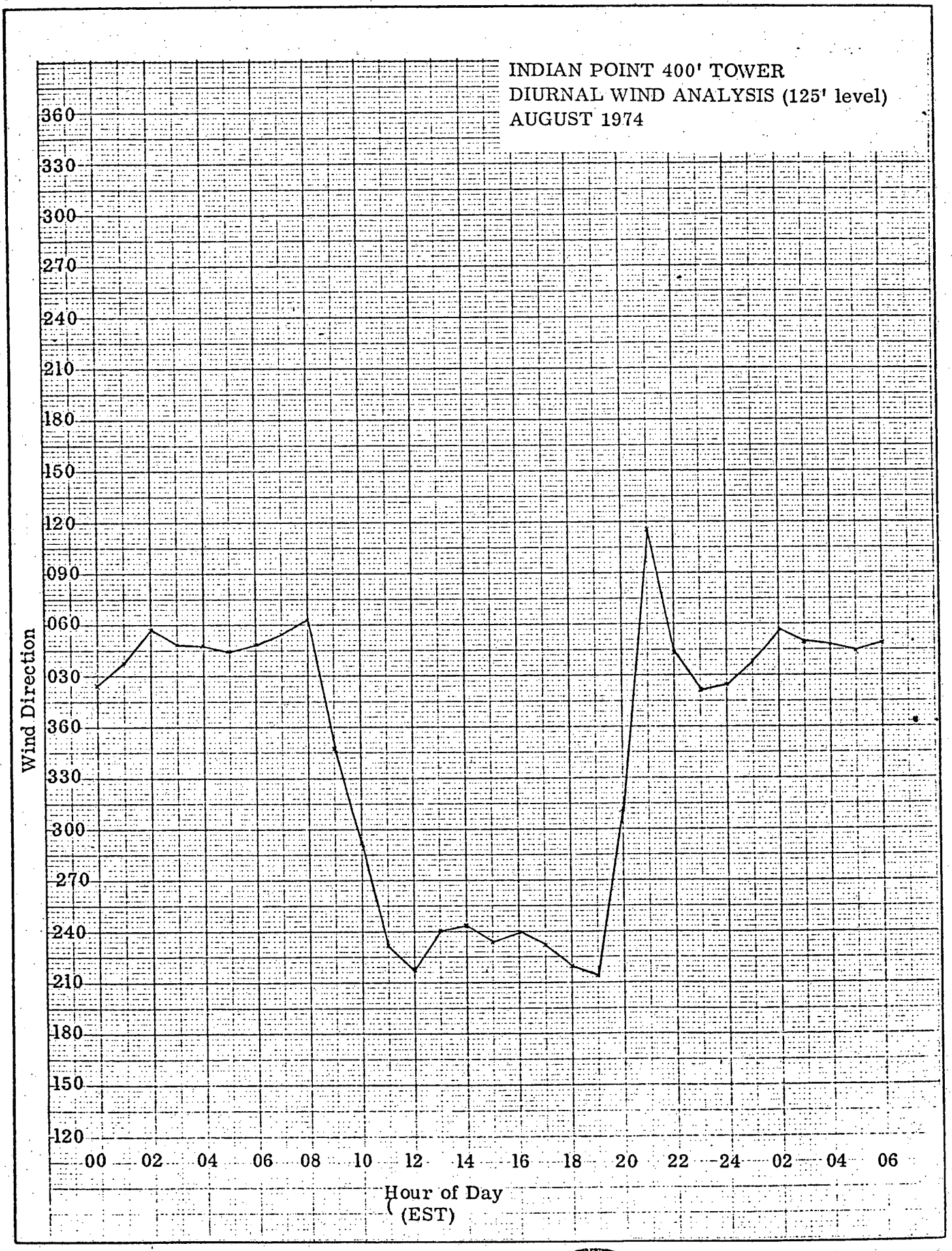

INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS (125' level)
MARCH 1974
Wind Direction
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
240
210
180
150
120
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)


INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS (125' level)
APRIL 1974
Wind Direction
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
240
210
180
150
120
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)


INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS (125' level)
MAY 1974
Wind Direction
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
240
210
180
150
120
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)


INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS (125' level)
JUNE 1974
Wind Direction
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
240
210
180
150
120
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)


INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS (125' level)
JULY 1974
Wind Direction
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
240
210
180
150
120
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)


INDIAN POINT 400' TOWER
DIURNAL WIND ANALYSIS (125' level)
AUGUST 1974
Wind Direction
360
330
300
270
240
210
180
150
120
090
060
030
360
330
300
270
240
210
180
150
120
00 02 04 06 08 10 12 14 16 18 20 22 24 02 04 06
Hour of Day
(EST)

APPENDIX D

WIND FREQUENCY DISTRIBUTIONS

FROM IP4 TOWER

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO. Y-8162

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 33 FT SUMMER

MAY 01, 1974 - AUG 31, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0254	.0085	.0003	.0003	.0	.0	.0	.0	.0	.0020	.0366
12- 33	NNE	.0495	.0451	.0037	.0	.0	.0	.0	.0	.0	.0088	.1071
34- 56	NE	.0766	.0671	.0058	.0	.0	.0	.0	.0	.0	.0095	.1589
57- 78	ENE	.0407	.0176	.0	.0	.0	.0	.0	.0	.0	.0037	.0620
79-101	E	.0234	.0037	.0	.0	.0	.0	.0	.0	.0	.0014	.0285
102-123	ESE	.0139	.0020	.0	.0	.0	.0	.0	.0	.0	.0	.0159
124-146	SE	.0217	.0	.0	.0	.0	.0	.0	.0	.0	.0003	.0220
147-168	SSE	.0261	.0020	.0	.0	.0	.0	.0	.0	.0	.0003	.0285
169-191	S	.0657	.0176	.0007	.0	.0	.0	.0	.0	.0	.0007	.0847
192-213	SSW	.0752	.0400	.0024	.0	.0	.0	.0	.0	.0	.0010	.1186
214-236	SW	.0691	.0413	.0095	.0007	.0	.0	.0	.0	.0	.0017	.1223
237-258	WSW	.0274	.0071	.0007	.0	.0	.0	.0	.0	.0	.0010	.0363
259-281	W	.0193	.0075	.0007	.0	.0	.0	.0	.0	.0	.0034	.0308
282-303	WNW	.0136	.0102	.0014	.0003	.0	.0	.0	.0	.0	.0007	.0261
304-326	NW	.0122	.0115	.0051	.0020	.0003	.0	.0	.0	.0	.0007	.0319
327-348	NNW	.0105	.0078	.0037	.0010	.0	.0	.0	.0	.0	.0010	.0241
VAR		.0593	.0014	.0	.0	.0	.0	.0	.0	.0	.0044	.0651
CALM		.0007										.0007
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0003
TOTAL		.6303	.2904	.0339	.0044	.0003	.0	.0	.0	.0	.0410	1.0000

NUMBER OF VALID DATA HOURS = 2951
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO. Y-8162 PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 125 FT SUMMER

MAY 01, 1974 - AUG 31, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0166	.0241	.0237	.0054	.0003	.0003	.0	.0	.0	.0	.0705
12- 33	NNE	.0288	.0417	.0305	.0054	.0	.0	.0	.0	.0	.0003	.1067
34- 56	NE	.0339	.0962	.0142	.0010	.0	.0	.0	.0	.0	.0	.1453
57- 78	ENE	.0183	.0152	.0047	.0	.0	.0	.0	.0	.0	.0	.0383
79-101	E	.0119	.0078	.0044	.0007	.0	.0	.0	.0	.0	.0	.0247
102-123	ESE	.0088	.0054	.0020	.0014	.0	.0	.0	.0	.0	.0	.0176
124-146	SE	.0132	.0112	.0024	.0007	.0	.0	.0	.0	.0	.0	.0274
147-168	SSE	.0173	.0224	.0119	.0010	.0	.0	.0	.0	.0	.0	.0525
169-191	S	.0224	.0478	.0369	.0136	.0007	.0003	.0	.0	.0	.0	.1216
192-213	SSW	.0264	.0359	.0207	.0034	.0003	.0	.0	.0	.0	.0	.0867
214-236	SW	.0291	.0352	.0173	.0075	.0007	.0	.0	.0	.0	.0	.0898
237-258	WSW	.0142	.0122	.0068	.0024	.0	.0	.0	.0	.0	.0	.0356
259-281	W	.0156	.0105	.0051	.0007	.0003	.0	.0	.0	.0	.0	.0322
282-303	WNW	.0091	.0105	.0136	.0027	.0007	.0	.0	.0	.0	.0	.0366
304-326	NW	.0119	.0085	.0163	.0061	.0037	.0010	.0003	.0	.0	.0	.0478
327-348	NNW	.0061	.0108	.0091	.0081	.0024	.0	.0	.0	.0	.0	.0366
VAR		.0295	.0007	.0	.0	.0	.0	.0	.0	.0	.0	.0301
CALM		.0										.0
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
TOTAL		.3130	.3960	.2195	.0600	.0091	.0017	.0003	.0	.0	.0003	1.0000

NUMBER OF VALID DATA HOURS = 2952
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO. Y-8162 PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 280 FT SUMMER

MAY 01, 1974 - AUG 31, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0112	.0228	.0160	.0088	.0027	.0007	.0	.0003	.0007	.0	.0632
12- 33	NNE	.0160	.0367	.0363	.0238	.0027	.0003	.0	.0007	.0031	.0	.1196
34- 56	NE	.0194	.0462	.0200	.0041	.0003	.0	.0	.0	.0	.0	.0900
57- 78	ENE	.0166	.0132	.0044	.0003	.0	.0	.0	.0	.0	.0	.0346
79-101	E	.0122	.0102	.0058	.0003	.0	.0	.0	.0	.0	.0	.0285
102-123	ESE	.0092	.0068	.0031	.0007	.0	.0	.0	.0	.0	.0	.0197
124-146	SE	.0132	.0099	.0068	.0014	.0	.0	.0	.0	.0	.0	.0313
147-168	SSE	.0088	.0136	.0078	.0010	.0	.0	.0	.0	.0	.0	.0313
169-191	S	.0228	.0391	.0418	.0333	.0048	.0003	.0003	.0	.0	.0	.1423
192-213	SSW	.0248	.0408	.0251	.0078	.0014	.0	.0	.0003	.0	.0	.1002
214-236	SW	.0221	.0367	.0248	.0122	.0031	.0	.0	.0	.0	.0	.0988
237-258	WSW	.0126	.0149	.0092	.0092	.0003	.0	.0	.0	.0	.0	.0462
259-281	W	.0099	.0102	.0153	.0061	.0014	.0	.0	.0	.0	.0	.0428
282-303	WNW	.0102	.0105	.0071	.0105	.0020	.0003	.0	.0	.0	.0	.0408
304-326	NW	.0075	.0078	.0153	.0078	.0058	.0014	.0010	.0003	.0	.0	.0469
327-348	NNW	.0048	.0075	.0051	.0085	.0024	.0017	.0	.0	.0	.0	.0299
VAR		.0190	.0003	.0	.0	.0	.0	.0	.0	.0	.0	.0194
CALM		.0078										.0078
MISS		.0020	.0027	.0020	.0	.0	.0	.0	.0	.0		.0095
TOTAL		.2500	.3298	.2459	.1359	.0268	.0048	.0014	.0017	.0037	.0027	1.0000

NUMBER OF VALID DATA HOURS = 2944
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 99.7

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO. Y-8162

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 33 FT WINTER

OCT 01, 1973 - APR 30, 1974

WIND DIRECTION		WIND SPEED MPH									
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0228	.0352	.0117	.0012	.0002	.0	.0	.0	.0	.0008	.0719
12- 33	NNE	.0326	.0680	.0308	.0032	.0004	.0	.0	.0	.0	.0016	.1367
34- 56	NE	.0509	.0538	.0133	.0012	.0002	.0	.0	.0	.0	.0028	.1222
57- 78	ENE	.0258	.0185	.0026	.0002	.0	.0	.0	.0	.0	.0004	.0475
79-101	E	.0123	.0034	.0002	.0	.0	.0	.0	.0	.0	.0	.0159
102-123	ESE	.0077	.0016	.0002	.0	.0	.0	.0	.0	.0	.0	.0095
124-146	SE	.0083	.0014	.0	.0	.0	.0	.0	.0	.0	.0002	.0099
147-168	SSE	.0155	.0020	.0	.0	.0	.0	.0	.0	.0	.0006	.0181
169-191	S	.0467	.0147	.0010	.0	.0	.0	.0	.0	.0	.0020	.0644
192-213	SSW	.0342	.0270	.0089	.0004	.0	.0	.0	.0	.0	.0034	.0739
214-236	SW	.0324	.0169	.0060	.0004	.0	.0	.0	.0	.0	.0018	.0576
237-258	WSW	.0163	.0048	.0042	.0	.0	.0	.0	.0	.0	.0004	.0258
259-281	W	.0201	.0079	.0044	.0002	.0	.0	.0	.0	.0	.0006	.0332
282-303	WNW	.0137	.0242	.0121	.0016	.0	.0	.0	.0	.0	.0026	.0542
304-326	NW	.0125	.0437	.0477	.0113	.0004	.0	.0	.0	.0	.0032	.1188
327-348	NNW	.0111	.0352	.0344	.0056	.0	.0	.0	.0	.0	.0016	.0880
VAR		.0381	.0034	.0002	.0	.0	.0	.0	.0	.0	.0006	.0423
CALM		.0066										.0066
MISS		.0016	.0016	.0004	.0	.0	.0	.0	.0	.0		.0280
TOTAL		.4091	.3634	.1782	.0254	.0012	.0	.0	.0	.0	.0471	1.0000

NUMBER OF VALID DATA HOURS = 4967
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 97.6

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 125 FT WINTER

OCT 01, 1973 - APR 30, 1974

WIND DIRECTION		WIND SPEED MPH									
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0095	.0216	.0322	.0183	.0038	.0026	.0	.0	.0	.0022	.0903
12- 33	NNE	.0139	.0464	.0429	.0204	.0018	.0002	.0	.0	.0	.0058	.1314
34- 56	NE	.0161	.0369	.0187	.0058	.0004	.0	.0	.0	.0	.0056	.0836
57- 78	ENE	.0093	.0099	.0048	.0024	.0002	.0	.0	.0	.0	.0004	.0270
79-101	E	.0042	.0034	.0012	.0002	.0002	.0	.0	.0	.0	.0002	.0095
102-123	ESE	.0044	.0040	.0012	.0004	.0	.0	.0	.0	.0	.0004	.0105
124-146	SE	.0042	.0032	.0016	.0002	.0	.0	.0	.0	.0	.0002	.0095
147-168	SSE	.0064	.0077	.0058	.0002	.0	.0	.0	.0	.0	.0002	.0204
169-191	S	.0155	.0349	.0240	.0075	.0012	.0004	.0002	.0	.0	.0002	.0838
192-213	SSW	.0173	.0240	.0191	.0099	.0014	.0004	.0	.0	.0	.0010	.0732
214-236	SW	.0149	.0157	.0149	.0077	.0014	.0	.0	.0	.0	.0002	.0548
237-258	WSW	.0109	.0083	.0062	.0030	.0	.0	.0	.0	.0	.0004	.0288
259-281	W	.0087	.0077	.0058	.0040	.0010	.0002	.0	.0	.0	.0008	.0282
282-303	WNW	.0056	.0105	.0202	.0119	.0028	.0004	.0004	.0	.0	.0030	.0548
304-326	NW	.0038	.0127	.0496	.0459	.0111	.0024	.0002	.0	.0	.0026	.1284
327-348	NNW	.0058	.0125	.0308	.0367	.0073	.0016	.0006	.0	.0	.0012	.0965
VAR		.0195	.0014	.0008	.0	.0	.0	.0	.0	.0	.0016	.0234
CALM		.0024										.0024
MISS		.0054	.0206	.0131	.0038	.0006	.0	.0	.0	.0		.0689
TOTAL		.1782	.2811	.2932	.1784	.0333	.0083	.0014	.0	.0	.0516	1.0000

NUMBER OF VALID DATA HOURS = 4962
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 97.5

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 280 FT WINTER

OCT 01, 1973 - APR 30, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0065	.0140	.0223	.0217	.0085	.0018	.0028	.0006	.0	.0045	.0826
12- 33	NNE	.0093	.0257	.0370	.0431	.0107	.0008	.0	.0	.0	.0105	.1372
34- 56	NE	.0079	.0285	.0221	.0091	.0004	.0	.0	.0	.0	.0061	.0741
57- 78	ENE	.0085	.0057	.0043	.0030	.0	.0	.0	.0	.0	.0016	.0231
79-101	E	.0059	.0043	.0022	.0010	.0014	.0004	.0	.0	.0	.0008	.0160
102-123	ESE	.0055	.0032	.0016	.0008	.0	.0	.0	.0	.0	.0008	.0119
124-146	SE	.0061	.0051	.0008	.0	.0002	.0	.0	.0	.0	.0014	.0136
147-168	SSE	.0069	.0081	.0028	.0002	.0	.0	.0	.0	.0	.0006	.0186
169-191	S	.0158	.0344	.0227	.0107	.0051	.0010	.0012	.0	.0	.0012	.0921
192-213	SSW	.0170	.0233	.0239	.0081	.0008	.0010	.0002	.0002	.0	.0010	.0755
214-236	SW	.0152	.0249	.0194	.0160	.0045	.0020	.0	.0	.0	.0004	.0824
237-258	WSW	.0083	.0107	.0059	.0059	.0008	.0	.0	.0	.0	.0006	.0322
259-281	W	.0057	.0067	.0067	.0049	.0024	.0	.0	.0	.0	.0006	.0269
282-303	WNW	.0032	.0065	.0158	.0150	.0047	.0012	.0010	.0	.0	.0008	.0482
304-326	NW	.0045	.0097	.0318	.0530	.0245	.0065	.0020	.0002	.0	.0018	.1340
327-348	NNW	.0032	.0115	.0233	.0381	.0164	.0030	.0006	.0002	.0	.0018	.0982
VAR		.0087	.0016	.0002	.0	.0	.0	.0	.0	.0	.0006	.0111
CALM		.0014										.0014
MISS		.0067	.0047	.0040	.0055	.0	.0	.0	.0	.0		.0508
TOTAL		.1462	.2285	.2468	.2360	.0804	.0178	.0079	.0012	.0	.0652	1.0000

NUMBER OF VALID DATA HOURS = 4940
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 97.1

YORK RESEARCH CORPORATION
STAMFORD, CONNECTICUT

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO. Y-8162

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 400 FT WINTER

OCT 01, 1973 - APR 30, 1974

WIND DIRECTION		WIND SPEED MPH									
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0051	.0124	.0197	.0227	.0093	.0014	.0006	.0002	.0	.0008	.0723
12- 33	NNE	.0035	.0215	.0410	.0463	.0126	.0026	.0024	.0012	.0	.0055	.1367
34- 56	NE	.0043	.0197	.0162	.0114	.0018	.0	.0	.0	.0	.0028	.0563
57- 78	ENE	.0032	.0079	.0030	.0032	.0006	.0	.0	.0	.0	.0012	.0193
79-101	E	.0035	.0053	.0020	.0024	.0010	.0010	.0004	.0	.0	.0004	.0160
102-123	ESE	.0051	.0045	.0006	.0006	.0002	.0	.0	.0	.0	.0006	.0116
124-146	SE	.0039	.0067	.0018	.0006	.0002	.0	.0	.0	.0	.0004	.0136
147-168	SSE	.0045	.0095	.0024	.0010	.0	.0	.0	.0	.0	.0004	.0179
169-191	S	.0110	.0349	.0205	.0118	.0037	.0022	.0010	.0002	.0	.0014	.0867
192-213	SSW	.0108	.0288	.0229	.0138	.0028	.0016	.0002	.0004	.0	.0010	.0825
214-236	SW	.0112	.0290	.0240	.0185	.0075	.0026	.0	.0	.0	.0008	.0936
237-258	WSW	.0069	.0104	.0079	.0067	.0018	.0004	.0	.0	.0	.0010	.0351
259-281	W	.0055	.0104	.0063	.0043	.0022	.0002	.0	.0	.0	.0006	.0294
282-303	WNW	.0032	.0055	.0128	.0154	.0087	.0035	.0008	.0004	.0	.0004	.0508
304-326	NW	.0045	.0108	.0284	.0538	.0278	.0110	.0024	.0006	.0	.0008	.1401
327-348	NNW	.0035	.0102	.0242	.0402	.0197	.0047	.0010	.0002	.0	.0006	.1042
VAR		.0087	.0012	.0006	.0004	.0	.0	.0	.0	.0	.0008	.0118
CALM		.0004										.0004
MISS		.0063	.0055	.0049	.0038	.0014	.0002	.0	.0	.0		.0550
TOTAL		.1048	.2342	.2394	.2567	.1015	.0315	.0089	.0032	.0	.0530	1.0000

NUMBER OF VALID DATA HOURS = 4924

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 96.8

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO. Y-8162 PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 400 FT SUMMER

MAY 01, 1974 - AUG 31, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0105	.0217	.0136	.0136	.0051	.0007	.0003	.0	.0	.0	.0654
12- 33	NNE	.0108	.0247	.0352	.0288	.0051	.0007	.0014	.0	.0	.0	.1067
34- 56	NE	.0119	.0213	.0186	.0112	.0010	.0	.0	.0	.0	.0	.0640
57- 78	ENE	.0112	.0098	.0024	.0007	.0	.0	.0	.0	.0	.0	.0241
79-101	E	.0071	.0064	.0044	.0003	.0	.0	.0	.0	.0	.0	.0183
102-123	ESE	.0064	.0054	.0041	.0003	.0003	.0	.0	.0	.0	.0	.0166
124-146	SE	.0095	.0088	.0088	.0017	.0003	.0	.0	.0	.0	.0	.0291
147-168	SSE	.0068	.0125	.0078	.0017	.0	.0	.0	.0	.0	.0	.0288
169-191	S	.0180	.0335	.0407	.0291	.0078	.0003	.0007	.0003	.0	.0	.1304
192-213	SSW	.0186	.0362	.0285	.0139	.0010	.0	.0	.0	.0	.0	.0982
214-236	SW	.0220	.0335	.0285	.0190	.0030	.0003	.0	.0	.0	.0	.1064
237-258	WSW	.0173	.0146	.0119	.0102	.0017	.0	.0	.0	.0	.0	.0556
259-281	W	.0136	.0122	.0125	.0051	.0007	.0003	.0	.0	.0	.0	.0444
282-303	WNW	.0078	.0105	.0081	.0119	.0027	.0007	.0	.0	.0	.0	.0417
304-326	NW	.0105	.0095	.0102	.0132	.0044	.0017	.0007	.0	.0003	.0	.0505
327-348	NNW	.0041	.0091	.0078	.0091	.0037	.0030	.0010	.0	.0	.0	.0379
VAR		.0122	.0024	.0010	.0	.0	.0	.0	.0	.0	.0	.0156
CALM		.0014										.0014
MISS		.0156	.0264	.0163	.0068	.0	.0	.0	.0	.0		.0650
TOTAL		.2151	.2988	.2602	.1765	.0369	.0078	.0041	.0003	.0003	.0	1.0000

NUMBER OF VALID DATA HOURS = 2952
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO. Y-8162

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 033 FT

OCT 01, 1973 - OCT 31, 1973

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0369	.0284	.0071	.0	.0	.0	.0	.0	.0	.0	.0723
12- 33	NNE	.0383	.0582	.0028	.0	.0	.0	.0	.0	.0	.0	.0993
34- 56	NE	.0805	.0752	.0085	.0	.0	.0	.0	.0	.0	.0	.1702
57- 78	ENE	.0823	.0624	.0142	.0014	.0	.0	.0	.0	.0	.0	.1603
79-101	E	.0255	.0142	.0	.0	.0	.0	.0	.0	.0	.0	.0397
102-123	ESE	.0142	.0057	.0014	.0	.0	.0	.0	.0	.0	.0	.0213
124-146	SE	.0113	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0142
147-168	SSE	.0170	.0014	.0	.0	.0	.0	.0	.0	.0	.0	.0184
169-191	S	.0383	.0057	.0	.0	.0	.0	.0	.0	.0	.0028	.0468
192-213	SSW	.0340	.0213	.0014	.0	.0	.0	.0	.0	.0	.0071	.0638
214-236	SW	.0426	.0241	.0071	.0	.0	.0	.0	.0	.0	.0043	.0780
237-258	WSW	.0128	.0028	.0	.0	.0	.0	.0	.0	.0	.0014	.0170
259-281	W	.0227	.0085	.0014	.0	.0	.0	.0	.0	.0	.0	.0326
282-303	WNW	.0184	.0298	.0057	.0	.0	.0	.0	.0	.0	.0043	.0582
304-326	NW	.0128	.0284	.0099	.0	.0	.0	.0	.0	.0	.0	.0511
327-348	NNW	.0113	.0312	.0071	.0	.0	.0	.0	.0	.0	.0	.0496
VAR		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CALM		.0043										.0043
MISS		.0028	.0	.0	.0	.0	.0	.0	.0	.0		.0582
TOTAL		.5121	.4000	.0667	.0014	.0	.0	.0	.0	.0	.0752	1.0000

NUMBER OF VALID DATA HOURS = 705
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 94.8

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON

Y-8162

I P 4 033 FT

NOV 01, 1973 - NOV 30, 1973

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0125	.0153	.0056	.0	.0	.0	.0	.0	.0	.0	.0333
12- 33	NNE	.0222	.0264	.0139	.0	.0	.0	.0	.0	.0	.0	.0625
34- 56	NE	.0194	.0389	.0125	.0042	.0	.0	.0	.0	.0	.0	.0750
57- 78	ENE	.0181	.0250	.0028	.0	.0	.0	.0	.0	.0	.0	.0458
79-101	E	.0083	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0111
102-123	ESE	.0083	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0111
124-146	SE	.0069	.0056	.0	.0	.0	.0	.0	.0	.0	.0	.0125
147-168	SSE	.0125	.0056	.0	.0	.0	.0	.0	.0	.0	.0	.0181
169-191	S	.0292	.0306	.0014	.0	.0	.0	.0	.0	.0	.0	.0611
192-213	SSW	.0306	.0653	.0097	.0	.0	.0	.0	.0	.0	.0097	.1153
214-236	SW	.0111	.0417	.0125	.0	.0	.0	.0	.0	.0	.0042	.0694
237-258	WSW	.0139	.0153	.0167	.0	.0	.0	.0	.0	.0	.0	.0458
259-281	W	.0194	.0167	.0111	.0014	.0	.0	.0	.0	.0	.0042	.0528
282-303	WNW	.0097	.0514	.0264	.0042	.0	.0	.0	.0	.0	.0028	.0944
304-326	NW	.0069	.0389	.1042	.0208	.0	.0	.0	.0	.0	.0	.1708
327-348	NNW	.0125	.0222	.0597	.0097	.0	.0	.0	.0	.0	.0014	.1056
VAR		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CALM		.0139										.0139
MISS		.0	.0	.0014	.0	.0	.0	.0	.0	.0		.0014
TOTAL		.2556	.4042	.2778	.0403	.0	.0	.0	.0	.0	.0222	1.0000

NUMBER OF VALID DATA HOURS = 720

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON

Y-8162

I P 4 033 FT

DEC 01, 1973 - DEC 31, 1973

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0068	.0491	.0123	.0	.0	.0	.0	.0	.0	.0	.0682
12- 33	NNE	.0355	.0819	.0314	.0205	.0027	.0	.0	.0	.0	.0	.1719
34- 56	NE	.0791	.0450	.0327	.0027	.0014	.0	.0	.0	.0	.0014	.1623
57- 78	ENE	.0205	.0191	.0014	.0	.0	.0	.0	.0	.0	.0	.0409
79-101	E	.0109	.0027	.0014	.0	.0	.0	.0	.0	.0	.0	.0150
102-123	ESE	.0027	.0014	.0	.0	.0	.0	.0	.0	.0	.0	.0041
124-146	SE	.0041	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0041
147-168	SSE	.0109	.0041	.0	.0	.0	.0	.0	.0	.0	.0	.0150
169-191	S	.0232	.0082	.0014	.0	.0	.0	.0	.0	.0	.0	.0327
192-213	SSW	.0095	.0246	.0136	.0	.0	.0	.0	.0	.0	.0	.0477
214-236	SW	.0218	.0191	.0082	.0	.0	.0	.0	.0	.0	.0	.0491
237-258	WSW	.0109	.0041	.0041	.0	.0	.0	.0	.0	.0	.0	.0191
259-281	W	.0164	.0068	.0027	.0	.0	.0	.0	.0	.0	.0	.0259
282-303	WNW	.0109	.0164	.0123	.0014	.0	.0	.0	.0	.0	.0027	.0437
304-326	NW	.0109	.0423	.0518	.0095	.0	.0	.0	.0	.0	.0109	.1255
327-348	NNW	.0055	.0355	.0246	.0082	.0	.0	.0	.0	.0	.0	.0737
VAR		.0778	.0055	.0014	.0	.0	.0	.0	.0	.0	.0	.0846
CALM		.0164										.0164
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0150
TOTAL		.3738	.3656	.1992	.0423	.0041	.0	.0	.0	.0	.0300	1.0000

NUMBER OF VALID DATA HOURS = 733

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 98.5

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STAMFORD, CONNECTICUT

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 33 FT

JAN 01,1974 - JAN 31,1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0281	.0326	.0015	.0	.0	.0	.0	.0	.0	.0	.0622
12- 33	NNE	.0533	.0652	.0252	.0	.0	.0	.0	.0	.0	.0089	.1526
34- 56	NE	.0548	.0593	.0015	.0	.0	.0	.0	.0	.0	.0104	.1259
57- 78	ENE	.0237	.0030	.0	.0	.0	.0	.0	.0	.0	.0030	.0296
79-101	E	.0163	.0015	.0	.0	.0	.0	.0	.0	.0	.0	.0178
102-123	ESE	.0119	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0119
124-146	SE	.0163	.0	.0	.0	.0	.0	.0	.0	.0	.0015	.0178
147-168	SSE	.0178	.0	.0	.0	.0	.0	.0	.0	.0	.0044	.0222
169-191	S	.0430	.0030	.0	.0	.0	.0	.0	.0	.0	.0074	.0533
192-213	SSW	.0459	.0104	.0044	.0	.0	.0	.0	.0	.0	.0	.0607
214-236	SW	.0578	.0119	.0015	.0	.0	.0	.0	.0	.0	.0	.0711
237-258	WSW	.0267	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0267
259-281	W	.0237	.0044	.0015	.0	.0	.0	.0	.0	.0	.0	.0296
282-303	WNW	.0207	.0148	.0	.0	.0	.0	.0	.0	.0	.0	.0356
304-326	NW	.0178	.0622	.0207	.0044	.0030	.0	.0	.0	.0	.0	.1081
327-348	NNW	.0104	.0415	.0119	.0	.0	.0	.0	.0	.0	.0	.0637
VAR		.0741	.0030	.0	.0	.0	.0	.0	.0	.0	.0044	.0815
CALM		.0074										.0074
MISS		.0089	.0119	.0015	.0	.0	.0	.0	.0	.0		.1244
TOTAL		.5585	.3244	.0696	.0044	.0030	.0	.0	.0	.0	.1422	1.0000

NUMBER OF VALID DATA HOURS = 675
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 90.7

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON　　　　　　　　　　　　　　Y-8162

I P 4　　33 FT

FEB 01, 1974 - FEB 28, 1974

WIND DIRECTION		WIND SPEED MPH 00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0268	.0372	.0134	.0015	.0	.0	.0	.0	.0	.0	.0789
12- 33	NNE	.0208	.1086	.0938	.0015	.0	.0	.0	.0	.0	.0	.2247
34- 56	NE	.0417	.0699	.0179	.0015	.0	.0	.0	.0	.0	.0	.1310
57- 78	ENE	.0119	.0089	.0	.0	.0	.0	.0	.0	.0	.0	.0208
79-101	E	.0134	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0134
102-123	ESE	.0060	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0060
124-146	SE	.0030	.0015	.0	.0	.0	.0	.0	.0	.0	.0	.0045
147-168	SSE	.0074	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0074
169-191	S	.0193	.0149	.0015	.0	.0	.0	.0	.0	.0	.0	.0357
192-213	SSW	.0536	.0298	.0030	.0015	.0	.0	.0	.0	.0	.0	.0878
214-236	SW	.0313	.0089	.0	.0	.0	.0	.0	.0	.0	.0	.0402
237-258	WSW	.0149	.0030	.0015	.0	.0	.0	.0	.0	.0	.0	.0193
259-281	W	.0179	.0015	.0030	.0	.0	.0	.0	.0	.0	.0	.0223
282-303	WNW	.0074	.0119	.0045	.0045	.0	.0	.0	.0	.0	.0	.0283
304-326	NW	.0164	.0461	.0521	.0164	.0	.0	.0	.0	.0	.0060	.1369
327-348	NNW	.0089	.0446	.0327	.0089	.0	.0	.0	.0	.0	.0060	.1012
[illegible]		.0327	.0045	.0	.0	.0	.0	.0	.0	.0	.0	.0372
[illegible]		.0045										.0045
[illegible]		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
[illegible]		.3378	.3914	.2232	.0357	.0	.0	.0	.0	.0	.0119	1.0000

NUMBER OF VALID DATA HOURS = 672
PERCENT OF VALID HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION
STAMFORD, CONNECTICUT

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STAMFORD, CONNECTICUT

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 33 FT

MAR 01, 1974 - MAR 31, 1974

WIND DIRECTION		WIND SPEED MPH									
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0270	.0445	.0350	.0067	.0013	.0	.0	.0	.0	.0054	.1199
12- 33	NNE	.0350	.0620	.0081	.0	.0	.0	.0	.0	.0	.0027	.1078
34- 56	NE	.0364	.0647	.0054	.0	.0	.0	.0	.0	.0	.0081	.1146
57- 78	ENE	.0135	.0054	.0	.0	.0	.0	.0	.0	.0	.0	.0189
79-101	E	.0067	.0013	.0	.0	.0	.0	.0	.0	.0	.0	.0081
102-123	ESE	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0040
124-146	SE	.0108	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0108
147-168	SSE	.0243	.0027	.0	.0	.0	.0	.0	.0	.0	.0	.0270
169-191	S	.0418	.0081	.0027	.0	.0	.0	.0	.0	.0	.0040	.0566
192-213	SSW	.0256	.0067	.0121	.0	.0	.0	.0	.0	.0	.0067	.0512
214-236	SW	.0323	.0040	.0040	.0	.0	.0	.0	.0	.0	.0040	.0445
237-258	WSW	.0162	.0027	.0013	.0	.0	.0	.0	.0	.0	.0	.0202
259-281	W	.0216	.0054	.0094	.0	.0	.0	.0	.0	.0	.0	.0364
282-303	WNW	.0139	.0243	.0296	.0013	.0	.0	.0	.0	.0	.0013	.0755
304-326	NW	.0108	.0404	.0526	.0162	.0	.0	.0	.0	.0	.0040	.1240
327-348	NNW	.0175	.0391	.0580	.0108	.0	.0	.0	.0	.0	.0040	.1294
VAR		.0431	.0081	.0	.0	.0	.0	.0	.0	.0	.0	.0512
CALM		.0										.0
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0027
TOTAL		.3854	.3194	.2183	.0350	.0013	.0	.0	.0	.0	.0431	1.0000

NUMBER OF VALID DATA HOURS = 742

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 99.7

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 33 FT

APR 01, 1974 - APR 30, 1974

WIND DIRECTION		WIND SPEED MPH 00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0222	.0389	.0056	.0	.0	.0	.0	.0	.0	.0	.0667
12- 33	NNE	.0236	.0764	.0444	.0	.0	.0	.0	.0	.0	.0	.1444
34- 56	NE	.0389	.0250	.0139	.0	.0	.0	.0	.0	.0	.0	.0778
57- 78	ENE	.0111	.0056	.0	.0	.0	.0	.0	.0	.0	.0	.0167
79-101	E	.0055	.0014	.0	.0	.0	.0	.0	.0	.0	.0	.0069
102-123	ESE	.0069	.0014	.0	.0	.0	.0	.0	.0	.0	.0	.0083
124-146	SE	.0056	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0056
147-168	SSE	.0131	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0131
169-191	S	.1306	.0319	.0	.0	.0	.0	.0	.0	.0	.0	.1625
192-213	SSW	.0431	.0306	.0167	.0014	.0	.0	.0	.0	.0	.0	.0917
214-236	SW	.0319	.0083	.0083	.0028	.0	.0	.0	.0	.0	.0	.0514
237-258	WSW	.0194	.0056	.0056	.0	.0	.0	.0	.0	.0	.0014	.0319
259-281	W	.0194	.0111	.0014	.0	.0	.0	.0	.0	.0	.0	.0319
282-303	WNW	.0097	.0194	.0042	.0	.0	.0	.0	.0	.0	.0069	.0403
304-326	NW	.0125	.0486	.0403	.0111	.0	.0	.0	.0	.0	.0014	.1139
327-348	NNW	.0111	.0333	.0444	.0014	.0	.0	.0	.0	.0	.0	.0903
[illegible]		.0389	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0417
[illegible]		.0										.0
[illegible]		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
[illegible]		[illegible]	.3403	.1847	.0167	.0	.0	.0	.0	.0	.0097	1.0000

NUMBER OF VALID DATA HOURS = 720
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

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STAMFORD, CONNECTICUT

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

[illegible] CON EDISON
I P 4 33 FT

MAY 01, 1974 - MAY 31, 1974

DIRECTION	WIND SPEED MPH 00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]	.0[illegible]	.0134	.0013	.0013	.0	.0	.0	.0	.0	.0	.0605
[illegible]	.0511	.0417	.0	.0	.0	.0	.0	.0	.0	.0	.0927
[illegible]	.0632	.0336	.0040	.0	.0	.0	.0	.0	.0	.0	.1008
[illegible]	.0282	.0094	.0	.0	.0	.0	.0	.0	.0	.0	.0376
[illegible]	.0242	.0013	.0	.0	.0	.0	.0	.0	.0	.0	.0255
[illegible]	.0188	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0188
[illegible]	.0242	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0242
[illegible]	.0390	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0430
[illegible]	.1116	.0577	.0027	.0	.0	.0	.0	.0	.0	.0	.1720
[illegible]	.0[illegible]	.0376	.0054	.0	.0	.0	.0	.0	.0	.0	.0860
[illegible]	.0376	.014[illegible]	.0	.0013	.0	.0	.0	.0	.0	.0	.0538
[illegible]	.0202	.0054	.0	.0	.0	.0	.0	.0	.0	.0	.0255
[illegible]	.01[illegible]1	.0054	.0013	.0	.0	.0	.0	.0	.0	.0	.0228
[illegible]	.0[illegible]	.0134	.0054	.0013	.0	.0	.0	.0	.0	.0	.0363
[illegible]	.01[illegible]	.0269	.0175	.0081	.0013	.0	.0	.0	.0	.0	.0685
[illegible]	.0134	.0229	.0148	.0040	.0	.0	.0	.0	.0	.0	.0551
[illegible]	.0726	.0027	.0	.0	.0	.0	.0	.0	.0	.0	.0753
[illegible]	.0013										.0013
[illegible]	.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
	.68[illegible]	.2903	.0524	.0161	.0013	.0	.0	.0	.0	.0	1.0000

[illegible] VALID DATA HOURS = 744
[illegible] TOTAL [illegible] PERCENT IN FREQUENCY DISTRIBUTION = 100.0

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-3162

YORK CON EDISON
I P 3 33 FT

JUN 01, 1974 - JUN 30, 1974

[illegible]		WIND SPEED MPH									
	[illegible]-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]	.0[illegible]	.0042	.0	.0	.0	.0	.0	.0	.0	.0042	.0264
[illegible]	.045[illegible]	.0236	.0028	.0	.0	.0	.0	.0	.0	.0347	.1069
[illegible]	.07[illegible]4	.0750	.0014	.0	.0	.0	.0	.0	.0	.0292	.1819
[illegible]	.0361	.0111	.0	.0	.0	.0	.0	.0	.0	.0111	.0583
[illegible]	.0139	.0083	.0	.0	.0	.0	.0	.0	.0	.0042	.0264
[illegible]	.0153	.0069	.0	.0	.0	.0	.0	.0	.0	.0	.0222
[illegible]	.0292	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0292
[illegible]	.0305	.0042	.0	.0	.0	.0	.0	.0	.0	.0	.0347
[illegible]	.0722	.0069	.0	.0	.0	.0	.0	.0	.0	.0	.0792
[illegible]	.0972	.0500	.0014	.0	.0	.0	.0	.0	.0	.0028	.1514
[illegible]-236	.0722	.0389	.0083	.0014	.0	.0	.0	.0	.0	.0014	.1222
[illegible]	.0347	.0014	.0	.0	.0	.0	.0	.0	.0	.0	.0361
[illegible]	.0097	.0111	.0	.0	.0	.0	.0	.0	.0	.0083	.0292
[illegible]-303	.0042	.0028	.0	.0	.0	.0	.0	.0	.0	.0014	.0083
[illegible]	.0056	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0083
[illegible]	.0069	.0014	.0	.0	.0	.0	.0	.0	.0	.0014	.0097
[illegible]	.0556	.0028	.0	.0	.0	.0	.0	.0	.0	.0097	.0681
[illegible]	.0014										.0014
[illegible]	.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
[illegible]	.3250	.2514	.0139	.0014	.0	.0	.0	.0	.0	.1083	1.0000

[illegible] OF VALID DATA HOURS = 720
[illegible] OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

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YORK RESEARCH CORPORATION
STAMFORD, CONNECTICUT

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO. Y-8162

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 33 FT

JUL 01, 1974 - JUL 31, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0215	.0094	.0	.0	.0	.0	.0	.0	.0	.0027	.0336
12- 33	NNE	.0525	.0794	.0081	.0	.0	.0	.0	.0	.0	.0013	.1413
34- 56	NE	.0619	.0700	.0121	.0	.0	.0	.0	.0	.0	.0040	.1480
57- 78	ENE	.0363	.0175	.0	.0	.0	.0	.0	.0	.0	.0	.0538
79-101	E	.0229	.0013	.0	.0	.0	.0	.0	.0	.0	.0013	.0256
102-123	ESE	.0108	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0108
124-146	SE	.0188	.0	.0	.0	.0	.0	.0	.0	.0	.0013	.0202
147-168	SSE	.0229	.0	.0	.0	.0	.0	.0	.0	.0	.0013	.0242
169-191	S	.0471	.0054	.0	.0	.0	.0	.0	.0	.0	.0	.0525
192-213	SSW	.0686	.0417	.0	.0	.0	.0	.0	.0	.0	.0	.1104
214-236	SW	.0713	.0444	.0081	.0	.0	.0	.0	.0	.0	.0054	.1292
237-258	WSW	.0229	.0162	.0027	.0	.0	.0	.0	.0	.0	.0027	.0444
259-281	W	.0310	.0094	.0013	.0	.0	.0	.0	.0	.0	.0054	.0471
282-303	WNW	.0215	.0202	.0	.0	.0	.0	.0	.0	.0	.0013	.0431
304-326	NW	.0175	.0108	.0027	.0	.0	.0	.0	.0	.0	.0027	.0336
327-348	NNW	.0081	.0040	.0	.0	.0	.0	.0	.0	.0	.0027	.0148
VAR		.0606	.0	.0	.0	.0	.0	.0	.0	.0	.0067	.0673
CALM		.0										.0
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0013
TOTAL		.5962	.3297	.0350	.0	.0	.0	.0	.0	.0	.0404	1.0000

NUMBER OF VALID DATA HOURS = 743
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 99.9

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 33 FT

AUG 01, 1974 - AUG 31, 1974

WIND DIRECTION		WIND SPEED MPH									
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0175	.0067	.0	.0	.0	.0	.0	.0	.0	.0013	.0255
12- 33	NNE	.0484	.0349	.0040	.0	.0	.0	.0	.0	.0	.0	.0874
34- 56	NE	.1048	.0901	.0054	.0	.0	.0	.0	.0	.0	.0054	.2056
57- 78	ENE	.0618	.0323	.0	.0	.0	.0	.0	.0	.0	.0040	.0981
79-101	E	.0323	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0363
102-123	ESE	.0108	.0013	.0	.0	.0	.0	.0	.0	.0	.0	.0121
124-146	SE	.0148	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0148
147-168	SSE	.0121	.0	.0	.0	.0	.0	.0	.0	.0	.0027	.0121
169-191	S	.0323	.0	.0	.0	.0	.0	.0	.0	.0	.0013	.0349
192-213	SSW	.0927	.0309	.0027	.0	.0	.0	.0	.0	.0	.0	.1277
214-236	SW	.0954	.0672	.0215	.0	.0	.0	.0	.0	.0	.0013	.1841
237-258	WSW	.0323	.0054	.0	.0	.0	.0	.0	.0	.0	.0	.0390
259-281	W	.0202	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0242
282-303	WNW	.0121	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0161
304-326	NW	.0108	.0054	.0	.0	.0	.0	.0	.0	.0	.0	.0161
327-348	NNW	.0134	.0027	.0	.0	.0	.0	.0	.0	.0	.0	.0161
VAR		.0484	.0	.0	.0	.0	.0	.0	.0	.0	.0013	.0497
CALM		.0										.0
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
TOTAL		.6599	.2890	.0336	.0	.0	.0	.0	.0	.0	.0175	1.0000

NUMBER OF VALID DATA HOURS = 744
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 125 FT

OCT 01, 1973 - OCT 31, 1973

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0057	.0257	.0185	.0043	.0014	.0	.0	.0	.0	.0	.0556
12- 33	NNE	.0086	.0357	.0228	.0100	.0014	.0	.0	.0	.0	.0	.0785
34- 56	NE	.0014	.0713	.0342	.0043	.0	.0	.0	.0	.0	.0	.1113
57- 78	ENE	.0057	.0171	.0257	.0114	.0014	.0	.0	.0	.0	.0	.0613
79-101	E	.0014	.0086	.0071	.0014	.0014	.0	.0	.0	.0	.0	.0200
102-123	ESE	.0	.0157	.0057	.0014	.0	.0	.0	.0	.0	.0	.0228
124-146	SE	.0014	.0086	.0086	.0	.0	.0	.0	.0	.0	.0	.0185
147-168	SSE	.0	.0143	.0043	.0	.0	.0	.0	.0	.0	.0	.0185
169-191	S	.0014	.0200	.0228	.0	.0	.0	.0	.0	.0	.0	.0442
192-213	SSW	.0014	.0200	.0157	.0071	.0	.0	.0	.0	.0	.0	.0442
214-236	SW	.0	.0128	.0171	.0086	.0	.0	.0	.0	.0	.0	.0385
237-258	WSW	.0	.0128	.0043	.0	.0	.0	.0	.0	.0	.0	.0171
259-281	W	.0057	.0114	.0043	.0	.0	.0	.0	.0	.0	.0	.0214
282-303	WNW	.0014	.0114	.0185	.0114	.0057	.0	.0	.0	.0	.0	.0485
304-326	NW	.0043	.0100	.0257	.0200	.0014	.0	.0	.0	.0	.0	.0613
327-348	NNW	.0014	.0100	.0157	.0143	.0	.0	.0	.0	.0	.0	.0414
VAR		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CALM		.0100										.0100
MISS		.0328	.1355	.0927	.0228	.0029	.0	.0	.0	.0		.3481
TOTAL		.0827	.4408	.3438	.1170	.0157	.0	.0	.0	.0	.0613	1.0000

NUMBER OF VALID DATA HOURS = 701
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 94.2

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YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO.

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 125 FT

NOV 01, 1973 - NOV 30, 1973

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0097	.0042	.0153	.0111	.0042	.0014	.0	.0	.0	.0	.0459
12- 33	NNE	.0056	.0125	.0362	.0209	.0042	.0	.0	.0	.0	.0	.0793
34- 56	NE	.0028	.0195	.0111	.0223	.0028	.0	.0	.0	.0	.0	.0584
57- 78	ENE	.0042	.0097	.0042	.0056	.0	.0	.0	.0	.0	.0	.0236
79-101	E	.0014	.0042	.0	.0	.0	.0	.0	.0	.0	.0	.0056
102-123	ESE	.0042	.0042	.0028	.0014	.0	.0	.0	.0	.0	.0	.0125
124-146	SE	.0	.0014	.0014	.0014	.0	.0	.0	.0	.0	.0	.0042
147-168	SSE	.0028	.0097	.0139	.0	.0	.0	.0	.0	.0	.0	.0264
169-191	S	.0028	.0445	.0264	.0083	.0	.0	.0	.0	.0	.0	.0821
192-213	SSW	.0042	.0195	.0501	.0139	.0	.0	.0	.0	.0	.0	.0876
214-236	SW	.0056	.0223	.0473	.0181	.0	.0	.0	.0	.0	.0	.0932
237-258	WSW	.0014	.0167	.0292	.0070	.0	.0	.0	.0	.0	.0	.0542
259-281	W	.0042	.0097	.0181	.0070	.0056	.0014	.0	.0	.0	.0	.0459
282-303	WNW	.0014	.0153	.0501	.0250	.0056	.0	.0	.0	.0	.0	.0974
304-326	NW	.0014	.0111	.0821	.0723	.0153	.0042	.0	.0	.0	.0	.1864
327-348	NNW	.0028	.0083	.0264	.0501	.0070	.0	.0	.0	.0	.0	.0946
VAR		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CALM		.0028										.0028
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0014
TOTAL		.0570	.2128	.4145	.2643	.0445	.0070	.0	.0	.0	.0014	1.0000

NUMBER OF VALID DATA HOURS = 719
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 99.9

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YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 125 FT

DEC 01, 1973 - DEC 31, 1973

WIND DIRECTION		WIND SPEED MPH									
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0054	.0272	.0380	.0285	.0095	.0163	.0	.0	.0	.0	.1250
12- 33	NNE	.0109	.0557	.0571	.0163	.0014	.0014	.0	.0	.0	.0014	.1440
34- 56	NE	.0299	.0408	.0245	.0068	.0	.0	.0	.0	.0	.0014	.1033
57- 78	ENE	.0095	.0149	.0041	.0	.0	.0	.0	.0	.0	.0	.0285
79-101	E	.0109	.0027	.0014	.0	.0	.0	.0	.0	.0	.0	.0149
102-123	ESE	.0054	.0041	.0	.0	.0	.0	.0	.0	.0	.0	.0095
124-146	SE	.0041	.0	.0014	.0	.0	.0	.0	.0	.0	.0	.0054
147-168	SSE	.0041	.0068	.0095	.0	.0	.0	.0	.0	.0	.0	.0204
169-191	S	.0109	.0109	.0068	.0122	.0014	.0	.0	.0	.0	.0	.0421
192-213	SSW	.0163	.0217	.0122	.0109	.0041	.0027	.0	.0	.0	.0	.0679
214-236	SW	.0095	.0217	.0122	.0027	.0027	.0	.0	.0	.0	.0	.0489
237-258	WSW	.0122	.0122	.0054	.0014	.0	.0	.0	.0	.0	.0	.0313
259-281	W	.0122	.0082	.0054	.0041	.0	.0	.0	.0	.0	.0	.0299
282-303	WNW	.0095	.0109	.0231	.0109	.0014	.0	.0	.0	.0	.0	.0557
304-326	NW	.0027	.0068	.0598	.0652	.0068	.0041	.0014	.0	.0	.0014	.1481
327-348	NNW	.0068	.0109	.0231	.0258	.0054	.0	.0	.0	.0	.0	.0720
VAR		.0353	.0027	.0027	.0	.0	.0	.0	.0	.0	.0	.0408
CALM		.0										.0
MISS		.0027	.0041	.0	.0041	.0014	.0	.0	.0	.0		.0231
TOTAL		.1984	.2622	.2867	.1889	.0340	.0245	.0014	.0	.0	.0149	1.0000

NUMBER OF VALID DATA HOURS = 730

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 98.9

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO. Y-8162

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 125 FT

JAN 01,1974 - JAN 31,1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0223	.0327	.0193	.0119	.0	.0	.0	.0	.0	.0045	.0908
12- 33	NNE	.0238	.0744	.0283	.0089	.0	.0	.0	.0	.0	.0298	.1652
34- 56	NE	.0223	.0432	.0104	.0	.0	.0	.0	.0	.0	.0089	.0848
57- 78	ENE	.0179	.0119	.0	.0	.0	.0	.0	.0	.0	.0015	.0313
79-101	E	.0060	.0	.0	.0	.0	.0	.0	.0	.0	.0015	.0074
102-123	ESE	.0060	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0060
124-146	SE	.0074	.0030	.0	.0	.0	.0	.0	.0	.0	.0015	.0119
147-168	SSE	.0149	.0045	.0	.0	.0	.0	.0	.0	.0	.0015	.0208
169-191	S	.0238	.0372	.0030	.0	.0	.0	.0	.0	.0	.0	.0640
192-213	SSW	.0417	.0268	.0119	.0030	.0	.0	.0	.0	.0	.0030	.0863
214-236	SW	.0387	.0208	.0089	.0030	.0030	.0	.0	.0	.0	.0015	.0759
237-258	WSW	.0238	.0074	.0	.0	.0	.0	.0	.0	.0	.0	.0313
259-281	W	.0089	.0104	.0030	.0030	.0	.0	.0	.0	.0	.0	.0253
282-303	WNW	.0060	.0119	.0074	.0030	.0	.0	.0	.0	.0	.0	.0283
304-326	NW	.0045	.0298	.0506	.0238	.0045	.0015	.0	.0	.0	.0045	.1190
327-348	NNW	.0060	.0149	.0432	.0238	.0	.0015	.0030	.0	.0	.0015	.0937
VAR		.0313	.0045	.0	.0	.0	.0	.0	.0	.0	.0104	.0461
CALM		.0045										.0045
MISS		.0015	.0060	.0	.0	.0	.0	.0	.0	.0		.1146
TOTAL		.3110	.3393	.1860	.0804	.0074	.0030	.0030	.0	.0	.1771	1.0000

NUMBER OF VALID DATA HOURS = 672
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 90.3

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

[illegible] CON EDISON — Y-8162

I P [illegible] 125 FT

FEB 01, 1974 - FEB 28, 1974

WIND DIRECTION	00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]	.0060	.0104	.0595	.0298	.0030	.0	.0	.0	.0	.0	.1086
[illegible]	.0208	.0551	.0878	.0670	.0060	.0	.0	.0	.0	.0	.2366
[illegible]	.0208	.0521	.0119	.0045	.0	.0	.0	.0	.0	.0	.0893
[illegible]	.0074	.0030	.0	.0	.0	.0	.0	.0	.0	.0	.0104
[illegible]	.0030	.0015	.0	.0	.0	.0	.0	.0	.0	.0	.0045
[illegible]	.0045	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0045
[illegible]	.0045	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0045
[illegible]	.0074	.0030	.0045	.0015	.0	.0	.0	.0	.0	.0	.0164
[illegible]	.0164	.0223	.0164	.0060	.0045	.0030	.0015	.0	.0	.0	.0699
[illegible]	.0134	.0372	.0253	.0060	.0	.0	.0	.0	.0	.0	.0818
[illegible]	.0238	.0104	.0060	.0	.0	.0	.0	.0	.0	.0	.0402
[illegible]	.0134	.0015	.0	.0030	.0	.0	.0	.0	.0	.0	.0179
[illegible]	.0045	.0045	.0	.0015	.0015	.0	.0	.0	.0	.0	.0119
[illegible]	.0104	.0015	.0030	.0074	.0	.0030	.0030	.0	.0	.0	.0283
[illegible]	.0015	.0134	.0327	.0595	.0208	.0045	.0	.0	.0	.0	.1324
[illegible]	.0089	.0208	.0372	.0357	.0179	.0015	.0	.0	.0	.0	.1220
[illegible]	.0208	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0208
[illegible]	.0										.0
[illegible]	.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
[illegible]	.1875	.2366	.2642	.2217	.0536	.0119	.0045	.0	.0	.0	1.0000

NUMBER OF VALID OBSERVATIONS = 672

[illegible] PERCENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

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YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-3162

FOR CON EDISON
[illegible] 125 FT

MAR 01, 1974 - MAR 31, 1974

WIND SPEED MPH

DIRECTION		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
– 11	[illegible]	.0074	.0243	.0391	.0146	.0067	.0	.0	.0	.0	.0108	.1051
1 – 33	[illegible]	.0162	.0404	.0296	.0013	.0	.0	.0	.0	.0	.0108	.0984
– 56	[illegible]	.014[illegible]	.0148	.0255	.0013	.0	.0	.0	.0	.0	.0283	.0849
57 – 78	[illegible]	.0108	.0081	.0	.0	.0	.0	.0	.0	.0	.0013	.0202
– 101	E	.0040	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0081
1 – 123	[illegible]	.0067	.0013	.0	.0	.0	.0	.0	.0	.0	.0027	.0108
1 – 146	[illegible]	.0094	.0081	.0	.0	.0	.0	.0	.0	.0	.0	.0175
147 – 168	[illegible]	.0081	.0094	.0040	.0	.0	.0	.0	.0	.0	.0	.0216
1 – 191	S	.0256	.0243	.0229	.0094	.0027	.0	.0	.0	.0	.0	.0849
1 – 213	[illegible]	.0229	.0159	.0054	.0094	.0027	.0	.0	.0	.0	.0013	.0606
21 – 236	[illegible]	.0202	.0094	.0054	.0081	.0	.0	.0	.0	.0	.0	.0431
– 25	[illegible]	.0135	.0027	.0	.0013	.0	.0	.0	.0	.0	.0027	.0175
– 281	[illegible]	.0113	.0040	.0067	.0094	.0	.0	.0	.0	.0	.0054	.0404
– 303	[illegible]	.0067	.0121	.0108	.0135	.0027	.0	.0	.0	.0	.0202	.0660
– 326	[illegible]	.0074	.0094	.0445	.0391	.0162	.0027	.0	.0	.0	.0121	.1334
7 – 34	[illegible]	.0108	.0135	.0350	.0674	.0189	.0067	.0013	.0	.0	.0067	.1604
[illegible]		.0229	.0013	.0013	.0	.0	.0	.0	.0	.0	.0013	.0270
[illegible]		.0										.0
[illegible]		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0027
[illegible]		.2237	.2062	.2306	.1752	.0499	.0094	.0013	.0	.0	.1065	1.0000

NUMBER OF VALID [illegible] HOURS = 742
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 99.7

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REPORT NO. Y-8162

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 125 FT

APR 01, 1974 - APR 30, 1974

WIND DIRECTION		WIND SPEED MPH 00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0083	.0264	.0361	.0278	.0014	.0	.0	.0	.0	.0	.1000
12- 33	NNE	.0125	.0528	.0403	.0208	.0	.0	.0	.0	.0	.0	.1264
34- 56	NE	.0208	.0194	.0125	.0014	.0	.0	.0	.0	.0	.0	.0542
57- 78	ENE	.0097	.0042	.0	.0	.0	.0	.0	.0	.0	.0	.0139
79-101	E	.0028	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0056
102-123	ESE	.0042	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0069
124-146	SE	.0028	.0014	.0	.0	.0	.0	.0	.0	.0	.0	.0042
147-168	SSE	.0083	.0056	.0042	.0	.0	.0	.0	.0	.0	.0	.0181
169-191	S	.0278	.0847	.0681	.0153	.0	.0	.0	.0	.0	.0014	.1972
192-213	SSW	.0222	.0250	.0139	.0181	.0028	.0	.0	.0	.0	.0028	.0847
214-236	SW	.0083	.0125	.0069	.0125	.0042	.0	.0	.0	.0	.0	.0444
237-258	WSW	.0153	.0042	.0042	.0083	.0	.0	.0	.0	.0	.0	.0319
259-281	W	.0097	.0056	.0028	.0028	.0	.0	.0	.0	.0	.0	.0208
282-303	WNW	.0042	.0097	.0264	.0111	.0042	.0	.0	.0	.0	.0	.0556
304-326	NW	.0028	.0097	.0500	.0403	.0125	.0	.0	.0	.0	.0	.1153
327-348	NNW	.0042	.0097	.0361	.0375	.0014	.0014	.0	.0	.0	.0	.0903
VAR		.0264	.0014	.0014	.0	.0	.0	.0	.0	.0	.0	.0292
CALM		.0										.0
MISS		.0014	.0	.0	.0	.0	.0	.0	.0	.0		.0014
TOTAL		.1917	.2778	.3028	.1958	.0264	.0014	.0	.0	.0	.0042	1.0000

NUMBER OF VALID DATA HOURS = 720
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON Y-8162

I P 4 125 FT

MAY 01, 1974 – MAY 31, 1974

WIND DIRECTION		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]– 11	N	.0148	.0336	.0202	.0054	.0	.0013	.0	.0	.0	.0	.0753
[illegible]	[illegible]	.0353	.0524	.0255	.0013	.0	.0	.0	.0	.0	.0013	.1169
[illegible]	[illegible]	.0349	.0470	.0134	.0	.0	.0	.0	.0	.0	.0	.0954
[illegible]	[illegible]	.0148	.0134	.0094	.0	.0	.0	.0	.0	.0	.0	.0376
[illegible]–101	E	.01[illegible]	.0067	.0094	.0027	.0	.0	.0	.0	.0	.0	.0376
[illegible]	[illegible]	.0121	.0027	.0	.0054	.0	.0	.0	.0	.0	.0	.0202
[illegible]	[illegible]	.0094	.0081	.0	.0013	.0	.0	.0	.0	.0	.0	.0188
[illegible]	[illegible]	.0202	.0228	.0242	.0040	.0	.0	.0	.0	.0	.0	.0712
[illegible]	S	.0202	.0470	.0618	.0282	.0027	.0013	.0	.0	.0	.0	.1613
[illegible]	[illegible]	.0175	.0215	.0108	.0081	.0	.0	.0	.0	.0	.0	.0578
[illegible]	[illegible]	.02[illegible]	.0121	.0067	.0	.0013	.0	.0	.0	.0	.0	.0457
[illegible]	[illegible]	.0121	.0054	.0067	.0	.0	.0	.0	.0	.0	.0	.0242
[illegible]	[illegible]	.0108	.0094	.0054	.0013	.0	.0	.0	.0	.0	.0	.0269
[illegible]	[illegible]	.0094	.0040	.0121	.0067	.0027	.0	.0	.0	.0	.0	.0349
[illegible]	[illegible]	.01[illegible]	.0067	.0242	.0134	.0108	.0040	.0013	.0	.0	.0	.0753
[illegible]	[illegible]	.0054	.0108	.0148	.0255	.0094	.0	.0	.0	.0	.0	.0659
[illegible]		.0349	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0349
[illegible]		.0										.0
[illegible]		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
[illegible]		.3113	.3038	.2446	.1035	.0269	.0067	.0013	.0	.0	.0013	1.0000

[illegible] VALID [illegible] HOURS = 7[illegible]

[illegible] TOTAL [illegible] PERCENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

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REPORT NO.

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-3162

FOR: CON EDISON
I P 3 125 FT

JUL 01, 1974 - JUN 30, 1974

WIND SPEED MPH

[illegible]	00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]	.0111	.0125	.0139	.0014	.0	.0	.0	.0	.0	.0	.0458
[illegible]	.0319	.0389	.0333	.0097	.0	.0	.0	.0	.0	.0	.1139
[illegible]	[illegible]	.1028	.0139	.0	.0	.0	.0	.0	.0	.0	.1569
[illegible]	.0111	.0069	.0028	.0	.0	.0	.0	.0	.0	.0	.0278
[illegible]	[illegible]	.0083	.0056	.0	.0	.0	.0	.0	.0	.0	.0222
[illegible]	[illegible]	.0167	.0083	.0	.0	.0	.0	.0	.0	.0	.0319
[illegible]	.0111	.0278	.0069	.0014	.0	.0	.0	.0	.0	.0	.0472
[illegible]	.0222	.0278	.0139	.0	.0	.0	.0	.0	.0	.0	.0639
[illegible]	[illegible]	.0597	.0458	.0097	.0	.0	.0	.0	.0	.0	.1500
[illegible]	.0375	.0375	.0222	.0028	.0	.0	.0	.0	.0	.0	.1000
[illegible]	[illegible]	[illegible]	.0111	.0083	.0014	.0	.0	.0	.0	.0	.0875
[illegible]	.0153	.0125	[illegible]	.0	.0	.0	.0	.0	.0	.0	.0306
[illegible]	.0153	[illegible]	.0042	.0014	.0	.0	.0	.0	.0	.0	.0292
[illegible]	.0111	.0083	[illegible]	.0014	.0	.0	.0	.0	.0	.0	.0264
[illegible]	.0117	.0042	.0056	.0028	.0	.0	.0	.0	.0	.0	.0292
[illegible]	.0	.0042	[illegible]	.0	.0	.0	.0	.0	.0	.0	.0069
	[illegible]	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0306
	.0										.0
	.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
[illegible]	[illegible]	.3972	[illegible]	.0389	.0014	.0	.0	.0	.0	.0	1.0000

[illegible] = 720
[illegible] FREQUENCY DISTRIBUTION = 100.0

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STAMFORD, CONNECTICUT

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 125 FT

JUL 01, 1974 - JUL 31, 1974

WIND DIRECTION		WIND SPEED MPH									
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0121	.0215	.0444	.0148	.0	.0	.0	.0	.0	.0	.0927
12- 33	NNE	.0228	.0363	.0444	.0094	.0	.0	.0	.0	.0	.0	.1129
34- 56	NE	.0228	.0780	.0121	.0040	.0	.0	.0	.0	.0	.0	.1169
57- 78	ENE	.0134	.0202	.0	.0	.0	.0	.0	.0	.0	.0	.0336
79-101	E	.0094	.0067	.0	.0	.0	.0	.0	.0	.0	.0	.0161
102-123	ESE	.0121	.0013	.0	.0	.0	.0	.0	.0	.0	.0	.0134
124-146	SE	.0161	.0081	.0	.0	.0	.0	.0	.0	.0	.0	.0242
147-168	SSE	.0148	.0255	.0094	.0	.0	.0	.0	.0	.0	.0	.0497
169-191	S	.0148	.0417	.0282	.0108	.0	.0	.0	.0	.0	.0	.0954
192-213	SSW	.0148	.0363	.0215	.0	.0	.0	.0	.0	.0	.0	.0726
214-236	SW	.0202	.0511	.0148	.0027	.0	.0	.0	.0	.0	.0	.0887
237-258	WSW	.0081	.0215	.0148	.0081	.0	.0	.0	.0	.0	.0	.0524
259-281	W	.0175	.0188	.0054	.0	.0013	.0	.0	.0	.0	.0	.0430
282-303	WNW	.0054	.0202	.0269	.0027	.0	.0	.0	.0	.0	.0	.0551
304-326	NW	.0121	.0148	.0228	.0081	.0040	.0	.0	.0	.0	.0	.0618
327-348	NNW	.0067	.0161	.0134	.0054	.0	.0	.0	.0	.0	.0	.0417
VAR		.0269	.0027	.0	.0	.0	.0	.0	.0	.0	.0	.0296
CALM		.0										.0
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
TOTAL		.2500	.4207	.2581	.0659	.0054	.0	.0	.0	.0	.0	1.0000

NUMBER OF VALID DATA HOURS = 744
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 125 FT

AUG 01, 1974 - AUG 31, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0215	.0282	.0161	.0	.0013	.0	.0	.0	.0	.0	.0672
12- 33	NNE	.0242	.0390	.0188	.0013	.0	.0	.0	.0	.0	.0	.0833
34- 56	NE	.0376	.1573	.0175	.0	.0	.0	.0	.0	.0	.0	.2124
57- 78	ENE	.0269	.0202	.0067	.0	.0	.0	.0	.0	.0	.0	.0538
79-101	E	.0108	.0094	.0027	.0	.0	.0	.0	.0	.0	.0	.0228
102-123	ESE	.0040	.0013	.0	.0	.0	.0	.0	.0	.0	.0	.0054
124-146	SE	.0161	.0013	.0027	.0	.0	.0	.0	.0	.0	.0	.0202
147-168	SSE	.0121	.0134	.0	.0	.0	.0	.0	.0	.0	.0	.0255
169-191	S	.0202	.0430	.0121	.0054	.0	.0	.0	.0	.0	.0	.0806
192-213	SSW	.0363	.0484	.0282	.0027	.0013	.0	.0	.0	.0	.0	.1169
214-236	SW	.0349	.0538	.0296	.0188	.0	.0	.0	.0	.0	.0	.1371
237-258	WSW	.0215	.0094	.0027	.0013	.0	.0	.0	.0	.0	.0	.0349
259-281	W	.0188	.0054	.0054	.0	.0	.0	.0	.0	.0	.0	.0296
282-303	WNW	.0108	.0121	.0067	.0	.0	.0	.0	.0	.0	.0	.0296
304-326	NW	.0040	.0081	.0121	.0	.0	.0	.0	.0	.0	.0	.0242
327-348	NNW	.0121	.0121	.0054	.0013	.0	.0	.0	.0	.0	.0	.0309
VAR		.0255	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0255
CALM		.0										.0
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
TOTAL		.3374	.4624	.1667	.0309	.0027	.0	.0	.0	.0	.0	1.0000

NUMBER OF VALID DATA HOURS = 744
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO. Y-8162

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 280 FT

OCT 01, 1973 - OCT 31, 1973

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0103	.0235	.0308	.0220	.0015	.0	.0	.0	.0	.0015	.0896
12- 33	NNE	.0338	.0470	.0396	.0220	.0	.0	.0	.0	.0	.0	.1424
34- 56	NE	.0088	.0514	.0470	.0117	.0	.0	.0	.0	.0	.0015	.1204
57- 78	ENE	.0103	.0044	.0162	.0088	.0	.0	.0	.0	.0	.0015	.0411
79-101	E	.0044	.0103	.0132	.0073	.0103	.0029	.0	.0	.0	.0015	.0499
102-123	ESE	.0073	.0044	.0103	.0059	.0	.0	.0	.0	.0	.0015	.0294
124-146	SE	.0088	.0073	.0059	.0	.0015	.0	.0	.0	.0	.0029	.0264
147-168	SSE	.0088	.0029	.0059	.0	.0	.0	.0	.0	.0	.0	.0176
169-191	S	.0059	.0220	.0176	.0073	.0	.0	.0	.0	.0	.0015	.0543
192-213	SSW	.0250	.0352	.0264	.0015	.0	.0	.0	.0	.0	.0044	.0925
214-236	SW	.0176	.0352	.0088	.0162	.0	.0	.0	.0	.0	.0029	.0808
237-258	WSW	.0132	.0220	.0059	.0	.0	.0	.0	.0	.0	.0044	.0455
259-281	W	.0029	.0147	.0103	.0015	.0	.0	.0	.0	.0	.0029	.0323
282-303	WNW	.0029	.0162	.0206	.0088	.0	.0	.0	.0	.0	.0015	.0499
304-326	NW	.0044	.0132	.0132	.0323	.0015	.0	.0	.0	.0	.0044	.0690
327-348	NNW	.0088	.0088	.0132	.0147	.0059	.0	.0	.0	.0	.0	.0514
VAR		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CALM		.0044										.0044
MISS		.0	.0015	.0015	.0	.0	.0	.0	.0	.0		.0954
TOTAL		.1777	.3201	.2863	.1601	.0206	.0029	.0	.0	.0	.1248	1.0000

NUMBER OF VALID DATA HOURS = 681
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 91.5

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO. Y-8162 PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 280 FT

NOV 01, 1973 - NOV 30, 1973

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0	.0014	.0083	.0139	.0111	.0028	.0	.0	.0	.0	.0376
12- 33	NNE	.0042	.0125	.0236	.0181	.0083	.0014	.0	.0	.0	.0	.0682
34- 56	NE	.0	.0167	.0097	.0097	.0	.0	.0	.0	.0	.0	.0362
57- 78	ENE	.0111	.0083	.0014	.0	.0	.0	.0	.0	.0	.0	.0209
79-101	E	.0070	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0070
102-123	ESE	.0083	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0111
124-146	SE	.0097	.0111	.0	.0	.0	.0	.0	.0	.0	.0	.0209
147-168	SSE	.0042	.0167	.0056	.0	.0	.0	.0	.0	.0	.0	.0264
169-191	S	.0097	.0389	.0209	.0028	.0	.0	.0	.0	.0	.0	.0723
192-213	SSW	.0111	.0181	.0362	.0042	.0014	.0	.0	.0	.0	.0	.0709
214-236	SW	.0111	.0125	.0570	.0334	.0014	.0	.0	.0	.0	.0	.1154
237-258	WSW	.0056	.0125	.0195	.0264	.0028	.0	.0	.0	.0	.0	.0668
259-281	W	.0083	.0042	.0125	.0125	.0070	.0	.0	.0	.0	.0014	.0459
282-303	WNW	.0042	.0042	.0306	.0264	.0097	.0028	.0014	.0	.0	.0042	.0834
304-326	NW	.0028	.0056	.0529	.0765	.0417	.0139	.0014	.0	.0	.0	.1947
327-348	NNW	.0056	.0111	.0181	.0529	.0264	.0	.0014	.0	.0	.0	.1154
VAR		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CALM		.0014										.0014
MISS		.0	.0028	.0028	.0	.0	.0	.0	.0	.0		.0070
TOTAL		.1043	.1794	.2990	.2768	.1099	.0209	.0042	.0	.0	.0070	1.0000

NUMBER OF VALID DATA HOURS = 719
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 99.9

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO. Y-8162

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 280 FT

DEC 01, 1973 - DEC 31, 1973

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0054	.0190	.0285	.0244	.0149	.0081	.0190	.0041	.0	.0	.1233
12- 33	NNE	.0027	.0230	.0285	.0339	.0027	.0014	.0	.0	.0	.0054	.0976
34- 56	NE	.0095	.0312	.0176	.0136	.0	.0	.0	.0	.0	.0095	.0813
57- 78	ENE	.0095	.0081	.0041	.0041	.0	.0	.0	.0	.0	.0027	.0285
79-101	E	.0041	.0027	.0	.0	.0	.0	.0	.0	.0	.0014	.0081
102-123	ESE	.0054	.0068	.0014	.0	.0	.0	.0	.0	.0	.0	.0136
124-146	SE	.0027	.0027	.0	.0	.0	.0	.0	.0	.0	.0	.0054
147-168	SSE	.0041	.0095	.0068	.0014	.0	.0	.0	.0	.0	.0	.0217
169-191	S	.0095	.0230	.0136	.0041	.0149	.0041	.0041	.0	.0	.0	.0732
192-213	SSW	.0068	.0149	.0108	.0014	.0014	.0054	.0	.0	.0	.0	.0407
214-236	SW	.0122	.0244	.0230	.0122	.0	.0	.0	.0	.0	.0	.0718
237-258	WSW	.0122	.0108	.0041	.0	.0	.0	.0	.0	.0	.0	.0271
259-281	W	.0014	.0054	.0054	.0027	.0	.0	.0	.0	.0	.0	.0149
282-303	WNW	.0	.0081	.0203	.0257	.0014	.0	.0	.0	.0	.0	.0556
304-326	NW	.0027	.0041	.0257	.0583	.0271	.0054	.0041	.0014	.0	.0	.1287
327-348	NNW	.0	.0122	.0203	.0217	.0136	.0	.0	.0	.0	.0	.0678
VAR		.0136	.0041	.0014	.0	.0	.0	.0	.0	.0	.0	.0190
CALM		.0										.0
MISS		.0447	.0244	.0190	.0339	.0	.0	.0	.0	.0		.1301
TOTAL		.1463	.2344	.2304	.2371	.0759	.0244	.0271	.0054	.0	.0271	1.0000

NUMBER OF VALID DATA HOURS = 738
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 99.2

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO. Y-8162

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 280 FT

JAN 01,1974 - JAN 31,1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
342- 11	N	.0105	.0135	.0180	.0120	.0	.0	.0	.0	.0	.0105	.0644
12- 33	NNE	.0120	.0254	.0299	.0359	.0045	.0	.0	.0	.0	.0629	.1707
34- 56	NE	.0135	.0539	.0120	.0015	.0015	.0	.0	.0	.0	.0120	.0943
57- 78	ENE	.0075	.0060	.0015	.0	.0	.0	.0	.0	.0	.0030	.0180
79-101	E	.0090	.0015	.0	.0	.0	.0	.0	.0	.0	.0015	.0120
102-123	ESE	.0030	.0	.0	.0	.0	.0	.0	.0	.0	.0045	.0075
124-146	SE	.0075	.0	.0	.0	.0	.0	.0	.0	.0	.0060	.0135
147-168	SSE	.0090	.0090	.0	.0	.0	.0	.0	.0	.0	.0	.0180
169-191	S	.0299	.0314	.0060	.0030	.0	.0	.0	.0	.0	.0045	.0749
192-213	SSW	.0299	.0240	.0180	.0015	.0	.0	.0	.0	.0	.0015	.0749
214-236	SW	.0240	.0509	.0195	.0135	.0060	.0	.0	.0	.0	.0	.1138
237-258	WSW	.0105	.0165	.0015	.0015	.0	.0	.0	.0	.0	.0	.0299
259-281	W	.0135	.0120	.0060	.0030	.0	.0	.0	.0	.0	.0	.0344
282-303	WNW	.0060	.0075	.0075	.0030	.0015	.0	.0030	.0	.0	.0090	.0254
304-326	NW	.0090	.0165	.0464	.0389	.0075	.0	.0	.0015	.0	.0075	.1302
327-348	NNW	.0030	.0195	.0269	.0359	.0030	.0030	.0	.0	.0	.0030	.1003
VAR		.0105	.0030	.0	.0	.0	.0	.0	.0	.0	.0	.0165
CALM		.0015										.0015
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.1138
TOTAL		.2096	.2904	.1931	.1497	.0240	.0030	.0030	.0015	.0	.2395	1.0000

NUMBER OF VALID DATA HOURS = 668
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 89.8

[illegible]ENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-3162

[illegible]
I P 4 280 FT

FEB 01, 1974 - FEB 28, 1974

WIND SPEED MPH

[illegible]	00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]	[illegible]	[illegible]	.0223	.0179	.0089	.0	.0	.0	.0	.0	.0640
[illegible]	.0075	.0298	.0580	.1250	.0327	.0030	.0	.0	.0	.0	.2530
[illegible]	.0119	.0253	.0179	.0074	.0015	.0	.0	.0	.0	.0	.0670
[illegible]	.0074	.0030	.0	.0	.0	.0	.0	.0	.0	.0	.0104
[illegible]	.0045	.0015	.0	.0	.0	.0	.0	.0	.0	.0	.0060
[illegible]	.0030	.0030	.0	.0	.0	.0	.0	.0	.0	.0	.0089
[illegible]	.0030	.0015	.0	.0	.0	.0	.0	.0	.0	.0	.0045
[illegible]	.0134	.0060	.0	.0	.0	.0	.0	.0	.0	.0	.0164
[illegible]	.0119	.0441	.0179	.0060	.0060	.0030	.0015	.0	.0	.0	.0923
[illegible]	.0223	.0253	.0313	.0104	.0	.0015	.0015	.0015	.0	.0	.0937
[illegible]	.0134	.0149	.0104	.0060	.0	.0	.0	.0	.0	.0	.0446
[illegible]	.0060	.0045	.0015	.0	.0	.0	.0	.0	.0	.0	.0119
[illegible]	.0030	.0	.0030	.0045	.0045	.0	.0	.0	.0	.0	.0179
[illegible]	.0030	.0045	.0	.0030	.0015	.0	.0060	.0	.0	.0	.0208
[illegible]	.0075	.0119	.0253	.0521	.0298	.0089	.0	.0	.0	.0	.1339
[illegible]	.0030	.0164	.0476	.0461	.0253	.0060	.0	.0	.0	.0	.1414
[illegible]	.0045	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0045
[illegible]	.0										.0
[illegible]	.0	.0030	.0030	.0030	.0	.0	.0	.0	.0		.0089
[illegible]	.1310	.2024	.2396	.2812	.1131	.0223	.0089	.0015	.0	.0	1.0000

[illegible] = [illegible]372

[illegible] FREQUENCY DISTRIBUTION = 100.0

REPORT NO.

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YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO.

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 280 FT

MAR 01, 1974 - MAR 31, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0067	.0175	.0310	.0350	.0121	.0013	.0	.0	.0	.0189	.1226
12- 33	NNE	.0040	.0135	.0323	.0256	.0	.0	.0	.0	.0	.0081	.0836
34- 56	NE	.0081	.0081	.0296	.0094	.0	.0	.0	.0	.0	.0189	.0741
57- 78	ENE	.0094	.0013	.0040	.0067	.0	.0	.0	.0	.0	.0040	.0256
79-101	E	.0040	.0108	.0027	.0	.0	.0	.0	.0	.0	.0013	.0189
102-123	ESE	.0054	.0013	.0	.0	.0	.0	.0	.0	.0	.0	.0067
124-146	SE	.0081	.0094	.0	.0	.0	.0	.0	.0	.0	.0013	.0189
147-168	SSE	.0054	.0081	.0013	.0	.0	.0	.0	.0	.0	.0040	.0189
169-191	S	.0283	.0189	.0243	.0135	.0054	.0	.0027	.0	.0	.0027	.0957
192-213	SSW	.0148	.0296	.0162	.0108	.0027	.0	.0	.0	.0	.0013	.0755
214-236	SW	.0189	.0202	.0067	.0081	.0121	.0013	.0	.0	.0	.0	.0674
237-258	WSW	.0054	.0067	.0027	.0013	.0	.0	.0	.0	.0	.0	.0162
259-281	W	.0027	.0054	.0027	.0054	.0054	.0	.0	.0	.0	.0	.0216
282-303	WNW	.0027	.0027	.0121	.0229	.0148	.0054	.0	.0	.0	.0	.0606
304-326	NW	.0040	.0094	.0296	.0485	.0310	.0108	.0040	.0	.0	.0	.1375
327-348	NNW	.0013	.0108	.0202	.0539	.0310	.0108	.0027	.0	.0	.0054	.1361
VAR		.0148	.0013	.0	.0	.0	.0	.0	.0	.0	.0013	.0175
CALM		.0013										.0013
MISS		.0	.0	.0013	.0	.0	.0	.0	.0	.0		.0040
TOTAL		.1456	.1752	.2170	.2412	.1146	.0296	.0094	.0	.0	.0701	1.0000

NUMBER OF VALID DATA HOURS = 742

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 99.7

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO. Y-8162

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 2?0 FT

APR 01, 1974 - APR 30, 1974

WIND SPEED MPH

DIRECTION	00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]	.0069	.0139	.0167	.0250	.0097	.0	.0	.0	.0	.0	.0722
[illegible]	.0056	.0306	.0486	.0458	.0278	.0	.0	.0	.0	.0	.1583
[illegible]	.0042	.0139	.0208	.0097	.0	.0	.0	.0	.0	.0	.0486
[illegible]	.0042	.0083	.0028	.0014	.0	.0	.0	.0	.0	.0	.0167
[illegible]	.0083	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0111
[illegible]	.0028	.0042	.0	.0	.0	.0	.0	.0	.0	.0	.0069
[illegible]	.0028	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0056
[illegible]	.0069	.0042	.0	.0	.0	.0	.0	.0	.0	.0	.0111
[illegible]	.0153	.0611	.0569	.0375	.0083	.0	.0	.0	.0	.0	.1792
[illegible]	.0111	.0167	.0292	.0264	.0	.0	.0	.0	.0	.0	.0833
[illegible]	.0097	.0181	.0097	.0222	.0111	.0125	.0	.0	.0	.0	.0833
[illegible]	.0056	.0028	.0056	.0111	.0028	.0	.0	.0	.0	.0	.0278
[illegible]	.0056	.0056	.0069	.0042	.0	.0	.0	.0	.0	.0	.0222
[illegible]	.0014	.0028	.0181	.0125	.0028	.0	.0	.0	.0	.0	.0375
[illegible]	.0042	.0083	.0278	.0625	.0306	.0056	.0014	.0	.0	.0	.1403
[illegible]	.0014	.0083	.0181	.0403	.0056	.0014	.0	.0	.0	.0	.0750
[illegible]	.0167	.0028	.0	.0	.0	.0	.0	.0	.0	.0	.0194
[illegible]	.0014										.0014
[illegible]	.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
[illegible]	.1139	.2639	.2611	.2986	.0986	.0194	.0014	.0	.0	.0	1.0000

TOTAL VALID ... HOURS = 720
... FREQUENCY DISTRIBUTION = 100.0

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

[illegible] CON EDISON
1 P -4 200 FT

MAY 01, 1974 - MAY 31, 1974

[illegible] DIRECTION	WIND SPEED MPH 00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]	.00[illegible]1	.0242	.01[illegible]	.0067	.0067	.0013	.0	.0	.0	.0	.0659
[illegible]	.0121	.0242	.0295	.0255	.0013	.0	.0	.0	.0	.0	.0927
[illegible]	.013[illegible]	.0323	.0134	.0054	.0	.0	.0	.0	.0	.0	.0645
[illegible]	.0161	.0268	.0054	.0	.0	.0	.0	.0	.0	.0	.0417
[illegible]	.00[illegible]1	.0121	.0027	.0	.0	.0	.0	.0	.0	.0	.0228
[illegible]	.00[illegible]1	.009[illegible]	.0	.0013	.0	.0	.0	.0	.0	.0	.0188
[illegible]	.0121	.014[illegible]	.0027	.0	.0	.0	.0	.0	.0	.0	.0296
[illegible]	.00[illegible]0	.02[illegible]2	.0094	.0027	.0	.0	.0	.0	.0	.0	.0444
[illegible]	.02[illegible]2	.052[illegible]	.057[illegible]	.0645	.0161	.0013	.0013	.0	.0	.0	.2177
[illegible]	.0242	.0497	.018[illegible]	.0081	.0040	.0	.0	.0013	.0	.0	.1062
[illegible]	.01[illegible]	.0242	.00[illegible]0	.0067	.0013	.0	.0	.0	.0	.0	.0470
[illegible]	.005[illegible]	.010[illegible]	.0067	.0040	.0	.0	.0	.0	.0	.0	.0269
[illegible]	.01[illegible]	.0013	.0121	.0040	.0013	.0	.0	.0	.0	.0	.0296
[illegible]	.00[illegible]0	.010[illegible]	.0027	.014[illegible]	.0054	.0013	.0	.0	.0	.0	.0390
[illegible]	.013[illegible]	.0094	.0161	.0242	.0188	.0027	.0040	.0013	.0	.0	.0874
[illegible]	.0027	.005[illegible]	.0040	.0262	.0094	.0067	.0	.0	.0	.0	.0484
[illegible]	.014[illegible]	.0013	.0	.0	.0	.0	.0	.0	.0	.0	.0161
[illegible]	.0013										.0013
[illegible]	.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
[illegible]	.1[illegible]9	.3303	.2[illegible]3	.1[illegible]42	.0645	.0134	.0054	.0027	.0	.0	1.0000

[illegible] VALID DATA HOURS = [illegible]
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR CON EDISON Y-3162

I P 200 FT

JUN 01, 1974 - JUN 30, 1974

WIND DIRECTION		WIND SPEED MPH 00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0069	.0139	.0097	.0056	.0	.0	.0	.0	.0	.0	.0361
12- 33	NNE	.0167	.0264	.0458	.0278	.0069	.0	.0	.0	.0	.0	.1236
34- 56	NE	.0153	.0500	.0250	.0042	.0	.0	.0	.0	.0	.0	.0944
57- 78	ENE	.0139	.0111	.0042	.0014	.0	.0	.0	.0	.0	.0	.0306
79-101	E	.0111	.0111	.0125	.0014	.0	.0	.0	.0	.0	.0	.0361
102-123	ESE	.0083	.0111	.0125	.0014	.0	.0	.0	.0	.0	.0	.0333
124-146	SE	.0139	.0153	.0236	.0056	.0	.0	.0	.0	.0	.0	.0583
147-168	SSE	.0139	.0069	.0139	.0014	.0	.0	.0	.0	.0	.0	.0361
169-191	S	.0319	.0431	.0569	.0361	.0028	.0	.0	.0	.0	.0	.1708
192-213	SSW	.0306	.0528	.0194	.0097	.0014	.0	.0	.0	.0	.0	.1139
214-236	SW	.0250	.0306	.0222	.0153	.0028	.0	.0	.0	.0	.0	.0958
237-258	WSW	.0194	.0153	.0083	.0042	.0	.0	.0	.0	.0	.0	.0472
259-281	W	.0069	.0056	.0125	.0042	.0	.0	.0	.0	.0	.0	.0292
282-303	WNW	.0139	.0083	.0042	.0069	.0	.0	.0	.0	.0	.0	.0333
304-326	NW	.0042	.0028	.0069	.0028	.0	.0	.0	.0	.0	.0	.0167
327-348	NNW	.0042	.0056	.0	.0	.0	.0	.0	.0	.0	.0	.0097
VAR		.0250	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0250
CALM		.0097										.0097
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
TOTAL		.2708	.3097	.2778	.1278	.0139	.0	.0	.0	.0	.0	1.0000

NUMBER OF VALID DATA HOURS = 720

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

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YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 280 FT

JUL 01, 1974 - JUL 31, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0161	.0202	.0296	.0228	.0040	.0	.0	.0	.0	.0	.0927
12- 33	NNE	.0121	.0457	.0403	.0457	.0013	.0	.0	.0	.0	.0	.1452
34- 56	NE	.0242	.0282	.0215	.0054	.0013	.0	.0	.0	.0	.0	.0806
57- 78	ENE	.0094	.0094	.0	.0	.0	.0	.0	.0	.0	.0	.0188
79-101	E	.0108	.0054	.0	.0	.0	.0	.0	.0	.0	.0	.0161
102-123	ESE	.0081	.0040	.0	.0	.0	.0	.0	.0	.0	.0	.0121
124-146	SE	.0134	.0067	.0	.0	.0	.0	.0	.0	.0	.0	.0202
147-168	SSE	.0108	.0108	.0067	.0	.0	.0	.0	.0	.0	.0	.0282
169-191	S	.0121	.0336	.0349	.0228	.0	.0	.0	.0	.0	.0	.1035
192-213	SSW	.0134	.0255	.0336	.0054	.0	.0	.0	.0	.0	.0	.0780
214-236	SW	.0202	.0511	.0255	.0013	.0	.0	.0	.0	.0	.0	.0981
237-258	WSW	.0108	.0202	.0148	.0228	.0	.0	.0	.0	.0	.0	.0685
259-281	W	.0081	.0161	.0323	.0134	.0040	.0	.0	.0	.0	.0	.0739
282-303	WNW	.0108	.0148	.0108	.0134	.0013	.0	.0	.0	.0	.0	.0511
304-326	NW	.0067	.0134	.0215	.0040	.0040	.0027	.0	.0	.0	.0	.0524
327-348	NNW	.0081	.0134	.0094	.0108	.0	.0	.0	.0	.0	.0	.0417
VAR		.0188	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0188
CALM		.0										.0
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
TOTAL		.2137	.3185	.2809	.1680	.0161	.0027	.0	.0	.0	.0	1.0000

NUMBER OF VALID DATA HOURS = 744
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 280 FT

AUG 01, 1974 - AUG 31, 1974

WIND DIRECTION		WIND SPEED MPH									
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0136	.0299	.0095	.0027	.0	.0014	.0	.0	.0	.0	.0571
12- 33	NNE	.0231	.0516	.0326	.0082	.0014	.0	.0	.0	.0	.0	.1168
34- 56	NE	.0245	.0747	.0204	.0014	.0	.0	.0	.0	.0	.0	.1209
57- 78	ENE	.0272	.0122	.0082	.0	.0	.0	.0	.0	.0	.0	.0476
79-101	E	.0190	.0122	.0082	.0	.0	.0	.0	.0	.0	.0	.0394
102-123	ESE	.0122	.0027	.0	.0	.0	.0	.0	.0	.0	.0	.0149
124-146	SE	.0136	.0027	.0014	.0	.0	.0	.0	.0	.0	.0	.0177
147-168	SSE	.0068	.0082	.0014	.0	.0	.0	.0	.0	.0	.0	.0163
169-191	S	.0231	.0272	.0177	.0095	.0	.0	.0	.0	.0	.0	.0774
192-213	SSW	.0313	.0353	.0285	.0082	.0	.0	.0	.0	.0	.0	.1033
214-236	SW	.0326	.0408	.0476	.0258	.0082	.0	.0	.0	.0	.0	.1549
237-258	WSW	.0149	.0136	.0068	.0054	.0014	.0	.0	.0	.0	.0	.0421
259-281	W	.0136	.0177	.0041	.0027	.0	.0	.0	.0	.0	.0	.0380
282-303	WNW	.0122	.0082	.0109	.0068	.0014	.0	.0	.0	.0	.0	.0394
304-326	NW	.0082	.0054	.0163	.0	.0	.0	.0	.0	.0	.0	.0299
327-348	NNW	.0041	.0054	.0068	.0027	.0	.0	.0	.0	.0	.0	.0190
VAR		.0177	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0177
CALM		.0204										.0204
MISS		.0082	.0109	.0082	.0	.0	.0	.0	.0	.0		.0380
TOTAL		.3261	.3587	.2283	.0734	.0122	.0014	.0	.0	.0	.0109	1.0000

NUMBER OF VALID DATA HOURS = 736
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 98.9

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 400 FT

OCT 01, 1973 - OCT 31, 1973

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0058	.0174	.0232	.0261	.0029	.0	.0	.0	.0	.0014	.0768
12- 33	NNE	.0043	.0261	.0478	.0333	.0	.0	.0	.0	.0	.0	.1116
34- 56	NE	.0043	.0319	.0246	.0145	.0	.0	.0	.0	.0	.0	.0754
57- 78	ENE	.0072	.0043	.0058	.0159	.0043	.0	.0	.0	.0	.0	.0377
79-101	E	.0043	.0072	.0087	.0159	.0072	.0072	.0029	.0	.0	.0	.0536
102-123	ESE	.0029	.0058	.0029	.0043	.0014	.0	.0	.0	.0	.0014	.0188
124-146	SE	.0029	.0072	.0101	.0029	.0014	.0	.0	.0	.0	.0	.0246
147-168	SSE	.0087	.0130	.0072	.0	.0	.0	.0	.0	.0	.0	.0290
169-191	S	.0174	.0348	.0188	.0087	.0	.0	.0	.0	.0	.0	.0797
192-213	SSW	.0101	.0348	.0203	.0203	.0014	.0	.0	.0	.0	.0043	.0913
214-236	SW	.0159	.0464	.0290	.0217	.0087	.0029	.0	.0	.0	.0014	.1261
237-258	WSW	.0087	.0174	.0130	.0029	.0	.0	.0	.0	.0	.0043	.0464
259-281	W	.0043	.0188	.0072	.0029	.0	.0	.0	.0	.0	.0	.0333
282-303	WNW	.0014	.0087	.0174	.0116	.0072	.0	.0	.0	.0	.0	.0464
304-326	NW	.0014	.0130	.0159	.0232	.0058	.0029	.0	.0	.0	.0	.0623
327-348	NNW	.0101	.0130	.0174	.0261	.0101	.0043	.0	.0	.0	.0014	.0826
VAR		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CALM		.0										.0
MISS		.0	.0014	.0029	.0	.0	.0	.0	.0	.0		.0826
TOTAL		.1101	.3014	.2725	.2304	.0507	.0174	.0029	.0	.0	.0928	1.0000

NUMBER OF VALID DATA HOURS = 690

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 92.7

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 400 FT

NOV 01, 1973 - NOV 30, 1973

WIND DIRECTION		WIND SPEED MPH									
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0056	.0042	.0168	.0084	.0112	.0014	.0	.0	.0	.0	.0475
12- 33	NNE	.0014	.0084	.0265	.0084	.0070	.0014	.0	.0	.0	.0	.0531
34- 56	NE	.0028	.0098	.0042	.0126	.0042	.0	.0	.0	.0	.0	.0335
57- 78	ENE	.0	.0042	.0014	.0	.0	.0	.0	.0	.0	.0	.0056
79-101	E	.0	.0070	.0	.0	.0	.0	.0	.0	.0	.0	.0070
102-123	ESE	.0070	.0070	.0	.0	.0	.0	.0	.0	.0	.0	.0140
124-146	SE	.0056	.0140	.0014	.0	.0	.0	.0	.0	.0	.0	.0209
147-168	SSE	.0028	.0168	.0042	.0	.0	.0	.0	.0	.0	.0	.0237
169-191	S	.0	.0265	.0182	.0056	.0	.0	.0	.0	.0	.0	.0503
192-213	SSW	.0056	.0293	.0293	.0098	.0056	.0	.0	.0	.0	.0	.0796
214-236	SW	.0042	.0182	.0475	.0321	.0056	.0	.0	.0	.0	.0	.1075
237-258	WSW	.0014	.0126	.0182	.0307	.0084	.0	.0	.0	.0	.0	.0712
259-281	W	.0014	.0140	.0154	.0098	.0056	.0	.0	.0	.0	.0	.0461
282-303	WNW	.0042	.0112	.0196	.0419	.0140	.0084	.0014	.0	.0	.0	.1006
304-326	NW	.0070	.0126	.0419	.0698	.0391	.0168	.0014	.0	.0	.0	.1885
327-348	NNW	.0	.0042	.0279	.0559	.0349	.0056	.0	.0	.0	.0	.1285
VAR		.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
CALM		.0										.0
MISS		.0056	.0112	.0014	.0028	.0014	.0	.0	.0	.0		.0279
TOTAL		.0545	.2109	.2737	.2877	.1369	.0335	.0028	.0	.0	.0056	1.0000

NUMBER OF VALID DATA HOURS = 716

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 99.4

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO. Y-8162 PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 400 FT

DEC 01, 1973 - DEC 31, 1973

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0096	.0150	.0260	.0246	.0096	.0	.0	.0	.0	.0	.0848
12- 33	NNE	.0014	.0260	.0451	.0520	.0123	.0082	.0164	.0082	.0	.0055	.1751
34- 56	NE	.0027	.0150	.0178	.0123	.0041	.0	.0	.0	.0	.0082	.0602
57- 78	ENE	.0014	.0109	.0055	.0027	.0	.0	.0	.0	.0	.0041	.0246
79-101	E	.0041	.0096	.0	.0	.0	.0	.0	.0	.0	.0014	.0150
102-123	ESE	.0027	.0096	.0014	.0	.0	.0	.0	.0	.0	.0	.0137
124-146	SE	.0041	.0055	.0014	.0014	.0	.0	.0	.0	.0	.0	.0123
147-168	SSE	.0041	.0068	.0055	.0068	.0	.0	.0	.0	.0	.0	.0233
169-191	S	.0109	.0301	.0205	.0055	.0027	.0082	.0055	.0	.0	.0	.0834
192-213	SSW	.0082	.0356	.0178	.0082	.0068	.0082	.0	.0	.0	.0	.0848
214-236	SW	.0068	.0287	.0219	.0068	.0014	.0014	.0	.0	.0	.0014	.0684
237-258	WSW	.0055	.0137	.0082	.0	.0	.0	.0	.0	.0	.0027	.0301
259-281	W	.0055	.0055	.0027	.0055	.0	.0	.0	.0	.0	.0041	.0233
282-303	WNW	.0027	.0068	.0137	.0219	.0082	.0	.0	.0	.0	.0014	.0547
304-326	NW	.0	.0096	.0219	.0616	.0342	.0041	.0041	.0027	.0	.0041	.1423
327-348	NNW	.0041	.0014	.0192	.0356	.0123	.0	.0	.0	.0	.0	.0725
VAR		.0205	.0	.0014	.0027	.0	.0	.0	.0	.0	.0	.0246
CALM		.0										.0
MISS		.0	.0	.0014	.0041	.0	.0014	.0	.0	.0		.0246
TOTAL		.0944	.2298	.2312	.2517	.0917	.0315	.0260	.0109	.0	.0506	1.0000

NUMBER OF VALID DATA HOURS = 731
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 98.3

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO. Y-8162 PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 400 FT

JAN 01,1974 - JAN 31,1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0060	.0136	.0151	.0091	.0	.0	.0	.0	.0	.0045	.0483
12- 33	NNE	.0091	.0363	.0483	.0423	.0076	.0	.0	.0	.0	.0272	.1707
34- 56	NE	.0106	.0378	.0045	.0015	.0	.0	.0	.0	.0	.0030	.0574
57- 78	ENE	.0076	.0196	.0045	.0	.0	.0	.0	.0	.0	.0015	.0332
79-101	E	.0045	.0	.0015	.0	.0	.0	.0	.0	.0	.0015	.0076
102-123	ESE	.0076	.0	.0	.0	.0	.0	.0	.0	.0	.0015	.0091
124-146	SE	.0060	.0	.0	.0	.0	.0	.0	.0	.0	.0015	.0076
147-168	SSE	.0106	.0076	.0	.0	.0	.0	.0	.0	.0	.0	.0181
169-191	S	.0136	.0363	.0091	.0030	.0	.0	.0	.0	.0	.0045	.0665
192-213	SSW	.0211	.0196	.0196	.0045	.0	.0	.0	.0	.0	.0015	.0665
214-236	SW	.0211	.0559	.0257	.0181	.0	.0	.0	.0	.0	.0	.1208
237-258	WSW	.0166	.0136	.0060	.0015	.0015	.0	.0	.0	.0	.0	.0393
259-281	W	.0151	.0242	.0015	.0045	.0	.0	.0	.0	.0	.0	.0453
282-303	WNW	.0091	.0045	.0106	.0060	.0030	.0	.0	.0	.0	.0015	.0347
304-326	NW	.0076	.0151	.0453	.0695	.0136	.0015	.0045	.0015	.0	.0015	.1601
327-348	NNW	.0030	.0211	.0287	.0332	.0045	.0	.0	.0	.0	.0015	.0921
VAR		.0151	.0015	.0	.0	.0	.0	.0	.0	.0	.0030	.0196
CALM		.0										.0
MISS		.0	.0015	.0015	.0	.0	.0	.0	.0	.0		.1269
TOTAL		.1843	.3082	.2221	.1934	.0302	.0015	.0045	.0015	.0	.1782	1.0000

NUMBER OF VALID DATA HOURS = 662
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 89.0

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR CON EDISON
I P 4 400 FT

FEB 01, 1974 - FEB 28, 1974

DIRECTION	WIND SPEED MPH 00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]	.0030	[illegible]	.0527	.0283	.0134	.0015	.0	.0	.0	.0	.0878
[illegible]	.0045	.0223	.0530	.1210	.0313	.0045	.0	.0	.0	.0	.2485
[illegible]	.0078	.0253	.0134	.0045	.0015	.0	.0	.0	.0	.0	.0491
[illegible]	.0015	.0060	.0	.0	.0	.0	.0	.0	.0	.0	.0074
[illegible]	.0045	.0030	.0	.0	.0	.0	.0	.0	.0	.0	.0074
[illegible]	.0045	.0030	.0	.0	.0	.0	.0	.0	.0	.0	.0074
[illegible]	.0045	.0045	.0	.0	.0	.0	.0	.0	.0	.0	.0089
[illegible]	.0030	.0104	.0	.0	.0	.0	.0	.0	.0	.0	.0134
[illegible]	.0134	.0045	.0193	.0074	.0045	.0060	.0	.0015	.0	.0	.0937
[illegible]	.0119	.0208	.0238	.0179	.0015	.0030	.0	.0030	.0	.0	.0908
[illegible]	.0119	.0193	.0045	.0104	.0	.0	.0	.0	.0	.0	.0461
[illegible]	.0104	.0030	.0	.0	.0	.0	.0	.0	.0	.0	.0134
[illegible]	.0030	.0045	.0045	.0	.0045	.0015	.0	.0	.0	.0	.0179
[illegible]	.0030	.0045	.0	.0030	.0074	.0015	.0030	.0030	.0	.0	.0253
[illegible]	[illegible]	.0134	.0253	.0581	.0446	.0253	.0030	.0	.0	.0	.1771
[illegible]	.0075	.0104	.0208	.0327	.0164	.0030	.0015	.0	.0	.0	.0997
[illegible]	.0030	.0015	.0	.0	.0	.0	.0	.0	.0	.0	.0045
[illegible]	.0015										.0015
	.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
	[illegible]	.2143	.2113	.2902	.1250	.0461	.0074	.0074	.0	.0	1.0000

[illegible] = 672

[illegible] PERCENT IN FREQUENCY DISTRIBUTION = 100.0

PAGE

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-3162

FOR: CON EDISON
I P 4 400 FT

MAR 01, 1974 - MAR 31, 1974

WIND SPEED MPH

WIND DIRECTION	00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11 N	.0014	.0177	.0150	.0409	.0191	.0068	.0041	.0014	.0	.0	.1064
12- 33 NNE	.0	.0109	.0286	.0232	.0	.0	.0	.0	.0	.0068	.0696
34- 56 NE	.0027	.0055	.0191	.0136	.0	.0	.0	.0	.0	.0082	.0491
57- 78 ENE	.0027	.0055	.0027	.0	.0	.0	.0	.0	.0	.0027	.0136
79-101 E	.0	.0055	.0041	.0	.0	.0	.0	.0	.0	.0	.0095
102-123 ESE	.0041	.0041	.0	.0	.0	.0	.0	.0	.0	.0014	.0095
124-146 SE	.0014	.0068	.0	.0	.0	.0	.0	.0	.0	.0014	.0095
147-168 SSE	.0014	.0055	.0	.0	.0	.0	.0	.0	.0	.0027	.0095
169-191 S	.0136	.0191	.0136	.0177	.0082	.0	.0014	.0	.0	.0055	.0791
192-213 SSW	.0136	.0259	.0191	.0109	.0014	.0	.0014	.0	.0	.0014	.0737
214-236 SW	.0102	.0191	.0177	.0095	.0123	.0055	.0	.0	.0	.0027	.0778
237-258 WSW	.0027	.0041	.0055	.0027	.0	.0014	.0	.0	.0	.0	.0164
259-281 W	.0027	.0041	.0041	.0041	.0041	.0	.0	.0	.0	.0	.0191
282-303 WNW	.0	.0014	.0109	.0136	.0150	.0082	.0014	.0	.0	.0	.0505
304-326 NW	.0027	.0068	.0191	.0464	.0232	.0191	.0041	.0	.0	.0	.1214
327-348 NNW	.0	.0150	.0286	.0505	.0332	.0164	.0055	.0	.0	.0014	.1555
VAR	.0123	.0027	.0014	.0	.0	.0	.0	.0	.0	.0027	.0191
CALM	.0										.0
[illegible]	.0353	.0232	.0259	.0164	.0082	.0	.0	.0	.0		.1255
TOTAL	.1021	.1023	.2156	.2497	.1296	.0573	.0177	.0014	.0	.0518	1.0000

NUMBER OF VALID DATA HOURS = 733
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 98.5

REPORT NO.

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YORK RESEARCH CORPORATION
STAMFORD, CONNECTICUT

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO. Y-3162

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 400 FT

APR 01, 1974 - APR 30, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
342- 11	N	.0042	.0097	.0097	.0208	.0083	.0	.0	.0	.0	.0	.0528
12- 33	NNE	.0042	.0222	.0347	.0417	.0306	.0042	.0	.0	.0	.0	.1375
34- 56	NE	.0028	.0153	.0292	.0194	.0028	.0	.0	.0	.0	.0	.0694
57- 78	ENE	.0028	.0056	.0014	.0042	.0	.0	.0	.0	.0	.0	.0139
79-101	E	.0069	.0042	.0	.0014	.0	.0	.0	.0	.0	.0	.0125
102-123	ESE	.0069	.0014	.0	.0	.0	.0	.0	.0	.0	.0	.0083
124-146	SE	.0028	.0083	.0	.0	.0	.0	.0	.0	.0	.0	.0111
147-168	SSE	.0014	.0069	.0	.0	.0	.0	.0	.0	.0	.0	.0083
169-191	S	.0111	.0542	.0431	.0333	.0097	.0014	.0	.0	.0	.0	.1528
192-213	SSW	.0056	.0264	.0306	.0250	.0028	.0	.0	.0	.0	.0	.0903
214-236	SW	.0033	.0181	.0208	.0306	.0236	.0083	.0	.0	.0	.0	.1097
237-258	WSW	.0042	.0083	.0042	.0083	.0028	.0014	.0	.0	.0	.0	.0292
259-281	W	.0069	.0028	.0083	.0028	.0014	.0	.0	.0	.0	.0	.0222
282-303	WNW	.0028	.0014	.0167	.0083	.0056	.0056	.0	.0	.0	.0	.0403
304-326	NW	.0042	.0056	.0292	.0514	.0333	.0069	.0	.0	.0	.0	.1306
327-348	NNW	.0028	.0069	.0194	.0431	.0194	.0028	.0	.0014	.0	.0	.0958
VAR		.0097	.0028	.0014	.0	.0	.0	.0	.0	.0	.0	.0139
CAL		.0014										.0014
MISS		.0	.0	.0	.0	.0	.0	.0	.0	.0		.0
TOTAL		.0639	.2000	.2486	.2903	.1403	.0306	.0	.0014	.0	.0	1.0000

NUMBER OF VALID DATA HOURS = 720

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

Y-8162

FOR: CON EDISON
I P 4 400 FT

MAY 01, 1974 - MAY 31, 1974

WIND DIRECTION	WIND SPEED MPH 00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]-11 N	.0027	.0108	.0067	.0081	.0161	.0027	.0	.0	.0	.0	.0470
[illegible]-33 [illegible]	.0027	.0148	.0323	.0242	.0	.0	.0	.0	.0	.0	.0739
[illegible]	.0027	.0161	.0081	.0121	.0	.0	.0	.0	.0	.0	.0390
[illegible]	.0067	.0054	.0	.0	.0	.0	.0	.0	.0	.0	.0121
[illegible]	.0067	.0067	.0	.0	.0	.0	.0	.0	.0	.0	.0134
[illegible]	.0040	.0067	.0	.0	.0	.0	.0	.0	.0	.0	.0108
[illegible]	.0040	.0108	.0040	.0	.0	.0	.0	.0	.0	.0	.0188
[illegible]	.0094	.0228	.0094	.0040	.0	.0	.0	.0	.0	.0	.0457
[illegible]	.01[illegible]	.0457	.0591	.0404	.0188	.0013	.0027	.0013	.0	.0	.1922
[illegible]	.0148	.0444	.0228	.0228	.0027	.0	.0	.0	.0	.0	.1075
[illegible]	.0067	.0242	.0094	.0094	.0	.0	.0	.0	.0	.0	.0497
[illegible]	.0121	.0040	.0	.0054	.0	.0	.0	.0	.0	.0	.0215
[illegible]	.0027	.0054	.0067	.0040	.0013	.0	.0	.0	.0	.0	.0202
[illegible]	.0013	.0094	.0040	.0108	.0054	.0027	.0	.0	.0	.0	.0336
[illegible]	.0054	.0067	.0104	.0108	.0040	.0054	.0013	.0	.0013	.0	.0538
[illegible]	.0	.0054	.0081	.0134	.0134	.0094	.0040	.0	.0	.0	.0538
[illegible]	.0094	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0094
[illegible]	.0013										.0013
[illegible]	.0417	.0901	.0470	.0175	.0	.0	.0	.0	.0		.1962
[illegible]	.1492	.3293	.22[illegible]	.1909	.0618	.0215	.0081	.0013	.0013	.0	1.0000

[illegible] VALID DATA HOURS = 744
[illegible] ARE PERCENT IN FREQUENCY DISTRIBUTION = 100.0

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YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO.

[illegible] OF WIND SPEED AND DIRECTION

Y-3162

[illegible]

[illegible] FT

JUN 01, 1974 - JUN 30, 1974

WIND SPEED MPH

[illegible]	[illegible]	04-07	[illegible]-12	13-[illegible]	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
[illegible]	[illegible]	.0125	[illegible]	[illegible]	.0	.0	.0	.0	.0	.0	.0403
[illegible]	[illegible]	.0125	.0292	.0333	.0111	.0028	.0056	.0	.0	.0	.1042
[illegible]	[illegible]	.0236	.0278	.0264	.0014	.0	.0	.0	.0	.0	.0806
[illegible]	.0111	.0153	.0042	.0014	.0	.0	.0	.0	.0	.0	.0319
[illegible]	[illegible]	.0153	.0111	.0014	.0	.0	.0	.0	.0	.0	.0347
[illegible]	[illegible]	[illegible]	.0153	.0014	.0014	.0	.0	.0	.0	.0	.0292
[illegible]	.0111	.0111	.0292	.0056	.0014	.0	.0	.0	.0	.0	.0583
[illegible]	[illegible]	[illegible]	.0111	.0028	.0	.0	.0	.0	.0	.0	.0361
[illegible]	.0278	.0361	[illegible]	.0403	.0056	.0	.0	.0	.0	.0	.1597
[illegible]	[illegible]	.0431	[illegible]	.0097	.0014	.0	.0	.0	.0	.0	.1097
[illegible]	[illegible]	.0347	.0236	.0222	.0056	.0	.0	.0	.0	.0	.1153
[illegible]	[illegible]	.0153	.0153	.0028	.0014	.0	.0	.0	.0	.0	.0542
[illegible]	[illegible]	[illegible]	.0125	.0014	.0	.0	.0	.0	.0	.0	.0333
[illegible]	[illegible]	[illegible]	.0097	.0042	.0042	.0	.0	.0	.0	.0	.0306
[illegible]	[illegible]	[illegible]	.0014	.0125	.0042	.0	.0	.0	.0	.0	.0333
[illegible]	[illegible]	.0042	.0014	.0028	.0	.0	.0	.0	.0	.0	.0125
	.0125	.0028	.0042	.0	.0	.0	.0	.0	.0	.0	.0194
[illegible]	[illegible]										.0028
[illegible]	[illegible]	.0	.0042	.0069	.0	.0	.0	.0	.0		.0139
	[illegible]	.2611	[illegible]	[illegible]	.0375	.0028	.0056	.0	.0	.0	1.0000

[illegible] = 720

[illegible] IN FREQUENCY DISTRIBUTION = 100.0

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YORK RESEARCH CORPORATION

STAMFORD, CONNECTICUT

REPORT NO. Y-8162

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FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON
I P 4 400 FT

JUL 01, 1974 - JUL 31, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0108	.0255	.0282	.0323	.0040	.0	.0	.0	.0	.0	.1008
12- 33	NNE	.0121	.0269	.0376	.0444	.0081	.0	.0	.0	.0	.0	.1290
34- 56	NE	.0134	.0108	.0215	.0108	.0027	.0	.0	.0	.0	.0	.0591
57- 78	ENE	.0081	.0054	.0	.0013	.0	.0	.0	.0	.0	.0	.0148
79-101	E	.0081	.0027	.0013	.0	.0	.0	.0	.0	.0	.0	.0121
102-123	ESE	.0067	.0067	.0	.0	.0	.0	.0	.0	.0	.0	.0134
124-146	SE	.0081	.0067	.0013	.0	.0	.0	.0	.0	.0	.0	.0161
147-168	SSE	.0027	.0134	.0027	.0	.0	.0	.0	.0	.0	.0	.0188
169-191	S	.0081	.0202	.0336	.0228	.0027	.0	.0	.0	.0	.0	.0874
192-213	SSW	.0121	.0269	.0336	.0108	.0	.0	.0	.0	.0	.0	.0833
214-236	SW	.0161	.0296	.0296	.0067	.0	.0	.0	.0	.0	.0	.0820
237-258	WSW	.0134	.0255	.0215	.0269	.0027	.0	.0	.0	.0	.0	.0901
259-281	W	.0094	.0242	.0202	.0094	.0013	.0013	.0	.0	.0	.0	.0659
282-303	WNW	.0121	.0161	.0148	.0255	.0013	.0	.0	.0	.0	.0	.0699
304-326	NW	.0148	.0148	.0161	.0202	.0081	.0013	.0013	.0	.0	.0	.0766
327-348	NNW	.0067	.0134	.0108	.0148	.0	.0027	.0	.0	.0	.0	.0484
VAR		.0108	.0067	.0	.0	.0	.0	.0	.0	.0	.0	.0175
CALM		.0										.0
MISS		.0054	.0094	.0	.0	.0	.0	.0	.0	.0		.0148
TOTAL		.1788	.2849	.2728	.2258	.0309	.0054	.0013	.0	.0	.0	1.0000

NUMBER OF VALID DATA HOURS = 744

PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

YORK RESEARCH CORPORATION STAMFORD, CONNECTICUT

REPORT NO.

FREQUENCY DISTRIBUTION OF WIND SPEED AND DIRECTION

FOR: CON EDISON Y-8162
I P 4 400 FT

AUG 01, 1974 - AUG 31, 1974

WIND DIRECTION		WIND SPEED MPH										
		00-03	04-07	08-12	13-18	19-24	25-31	32-38	39-46	>47	MISS	TOTAL
349- 11	N	.0188	.0376	.0094	.0054	.0	.0	.0013	.0	.0	.0	.0726
12- 33	NNE	.0188	.0444	.0417	.0134	.0013	.0	.0	.0	.0	.0	.1196
34- 56	NE	.0242	.0349	.0175	.0013	.0	.0	.0	.0	.0	.0	.0780
57- 78	ENE	.0188	.0134	.0054	.0	.0	.0	.0	.0	.0	.0	.0376
79-101	E	.0067	.0013	.0054	.0	.0	.0	.0	.0	.0	.0	.0134
102-123	ESE	.0108	.0013	.0013	.0	.0	.0	.0	.0	.0	.0	.0134
124-146	SE	.0148	.0067	.0013	.0013	.0	.0	.0	.0	.0	.0	.0242
147-168	SSE	.0054	.0081	.0013	.0	.0	.0	.0	.0	.0	.0	.0148
169-191	S	.0215	.0323	.0202	.0054	.0040	.0	.0	.0	.0	.0	.0833
192-213	SSW	.0215	.0309	.0282	.0121	.0	.0	.0	.0	.0	.0	.0927
214-236	SW	.0363	.0457	.0511	.0376	.0067	.0013	.0	.0	.0	.0	.1788
237-258	WSW	.0242	.0134	.0108	.0054	.0027	.0	.0	.0	.0	.0	.0565
259-281	W	.0296	.0121	.0108	.0054	.0	.0	.0	.0	.0	.0	.0578
282-303	WNW	.0121	.0094	.0040	.0067	.0	.0	.0	.0	.0	.0	.0323
304-326	NW	.0148	.0081	.0121	.0013	.0013	.0	.0	.0	.0	.0	.0376
327-348	NNW	.0054	.0134	.0108	.0054	.0013	.0	.0	.0	.0	.0	.0363
VAR		.0161	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0161
CALM		.0013										.0013
MISS		.0121	.0054	.0134	.0027	.0	.0	.0	.0	.0		.0336
TOTAL		.3132	.3185	.2446	.1035	.0175	.0013	.0013	.0	.0	.0	1.0000

NUMBER OF VALID DATA HOURS = 744
PERCENT OF TOTAL HOURS PRESENT IN FREQUENCY DISTRIBUTION = 100.0

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