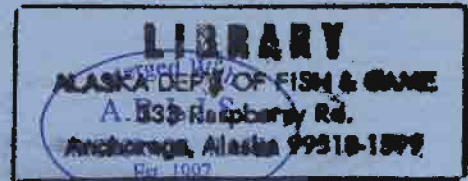


088 -

**SUSITNA
HYDROELECTRIC PROJECT**

FEDERAL ENERGY REGULATORY COMMISSION
PROJECT No. 7114



**PROCESSED CLIMATIC DATA
OCTOBER 1982 - SEPTEMBER 1983**

**VOLUME I
SUSITNA GLACIER STATION
(No. 0610)**

R&M
R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

UNDER CONTRACT TO

HARZA-EBASCO
SUSITNA JOINT VENTURE

FINAL REPORT

**JUNE 1984
DOCUMENT No. 1088**

ALASKA POWER AUTHORITY

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SUSITNA HYDROELECTRIC PROJECT

**PROCESSED CLIMATIC DATA
OCTOBER 1982 - SEPTEMBER 1983**

**VOLUME 1
SUSITNA GLACIER STATION (No. 0610)**

Report by
R&M Consultants, Inc.

Under Contract to
Harza-Ebasco Susitna Joint Venture

Prepared for
Alaska Power Authority

Final Report
June 1984

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ARLIS
Alaska Resources
Library & Information Services
Anchorage, Alaska

NOTICE

**ANY QUESTIONS OR COMMENTS CONCERNING
THIS REPORT SHOULD BE DIRECTED TO
THE ALASKA POWER AUTHORITY
SUSITNA PROJECT OFFICE**

ALASKA POWER AUTHORITY
SUSITNA HYDROELECTRIC PROJECT

TASK 4 - HYDROLOGY

PROCESSED CLIMATIC DATA (1983)
OCTOBER 1982 - SEPTEMBER 1983

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VOLUME 2: 0620 - DENALI STATION
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ALASKA POWER AUTHORITY
SUSITNA HYDROELECTRIC PROJECT

PROCESSED CLIMATIC DATA - SUSITNA GLACIER STATION
OCTOBER 1982 - SEPTEMBER 1983

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Acknowledgments

These climatic data were collected under contract to Acres American, Incorporated (through February 1983) and under contract to Harza-Ebasco Joint Venture (after February) for the Alaska Power Authority's Susitna Hydroelectric Feasibility Study. The data recorders are Model 5100 Weather Wizards manufactured by Meteorology Research, Incorporated (MRI), now part of Belfort Instrument Company. All sensors were supplied by MRI or were replacements obtained from MRI's suppliers. Field maintenance and data collection were performed by the hydrology staff of R&M Consultants, Incorporated. Data reduction and processing were performed by Lisa Fotherby, Len Story, Bob Butera, Carl Schoch, and Jeff Coffin, using computer programs developed by Mark Holmstrand. The computer hardware used was a Hewlett-Packard 9845B system. Review comments were provided by Khalid Jawed of Harza-Ebasco.

ADDENDUM

Subsequent to preparation of the final report and prior to publication, adjustments were made to some of this station's humidity data. Data were adjusted for the months where the RH sensor was seriously out of calibration. The revised mean daily values for both relative humidity and dewpoint are presented in the following table.

June 1984

ADDENDUM

Revised RH and Dewpoint Data

STATION: GLACIER

YEAR: 1982-83

	* October		November		December		January		February		March		
DAY	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	DAY
1	**	*****	56	-12.8	70	-24.3	68	-9.8	43	-11.9	68	-15.7	1
2	**	*****	64	-11.1	41	-25.4	93	-8.6	52	-10.9	53	-20.1	2
3	**	*****	55	-14.4	46	-25.5	78	-16.5	48	-14.1	30	-27.3	3
4	**	*****	63	-11.1	43	-24.1	33	-29.8	48	-14.0	34	-25.6	4
5	**	*****	50	-17.2	56	-16.7	36	-32.7	45	-15.6	53	-17.6	5
6	**	*****	48	-22.6	56	-12.9	54	-30.1	64	-9.7	43	-18.9	6
7	**	*****	49	-23.0	71	-7.6	48	-29.9	78	-9.0	17	-26.1	7
8	**	*****	68	-15.8	75	-8.7	58	-34.1	71	-14.0	6	-37.4	8
9	**	*****	76	-15.7	57	-16.2	43	-36.6	52	-20.3	12	-35.2	9
10	**	*****	68	-15.4	17	-30.0	36	-35.4	62	-20.7	55	-17.6	10
11	**	*****	76	-10.6	50	-18.1	36	-33.2	50	-22.1	63	-10.0	11
12	**	*****	64	-11.1	63	-9.6	54	-31.3	51	-23.9	42	-14.4	12
13	**	*****	73	-9.2	56	-12.4	45	-26.7	58	-23.8	28	-19.0	13
14	**	*****	64	-13.7	32	-20.0	48	-24.2	38	-26.9	38	-17.4	14
15	**	*****	53	-17.8	45	-15.2	51	-15.6	12	-35.6	65	-10.7	15
16	**	*****	44	-20.9	41	-14.6	74	-9.7	6	-37.9	51	-14.4	16
17	**	*****	21	-30.7	58	-12.7	62	-15.7	12	-33.5	39	-18.2	17
18	**	*****	22	-31.9	47	-16.8	66	-7.8	47	-22.4	32	-21.0	18
19	**	*****	20	-31.4	46	-17.7	81	-11.0	54	-15.8	20	-26.5	19
20	58	-19.9	57	-16.2	54	-15.5	43	-19.4	57	-12.7	31	-21.1	20
21	54	-21.3	60	-10.8	27	-24.8	4	-40.2	58	-11.3	46	-14.5	21
22	56	-21.0	51	-14.9	19	-30.0	4	-36.5	39	-17.3	42	-16.6	22
23	64	-21.5	74	-9.3	31	-26.2	7	-32.0	17	-26.5	41	-18.9	23
24	72	-20.3	75	-8.2	49	-18.1	15	-29.5	78	-8.5	49	-17.7	24
25	68	-22.1	42	-15.9	64	-16.4	35	-18.7	45	-16.0	53	-16.1	25
26	58	-29.5	50	-12.2	64	-12.8	42	-12.5	43	-14.6	43	-18.1	26
27	53	-28.6	63	-10.9	75	-7.7	46	-13.1	47	-14.1	50	-15.7	27
28	74	-17.4	61	-12.6	84	-5.3	76	-10.3	76	-12.5	35	-19.8	28
29	73	-17.9	82	-10.4	88	-6.0	45	-16.6			29	-22.6	29
30	44	-25.6	85	-12.2	69	-12.8	66	-12.1			31	-21.3	30
31	38	-24.1			38	-18.4	55	-9.5			47	-15.3	31
MONTH	58	-22.4	57	-15.7	52	-16.8	46	-22.2	47	-19.4	39	-19.7	MONTH

* NOTE: Data for October were not changed.

ADDENDUM

Revised RH and Dewpoint Data

STATION: GLACIER

YEAR: 1983

	April		May		* June		* July		* August		September		
DAY	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	MEAN RH %	MEAN DP DEG C	DAY
1	31	-18.7	32	-15.6	**	*****	**	*****	**	*****	**	*****	1
2	23	-22.7	58	-8.6	**	*****	**	*****	**	*****	33	-14.3	2
3	35	-17.6	67	-10.1	**	*****	**	*****	**	*****	32	-13.1	3
4	59	-10.4	39	-16.5	**	*****	**	*****	**	*****	43	-12.6	4
5	59	-13.4	36	-17.2	**	*****	**	*****	**	*****	57	-9.7	5
6	47	-18.2	34	-15.9	**	*****	**	*****	**	*****	43	-13.1	6
7	60	-15.7	24	-18.2	**	*****	**	*****	**	*****	56	-7.9	7
8	45	-19.9	26	-17.1	**	*****	**	*****	**	*****	66	-4.8	8
9	59	-17.7	24	-17.4	**	*****	**	*****	**	*****	68	-3.9	9
10	48	-23.1	29	-15.7	**	*****	**	*****	**	*****	45	-8.0	10
11	48	-21.5	**	*****	**	*****	**	*****	**	*****	36	-10.7	11
12	67	-11.4	**	*****	**	*****	**	*****	**	*****	51	-6.9	12
13	63	-10.3	**	*****	**	*****	**	*****	**	*****	52	-7.2	13
14	59	-10.3	**	*****	**	*****	**	*****	**	*****	75	-4.3	14
15	67	-10.7	**	*****	**	*****	**	*****	**	*****	63	-7.8	15
16	51	-14.6	**	*****	**	*****	**	*****	**	*****	43	-11.3	16
17	48	-16.3	**	*****	**	*****	**	*****	**	*****	48	-11.5	17
18	58	-13.4	**	*****	**	*****	**	*****	**	*****	32	-14.5	18
19	46	-15.9	**	*****	**	*****	**	*****	**	*****	55	-7.9	19
20	46	-14.5	**	*****	**	*****	**	*****	**	*****	79	-5	20
21	50	-13.3	**	*****	**	*****	**	*****	**	*****	82	-4	21
22	44	-12.5	**	*****	**	*****	**	*****	**	*****	81	-4.1	22
23	39	-13.0	**	*****	**	*****	**	*****	**	*****	62	-15.0	23
24	34	-12.6	**	*****	**	*****	**	*****	**	*****	45	-22.0	24
25	21	-18.3	**	*****	**	*****	**	*****	**	*****	39	-24.2	25
26	25	-17.1	**	*****	**	*****	**	*****	**	*****	43	-22.3	26
27	36	-14.2	**	*****	**	*****	**	*****	**	*****	42	-19.8	27
28	36	-14.3	**	*****	**	*****	**	*****	**	*****	73	-7.1	28
29	67	-7.6	**	*****	**	*****	**	*****	**	*****	81	-2.2	29
30	40	-13.1	**	*****	**	*****	**	*****	**	*****	83	-2.0	30
31			**	*****	**	*****	**	*****	**	*****			31
MONTH	46	-15.1	36	-15.2	**	*****	**	*****	**	*****	54	-10.0	MONTH

* NOTE: Data for June, July, and August were not changed.

I. BACKGROUND

A. Purpose

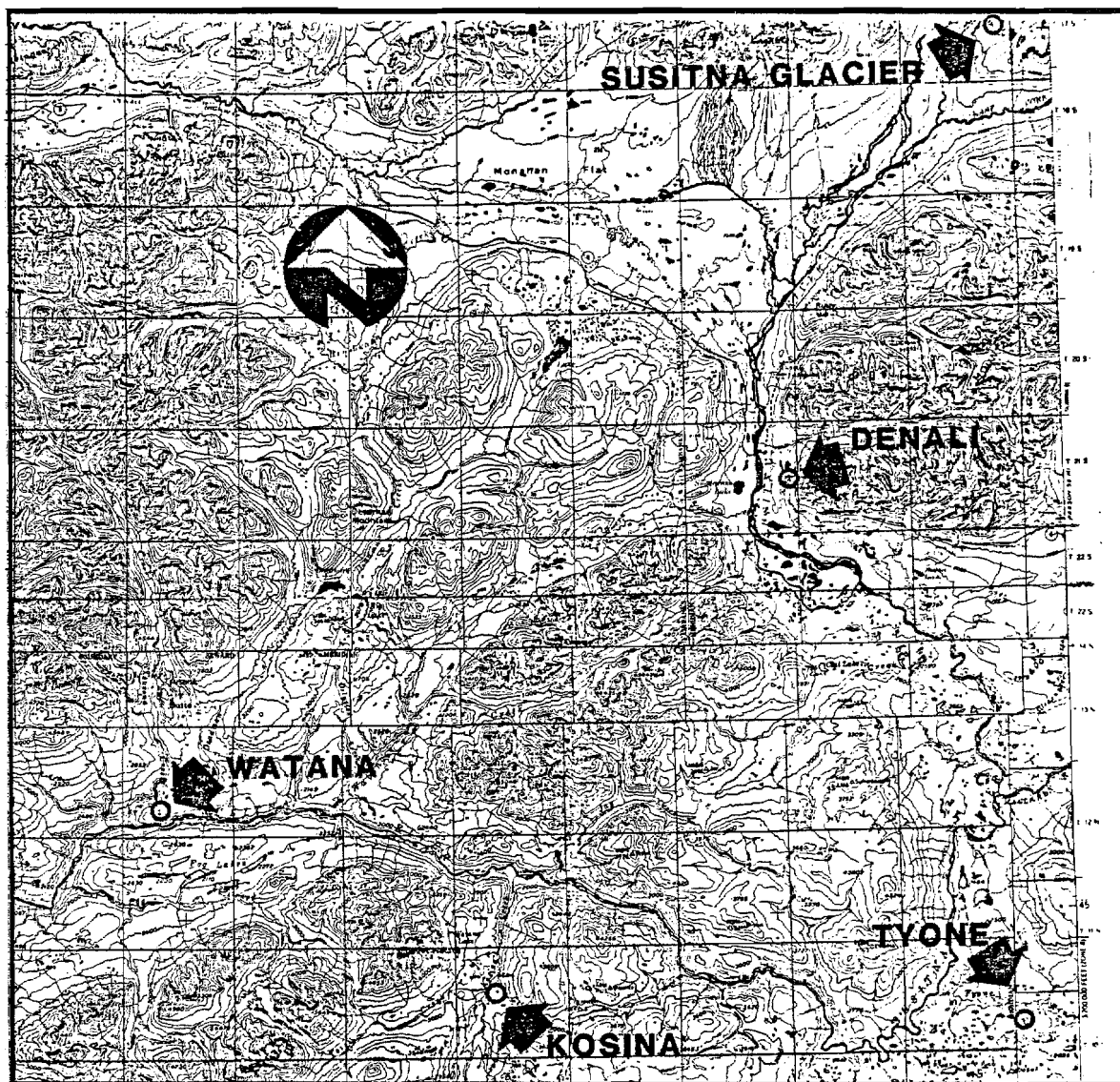
The Glacier climatic station was installed adjacent to Susitna Glacier in the Eastern Alaska Range to obtain data representative of the high elevations of the basin.

B. History of Susitna Glacier Station (No. 0610)

The station lies near the confluence of four major glaciers feeding the mainstem of the Susitna River. An extrapolated Susitna River Mile for Glacier Station is approximately 331. The climate station is situated on a ridge at approximately 4,700 feet elevation (see Figure I-1 for location). The station began recording on July 20, 1980.

Previous data for this station are published in:

Report	Period Covered
1. Processed Climatic Data Volume 1 Susitna Glacier Station March 1982 (R&M Consultants)	7/80 - 9/81
2. Processed Climatic Data Volume 1 Susitna Glacier Station December 1982 (R&M Consultants)	10/81 - 9/82



TALKEETNA MTS. AND HEALY QUADRANGLES APPROX. SCALE 1" = 11 MILES

CLIMATE STATIONS UPPER SUSITNA BASIN



Station Location

Figure 1-1

PREPARED BY:

R&M

R&M CONSULTANTS, INC.
ENGINEERS GEOLOGISTS PLANNERS SURVEYORS

PREPARED FOR:

HARZA-EBASCO

SUSITNA JOINT VENTURE

II. ANNUAL DATA SUMMARIES

SUSITNA GLACIER STATION (No. 0610)

SUMMARY OF CLIMATE DATA RECORDED AT GLACIER STATION (NO. 610)
WATER YEAR 1983

Month	Temperature			Wind						Mean RH (%)	Mean DP (°C)	Precip. (mm)	Total Solar Energy (WH/m2)	Month
	Max. (°C)	Min. (°C)	Mean (°C)	Res. Dir. (°True)	Res. Speed (m/sec)	Avg. Speed (m/sec)	Max. Gust Dir. (°True)	Max. Gust Speed (m/sec)	P'val. Dir. (True)					
OCT	M	M	M	M	M	M	M	M	M	M	M	M	M	OCT
NOV	0.7	-17.9	-8.5	062M	1.5M	1.8M	105M	14.0M	ENE(M)	66M	-13.7M	M	13,168M	NOV
DEC	-0.5	-25.6	-7.9	071	1.9	2.4	131	18.4	ENE	M	M	M	7,448	DEC
JAN	2.8	-33.7	-11.5	058	1.4	2.1	123	19.0	ENE	51M	-21.1M	M	12,273	JAN
FEB	10.0	-19.9	-7.3	063M	1.5M	1.5M	112M	14.0M	ENE(M)	M	M	M	28,793	FEB
MAR	4.3	-14.8	-5.2	063M	1.1M	1.4M	128M	10.8M	ENE(M)	54M	-15.3M	M	84,595	MAR
APR	11.5	-15.7	-2.0	080	1.2	1.9	184	24.1	ENE	M	M	13.0	135,372	APR
MAY	M	M	M	M	M	M	M	M	M	M	M	M	M	MAY
JUN	M	M	M	M	M	M	M	M	M	M	M	M	M	JUN
JUL	18.5	1.5	8.5	130	0.4	1.6	083	15.2	SE	M	M	50.8	159,252	JUL
AUG	13.5M	-1.7M	5.0M	110M	0.7M	1.7M	124M	15.9M	E(M)	M	M	242.0	110,859M	AUG
SEP	6.0M	-15.1M	-1.3M	102M	0.7M	1.7M	151M	17.8M	NNE(M)	M	M	108.0	73,147M	SEP
Annual	M	M	M	M	M	M	M	M	M	M	M	M	M	Annual

Note: Refer to Section III of report for explanation of symbols used.

SUMMARY OF CLIMATE DATA RECORDED AT GLACIER STATION (NO. 610)
WATER YEAR 1982

Month	Temperature			Wind						Mean RH (%)	Mean DP (°C)	Precip. (mm)	Total Solar Energy (WH/m2)	Month
	Max. (°C)	Min. (°C)	Mean (°C)	Res. Dir. (°True)	Res. Speed (m/sec)	Avg. Speed (m/sec)	Max. Gust Dir. (°True)	Max. Gust Speed (m/sec)	P'val. Dir. (True)					
OCT	7.5M	-12.6M	-3.6M	061M	1.0M	0.9M	186M	16.5M	NE(M)	M	M	M	42,691M	OCT
NOV	6.1	-21.5	-9.1	077	1.6	2.1	128	21.6	ENE	M	M	M	12,592	NOV
DEC	2.3	-22.8	-10.7	083	1.7	2.0	131	22.9	ENE	M	M	M	5,706	DEC
JAN	-4.6M	-33.1M	-15.2M	066	1.4	1.8	077	20.3	ENE	M	M	M	6,313	JAN
FEB	5.8	-32.7	-12.7	063M	1.6M	2.5M	336M	26.0M	ENE(M)	M	M	M	31,599	FEB
MAR	M	M	M	M	M	M	M	M	M	M	M	M	M	MAR
APR	M	M	M	M	M	M	M	M	M	M	M	M	M	APR
MAY	13.0	-8.2	1.4	083M	0.5M	1.3M	212M	10.8M	ENE(M)	M	M	26.0	201,312	MAY
JUN	18.0	-2.1	6.2	113	1.1	2.1	135	20.3	SE	M*	M*	103.8	175,490	JUN
JUL	18.7	-0.2	7.8	129	0.4	1.4	001	12.1	SSW	M	M	194.2	136,467	JUL
AUG	14.6	-0.5	6.6	096	0.3	1.6	087	10.8	NNE	M	M	78.6	122,685	AUG
SEP	M	M	M	M	M	M	M	M	M	M	M	M	M	SEP
Annual	M	M	M	M	M	M	M	M	M	M	M	M	M	Annual

* Months when RH values were reported in the annual report but where subsequent review indicated the data were unusable.

Note: Refer to Section III of report for explanation of symbols used.

SUMMARY OF CLIMATE DATA RECORDED AT GLACIER STATION (NO. 610)
WATER YEAR 1981

Month	Temperature			Wind					P'val. Dir. (True)	Mean RH (%)	Mean DP (°C)	Precip. (mm)	Total Solar Energy (WH/m2)	Month
	Max. (°C)	Min. (°C)	Mean (°C)	Res. Dir. (°True)	Res. Speed (m/sec)	Avg. Speed (m/sec)	Max. Gust Dir. (°True)	Max. Gust Speed (m/sec)						
OCT	6.9M	-9.7M	-2.0M	080M	1.7M	2.3	146	24.1	ENE(M)	M	M	M	37,415M	OCT
NOV	2.2M	-16.4M	-6.4M	074M	1.6M	1.9	048	17.8	ENE(M)	M	M	M	13,538	NOV
DEC	1.1	-33.5	-14.4	070	1.4	1.8	156	30.5	ENE	39M	-27.0M	M	12,417	DEC
JAN	4.4	-13.7	-2.9	102M	3.3M	3.8	154	32.4	E(M)	51M	-13.0M	M	10,060	JAN
FEB	0.4M	-25.7M	-9.1M	M	M	2.1	M	25.4	M	56M	-17.7M	M	25,698M	FEB
MAR	M	M	M	091M	2.2M	2.9M	159M	26.0M	ENE	48M	-16.8M	M	73,041M	MAR
APR	M	M	M	M	M	M	M	M	M	M	M	M	M	APR
MAY	15.4M	-5.3M	4.7M	116M	0.7M	2.0M	151M	14.0M	ENE(M)	M*	M*	34.0M	174,283M	MAY
JUN	15.2	-2.5	6.6	102	0.3	1.9	028	13.3	NNE	M*	M*	141.4	182,185	JUN
JUL	11.0	-0.3	5.7	119	0.4	1.6	188	17.8	NNE	M*	M*	324.2	108,046	JUL
AUG	17.7	-4.7	6.2	084M	0.8M	1.9	136	15.2	ENE(M)	M*	M*	300.2	105,803	AUG
SEP	10.0	-9.6	1.1	079	0.8	1.7	215	14.6	NE	M*	M*	66.4	78,858	SEP
Annual	M	M	M	M	M	M	M	M	M	M	M	M	M	Annual

* Months when RH values were reported in the annual report but where subsequent review indicated the data were unusable.

Note: Refer to Section III of report for explanation of symbols used.

SUMMARY OF CLIMATE DATA RECORDED AT GLACIER STATION (NO. 610)
WATER YEAR 1980

Month	Temperature			Wind					P'val. Dir. (True)	Mean RH (%)	Mean DP (°C)	Precip. (mm)	Total Solar Energy (WH/m2)	Month
	Max. (°C)	Min. (°C)	Mean (°C)	Res. Dir. (°True)	Res. Speed (m/sec)	Avg. Speed (m/sec)	Max. Gust Dir. (°True)	Max. Gust Speed (m/sec)						
OCT														OCT
NOV														NOV
DEC														DEC
JAN														JAN
FEB														FEB
MAR														MAR
APR														APR
MAY														MAY
JUN														JUN
JUL	M	M	M	M	M	M	M	M	M	M	M	M	M	JUL
AUG	M	M	M	M	M	M	M	M	M	M	M	M	M	AUG
SEP	8.5	-10.5	1.1	085	0.7	1.6	093	15.2	ENE	M	M	89.2	77,065	SEP
Annual	M	M	M	M	M	M	M	M	M	M	M	M	M	Annual

* Months when RH values were reported in the annual report but where subsequent review indicated the data were unusable.

Note: Refer to Section III of report for explanation of symbols used.

III. REPORT PREPARATION

A. DESCRIPTION OF SYMBOLS USED IN ANNUAL AND MONTHLY SUMMARIES

Annual Summary

Blank entries for monthly values indicate the station had not yet been installed at the site or that it had been removed prior to that month. Installation and removal dates are noted on the table as well.

M Insufficient or partial data. M follows average and/or total values if 1-9 daily values were missing data for all or part of the day. M appears alone for the month if 10 or more daily values were missing or contained missing data. Parentheses surround the M where other letters may cause confusion (i.e. in prevailing direction). M follows average and/or total values for the year if any month was missing data. M appears alone for the year if any month was missing enough data to require it to have an M alone or if three or more months were missing any data.

Monthly Summaries

Blank entries for three-hourly, daily, or monthly values (generally just for relative humidity or dewpoint) indicate the R.H. and D.P. data have been deleted for the period. For further explanation, refer to the section "Interpretation of Data."

M Insufficient or partial data. M follows average and/or total values if any readings for the period were missing and would have been required for determination of the table value. M follows the summary values for the month if 1-9 daily values had M's appended to them or had asterisks in their place. M appears alone in place of the monthly values if all daily values had blank entries or asterisks. Parentheses surround the M where other letters may cause confusion (i.e in prevailing direction).

**** Erroneous or missing data (may be from 2 to 6 asterisks, depending on number of digits possible in the value). Appears in place of the value if all readings required for determination of the table value were missing.

- A dash in the hourly precipitation table indicates the volume for that hour is not known, but the cumulative total of precipitation over the interval of consecutive dashed hours is included in the next hour where a value is reported. Similarly, a dash for precipitation in the monthly summary table indicates the volume for that day is not known, but the cumulative total over the interval of consecutive dashed days is included in the next day where a value is reported.

B. DATA COMPUTATION STANDARDS (CLIMATE)

Graphical Data Plot

Graphical representation of valid recorded and/or computed data.

Hourly Precipitation Summary Table

Hourly precipitation values are calculated as the difference between valid (current and preceding) consecutive hourly readings. When either of these hourly precipitation readings is invalid, no value is reported for the current hour.

Monthly Summary Table

1. Maximum daily and monthly temperatures are determined from all valid recorded temperatures.
2. Minimum daily and monthly temperatures are determined from all valid recorded temperatures.
3. Mean daily and monthly temperatures are determined from all valid recorded temperatures. The mean daily temperature is determined from the mean of the maximum and minimum temperatures. The mean monthly temperature is determined from the mean of all reported daily mean temperatures.
4. Resultant daily and monthly wind directions and speeds are summed vectorially from all valid readings.
5. Average daily and month wind speeds are determined for all valid readings (arithmetic mean).

6. Maximum daily and monthly gust speeds are determined from all valid readings. Associated directions are the resultant directions from the recording interval in which the peak interval gust was observed.
7. Prevailing daily and monthly directions are determined from all valid readings. The reported value is the most frequent direction observed.
8. Mean daily and monthly relative humidities are determined from all valid readings (arithmetic mean).
9. Mean daily and monthly dewpoint temperatures are determined from all valid readings (arithmetic mean). Dewpoints are omitted when the wind speed is less than 1 m/s, when the dewpoint calculates to a value greater than the recorded temperature, or when the dewpoint calculates to less than minus 47 degrees or more than 27 degrees Centigrade.
10. Daily and monthly precipitation values are determined from all valid readings.
11. Daily and monthly solar energy values are determined from all valid readings. Daily solar energy is determined by averaging the recorded solar intensity and converting the units. The monthly value is the sum of the daily values.

Three-Hour Summary Tables

1. The temperature reported is the temperature recorded at the specified time.

2. The dewpoint temperature reported is the dewpoint calculated at the specified time. Dewpoints are omitted when the wind speed is less than 1 m/s, when the dewpoint is calculated to a value greater than the recorded temperature, or when the dewpoint calculates to less than minus 47 degrees or more than 27 degrees centigrade, or when either the temperature or R.H. reading is invalid.
3. The relative humidity reported is the humidity recorded at the specified time.
4. The wind direction reported is the three-hour vectorial resultant sum of data recorded up to the specified time.
5. The wind speed reported is the three-hour vectorial resultant of data recorded up to the specified time.
6. The gust direction reported is the direction of the maximum gust recorded during the preceding three-hour period.
7. The gust reported is the maximum recorded during the three-hour period.
8. The radiation reported is the solar radiation intensity recorded at the specified time.

Wind Frequency Summary Table

1. Reported data are determined from all valid readings.

Wind Rose Graphical Plot

1. Plot is a graphical representation of the wind frequency summary table.

General Notes

1. The following are the data ranges assumed valid, based on reasonable expectations for the parameters in south-central Alaska; data outside these ranges are not used:

Time: 0000 through 2400 hours - at specified time intervals.

Temperature: -50 through +35 °C

Wind Speed: 0 through 99.9 meters per second and less than or equal to GUST

Direction: 0 through 360 degrees

Relative Humidity: 0 through 99 percent

Precipitation: 0 through 99.8 mm. Precipitation during recording interval (15 or 30 minutes) should not exceed 30 mm.

Solar: 0 through 150 milliwatts/cm²

Gust: 0 through 99.9 m/sec

Battery: 9 through 14.5 volts

2. Accuracy of the MRI (Meteorology Research, Inc.) sensors and processor are as follows:

Temperature: ±1°C

Wind Speed: ±0.5 meters per second

Wind Direction: ±1% of full scale

Relative Humidity: ±6%

Precipitation: $\pm 1\%$ up to 76.2 mm/hr, $\pm 5\%$ from 76.2 mm/hr to 254 mm/hr

Solar Radiation: $\pm 5 \text{ mw cm}^{-2}$

Tape Recorder Error Rate: 1 bit in 10^7

3. The following are the direction ranges used in the prevailing direction, wind frequency and wind rose summaries:

DIRECTION	COMPASS HEADING
North	350 through 11
North-Northeast	12 through 34
Northeast	35 through 56
East-Northeast	57 through 79
East	80 through 101
East-Southeast	102 through 124
Southeast	125 through 146
South-Southeast	147 through 169
South	170 through 191
South-Southwest	192 through 214
Southwest	215 through 236
West-Southwest	237 through 259
West	260 through 281
West-Northwest	282 through 304
Northwest	305 through 326
North-Northwest	327 through 349

IV. INTERPRETATION OF DATA

A. GENERAL - Notes on Interpreting Data

1. General

- a. Many of the sensors or the methods of measuring various parameters have peculiarities that affect how the data should be interpreted. The user is encouraged to become familiar with the methods of summation for each parameter and each table. These are described in the section "Data Computation Standards."
- b. The estimates of usable data for the current year in Table IV.1 at the end of this section were prepared by reviewing the published summary tables for each month. Precipitation estimates came from the hourly table; estimates for usable percentages of temperature, relative humidity, and solar radiation data were based on the 3-hour summaries; wind estimates came from comparison with the other parameters and a cursory review of the raw-data printout; and usable longwave radiation estimates were from the raw data.
- c. An enhancement that has been added to this year's series of reports is use of symbols to indicate where data are missing from parameter totals or averages in the summary tables. This is intended to assist the data user in evaluating the quality of the data.

Estimates that are below 90% are reported to the nearest 5%, estimates above 90% are to the nearest 1%. If the data are nearly all good, except for infrequent "bugs," this is

indicated by a "99 + " value. If the estimate is quite rough, this is denoted by a "±" after the value.

2. **Precipitation** - Precipitation data for most stations are reported for April through September only. The stations do not have heaters in their precipitation sensors (tipping buckets), so they are unable to record precipitation when the temperature is below freezing. The sensors are calibrated to tip for 0.2 mm of rainfall and not for snowfall. The sub-freezing temperatures may cause a loss or a delay of the recorded precipitation. Winds frequently blow snow away from or out of (or occasionally into) the collector, and snow collected in the bucket may not be melted and recorded until the next occurrence of warm weather, possibly days or weeks later. The months of October through March very often have sub-freezing temperatures on nearly every day of the month, so their precipitation records have been omitted. It should be noted that even in the months where precipitation data are reported (i.e. April through September), the occurrence of sub-freezing temperatures could affect the timing and the recorded amount of precipitation. The user should exercise caution and make note of the concurrent temperatures in interpreting the precipitation records.

An exception to the normal system of recording winter precipitation is at the Watana Station (No. 0650). That site is equipped with a Wyoming wind gage to eliminate the effects of the wind on the snow, and it also has an AC-powered heater on the precipitation bucket to melt snow that falls into it. The Watana data are thus published for the whole year. Details on the Watana data are included in "Notes on Interpreting Watana Station Data," in the Watana report.

3. **Relative Humidity and Dewpoint** - The relative humidity (R.H.) sensors used are printed circuit elements which sense changes in R.H. by changes in impedance. The sensors, manufactured by Phys-Chem Research Corporation, have chemically-treated surfaces which degrade with time, and are thus very difficult to keep in calibration. Many of the months throughout the year (and at all stations) therefore display significant variations in R.H. patterns. Though the data are generally of poor quality throughout the 1983 year, they are believed to be useful as indicators of the true humidity and have for that reason been left in the report.

When the calibration of the R.H. sensor is too high, readings near the top end (i.e. approaching 100%) may go "over the top" and be read as, say, 110% (if the calibration is high by 10 points). Having only two digits in which to record the R.H., the Weather Wizard will report this as "10," which will drastically affect the computation of instantaneous dewpoint, average R.H., and average dewpoint values. The graphical plot of R.H. will also be misleading, with periodic "spikes" down to very low values. Each plot may be interpreted, however, by mentally adjusting the entire plot downward an appropriate amount to keep the maximum values at 100%. The approximate amount of such adjustment for each month is noted in the following section, "Notes on Interpreting Susitna Glacier Station Data". Because the R.H. and dewpoint values in the monthly summary tables are numerical averages, they are not easily interpreted and have been deleted for the days when RH was "overtopped". Values in the three-hour summaries have been retained since they are instantaneous readings; they should, however, be adjusted by the same amount indicated for the plots.

An additional consideration with respect to dewpoint is the fact that it is not computed when the reported wind speed falls below

1 m/sec, due to inadequate aspiration of the R.H. sensor. This typically causes elimination of at least one dewpoint value on nearly every day of data-collection. However, to avoid undue congestion in the table, daily values have not been individually noted as containing missing records; only the monthly average has been so designated. The same applies to R.H.

4. **Solar Radiation** - Daily and monthly solar radiation values are the cumulative total energy, computed from all valid readings for the period. Either the daily or monthly value can be significantly above or below the true energy value if there are large segments of missing readings (i.e. from the period of very low intensity at night or the period of very high intensity at mid-day). A check should be made, therefore, of the "Usable Data" table and of the graphical plot to get a feel for the frequency and timing of lost solar radiation data. Caution should be used when a significant amount of data is missing.

Another frequent concern in the processing of solar data is the presence of non-zero minimum values. Since the sensors have a stated accuracy of $\pm 1\%$ of the full-scale value of 140 mW/cm^2 , they often record a reading of 0 (during night) as 1 or even 2 mW/cm^2 . This also can bias the daily or monthly totals, making the computed energy much higher than the true solar energy. This type of error in the data is difficult to adjust automatically, but the user can compensate for it in his interpretation by reviewing the instantaneous radiation readings printed in the 3-hour summary tables. If the 3-hour values never drop below 1, even in the winter time, the sensor is very likely reading high. An error of $+1 \text{ mW/cm}^2$ on every reading will cause the computed daily total energy to be high by $240 \text{ watt-hr./cm}^2$. The user can adjust the numbers used accordingly.

5. **Wind Speed and Direction** - The wind frequency summary table in each month's report notes the number of wind observations used in preparing the table. Since data for this year have all been recorded at 15-minute intervals, there were 4 readings recorded per hour and 96 readings per day. This gives a maximum possible number of observations for each month as follows (dependent on the number of days in the month):

Month	Max. Possible # of Observations
October, December, January, March May, July, August (31 days)	2976
November, April, June, September (30 days)	2880
February (28 days)	2688
February in leap years (29 days)	2784

B. Notes on Interpreting SUSITNA GLACIER Station Data

1. **General** - The station was not installed from September 2 to October 20, 1982, while factory maintenance was performed. The station was inoperable for unknown reasons from May 10 to June 15, 1983, and no data at all were recovered for the period. All data except precipitation and solar were also lost from August 28 until September 2, 1983, when the unit was pulled for annual maintenance.
2. **Precipitation** - Data are presented for April, despite the occurrence of sub-freezing temperatures on several days. This may give errors in the reporting of the timing or the amount of precipitation, and the user should be aware of this in interpreting and applying the data.
3. **Relative Humidity** - As discussed in the preceding section of general notes, many of the R.H. data for the year were considered unreliable or required some "judgment" in their use. Due to calibration problems with the R.H. sensors, some of the data should be adjusted prior to application. The amount of adjustment for each month applicable is listed below, and an example of the interpretation is explained afterward. Data for November are considered poor, but were retained in the report as indicators of RH. Data for June, July, and August have been deleted.

Month	Adjustment to Graphical R.H. Values
December 1982	-10 R.H. Points
January 1983	-10
February	-10
March	-10
April	-15
May	-15
September	-15

Example: In March, the readings peak over the top at about "110 percent" in the graphical plot (The plot does not go to 110, but readings of "10" are equivalent to 110 percent). This value is assumed to correspond to a true R.H. of 100 percent. Therefore, 10 points should be subtracted from all the plotted R.H. values. Values from 0-10 should be read as 100-110 (and therefore adjusted to 90-100). The graphical plot may thus be interpreted semi-quantitatively. The numerical values (daily averages), however, are more difficult to interpret and have been deleted from the tables.

4. **Solar Radiation** - The minimum (nightly) value for solar radiation intensity is generally 1 and frequently 2 mw/cm^2 from December through September. As explained in the General Notes (Section IV.A), this gives daily totals that are too high by 240 (for high by 1) or 480 (for high by 2) watt-hours per day. Inspection should be made of the night-time values in the 3-hour tables (to see whether "1" or "2" appears in place of "0") and then the daily and monthly totals should be adjusted accordingly.

TABLE IV.1

SUSITNA HYDROELECTRIC PROJECT - CLIMATE DATA PROCESSINGAPPROXIMATE PERCENTAGES OF USABLE DATA

Station: Glacier

Water Year: 1983

	<u>OCT</u>	<u>NOV</u>	<u>DEC</u>	<u>JAN</u>	<u>FEB</u>	<u>MAR</u>	<u>APR</u>	<u>MAY</u>	<u>JUN</u>	<u>JUL</u>	<u>AUG</u>	<u>SEP</u>	<u>YEAR</u>
Temperature	35	100	100	100	100	100	100	30	50	100	65	95	81
Wind Speed	35	99	100	100	100	100	100	30	50	100	55	90	80
Wind Direction	35	99	100	100	98	99	100	30	50	100	55	85	79
Relative Humidity	35	100	100	100	100	100	100	30	0	0	0	95	63
Precipitation	0	0	0	0	0	0	100	30	50	100	100	99+	40(1)
Solar Radiation	35	100	100	100	100	100	100	30	50	100	99+	99+	84
Peak Gust	35	99	100	100	100	100	100	30	50	100	55	90	80
Longwave	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

(1) Maximum possible recovery percentage is 50% for the year since precipitation bucket is not heated and measurement of sub-freezing precipitation (generally during Oct. - Mar.) is not possible.

V. MONTHLY CLIMATIC DATA SUMMARIES

SUSITNA GLACIER STATION, WATER YEAR 1983

No precipitation data for October

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING October, 1982

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	
DEG C	DEG C	Z	DEG.	M/S	DEG.	M/S	DEG C	DEG C	Z	DEG.	M/S	DEG.	DEG C	DEG C	Z	DEG.	M/S	
0300	*****	*****	**	***	****	***	0300	*****	*****	**	***	****	***	0300	*****	*****	**	***
0600	*****	*****	**	***	****	***	0600	*****	*****	**	***	****	***	0600	*****	*****	**	***
0900	*****	*****	**	***	****	***	0900	*****	*****	**	***	****	***	0900	*****	*****	**	***
1200	*****	*****	**	***	****	***	1200	*****	*****	**	***	****	***	1200	*****	*****	**	***
1500	*****	*****	**	***	****	***	1500	*****	*****	**	***	****	***	1500	*****	*****	**	***
1800	*****	*****	**	***	****	***	1800	*****	*****	**	***	****	***	1800	*****	*****	**	***
2100	*****	*****	**	***	****	***	2100	*****	*****	**	***	****	***	2100	*****	*****	**	***
2400	*****	*****	**	***	****	***	2400	*****	*****	**	***	****	***	2400	*****	*****	**	***

DAY 13

DAY 14

DAY 15

HOUR DEW WIND WIND GUST MAX.								HOUR DEW WIND WIND GUST MAX.								HOUR DEW WIND WIND GUST MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	*****	*****	**	***	****	***	****	0300	*****	*****	**	***	****	***	****	0300	*****	*****	**	***	****	***	****
0600	*****	*****	**	***	****	***	****	0600	*****	*****	**	***	****	***	****	0600	*****	*****	**	***	****	***	****
0900	*****	*****	**	***	****	***	****	0900	*****	*****	**	***	****	***	****	0900	*****	*****	**	***	****	***	****
1200	*****	*****	**	***	****	***	****	1200	*****	*****	**	***	****	***	****	1200	*****	*****	**	***	****	***	****
1500	*****	*****	**	***	****	***	****	1500	*****	*****	**	***	****	***	****	1500	*****	*****	**	***	****	***	****
1800	*****	*****	**	***	****	***	****	1800	*****	*****	**	***	****	***	****	1800	*****	*****	**	***	****	***	****
2100	*****	*****	**	***	****	***	****	2100	*****	*****	**	***	****	***	****	2100	*****	*****	**	***	****	***	****
2400	*****	*****	**	***	****	***	****	2400	*****	*****	**	***	****	***	****	2400	*****	*****	**	***	****	***	****

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.					
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	*****	*****	**	***	****	***	0300	*****	*****	**	***	****	***	0300	*****	*****	**	***	****	***	****	***
0600	*****	*****	**	***	****	***	0600	*****	*****	**	***	****	***	0600	*****	*****	**	***	****	***	****	***
0900	*****	*****	**	***	****	***	0900	*****	*****	**	***	****	***	0900	*****	*****	**	***	****	***	****	***
1200	*****	*****	**	***	****	***	1200	*****	*****	**	***	****	***	1200	*****	*****	**	***	****	***	****	***
1500	*****	*****	**	***	****	***	1500	*****	*****	**	***	****	***	1500	*****	*****	**	***	****	***	****	***
1800	*****	*****	**	***	****	***	1800	*****	*****	**	***	****	***	1800	*****	*****	**	***	****	***	****	***
2100	*****	*****	**	***	****	***	2100	*****	*****	**	***	****	***	2100	*****	*****	**	***	****	***	****	***
2400	*****	*****	**	***	****	***	2400	*****	*****	**	***	****	***	2400	*****	*****	**	***	****	***	****	***

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING October, 1982

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	*****	*****	**	***	****	***	0300	*****	*****	**	***	****	***	0300	-13.4	-20.5	55	061	4.4	060	10.2
0600	*****	*****	**	***	****	***	0600	*****	*****	**	***	****	***	0600	-13.4	-20.7	54	063	4.2	071	11.4
0900	*****	*****	**	***	****	***	0900	*****	*****	**	***	****	***	0900	-14.4	-21.9	53	041	3.4	058	7.0
1200	*****	*****	**	***	****	***	1200	*****	*****	**	***	****	***	1200	*****	*****	**	052	2.4	052	3.8
1500	*****	*****	**	***	****	***	1500	-10.1	-18.8	49	088	1.2	324	1500	-12.7	-20.5	52	064	4.9	072	11.4
1800	*****	*****	**	***	****	***	1800	-12.5	-19.3	57	081	4.5	081	1800	-15.3	-22.1	56	054	4.1	067	10.8
2100	*****	*****	**	***	****	***	2100	*****	*****	**	***	****	064	2100	-15.3	-22.1	56	008	1.7	045	8.9
2400	*****	*****	**	***	****	***	2400	-13.4	-20.3	56	060	4.0	061	2400	-15.1	-22.1	55	030	2.2	050	7.6

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S						
0300	-14.6	-21.4	56	020	2.3	359	5.1	1	0300	-14.6	-20.1	63	030	1.1	000	3.8	0	0300	-17.8	-21.6	72	045	1.1	021	3.8	0
0600	-14.5	-21.4	56	004	2.3	351	5.7	1	0600	-13.8	-19.3	63	070	1.2	019	4.4	1	0600	-18.3	-21.9	73	051	.9	355	3.2	0
0900	-13.3	-20.0	57	039	1.6	024	7.6	3	0900	-15.1	-20.5	63	060	.8	097	2.5	3	0900	-17.5	-21.3	72	071	.8	043	3.8	3
1200	-11.6	-19.5	52	342	1.7	021	4.4	23	1200	-14.9	-21.5	57	073	1.3	063	3.2	22	1200	-13.8	-19.7	61	068	1.4	091	4.4	27
1500	-10.5	*****	46	050	1.1	014	5.1	22	1500	-13.9	-21.4	53	347	1.9	347	4.4	15	1500	-15.4	-20.3	66	113	.9	126	3.8	18
1800	-16.2	-21.2	65	036	1.3	039	5.1	1	1800	-17.7	-21.3	73	346	.8	320	3.2	0	1800	-16.0	*****	76	074	.7	103	2.5	1
2100	-16.5	*****	65	018	1.2	351	4.4	1	2100	-19.0	*****	75	345	2.3	352	6.3	1	2100	-15.5	-18.5	78	033	1.0	340	2.5	0
2400	-15.7	-20.8	65	020	1.3	000	3.8	1	2400	-19.1	-22.5	74	358	1.7	339	4.4	1	2400	-15.9	-18.6	80	056	.8	104	3.2	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S						
0300	-13.8	-16.8	78	062	1.1	067	2.5	1	0300	-22.8	-28.4	60	018	1.8	044	4.4	1	0300	-23.3	-29.6	56	047	2.2	071	6.3	1
0600	-19.4	-22.0	80	354	.7	342	2.5	0	0600	-23.8	-29.0	62	012	1.9	015	4.4	1	0600	-23.1	-29.4	56	054	1.7	049	4.4	1
0900	-16.8	*****	**	075	.6	354	3.2	***	0900	-23.2	-29.1	58	017	2.3	007	5.7	4	0900	-22.4	-28.8	56	060	1.6	042	3.8	2
1200	-15.9	*****	66	084	1.3	106	5.1	13	1200	-22.8	-30.2	51	024	2.4	032	5.1	23	1200	-19.7	-28.4	46	048	1.3	033	3.8	14
1500	-17.4	*****	58	080	1.2	121	4.4	9	1500	-23.3	-30.8	50	026	2.3	022	4.4	10	1500	-20.2	*****	40	075	.9	031	3.2	8
1800	-19.5	-24.2	66	088	3.4	109	7.6	1	1800	-24.5	-30.2	59	025	2.6	008	5.1	1	1800	-21.1	-27.6	56	063	1.1	030	3.8	1
2100	-20.6	-25.8	63	065	1.7	087	5.7	1	2100	-25.3	-30.9	59	045	2.0	029	5.1	1	2100	-21.6	*****	57	048	1.1	035	3.2	1
2400	-20.7	-26.2	61	045	1.4	045	4.4	1	2400	-24.5	-30.6	57	045	1.7	003	5.7	1	2400	-21.1	-27.8	55	085	1.5	109	3.8	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING October, 1982

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.							
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.							
0300	-15.1	-21.1	60	070	1.5	353	4.4	1	0300	-10.6	*****	89	116	.3	117	2.5	1	0300	-15.9	-22.5	57	040	1.3	018	3.2	1
0600	-16.6	-20.0	75	049	.9	115	3.2	1	0600	-12.1	-13.7	88	320	1.1	303	3.2	1	0600	-15.5	-23.8	49	053	1.1	107	3.2	1
0900	-16.0	-18.8	79	016	.9	005	4.4	2	0900	-13.7	*****	88	347	.4	344	3.8	1	0900	-16.6	-25.8	45	046	1.5	041	3.8	2
1200	-13.4	-16.9	75	032	1.2	037	4.4	9	1200	-13.7	*****	74	111	.1	047	1.9	7	1200	-15.3	-27.1	36	031	1.3	338	3.8	15
1500	-10.0	-13.9	73	063	2.4	053	6.3	6	1500	-13.2	-19.9	57	055	1.1	030	3.2	10	1500	-14.2	-26.4	35	032	.9	004	3.2	10
1800	-10.5	-12.8	83	047	1.9	056	6.3	0	1800	-15.5	-18.3	79	046	1.3	037	3.2	1	1800	-16.7	*****	40	055	.9	349	3.2	1
2100	-10.4	-12.0	88	027	.9	008	3.2	1	2100	-14.9	-19.5	68	055	1.1	054	2.5	1	2100	-16.3	*****	39	062	1.2	013	2.5	1
2400	-8.9	-11.1	84	070	1.2	075	3.8	0	2400	-15.1	-20.7	62	053	1.5	040	3.2	1	2400	-15.1	-26.9	36	078	1.5	089	4.4	1

DAY 31

HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	-15.7	-27.1	38	068	1.2	033
0600	-15.1	-26.6	37	055	1.1	069
0900	-14.3	-26.2	36	059	1.3	092
1200	-12.0	-26.2	30	071	1.5	066
1500	-10.3	-24.7	30	053	1.6	038
1800	-10.9	-24.2	33	077	1.0	060
2100	-9.2	-17.8	50	063	2.1	067
2400	-9.2	-16.6	55	094	4.2	120

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION DATA TAKEN DURING October, 1982

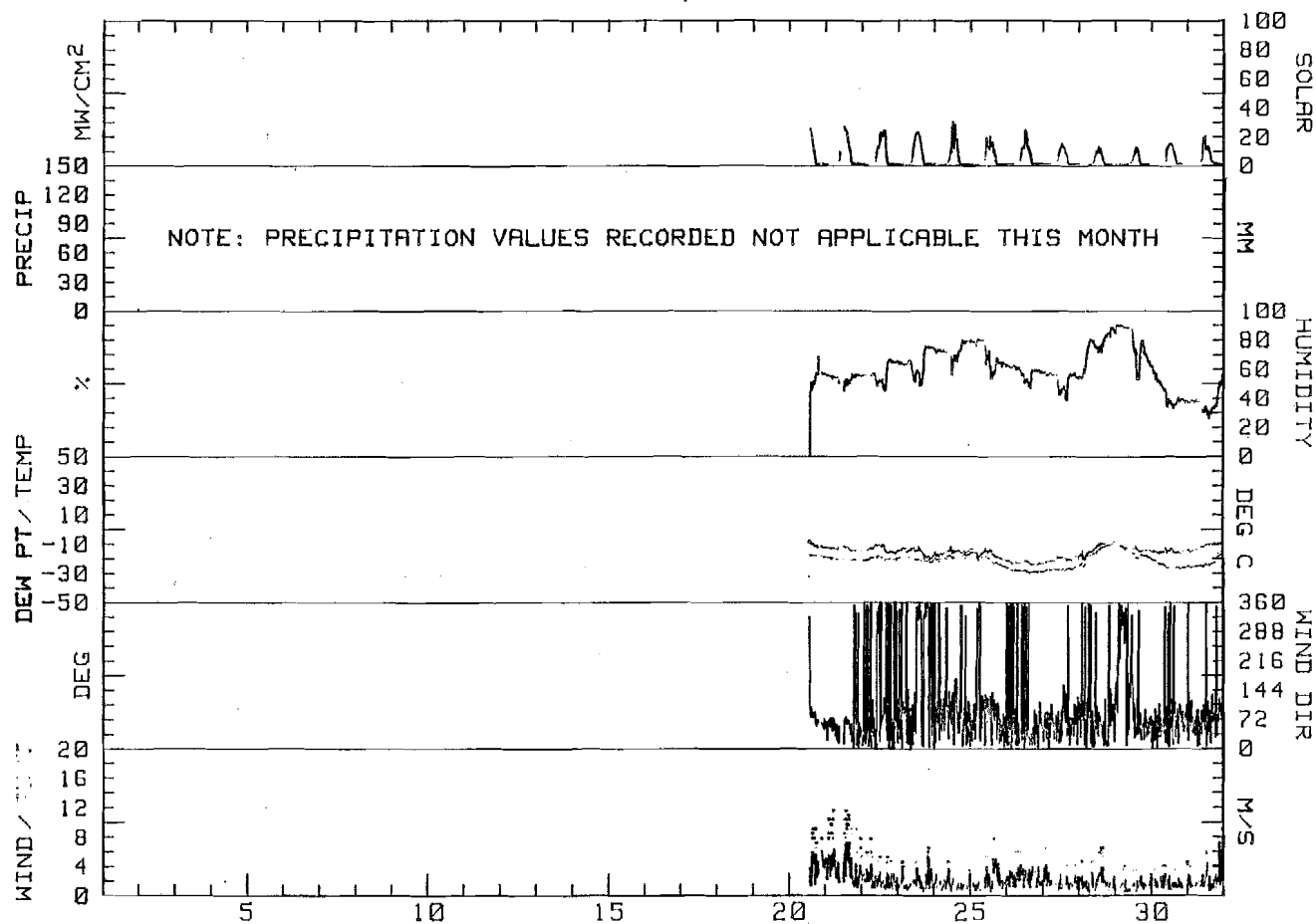
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	1
2	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	2
3	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	3
4	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	4
5	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	5
6	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	6
7	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	7
8	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	8
9	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	9
10	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	10
11	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	11
12	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	12
13	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	13
14	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	14
15	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	15
16	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	16
17	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	17
18	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	18
19	*****	*****	*****	***	****	****	***	****	***	**	*****	****	*****	19
20	-8.2m	-13.6m	-10.9m	071m	3.5m	3.9m	081m	8.9m	ENE(m)50m	-19.9m	****		1727m	20
21	-11.9m	-15.6m	-13.8m	052m	3.4m	3.6m	071m	11.4m	ENE(m)54m	-21.3m	****		1256	21
22	-10.5	-17.3	-13.9	019	1.5	1.9	024	7.6	N	56	-21.0	****	1395	22
23	-12.6	-21.1	-16.9	015	1.1	1.6	352	6.3	NNW	64	-21.5	****	1350	23
24	-12.3	-19.9	-16.1	063	.9	1.4	091	4.4	ESE	72	-20.3	****	1183	24
25	-13.4	-21.9	-17.7	070	1.3	1.7	109	7.6	NNE	68m	-22.1m	****	1029	25
26	-21.3	-25.3	-23.3	026	2.1	2.3	007	5.7	NNE	58	-29.5	****	1125	26
27	-18.5	-24.5	-21.5	060	1.4	1.7	071	6.3	ENE	53	-28.6	****	875	27
28	-8.9	-21.0	-15.0	051	1.3	1.6	053	6.3	ENE	74	-17.4	****	640	28
29	-9.2	-16.2	-12.7	040	.7	1.1	344	3.8	NE	73	-17.9	****	590	29
30	-13.4	-17.4	-15.4	050	1.2	1.4	089	4.4	NE	44	-25.6	****	978	30
31	-8.8	-16.0	-12.4	072	1.7	2.0	120	10.8	ENE	38	-24.1	****	993	31
MONTH	-8.2m	-25.3m	-15.8m	049m	1.5m	1.9m	071m	11.4m	ENE(m)58m	-22.4m	****		13139m	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 10.2
 GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 6.3
 GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 7.0
 GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 7.0

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
October, 1982



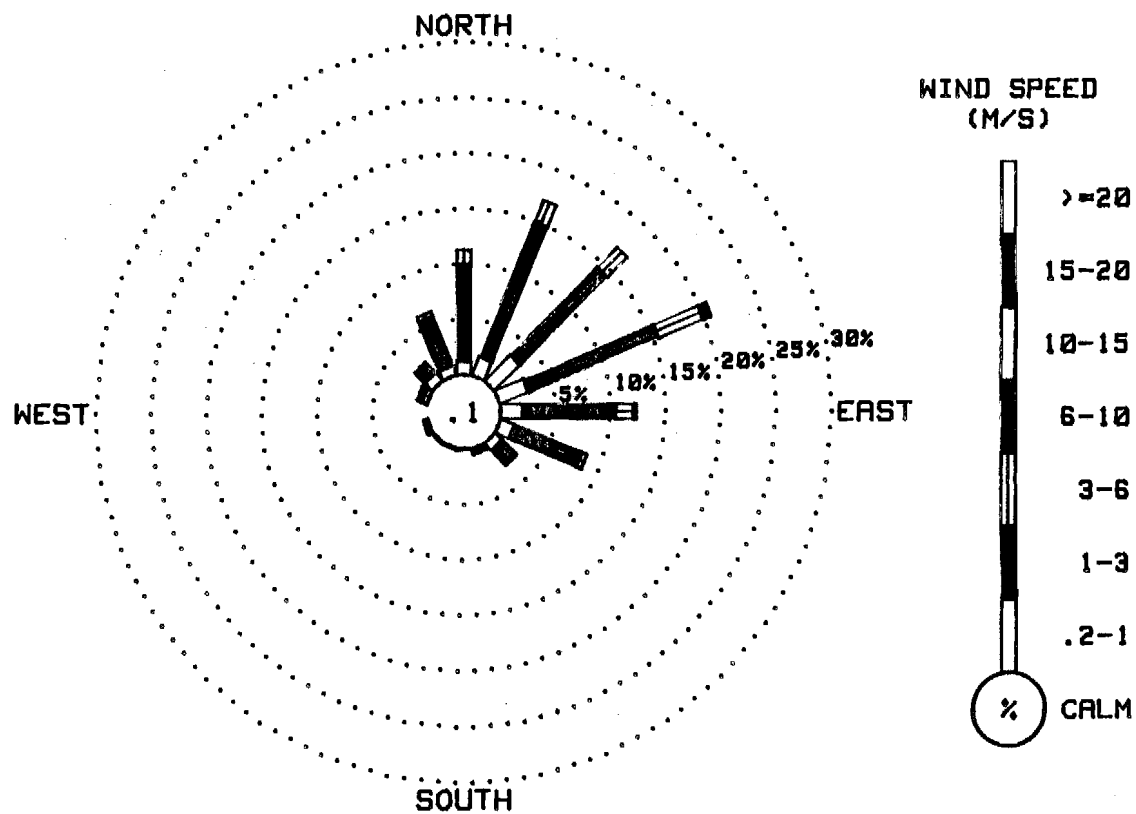
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING October, 1982

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	1.20	8.71	1.30	0.00	0.00	0.00	0.00	11.21
NNE	1.76	13.07	2.13	0.00	0.00	0.00	0.00	16.96
NE	3.24	11.12	2.50	0.00	0.00	0.00	0.00	16.87
ENE	2.78	12.70	4.36	.74	0.00	0.00	0.00	20.57
E	2.04	8.43	1.58	.28	0.00	0.00	0.00	12.33
ESE	1.39	6.58	.56	0.00	0.00	0.00	0.00	8.53
SE	.93	1.85	0.00	0.00	0.00	0.00	0.00	2.78
SSE	.28	.28	0.00	0.00	0.00	0.00	0.00	.56
S	.09	0.00	0.00	0.00	0.00	0.00	0.00	.09
SSW	.09	0.00	0.00	0.00	0.00	0.00	0.00	.09
SW	.09	0.00	0.00	0.00	0.00	0.00	0.00	.09
WSW	.28	.09	0.00	0.00	0.00	0.00	0.00	.37
W	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WNW	.56	.46	0.00	0.00	0.00	0.00	0.00	1.02
NW	1.02	1.20	.09	0.00	0.00	0.00	0.00	2.32
NNW	.93	4.73	.46	0.00	0.00	0.00	0.00	6.12
CALM								.09
TOTAL	16.68	69.23	12.98	1.02	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
1079 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
October, 1982



WIND ROSE PLOT

No precipitation data for November

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING November, 1982

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	-9.3	-15.6	60	094	4.9	079 11.4	1	0300	-2.0	-8.3	62	066	3.8	070 8.9	0	0300	-6.5	-16.8	44	058	1.5
0600	-8.6	-14.2	64	097	2.8	087 10.8	1	0600	-2.5	-7.8	67	082	3.5	078 8.3	1	0600	-7.5	*****	53	044	1.5
0900	-5.8	-10.2	71	077	4.8	079 12.7	1	0900	-5.3	*****	94	101	1.7	070 8.9	1	0900	-5.7	-13.8	53	019	1.5
1200	-4.8	-10.0	67	077	5.6	073 10.8	8	1200	-6.3	-6.7	97	213	1.1	236 10.2	8	1200	-4.5	-10.5	63	020	1.5
1500	-5.1	-9.3	72	089	4.9	098 9.5	5	1500	-6.8	-8.2	90	238	2.6	248 10.2	3	1500	-8.8	-12.1	77	029	1.3
1800	-2.8	-8.4	65	058	3.4	063 9.5	1	1800	-6.7	*****	88	072	.9	129 2.5	1	1800	-4.2	-7.8	76	035	2.0
2100	-2.1	-8.4	62	052	3.0	047 7.0	1	2100	-8.1	-13.1	67	057	2.0	029 4.4	1	2100	-1.6	-6.3	70	067	1.1
2400	-1.8	-7.9	63	055	3.4	068 8.3	1	2400	-6.5	-16.6	45	064	1.9	058 4.4	1	2400	-8.5	-9.5	93	041	1.0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	-5.8	-6.2	97	032	1.0	009 4.4	1	0300	-7.3	-12.5	66	073	2.5	081 5.1	1	0300	-9.0	-19.1	44	050	1.6
0600	-4.3	-7.4	79	081	1.5	077 6.3	0	0600	-7.5	-13.3	63	063	3.2	052 6.3	0	0600	-10.4	-20.1	45	070	1.5
0900	-5.8	-10.2	71	086	4.4	102 11.4	2	0900	-9.2	-15.1	62	062	2.3	063 4.4	1	0900	-11.7	-20.6	48	056	.8
1200	-6.2	-9.4	78	075	2.4	075 6.3	12	1200	-7.4	-15.6	52	057	1.5	085 4.4	15	1200	-14.2	-20.7	58	009	1.5
1500	-6.3	-10.3	73	074	3.2	088 6.3	6	1500	-8.4	*****	50	047	1.3	026 3.8	7	1500	-15.1	-21.5	58	346	2.1
1800	-7.5	*****	84	065	1.3	049 4.4	0	1800	-9.7	*****	58	052	1.3	059 3.2	1	1800	-15.7	-20.1	69	354	1.3
2100	-7.8	-10.6	80	358	.7	334 3.8	1	2100	-9.5	-16.2	58	051	1.8	043 4.4	1	2100	-17.5	-21.5	71	359	1.6
2400	-8.6	-11.3	81	001	.2	069 4.4	1	2400	-9.4	-17.5	52	060	1.9	041 4.4	1	2400	-16.8	-21.0	70	357	2.0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.				
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.			
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S			
0300	-15.0	*****	66	027	1.0	011 3.2	1	0300	-11.0	-18.5	54	059	1.4	022 5.1	1	0300	-12.0	-12.9	93	359	1.3	006 5.1	0
0600	-16.1	-21.0	66	063	.7	054 2.5	1	0600	-12.6	-17.8	65	032	1.4	078 4.4	1	0600	-11.8	-12.7	93	344	1.3	004 3.8	0
0900	-14.4	*****	61	064	1.0	098 3.2	1	0900	-12.0	*****	87	065	1.0	087 5.1	1	0900	-13.4	*****	93	359	1.3	341 3.8	1
1200	-13.4	*****	48	056	.7	034 2.5	13	1200	-10.5	-13.0	82	061	1.3	052 3.2	7	1200	-11.8	-15.0	77	005	1.0	307 2.5	6
1500	-13.0	*****	44	070	.8	090 2.5	4	1500	-8.7	-10.8	85	026	1.6	017 3.8	3	1500	-12.7	*****	83	040	.8	094 2.5	2
1800	-13.9	-20.8	56	064	1.4	090 3.8	1	1800	-8.3	-9.4	92	063	1.4	079 4.4	0	1800	-13.4	*****	84	059	1.1	021 2.5	1
2100	-13.6	-20.3	57	044	1.1	056 2.5	0	2100	-8.4	*****	96	012	.8	011 3.2	0	2100	-13.2	-16.1	79	053	1.5	024 3.2	0
2400	-12.8	-19.8	56	045	1.7	095 4.4	1	2400	-11.1	-11.8	95	052	1.0	081 4.4	1	2400	-12.0	-14.9	79	053	1.2	028 3.8	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING November, 1982

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-11.5	-13.7	84	028	1.0	033	3.2	0	0300	-7.7	-8.9	91	018	1.0	022	3.2	0
0600	-11.3	-14.2	79	044	1.5	085	3.8	1	0600	-7.5	*****	96	031	.7	031	2.5	0
0900	-11.7	-15.7	72	056	1.5	043	3.8	1	0900	-7.2	*****	96	043	.7	037	1.9	1
1200	-9.4	-15.3	62	054	2.5	093	6.3	6	1200	-7.4	-8.6	91	022	.8	108	3.2	3
1500	-10.1	-14.2	72	093	1.0	092	3.2	2	1500	-6.5	-8.8	84	029	1.0	124	3.2	2
1800	-9.6	-12.0	83	048	1.6	025	4.4	1	1800	-7.3	-9.4	85	061	1.1	049	4.4	1
2100	-9.6	*****	90	010	.6	046	3.8	0	2100	-6.7	-9.4	81	089	1.4	076	3.8	1
2400	-8.4	-9.9	89	050	1.3	066	4.4	0	2400	-6.5	-11.4	68	068	2.4	029	4.4	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-5.0	-46.7	1	107	2.9	095	11.4	0	0300	-6.7	-10.2	76	069	1.2	077	2.5	1
0600	-5.3	-34.5	8	161	2.3	129	10.8	0	0600	-8.1	-11.3	78	065	1.5	035	3.8	1
0900	-4.6	-6.6	86	109	.4	242	3.8	2	0900	-8.8	-11.9	78	046	1.3	041	3.2	3
1200	-3.8	-7.7	74	101	3.4	069	8.3	12	1200	-7.5	-11.7	72	042	1.1	020	3.2	11
1500	-5.0	-9.1	73	077	4.3	066	8.3	1	1500	-9.2	-13.3	72	061	.9	040	1.9	1
1800	-5.6	*****	74	057	1.7	069	5.1	0	1800	-8.6	-12.7	72	065	1.3	092	3.2	0
2100	-5.9	-9.4	76	050	1.8	051	3.8	1	2100	-8.8	*****	75	052	1.2	091	3.8	1
2400	-5.8	-9.3	76	040	1.6	030	3.2	0	2400	-9.2	-13.5	71	023	1.4	355	3.8	1

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-10.3	-17.6	55	049	1.4	088	2.5	1	0300	-11.2	-22.8	38	073	2.7	055	5.7	1
0600	-9.5	-17.3	53	056	1.8	043	3.8	1	0600	-11.4	-24.6	33	064	2.5	098	5.7	1
0900	-10.9	-18.4	54	049	1.5	052	3.2	3	0900	-11.8	-24.9	33	082	2.4	089	5.7	3
1200	-10.1	-17.9	53	047	1.0	036	3.8	10	1200	-11.7	-27.4	26	070	1.8	085	6.3	9
1500	-11.4	-18.7	55	046	1.6	046	3.8	1	1500	-11.8	-34.7	13	078	1.9	086	6.3	2
1800	-11.5	-19.0	54	057	1.3	092	3.8	1	1800	-13.0	-27.4	29	061	1.5	098	3.8	2
2100	-12.1	-19.8	53	054	1.6	053	4.4	1	2100	-13.4	-27.4	30	052	1.6	033	4.4	2
2400	-12.2	-20.8	49	054	2.2	052	7.0	1	2400	-13.2	-27.6	29	055	1.3	080	3.8	2

R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING November, 1982

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	-15.0	-27.8	33	072	1.4	041	3.2	2 0300	-13.6	-23.9	42	086	1.5	119	4.4	1 0300	-7.4	-7.5	99	069	.5
0600	-13.4	-27.0	31	063	1.4	057	3.8	2 0600	-6.4	-12.9	60	051	1.3	056	7.0	0 0600	-6.8	-7.1	98	055	.5
0900	-14.8	-27.6	33	044	1.2	012	3.8	2 0900	-6.3	-11.2	68	049	1.5	003	5.7	1 0900	-6.5	-7.8	91	046	.7
1200	-11.6	-27.3	26	068	1.5	050	3.8	6 1200	-6.4	-10.6	72	091	2.4	101	4.4	6 1200	-5.2	*****	77	068	1.6
1500	-11.2	-26.6	27	049	1.1	344	3.2	2 1500	-8.2	-11.2	79	076	1.3	098	3.8	1 1500	-4.5	-8.8	72	058	1.2
1800	-11.3	-26.7	27	075	1.1	122	3.2	1 1800	-10.5	-10.9	97	039	.3	334	3.8	0 1800	-6.0	-9.4	77	059	1.4
2100	-11.5	-25.7	30	063	1.5	060	4.4	2 2100	-7.5	*****	94	068	.7	018	3.8	1 2100	-5.4	-9.8	71	071	1.6
2400	-9.0	-23.5	38	072	1.0	071	3.8	2 2400	-7.8	*****	99	036	.6	117	2.5	0 2400	-5.0	-13.6	51	064	1.5

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S						
0300	-5.4	-13.3	54	060	1.7	034	4.4	1	0300	-5.8	-7.3	89	065	1.1	052	3.8	0	0300	-5.5	-6.8	91	068	1.4	025	3.2	1
0600	-5.3	-12.9	55	016	2.1	009	7.0	1	0600	-5.8	-7.9	85	059	.9	059	3.8	0	0600	-4.9	*****	89	086	1.1	041	3.2	0
0900	-5.9	-13.5	55	066	1.7	087	5.1	1	0900	-6.3	-7.8	89	079	1.4	095	3.8	2	0900	-4.6	*****	90	075	1.1	016	3.2	1
1200	-5.7	-13.5	54	063	2.2	030	7.0	4	1200	-4.7	-7.9	78	056	1.1	032	3.2	6	1200	-4.4	-5.8	90	056	1.1	036	3.2	4
1500	-6.0	*****	56	043	.9	017	2.5	1	1500	-5.0	-8.4	77	051	1.6	047	3.8	0	1500	-4.2	-5.6	90	067	.8	054	1.9	0
1800	-5.3	-12.5	57	063	1.6	057	5.1	0	1800	-4.7	*****	79	050	1.5	024	3.2	1	1800	-3.7	-5.6	87	046	.8	034	3.2	0
2100	-6.9	-10.9	73	029	.9	055	3.8	1	2100	-5.5	-6.6	92	034	1.1	060	3.8	1	2100	-4.6	-7.7	79	055	1.5	040	3.8	1
2400	-6.7	*****	88	037	.9	048	6.3	0	2400	-4.5	-6.2	88	046	1.0	350	3.2	0	2400	-4.4	-8.5	73	051	2.6	043	5.7	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S						
0300	-3.4	-8.8	66	061	1.3	045	4.4	0	0300	-6.0	-17.5	40	049	1.4	018	3.2	1	0300	-4.5	*****	88	055	.6	028	2.5	0
0600	-4.9	-10.1	67	060	2.1	051	5.7	1	0600	-7.5	-10.2	48	065	1.8	038	4.4	1	0600	-4.3	-6.8	83	043	1.1	008	3.2	0
0900	-3.5	-11.3	55	059	2.1	061	5.1	1	0900	0.0	-7.3	58	098	3.2	076	7.0	1	0900	-4.4	-7.5	79	061	1.5	041	3.8	1
1200	-3.8	-13.0	49	035	2.7	022	7.0	6	1200	-2	-7.5	58	099	3.8	098	9.5	7	1200	-4.5	*****	71	055	1.4	051	3.8	4
1500	-3.7	-14.9	42	050	1.6	063	3.8	1	1500	-2.1	-7.0	69	094	1.3	108	8.9	0	1500	-5.0	-9.4	71	054	1.3	063	3.2	1
1800	-5.8	*****	40	048	1.2	047	2.5	1	1800	-2.5	-6.5	74	073	1.0	104	3.2	1	1800	-5.8	-10.7	68	056	1.6	057	4.4	1
2100	-6.1	-18.2	38	058	1.3	019	3.8	1	2100	-2.8	-6.1	78	050	1.3	093	3.2	1	2100	-4.7	-9.9	67	057	1.5	056	3.8	1
2400	-8.6	-18.5	45	053	.9	099	3.2	1	2400	-3.5	-6.9	77	072	1.4	088	4.4	0	2400	-5.9	-11.8	63	058	2.0	050	4.4	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING November, 1982

DAY 28

DAY 29

DAY 30

DAY 28										DAY 29										DAY 30									
HR	DEW	WIND			GUST MAX.			HR	DEW	WIND			GUST MAX.			HR	DEW	WIND			GUST MAX.								
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD			
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW						
0300	-6.1	-12.2	62	074	1.4	089	2.5	1	0300	-7.9	*****	99	009	.5	357	1.9	0	0300	-8.1	-8.5	97	001	1.2	069	3.2	0			
0600	-4.5	-10.5	63	056	1.6	073	4.4	0	0600	-8.1	*****	0	338	.3	337	1.9	1	0600	-7.6	-8.7	92	001	1.6	340	5.7	1			
0900	-5.2	*****	67	049	1.0	096	2.5	1	0900	-8.3	*****	1	044m	.4m	001m	1.9m	1	0900	-7.5	-8.7	91	036	1.9	058	6.3	1			
1200	-5.9	-10.5	70	062	.9	080	3.2	4	1200	-7.6	*****	91	***	***	***	***	2	1200	-9.4	-10.3	93	054	1.3	063	5.1	2			
1500	-7.5	*****	90	052	.7	105	2.5	0	1500	-8.1	*****	98	048	.7	066	2.5	0	1500	-16.3	-17.2	93	072	1.3	068	5.1	1			
1800	-6.9	-8.4	89	081	.9	101	3.2	0	1800	-7.6	-9.0	90	088	2.2	101	6.3	1	1800	-9.0	-9.3	98	052	1.2	035	5.1	1			
2100	-7.5	*****	94	068	.6	012	3.2	1	2100	-8.3	*****	91	089	2.3	089	5.7	1	2100	-12.6	-13.3	95	036	1.4	032	4.4	1			
2400	-8.2	*****	97	053	.7	069	3.2	0	2400	-8.4	-8.8	97	049	1.0	036	3.8	0	2400	-13.4	-14.2	94	046	1.4	051	6.3	0			

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING November, 1982

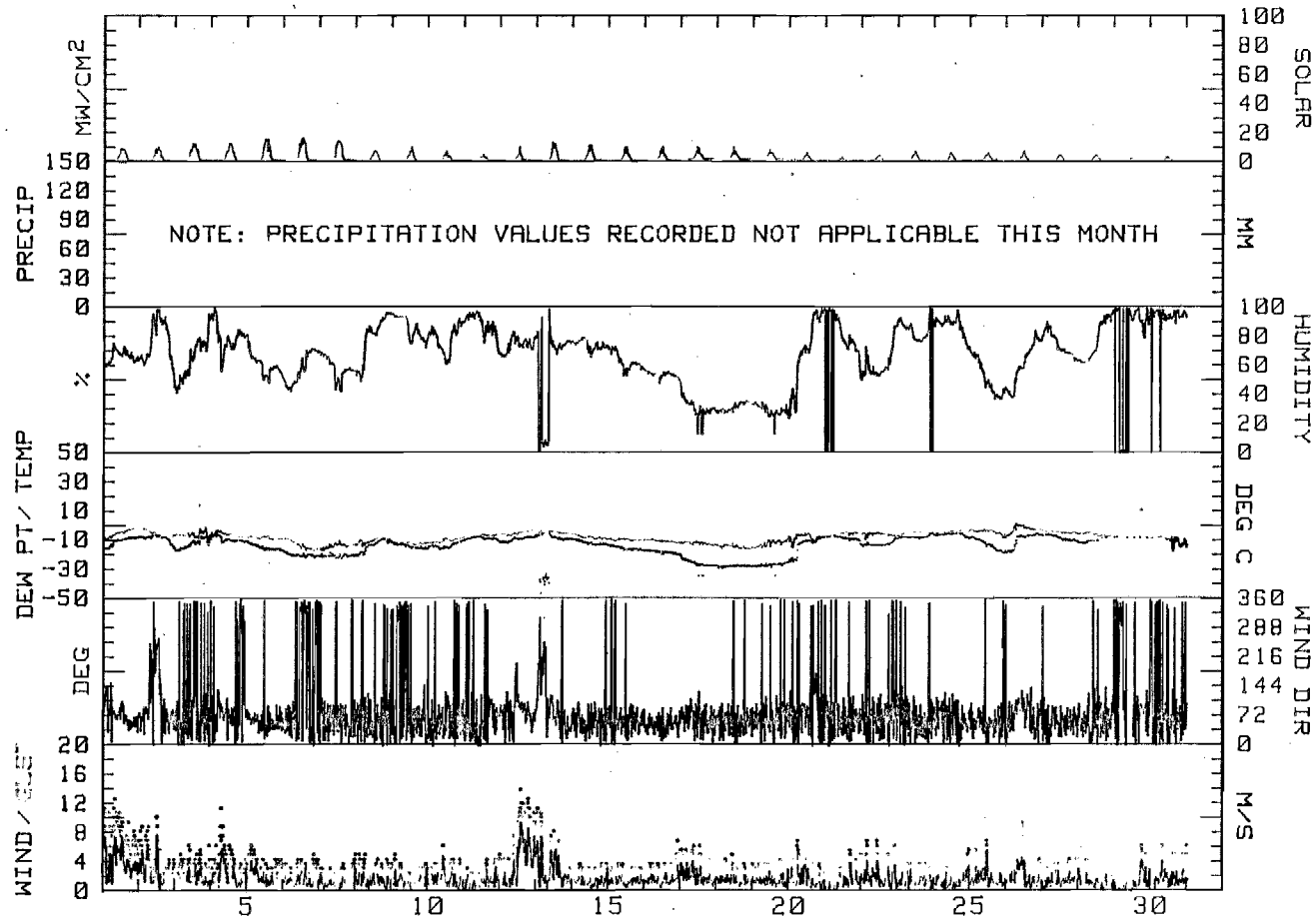
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQKM	DAY
1	-1.8	-9.9	-5.9	077	3.9	4.3	079	12.7	ENE	66	-10.7	****	533	1
2	-1.7	-8.2	-5.0	081	1.3	2.6	236	10.2	ENE	74	-9.2	****	518	2
3	-1.6	-11.5	-6.6	038	1.4	1.8	049	6.3	N	65	-12.2	****	695	3
4	-3.3	-8.6	-6.0	071	1.7	2.2	102	11.4	E	78	-9.4	****	655	4
5	-7.1	-10.0	-8.6	060	2.0	2.0	052	6.3	ENE	60	-14.9	****	785	5
6	-8.7	-17.9	-13.3	014	1.3	1.7	001	5.1	N	58	-20.2	****	820	6
7	-10.5	-17.3	-13.9	053	1.0	1.2	095	4.4	NE	59	-20.7	****	763	7
8	-7.9	-14.2	-11.1	047	1.2	1.6	022	5.1	NE	78	-14.1	****	418	8
9	-10.9	-13.8	-12.4	023	1.0	1.4	006	5.1	NNE	86	-14.2	****	375	9
10	-8.4	-12.5	-10.5	050	1.3	1.6	093	6.3	NNE	78	-13.7	****	310	10
11	-5.8	-8.5	-7.2	052	1.0	1.4	049	4.4	NNE	86	-9.1	****	250	11
12	-3.4	-7.6	-5.5	086	3.7	4.1	105	14.0	E	74	-9.2	****	295	12
13	-3.4	-6.2	-4.8	088	1.9	2.8	095	11.4	ENE			****	525	13
14	-5.8	-10.0	-7.9	053	1.2	1.4	035	3.8	NE	74	-11.9	****	480	14
15	-8.8	-10.9	-9.9	056	1.3	1.4	039	3.8	ENE	63	-15.7	****	443	15
16	-9.5	-12.3	-10.9	052	1.5	1.6	052	7.0	NE	54	-18.4	****	468	16
17	-10.8	-14.6	-12.7	068	1.9	2.1	085	6.3	ENE	31	-26.3	****	613	17
18	-12.3	-16.5	-14.4	053	1.4	1.6	096	5.1	ENE	32	-28.0	****	608	18
19	-9.0	-15.7	-12.4	064	1.2	1.5	060	4.4	ENE	30	-27.0	****	640	19
20	-5.7	-15.1	-10.4	069	1.1	1.6	056	7.0	E	67	-13.9	****	335	20
21	-4.4	-8.0	-6.2	063	1.1	1.3	010	5.7	ENE			****	205	21
22	-5.0	-9.6	-7.3	049	1.4	1.8	009	7.0	NNE	61	-12.6	****	290	22
23	-4.4	-7.5	-6.0	055	1.2	1.5	052	3.8	NE			****	318	23
24	-3.6	-5.6	-4.6	062	1.3	1.4	043	5.7	NE	85	-6.6	****	273	24
25	-2.8	-8.7	-5.8	052	1.6	1.8	022	7.0	NE	52	-13.7	****	343	25
26	.7	-8.6	-4.0	081	1.8	2.0	098	9.5	E	60	-9.8	****	343	26
27	-3.7	-5.9	-4.8	056	1.4	1.5	057	4.4	NE	73	-9.1	****	243	27
28	-4.5	-8.6	-6.6	062	1.0	1.1	073	4.4	ENE	71	-10.6	****	265	28
29	-7.1	-8.7	-7.9	069M	.9M	1.1M	101M	6.3M	E(M)			****	163	29
30	-7.1	-17.6	-12.4	037	1.3	1.7	058	6.3	NE			****	203	30
MONTH	.7	-17.9	-8.5	062M	1.5M	1.8M	105M	14.0M	ENE(M)	66M	-13.7M	****	13168	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 10.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 11.4
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.8
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 12.1

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
November, 1982



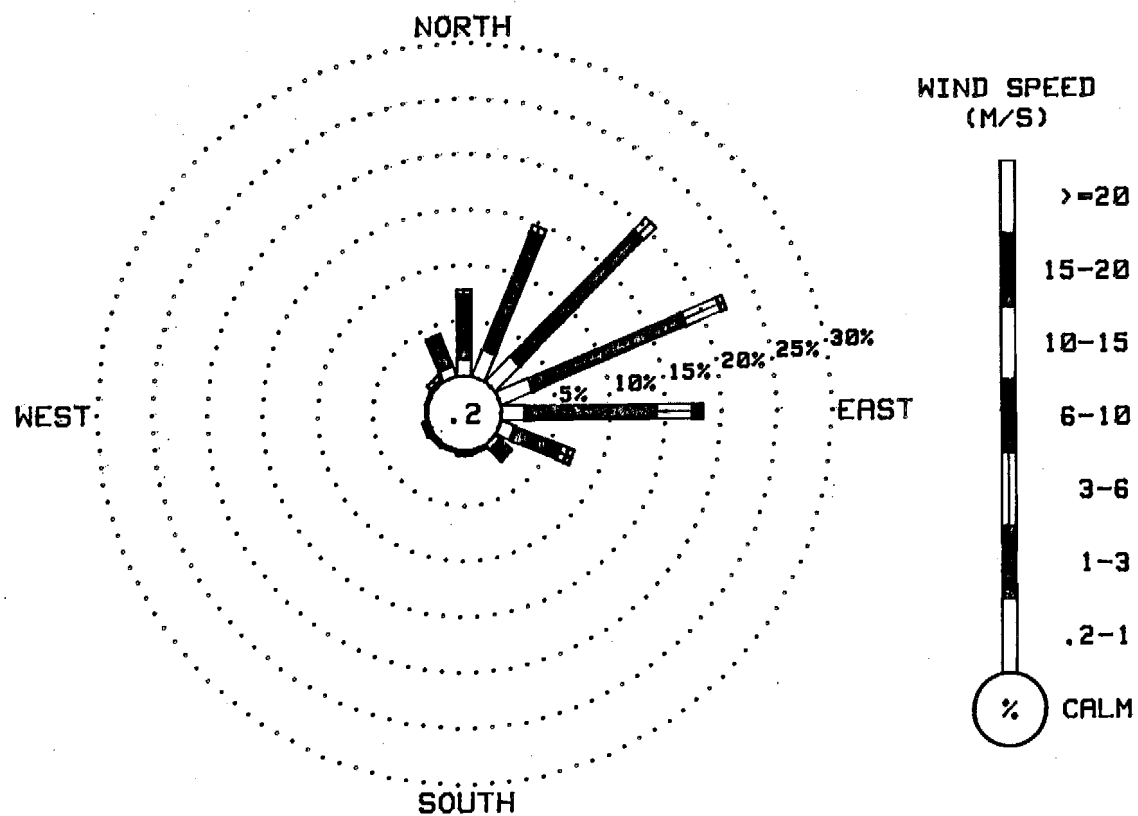
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING November, 1982

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	1.50	5.80	.45	0.00	0.00	0.00	0.00	7.75
NNE	2.62	11.35	.66	0.00	0.00	0.00	0.00	14.63
NE	3.21	15.85	1.57	0.00	0.00	0.00	0.00	20.64
ENE	3.18	15.05	3.46	.45	0.00	0.00	0.00	22.14
E	2.16	11.94	3.25	.94	0.00	0.00	0.00	18.30
ESE	1.40	4.50	.73	.56	0.00	0.00	0.00	7.19
SE	.63	1.22	.10	.10	0.00	0.00	0.00	2.05
SSE	.14	.14	.03	0.00	0.00	0.00	0.00	.31
S	.07	.31	.07	0.00	0.00	0.00	0.00	.45
SSW	.10	.10	0.00	0.00	0.00	0.00	0.00	.21
SW	0.00	.24	.03	.03	0.00	0.00	0.00	.31
WSW	.10	.17	.14	.07	0.00	0.00	0.00	.49
W	.07	.10	0.00	0.00	0.00	0.00	0.00	.17
WNW	.14	.10	0.00	0.00	0.00	0.00	0.00	.24
NW	.24	.52	0.00	0.00	0.00	0.00	0.00	.77
NNW	1.01	2.90	.17	0.00	0.00	0.00	0.00	4.09
CALM	-----	-----	-----	-----	-----	-----	-----	.24
TOTAL	16.59	70.32	10.68	2.16	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2864 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
November, 1982



No precipitation data for December

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING December, 1982

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-15.4	-16.3	93	051	1.3	324	5.1	1	0300	-16.9	*****	77	039	.9	051	3.2	0
0600	-20.6	*****	87	024	1.1	340	5.1	0	0600	-14.9	-20.9	60	057	1.2	072	3.8	0
0900	-23.7	-25.4	86	350	1.4	333	6.3	1	0900	-14.6	-21.2	57	049	1.1	088	3.2	1
1200	-23.1	-24.9	85	063	1.4	143	5.7	3	1200	-13.4	-21.9	49	057	1.0	011	2.5	3
1500	-24.4	-26.3	84	076	.7	063	4.4	1	1500	-14.3	-22.5	50	068	1.0	043	3.2	1
1800	-25.6	-27.6	83	002	.4	232	3.2	1	1800	-15.1	-21.7	57	045	1.2	009	3.8	1
2100	-23.6	*****	84	023	.8	112	3.8	0	2100	-14.8	-21.4	57	036	1.3	029	3.2	1
2400	-22.9	*****	85	025	.7	083	3.2	0	2400	-14.8	-21.0	59	033	1.5	025	3.8	1

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-17.0	-21.5	68	056	.9	010	3.2	1	0300	-11.6	-18.6	56	067	2.0	044	4.4	1
0600	-15.9	*****	67	054	1.3	058	3.8	0	0600	-10.9	*****	68	042	1.6	045	3.8	1
0900	-16.0	-21.2	64	061	1.1	045	2.5	1	0900	-10.2	*****	88	052	.9	031	3.8	1
1200	-13.2	*****	58	037	1.0	036	2.5	4	1200	-9.0	-11.2	84	052	1.1	042	2.5	3
1500	-13.2	*****	56	070	1.6	035	5.1	1	1500	-8.6	-11.4	80	084	1.6	099	3.8	1
1800	-13.4	-20.1	57	046	1.8	033	4.4	1	1800	-8.5	*****	79	053	1.1	031	3.2	1
2100	-12.9	-19.4	58	057	2.1	046	5.7	1	2100	-6.7	*****	73	073	1.5	079	3.2	1
2400	-11.5	-18.3	57	050	2.0	040	6.3	1	2400	-6.7	-10.4	75	017	1.4	021	3.8	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-1.8	-6.2	72	092	5.3	111	12.7	1	0300	-5.8	-36.2	7	078	.5	010	3.2	0
0600	-1.8	-6.0	73	108	5.7	124	14.0	1	0600	-6.1	*****	8	085	.8	095	4.4	0
0900	-3.2	-3.3	99	054	2.7	066	9.5	1	0900	-6.4	*****	8	013	.8	358	3.2	1
1200	-3.3	-3.6	98	052	1.4	014	4.4	2	1200	-4.4	-5.7	91	006	1.2	009	3.2	2
1500	-2.1	-3.8	88	088	2.4	096	10.2	1	1500	-3.6	-6.7	79	093	3.4	099	8.3	0
1800	-4.1	-30.3	11	131	2.5	102	10.8	0	1800	-5.0	-6.6	89	084	4.5	076	8.9	0
2100	-4.5	-5.9	90	137	2.6	117	14.6	1	2100	-4.5	-5.6	92	080	4.5	087	11.4	1
2400	-5.6	*****	11	113	2.7	131	9.5	0	2400	-4.8	-5.4	96	099	6.2	091	11.4	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING December, 1982

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	-9.9	-19.2	47	055	2.1	066	4.4	1	0300	-6.8	-19.8	35	055	2.1	094	4.4	1	0300	-8.6	-46.8	2
0600	-8.3	-19.9	39	059	1.9	046	5.1	1	0600	-7.0	*****	46	078	.9	085	3.8	1	0600	-3.2	-4.3	92
0900	-7.4	-19.7	37	048	2.5	056	5.1	1	0900	-9.1	-18.9	45	094	.4	004	2.5	1	0900	-3.3	-6.1	81
1200	-7.4	-21.1	33	056	2.7	046	5.7	4	1200	-10.4	*****	2	058	.5	315	3.8	1	1200	-2.6	-7.5	69
1500	-7.2	-23.1	27	050	2.3	051	6.3	2	1500	-6.6	*****	1	052	.6	110	3.2	0	1500	-1.9	-6.3	72
1800	-9.7	*****	26	050	2.0	049	4.4	2	1800	-6.2	-34.0	9	042	.8	023	3.8	0	1800	-3.6	-5.5	87
2100	-9.4	-25.4	26	048	1.9	042	5.7	2	2100	-4.5	-7.0	83	063	1.4	046	3.8	0	2100	-4.4	*****	98
2400	-9.2	-23.7	30	035	2.4	029	5.7	2	2400	-2.9	-8.5	65	066	1.4	078	3.8	1	2400	-2.8	-7.3	71

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	
0300	-3.8	-5.5	88	071	3.3	079	7.0	1	0300	-5.1	-9.3	72	074	3.7	098	7.6	1	0300	-5.9	-17.1	41
0600	-4.2	-7.6	77	115	5.0	100	15.2	0	0600	-6.7	-11.6	68	055	2.3	073	5.1	1	0600	-5.6	-15.5	46
0900	-6.6	-9.2	82	108	6.6	095	12.7	1	0900	-5.7	-11.6	63	056	2.1	035	5.1	1	0900	-7.0	-8.4	90
1200	-4.7	-9.7	68	057	2.0	059	5.7	3	1200	-2.5	-15.7	36	053	2.4	055	7.0	4	1200	-6.1	-7.1	93
1500	-4.4	-11.9	56	075	3.2	101	5.7	1	1500	-2.2	-16.5	33	043	2.9	055	7.0	1	1500	-3.4	-5.7	84
1800	-5.7	-9.7	73	037	2.5	077	7.0	0	1800	-1.3	-16.4	31	046	2.5	066	6.3	1	1800	-2.3	-8.4	63
2100	-5.1	-9.9	69	071	2.1	076	5.1	0	2100	-2.9	-16.7	34	049	1.9	037	5.1	1	2100	-2.5	-9.9	57
2400	-5.3	-9.5	72	081	4.6	082	8.3	1	2400	-2.9	-16.7	34	032	1.8	024	4.4	1	2400	-2.0	-12.7	44

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.						
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S						
0300	-1.0	-12.7	41	048	2.5	054	5.1	1	0300	-4.3	-8.4	73	081	3.0	072	6.3	1	0300	-6.7	-12.0	66	047	1.2	013	3.2	1
0600	-1.5	-11.1	48	073	3.2	087	8.3	1	0600	-5.0	-9.6	70	065	1.8	083	3.8	0	0600	-7.5	-12.5	67	039	1.7	049	3.8	1
0900	-2.1	-10.7	52	071	4.5	073	8.9	0	0900	-4.8	-9.2	71	049	1.3	046	4.4	1	0900	-8.0	-13.0	67	044	1.6	034	4.4	1
1200	-3.0	-8.6	65	074	3.8	085	8.3	3	1200	-4.6	-8.2	76	065	1.0	105	3.8	4	1200	-7.6	-13.2	64	053	1.3	037	3.8	3
1500	-3.4	-8.4	68	068	3.1	092	7.0	0	1500	-6.1	-9.1	79	061	1.4	047	3.8	1	1500	-7.8	-13.6	63	047	1.3	095	3.8	1
1800	-3.2	-8.8	65	084	4.5	106	11.4	0	1800	-6.9	-10.6	75	053	1.2	068	3.2	1	1800	-7.8	-13.8	62	036	1.0	353	3.2	1
2100	-3.6	-8.4	69	068	4.2	067	8.3	1	2100	-6.8	-10.8	73	068	1.4	054	3.8	1	2100	-7.1	-13.3	61	057	1.1	049	2.5	1
2400	-3.5	-8.5	68	073	3.5	087	7.0	1	2400	-7.9	-11.7	74	029	1.3	006	3.2	0	2400	-7.0	-14.1	57	054	1.4	043	4.4	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING December, 1982

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	
0300	-8.4	-15.2	58	051	1.6	078	0300	-6.5	-10.9	71	060	1.6	0300	-7.8	-15.3	55	061	1.8
0600	-8.0	-15.7	54	057	1.6	069	0600	-7.7	*****	91	064	1.4	0600	-8.4	-16.5	52	054	1.8
0900	-8.6	-15.6	57	042	1.3	010	0900	-8.0	-9.2	91	017	1.2	0900	-8.9	-17.7	49	063	1.4
1200	-9.1	-15.8	58	047	1.1	070	1200	-7.9	-10.6	81	086	2.2	1200	-8.8	-18.9	44	051	1.6
1500	-7.9	-14.9	57	039	1.6	034	1500	-7.1	-12.5	65	059	2.1	1500	-9.1	-19.8	42	062	1.5
1800	-7.9	-12.4	70	050	1.5	047	1800	-7.7	-14.5	58	062	1.8	1800	-9.3	-21.7	36	064	1.6
2100	-6.9	-9.0	85	036	1.5	053	2100	-9.0	-16.0	57	060	1.5	2100	-8.9	-22.4	33	057	1.5
2400	-6.7	-9.6	80	065	1.8	055	2400	-8.2	-15.4	56	059	1.6	2400	-9.1	-22.6	33	056	1.5

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.		
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	-9.6	-23.0	33	051	1.5	075	0300	-14.4	-24.3	43	050	1.4	0300	-9.5	-17.8	51	054	1.4	041	3.2
0600	-10.2	-23.2	34	046	1.3	033	0600	-13.1	-22.9	44	025	1.3	0600	-8.4	-15.8	55	058	1.3	047	3.2
0900	-10.3	-23.3	34	063	1.6	051	0900	-12.9	-22.7	44	035	.9	0900	-8.6	*****	64	053	1.1	026	3.8
1200	-10.9	-23.5	35	052	1.5	039	1200	-10.2	-19.9	45	058	1.2	1200	-8.9	*****	73	072	.8	108	1.9
1500	-11.2	-23.1	37	058	1.3	062	1500	-13.6	*****	53	076	1.4	1500	-7.9	-11.5	75	058	1.0	096	2.5
1800	-12.8	-23.1	42	037	1.6	032	1800	-11.1	-18.6	54	057	1.3	1800	-9.2	-12.5	77	061	1.4	045	3.8
2100	-12.4	-23.3	40	067	1.3	072	2100	-11.0	-18.5	54	040	1.3	2100	-9.4	-13.0	75	059	1.2	038	3.2
2400	-14.1	-24.3	42	062	1.1	057	2400	-11.0	-19.2	51	053	1.4	2400	-8.1	-11.9	74	068	1.1	041	3.8

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD			
	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	DEG.	M/S			
0300	-10.3	-12.1	87	009	1.1	349	0300	-9.0	-13.1	72	091	3.1	088	8.3	1	0300	-3.3	-6.3	80	058	3.9	071	9.5	0
0600	-10.3	-12.1	87	008	.7	006	0600	-8.7	-12.6	73	086	5.1	090	8.9	1	0600	-3.5	-6.0	83	073	4.2	071	8.3	0
0900	-10.8	-12.8	85	046	1.5	053	0900	-7.6	-11.6	73	092	6.4	092	10.8	0	0900	-4.6	-4.9	98	091	4.7	107	10.8	0
1200	-11.0	-14.2	77	068	1.8	045	1200	-7.3	-10.3	79	092	6.7	091	10.8	2	1200	-5.0	-32.0	10	281	.3	170	5.1	2
1500	-11.5	*****	77	054	.9	071	1500	-7.6	-8.0	97	070	2.9	088	8.9	1	1500	-3.8	-3.9	99	079	1.1	094	10.2	0
1800	-10.6	-13.7	78	039	1.5	036	1800	-5.2	-6.6	90	021	2.5	047	6.3	1	1800	-2.6	-4.9	84	117	7.8	131	18.4	0
2100	-10.6	-13.4	80	062	1.2	020	2100	-4.7	-6.3	89	036	2.7	024	8.3	1	2100	-4.6	-28.1	14	106	6.4	102	16.5	0
2400	-10.9	-14.1	77	058	1.0	015	2400	-3.8	-6.6	81	059	3.3	041	7.6	0	2400	-4.3	-29.5	12	130	3.2	102	12.1	0

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING December, 1982

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	-3.8	-36.1	6	215	3.4	171	0300	-1.6	-2.8	92	085	4.9	088	0300	-5.6	-33.6	9	120	.3	193
0600	-4.2	-29.4	12	222	1.7	163	0600	-2.5	-4.8	84	093	8.2	081	0600	-6.9	-34.6	9	191	5.3	189
0900	-4.2	-27.8	14	025	1.4	046	0900	-3.1	-34.2	7	118	9.7	122	0900	-7.3	-36.0	8	301	1.0	258
1200	-2.8	-3.1	98	072	2.9	076	1200	-3.1	-3.7	96	112	8.8	121	1200	-7.5	*****	8	031	.8	010
1500	-2.2	-3.1	94	072	5.8	075	1500	-4.2	-29.4	12	118	5.3	118	1500	-7.9	-9.9	86	064	1.2	054
1800	-1.2	-3.1	87	075	8.0	079	1800	-4.4	*****	11	249	1.2	249	1800	-7.6	-11.9	71	069	1.7	072
2100	-1.4	-3.2	88	075	6.1	067	2100	-4.8	-31.8	10	331	.8	001	2100	-7.2	-15.2	53	055	1.8	064
2400	-2.4	*****	9	063	.8	091	2400	-5.0	-31.0	11	205	1.9	208	2400	-6.7	-17.0	44	070	2.0	049

DAY 31

HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	-7.1	-16.3	48	048	1.4	053
0600	-6.5	-16.3	46	057	1.7	048
0900	-6.3	*****	55	049	2.0	040
1200	-5.9	-13.5	55	043	1.9	044
1500	-6.0	-13.1	57	045	1.7	039
1800	-6.5	-13.2	59	063	1.5	037
2100	-5.5	-11.0	65	063	1.5	053
2400	-5.2	-10.5	66	057	1.3	023

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING December, 1982

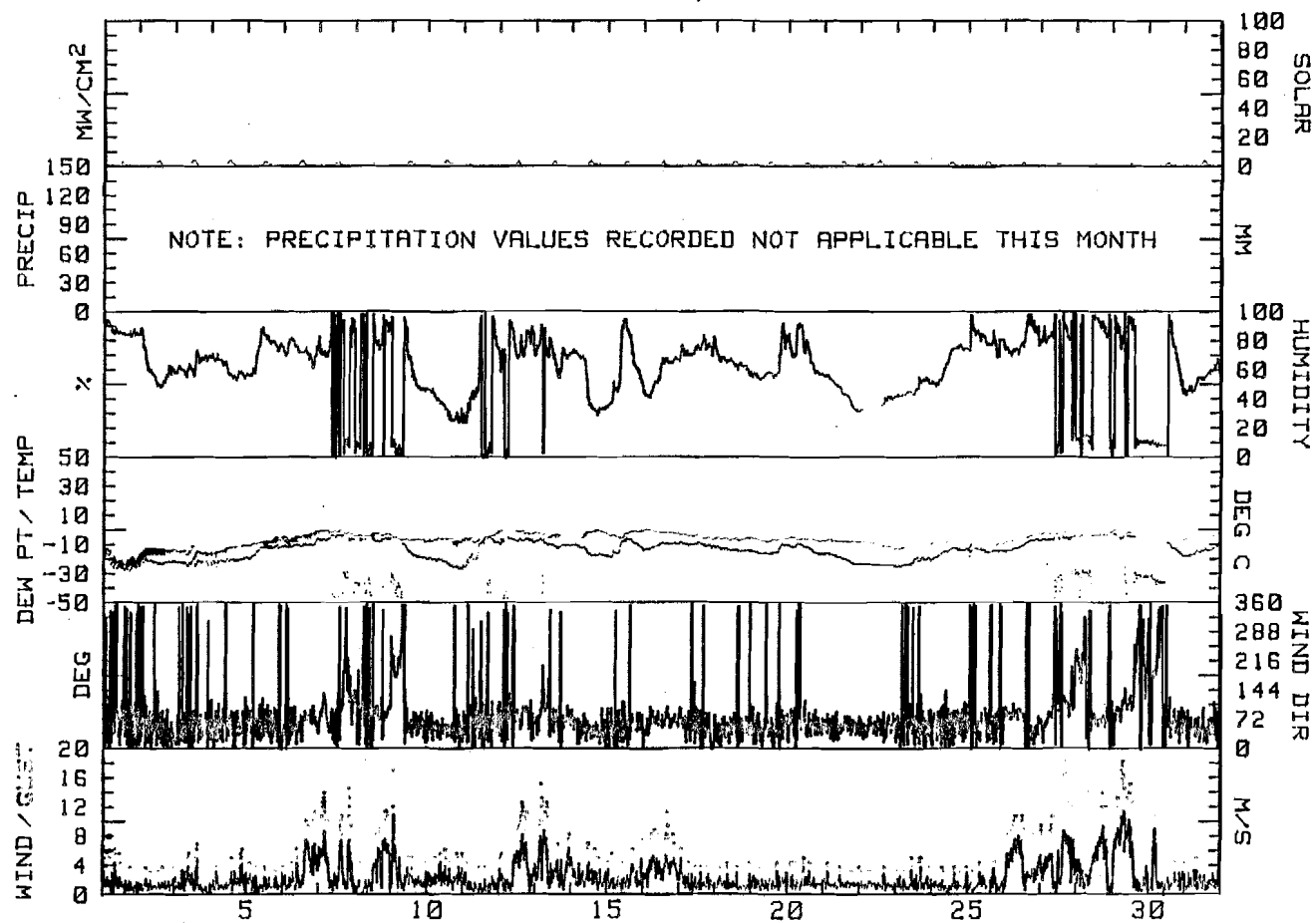
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SDN	DAY
1	-10.0	-25.6	-17.8	033	.9	1.6	333	6.3	NE	87	-21.9	****	195	1
2	-13.4	-22.9	-18.2	047	1.1	1.3	072	3.8	NNE	58	-21.4	****	298	2
3	-11.5	-21.6	-16.6	033	1.4	1.7	035	7.0	NNE	63	-21.8	****	303	3
4	-10.9	-20.8	-15.9	054	1.5	1.7	040	6.3	NE	60	-20.2	****	290	4
5	-5.9	-12.3	-9.1	056	1.3	1.5	044	4.4	NE	73	-13.4	****	223	5
6	-2.3	-8.6	-5.5	071	2.9	3.2	079	11.4	ENE	73	-9.6	****	245	6
7	-1.3	-5.8	-3.6	100	2.9	3.7	117	14.6	E			****	158	7
8	-2.9	-6.4	-4.7	084	2.5	3.0	087	11.4	E			****	158	8
9	-5.1	-9.6	-7.4	126	.6	2.6	203	17.1	NE			****	245	9
10	-6.9	-10.4	-8.7	050	2.2	2.4	051	6.3	NE	34	-21.8	****	438	10
11	-2.7	-11.2	-7.0	062	1.0	1.4	094	4.4	ENE			****	205	11
12	-1.2	-9.4	-5.3	077	3.0	3.4	083	12.7	E			****	205	12
13	-3.0	-6.6	-4.8	085	3.3	3.9	100	15.2	ENE			****	230	13
14	-1.0	-7.1	-4.1	053	2.4	2.6	098	7.6	ENE	49	-13.9	****	303	14
15	-1.5	-7.6	-4.6	056	1.9	2.1	070	7.6	ENE	62	-10.8	****	263	15
16	-1.0	-3.8	-2.4	071	3.6	3.7	106	11.4	ENE	58	-10.0	****	253	16
17	-3.7	-8.1	-5.9	062	1.5	1.8	072	6.3	E	75	-9.5	****	213	17
18	-6.1	-9.0	-7.6	047	1.3	1.4	034	4.4	NE	64	-13.0	****	253	18
19	-6.1	-9.4	-7.8	049	1.5	1.6	047	4.4	NE	63	-13.8	****	233	19
20	-5.5	-9.2	-7.4	061	1.6	1.8	107	5.1	ENE	71	-12.0	****	210	20
21	-7.7	-9.6	-8.7	058	1.6	1.6	052	4.4	ENE	44	-19.0	****	310	21
22	-8.9	-14.1	-11.5	054	1.4	1.4	075	3.8	ENE	36	-23.1	****	378	22
23	-9.2	-14.6	-11.9	050	1.2	1.5	041	5.1	NE	48	-21.2	****	293	23
24	-7.8	-11.2	-9.5	060	1.1	1.3	026	3.8	NE	66	-14.3	****	250	24
25	-8.0	-15.0	-11.5	046	1.1	1.4	053	4.4	NNE	81	-13.5	****	200	25
26	-3.3	-10.8	-7.1	077	3.8	4.2	092	10.8	E	81	-9.8	****	168	26
27	-2.5	-5.1	-3.8	098	3.6	4.6	131	18.4	ESE			****	158	27
28	-.5	-4.3	-2.4	079	2.6	4.1	079	14.0	ENE			****	145	28
29	-.9	-5.0	-3.0	110	4.3	5.3	122	18.4	ESE			****	145	29
30	-5.0	-8.6	-6.8	105	.6	2.0	188	10.8	E			****	213	30
31	-2.5	-7.9	-5.2	053	1.6	1.8	040	5.1	NE	55	-13.8	****	275	31
MONTH	-.5	-25.6	-7.9	071	1.9	2.4	131	18.4	ENE	M	M	****	7448	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 14.0
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 15.2
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 15.9
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 16.5

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
December, 1982



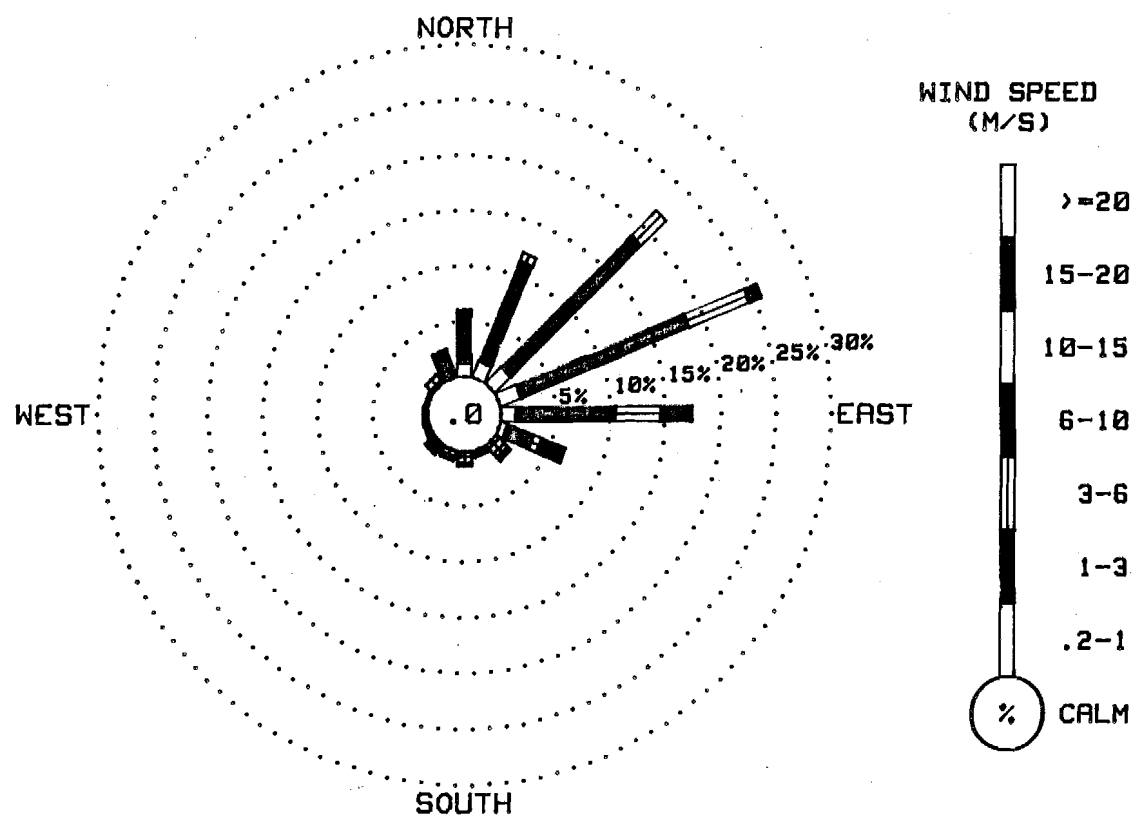
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING December, 1982

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO 1.0	TO 3.0	TO 6.0	TO 10.0	TO 15.0	TO 20.0	OR GREATER	
N	1.18	4.57	.30	0.00	0.00	0.00	0.00	6.05
NNE	1.58	9.68	.84	0.00	0.00	0.00	0.00	12.10
NE	2.05	16.60	3.16	0.00	0.00	0.00	0.00	21.81
ENE	2.05	16.40	5.91	1.14	0.00	0.00	0.00	25.50
E	1.38	9.07	4.10	2.76	.07	0.00	0.00	17.37
ESE	.71	2.45	.84	2.15	.20	0.00	0.00	6.35
SE	.40	.64	.44	.37	.03	0.00	0.00	1.88
SSE	.20	.27	.10	.03	0.00	0.00	0.00	.60
S	.13	.37	.50	.30	0.00	0.00	0.00	1.31
SSW	.10	.44	.30	.03	.03	0.00	0.00	.91
SW	.07	.67	.34	.03	0.00	0.00	0.00	1.11
WSW	.03	.30	.13	0.00	0.00	0.00	0.00	.47
W	.07	.34	.03	0.00	0.00	0.00	0.00	.44
WNW	.20	.17	0.00	0.00	0.00	0.00	0.00	.37
NW	.30	.64	.07	0.00	0.00	0.00	0.00	1.01
NNW	.37	2.18	.13	0.00	0.00	0.00	0.00	2.69
CALM								.03
TOTAL	10.82	64.78	17.20	6.82	.34	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2976 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
December, 1982



WIND ROSE PLOT

No precipitation data for January

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING January, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-5.0	-10.5	65	025	1.1	044	3.8	1	0300	-5.6	*****	9	082	.4	131	2.5	0	0300	-11.1	*****	3	272	.5	197	3.8	1
0600	-4.9	-10.1	67	072	1.3	104	3.8	0	0600	-7.1	*****	9	095	.1	124	1.9	1	0600	-12.8	*****	2	315	1.4	313	3.8	1
0900	-5.0	-6.3	91	066	1.3	097	3.8	1	0900	-6.8	*****	7	072	.5	060	1.9	0	0900	-13.7	*****	3	320	1.5	321	4.4	1
1200	-3.7	*****	89	065	.8	044	2.5	3	1200	-6.5	*****	99	082	.4	095	2.5	2	1200	-13.4	-13.5	99	310	1.4	322	3.8	2
1500	-3.4	-6.7	78	064	1.2	095	3.2	1	1500	-6.7	*****	7	041	.4	000	2.5	0	1500	-12.7	-13.0	98	303	1.2	322	3.8	0
1800	-6.7	-7.7	93	051	1.0	086	3.8	1	1800	-7.4	*****	7	097	.2	118	1.9	0	1800	-13.8	-16.2	82	322	2.1	323	5.1	0
2100	-6.8	-34.5	9	024	.8	039	3.2	0	2100	-6.4	*****	9	104	.5	126	2.5	0	2100	-14.0	-17.9	72	314	1.3	323	3.8	1
2400	-5.4	-44.6	2	050	.6	046	2.5	1	2400	-10.0	*****	4	173	.2	174	3.2	1	2400	-14.3	-19.8	63	316	1.9	316	3.8	0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-15.6	-23.7	50	333	1.3	339	4.4	1	0300	-19.0	-27.8	46	068	1.4	037	4.4	1	0300	-23.7	-30.8	52	052	2.1	046	5.1	1
0600	-16.2	-25.0	47	022	1.2	327	3.8	1	0600	-20.4	-28.8	47	057	1.4	038	3.8	1	0600	-24.3	-31.2	53	051	1.5	040	5.1	1
0900	-18.0	-27.1	45	032	1.0	087	3.8	1	0900	-20.4	-28.8	47	038	1.4	009	3.2	1	0900	-21.6	-28.2	55	044	1.7	018	4.4	1
1200	-17.6	-27.5	42	053	1.1	049	3.8	3	1200	-21.8	-29.9	48	060	1.3	046	3.2	4	1200	-24.5	-28.2	71	031	1.7	349	5.7	4
1500	-17.8	*****	42	336	1.3	314	4.4	1	1500	-21.8	-29.7	49	053	1.5	020	3.8	1	1500	-21.6	-24.7	76	002	2.1	017	6.3	1
1800	-17.7	-27.9	41	046	1.5	028	3.8	1	1800	-22.9	-30.5	50	039	1.4	101	3.8	1	1800	-22.3	-25.2	77	355	3.5	002	7.0	1
2100	-18.0	-28.1	41	045	1.8	039	4.4	1	2100	-22.8	-30.4	50	063	1.6	083	3.2	1	2100	-22.3	-25.2	77	357	3.8	016	7.0	1
2400	-18.7	-27.7	45	049	1.3	032	3.8	1	2400	-24.0	-31.3	51	061	1.3	060	3.8	1	2400	-26.9	-29.6	78	347	3.0	016	5.7	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-27.3	-30.1	77	001	3.3	002	7.0	0	0300	-31.2	-34.5	72	009	1.4	004	4.4	1	0300	-29.4	-34.3	62	118	2.7	142	8.3	1
0600	-30.5	-33.6	74	012	1.9	359	8.3	1	0600	-28.1	-31.0	76	002	1.4	335	4.4	0	0600	-27.7	-33.8	56	085	3.3	094	10.2	1
0900	-16.8	-25.0	49	068	3.5	067	10.8	1	0900	-32.9	-36.2	72	022	1.5	063	5.1	1	0900	-27.1	-33.4	55	084	2.7	096	9.5	1
1200	-16.5	-25.0	48	069	4.4	063	8.3	4	1200	-33.3	-36.7	71	007	2.5	004	6.3	6	1200	-27.2	-34.1	52	039	2.3	019	5.7	4
1500	-18.7	-26.6	50	045	1.7	063	4.4	1	1500	-30.2	-33.3	74	017	1.2	038	5.1	1	1500	-29.1	-35.8	53	051	1.4	049	4.4	1
1800	-19.4	-26.8	52	053	1.5	054	4.4	1	1800	-26.6	-30.8	67	015	1.9	356	5.7	1	1800	-26.6	-33.3	53	061	1.7	065	6.3	1
2100	-18.5	-25.5	54	035	1.4	030	4.4	1	2100	-28.6	-33.6	62	085	2.4	112	10.2	1	2100	-25.7	-32.9	51	045	1.7	046	5.1	1
2400	-30.3	*****	69	069	.8	075	3.2	1	2400	-26.2	-32.3	56	141	2.7	129	10.8	1	2400	-28.7	*****	56	021	1.0	023	5.7	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING January, 1983

DAY 10

DAY 11

DAY 12

HOUR								DEW								WIND								WIND								GUST								MAX.																																																																																																							
NDNG								TEMP.								POINT								RH								DIR.								SPD.								DIR.								GUST								RAD																																																																															
DEG C								DEG C								% DEG.								M/S								DEG.								M/S								MW																																																																																															
0300																-27.1																-33.8																53																056																1.2																040																3.8																1															
0600																-30.3																-36.0																57																055																1.3																026																4.4																1															
0900																-27.4																-34.9																49																045																1.0																331																3.8																1															
1200																-24.7																-32.1																50																018																1.1																327																3.8																4															
1500																-22.9																*****																44																065																1.2																066																4.4																2															
1800																-21.0																-30.3																43																040																1.4																007																3.8																1															
2100																-21.1																-30.7																42																038																1.7																052																3.8																2															
2400																-22.2																-31.0																45																055																1.8																073																5.1																1															
0300																-19.2																-28.2																45																070																2.1																094																5.7																1															
0600																-21.8																-29.0																52																357																3.7																308																16.5																1															
0900																-22.7																-30.7																48																007																1.2																326																15.2																2															
1200																-21.9																-31.2																43																164																3.0																155																8.9																4															
1500																-23.5																-31.5																48																183																3.0																172																12.7																1															
1800																-23.6																-31.1																50																173																2.4																143																9.5																1															
2100																-22.2																-29.8																50																355																1.7																350																5.1																1															
2400																-23.4																-30.3																53																015																2.2																022																6.3																1															
0300																-22.7																-29.5																54																039																1.7																043																5.1																1															
0600																-29.2																-32.9																76																015																2.3																347																6.3																1															
0900																-24.2																-29.0																64																013																2.7																043																8.3																1															
1200																-29.5																-33.5																68																010																1.7																351																5.7																4															
1500																-22.5																-26.0																73																042																1.2																056																5.1																1															
1800																-23.8																-27.1																74																003																1.7																348																5.1																0															
2100																-22.7																-26.6																70																005																1.8																341																5.7																1															
2400																-23.7																*****																71																016																1.0																027																3.2																0															

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.					
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG		
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	-22.1	*****	64	033	1.0	021	2.5	0	0300	-11.2	-24.1	34	065	3.7	071	8.9	2	0300	-10.4	-12.5	85	067	1.2	002	3.2	0
0600	-21.2	*****	65	039	.8	345	3.2	1	0600	-13.1	-25.1	36	052	2.3	040	7.0	2	0600	-8.0	-12.5	70	048	1.2	088	3.8	1
0900	-19.9	-25.7	60	026	.9	021	3.8	1	0900	-12.4	*****	34	052	2.2	063	5.1	2	0900	-7.5	-12.4	68	055	1.6	046	4.4	1
1200	-15.1	-23.5	49	081	1.3	059	3.8	8	1200	-12.1	-22.2	43	051	1.0	006	3.8	4	1200	-8.1	-12.9	68	050	1.5	052	4.4	5
1500	-16.4	-22.7	58	091	1.4	115	4.4	1	1500	-15.5	-17.9	82	018	.7	139	3.8	1	1500	-4.3	-14.5	45	057	2.4	061	5.7	1
1800	-15.1	-21.3	59	069	2.3	077	7.0	1	1800	-18.9	*****	91	127	1.4	076	5.1	0	1800	-4.2	-14.7	44	029	2.2	016	5.1	1
2100	-12.8	-20.6	52	061	1.9	051	7.0	1	2100	-16.5	-17.4	93	099	1.2	071	5.1	1	2100	-2.7	-13.1	45	047	2.5	077	8.9	1
2400	-11.8	-24.0	36	062	4.8	056	10.2	2	2400	-13.7	-14.9	91	097	1.4	102	5.7	0	2400	-4.3	-6.6	84	075	2.6	070	8.9	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.					
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST			
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	-4.6	-8.5	74	085	4.0	094	10.2	1	0300	-7.6	-38.9	6	068	.9	063	3.8	1	0300	-3.1	-6.2	79	039	2.1	084	6.3	1
0600	-6.6	-8.0	90	121	1.1	109	10.2	1	0600	-8.9	*****	0	017	.4	320	2.5	0	0600	-2.4	-6.0	76	043	2.0	080	7.0	0
0900	-4.8	-8.0	78	032	.9	082	7.0	0	0900	-10.3	-42.4	5	089	.8	118	3.8	1	0900	-.9	-6.4	66	044	2.4	032	5.7	1
1200	-5.0	-7.3	84	086	4.8	100	8.3	3	1200	-10.6	-11.5	93	037	.9	109	3.8	3	1200	.3	-8.7	51	059	2.0	073	6.3	7
1500	-6.7	*****	7	132	1.1	100	8.3	0	1500	-9.8	-13.7	73	050	1.6	049	5.1	1	1500	-2.6	-4.0	90	092	4.4	118	15.2	1
1800	-6.5	-6.8	98	082	.8	025	5.1	1	1800	-12.2	-15.7	75	056	1.7	039	5.1	1	1800	-2.5	-3.4	94	046	1.2	089	4.4	1
2100	-6.7	-7.0	98	357	1.2	054	5.7	0	2100	-7.2	-19.2	38	047	2.4	025	5.7	1	2100	-2.5	-4.4	87	116	3.4	129	15.2	0
2400	-6.5	-7.9	90	071	1.2	127	5.7	0	2400	-5.0	-9.4	71	044	2.1	048	4.4	1	2400	-1.6	-5.1	77	124	9.1	123	19.0	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING January, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW							WIND	WIND	GUST	MAX.	HOUR	DEW							WIND	WIND	GUST	MAX.	HOUR	DEW							WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-2.9	-6.5	76	099	7.1	103	16.5	0	0300	-9.0	-12.1	78	077	1.6	096	5.1	1	0300	-4.2	-22.3	23	065	4.1	062	7.6	2									
0600	-4.6	-6.8	85	177	.4	121	14.6	1	0600	-7.5	-11.3	74	080	1.4	038	3.8	1	0600	-2.9	-25.2	16	070	3.5	069	6.3	2									
0900	-6.2	-8.3	85	071	.5	033	3.2	1	0900	-8.5	-14.1	64	081	2.1	059	4.4	1	0900	-1.2	-24.6	15	069	4.4	058	7.6	3									
1200	-10.4	-42.5	5	237	3.7	243	11.4	4	1200	-7.7	-15.9	52	046	1.9	034	5.1	7	1200	-.9	-25.9	13	069	3.4	065	7.0	7									
1500	-11.4	-41.8	6	238	6.3	226	12.7	1	1500	-7.1	-19.8	36	063	2.0	089	5.1	2	1500	-.8	-26.7	12	065	2.7	078	6.3	3									
1800	-12.0	*****	3	256	1.0	217	5.7	1	1800	-8.8	-17.6	49	046	1.3	085	3.8	1	1800	0.0	-26.1	12	067	4.4	077	6.3	2									
2100	-10.9	-12.5	88	062	1.4	127	8.9	1	2100	-6.7	-20.4	33	066	2.2	085	5.1	2	2100	-1.9	-25.9	14	076	3.0	079	6.3	2									
2400	-10.3	-12.8	82	086	1.7	046	3.8	0	2400	-5.3	-21.9	26	072	2.7	065	7.6	2	2400	-1.2	-26.2	13	067	2.5	088	5.1	2									

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-1.5	-25.6	14	050	2.0	051	4.4	2	0300	1.4	-19.8	19	044	2.4	042	4.4	2
0600	-1.5	-25.6	14	050	1.8	043	3.8	2	0600	.8	-19.7	20	055	1.8	054	4.4	2
0900	-.5	-25.6	13	059	1.7	042	3.8	3	0900	.4	-20.6	19	059	1.9	043	4.4	3
1200	1.0	-20.7	18	054	1.5	045	3.8	8	1200	-1.0	-21.2	20	057	1.5	082	3.2	7
1500	1.8	-20.0	18	047	1.3	053	3.2	3	1500	-.9	-21.7	19	053	1.5	038	3.8	3
1800	2.7	-19.3	18	045	1.4	082	2.5	2	1800	-.4	-23.2	16	073	2.1	049	5.7	2
2100	2.3	-19.0	19	054	1.5	036	3.2	2	2100	-3.9	-23.6	20	053	1.7	064	6.3	1
2400	.5	-18.8	22	053	1.9	042	5.1	2	2400	-5.0	-25.7	18	036	1.5	009	4.4	2

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD	NDNG TEMP. POINT RH DIR. SPD. DIR. GUST RAD									
DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW	DEG C DEG C % DEG. M/S DEG. M/S MW									
0300	-10.4	*****	50	073	.8	079	2.5	1	0300	-3.7	-11.7	54	057	1.7	090	6.3	1	0300	-1.0	-9.6	52	051	1.4	038	3.2	1
0600	-8.9	-16.8	53	056	.9	091	3.2	1	0600	-7.2	-13.4	61	048	1.3	036	4.4	0	0600	-1.8	-10.6	51	055	1.7	046	4.4	1
0900	-11.1	-18.2	56	062	1.0	067	2.5	1	0900	-.1	-7.1	59	044	2.0	026	7.0	1	0900	-1.5	*****	50	061	1.3	045	3.2	2
1200	-11.5	-19.4	52	070	.9	116	3.2	6	1200	1.1	-6.9	55	105	3.6	112	14.0	6	1200	-2.2	-11.5	49	039	1.2	037	3.8	10
1500	-4.1	-14.6	44	067	1.6	098	4.4	2	1500	.9	-7.6	53	079	3.9	093	10.2	2	1500	-2.5	*****	51	051	1.1	018	3.2	2
1800	-3.4	-13.7	45	063	1.7	027	3.8	1	1800	-.1	-8.3	54	064	2.6	063	6.3	1	1800	-4.6	-11.6	58	057	.9	034	2.5	1
2100	-1.5	-13.5	40	064	1.8	041	5.1	1	2100	-.1	-8.1	53	066	2.5	031	5.1	1	2100	-6.0	-33.9	9	041	1.0	104	3.8	1
2400	.5	-11.0	42	055	1.6	011	3.8	1	2400	-.5	-8.7	54	072	2.3	071	5.1	1	2400	-5.0	-44.3	2	070	.6	010	2.5	0

R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING January, 1983

DAY 28

DAY 29

DAY 30

HOOR	DEW	WIND	WIND	GUST	MAX.	HOOR	DEW	WIND	WIND	GUST	MAX.	HOOR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-5.1	*****	5	055	.5	048	2.5	1	0300	-6.7	-10.7	73	070	1.6	087	3.2	1
0600	-6.0	-33.9	9	093	.7	019	2.5	0	0600	-6.3	-12.2	63	055	1.7	047	3.8	1
0900	-5.8	-33.7	9	029	.4	129	2.5	1	0900	-5.7	-12.2	60	057	1.6	062	3.8	2
1200	-2.8	*****	78	086	.6	114	2.5	11	1200	-5.0	-13.1	53	052	1.5	035	3.8	6
1500	-7.3	*****	8	050	.5	037	3.8	1	1500	-5.7	-14.5	50	049	1.1	033	3.2	2
1800	-6.7	-9.0	84	056	1.3	059	3.2	0	1800	-6.6	-15.6	49	050	1.1	047	3.2	1
2100	-6.8	-11.0	72	054	1.2	042	2.5	0	2100	-7.4	-16.9	47	060	1.3	041	3.2	1
2400	-7.0	-10.5	76	053	1.5	076	3.2	1	2400	-7.8	-16.5	50	039	2.0	019	4.4	1

DAY 31

HOOR	DEW	WIND	WIND	GUST	MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-2.3	-5.8	77	081	3.6	094	10.8	0
0600	-2.1	-6.3	73	077	3.7	080	8.3	1
0900	-2.0	-7.3	67	081	3.2	083	7.0	2
1200	-.3	-7.6	58	078	4.1	095	9.5	12
1500	-1.4	-6.5	68	067	4.0	110	11.4	2
1800	-1.1	-7.4	62	072	4.3	101	8.3	1
2100	-1.2	-8.2	59	052	2.7	070	6.3	1
2400	-.8	-8.7	55	066	2.5	088	4.4	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING January, 1983

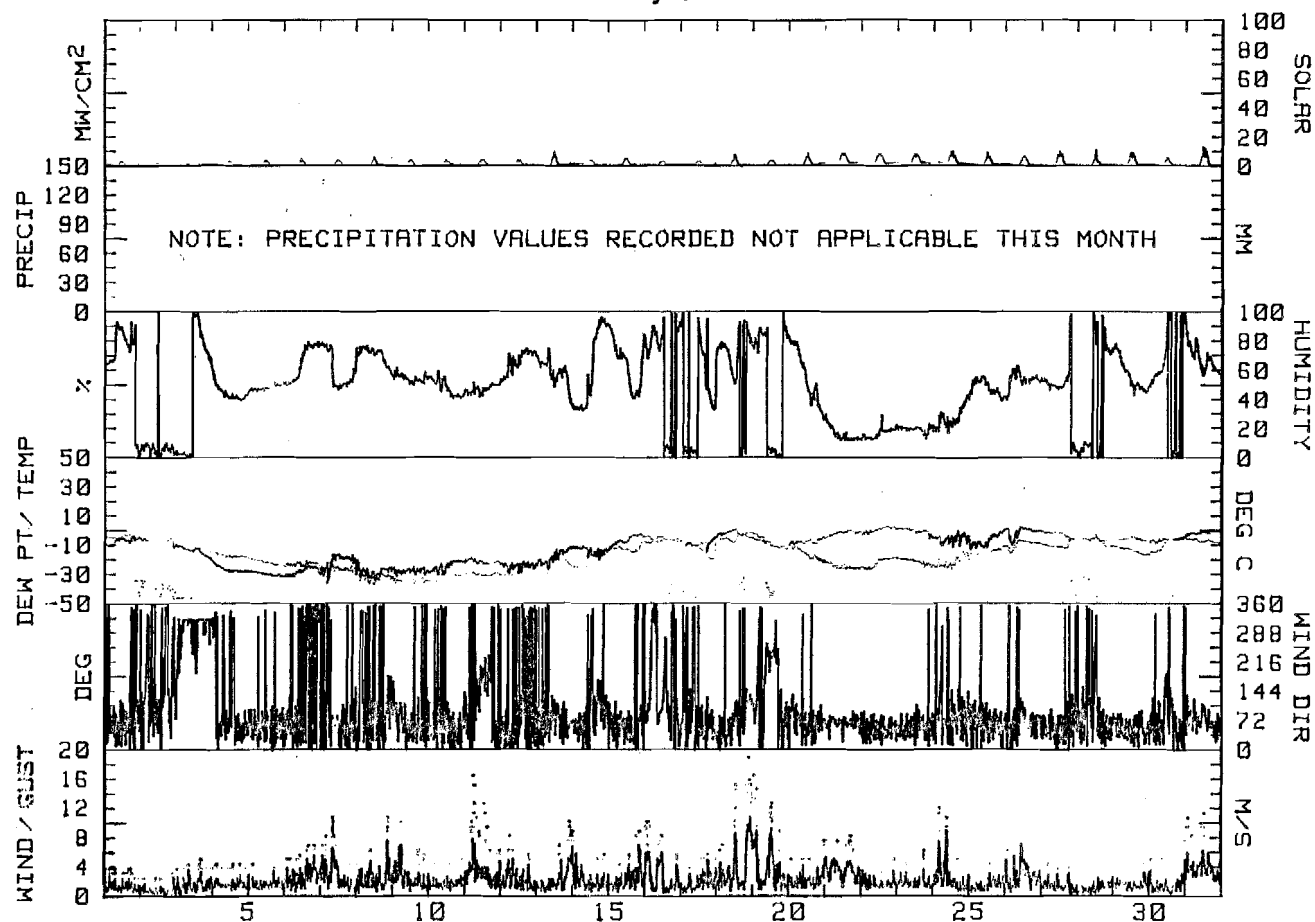
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SGH	DAY
1	-2.6	-6.8	-4.7	054	1.0	1.3	044	3.8	NE			****	218	1
2	-5.4	-11.7	-8.6	086	.3	.7	174	3.2	ESE			****	140	2
3	-10.3	-14.6	-12.5	313	1.4	1.5	323	5.1	NW	52	-19.7	****	203	3
4	-14.3	-18.8	-16.6	027	1.1	1.6	339	4.4	NE	45	-26.4	****	316	4
5	-19.0	-24.4	-21.7	055	1.4	1.6	037	4.4	ENE	48	-29.6	****	330	5
6	-20.8	-26.9	-23.9	012	2.2	2.7	002	7.0	N	66	-27.9	****	298	6
7	-16.4	-32.7	-24.6	045	2.1	2.7	067	10.8	ENE	60	-27.3	****	303	7
8	-20.6	-33.7	-27.2	038	1.2	2.2	129	10.8	N	70	-32.1	****	300	8
9	-24.7	-31.1	-27.9	071	1.9	2.3	094	10.2	ENE	55	-34.0	****	335	9
10	-20.7	-30.4	-25.6	047	1.3	1.6	073	5.1	ENE	48	-32.4	****	340	10
11	-18.6	-23.9	-21.3	069	.4	3.0	308	16.5	N	48	-30.1	****	358	11
12	-21.5	-29.5	-25.5	016	1.7	2.1	043	8.3	NE	66	-29.1	****	305	12
13	-11.5	-26.4	-19.0	062	1.7	2.0	056	10.2	ENE	57	-24.0	****	433	13
14	-10.8	-19.7	-15.3	069	1.5	2.0	071	8.9	NE	60	-21.0	****	378	14
15	-2.7	-13.6	-8.2	054	1.9	2.2	077	8.9	NE	63	-12.8	****	328	15
16	-3.8	-7.2	-5.5	081	1.6	2.5	094	10.2	E			****	240	16
17	-4.7	-14.5	-9.6	051	1.3	1.7	025	5.7	NE			****	285	17
18	1.2	-4.5	-1.7	090	2.7	3.6	123	19.0	NE			****	340	18
19	-1.6	-12.5	-7.1	171	.8	3.6	103	16.5	WSW			****	255	19
20	-4.6	-10.5	-7.6	067	1.9	2.1	065	7.6	ENE	55	-16.1	****	455	20
21	.3	-5.9	-2.8	068	3.5	3.6	077	8.3	ENE	16	-25.0	****	753	21
22	2.8	-3.1	-.2	052	1.6	1.7	042	5.1	NE	16	-22.4	****	738	22
23	1.7	-5.9	-2.1	054	1.8	1.9	064	6.3	NE	19	-21.3	****	733	23
24	-.8	-11.2	-6.0	066	1.7	2.3	073	12.1	ENE	27	-22.4	****	685	24
25	.7	-12.9	-6.1	063	1.3	1.5	041	5.1	ENE	47	-15.0	****	458	25
26	2.3	-9.9	-3.8	072	2.4	2.7	112	14.0	ENE	54	-9.2	****	440	26
27	-.4	-6.7	-3.6	052	1.1	1.3	046	4.4	NE			****	510	27
28	-2.8	-7.5	-5.2	059	.8	1.1	037	3.8	NE			****	345	28
29	-3.5	-7.8	-5.7	054	1.5	1.6	019	4.4	NE	57	-13.5	****	520	29
30	-3.1	-9.7	-6.4	049	.9	1.4	043	5.1	NNE			****	348	30
31	.1	-3.6	-1.8	075	3.5	3.7	110	11.4	ENE	67	-6.9	****	588	31
MONTH	2.8	-33.7	-11.5	058	1.4	2.1	123	19.0	ENE	51M	-21.1M	****	12273	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 14.0
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 14.0
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 15.9
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 15.2

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

***** SEE NOTES AT THE BACK OF THIS REPORT *****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
January, 1983



R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING January, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO	TO	TO	TO	TO	TO	OR	
	1.0	3.0	6.0	10.0	15.0	20.0	GREATER	
N	.81	5.28	1.92	0.00	0.00	0.00	0.00	8.00
NNE	1.04	10.25	1.28	0.00	0.00	0.00	0.00	12.57
NE	2.32	14.68	1.92	.03	0.00	0.00	0.00	18.95
ENE	2.02	14.52	5.75	.40	0.00	0.00	0.00	22.69
E	1.41	8.84	2.08	.50	0.00	0.00	0.00	12.84
ESE	1.71	3.63	1.04	.91	0.00	0.00	0.00	7.29
SE	.57	1.48	.57	.17	.03	0.00	0.00	2.82
SSE	.40	.67	.27	0.00	0.00	0.00	0.00	1.34
S	.13	.50	.24	0.00	0.00	0.00	0.00	.87
SSW	.20	.24	.27	0.00	0.00	0.00	0.00	.71
SW	.20	.17	.17	.10	0.00	0.00	0.00	.64
WSW	.13	.24	.34	.17	0.00	0.00	0.00	.87
W	.30	.40	0.00	0.00	0.00	0.00	0.00	.71
WNW	.30	.37	0.00	0.00	0.00	0.00	0.00	.67
NW	.54	3.19	.17	.07	0.00	0.00	0.00	3.97
NNW	1.14	2.79	.97	.03	0.00	0.00	0.00	4.94
CALM								.13
TOTAL	13.24	67.24	16.97	2.39	.03	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2976 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

WIND SPEED (M/S)

>=20
15-20
10-15
6-10
3-6
1-3
.2-1
CALM

NORTH
WEST
EAST
SOUTH

.1

5% 10% 15% 20% 25% 30%

%

WIND ROSE PLOT

No precipitation data for February

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING February, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	.9	-10.7	42	055	2.8	053	7.0	1	0300	-.3	-5.5	68	099	4.7	109	11.4	1
0600	2.4	-10.3	39	064	5.1	064	9.5	1	0600	-2.8	-27.4	13	073	.8	128	4.4	0
0900	-.3	-6.7	62	087	5.1	112	14.0	2	0900	-1.6	-8.8	58	062	3.3	058	6.3	2
1200	.1	-6.3	62	090	6.5	107	12.1	9	1200	-1.4	-8.8	57	080	3.0	123	7.6	12
1500	-1.7	-8.2	61	081	2.6	093	9.5	2	1500	-2.4	-8.3	64	104	4.9	118	12.7	3
1800	-.8	-7.8	59	052	2.3	058	7.0	1	1800	-3.3	-8.3	68	111	5.2	113	10.8	1
2100	-.2	-3.9	76	063	2.5	112	8.9	1	2100	-4.8	-7.4	82	112	4.9	133	11.4	1
2400	-.3	-5.5	68	051	3.1	084	8.3	1	2400	-4.2	-8.5	72	101	4.3	110	11.4	1

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-3.4	-9.6	62	069	3.0	061	7.6	0	0300	-3.2	-13.0	47	039	2.5	053	7.0	1
0600	-3.6	-9.4	64	086	4.5	108	12.1	1	0600	-3.1	-14.0	43	041	2.1	074	6.3	1
0900	-4.4	-8.5	73	101	5.3	101	10.8	2	0900	-2.7	-13.7	43	065	3.1	075	7.6	3
1200	-3.0	****	85	092	2.4	107	5.7	10	1200	-3.5	****	48	069	1.8	034	4.4	15
1500	-4.5	-8.9	71	081	2.4	083	7.0	2	1500	-4.7	-8.3	76	158	.5	253	8.9	2
1800	-5.1	-10.8	64	056	2.4	065	5.7	0	1800	-7.0	****	10	250	2.3	250	8.3	0
2100	-5.0	-13.6	51	066	2.3	053	5.7	1	2100	-6.5	****	6	051	.3	116	2.5	0
2400	-2.4	-12.0	48	069	2.4	056	5.1	1	2400	-6.7	-8.0	91	065	1.2	050	3.8	1

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-1.6	-4.9	78	082	3.1	091	8.9	1	0300	-7.5	-8.9	90	079	1.8	082	5.7	0
0600	-7.5	****	12	138	.1	112	5.7	0	0600	-7.8	-9.2	90	061	1.7	076	5.1	0
0900	-7.1	****	5	076	.2	120	2.5	2	0900	-6.9	-10.4	76	041	1.5	055	3.2	4
1200	-7.6	-46.1	2	287	.6	206	5.7	7	1200	-9.2	-13.5	71	059	1.1	069	3.8	11
1500	-7.0	-8.1	92	032	1.2	016	3.2	4	1500	-10.4	****	3	074	.7	087	3.8	5
1800	-6.4	-7.2	94	024	1.6	020	3.8	0	1800	-12.6	-13.4	94	040	1.1	083	4.4	0
2100	-5.8	-34.9	8	026	1.8	057	8.9	1	2100	-12.3	-14.6	83	040	1.4	005	3.8	1
2400	-5.8	-7.9	85	078	4.6	067	8.3	1	2400	-12.5	-15.4	79	045	1.6	040	3.2	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING February, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	-14.5	-17.3	79	016	1.0	344	0300	-14.3	-17.1	79	068	1.2	0300	-15.4	-20.8	63	044
0600	-16.0	-18.7	80	050	.9	026	0600	-15.0	-17.5	81	051	1.0	0600	-14.0	-19.1	65	051
0900	-15.0	-18.3	76	016	1.3	039	0900	-11.6	-16.7	66	022	1.4	0900	-15.5	*****	67	037
1200	-14.9	*****	72	005	1.1	018	1200	-12.0	-20.1	51	051	1.2	1200	-16.2	-21.2	65	044
1500	-14.7	*****	73	025	.7	012	1500	-12.6	-19.6	56	015	1.8	1500	-16.7	-22.2	62	020
1800	-17.4	-18.0	95	042	.8	099	1800	-13.4	-18.9	63	065	2.3	1800	-17.6	-20.8	76	044
2100	-14.4	-17.7	76	056	.8	357	2100	-14.5	-20.0	63	078	2.7	2100	-17.8	*****	75	045
2400	-14.9	-17.4	81	053	.7	326	2400	-14.3	-20.0	62	054	1.1	2400	-19.8	*****	90	059

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.
0300	-19.0	-20.3	90	068	.5	092	0300	-17.2	-20.6	75	067	1.3	085	0300	-11.6	-24.4	34
0600	-19.1	*****	88	055	.7	062	0600	-17.4	*****	74	054	1.1	057	0600	-11.5	-24.4	34
0900	-18.3	-20.9	80	070	1.2	031	0900	-16.5	-21.9	63	058	1.1	090	0900	-11.4	-25.3	31
1200	-16.0	*****	56	061	1.2	063	1200	-13.2	*****	40	057	.9	068	1200	-8.2	-26.2	22
1500	-16.0	-22.4	58	062	.8	022	1500	-12.3	*****	35	040	.6	116	1500	-7.8	*****	21
1800	-17.4	-20.6	76	056	.8	091	1800	-14.4	-24.3	43	047	1.1	015	1800	-10.1	-26.0	26
2100	-16.7	-20.2	74	059	1.3	037	2100	-13.9	-24.7	40	045	1.2	010	2100	-9.7	-27.5	22
2400	-17.0	-20.5	74	056	1.4	096	2400	-13.0	-24.8	37	052	1.3	034	2400	-9.2	-27.0	22

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.
0300	-7.6	*****	19	060	1.3	033	0300	-6.8	-24.1	24	068	1.3	037	0300	-11.9	-26.4	29
0600	-6.7	-26.0	20	056	1.2	062	0600	-7.3	-22.8	28	054	1.4	036	0600	-13.6	-27.6	30
0900	-5.8	-24.2	22	074	1.4	096	0900	-7.6	-23.5	27	050	1.5	027	0900	-10.4	-24.1	32
1200	-5.6	*****	22	040	.9	081	1200	-6.9	*****	11	070	1.3	039	1200	-9.1	-12.2	78
1500	-4.4	*****	23	067	.7	115	1500	-9.0	-25.1	26	030	1.1	024	1500	-9.1	-11.5	83
1800	-6.3	-23.6	24	055	1.2	048	1800	-11.5	-24.7	33	047	1.2	078	1800	-9.0	-9.4	97
2100	-6.4	-23.7	24	074	1.5	102	2100	-10.6	-24.6	31	055	1.5	048	2100	-8.6	-10.7	85
2400	-7.0	-23.4	26	047	1.6	088	2400	-10.9	-25.2	30	067	1.5	039	2400	-8.4	*****	0

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING February, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-8.7	-38.4	7	023	.9	032	4.4	1	0300	-5.9	-13.0	57	067	2.2	078	5.1	1
0600	-8.4	*****	5	028	1.0	043	3.8	0	0600	-7.1	-7.4	98	064	1.9	086	5.7	0
0900	-7.8	*****	93	020	1.0	003	3.2	2	0900	-6.1	-6.8	95	038	1.0	073	3.2	2
1200	-6.0	-12.3	61	032	1.6	029	3.8	15	1200	-4.3	-8.7	71	007	1.0	005	3.8	11
1500	-5.5	-14.8	48	052	1.5	050	5.7	10	1500	-3.7	-10.1	61	068	1.4	071	5.1	7
1800	-7.9	-15.6	54	068	1.2	059	3.2	1	1800	-4.1	-9.7	65	082	2.0	103	8.3	1
2100	-6.9	-15.1	52	***	***	***	***	1	2100	-5.5	-7.1	89	125	2.6	135	8.9	0
2400	-6.7	-15.0	52	***	***	***	***	1	2400	-5.1	-7.4	84	043	1.5	014	4.4	1

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-5.1	-8.8	75	064	2.0	062	5.1	1	0300	-5.5	-17.4	39	037	1.4	353	3.2	1
0600	-5.3	-9.7	71	053	1.5	052	4.4	0	0600	-6.0	-18.8	36	060	1.5	031	3.2	1
0900	-4.2	-11.0	59	064	1.7	069	3.2	10	0900	-4.2	-19.3	30	063	1.5	046	4.4	11
1200	-2.1	-14.0	40	057	1.5	044	3.8	25	1200	-3.7	-21.0	25	028	1.5	020	5.1	26
1500	-1.1	*****	35	064	.8	036	2.5	13	1500	-5.3	-21.1	28	024	.7	014	2.5	14
1800	-4.7	-14.9	45	040	1.1	021	3.2	1	1800	-5.9	-19.7	33	058	1.2	344	2.5	2
2100	-4.2	-15.0	43	051	1.4	059	3.2	1	2100	-5.9	-19.7	33	052	1.5	018	3.8	1
2400	-4.8	-16.5	40	056	1.9	092	4.4	1	2400	-3.2	-13.0	47	045	1.3	019	4.4	1

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-7.2	-10.2	79	049	1.6	052	3.2	1	0300	-7.2	*****	66	033	.9	044	4.4	1
0600	-6.7	-11.2	70	056	1.4	089	3.2	0	0600	-5.3	*****	64	052	1.3	025	3.2	1
0900	-5.5	-12.2	59	059	1.8	072	5.1	13	0900	-3.4	*****	65	058	.9	034	3.2	11
1200	-4.3	-13.7	48	036	1.2	327	3.2	29	1200	-.2	*****	45	096	1.1	124	3.8	49
1500	-3.2	-13.0	47	045	2.0	053	6.3	14	1500	-.4	-10.4	47	084	2.4	087	6.3	24
1800	-6.0	-12.9	58	043	1.7	071	5.1	1	1800	-3.6	-9.8	62	073	4.1	071	7.0	1
2100	-5.3	-13.2	54	053	2.6	057	7.0	1	2100	-4.2	-9.8	65	072	4.3	073	6.3	1
2400	-5.5	-12.5	58	047	1.6	053	6.3	1	2400	-4.2	-10.6	61	066	3.8	066	6.3	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING February, 1983

DAY 28

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.

0300	-9.1	-37.4	8	001	.4	073	1.9	0
0600	-8.9	*****	9	205	.0	148	1.9	1
0900	-8.3	-8.8	96	013	.2	346	1.3	6
1200	-7.2	-9.9	81	087	.2	124	2.5	11
1500	-6.1	*****	60	051	.1	331	1.9	13
1800	-9.7	-10.2	96	049M	.6M	100M	1.9M	1
2100	-10.0	*****	91	***	***	***	***	0
2400	-10.3	-10.8	96	***	***	***	***	0

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING February, 1983

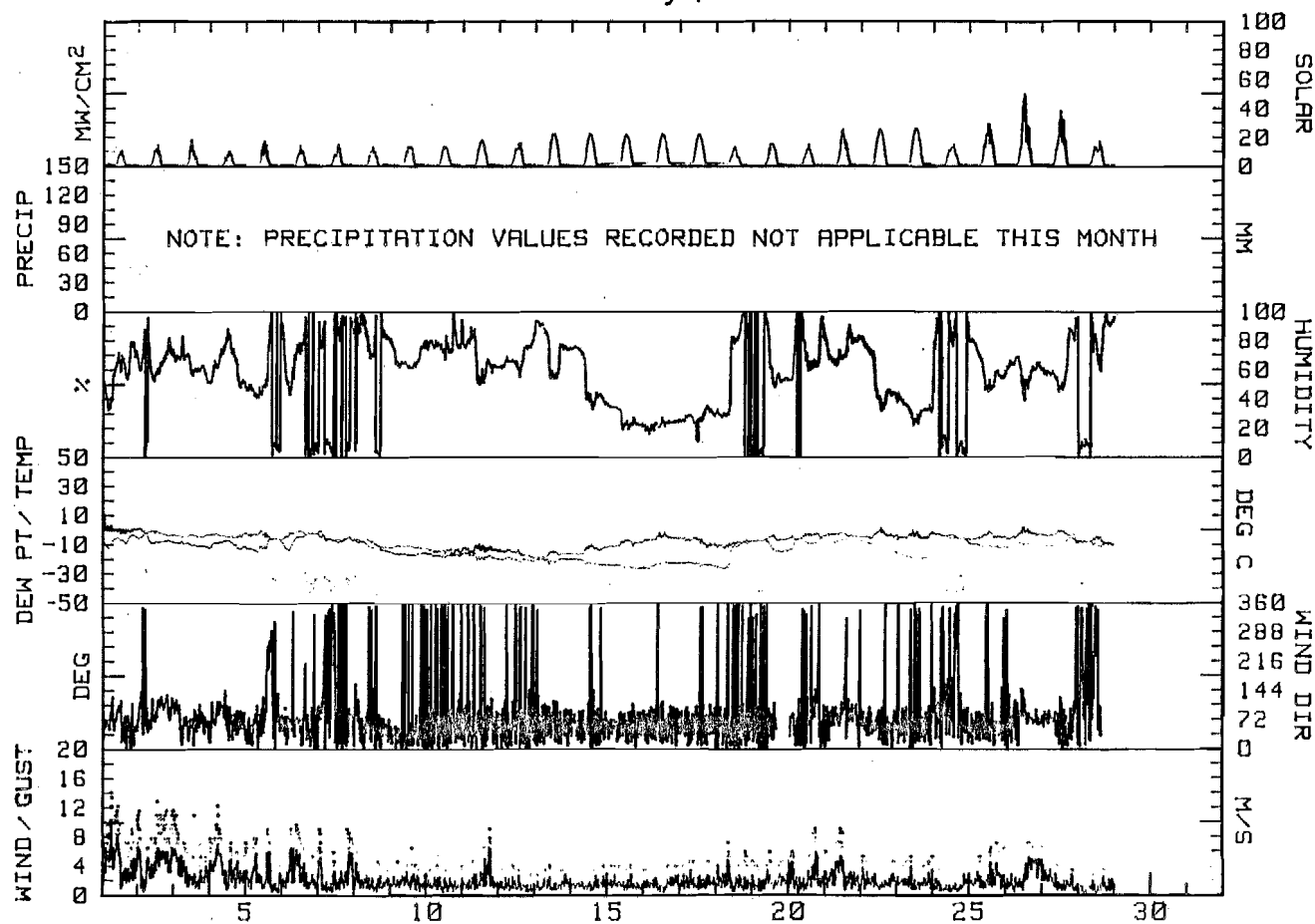
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY DAY WH/SQH
1	10.0	-2.6	3.7	072	3.6	4.0	112	14.0	ENE			****	550 1
2	.9	-4.8	-2.0	098	3.7	4.1	118	12.7	ESE	65	-8.2	****	670 2
3	-3.5	-5.7	-4.6	073	2.6	3.0	100	11.4	ENE	64	-10.4	****	667 3
4	-2.4	-6.0	-4.2	081	3.0	3.2	108	12.1	E	64	-10.2	****	535 4
5	-.8	-7.0	-3.9	054	1.0	2.1	253	8.9	ENE			****	693 5
6	-.8	-7.3	-4.1	059	2.3	2.6	076	9.5	ENE			****	620 6
7	-1.2	-8.2	-4.7	059	1.4	2.1	091	8.9	E			****	598 7
8	-5.8	-13.2	-9.5	055	1.3	1.6	082	5.7	NE			****	625 8
9	-11.2	-13.4	-12.3	026	1.4	1.5	057	6.3	NNE	68	-17.1	****	760 9
10	-13.1	-17.9	-15.5	030	.9	1.2	039	3.8	N	78	-18.0	****	745 10
11	-10.3	-17.7	-14.0	054	1.5	1.8	101	8.9	E	66	-18.7	****	988 11
12	-13.9	-19.9	-16.9	041	.8	1.1	075	3.8	NNE	67	-20.7	****	851 12
13	-14.8	-19.9	-17.4	061	1.0	1.2	063	3.8	NNE	74	-21.0	****	1245 13
14	-10.6	-17.5	-14.1	053	1.1	1.2	034	3.8	NE	54	-22.5	****	1283 14
15	-7.1	-12.4	-9.8	056	1.2	1.3	046	3.8	ENE	28	-25.6	****	1438 15
16	-2.7	-8.7	-5.7	059	1.2	1.4	048	3.8	ENE	22	-24.7	****	1490 16
17	-6.0	-12.9	-9.5	056	1.3	1.5	027	4.4	NE	28	-24.3	****	1475 17
18	-7.6	-13.6	-10.6	035	1.3	1.6	027	7.0	N			****	775 18
19	-4.3	-8.9	-6.6	036M	1.2M	1.5M	050M	5.7M	NNE(M)			****	868 19
20	-3.3	-7.5	-5.4	070M	1.4M	1.9M	135M	8.9M	ENE(M)			****	710 20
21	-2.5	-5.5	-4.0	078	2.2	2.5	096	8.9	E	74	-8.1	****	1173 21
22	.9	-6.6	-2.9	057	1.5	1.6	062	5.1	NE	55	-12.7	****	1498 22
23	-.9	-7.2	-4.1	047	1.3	1.5	020	5.1	ENE	33	-18.9	****	1640 23
24	-2.1	-7.5	-4.8	068	.7	1.0	096	5.1	E			****	835 24
25	-2.0	-7.8	-4.9	049	1.7	1.9	057	7.0	NE	61	-12.1	****	1513 25
26	1.1	-7.3	-3.1	070	2.3	2.5	071	7.0	ENE	59	-10.6	****	2040 26
27	-1.1	-9.5	-5.3	064	1.5	1.7	079	6.3	ENE	63	-10.2	****	1595 27
28	-5.3	-10.5	-7.9	030M	1.2M	.8M	124M	2.5M	N(M)			****	918 28
MONTH	10.0	-19.9	-7.3	063M	1.5M	1.5M	112M	14.0M	ENE(M)	M	M	****	28793

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 10.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 12.1
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 13.3
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 12.1

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
February, 1983



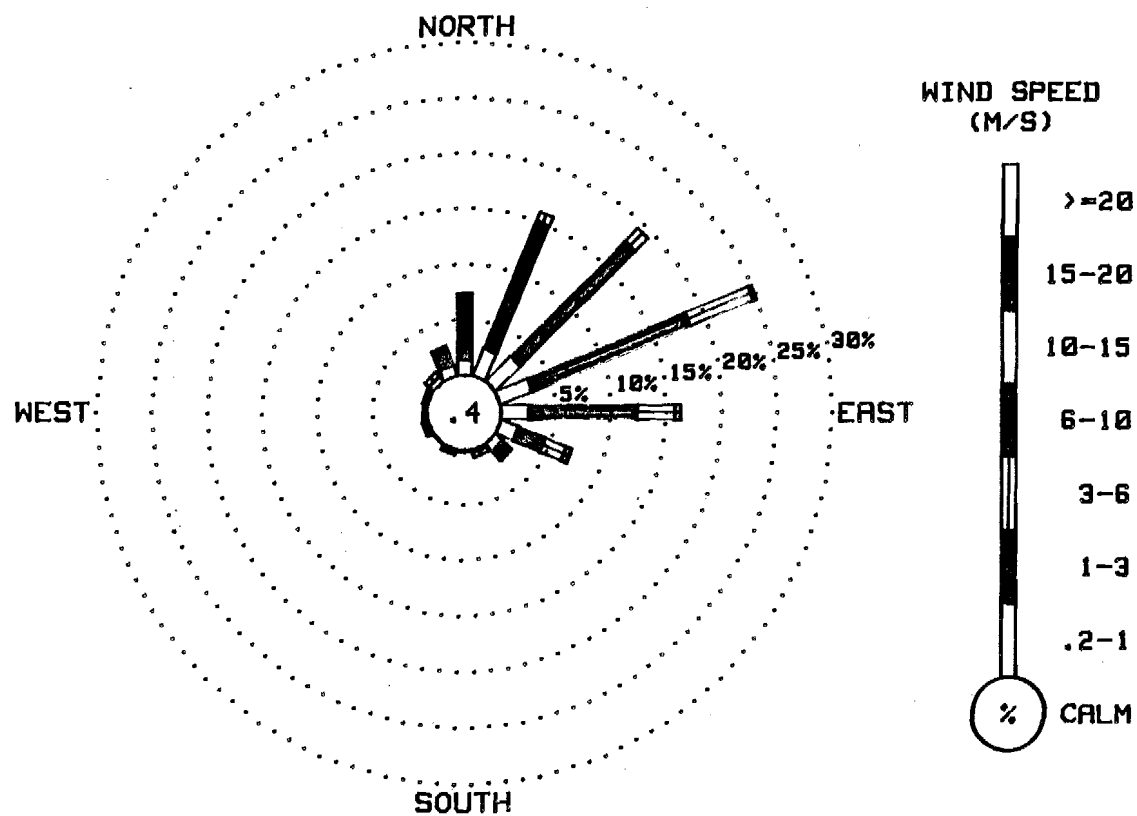
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING February, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	1.38	5.96	.08	0.00	0.00	0.00	0.00	7.41
NNE	2.64	12.34	.88	0.00	0.00	0.00	0.00	15.85
NE	3.17	14.55	1.64	0.00	0.00	0.00	0.00	19.37
ENE	3.09	15.36	6.19	.23	0.00	0.00	0.00	24.87
E	2.52	9.82	3.40	.53	0.00	0.00	0.00	16.27
ESE	1.72	2.60	2.10	.50	.04	0.00	0.00	6.95
SE	.92	.80	.31	.04	0.00	0.00	0.00	2.06
SSE	.31	.42	0.00	0.00	0.00	0.00	0.00	.73
S	.11	.08	0.00	0.00	0.00	0.00	0.00	.19
SSW	.15	.31	0.00	0.00	0.00	0.00	0.00	.46
SW	.04	0.00	0.00	0.00	0.00	0.00	0.00	.04
WSW	.23	.11	.15	0.00	0.00	0.00	0.00	.50
W	.19	.15	.04	0.00	0.00	0.00	0.00	.38
WNW	.31	.15	.04	0.00	0.00	0.00	0.00	.50
NW	.61	.53	0.00	0.00	0.00	0.00	0.00	1.15
NNW	1.03	1.80	.04	0.00	0.00	0.00	0.00	2.86
CALM								.42
TOTAL	18.41	64.97	14.86	1.30	.04	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2618 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
February, 1983



No precipitation data for March

(See INTERPRETATION OF DATA).

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING March, 1983

DAY 01

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.

0300	-11.2	-12.5	96	***	****
0600	-10.9	-13.1	84	***	****
0900	-8.3	-14.5	61	***	****
1200	-8.4	-14.8	60	065M	.8M355M2.5M10
1500	-10.1	-13.2	78	071	.5 013 2.5
1800	-10.8	*****	2	050	.2 354 1.9
2100	-11.7	-13.0	90	055	1.1 028 3.8
2400	-11.9	-14.2	83	032	1.8 039 3.8

DAY 02

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.

0300	-12.2	-14.8	81	070	1.3 068 3.8
0600	-13.1	-15.7	81	038	1.6 028 3.8
0900	-10.2	-15.7	64	032	1.4 016 3.2
1200	-9.2	*****	47	048	1.4 040 3.8
1500	-10.1	*****	45	050	.7 037 3.2
1800	-12.2	-17.2	66	048	1.0 043 3.8
2100	-11.8	-18.4	58	050	1.6 020 3.2
2400	-13.4	-19.5	60	055	1.3 060 3.2

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.

0300	-12.7	-19.7	56	062	1.4 041 3.8
0600	-13.6	-20.7	55	055	1.2 041 3.2
0900	-11.0	*****	37	043	1.2 035 4.4
1200	-10.2	*****	29	061	.9 045 2.5
1500	-9.4	*****	26	058	.6 088 3.2
1800	-13.9	-23.6	44	046	.7 001 1.9
2100	-13.9	-24.4	41	059	1.0 065 2.5
2400	-14.0	*****	40	058	1.0 082 1.9

DAY 04

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.

0300	-14.3	-25.0	40	047	1.1 061 1.9
0600	-14.2	-24.7	41	042	1.4 009 3.8
0900	-11.6	*****	36	054	1.1 025 2.5
1200	-11.5	-23.7	36	056	.9 022 2.5
1500	-11.0	-19.4	50	028	1.0 122 3.8
1800	-10.8	-15.5	68	070	1.5 039 5.1
2100	-10.3	-14.2	73	043	1.1 024 3.8
2400	-10.3	-15.0	68	040	1.8 042 5.1

DAY 05

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.

0300	-11.1	-15.5	70	033	2.9 031 7.0
0600	-10.5	-14.7	71	055	1.8 034 7.0
0900	-9.2	-15.3	61	056	1.4 037 3.2
1200	-8.1	-15.3	56	077	.7 064 3.8
1500	-8.7	-14.8	61	062	1.4 033 5.1
1800	-8.4	-12.7	71	060	1.4 046 3.8
2100	-9.5	-12.9	76	052	1.3 046 3.2
2400	-9.8	-11.7	86	056	1.3 058 3.8

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.

0300	-10.0	-12.2	84	051	1.5 026 3.8
0600	-8.6	-12.4	74	057	1.0 043 2.5
0900	-5.9	-13.5	55	057	1.2 055 2.5
1200	-2.7	*****	29	062	.8 071 1.9
1500	-3.4	*****	30	044	.5 351 1.9
1800	-6.1	*****	42	064	.8 018 2.5
2100	-4.4	-16.1	40	071	1.3 055 3.2
2400	-4.2	-15.9	40	069	1.3 086 2.5

DAY 07

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.

0300	-3.9	-15.6	40	052	1.3 051 3.2
0600	-4.2	-16.2	39	053	1.4 054 3.8
0900	-2.7	-16.5	34	061	1.2 072 2.5
1200	.4	*****	24	053	.9 048 3.2
1500	-1.9	-18.1	28	039	.6 072 1.9
1800	-4.6	-19.7	30	050	.8 079 1.9
2100	-4.7	-21.4	26	054	1.3 042 3.2
2400	-5.2	-22.2	25	064	1.5 058 3.2

DAY 08

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.

0300	-6.2	-23.6	24	065	1.6 046 3.8
0600	-6.0	-23.8	23	062	1.4 058 3.2
0900	-3.3	-23.1	20	049	2.2 042 5.7
1200	-.9	-21.7	19	064	1.5 062 5.2
1500	-.5	*****	19	028	.6 014 2.5
1800	-5.4	-23.8	22	049	1.0 044 2.5
2100	-5.4	-24.3	21	057	1.5 045 3.8
2400	-5.4	-24.3	21	063	1.6 033 3.8

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.

0300	-6.0	-24.8	21	059	1.9 068 3.8
0600	-6.5	-25.3	21	057	1.7 075 3.8
0900	-6.9	-25.6	21	032	1.5 015 4.4
1200	-7.3	*****	22	038	.7 077 2.5
1500	-6.9	*****	22	123	.3 317 3.2
1800	-12.5	*****	44	074	.5 063 2.5
2100	-13.1	-22.9	44	072	1.4 096 3.2
2400	-11.5	-22.8	39	058	1.4 031 4.4

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THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
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DAY 10

DAY 11

DAY 12

HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-12.9	-22.4	45	082	1.5	098	5.1	1	0300	-5.9	*****	2	090	.5	111	2.5	0
0600	-9.5	-15.6	61	037	1.4	357	5.1	1	0600	-5.9	*****	99	117	.9	088	3.2	0
0900	-8.8	*****	67	030	.3	099	2.5	12	0900	-4.2	*****	79	108	.3	187	1.9	12
1200	-7.7	-12.4	69	077	.7	145	2.5	21	1200	-1.8	*****	57	112	.7	119	3.2	24
1500	-8.2	*****	76	352	1.0	329	2.5	11	1500	-3.7	-6.8	79	107	2.7	117	10.2	12
1800	-6.3	*****	1	084	.7	095	3.2	0	1800	-3.4	-7.0	76	097	5.5	109	9.5	1
2100	-7.4	*****	4	040	.7	006	2.5	0	2100	-3.9	-6.2	84	101	5.1	098	10.2	1
2400	-6.4	*****	1	097	.8	105	2.5	0	2400	-4.2	-5.5	91	114	4.4	128	10.8	1

DAY 13

DAY 14

DAY 15

HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-2.2	-11.8	48	058	1.5	051	3.8	1	0300	-5.9	*****	54	045	1.4	004	3.8	1
0600	-2.6	-12.7	46	050	1.8	040	3.8	1	0600	-6.1	-13.2	57	056	1.5	043	3.8	1
0900	-1.0	-13.3	39	063	1.4	047	3.2	19	0900	-4.0	-14.8	43	059	1.4	040	3.2	22
1200	1.9	*****	25	036	.7	040	3.2	40	1200	-1.9	-13.5	41	061	1.1	036	2.5	40
1500	-2.0	-15.2	36	038	.9	078	2.5	24	1500	-3.3	*****	43	112	.7	153	2.5	19
1800	-3.7	-14.0	45	049	1.2	079	3.8	1	1800	-5.5	*****	62	044	.9	062	2.5	1
2100	-5.5	-14.3	50	043	1.5	045	3.2	1	2100	-4.9	-10.6	64	069	1.3	093	3.2	0
2400	-5.2	-13.8	51	065	1.3	081	2.5	0	2400	-5.0	-10.7	64	057	1.2	035	2.5	1

DAY 16

DAY 17

DAY 18

HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-5.8	-7.3	89	065	1.7	099	3.8	0	0300	-6.4	-13.7	56	089	1.2	048	3.2	1
0600	-5.6	-9.1	76	032	1.2	035	3.2	1	0600	-7.2	-13.8	59	072	1.5	049	3.2	1
0900	-4.7	-9.9	67	052	1.2	048	3.2	24	0900	-5.0	-14.6	47	057	1.6	060	3.8	25
1200	-2.2	*****	43	075	1.3	090	2.5	41	1200	-5.0	-13.9	50	054	1.3	085	4.4	43
1500	-3.5	*****	44	042	.7	059	3.2	21	1500	-5.2	-15.4	45	059	.5	097	2.5	27
1800	-6.1	-12.4	61	053	.8	069	1.9	1	1800	-7.5	-13.1	64	014	.7	012	3.2	1
2100	-5.4	-13.3	54	054	1.1	038	2.5	0	2100	-6.9	-13.3	60	063	1.4	082	3.2	1
2400	-5.5	-13.6	53	066	1.3	069	2.5	1	2400	-7.7	-14.3	59	069	1.5	088	3.2	1

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THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING March, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-7.5	-19.2	39	061	1.2	041	1.9	1	0300	-8.0	-20.3	37	049	1.6	046	3.8	1
0600	-7.8	-20.1	37	059	1.5	045	3.2	1	0600	-6.7	-16.7	45	066	2.0	028	5.7	1
0900	-5.1	-20.1	30	053	1.3	063	2.5	27	0900	-5.4	-15.8	44	074	1.2	116	3.8	18
1200	-5.4	-19.6	32	077	.9	074	2.5	45	1200	-1.0	*****	39	063	.9	034	3.2	33
1500	-5.1	-19.7	31	099	.3	125	2.5	29	1500	-3.7	-14.8	49	102	1.0	048	2.5	21
1800	-7.6	-19.0	40	065	.7	110	3.2	1	1800	-6.2	-13.6	56	065	.7	011	2.5	1
2100	-9.2	-20.4	40	057	1.3	023	3.8	1	2100	-6.0	-12.9	58	057	1.2	047	2.5	1
2400	-7.4	-20.4	35	073	1.5	057	3.8	1	2400	-5.5	-12.0	60	061	1.2	066	3.2	0

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-5.8	-11.3	65	047	1.1	050	1.9	1	0300	-8.0	-14.2	61	041	1.0	001	3.2	0
0600	-6.7	*****	67	056	.9	020	2.5	1	0600	-8.2	-14.8	59	045	1.3	026	3.2	1
0900	-3.2	-13.5	45	065	1.1	105	2.5	27	0900	-5.8	-16.2	44	051	1.1	029	2.5	30
1200	-2.9	*****	34	037	.6	072	1.9	48	1200	-2.2	*****	30	079	.6	121	2.5	48
1500	-2.5	*****	32	325	.2	352	1.3	31	1500	-6.2	-16.6	44	142	.4	130	2.5	31
1800	-5.8	-12.5	59	105	.9	118	2.5	1	1800	-9.2	*****	65	064	.3	345	2.5	1
2100	-6.8	*****	63	048	.8	049	1.9	1	2100	-8.2	-13.6	65	046	1.2	047	3.2	1
2400	-6.0	-13.1	57	045	1.2	041	3.2	1	2400	-8.9	-14.4	64	043	1.2	035	2.5	1

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-9.6	-11.4	87	064	1.1	039	3.2	0	0300	-8.8	*****	64	065	1.3	036	3.8	1
0600	-9.2	-11.7	82	074	1.5	091	3.2	2	0600	-7.7	-13.9	61	068	1.9	047	6.3	2
0900	-5.8	-14.4	51	064	1.2	066	2.5	31	0900	-5.0	-15.2	45	056	1.9	055	4.4	32
1200	-6.6	*****	46	090	.8	064	3.2	49	1200	-4.2	-13.6	48	081	1.8	082	5.7	50
1500	-3.7	*****	42	146	.6	340	3.2	33	1500	-4.2	-12.6	52	063	1.7	066	5.7	32
1800	-7.7	-12.4	69	095	.6	071	1.9	2	1800	-6.7	-12.7	62	051	1.0	040	4.4	2
2100	-8.2	-13.2	67	061	1.5	036	3.8	0	2100	-10.2	-13.1	79	031	1.2	357	3.8	1
2400	-7.6	-13.4	63	062	1.5	042	3.8	1	2400	-9.4	*****	76	030	.8	030	2.5	1

R & M CONSULTANTS, INC.
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THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING March, 1983

DAY 28

DAY 29

DAY 30

DAY 28										DAY 29										DAY 30									
HOUR	DEW		WIND		WIND		GUST MAX.			HOUR	DEW		WIND		WIND		GUST MAX.			HOUR	DEW		WIND		WIND		GUST MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD		NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD		NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		
0300	-6.8	-12.3	65	049	1.5	052	3.8	1		0300	-6.7	-17.9	41	067	1.4	076	2.5	1		0300	-7.4	-13.8	60	038	1.4	349	3.2	1	
0600	-8.4	-14.0	64	071	1.3	058	3.2	2		0600	-6.2	-17.4	41	059	1.2	060	3.2	3		0600	-6.1	-15.4	48	058	1.7	042	3.8	3	
0900	-5.6	-15.5	44	068	1.3	045	3.2	34		0900	-4.9	-18.5	34	044	1.0	031	1.9	34		0900	-3.9	-17.3	35	041	1.6	066	3.2	32	
1200	-4.2	-15.0	43	071	1.3	042	3.2	52		1200	-3.9	-17.6	34	098	.7	137	2.5	53		1200	-3.3	-17.4	33	096	1.0	095	3.2	54	
1500	-2.1	*****	31	145	1.0	149	2.5	35		1500	-3.7	*****	33	157	.7	131	2.5	34		1500	-3.4	-17.5	33	150	1.1	147	3.2	29	
1800	-5.6	*****	45	089	.5	142	1.9	3		1800	-6.7	-15.7	49	100	.6	001	2.5	3		1800	-4.6	-16.6	39	114	.7	125	1.9	4	
2100	-6.3	-16.7	44	053	1.1	035	3.8	1		2100	-7.6	-13.4	63	049	1.2	052	2.5	0		2100	-6.5	-15.3	50	047	1.0	043	2.5	1	
2400	-6.4	-17.6	41	062	1.6	054	3.2	1		2400	-8.4	-14.2	63	057	1.2	067	3.8	1		2400	-6.8	-16.0	48	063	1.6	091	3.8	1	

DAY 31

HOUR	DEW		WIND		WIND		GUST MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		
0300	-6.7	-14.7	53	065	1.6	081	3.2	1	
0600	-5.4	-10.9	65	066	1.6	058	3.8	2	
0900	-1.9	*****	48	050	1.2	055	3.2	31	
1200	-2.2	*****	46	112	.8	107	1.9	54	
1500	.2	*****	38	131	.4	164	1.9	38	
1800	-4.9	*****	78	129	.4	121	2.5	3	
2100	-4.5	-8.1	76	057	1.2	038	4.4	1	
2400	-5.5	-10.6	67	070	1.4	044	2.5	1	

R & M CONSULTANTS, INC.
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MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING March, 1983

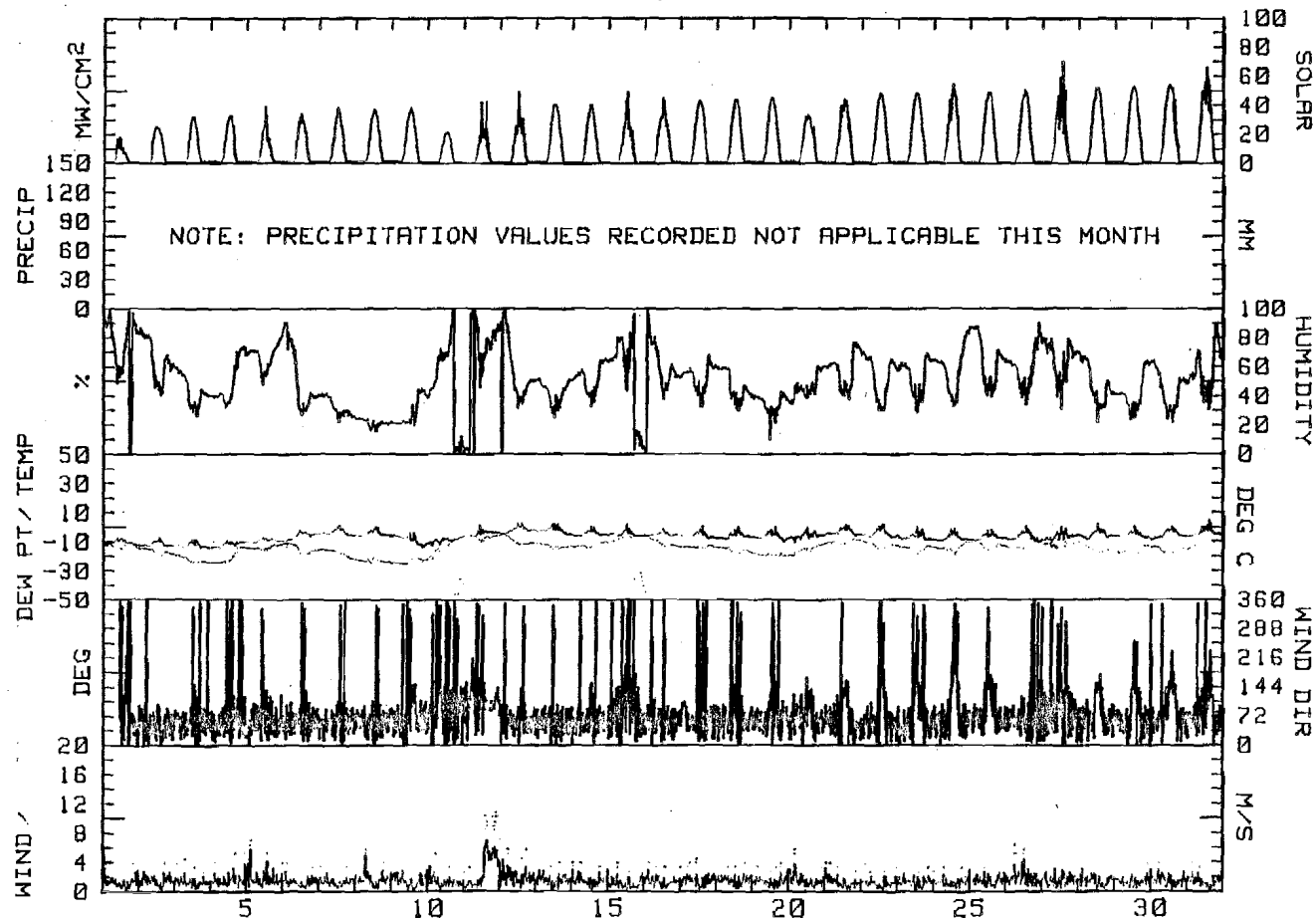
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	-6.9	-12.3	-9.6	048M	.9M	1.2M	028M	3.8M	NNE(M)			****	908	1
2	-7.3	-13.4	-10.4	049	1.3	1.4	068	3.8	NE	69	-16.8	****	1728	2
3	-8.2	-14.8	-11.5	055	1.0	1.1	035	4.4	ENE	46	-22.3	****	1988	3
4	-9.0	-14.7	-11.9	048	1.2	1.5	039	5.1	NE	50	-20.8	****	2073	4
5	-6.6	-11.4	-9.0	052	1.5	1.7	031	7.0	NE	69	-14.3	****	1713	5
6	-2.3	-10.5	-6.4	060	1.0	1.2	026	3.8	ENE	59	-14.4	****	2048	6
7	1.3	-5.8	-2.3	055	1.1	1.2	054	3.8	ENE	33	-18.2	****	2368	7
8	.6	-6.7	-3.1	057	1.4	1.5	042	5.7	ENE	22	-23.6	****	2603	8
9	-4.0	-14.3	-9.2	057	1.1	1.4	015	4.4	ENE	28	-24.1	****	2570	9
10	-6.2	-12.9	-9.6	057	.7	1.2	098	5.1	E			****	1415	10
11	1.2	-6.4	-2.6	105	2.5	2.8	128	10.8	ESE			****	1618	11
12	2.8	-5.0	-1.1	064	1.7	1.9	099	7.6	ENE	56	-10.8	****	2215	12
13	2.5	-5.5	-1.5	051	1.3	1.4	051	3.8	NE	44	-13.5	****	2733	13
14	.6	-6.5	-3.0	060	1.2	1.3	004	3.8	NE	54	-12.9	****	2538	14
15	1.5	-6.3	-2.4	065	.6	.9	021	3.8	E			****	2198	15
16	-1.0	-6.5	-3.8	056	1.1	1.3	099	3.8	ENE			****	2585	16
17	.8	-7.9	-3.6	063	1.2	1.4	085	4.4	NE	55	-13.9	****	2955	17
18	-.1	-8.5	-4.3	061	1.2	1.4	052	3.8	ENE	48	-16.0	****	3098	18
19	-.2	-9.9	-5.1	064	1.1	1.3	023	3.8	ENE	36	-19.8	****	3213	19
20	-1.0	-10.6	-5.8	066	1.2	1.4	028	5.7	ENE	47	-15.9	****	2455	20
21	1.2	-6.4	-2.6	069	.9	1.1	093	3.8	NE	62	-10.7	****	3005	21
22	1.8	-7.1	-2.7	055	.8	1.0	041	3.2	ENE	58	-12.5	****	3353	22
23	.2	-9.4	-4.6	052	.8	1.1	001	3.2	NNE	57	-14.8	****	3443	23
24	-1.5	-9.5	-5.5	062	.8	1.1	021	3.2	E	65	-14.0	****	3395	24
25	-2.1	-9.7	-5.9	073	1.0	1.3	036	3.8	ENE	69	-12.7	****	3570	25
26	.4	-10.6	-5.1	059	1.4	1.7	047	6.3	NE	59	-14.0	****	3588	26
27	.4	-10.9	-5.3	079	.8	1.4	032	4.4	ESE	66	-12.2	****	3220	27
28	2.3	-8.8	-3.3	070	1.1	1.3	052	3.8	ENE	51	-14.9	****	3843	28
29	.9	-8.4	-3.8	069	.9	1.2	067	3.8	NE	45	-16.5	****	3950	29
30	.4	-9.0	-4.3	067	1.1	1.4	042	3.8	ENE	47	-15.8	****	4058	30
31	4.3	-7.1	-1.4	072	1.0	1.2	038	4.4	ENE	63	-11.4	****	4158	31
MONTH	4.3	-14.8	-5.2	063M	1.1M	1.4M	128M	10.8M	ENE(M)	54M	-15.3M	****	84595	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 7.6
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.2
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 6.3
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 7.6

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

***** SEE NOTES AT THE BACK OF THIS REPORT *****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
March, 1983



R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING March, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO	TO	TO	TO	TO	TO	OR	
	1.0	3.0	6.0	10.0	15.0	20.0	GREATER	
N	1.67	2.80	0.00	0.00	0.00	0.00	0.00	4.47
NNE	3.61	9.00	.48	0.00	0.00	0.00	0.00	13.09
NE	4.23	18.75	.24	0.00	0.00	0.00	0.00	23.22
ENE	5.01	19.78	.24	0.00	0.00	0.00	0.00	25.03
E	3.48	10.91	.68	.14	0.00	0.00	0.00	15.21
ESE	2.32	3.51	.61	.14	0.00	0.00	0.00	6.58
SE	1.98	2.80	.10	0.00	0.00	0.00	0.00	4.88
SSE	1.19	.82	0.00	0.00	0.00	0.00	0.00	2.01
S	.72	.07	0.00	0.00	0.00	0.00	0.00	.78
SSW	.34	.03	0.00	0.00	0.00	0.00	0.00	.38
SW	.41	0.00	0.00	0.00	0.00	0.00	0.00	.41
WSW	.17	0.00	0.00	0.00	0.00	0.00	0.00	.17
W	.24	.10	0.00	0.00	0.00	0.00	0.00	.34
WNW	.38	.07	0.00	0.00	0.00	0.00	0.00	.44
NW	.51	.38	0.00	0.00	0.00	0.00	0.00	.89
NNW	.68	1.16	0.00	0.00	0.00	0.00	0.00	1.84
CALM								.27
TOTAL	26.93	70.17	2.35	.27	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2933 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

WIND ROSE PLOT

R & M CONSULTANTS, INC.

HOURLY PRECIPITATION SUMMARY FOR GLACIER WEATHER STATION

PRECIPITATION VALUES ARE IN MILLIMETERS

HOUR	ENDING
0000	0000
0001	0001
0002	0002
0003	0003
0004	0004
0005	0005
0006	0006
0007	0007
0008	0008
0009	0009
0010	0010
0011	0011
0012	0012
0013	0013
0014	0014
0015	0015
0016	0016
0017	0017
0018	0018
0019	0019
0020	0020
0021	0021
0022	0022
0023	0023
0024	0024
0025	0025
0026	0026
0027	0027
0028	0028
0029	0029
0030	0030
0031	0031
0032	0032
0033	0033
0034	0034
0035	0035
0036	0036
0037	0037
0038	0038
0039	0039
0040	0040
0041	0041
0042	0042
0043	0043
0044	0044
0045	0045
0046	0046
0047	0047
0048	0048
0049	0049
0050	0050
0051	0051
0052	0052
0053	0053
0054	0054
0055	0055
0056	0056
0057	0057
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0059	0059
0060	0060
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0062	0062
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0065	0065
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0067	0067
0068	0068
0069	0069
0070	0070
0071	0071
0072	0072
0073	0073
0074	0074
0075	0075
0076	0076
0077	0077
0078	0078
0079	0079
0080	0080
0081	0081
0082	0082
0083	0083
0084	0084
0085	0085
0086	0086
0087	0087
0088	0088
0089	0089
0090	0090
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0092	0092
0093	0093
0094	0094
0095	0095
0096	0096
0097	0097
0098	0098
0099	0099

[illegible]

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING April, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.	
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG. M/S MW	DEG C	DEG C	%	DEG.	M/S	DEG. M/S MW	DEG C	DEG C	%	DEG.	M/S	DEG. M/S MW
0300	-4.6	-12.1	56	058	1.6 041 3.8 1	0300	-4.7	-15.2	44	055	1.8 052 5.7 1	0300	-6.2	-13.8	55	056	1.7 046 3.8 1
0600	-4.7	-12.1	56	047	1.6 042 3.8 3	0600	-5.7	-16.1	44	063	1.4 048 3.8 3	0600	-6.0	-12.9	58	056	1.9 052 4.4 4
0900	-1.6	*****	43	076	1.1 095 3.2 28	0900	-2.8	-16.6	34	067	1.2 060 2.5 38	0900	-4.2	-13.9	47	061	1.6 050 4.4 38
1200	3.2	*****	30	074	1.1 085 3.8 55	1200	-1.6	-16.7	31	072	1.4 051 3.2 56	1200	-3.4	-11.9	52	094	1.9 123 7.6 36
1500	2.3	*****	31	109	1.0 123 3.2 38	1500	-1.0	-15.4	33	154	.7 146 2.5 39	1500	-3.2	-13.0	47	133	4.2 119 7.6 40
1800	-3.3	-11.3	54	097	.8 114 3.2 4	1800	-3.6	*****	46	090	.7 086 3.8 5	1800	-3.7	-11.7	54	073	.3 095 3.8 4
2100	-4.3	-12.0	55	056	1.3 047 3.2 1	2100	-5.0	-12.7	55	058	1.5 053 3.8 1	2100	-2.5	-7.2	70	083	3.6 088 8.9 1
2400	-4.1	-14.4	45	062	1.6 056 4.4 1	2400	-5.6	-13.9	52	058	1.8 041 4.4 1	2400	-1.2	-8.2	59	080	3.9 070 10.8 0

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.	
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG. M/S MW	DEG C	DEG C	%	DEG.	M/S	DEG. M/S MW	DEG C	DEG C	%	DEG.	M/S	DEG. M/S MW
0300	-.4	-8.8	53	061	4.2 072 10.8 1	0300	-7.0	-30.0	14	186	.1 217 3.8 0	0300	-8.4	-46.7	2	154	.4 101 3.2 1
0600	-.8	-8.3	57	067	3.0 060 10.2 4	0600	-5.9	-8.3	83	127	2.2 136 7.0 6	0600	-8.7	-11.1	83	100	1.5 100 3.2 4
0900	-1.9	-5.4	77	084	2.6 100 6.3 24	0900	-3.3	-12.8	48	115	3.0 131 7.0 45	0900	-6.7	-14.5	54	093	1.3 076 3.2 38
1200	-.2	-5.2	69	062	3.5 073 8.9 26	1200	-5.9	-11.4	65	092	4.2 089 7.6 40	1200	-5.6	-16.6	42	097	1.1 090 3.2 64
1500	.3	-5.9	63	079	3.1 103 9.5 21	1500	-4.6	*****	67	072	1.1 089 5.7 29	1500	-5.2	-17.1	39	131	.8 132 2.5 43
1800	-4.7	-26.7	16	161	2.9 139 14.0 3	1800	-5.4	-9.1	75	082	1.0 098 3.2 4	1800	-8.0	-13.0	67	093	.4 068 2.5 5
2100	-7.1	-32.6	11	184	9.2 184 24.1 1	2100	-6.5	*****	93	134	1.0 106 5.1 0	2100	-9.1	-13.9	68	056	1.7 037 3.8 0
2400	-7.3	-33.8	10	186	4.5 181 16.5 1	2400	-7.4	*****	98	116	1.8 114 5.1 0	2400	-8.2	-12.9	69	054	1.2 027 3.2 1

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.	
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	DEG. M/S MW	DEG C	DEG C	%	DEG.	M/S	DEG. M/S MW	DEG C	DEG C	%	DEG.	M/S	DEG. M/S MW
0300	-9.3	-10.1	94	056	1.2 059 3.8 0	0300	-10.1	-14.5	70	059	1.2 076 2.5 0	0300	-10.7	*****	3	017	.9 280 3.8 1
0600	-8.7	*****	82	057	1.1 040 3.8 7	0600	-10.1	-16.6	59	057	1.4 025 3.8 5	0600	-9.7	*****	95	055	.5 109 1.9 6
0900	-6.5	*****	56	063	1.0 029 3.2 30	0900	-8.1	-18.3	44	045	1.2 063 3.8 43	0900	-8.4	-13.4	67	345	.1 291 1.9 25
1200	.4	*****	33	017	.4 343 2.5 61	1200	-1.5	*****	25	027	.5 017 2.5 60	1200	-6.4	-15.2	50	002	.2 347 1.9 65
1500	-4.0	*****	38	338	.4 198 1.9 43	1500	-5.8	*****	32	197	.4 167 1.9 40	1500	-6.7	-15.2	51	319	1.0 014 2.5 43
1800	-8.4	-12.7	71	080	.3 043 2.5 6	1800	-8.8	*****	76	079	.3 356 1.3 4	1800	-11.1	*****	75	085	.3 005 2.5 7
2100	-10.2	-11.6	90	069	1.3 058 2.5 1	2100	-9.7	-11.6	86	082	.7 024 3.8 0	2100	-12.8	-13.7	93	067	1.2 042 2.5 0
2400	-10.1	-13.5	76	058	1.2 037 2.5 0	2400	-9.0	-13.1	72	040	1.5 043 4.4 1	2400	-14.0	-15.7	87	072	1.2 052 2.5 0

R & M CONSULTANTS, INC.

SUSTNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING April, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.	
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300	-14.4	-16.7	83	057	1.2	040	3.8	1	0300	-15.1	-19.8	67	069	1.4	096	3.8	0
0600	-14.5	-17.0	81	049	1.7	041	3.8	6	0600	-14.6	-19.7	65	051	1.4	012	3.2	5
0900	-13.5	-20.0	58	033	1.8	016	3.8	48	0900	-11.8	-22.2	42	053	1.8	049	4.4	44
1200	-9.7	-21.8	37	058	1.3	107	5.7	54	1200	-11.1	-23.4	36	093	.7	116	3.8	40
1500	-11.5	-22.8	39	175	.8	189	3.2	44	1500	-11.4	-15.6	71	214	.2	229	3.2	24
1800	-14.3	-18.5	70	014	.4	066	5.1	7	1800	-9.9	-12.9	79	041	1.5	079	6.3	4
2100	-15.1	-17.9	79	044	1.7	033	3.8	0	2100	-9.4	-11.5	85	068	3.6	080	7.0	0
2400	-15.1	-19.0	72	066	1.4	073	3.8	1	2400	-8.4	-8.7	98	062	3.1	077	7.0	0

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.	
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300	-6.6	-9.5	80	062	1.6	067	4.4	1	0300	-3.9	*****	12	194	1.1	201	3.8	1
0600	-5.4	-10.2	69	050	1.7	043	3.8	5	0600	-3.6	*****	5	228	.3	268	3.2	7
0900	-2.1	-9.7	56	041	1.5	085	3.2	23	0900	-1.7	-5.5	75	167	.7	135	2.5	27
1200	-2.5	*****	52	062	.7	053	3.2	41	1200	-1.7	-6.1	72	155	3.3	136	9.5	48
1500	-2.5	-7.4	69	013	1.5	001	2.5	30	1500	1.2	-10.7	41	191	2.8	156	7.6	72
1800	-3.1	*****	6	334	1.2	326	4.4	4	1800	-2.5	-6.0	77	169	2.3	147	11.4	6
2100	-2.1	-3.0	94	163	4.2	140	12.7	0	2100	-3.3	-6.3	80	133	5.7	142	10.8	1
2400	-3.4	-30.8	10	172	2.7	163	10.8	0	2400	-5.0	-31.0	11	133	4.7	143	9.5	0

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.		HOUR	DEW	WIND	WIND	GUST MAX.	
NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD	NDNG TEMP.	POINT RH	DIR.	SPD.	DIR.	GUST RAD
DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	MW
0300	-6.6	*****	1	036	1.2	096	2.5	0	0300	-6.6	-12.7	62	057	2.3	057	5.1	1
0600	-6.3	-8.6	84	073	1.2	050	3.8	7	0600	-6.3	-13.9	55	053	2.1	049	5.1	7
0900	-4.9	-12.6	55	031	1.4	036	3.8	44	0900	-1.4	*****	31	057	1.5	052	3.2	41
1200	-2.2	*****	39	065	.6	021	1.9	58	1200	-2.2	-19.2	26	096	.6	039	3.2	57
1500	-.3	*****	35	127	.3	357	1.9	48	1500	-2.8	*****	43	256	.6	250	2.5	26
1800	-3.8	-10.4	60	123	1.0	153	3.2	11	1800	-4.8	-8.2	77	122	2.7	091	5.7	6
2100	-6.1	-9.8	75	069	1.1	033	4.4	1	2100	-6.3	-30.2	13	116	4.6	122	10.8	0
2400	-6.0	-11.5	65	072	1.5	045	3.8	0	2400	-6.5	-31.3	12	181	.9	168	4.4	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING April, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-6.6	-39.8	5	008	1.4	076	3.8	0	0300	-5.4	-7.1	88	089	3.5	098	8.3	0
0600	-6.2	-37.9	6	223	.5	248	3.8	7	0600	-4.4	-8.5	73	060	1.9	077	5.1	10
0900	-2.6	-8.6	63	183	1.4	196	5.1	21	0900	-2.3	-11.1	51	070	2.8	087	5.7	45
1200	-2.5	-12.9	45	132	3.3	172	6.3	66	1200	-1.6	-12.1	45	076	3.9	071	7.0	50
1500	-3.4	-14.9	41	141	3.6	157	6.3	42	1500	-.9	-12.9	40	072	3.7	080	6.3	37
1800	-5.0	-12.4	56	093	3.1	122	6.3	9	1800	-3.1	-9.8	60	074	4.5	072	8.3	7
2100	-5.7	-10.1	71	075	3.9	060	7.0	1	2100	-3.6	-7.4	75	069	5.1	063	8.3	0
2400	-5.5	-9.7	72	079	4.8	081	8.9	1	2400	-4.8	*****	0	055	2.1	029	5.7	0
0300	-4.0	-9.2	67	077	3.3	093	8.9	1	0300	-4.0	-9.2	67	077	3.3	093	8.9	1
0600	-3.7	-11.2	56	073	4.5	068	8.3	10	0600	-3.7	-11.2	56	073	4.5	068	8.3	10
0900	-1.3	*****	40	102	.8	100	3.8	49	0900	-1.3	*****	40	102	.8	100	3.8	49
1200	.8	*****	31	126	.6	082	1.9	47	1200	.8	*****	31	126	.6	082	1.9	47
1500	-1.2	*****	50	288	.3	259	3.8	36	1500	-1.2	*****	50	288	.3	259	3.8	36
1800	-3.4	-5.1	88	058	.8	130	3.2	11	1800	-3.4	-5.1	88	058	.8	130	3.2	11
2100	-3.1	-6.1	80	057	1.2	033	3.8	0	2100	-3.1	-6.1	80	057	1.2	033	3.8	0
2400	-2.5	-6.0	77	063	3.3	061	5.7	1	2400	-2.5	-6.0	77	063	3.3	061	5.7	1

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-2.9	*****	86	049	1.5	032	5.1	0	0300	-1.5	-8.5	59	093	1.6	105	4.4	1
0600	-2.1	-6.3	73	073	2.1	064	5.7	9	0600	-.9	*****	55	081	1.1	087	2.5	10
0900	-1.3	-7.4	63	090	4.6	099	8.9	34	0900	2.2	*****	41	063	.6	031	2.5	48
1200	1.1	-9.3	46	159	2.1	111	7.0	50	1200	2.7	*****	30	000	.1	285	1.9	69
1500	5.7	-8.0	37	222	1.7	238	5.1	75	1500	3.0	*****	37	101	.7	123	2.5	33
1800	-1.1	-8.3	58	079	.4	078	5.7	8	1800	-.1	-7.4	58	046	.7	028	3.2	8
2100	-1.7	-8.2	61	105	3.8	114	8.3	1	2100	.9	-4.7	66	044	1.9	118	4.4	0
2400	-1.4	-8.6	58	089	3.5	097	7.0	0	2400	-1.0	-4.5	77	067	1.4	034	3.2	0
0300	-.5	-4.4	75	059	1.3	021	3.8	1	0300	-.5	-4.4	75	059	1.3	021	3.8	1
0600	.2	-4.6	70	031	.8	345	2.5	6	0600	.2	-4.6	70	031	.8	345	2.5	6
0900	5.0	*****	39	065	.9	022	2.5	53	0900	5.0	*****	39	065	.9	022	2.5	53
1200	6.0	-10.0	31	054	.6	046	1.9	69	1200	6.0	-10.0	31	054	.6	046	1.9	69
1500	6.2	-9.4	32	071	.7	142	2.5	54	1500	6.2	-9.4	32	071	.7	142	2.5	54
1800	4.2	-7.4	43	034	1.1	044	3.8	11	1800	4.2	-7.4	43	034	1.1	044	3.8	11
2100	4.4	-5.2	50	009	1.7	011	4.4	1	2100	4.4	-5.2	50	009	1.7	011	4.4	1
2400	4.7	-3.6	55	050	1.3	084	4.4	1	2400	4.7	-3.6	55	050	1.3	084	4.4	1

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	5.7	-4.2	49	060	1.7	045	3.8	1	0300	1.4	-7.2	53	044	1.7	029	4.4	1
0600	6.5	-5.6	42	059	1.9	061	4.4	6	0600	1.2	-8.1	50	069	1.4	035	3.8	8
0900	8.5	*****	29	070	1.5	095	4.4	54	0900	5.1	*****	32	065	1.3	057	3.8	53
1200	11.5	*****	22	065	1.1	105	3.2	68	1200	3.6	-11.3	33	024	.7	352	2.5	68
1500	8.5	*****	20	062	.7	049	3.2	53	1500	4.6	-12.1	29	068	1.0	067	3.2	53
1800	6.3	-13.4	23	052	1.3	094	3.8	14	1800	3.1	-10.0	38	085	1.1	091	2.5	14
2100	2.2	-4.1	63	052	1.3	074	3.8	1	2100	.6	*****	66	064	.7	007	1.9	1
2400	2.1	-5.5	57	048	1.1	011	3.2	1	2400	1.4	-8.5	48	058	1.2	083	3.2	1
0300	.1	-8.1	54	057	1.3	051	3.2	1	0300	.1	-8.1	54	057	1.3	051	3.2	1
0600	.8	-8.8	49	043	1.7	040	3.8	10	0600	.8	-8.8	49	043	1.7	040	3.8	10
0900	2.6	-10.1	39	047	1.6	024	3.8	54	0900	2.6	-10.1	39	047	1.6	024	3.8	54
1200	4.6	*****	29	023	1.5	012	3.2	49	1200	4.6	*****	29	023	1.5	012	3.2	49
1500	3.5	*****	39	346	.5	022	1.9	50	1500	3.5	*****	39	346	.5	022	1.9	50
1800	2.1	*****	47	271	.2	133	1.9	15	1800	2.1	*****	47	271	.2	133	1.9	15
2100	-1.4	*****	91	050	.6	022	1.9	1	2100	-1.4	*****	91	050	.6	022	1.9	1
2400	-1.7	-3.6	87	070	1.2	031	2.5	1	2400	-1.7	-3.6	87	070	1.2	031	2.5	1

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R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING April, 1983

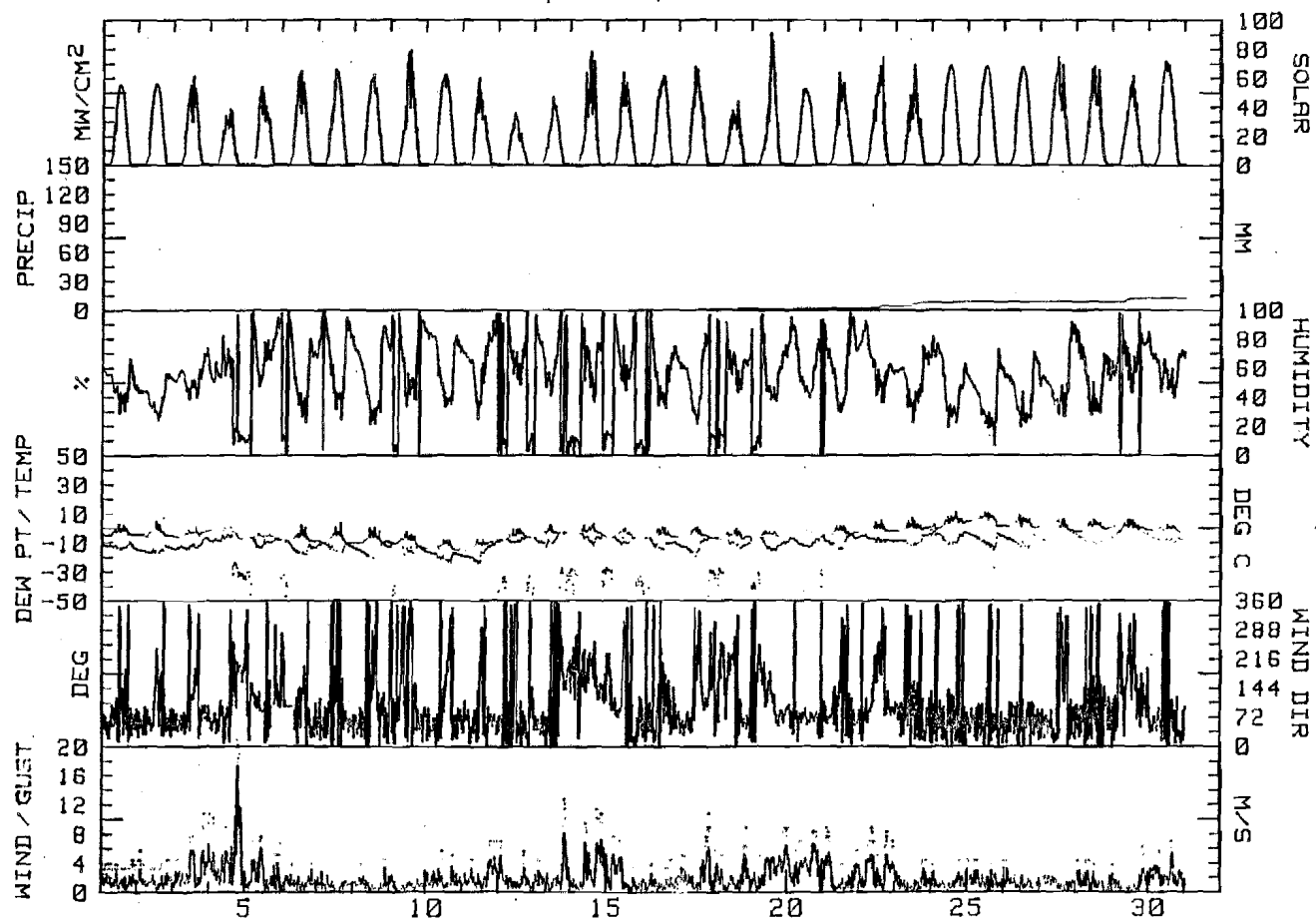
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQ	DAY
1	3.4	-5.0	-1.8	068	1.2	1.4	056	4.4	NE	51	-12.4	0.0	4155	1
2	5.1	-5.9	-1.4	067	1.2	1.5	052	5.7	NE	43	-14.9	0.0	4310	2
3	.9	-6.5	-2.8	087	2.1	2.7	070	10.8	ENE	55	-11.8	0.0	3943	3
4	1.4	-7.3	-3.0	126	2.3	4.6	184	24.1	ENE			0.0	2635	4
5	-3.3	-7.6	-5.5	106	1.8	2.1	089	7.6	ESE	65	-13.0	0.0	3738	5
6	2.5	-9.5	-3.5	085	.8	1.3	037	3.8	E	59	-16.0	.2	4443	6
7	3.9	-10.2	-3.2	055	.8	1.1	059	3.8	ENE	80	-12.0	0.0	4595	7
8	.8	-10.6	-4.9	055	.8	1.1	043	4.4	ENE	65	-15.1	0.0	4628	8
9	-2.1	-14.1	-8.1	040	.5	1.0	280	3.8	E			0.0	4725	9
10	-8.0	-15.5	-11.8	053	1.1	1.6	107	5.7	ENE	68	-18.7	0.0	5063	10
11	-7.6	-15.7	-11.7	061	1.6	2.1	080	7.0	ENE	67	-17.0	0.0	3658	11
12	0.0	-9.2	-4.6	037	1.4	1.6	072	7.0	NNE			0.0	2483	12
13	2.6	-6.9	-2.2	099	.7	2.0	140	12.7	NE			0.0	3030	13
14	3.6	-5.4	-.9	153	2.4	2.9	147	11.4	SE			.2	4545	14
15	.4	-6.5	-3.1	095	1.1	2.0	091	7.6	E			0.0	4255	15
16	1.1	-7.0	-3.0	067	.9	1.2	033	4.4	ENE			.4	4913	16
17	1.3	-7.1	-2.9	096	1.4	2.1	122	10.8	NE			.8	4575	17
18	.2	-7.5	-3.7	092	.6	1.8	066	8.9	ENE			.6	2998	18
19	-1.4	-7.1	-4.3	102	2.1	3.0	081	8.9	E			0.0	4810	19
20	-.9	-6.3	-3.6	072	3.4	3.5	098	8.3	ENE			0.0	4488	20
21	2.0	-4.9	-1.5	072	1.7	2.1	093	8.9	ENE	68	-8.5	.4	4575	21
22	5.7	-3.3	1.2	099	1.9	2.8	099	8.9	E	64	-7.4	2.2	4735	22
23	7.4	-2.0	2.7	069	.9	1.3	105	4.4	E	59	-7.4	3.8	4250	23
24	11.5	-1.3	5.1	043	1.0	1.3	011	4.4	NNE	54	-5.6	1.0	5943	24
25	11.5	1.3	6.4	059	1.3	1.6	061	4.4	NE	41	-7.5	0.0	5968	25
26	9.5	.2	4.9	060	1.1	1.3	029	4.4	ENE	45	-8.6	0.0	6000	26
27	6.2	-2.0	2.1	043	1.0	1.3	040	3.8	NNE	56	-7.8	0.0	5753	27
28	6.1	-2.4	1.9	067	.9	1.3	043	4.4	E	56	-7.9	0.0	5198	28
29	6.8	-2.9	2.0	114	.6	1.1	113	6.3	SE			3.4	4593	29
30	2.6	-3.1	-.3	050	1.9	2.3	113	7.0	NE	60	-7.7	0.0	6370	30
MONTH	11.5	-15.7	-2.0	080	1.2	1.9	184	24.1	ENE	M	M	13.0	135372	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 8.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 21.0
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 20.3
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 18.4

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
April, 1983



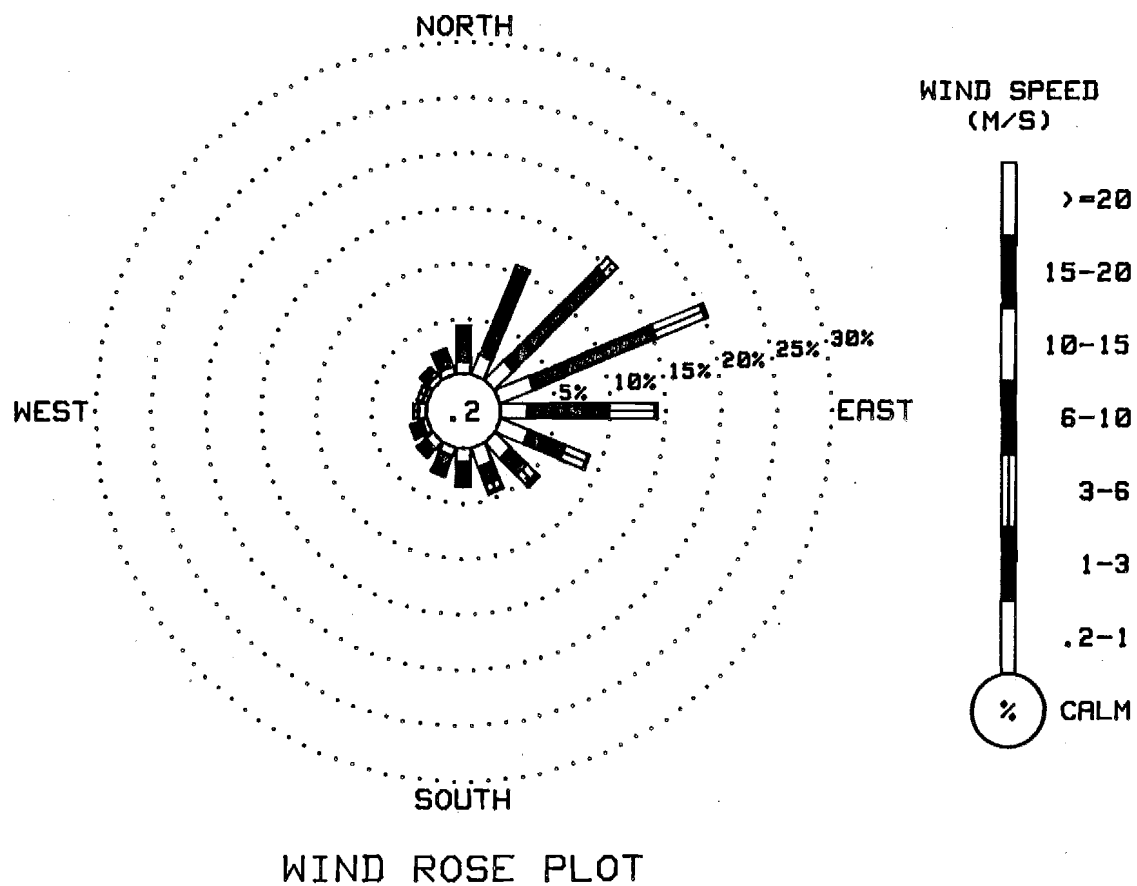
R & M CONSULTANTS, INC.,
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING April, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	1.12	3.22	.04	0.00	0.00	0.00	0.00	4.38
NNE	1.89	8.37	.35	0.00	0.00	0.00	0.00	10.61
NE	2.42	11.87	1.30	0.00	0.00	0.00	0.00	15.58
ENE	3.33	11.90	4.83	.21	0.00	0.00	0.00	20.27
E	2.45	7.35	4.20	.21	0.00	0.00	0.00	14.21
ESE	2.84	3.54	2.28	.11	0.00	0.00	0.00	8.75
SE	2.03	2.07	1.19	.32	.04	0.00	0.00	5.64
SSE	1.86	1.61	.77	.21	0.00	0.00	0.00	4.45
S	1.23	1.58	.35	.04	.18	.04	0.00	3.40
SSW	.81	1.65	.11	.11	.07	0.00	0.00	2.73
SW	.88	.95	.11	0.00	0.00	0.00	0.00	1.93
WSW	.53	.95	.14	0.00	0.00	0.00	0.00	1.61
W	.74	.46	0.00	0.00	0.00	0.00	0.00	1.19
WNW	.46	.53	0.00	0.00	0.00	0.00	0.00	.98
NW	.63	.95	0.00	0.00	0.00	0.00	0.00	1.58
NNW	.77	1.72	0.00	0.00	0.00	0.00	0.00	2.49
CALM								.25
TOTAL	23.94	58.66	15.65	1.19	.28	.04	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2857 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
April, 1983



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R & M CONSULTANTS, INC.
SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING May, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-2.5	-9.2	60	061	1.2	053	3.2	1	0300	-2.0	-2.7	95	093	2.4	089	7.0	1
0600	-2.2	-11.5	49	079	1.2	095	2.5	9	0600	1.0	*****	79	067	.6	024	3.2	16
0900	.1	-14.1	34	073	1.3	044	3.8	53	0900	.5	*****	69	348	.3	097	1.3	33
1200	4.8	*****	20	119	.6	139	3.2	64	1200	1.1	-7.4	53	246	.5	209	2.5	58
1500	1.4	-14.8	29	098	.1	146	2.5	54	1500	1.2	-8.1	50	105	2.0	113	7.0	38
1800	.8	-13.1	35	092	1.1	043	4.4	13	1800	-.4	*****	60	128	2.4	112	8.9	13
2100	.8	-10.5	43	064	1.1	089	3.2	1	2100	-3.2	-32.9	8	031	.7	005	3.2	1
2400	1.4	-7.4	52	069	3.4	079	6.3	1	2400	-3.6	*****	8	090	.5	031	3.2	1

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-4.9	-10.4	65	063	1.1	040	3.2	1	0300	-4.6	*****	57	057	1.1	003	3.2	1	0300	-3.3	-7.1	75	069	.8	020	2.5	1
0600	-4.3	-11.3	58	070	1.2	078	2.5	12	0600	-3.4	-13.2	47	063	1.0	035	2.5	16	0600	-2.3	-9.9	56	064	1.1	068	2.5	12
0900	2.1	*****	22	097	1.1	112	3.2	60	0900	1.0	*****	27	083	.7	058	1.9	52	0900	1.3	-12.6	35	057	1.0	012	2.5	54
1200	.9	*****	20	160	.8	142	2.5	53	1200	1.3	*****	20	335	.3	022	1.9	61	1200	3.5	*****	22	103	.5	030	2.5	73
1500	1.4	*****	19	285	.5	210	1.9	45	1500	2.4	*****	21	359	.6	279	1.9	50	1500	1.7	-15.9	26	135	.4	159	1.9	48
1800	-.3	*****	30	232	.1	139	2.5	18	1800	-2.0	-7.1	68	106	.4	025	3.8	12	1800	-.2	-12.6	39	136	.5	124	3.2	13
2100	-3.9	-11.6	55	068	1.0	073	3.8	1	2100	-2.5	*****	80	063	.6	358	2.5	1	2100	-.6	-10.9	46	057	1.9	058	5.1	1
2400	-3.9	-12.6	51	035	1.0	032	3.8	1	2400	-2.9	*****	78	051	.7	005	1.9	1	2400	-1.7	-11.3	48	064	1.5	040	3.8	1

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-2.1	*****	45	055	1.3	066	4.4	1	0300	.2	-11.3	42	068	2.2	074	5.1	1
0600	-1.3	-13.9	38	067	1.3	042	3.8	10	0600	.9	*****	40	079	.9	045	2.5	15
0900	3.4	-13.5	28	085	1.0	122	3.2	57	0900	3.1	-12.1	32	108	1.3	102	3.8	50
1200	3.5	-16.3	22	116	2.0	122	5.7	63	1200	4.5	-15.5	22	009	.9	011	1.9	75
1500	2.4	-12.8	32	111	3.8	120	7.0	51	1500	9.6	*****	16	013	.8	333	1.9	59
1800	2.0	-13.1	32	103	4.1	099	7.0	16	1800	4.1	*****	23	090	.5	133	1.9	20
2100	.9	-9.8	45	061	3.2	062	5.1	1	2100	.5	-8.2	52	065	.8	098	1.9	1
2400	.7	-9.7	46	058	2.9	050	5.1	1	2400	.3	-9.8	47	068	1.2	055	3.2	1

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING May, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	1.0	-10.3	43	064	1.2	053	3.2	1	0300	*****	*****	**	***	****	***	****	***
0600	-1.1	-11.6	42	041	1.0	002	3.8	9	0600	*****	*****	**	***	****	***	****	***
0900	4.1	*****	29	061	.7	020	2.5	39	0900	*****	*****	**	***	****	***	****	***
1200	*****	*****	**	***	****	***	****	***	1200	*****	*****	**	***	****	***	****	***
1500	*****	*****	**	***	****	***	****	***	1500	*****	*****	**	***	****	***	****	***
1800	*****	*****	**	***	****	***	****	***	1800	*****	*****	**	***	****	***	****	***
2100	*****	*****	**	***	****	***	****	***	2100	*****	*****	**	***	****	***	****	***
2400	*****	*****	**	***	****	***	****	***	2400	*****	*****	**	***	****	***	****	***

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG.	M/S	MW
0300	*****	*****	**	***	****	***	****	***	0300	*****	*****	**	***	****	***	****	***
0600	*****	*****	**	***	****	***	****	***	0600	*****	*****	**	***	****	***	****	***
0900	*****	*****	**	***	****	***	****	***	0900	*****	*****	**	***	****	***	****	***
1200	*****	*****	**	***	****	***	****	***	1200	*****	*****	**	***	****	***	****	***
1500	*****	*****	**	***	****	***	****	***	1500	*****	*****	**	***	****	***	****	***
1800	*****	*****	**	***	****	***	****	***	1800	*****	*****	**	***	****	***	****	***
2100	*****	*****	**	***	****	***	****	***	2100	*****	*****	**	***	****	***	****	***
2400	*****	*****	**	***	****	***	****	***	2400	*****	*****	**	***	****	***	****	***

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	*****	*****	**	***	****	***	****	***	0300	*****	*****	**	***	****	***	****	***	0300	*****	*****	**	***	****	***	****	***
0600	*****	*****	**	***	****	***	****	***	0600	*****	*****	**	***	****	***	****	***	0600	*****	*****	**	***	****	***	****	***
0900	*****	*****	**	***	****	***	****	***	0900	*****	*****	**	***	****	***	****	***	0900	*****	*****	**	***	****	***	****	***
1200	*****	*****	**	***	****	***	****	***	1200	*****	*****	**	***	****	***	****	***	1200	*****	*****	**	***	****	***	****	***
1500	*****	*****	**	***	****	***	****	***	1500	*****	*****	**	***	****	***	****	***	1500	*****	*****	**	***	****	***	****	***
1800	*****	*****	**	***	****	***	****	***	1800	*****	*****	**	***	****	***	****	***	1800	*****	*****	**	***	****	***	****	***
2100	*****	*****	**	***	****	***	****	***	2100	*****	*****	**	***	****	***	****	***	2100	*****	*****	**	***	****	***	****	***
2400	*****	*****	**	***	****	***	****	***	2400	*****	*****	**	***	****	***	****	***	2400	*****	*****	**	***	****	***	****	***

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING May, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	
					M/S	MW						MW					MW	
0300	*****	*****	**	***	*****	***	0300	*****	*****	**	***	*****	***	0300	*****	*****	**	***
0600	*****	*****	**	***	*****	***	0600	*****	*****	**	***	*****	***	0600	*****	*****	**	***
0900	*****	*****	**	***	*****	***	0900	*****	*****	**	***	*****	***	0900	*****	*****	**	***
1200	*****	*****	**	***	*****	***	1200	*****	*****	**	***	*****	***	1200	*****	*****	**	***
1500	*****	*****	**	***	*****	***	1500	*****	*****	**	***	*****	***	1500	*****	*****	**	***
1800	*****	*****	**	***	*****	***	1800	*****	*****	**	***	*****	***	1800	*****	*****	**	***
2100	*****	*****	**	***	*****	***	2100	*****	*****	**	***	*****	***	2100	*****	*****	**	***
2400	*****	*****	**	***	*****	***	2400	*****	*****	**	***	*****	***	2400	*****	*****	**	***

DAY 22

DAY 23

DAY 24

HOUR							DEW							WIND WIND GUST MAX.							HOUR							DEW							WIND WIND GUST MAX.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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		DEG C		DEG C		%		DEG.		M/S		DEG.		M/S		MM				DEG C		DEG C		%		DEG.		M/S		DEG.		M/S		MM				DEG C		DEG C		%		DEG.		M/S		DEG.		M/S		MM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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DAY 25

DAY 26

DAY 27

HOUR							DEW							WIND WIND GUST MAX.							HOUR							DEW							WIND WIND GUST MAX.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
NDNG		TEMP.		POINT		RH	DIR.		SPD.		DIR.		GUST		MAX.	NDNG		TEMP.		POINT		RH	DIR.		SPD.		DIR.		GUST		MAX.	NDNG		TEMP.		POINT		RH	DIR.		SPD.		DIR.		GUST		MAX.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
		DEG C		DEG C		%	DEG.		M/S		DEG.		M/S		MW			DEG C		DEG C		%	DEG.		M/S		DEG.		M/S		MW			DEG C		DEG C		%	DEG.		M/S		DEG.		M/S		MW																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING May, 1983

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	
0300	*****	*****	**	***	****	***	0300	*****	*****	**	***	****	***	0300	*****	*****	**	***
0600	*****	*****	**	***	****	***	0600	*****	*****	**	***	****	***	0600	*****	*****	**	***
0900	*****	*****	**	***	****	***	0900	*****	*****	**	***	****	***	0900	*****	*****	**	***
1200	*****	*****	**	***	****	***	1200	*****	*****	**	***	****	***	1200	*****	*****	**	***
1500	*****	*****	**	***	****	***	1500	*****	*****	**	***	****	***	1500	*****	*****	**	***
1800	*****	*****	**	***	****	***	1800	*****	*****	**	***	****	***	1800	*****	*****	**	***
2100	*****	*****	**	***	****	***	2100	*****	*****	**	***	****	***	2100	*****	*****	**	***
2400	*****	*****	**	***	****	***	2400	*****	*****	**	***	****	***	2400	*****	*****	**	***

DAY 31

HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.
DEG C	DEG C	%	DEG.	M/S	DEG.
0300	*****	*****	**	***	****
0600	*****	*****	**	***	****
0900	*****	*****	**	***	****
1200	*****	*****	**	***	****
1500	*****	*****	**	***	****
1800	*****	*****	**	***	****
2100	*****	*****	**	***	****
2400	*****	*****	**	***	****

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING May, 1983

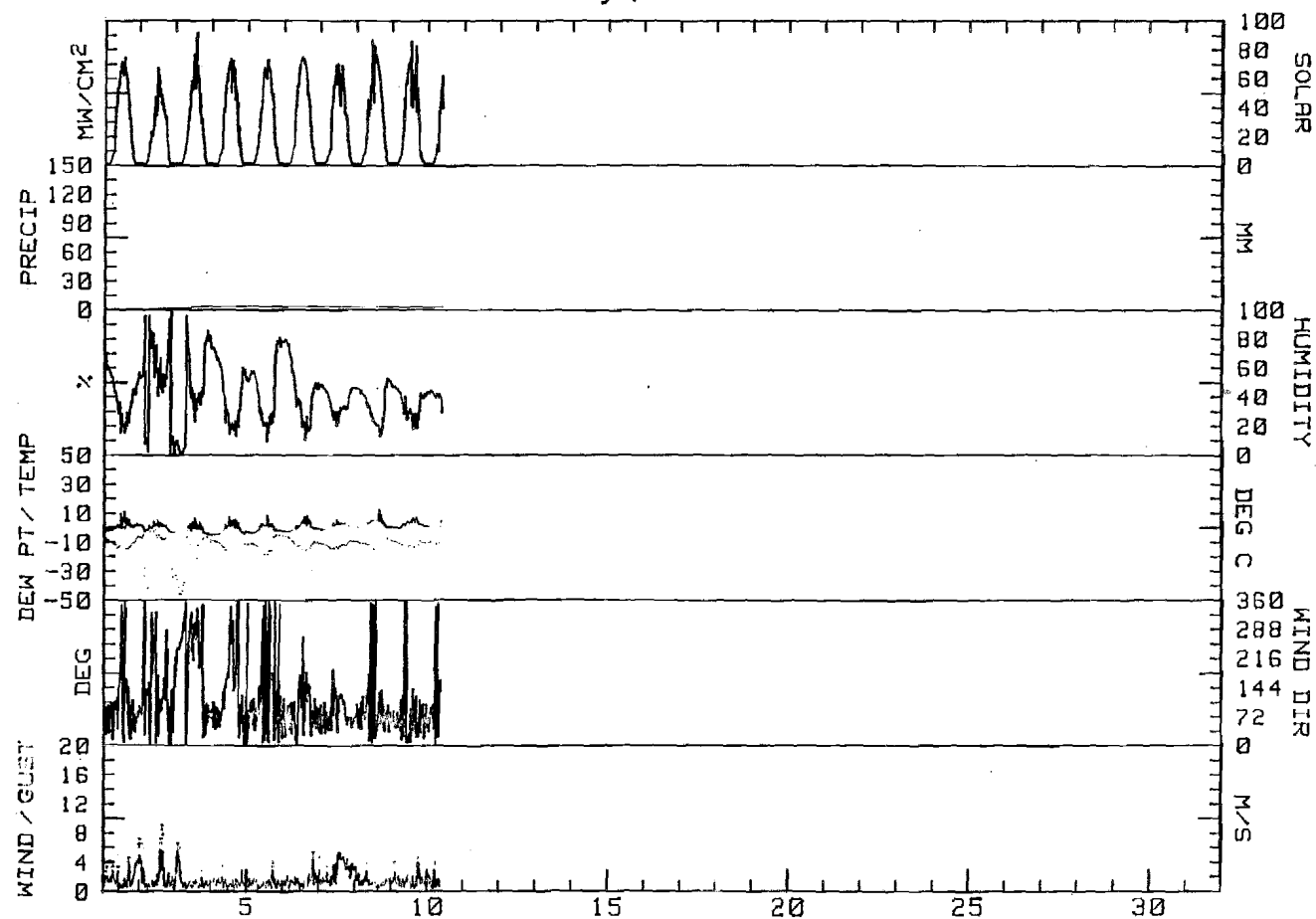
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	11.0	-3.1	4.0	075	1.2	1.6	079	6.3	E	45	-11.0	0.0	6168	1
2	5.3	-3.8	.8	100	.9	1.6	112	8.9	ESE			.8	4630	2
3	6.1	-5.3	.4	261	.7	1.3	239	6.3	WSW			1.8	5740	3
4	7.0	-5.2	.9	073	.6	1.0	073	3.8	ENE	52	-12.4	0.0	6363	4
5	8.0	-4.6	1.7	056	.6	1.0	025	3.8	ENE	49	-12.3	0.0	6120	5
6	7.9	-3.3	2.3	071	.9	1.2	058	5.1	NE	47	-11.3	0.0	6630	6
7	5.0	-2.2	1.4	086	2.3	2.6	120	7.0	ENE	37	-12.6	0.0	5995	7
8	11.6	-.2	5.7	066	.9	1.2	074	5.1	ENE	39	-11.4	0.0	6658	8
9	6.9	-.4	3.3	051	1.0	1.3	047	4.4	NE	37	-11.8	0.0	6203	9
10	4.1	-.5	1.8	055	.9	1.2	002	3.8	NE	42	-11.1	0.0M	3827	10
11	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	11
12	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	12
13	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	13
14	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	14
15	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	15
16	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	16
17	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	17
18	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	18
19	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	19
20	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	20
21	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	21
22	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	22
23	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	23
24	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	24
25	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	25
26	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	26
27	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	27
28	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	28
29	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	29
30	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	30
31	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	31
MONTH	11.6M	-5.3M	2.2M	073M	.8M	1.4M	112M	8.9M	ENE	43M	-13.1M	2.6M	58332 M	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.7
 GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 6.3
 GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 8.3
 GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 7.6

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
May, 1983



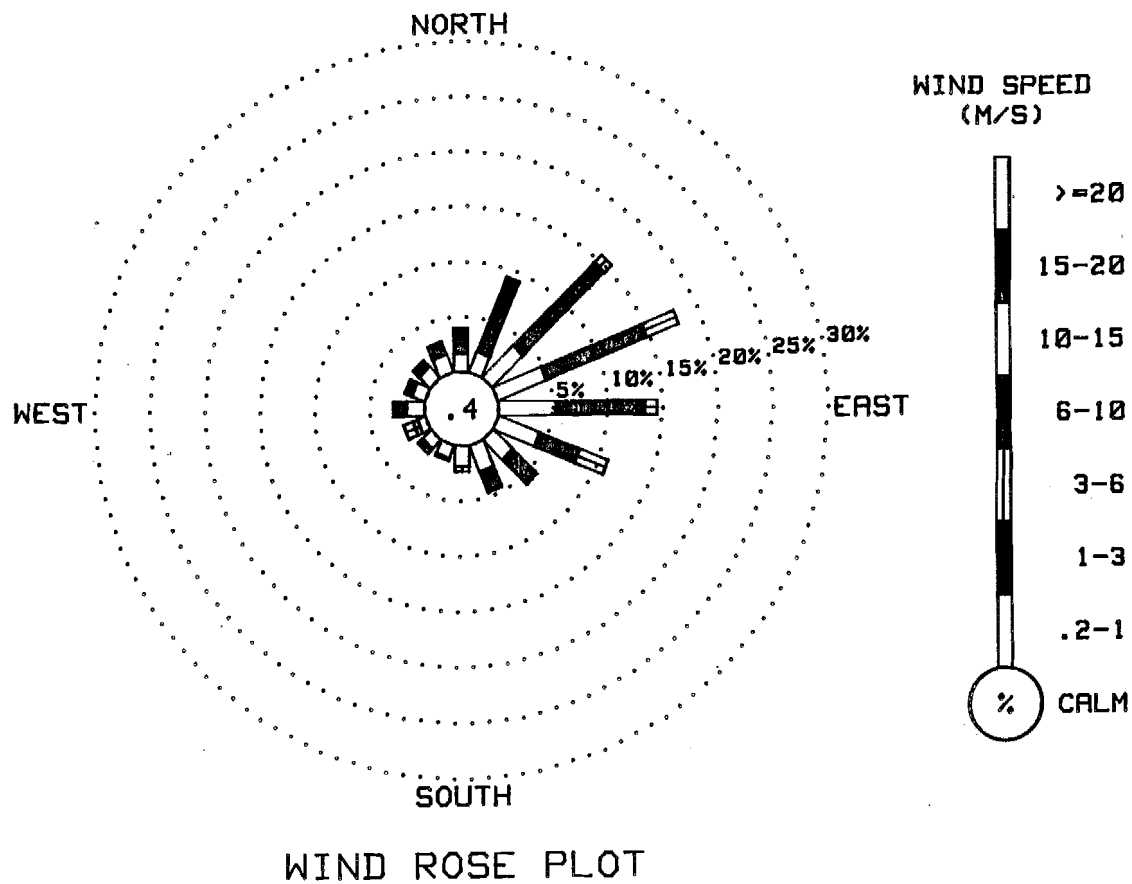
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING May, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	1.67	2.33	0.00	0.00	0.00	0.00	0.00	4.00
NNE	2.00	7.22	0.00	0.00	0.00	0.00	0.00	9.22
NE	4.00	10.56	.89	0.00	0.00	0.00	0.00	15.44
ENE	4.78	9.89	3.11	0.00	0.00	0.00	0.00	17.78
E	5.22	8.11	1.11	0.00	0.00	0.00	0.00	14.44
ESE	4.11	3.89	2.78	0.00	0.00	0.00	0.00	10.78
SE	2.56	2.78	.33	0.00	0.00	0.00	0.00	5.67
SSE	2.56	1.89	.11	0.00	0.00	0.00	0.00	4.56
S	1.89	.44	0.00	0.00	0.00	0.00	2.33	→
SSW	1.22	.22	0.00	0.00	0.00	0.00	0.00	1.44
SW	1.11	.22	.33	0.00	0.00	0.00	0.00	1.67
WSW	.78	.44	.89	0.00	0.00	0.00	0.00	2.11
W	1.67	1.11	.11	0.00	0.00	0.00	0.00	2.89
WNW	1.33	.67	0.00	0.00	0.00	0.00	0.00	2.00
NW	1.44	.78	0.00	0.00	0.00	0.00	0.00	2.22
NNW	1.78	1.22	0.00	0.00	0.00	0.00	0.00	3.00
CALM								.44
TOTAL	38.11	51.78	9.67	0.00	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
900 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
May, 1983



[illegible]

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING June, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	
					M/S	MW											M/S	
0300	*****	*****	**	***	****	***	0300	*****	*****	**	***	****	***	0300	*****	*****	**	***
0600	*****	*****	**	***	****	***	0600	*****	*****	**	***	****	***	0600	*****	*****	**	***
0900	*****	*****	**	***	****	***	0900	*****	*****	**	***	****	***	0900	*****	*****	**	***
1200	*****	*****	**	***	****	***	1200	*****	*****	**	***	****	***	1200	*****	*****	**	***
1500	*****	*****	**	***	****	***	1500	*****	*****	**	***	****	***	1500	*****	*****	**	***
1800	*****	*****	**	***	****	***	1800	*****	*****	**	***	****	***	1800	*****	*****	**	***
2100	*****	*****	**	***	****	***	2100	*****	*****	**	***	****	***	2100	*****	*****	**	***
2400	*****	*****	**	***	****	***	2400	*****	*****	**	***	****	***	2400	*****	*****	**	***

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.						
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	MAX.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	GUST	MAX.	
0300	*****	*****	**	***	****	***	0300	*****	*****	**	***	****	***	0300	*****	*****	**	***	****	***	****	***	****
0600	*****	*****	**	***	****	***	0600	*****	*****	**	***	****	***	0600	*****	*****	**	***	****	***	****	***	****
0900	*****	*****	**	***	****	***	0900	*****	*****	**	***	****	***	0900	*****	*****	**	***	****	***	****	***	****
1200	*****	*****	**	***	****	***	1200	*****	*****	**	***	****	***	1200	*****	*****	**	***	****	***	****	***	****
1500	*****	*****	**	***	****	***	1500	*****	*****	**	***	****	***	1500	*****	*****	**	***	****	***	****	***	****
1800	*****	*****	**	***	****	***	1800	*****	*****	**	***	****	***	1800	*****	*****	**	***	****	***	****	***	****
2100	*****	*****	**	***	****	***	2100	*****	*****	**	***	****	***	2100	*****	*****	**	***	****	***	****	***	****
2400	*****	*****	**	***	****	***	2400	*****	*****	**	***	****	***	2400	*****	*****	**	***	****	***	****	***	****

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	
0300	*****	*****	**	***	****	***	0300	*****	*****	**	***	****	***	0300	*****	*****	**	***
0600	*****	*****	**	***	****	***	0600	*****	*****	**	***	****	***	0600	*****	*****	**	***
0900	*****	*****	**	***	****	***	0900	*****	*****	**	***	****	***	0900	*****	*****	**	***
1200	*****	*****	**	***	****	***	1200	*****	*****	**	***	****	***	1200	*****	*****	**	***
1500	*****	*****	**	***	****	***	1500	*****	*****	**	***	****	***	1500	*****	*****	**	***
1800	*****	*****	**	***	****	***	1800	*****	*****	**	***	****	***	1800	*****	*****	**	***
2100	*****	*****	**	***	****	***	2100	*****	*****	**	***	****	***	2100	*****	*****	**	***
2400	*****	*****	**	***	****	***	2400	*****	*****	**	***	****	***	2400	*****	*****	**	***

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING June, 1983

DAY 10

DAY 11

DAY 12

HOUR							DEW							WIND							GUST							MAX.							
NDNG		TEMP.		POINT		RH		DIR.		SPD.		DIR.		GUST		RAD		NDNG		TEMP.		POINT		RH		DIR.		SPD.		DIR.		GUST		RAD	
		DEG C		DEG C		%		DEG.		M/S		DEG.		M/S		MM				DEG C		DEG C		%		DEG.		M/S		DEG.		M/S		MM	

0300		*****		*****		**		***		****		***		****		***		0300		*****		*****		**		***		****		***		****		***	
0600		*****		*****		**		***		****		***		****		***		0600		*****		*****		**		***		****		***		****		***	
0900		*****		*****		**		***		****		***		****		***		0900		*****		*****		**		***		****		***		****		***	
1200		*****		*****		**		***		****		***		****		***		1200		*****		*****		**		***		****		***		****		***	
1500		*****		*****		**		***		****		***		****		***		1500		*****		*****		**		***		****		***		****		***	
1800		*****		*****		**		***		****		***		****		***		1800		*****		*****		**		***		****		***		****		***	
2100		*****		*****		**		***		****		***		****		***		2100		*****		*****		**		***		****		***		****		***	
2400		*****		*****		**		***		****		***		****		***		2400		*****		*****		**		***		****		***		****		***	

DAY 13

DAY 14

DAY 15

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.					
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	*****	*****	**	***	*****	***	0300	*****	*****	**	***	*****	***	0300	*****	*****	**	***	*****	***	*****	***
0600	*****	*****	**	***	*****	***	0600	*****	*****	**	***	*****	***	0600	*****	*****	**	***	*****	***	*****	***
0900	*****	*****	**	***	*****	***	0900	*****	*****	**	***	*****	***	0900	*****	*****	**	***	*****	***	*****	***
1200	*****	*****	**	***	*****	***	1200	*****	*****	**	***	*****	***	1200	6.6	*****	**	007	.3	010	6.3	69
1500	*****	*****	**	***	*****	***	1500	*****	*****	**	***	*****	***	1500	6.7	*****	**	236	.6	203	5.1	27
1800	*****	*****	**	***	*****	***	1800	*****	*****	**	***	*****	***	1800	6.3	*****	**	123	.5	142	3.2	15
2100	*****	*****	**	***	*****	***	2100	*****	*****	**	***	*****	***	2100	2.1	*****	**	208	.1	250	5.7	1
2400	*****	*****	**	***	*****	***	2400	*****	*****	**	***	*****	***	2400	.9	*****	**	052	.5	032	2.5	1

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.
	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S	DEG.	DEG C	DEG C	%	DEG.	M/S
0300	1.2	*****	**	101	.5	354	1.9	4	0300	4.1	*****	**	031	.8	024	2.5	4
0600	2.1	*****	**	028	.4	070	2.5	29	0600	4.4	*****	**	052	1.1	046	2.5	32
0900	4.4	*****	**	215	.0	185	3.2	47	0900	6.9	*****	**	144	1.2	183	5.1	66
1200	6.8	*****	**	248	1.3	268	5.1	85	1200	7.7	*****	**	139	3.4	145	5.1	85
1500	7.2	*****	**	210	1.8	185	5.1	64	1500	10.6	*****	**	137	3.1	126	5.7	80
1800	7.6	*****	**	193	2.0	172	4.4	27	1800	9.1	*****	**	138	3.2	143	6.3	28
2100	6.0	*****	**	019	.6	234	2.5	4	2100	6.6	*****	**	140	.4	239	3.2	4
2400	4.5	*****	**	060	1.0	058	3.2	2	2400	6.2	*****	**	046	.9	032	3.2	2

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION

DATA TAKEN DURING June, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	9.2	*****	**	064	2.1	052	5.7	4	0300	5.9	*****	**	064	.9	093	2.5	3
0600	9.8	*****	**	054	1.3	044	3.2	32	0600	5.0	*****	**	069	.9	020	2.5	24
0900	10.7	*****	**	179	.9	155	3.2	41	0900	10.2	*****	**	203	1.1	239	4.4	66
1200	11.5	*****	**	194	1.8	182	3.8	34	1200	11.1	*****	**	192	1.6	172	3.8	79
1500	10.2	*****	**	227	.4	148	4.4	38	1500	12.7	*****	**	192	2.7	200	5.1	66
1800	5.6	*****	**	255	2.8	241	7.6	4	1800	11.2	*****	**	194	2.1	165	5.1	29
2100	7.5	*****	**	057	1.8	040	4.4	3	2100	9.3	*****	**	032	.5	306	3.8	2
2400	6.0	*****	**	050	1.2	039	3.8	1	2400	8.4	*****	**	036	1.4	019	3.8	2

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	8.2	*****	**	016	1.3	350	3.8	3	0300	8.9	*****	**	043	1.1	084	3.2	4
0600	8.5	*****	**	039	.9	043	1.9	31	0600	11.8	*****	**	051	.8	002	2.5	31
0900	10.9	*****	**	192	.6	171	2.5	66	0900	13.8	*****	**	138	2.2	134	7.0	60
1200	13.6	*****	**	191	2.1	193	5.1	78	1200	14.4	*****	**	137	4.7	132	8.3	64
1500	13.1	*****	**	210	2.1	200	5.1	32	1500	15.3	*****	**	133	4.7	134	7.6	61
1800	12.1	*****	**	181	1.1	150	3.8	18	1800	13.1	*****	**	117	3.6	128	6.3	17
2100	11.2	*****	**	002	.1	188	1.9	4	2100	12.7	*****	**	071	2.1	059	5.1	4
2400	10.9	*****	**	065	1.2	075	3.8	2	2400	12.0	*****	**	062	3.3	059	5.7	2

DAY 25

DAY 26

DAY 27

HOUR										DEW										WIND										WIND										GUST MAX.																			
NDNG										TEMP. POINT RH DIR. SPD. DIR. GUST RAD										NDNG										TEMP. POINT RH DIR. SPD. DIR. GUST RAD										NDNG										TEMP. POINT RH DIR. SPD. DIR. GUST RAD									
DEG C DEG C % DEG. M/S DEG. M/S MW										DEG C DEG C % DEG. M/S DEG. M/S MW										DEG C DEG C % DEG. M/S DEG. M/S MW										DEG C DEG C % DEG. M/S DEG. M/S MW										DEG C DEG C % DEG. M/S DEG. M/S MW																			
0300										13.6 ***** ** 070 1.6 059 3.8 4										0300										9.0 ***** ** 014 .9 310 4.4 3										0300										8.8 ***** ** 082 1.4 066 4.4 3									
0600										12.9 ***** ** 056 1.6 019 4.4 31										0600										8.6 ***** ** 082 .6 156 2.5 34										0600										8.5 ***** ** 001 .5 062 3.8 11									
0900										15.0 ***** ** 173 1.0 149 4.4 66										0900										11.5 ***** ** 175 1.1 149 4.4 64										0900										6.2 ***** ** 042 .8 021 3.2 8									
1200										16.4 ***** ** 201 1.9 200 4.4 80										1200										15.1 ***** ** 199 1.6 173 5.1 77										1200										6.3 ***** ** 158 .6 137 3.2 24									
1500										19.1 ***** ** 159 2.7 139 6.3 64										1500										14.2 ***** ** 215 1.7 175 4.4 29										1500										7.1 ***** ** 116 1.0 014 3.8 10									
1800										16.4 ***** ** 230 1.5 146 5.7 16										1800										13.9 ***** ** 278 .4 028 3.8 21										1800										6.0 ***** ** 173 .8 134 3.2 3									
2100										15.4 ***** ** 060 1.1 064 3.8 3										2100										12.4 ***** ** 021 .8 253 3.8 3										2100										6.0 ***** ** 104 .7 132 2.5 1									
2400										11.9 ***** ** 021 1.0 298 5.1 2										2400										8.4 ***** ** 041 .8 344 4.4 2										2400										6.0 ***** ** 046 .6 055 2.5 1									

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING June, 1983

DAY 28

DAY 29

DAY 30

DAY 28								DAY 29								DAY 30										
HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.			HOUR	DEW	WIND	WIND	GUST	MAX.					
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST			
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S			
0300	5.2	*****	**	082	.6	068	1.9	2	0300	6.8	*****	**	045	1.0	025	2.5	3	0300	6.9	*****	**	084	.4	063	2.5	2
0600	5.5	*****	**	149	1.0	124	1.9	12	0600	7.3	*****	**	053	1.1	009	2.5	31	0600	7.3	*****	**	126	1.0	122	2.5	16
0900	6.9	*****	**	229	.7	147	3.2	37	0900	9.9	*****	**	189	.1	143	4.4	61	0900	9.2	*****	**	126	.8	072	4.4	49
1200	7.7	*****	**	158	1.0	171	3.2	30	1200	12.2	*****	**	166	2.3	138	5.7	54	1200	11.4	*****	**	178	2.6	163	5.1	67
1500	7.2	*****	**	186	1.6	169	3.2	20	1500	9.1	*****	**	127	2.5	118	6.3	22	1500	12.9	*****	**	177	2.5	150	5.7	63
1800	8.2	*****	**	355	.5	025	3.8	15	1800	8.3	*****	**	249	.5	231	5.1	10	1800	10.6	*****	**	221	1.7	252	5.1	14
2100	6.1	*****	**	116	.2	337	4.4	2	2100	8.4	*****	**	096	.9	120	3.8	3	2100	10.4	*****	**	045	1.6	090	5.1	3
2400	6.5	*****	**	021	.9	072	3.2	1	2400	7.2	*****	**	063	.9	076	2.5	1	2400	10.7	*****	**	048	.9	055	3.2	2

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING June, 1983

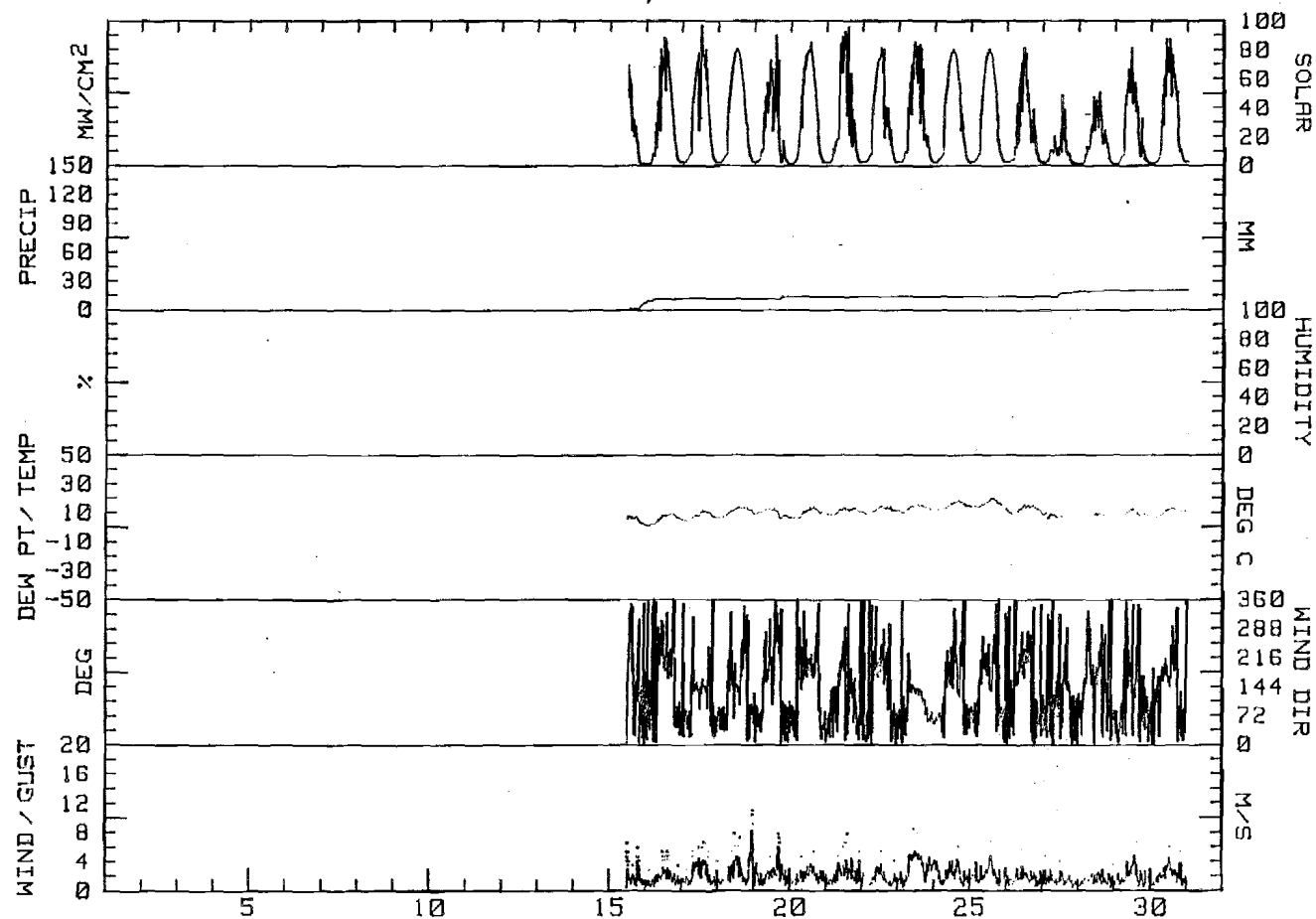
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	1
2	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	2
3	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	3
4	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	4
5	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	5
6	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	6
7	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	7
8	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	8
9	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	9
10	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	10
11	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	11
12	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	12
13	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	13
14	*****	*****	*****	***	***	***	***	***	***	**	*****	***	*****	14
15	7.0	.9	4.0	145	.1	1.5	010	6.3	SE	**	*****	7.4M	4430	15
16	8.7	.3	4.5	197	.3	1.4	268	5.1	SSW	**	*****	3.0	7568	16
17	10.6	3.6	7.1	124	1.4	2.0	143	6.3	SE	**	*****	0.0	7653	17
18	13.9	5.6	9.8	118	1.2	2.3	072	10.8	ENE	**	*****	0.0	8300	18
19	12.6	5.4	9.0	099	.2	2.0	241	7.6	NE	**	*****	2.0	5505	19
20	13.9	5.0	9.5	169	.6	1.8	200	5.1	SSW	**	*****	0.0	8038	20
21	13.2	7.5	10.4	106	.9	1.9	027	7.6	ENE	**	*****	0.0	6728	21
22	14.5	7.5	11.0	173	.4	1.5	193	5.1	SSW	**	*****	0.0	6830	22
23	15.4	8.9	12.2	110	2.3	2.9	132	8.3	SE	**	*****	0.0	7293	23
24	17.7	10.8	14.3	113	.9	2.1	057	5.7	ENE	**	*****	0.0	8145	24
25	20.0	11.9	16.0	136	.6	1.9	139	6.3	ENE	**	*****	0.0	7958	25
26	15.1	7.7	11.4	185	.2	1.5	173	5.1	ENE	**	*****	0.0	6173	26
27	9.6	5.0	7.3	092	.5	1.2	066	4.4	ESE	**	*****	5.0	2030	27
28	9.2	5.2	7.2	155	.4	1.2	337	4.4	SSE	**	*****	1.2	3790	28
29	12.2	6.4	9.3	114	.7	1.7	118	6.3	NNE	**	*****	.2	5413	29
30	13.0	6.5	9.8	153	.8	1.8	150	5.7	S	**	*****	0.0	7523	30
MONTH	20.0M	.3M	9.5M	126M	.7M	1.8M	072M	10.8M	ENE(M)	**	*****	18.8M	103373M	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 8.9
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.2
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 8.9
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 8.3

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
June, 1983



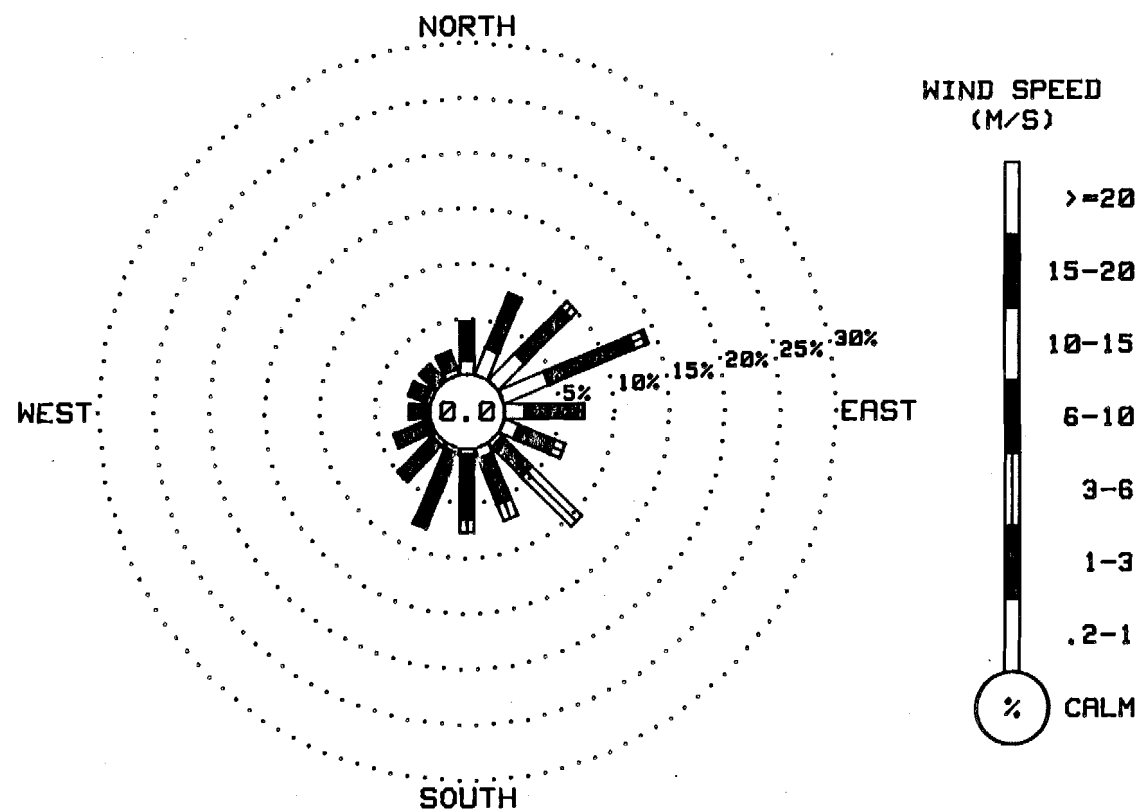
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING June, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	1.28	3.42	.07	0.00	0.00	0.00	0.00	4.77
NNE	2.62	4.97	.34	0.00	0.00	0.00	0.00	7.92
NE	3.42	5.77	.81	0.00	0.00	0.00	0.00	10.00
ENE	4.43	8.32	1.14	.20	0.00	0.00	0.00	14.09
E	1.88	4.83	.47	.07	0.00	0.00	0.00	7.25
ESE	1.48	3.49	1.07	0.00	0.00	0.00	0.00	6.04
SE	.54	3.76	6.38	0.00	0.00	0.00	0.00	10.67
SSE	1.01	4.43	1.61	0.00	0.00	0.00	0.00	7.05
S	.54	5.84	1.21	0.00	0.00	0.00	0.00	7.58
SSW	.47	6.98	.34	0.00	0.00	0.00	0.00	7.79
SW	.47	4.09	.34	0.00	0.00	0.00	0.00	4.90
WSW	.34	2.95	.27	0.00	0.00	0.00	0.00	3.56
W	.27	1.61	0.00	0.00	0.00	0.00	0.00	1.88
WNW	.47	1.68	0.00	0.00	0.00	0.00	0.00	2.15
NW	.40	1.68	0.00	0.00	0.00	0.00	0.00	2.08
NNW	.60	1.68	0.00	0.00	0.00	0.00	0.00	2.28
CALM								0.00
TOTAL	20.20	65.50	14.03	.27	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
1490 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
June, 1983



WIND ROSE PLOT

[illegible]

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING July, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG.	M/S	MW
0300	11.5	*****	**	056	1.5	082	4.4	3	0300	5.9	*****	**	338	.6	073	3.8	1
0600	10.4	*****	**	041	1.8	054	7.0	17	0600	5.1	*****	**	305	1.1	335	3.2	5
0900	12.6	*****	**	346	1.8	355	5.1	26	0900	6.4	*****	**	158	1.1	156	3.2	26
1200	12.1	*****	**	198	.2	003	3.2	26	1200	7.4	*****	**	167	1.2	097	3.2	23
1500	13.1	*****	**	183	1.8	178	4.4	38	1500	8.5	*****	**	173	1.6	150	3.2	22
1800	14.0	*****	**	179	1.1	175	3.8	33	1800	8.4	*****	**	184	1.0	176	2.5	13
2100	8.5	*****	**	267	.6	254	5.1	1	2100	8.5	*****	**	276	.2	149	2.5	1
2400	7.3	*****	**	035	1.1	006	5.7	1	2400	7.0	*****	**	061	.4	091	1.9	1

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG.	M/S	MW
0300	9.8	*****	**	055	2.0	033	4.4	3	0300	11.2	*****	**	060	1.8	060	8.9	2
0600	10.7	*****	**	049	1.4	059	4.4	15	0600	8.0	*****	**	064	1.1	044	5.1	21
0900	12.1	*****	**	013	1.2	071	4.4	29	0900	10.6	*****	**	131	1.4	148	4.4	61
1200	13.1	*****	**	354	1.0	043	4.4	34	1200	15.5	*****	**	143	2.8	123	6.3	77
1500	15.4	*****	**	255	1.4	258	3.8	38	1500	16.7	*****	**	072	1.2	064	8.3	69
1800	14.8	*****	**	261	1.3	234	3.8	18	1800	14.8	*****	**	259	1.2	265	5.1	13
2100	10.7	*****	**	024	1.3	005	5.7	2	2100	13.9	*****	**	076	1.1	089	4.4	3
2400	11.4	*****	**	063	1.3	045	3.8	2	2400	11.2	*****	**	070	4.4	083	15.2	2

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG.	M/S	MW
0300	5.3	*****	**	025	.9	014	3.2	3	0300	9.5	*****	**	075	.9	093	2.5	4
0600	6.9	*****	**	115	.3	344	2.5	15	0600	8.6	*****	**	080	.5	094	1.9	16
0900	7.7	*****	**	162	.6	143	3.8	34	0900	9.0	*****	**	245	.9	243	3.2	35
1200	10.0	*****	**	197	1.5	188	3.8	66	1200	11.1	*****	**	207	1.4	176	3.8	62
1500	11.9	*****	**	202	2.2	212	3.8	72	1500	12.9	*****	**	213	1.6	224	3.8	71
1800	12.0	*****	**	198	1.9	191	3.8	24	1800	10.7	*****	**	157	2.3	147	5.1	13
2100	10.0	*****	**	179	.5	172	3.2	3	2100	8.9	*****	**	289	.8	220	3.8	3
2400	9.8	*****	**	063	1.0	016	2.5	2	2400	6.7	*****	**	280	1.1	256	5.1	2

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING July, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	5.5	*****	**	032	1.2	018	3.2	4	0300	4.8	*****	**	083	.5	131	3.8	3	0300	6.0	*****	**	075	.9	034	3.2	2
0600	4.7	*****	**	034	.6	034	2.5	12	0600	4.6	*****	**	203	1.1	283	6.3	5	0600	5.9	*****	**	192	.5	170	2.5	17
0900	7.5	*****	**	232	.6	185	3.8	69	0900	6.4	*****	**	109	.8	034	4.4	10	0900	9.0	*****	**	130	1.2	132	4.4	63
1200	9.3	*****	**	197	1.9	193	3.8	54	1200	7.7	*****	**	255	.9	325	3.8	30	1200	11.0	*****	**	140	3.9	137	6.3	78
1500	10.9	*****	**	194	2.2	194	4.4	31	1500	7.7	*****	**	200	.5	172	3.2	22	1500	11.5	*****	**	140	4.4	141	6.3	62
1800	8.8	*****	**	189	1.5	237	5.1	11	1800	8.4	*****	**	059	.7	021	3.8	12	1800	11.1	*****	**	166	2.8	147	5.7	27
2100	7.7	*****	**	146	1.1	284	5.1	2	2100	7.2	*****	**	076	1.3	071	4.4	2	2100	8.9	*****	**	128	.6	141	4.4	4
2400	6.1	*****	**	319	1.8	308	8.3	1	2400	6.4	*****	**	050	.6	011	3.2	1	2400	7.8	*****	**	036	1.0	048	3.8	2

DAY 13

DAY 14

DAY 15

HOURL	DEW	WIND	WIND	GUST	MAX.		HOURL	DEW	WIND	WIND	GUST	MAX.		HOURL	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	6.8	*****	**	034	.9	350	2.5	3	0300	3.7	*****	**	084	.9	080	2.5	3	0300	6.1	*****	**	068	1.1	080	3.8	2
0600	5.3	*****	**	317	.3	314	2.5	16	0600	3.6	*****	**	355	1.1	358	3.2	12	0600	6.0	*****	**	033	.8	031	3.2	5
0900	4.5	*****	**	353	.7	013	3.8	15	0900	4.8	*****	**	251	.8	243	3.2	34	0900	6.7	*****	**	354	1.5	008	3.8	15
1200	6.5	*****	**	011	.8	166	4.4	85	1200	4.8	*****	**	356	2.1	005	4.4	25	1200	9.6	*****	**	227	.6	350	3.2	98
1500	8.5	*****	**	214	1.2	229	3.8	77	1500	6.8	*****	**	047	1.1	016	3.8	31	1500	11.2	*****	**	214	1.7	179	4.4	75
1800	6.0	*****	**	102	.6	075	6.3	13	1800	7.9	*****	**	132	.8	139	3.2	12	1800	9.4	*****	**	239	.7	220	5.1	12
2100	4.9	*****	**	043	1.0	010	3.8	2	2100	6.5	*****	**	028	.2	291	5.1	2	2100	8.9	*****	**	082	.5	095	3.2	3
2400	4.3	*****	**	075	.7	329	3.8	2	2400	6.0	*****	**	059	1.1	058	3.8	2	2400	7.5	*****	**	048	.9	055	3.2	2

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	8.1	*****	**	068	1.2	097	2.5	3	0300	5.6	*****	**	025	.9	355	3.8	1	0300	2.1	*****	**	234	.6	286	1.9	1
0600	8.3	*****	**	049	.9	031	3.2	10	0600	6.3	*****	**	062	1.3	111	3.8	11	0600	1.5	*****	**	348	1.2	341	3.2	10
0900	9.5	*****	**	179	1.2	137	2.5	64	0900	6.8	*****	**	035	1.1	054	4.4	16	0900	2.3	*****	**	309	1.6	313	3.2	24
1200	10.0	*****	**	217	1.1	249	3.2	40	1200	8.2	*****	**	300	.4	022	3.8	41	1200	3.7	*****	**	300	1.8	272	3.8	48
1500	11.9	*****	**	308	.6	358	3.2	31	1500	7.5	*****	**	221	1.3	156	5.1	24	1500	5.8	*****	**	128	3.2	130	6.3	29
1800	10.2	*****	**	257	.2	110	3.2	8	1800	6.8	*****	**	173	1.8	128	6.3	17	1800	6.4	*****	**	122	3.7	120	6.3	13
2100	9.1	*****	**	036	.8	028	2.5	3	2100	4.3	*****	**	168	1.3	198	4.4	2	2100	5.5	*****	**	104	1.7	095	4.4	3
2400	7.7	*****	**	079	1.1	109	3.8	2	2400	2.6	*****	**	327	1.1	324	3.8	1	2400	4.7	*****	**	053	1.0	031	3.2	2

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING July, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	3.9	*****	**	021	1.2	037	3.8	3	0300	5.5	*****	**	078	.3	176	3.2	2	0300	5.2	*****	**	096	.4	347	1.3	2
0600	4.3	*****	**	047	.9	122	3.2	16	0600	6.1	*****	**	142	.1	271	1.9	15	0600	4.9	*****	**	107	.3	033	1.9	10
0900	7.6	*****	**	098	1.2	120	6.3	57	0900	6.2	*****	**	232	1.1	214	3.2	31	0900	7.3	*****	**	171	.7	189	2.5	48
1200	9.3	*****	**	134	4.8	127	7.0	70	1200	8.2	*****	**	194	1.6	203	4.4	46	1200	10.2	*****	**	150	1.7	071	5.7	79
1500	10.7	*****	**	146	3.1	135	6.3	66	1500	9.5	*****	**	214	1.8	225	4.4	69	1500	10.7	*****	**	241	1.0	250	5.7	65
1800	9.2	*****	**	158	2.6	144	5.7	24	1800	8.6	*****	**	198	.6	191	3.8	11	1800	10.6	*****	**	189	1.6	346	5.1	27
2100	6.8	*****	**	209	.2	141	4.4	3	2100	6.0	*****	**	328	.5	278	4.4	2	2100	9.3	*****	**	087	.4	122	5.1	2
2400	6.2	*****	**	062	.7	106	3.8	2	2400	6.0	*****	**	020	.6	002	2.5	1	2400	7.7	*****	**	074	.6	071	1.9	1

DAY 22

DAY 23

DAY 24

DEW WIND WIND GUST MAX. HOUR									DEW WIND WIND GUST MAX. HOUR									DEW WIND WIND GUST MAX. HOUR								
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	7.6	*****	**	063	.9	059	2.5	3	0300	6.0	*****	**	355	.7	291	3.2	2	0300	4.4	*****	**	104	.3	036	2.5	2
0600	8.2	*****	**	056	.9	039	1.9	7	0600	2.9	*****	**	272	1.8	243	6.3	8	0600	4.8	*****	**	096	.7	052	3.8	16
0900	10.0	*****	**	092	.9	126	3.2	60	0900	3.5	*****	**	253	1.6	285	3.2	32	0900	7.9	*****	**	177	.9	147	4.4	64
1200	13.8	*****	**	158	2.7	155	5.1	81	1200	5.6	*****	**	218	1.5	194	3.8	91	1200	11.0	*****	**	214	1.5	203	3.8	87
1500	12.8	*****	**	121	.5	134	5.1	66	1500	7.1	*****	**	225	1.9	240	4.4	49	1500	10.2	*****	**	145	3.5	138	5.7	26
1800	10.2	*****	**	152	1.5	136	6.3	11	1800	8.1	*****	**	191	1.3	203	3.2	28	1800	9.5	*****	**	176	1.4	190	3.8	9
2100	9.1	*****	**	085	1.2	017	4.4	2	2100	6.7	*****	**	131	1.0	151	3.8	2	2100	8.4	*****	**	079	.5	147	1.9	2
2400	7.9	*****	**	050	.2	205	4.4	2	2400	6.4	*****	**	062	.9	076	3.8	1	2400	7.9	*****	**	066	.9	080	3.8	2

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	6.1	*****	**	036	.9	037	2.5	2	0300	6.6	*****	**	069	1.1	024	2.5	2
0600	7.8	*****	**	064	1.1	078	3.8	7	0600	6.8	*****	**	080	.6	106	2.5	11
0900	10.6	*****	**	137	2.3	133	5.1	58	0900	8.2	*****	**	219	.7	217	2.5	59
1200	10.2	*****	**	208	2.0	207	4.4	76	1200	9.8	*****	**	197	1.9	203	3.8	22
1500	11.0	*****	**	141	2.2	150	5.1	19	1500	10.4	*****	**	089	1.4	110	6.3	19
1800	12.1	*****	**	153	1.4	165	3.8	24	1800	11.9	*****	**	115	1.2	161	5.7	26
2100	9.5	*****	**	114	.7	145	3.2	2	2100	8.3	*****	**	281	1.3	242	5.1	2
2400	6.8	*****	**	010	.8	344	3.2	1	2400	6.6	*****	**	025	1.0	005	3.2	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING July, 1983

DAY 28

DAY 29

DAY 30

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.									
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD									
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW			
0300	11.0	*****	**	040	1.1	047	2.5	2	0300	9.0	*****	**	062	.7	066	1.9	2	0300	6.9	*****	**	102	.6	103	1.9	1
0600	11.9	*****	**	076	1.0	087	2.5	12	0600	8.0	*****	**	045	.7	340	1.9	8	0600	6.4	*****	**	102	.4	048	2.5	10
0900	14.0	*****	**	192	.5	200	3.8	58	0900	10.2	*****	**	146	1.2	158	3.2	57	0900	6.4	*****	**	190	.6	168	1.9	8
1200	14.2	*****	**	172	1.6	157	5.1	28	1200	12.4	*****	**	192	1.8	162	3.8	50	1200	7.2	*****	**	057	.3	135	2.5	25
1500	14.6	*****	**	157	1.4	126	6.3	28	1500	10.8	*****	**	156	1.5	122	5.7	22	1500	7.3	*****	**	153	.5	143	3.2	28
1800	13.6	*****	**	177	.7	093	6.3	10	1800	9.2	*****	**	148	.2	297	3.2	4	1800	6.8	*****	**	163	1.5	165	2.5	10
2100	12.4	*****	**	039	2.2	021	6.3	2	2100	8.3	*****	**	092	.4	117	1.3	2	2100	5.8	*****	**	161	.9	150	3.2	2
2400	10.0	*****	**	003	1.0	014	3.2	2	2400	6.6	*****	**	078	.4	010	2.5	2	2400	5.2	*****	**	104	.2	357	1.9	1

DAY 31

HOUR	DEW	WIND	WIND	GUST	MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	5.2	*****	**	088	.5	123	1.9	2
0600	5.6	*****	**	324	.4	001	1.9	12
0900	7.7	*****	**	179	.9	161	3.2	54
1200	9.4	*****	**	189	1.6	184	3.8	76
1500	11.0	*****	**	180	2.3	173	4.4	45
1800	10.1	*****	**	206	1.8	261	5.7	27
2100	8.1	*****	**	100	.8	151	4.4	1
2400	5.1	*****	**	048	.8	005	3.2	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

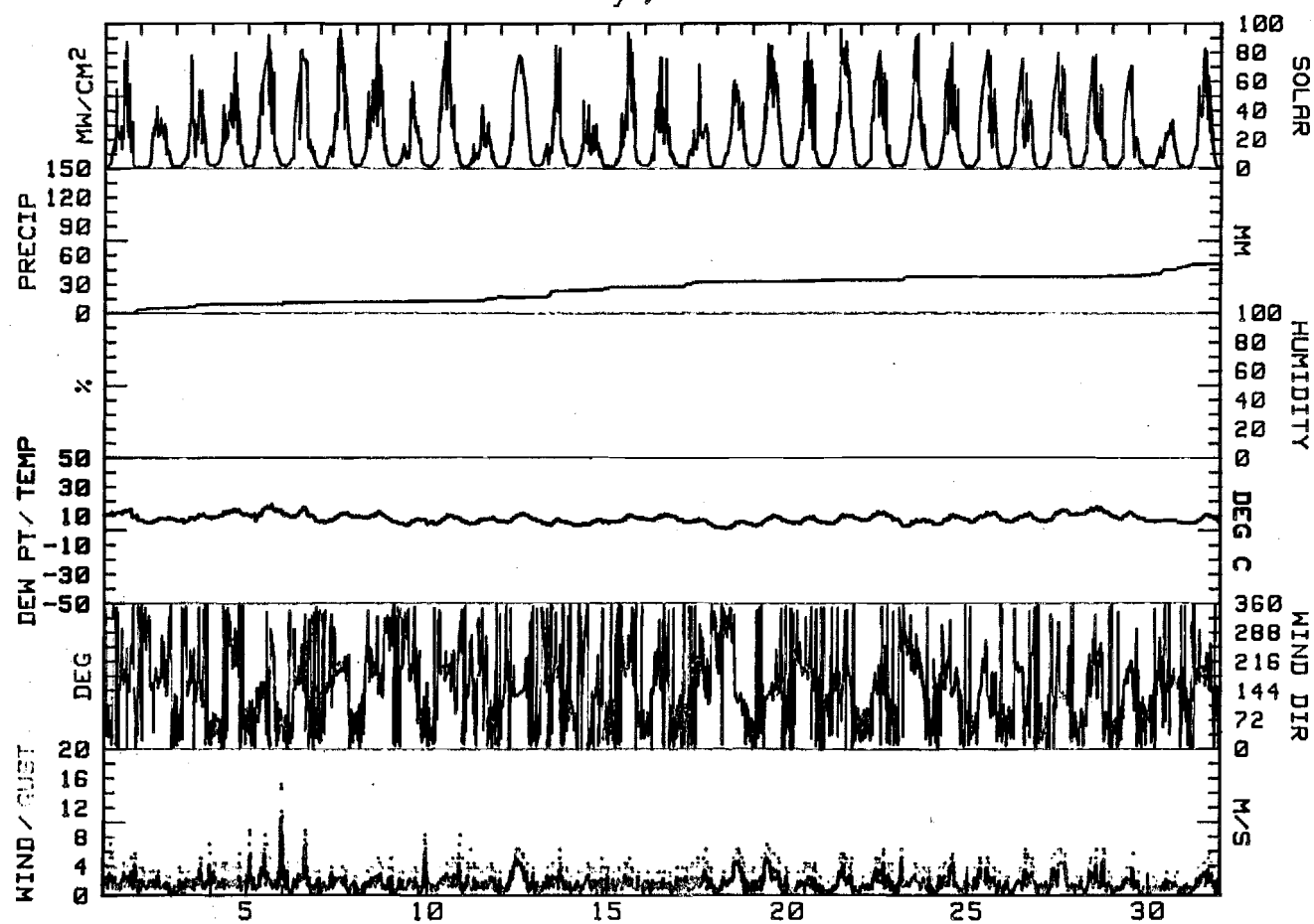
MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING July, 1983

DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SON	DAY
1	14.6	6.8	10.7	048	.3	1.9	054	7.0	N	**	*****	4.2	4835	1
2	9.2	5.0	7.1	183	.4	1.3	073	3.8	SSE	**	*****	1.4	3148	2
3	11.9	5.3	8.6	094	.3	1.5	073	7.0	N	**	*****	3.8	4223	3
4	15.4	8.8	12.1	018	.7	1.7	005	5.7	NE	**	*****	0.0	4768	4
5	18.5	6.8	12.7	089	1.3	2.3	083	15.2	ESE	**	*****	1.4	7195	5
6	16.9	5.7	11.3	106	.4	1.9	094	8.9	NNE	**	*****	.6	6450	6
7	12.7	5.3	9.0	182	.7	1.5	143	3.8	SSW	**	*****	0.0	6260	7
8	13.5	6.7	10.1	203	.6	1.4	147	5.1	WSW	**	*****	0.0	6063	8
9	8.2	3.5	5.9	082	.1	1.5	087	8.3	N	**	*****	.8	3420	9
10	11.5	4.3	7.9	200	.5	1.8	308	8.3	SSW	**	*****	.2	6635	10
11	9.5	4.5	7.0	113	.3	1.4	283	6.3	N	**	*****	4.6	2713	11
12	12.2	5.4	8.8	138	1.6	2.3	137	6.3	SE	**	*****	.2	7578	12
13	8.5	3.4	6.0	035	.3	1.6	075	6.3	N	**	*****	7.0	4165	13
14	7.9	3.2	5.6	030	.6	1.4	291	5.1	N	**	*****	1.8	2865	14
15	11.3	4.9	8.1	022	.1	1.4	220	5.1	N	**	*****	1.6	5205	15
16	11.9	7.1	9.5	085	.3	1.3	109	3.8	NNE	**	*****	.2	4685	16
17	8.5	2.6	5.6	125	.1	1.7	128	6.3	N	**	*****	5.0	3305	17
18	6.8	1.5	4.2	102	.6	2.1	130	6.3	ESE	**	*****	.4	4655	18
19	11.1	3.5	7.3	126	1.4	2.3	127	7.0	SE	**	*****	0.8	6960	19
20	10.4	5.0	7.7	214	.5	1.3	203	4.4	SSW	**	*****	1.0	5192	20
21	11.6	4.9	8.3	161	.6	1.5	071	5.7	SE	**	*****	.2	7075	21
22	13.8	7.1	10.5	116	.8	1.7	136	6.3	NE	**	*****	0.0	6068	22
23	8.1	2.9	5.5	229	.7	1.7	243	6.3	SSW	**	*****	3.6	5325	23
24	11.5	4.3	7.9	150	.9	1.6	138	5.7	SSE	**	*****	0.0	5048	24
25	13.0	5.4	9.2	134	.8	1.7	133	5.1	SE	**	*****	0.0	6050	25
26	12.6	6.0	9.3	117	.3	1.5	110	6.3	E	**	*****	0.0	5498	26
27	14.4	6.0	10.2	120	1.1	2.0	142	6.3	SE	**	*****	0.0	6005	27
28	16.6	10.0	13.3	094	.5	1.7	126	6.3	E	**	*****	.6	5245	28
29	13.2	6.5	9.9	140	.5	1.2	122	5.7	ENE	**	*****	1.4	4493	29
30	7.7	5.1	6.4	146	.5	1.0	143	3.2	SSE	**	*****	8.4	2630	30
31	11.8	5.0	8.4	173	.7	1.5	261	5.7	S	**	*****	2.4	5588	31
MONTH	18.5	1.5	8.5	130	.4	1.6	083	15.2	SE	**	*****	50.8	159252	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 4.4
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 3.8
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 14.6
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 11.4

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
July, 1983



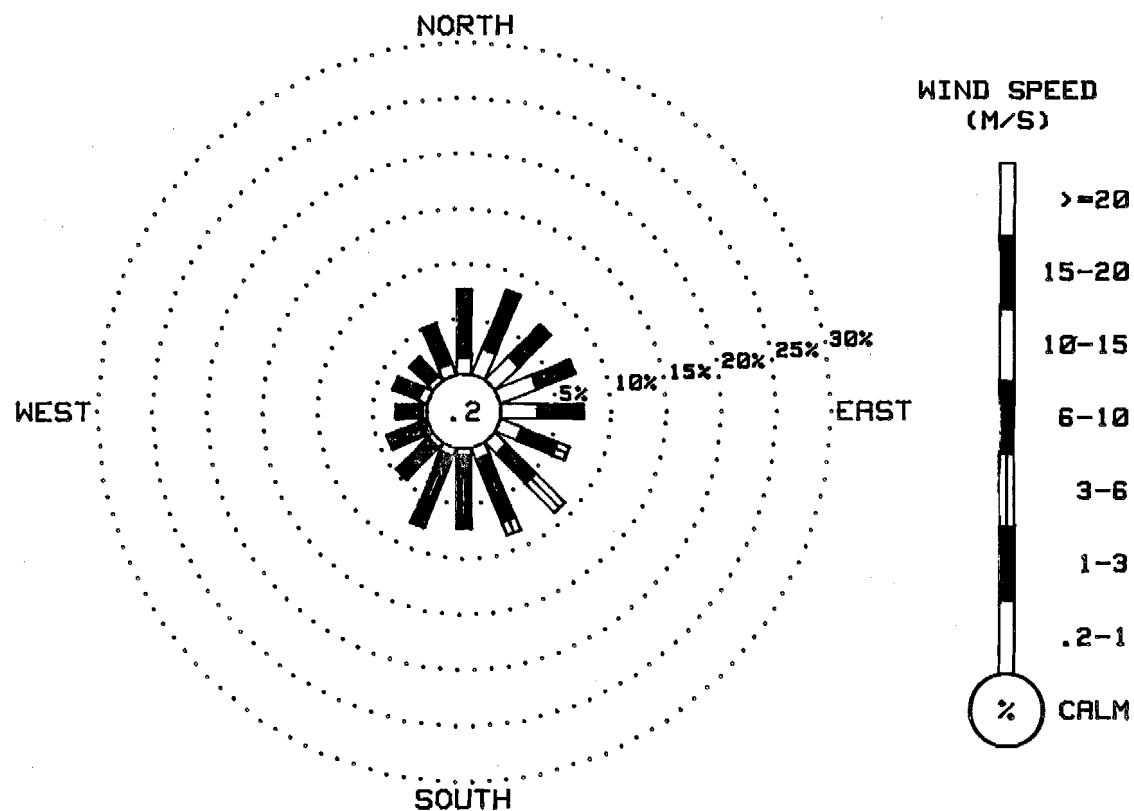
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING July, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2 TO 1.0	1.0 TO 3.0	3.0 TO 6.0	6.0 TO 10.0	10.0 TO 15.0	15.0 TO 20.0	20.0 OR GREATER	
N	1.51	6.05	.10	0.00	0.00	0.00	0.00	7.67
NNE	2.56	5.48	.27	0.00	0.00	0.00	0.00	8.31
NE	3.03	3.77	.24	.03	0.00	0.00	0.00	7.06
ENE	3.60	3.36	.27	.03	.03	0.00	0.00	7.30
E	3.36	3.73	.30	.10	0.00	0.00	0.00	7.50
ESE	2.09	3.46	1.18	0.00	0.00	0.00	0.00	6.73
SE	1.48	3.70	3.73	0.00	0.00	0.00	0.00	8.91
SSE	1.14	6.05	1.28	0.00	0.00	0.00	0.00	8.48
S	.64	6.46	.13	0.00	0.00	0.00	0.00	7.23
SSW	.81	6.83	.13	0.00	0.00	0.00	0.00	7.77
SW	.61	4.04	.03	0.00	0.00	0.00	0.00	4.68
WSW	.37	3.26	.34	0.00	0.00	0.00	0.00	3.97
W	.40	2.42	.03	0.00	0.00	0.00	0.00	2.86
WNW	.91	2.49	0.00	0.00	0.00	0.00	0.00	3.40
NW	.67	2.22	.13	0.00	0.00	0.00	0.00	3.03
NNW	1.21	3.73	0.00	0.00	0.00	0.00	0.00	4.94
CALM								.17
TOTAL	24.39	67.07	8.17	.17	.03	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2973 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY
2976 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 15 MINUTE DATA.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
July, 1983



WIND ROSE PLOT

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING August, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	6.5	*****	**	052	1.0	072 3.2 2	0300	6.7	*****	**	089	1.8	100 3.8 2	0300	6.4	*****	**	044	1.2	049 5.1 2
0600	7.2	*****	**	031	.8	011 3.2 17	0600	7.8	*****	**	075	1.3	101 3.8 14	0600	6.9	*****	**	040	1.1	068 3.2 7
0900	7.9	*****	**	135	2.0	109 4.4 48	0900	8.5	*****	**	133	2.0	123 7.0 57	0900	9.1	*****	**	045	.8	162 4.4 57
1200	10.9	*****	**	164	2.4	184 5.1 75	1200	10.7	*****	**	120	3.5	045 7.0 71	1200	11.8	*****	**	163	1.1	185 5.1 71
1500	11.1	*****	**	169	3.0	157 5.7 60	1500	10.0	*****	**	137	3.3	155 7.0 59	1500	12.9	*****	**	190	2.3	198 4.4 58
1800	8.5	*****	**	167	2.2	163 5.1 9	1800	9.2	*****	**	149	2.7	297 9.5 21	1800	13.0	*****	**	242	1.0	237 3.8 20
2100	7.7	*****	**	108	1.4	096 5.7 1	2100	7.6	*****	**	122	.9	196 7.0 1	2100	10.6	*****	**	105	.5	103 3.2 1
2400	7.1	*****	**	082	1.8	077 4.4 1	2400	7.7	*****	**	059	1.6	080 6.3 1	2400	10.3	*****	**	063	.8	091 1.9 1

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	9.8	*****	**	037	1.0	011 2.5 1	0300	5.7	*****	**	094	.9	081 3.2 1	0300	3.5	*****	**	040	.2	265 1.9 1
0600	8.5	*****	**	358	.9	335 3.2 2	0600	5.2	*****	**	082	.5	028 1.9 8	0600	3.7	*****	**	044	.7	003 1.9 11
0900	7.7	*****	**	359	.9	005 2.5 7	0900	5.1	*****	**	171	.9	143 1.9 17	0900	4.5	*****	**	101	.3	148 3.2 21
1200	5.2	*****	**	188	1.8	209 7.0 10	1200	6.0	*****	**	196	1.0	263 2.5 27	1200	6.3	*****	**	186	1.2	136 3.8 41
1500	5.3	*****	**	051	1.1	013 3.8 14	1500	5.2	*****	**	196	.6	281 1.9 16	1500	5.2	*****	**	096	1.2	119 4.4 18
1800	5.0	*****	**	083	.9	125 3.2 5	1800	4.7	*****	**	149	.4	179 1.9 4	1800	5.2	*****	**	037	.9	028 5.1 4
2100	5.6	*****	**	060	.9	026 3.8 1	2100	3.8	*****	**	352	.7	229 1.9 1	2100	6.1	*****	**	092	1.0	099 4.4 2
2400	6.0	*****	**	080	.8	099 3.2 1	2400	3.7	*****	**	017	.7	021 1.9 1	2400	5.4	*****	**	050	.8	016 3.2 2

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S
0300	5.3	*****	**	072	1.2	090 5.1 1	0300	4.8	*****	**	140	2.4	135 11.4 1	0300	6.4	*****	**	127	3.6	131 10.2 2
0600	5.5	*****	**	091	1.0	093 3.8 7	0600	4.0	*****	**	129	2.8	124 10.8 4	0600	4.4	*****	**	104	1.0	105 4.4 3
0900	7.6	*****	**	114	1.9	112 5.7 25	0900	2.5	*****	**	076	.6	106 4.4 8	0900	4.6	*****	**	041	1.2	186 5.1 24
1200	9.0	*****	**	120	4.8	120 7.0 25	1200	5.0	*****	**	037	1.4	088 5.7 9	1200	5.1	*****	**	298	.4	102 2.5 25
1500	9.2	*****	**	116	5.1	117 10.2 30	1500	7.1	*****	**	071	2.8	079 10.8 7	1500	5.3	*****	**	183	.8	153 3.2 16
1800	8.7	*****	**	123	6.1	117 11.4 5	1800	7.7	*****	**	098	5.3	103 10.8 4	1800	4.8	*****	**	093	.6	030 3.2 4
2100	6.7	*****	**	131	7.4	124 15.9 1	2100	7.7	*****	**	093	3.8	111 10.2 1	2100	5.1	*****	**	067	.7	001 3.2 1
2400	4.8	*****	**	152	3.1	137 10.8 1	2400	6.8	*****	**	127	3.6	128 9.5 2	2400	5.0	*****	**	048	1.0	029 3.2 1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE-HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING August, 1983

DAY 10

DAY 11

DAY 12

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	
0300	3.4	*****	**	007	.6	337 3.8	1	0300	4.5	*****	**	049	1.0	017 3.2	1	0300	4.3	*****	**	066	.3
0600	3.4	*****	**	052	1.1	041 3.8	11	0600	5.2	*****	**	064	.9	049 2.5	7	0600	3.7	*****	**	187	.1
0900	5.4	*****	**	194	.6	186 3.2	59	0900	7.4	*****	**	165	.8	173 3.2	53	0900	4.1	*****	**	134	.8
1200	7.7	*****	**	226	1.2	284 3.8	76	1200	7.8	*****	**	193	1.9	187 4.4	20	1200	5.1	*****	**	308	1.0
1500	8.4	*****	**	209	1.6	225 4.4	56	1500	9.5	*****	**	180	1.6	171 3.2	52	1500	4.0	*****	**	165	1.0
1800	9.4	*****	**	205	1.7	177 3.8	18	1800	9.7	*****	**	195	1.6	188 3.8	16	1800	4.8	*****	**	078	.5
2100	7.2	*****	**	175	.2	213 1.9	1	2100	6.9	*****	**	176	.6	163 5.1	1	2100	3.7	*****	**	120	.6
2400	4.7	*****	**	079	.7	029 1.9	1	2400	5.1	*****	**	355	1.0	315 4.4	1	2400	2.0	*****	**	001	.6

DAY 13

DAY 14

DAY 15

DEW							WIND WIND GUST MAX.							HOUR							DEW							WIND WIND GUST MAX.							HOUR							DEW							WIND WIND GUST MAX.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
NDNG		TEMP.		POINT		RH		DIR.		SPD.		DIR.		GUST		RAD		NDNG		TEMP.		POINT		RH		DIR.		SPD.		DIR.		GUST		RAD		NDNG		TEMP.		POINT		RH		DIR.		SPD.		DIR.		GUST		RAD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		DEG C		DEG C		%		DEG.		M/S		DEG.		M/S		MM				DEG C		DEG C		%		DEG.		M/S		DEG.		M/S		MM				DEG C		DEG C		%		DEG.		M/S		DEG.		M/S		MM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
0300	3.8	*****	**	064	.9	043	2.5	1	0300	2.6	*****	**	039	.9	016	3.2	1	0300	-1.6	*****	**	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***	***

DAY 16

DAY 17

DAY 18

HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.		HOUR	DEW	WIND	WIND	GUST	MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.		
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S		
0300	-5	*****	**	***	***	***	1 0300	3.2	*****	**	062	1.5	036 3.2	1 0300	3.2	*****	**	089	1.6	089 4.4	2	
0600	-6	*****	**	***	***	***	6 0600	3.8	*****	**	069	.8	084 1.9	6 0600	3.7	*****	**	076	1.5	108 5.1	7	
0900	.2	*****	**	195M	.9M	195M	3.2M	35 0900	5.2	*****	**	185	.2	053 2.5	29 0900	4.4	*****	**	109	2.2	078 5.1	51
1200	3.3	*****	**	194	1.8	174 3.8	69 1200	7.0	*****	**	179	1.9	158 4.4	73 1200	6.6	*****	**	158	3.2	170 5.7	69	
1500	6.8	*****	**	192	1.9	193 4.4	22 1500	7.2	*****	**	150	3.4	158 5.1	54 1500	7.5	*****	**	155	3.3	155 5.7	56	
1800	7.1	*****	**	188	1.8	167 5.1	16 1800	5.8	*****	**	317	1.4	316 11.4	15 1800	6.3	*****	**	143	3.2	142 5.7	15	
2100	4.3	*****	**	066	.9	105 3.8	1 2100	3.9	*****	**	116	1.8	117 5.1	1 2100	4.3	*****	**	078	1.1	130 4.4	1	
2400	3.3	*****	**	047	.7	051 2.5	1 2400	3.5	*****	**	071	1.6	093 5.1	1 2400	3.7	*****	**	048	.9	029 3.2	1	

R & M CONSULTANTS, INC.

SUSTITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING August, 1983

DAY 19

DAY 20

DAY 21

HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	2.6	*****	**	080	1.1	105	2.5	1	0300	5.1	*****	**	056	.9	032	3.8	1
0600	3.3	*****	**	075	1.1	097	1.9	7	0600	3.9	*****	**	052	.8	154	5.7	3
0900	5.0	*****	**	092	.5	144	4.4	50	0900	2.6	*****	**	069	1.6	011	5.7	6
1200	7.5	*****	**	174	1.7	131	5.1	62	1200	.3	*****	**	220	3.5	209	8.3	11
1500	8.4	*****	**	209	1.7	202	4.4	51	1500	1.3	*****	**	003	1.7	355	4.4	11
1800	7.8	*****	**	323	.5	175	4.4	6	1800	.2	*****	**	096	.6	107	2.5	4
2100	7.5	*****	**	091	.7	105	3.2	1	2100	1.7	*****	**	080	1.1	102	3.8	1
2400	5.2	*****	**	346	.5	164	3.2	1	2400	.7	*****	**	048	.9	034	4.4	1

DAY 22

DAY 23

DAY 24

HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	3.1	*****	**	052	.9	071	1.9	1	0300	0.0	*****	**	182M	.7M	172M	2.5M	1
0600	3.3	*****	**	067	.5	007	1.9	7	0600	.1	*****	**	088M	.1M	088M	1.9M	3
0900	4.2	*****	**	164	.9	127	2.5	18	0900	.9	*****	**	029	.8	074	3.2	10
1200	4.5	*****	**	200	1.0	200	2.5	25	1200	2.5	*****	**	035	.5	350	2.5	39
1500	3.4	*****	**	260	.9	216	3.8	11	1500	3.0	*****	**	148	1.6	152	4.4	20
1800	2.8	*****	**	019	.7	013	3.2	3	1800	2.7	*****	**	202	.5	115	3.8	4
2100	2.5	*****	**	010	1.0	358	3.2	1	2100	.1	*****	**	135M	.8M	215M	7.0M	1
2400	.9	*****	**	023	1.0	024	3.2	1	2400	-.1	*****	**	***	***	***	***	1

DAY 25

DAY 26

DAY 27

HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	.6	*****	**	031	.7	066	3.8	1	0300	4.9	*****	**	044	1.1	016	3.2	1
0600	1.7	*****	**	033	1.2	040	2.5	3	0600	4.8	*****	**	046	.9	032	2.5	9
0900	3.2	*****	**	045	1.8	105	5.7	21	0900	8.6	*****	**	081	1.3	091	3.2	48
1200	4.7	*****	**	040	1.8	040	3.8	40	1200	6.7	*****	**	074	1.0	024	2.5	45
1500	5.8	*****	**	062	2.6	073	8.9	32	1500	6.7	*****	**	065	.9	089	1.9	25
1800	5.7	*****	**	081	2.0	098	7.6	13	1800	4.7	*****	**	089	1.9	100	5.1	6
2100	3.1	*****	**	077	1.0	122	3.2	1	2100	3.4	*****	**	065	.8	065	2.5	1
2400	4.3	*****	**	042	1.6	096	3.8	1	2400	2.6	*****	**	054	1.2	054	3.2	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING August, 1983

DAY 28

DAY 29

DAY 30

HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.	HR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	4.6	*****	**	059	1.5	051	3.8	1	0300	*****	*****	**	***	***	***	***	0
0600	5.8	*****	**	044	1.6	040	3.8	9	0600	*****	*****	**	***	***	***	***	1
0900	*****	*****	**	070	1.0	046	3.8	40	0900	*****	*****	**	***	***	***	***	2
1200	*****	*****	**	***	***	***	***	26	1200	*****	*****	**	***	***	***	***	6
1500	*****	*****	**	***	***	***	***	39	1500	*****	*****	**	***	***	***	***	8
1800	*****	*****	**	***	***	***	***	5	1800	*****	*****	**	***	***	***	***	2
2100	*****	*****	**	***	***	***	***	0	2100	*****	*****	**	***	***	***	***	0
2400	*****	*****	**	***	***	***	***	2	2400	*****	*****	**	***	***	***	***	0

DAY 31

HR	DEW	WIND	WIND	GUST	MAX.			
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	*****	*****	**	***	***	***	***	0
0600	*****	*****	**	***	***	***	***	2
0900	*****	*****	**	***	***	***	***	16
1200	*****	*****	**	***	***	***	***	29
1500	*****	*****	**	***	***	***	***	11
1800	*****	*****	**	***	***	***	***	3
2100	*****	*****	**	***	***	***	***	0
2400	*****	*****	**	***	***	***	***	0

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

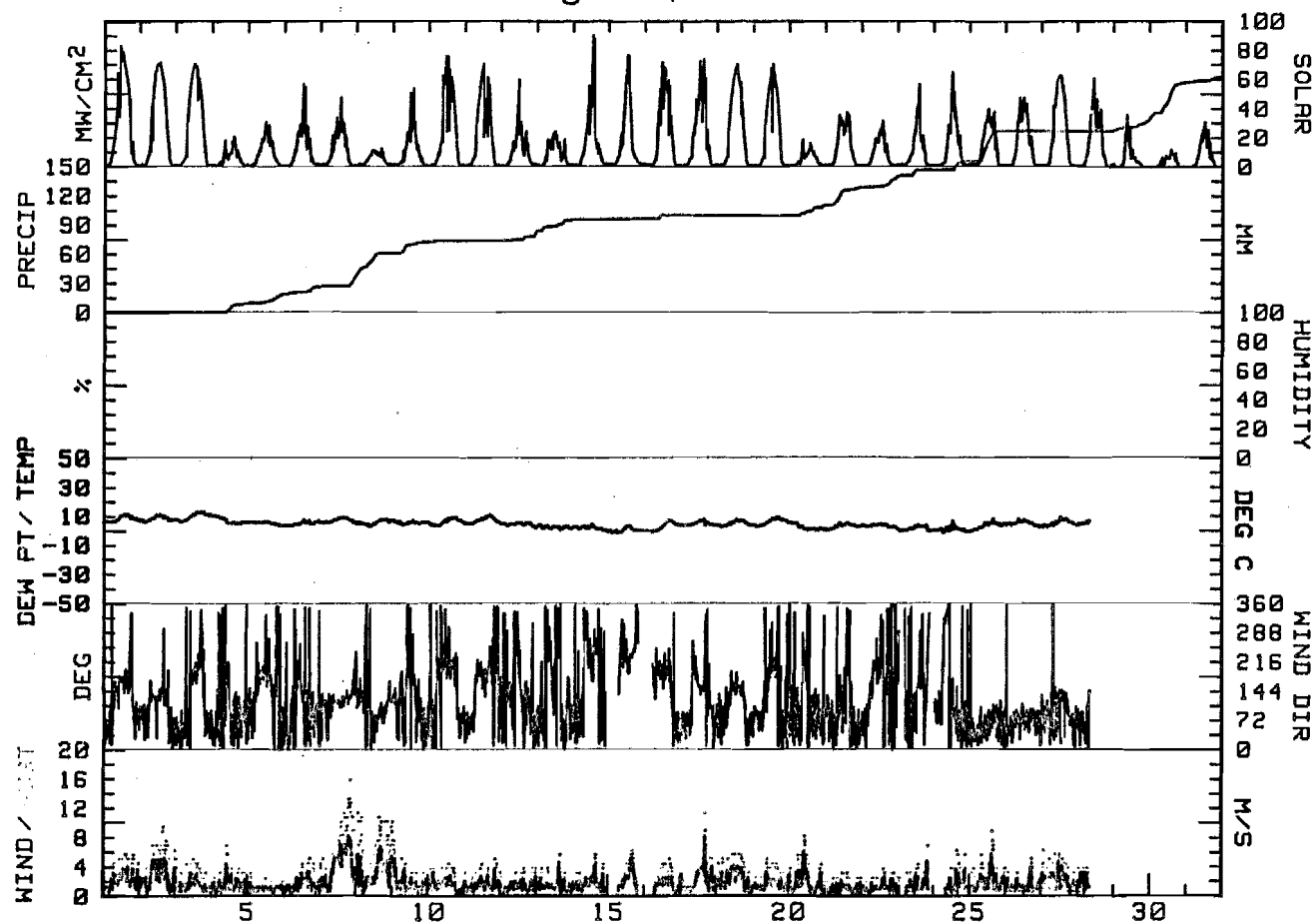
MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING August, 1983

	MAX.	MIN.	MEAN	RES.	RES.	AVG.	MAX.	MAX.	P-VAL	MEAN	MEAN		DAY'S		
DAY	TEMP.	TEMP.	TEMP.	WIND	WIND	WIND	GUST	GUST	DIR.	RH	DP	PRECIP	SOLAR	DAY	
	DEG C	DEG C	DEG C	DIR.	SPD.	SPD.	DIR.	SPD.	DIR.	%	DEG C	MM	WH/SGH		
				DEG	M/S	M/S	DEG	M/S							
1	11.5	6.0	8.8	136	1.3	2.1	157	5.7	S	**	*****	0.0	6520	1	
2	11.5	5.6	8.6	118	1.9	2.5	297	9.5	SE	**	*****	0.0	6823	2	
3	13.5	6.2	9.9	117	.3	1.5	049	5.1	NNE	**	*****	0.0	6565	3	
4	10.7	4.6	7.7	059	.5	1.4	209	7.0	NNE	**	*****	9.6	1475	4	
5	6.5	2.8	4.7	135	.3	1.0	081	3.2	S	**	*****	9.6	2305	5	
6	7.9	3.2	5.6	083	.5	1.4	028	5.1	NNE	**	*****	7.6	2895	6	
7	9.4	4.8	7.1	123	3.7	4.0	124	15.9	ESE	**	*****	13.0	2890	7	
8	8.3	2.5	5.4	103	2.5	3.2	135	11.4	ESE	**	*****	21.4	1250	8	
9	7.3	3.5	5.4	101	.8	1.7	131	10.2	NNE	**	*****	11.6	2585	9	
10	9.4	3.1	6.3	197	.4	1.4	225	4.4	SSW	**	*****	1.2	5625	10	
11	11.0	4.4	7.7	168	.5	1.4	163	5.1	S	**	*****	.2	5358	11	
12	6.0	2.0	4.0	110	.2	1.2	006	3.8	SSE	**	*****	10.2	2628	12	
13	4.3	.5	2.4	019	.2	1.2	225	5.7	NNE	**	*****	11.4	2095	13	
14	4.8	-.8	2.0	248M	.4M	1.6M	241M	5.7M	WSW(M)	**	*****	.2	4023	14	
15	3.8	-1.6	1.1	242M	2.0M	2.3M	234M	6.3M	SW	M	**	*****	.8	4018	15
16	7.5	-.8	3.4	180M	.9M	1.5M	167M	5.1M	SSW(M)	**	*****	3.4	5248	16	
17	8.0	3.1	5.6	119	.8	2.1	316	11.4	E	**	*****	0.0	4833	17	
18	8.0	2.3	5.2	125	1.7	2.3	170	5.7	SSE	**	*****	0.0	5863	18	
19	9.3	2.6	6.0	129	.4	1.4	131	5.1	E	**	*****	0.0	5565	19	
20	5.6	.1	2.9	068	.4	1.7	209	8.3	NNE	**	*****	10.8	1315	20	
21	5.3	.1	2.7	070	.3	.9	149	3.2	ESE	**	*****	18.2	3203	21	
22	5.1	.9	3.0	034	.2	1.1	216	3.8	SSW	**	*****	11.4	2210	22	
23	4.1	-.6	1.8	131M	.4M	1.4M	215M	7.0M	SSE(M)	**	*****	6.4	2658	23	
24	7.0	-1.7	2.7	049M	.9M	1.4M	037M	6.3M	N (M)	**	*****	8.6	3213	24	
25	8.6	-.7	4.0	054	1.5	1.8	073	8.9	NNE	**	*****	31.4	3208	25	
26	8.6	2.3	5.5	067	1.1	1.2	100	5.1	E	**	*****	0.0	3745	26	
27	9.9	2.2	6.1	094	1.4	1.8	097	6.3	E	**	*****	0.0	5288	27	
28	7.1M	3.9M	5.5M	055M	1.4M	1.6M	051M	3.8M	NE(M)	**	*****	1.0	3603M	28	
29	*****	*****	*****	***	****	****	***	****	***	**	*****	12.8	1310	29	
30	*****	*****	*****	***	****	****	***	****	***	**	*****	36.4	753	30	
31	*****	*****	*****	***	****	****	***	****	***	**	*****	4.8	1795	31	
MONTH	13.5M	-1.7M	5.0M	110M	.7M	1.7M	124M	15.9M	E(M)	**	*****	242.0	110859M		

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 13.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 12.1
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 12.7
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 11.4

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
August, 1983



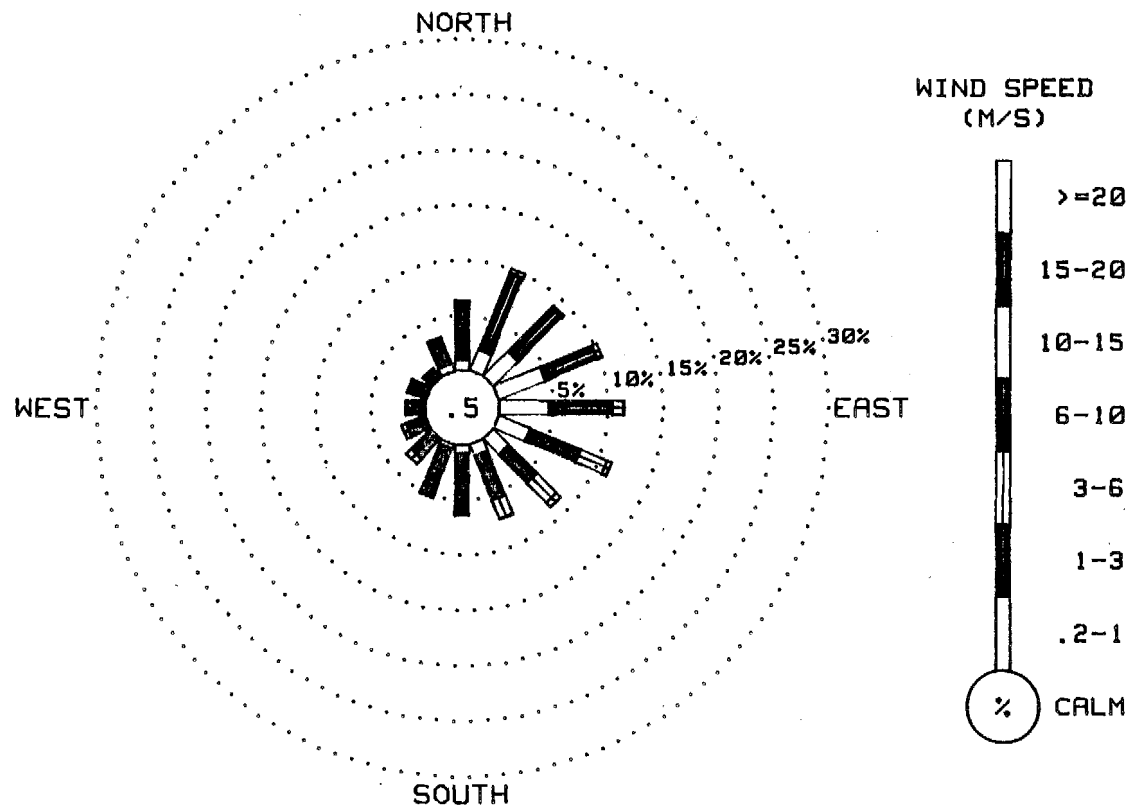
R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING August, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO 1.0	TO 3.0	TO 6.0	TO 10.0	TO 15.0	TO 20.0	OR GREATER	
N	.97	5.27	.16	0.00	0.00	0.00	0.00	6.40
NNE	2.05	7.52	.44	0.00	0.00	0.00	0.00	10.02
NE	3.22	5.59	.28	0.00	0.00	0.00	0.00	9.09
ENE	4.59	5.11	.48	0.00	0.00	0.00	0.00	10.18
E	4.55	5.83	1.01	.04	0.00	0.00	0.00	11.42
ESE	3.10	4.99	2.61	.44	0.00	0.00	0.00	11.14
SE	2.01	3.66	2.49	.56	0.00	0.00	0.00	8.73
SSE	1.13	4.30	1.81	.04	0.00	0.00	0.00	7.28
S	.76	5.31	.32	0.00	0.00	0.00	0.00	6.40
SSW	.40	4.51	.24	.04	0.00	0.00	0.00	5.19
SW	.24	2.33	.64	0.00	0.00	0.00	0.00	3.22
WSW	.12	1.81	.44	0.00	0.00	0.00	0.00	2.37
W	.32	1.45	.04	0.00	0.00	0.00	0.00	1.81
WNW	.24	1.53	.08	0.00	0.00	0.00	0.00	1.85
NW	.20	.80	0.00	.08	0.00	0.00	0.00	1.09
NNW	.72	2.53	.04	0.00	0.00	0.00	0.00	3.30
CALM								.52
TOTAL	24.62	62.55	11.10	1.21	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2486 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY
2976 WIND OBSERVATIONS WOULD HAVE BEEN CORRECT FOR 15 MINUTE DATA.

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
August, 1983



WIND ROSE PLOT

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

HOURLY PRECIPITATION SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING September, 1983

PRECIPITATION VALUES ARE IN MILLIMETERS

HOUR ENDING

DATE	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	2400	DATE
1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	0.0	.2	1.0	2.0	.8	1.4	2.0	1.6	.6	0.0	.8	1.2	.8	.4	0.0	1
2	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	1.0	1.0	.6	.2	.6	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.4	.6	1.6	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.9	0.0	0.0	.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.2	.4	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	14
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	3.0	2.0	1.0	.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	18
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	3.0	2.0	19
20	.4	.2	0.0	1.4	2.4	2.2	1.8	2.4	1.4	1.2	1.4	1.0	.2	4.2	2.6	1.2	.8	1.0	.2	1.2	2.2	3.4	1.8	1.0	20
21	.8	1.0	.6	0.0	0.0	0.0	.2	.2	0.0	.2	1.0	3.4	.8	1.2	1.0	.4	1.0	.8	.4	.4	.2	0.0	0.0	0.0	21
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.6	1.2	1.0	0.0	.6	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	23
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	25
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	26
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	27
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	28
29	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	.2	.2	0.0	.2	1.6	1.4	1.6	.8	0.0	0.0	0.0	.2	.2		29
30	1.2	3.0	1.4	.6	.6	.4	.2	.4	.2	.8	1.0	.8	.6	.4	.6	.4	.2	.2	0.0	0.0	0.0	0.0	0.0	0.0	30

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING September, 1983

DAY 01

DAY 02

DAY 03

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.						
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	MAX.	
	DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	*****	*****	**	***	****	***	0300	*****	*****	**	***	****	***	0300	1.4	-9.3	45	081	1.2	082	3.2	1	
0600	*****	*****	**	***	****	***	0600	*****	*****	**	***	****	***	0600	.8	-7.2	55	029	1.2	022	3.8	7	
0900	*****	*****	**	***	****	***	0900	*****	*****	**	***	****	***	0900	3.4	-7.8	44	098	.7	094	3.2	32	
1200	*****	*****	**	***	****	***	1200	-6	-9.8	50	145M	5M169M	5.1M	1200	4.1	-5.4	50	173	1.8	157	4.4	39	
1500	*****	*****	**	***	****	***	1500	.7	-7.6	54	136	2.3	138	6.3	1500	4.5	-5.6	48	309	.8	320	5.1	20
1800	*****	*****	**	***	****	***	1800	2.3	*****	51	126	1.3	051	5.7	1800	2.1	-6.0	55	149	2.8	156	5.1	5
2100	*****	*****	**	***	****	***	2100	-2	*****	55	098	.8	178	2.5	2100	.2	*****	58	101	.4	147	4.4	1
2400	*****	*****	**	***	****	***	2400	.2	-10.1	46	077	1.1	057	3.2	2400	-1.0	-7.8	60	026	1.5	019	3.2	1

DAY 04

DAY 05

DAY 06

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.
0300	-1.6	-8.1	61	040	1.8	077	5.1	0	0300	-3.7	-7.1	77	051	1.1	020	3.2	1
0600	-1.5	-8.5	59	076	2.7	093	9.5	7	0600	-3.4	-7.0	76	078	.9	050	3.8	6
0900	-1.1	-8.3	58	094	2.7	091	6.3	30	0900	-3.4	-6.7	78	208	.7	164	3.2	17
1200	.3	-6.8	59	123	4.7	117	7.6	40	1200	-1.8	-4.3	83	155	.6	006	3.2	27
1500	.1	-7.2	58	156	3.4	149	6.3	30	1500	-1.1	-4.6	77	222	1.1	179	3.8	17
1800	-1.7	-7.8	63	138	2.6	147	4.4	3	1800	-1.0	*****	68	300	.7	346	2.5	3
2100	-2.5	-8.3	64	124	1.7	207	3.8	0	2100	-1.8	*****	70	115	.7	107	3.8	0
2400	-4.0	-7.3	78	014	.9	346	2.5	1	2400	-2.7	-7.9	67	112	1.3	110	3.8	0

DAY 07

DAY 08

DAY 09

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	NDNG	TEMP.	POINT	RH
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	DEG C	DEG C	%	DEG.
				M/S		MW					M/S		MW				MW
0300	-3.1	*****	73	010	.9	331	2.5	1	0300	-.5	*****	95	107	.6	094	3.2	0
0600	-2.5	*****	89	077	.7	116	3.2	3	0600	.1	-1.5	89	054	1.0	034	3.2	2
0900	-.7	-3.7	80	064	.2	171	2.5	20	0900	.5	-2.1	83	007	.7	014	2.5	19
1200	1.3	-3.0	73	217	.4	169	3.8	35	1200	1.3	-1.8	80	324	.9	336	2.5	35
1500	1.4	-4.2	66	334	1.3	357	3.2	14	1500	2.0	-1.6	77	224	.4	253	3.2	17
1800	1.1	*****	70	360	.1	042	3.8	2	1800	1.3	-1.1	84	175	.7	169	3.8	2
2100	1.0	-3.8	70	028	.5	016	3.2	0	2100	.1	*****	93	016	.5	335	3.2	0
2400	.1	*****	89	068	1.1	077	3.8	1	2400	0.0	*****	93	052	1.3	020	3.2	1

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING September, 1983

DAY 10										DAY 11										DAY 12															
HOUR		DEW		WIND		WIND		GUST MAX.		HOUR		DEW		WIND		WIND		GUST MAX.		HOUR		DEW		WIND		WIND		GUST MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	.7	*****	88	***	****	***	****	0	0300	2.2	-6.2	54	089	.9	060	2.5	1	0300	2.2	-3.5	66	056	1.7	063	3.2	1									
0600	.5	-1.4	87	073	M	.8	M150	M2.5	3	0600	1.6	-6.7	54	071	1.0	066	2.5	3	0600	2.2	*****	66	087	.8	080	3.2	3								
0900	2.1	-1.7	76	209	.4	223	2.5	26	0900	4.0	-4.2	55	073	.9	066	3.2	32	0900	1.6	*****	75	212	.4	244	4.4	13									
1200	4.1	-2.1	64	241	.7	214	3.8	56	1200	5.2	-4.7	49	202	1.6	154	3.8	34	1200	2.1	-2.2	73	097	.7	159	3.8	17									
1500	4.8	-4.8	50	175	2.5	164	5.7	34	1500	4.5	-5.1	50	193	1.5	192	3.2	12	1500	3.2	-1.5	71	261	.4	306	3.2	22									
1800	2.6	*****	56	176	1.4	262	5.7	2	1800	3.7	-5.0	53	142	1.4	112	3.2	1	1800	2.9	-3.9	61	096	.6	245	3.8	1									
2100	2.6	*****	55	267	.3	259	1.9	1	2100	2.9	*****	55	073	1.3	076	2.5	0	2100	1.6	-3.1	71	090	2.1	108	5.1	1									
2400	2.3	-5.8	55	036	.5	062	3.2	1	2400	2.2	*****	66	035	2.2	029	7.0	0	2400	2.6	-2.9	67	088	1.6	131	6.3	1									
DAY 13										DAY 14										DAY 15															
HOUR		DEW		WIND		WIND		GUST MAX.		HOUR		DEW		WIND		WIND		GUST MAX.		HOUR		DEW		WIND		WIND		GUST MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	2.1	-4.0	64	120	1.8	122	4.4	0	0300	.8	*****	85	042	.9	071	3.2	0	0300	-2.4	*****	7	028	.4	028	1.3	0									
0600	0.0	-3.2	79	126	1.0	128	3.8	5	0600	.3	*****	85	069	.6	102	1.9	3	0600	-3.3	*****	8	263	.5	007	2.5	2									
0900	1.9	-3.2	69	149	1.2	166	5.1	32	0900	.1	*****	93	111	.4	191	1.9	12	0900	-1.2	-3.4	85	075	1.3	042	3.8	23									
1200	3.1	-2.4	67	191	2.1	263	7.0	37	1200	1.4	-2	89	200	1.1	175	3.2	30	1200	.9	*****	68	081	.7	063	2.5	50									
1500	2.7	-3.2	65	133	2.8	150	6.3	11	1500	2.6	-3.1	66	233	1.3	167	5.1	19	1500	2.1	*****	60	208	.4	208	1.9	29									
1800	1.8	-3.2	69	130	3.1	136	5.7	1	1800	-1.3	-30.3	9	178	1.2	258	6.3	1	1800	-1.4	-5.1	76	144	1.1	147	5.1	1									
2100	.6	-3.0	77	181	1.4	200	5.1	0	2100	-2.1	-29.8	10	273	1.6	247	4.4	0	2100	-1.6	*****	75	029	1.1	070	3.2	1									
2400	.1	-1.5	89	193	.4	172	2.5	0	2400	-2.1	-34.9	6	001	1.0	265	2.5	0	2400	-1.2	-5.9	70	060	1.0	095	3.2	0									
DAY 16										DAY 17										DAY 18															
HOUR		DEW		WIND		WIND		GUST MAX.		HOUR		DEW		WIND		WIND		GUST MAX.		HOUR		DEW		WIND		WIND		GUST MAX.							
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-1.3	-6.8	66	051	1.2	037	3.2	1	0300	-2.5	-8.8	62	061	.9	050	3.2	1	0300	-1.7	-7.6	64	061	1.4	064	3.2	0									
0600	-1.7	-6.8	68	043	1.3	043	3.2	3	0600	-2.3	*****	61	094	.7	112	1.9	3	0600	-1.3	-8.7	57	066	1.3	056	3.2	3									
0900	-1.1	-7.6	57	055	1.2	050	3.2	36	0900	-1.1	-8.3	58	107	.6	125	3.2	34	0900	2.1	*****	47	071	.9	064	3.2	31									
1200	1.2	-5.7	60	031	.5	211	5.1	50	1200	2.6	*****	54	200	1.5	175	3.8	49	1200	3.0	-8.5	43	155	1.0	143	5.1	52									
1500	2.6	-5.5	55	156	3.5	142	6.3	29	1500	2.1	-6.0	55	250	1.2	228	3.8	28	1500	1.8	-9.3	44	166	1.4	173	4.4	20									
1800	-1.5	*****	59	353	.6	029	3.8	1	1800	.9	-5.7	61	191	.8	183	3.8	1	1800	.5	*****	47	162	.7	187	3.2	1									
2100	-1.5	*****	61	069	.8	076	2.5	0	2100	.4	-6.2	61	097	1.3	085	3.2	0	2100	.9	-10.1	44	065	1.1	050	3.2	1									
2400	-1.3	*****	62	073	.8	071	2.5	1	2400	-1.4	-6.8	62	088	.8	058	3.2	0	2400	1.3	-9.1	46	083	3.0	067	6.3	1									

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING September, 1983

DAY 19

DAY 20

DAY 21

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-1.4	-5.1	76	115	3.1	105	6.3	0	0300	1.4	-32.3	6	006	1.0	026	1.9	0
0600	-1.2	*****	75	043	1.1	027	3.2	2	0600	1.8	-37.5	3	035	1.4	026	3.2	1
0900	.7	-4.9	66	146	1.4	163	5.1	16	0900	2.6	1.9	95	018	1.6	026	3.2	12
1200	1.2	-4.6	65	171	.8	143	5.1	30	1200	4.8	2.2	83	040	1.4	039	3.8	14
1500	1.5	-4.3	65	310	.7	338	4.4	20	1500	3.4	3.1	98	071	1.2	034	5.1	4
1800	.5	*****	70	058	.9	043	3.2	1	1800	4.0	2.8	92	061	1.7	061	5.7	1
2100	.7	*****	1	049	1.2	056	3.8	0	2100	2.6	*****	97	044	1.3	023	3.8	0
2400	1.1	-32.5	6	066	1.4	034	3.8	0	2400	1.2	*****	10	087	.6	099	1.9	1

DAY 22

DAY 23

DAY 24

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	.6	-31.4	7	047	.3	150	2.5	0	0300	-7.1	-8.2	92	***	***	***	***	0
0600	-2	-23.0	16	019M	.1M	019M	.6M	1	0600	-8.5	-9.3	94	***	***	***	***	2
0900	.7	*****	2	104	.3	050	1.9	10	0900	-8.5	-11.0	82	***	***	***	***	19
1200	.6	-6	92	127	1.2	130	4.4	20	1200	-8.7	-12.2	76	***	***	***	***	32
1500	-1	-1.1	93	036	1.2	067	4.4	6	1500	-6.6	-13.3	59	***	***	***	***	17
1800	-2.3	-3.5	92	358M	1.0M	007M	3.2M	0	1800	-10.6	-14.0	76	***	***	***	***	0
2100	-3.4	-5.1	88	***	***	***	***	0	2100	-11.2	-15.7	69	***	***	***	***	0
2400	-5.4	-6.2	94	***	***	***	***	0	2400	-11.9	-16.4	69	***	***	***	***	0

DAY 25

DAY 26

DAY 27

HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.	HOUR	DEW	WIND	WIND	GUST	MAX.
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW	
0300	-13.4	-20.1	57	094	3.0	098	7.6	1	0300	-14.3	-19.6	64	045	1.5	040	4.4	1
0600	-13.4	-20.1	57	127	3.5	115	7.6	2	0600	-14.1	-19.6	63	059	1.1	036	2.5	2
0900	-12.5	-19.7	55	109	2.9	107	7.6	17	0900	-12.7	-19.4	57	066	1.1	025	3.2	30
1200	-10.5	-19.0	50	118	3.2	097	7.0	44	1200	-11.2	-18.5	55	206	.8	167	2.5	43
1500	-10.5	-18.3	53	116	2.2	125	5.7	23	1500	-9.2	-16.4	56	213	1.3	228	3.2	22
1800	-13.6	-19.1	63	044	1.9	077	4.4	1	1800	-11.8	*****	68	179	.6	247	1.9	0
2100	-14.4	-19.7	64	036	2.0	051	4.4	0	2100	-11.4	-16.8	64	079	.8	106	1.9	0
2400	-15.1	-20.2	65	031	1.5	038	4.4	0	2400	-11.1	-17.5	59	090	1.5	104	3.8	1

R & M CONSULTANTS, INC.

THREE HOUR SUMMARY FOR GLACIER WEATHER STATION

DATA TAKEN DURING September, 1983

DAY 28

DAY 29

DAY 30

STATION 1									STATION 2									STATION 3								
HOUR	DEW		WIND		WIND		GUST MAX.		HOUR	DEW		WIND		WIND		GUST MAX.		HOUR	DEW		WIND		WIND		GUST MAX.	
NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD	NDNG	TEMP.	POINT	RH	DIR.	SPD.	DIR.	GUST	RAD
	DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW		DEG C	DEG C	%	DEG.	M/S	DEG.	M/S	MW
0300	-4.8	-6.2	90	046	1.3	026	3.2	0	0300	-5	-46.4	0	118	.3	109	-2.5	0	0300	2.2	1.5	95	168	4.5	151	17.8	1
0600	-5.0	*****	91	091	.7	059	3.2	1	0600	-4	-7	98	053	.4	025	3.2	1	0600	.1	-23.5	15	214	1.5	247	7.0	1
0900	-3.3	-6.1	81	055	.5	022	1.9	15	0900	.7	-1.1	88	108	.9	089	5.7	5	0900	1.1	-26.2	11	260	.5	224	5.1	11
1200	-7	*****	64	061	.6	004	2.5	22	1200	1.1	-8	87	110	2.4	096	8.9	8	1200	.8	-7	90	054	.5	103	3.2	19
1500	-9	*****	77	091	.8	144	3.2	11	1500	2.4	.7	89	091	6.2	099	11.4	8	1500	1.6	*****	77	020	1.4	340	3.8	15
1800	-2.6	*****	6	052	.3	112	1.9	0	1800	.5	-24.8	13	070	2.2	108	10.8	0	1800	-3	-37.0	4	058	1.1	045	2.5	0
2100	-1.4	-36.0	5	041	.8	020	3.2	0	2100	.2	-25.1	13	323	.3	134	5.1	1	2100	-7	-26.7	12	285	.7	244	5.1	0
2400	-1.4	*****	9	108	.7	079	3.2	0	2400	0.0	-28.1	10	201	.7	151	9.5	0	2400	-9	-27.8	11	249	3.0	246	6.3	0

R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING September, 1983

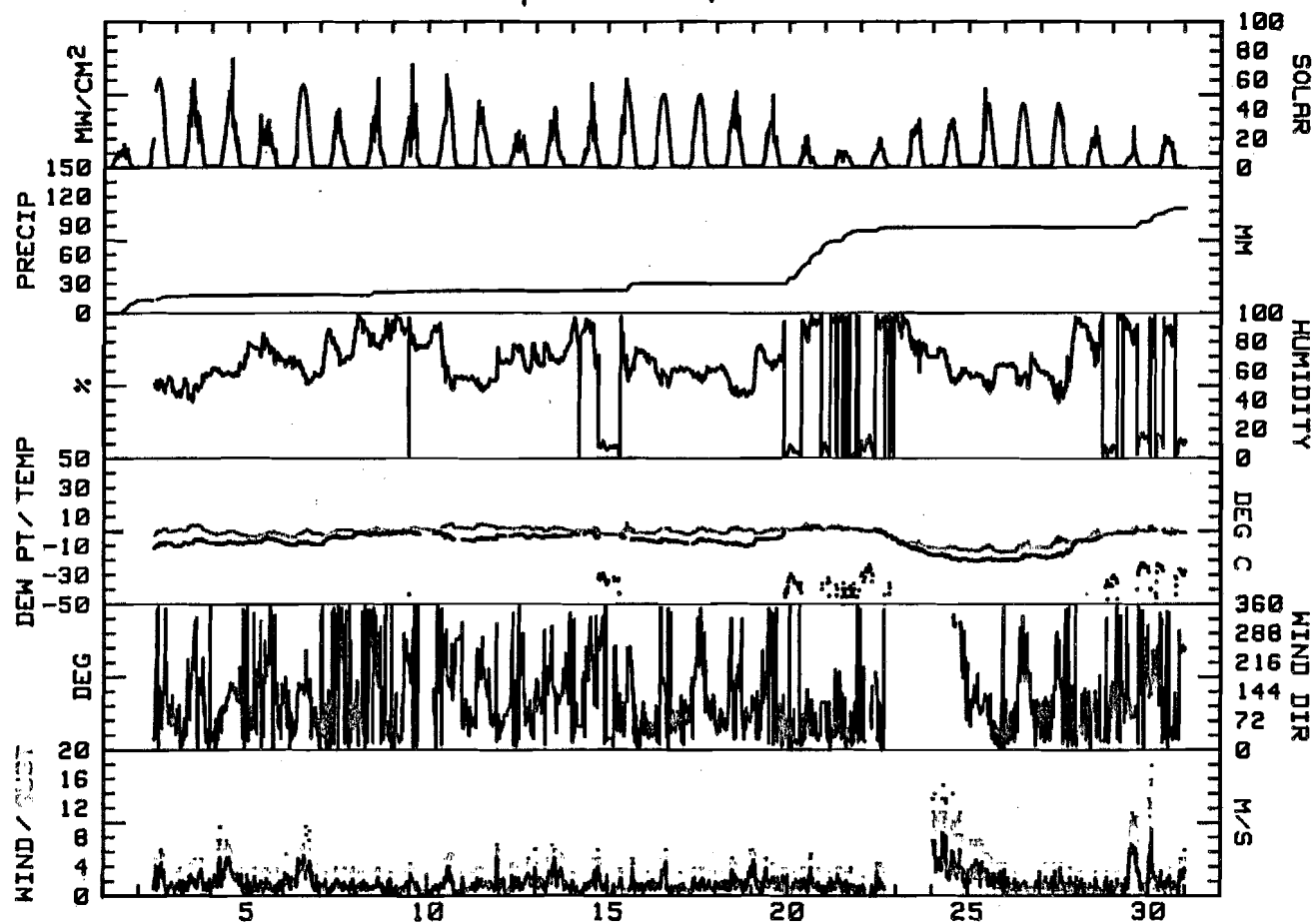
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	*****	*****	*****	***	****	****	***	****	***	**	*****	13.2	1003	1
2	2.6M	-2.5M	.1M	119M	1.1M	1.9M	138M	6.3M	E(M)	51M	-8.8M	4.4	4114M	2
3	5.1	-1.5	1.8	105	.6	1.7	320	5.1	NNE	50	-7.2	.8	3638	3
4	.6	-4.1	-1.8	111	2.0	2.7	093	9.5	E	61	-8.0	0.0	3435	4
5	.4	-4.2	-1.9	124	.3	1.3	050	3.8	ESE	75	-6.1	.4	2353	5
6	1.6	-4.6	-1.5	125	1.9	2.6	246	9.5	SSE	61	-8.5	0.0	4315	6
7	1.7	-3.3	-.8	027	.4	1.2	169	3.8	N	74	-4.2	0.0	2183	7
8	2.9	-.6	1.2	039	.4	1.2	169	3.8	NNE	84	-1.6	2.8	2450	8
9	3.1	-.7	1.2	235M	.2M	1.0M	164M	4.4M	N(M)			1.0	2545	9
10	5.4	.1	2.8	179M	.6M	1.3M	164M	5.7M	W(M)	63	-3.3	0.0	3428	10
11	5.5	1.0	3.3	105	.7	1.5	029	7.0	ENE	54	-5.3	0.0	2595	11
12	3.6	.9	2.3	085	.8	1.6	131	6.3	E	69	-2.8	0.0	1598	12
13	3.4	-.3	1.6	146	1.6	2.1	263	7.0	SE	70	-3.2	0.0	2203	13
14	3.0	-2.2	.4	233	.2	1.4	258	6.3	ENE			1.0	2155	14
15	6.0	-3.3	1.4	076	.5	1.1	147	5.1	NNE			6.6	3708	15
16	2.6	-2.4	.1	082	.7	1.5	142	6.3	NE	61	-6.7	.2	3595	16
17	3.1	-2.5	.3	137	.4	1.2	175	3.8	E	58	-6.7	0.0	3418	17
18	3.4	-2.1	.7	094	1.0	1.7	067	6.3	ENE	50	-8.7	0.0	2943	18
19	2.4	-1.5	.5	093	.9	1.8	105	6.3	NNE			5.2	2110	19
20	5.4	.5	3.0	043	1.2	1.4	061	5.7	NNE			35.6	988	20
21	4.2	0.0	2.1	064	.8	1.2	102	3.8	NE			13.6	853	21
22	2.1	-5.4	-1.7	056M	.6M	1.1M	130M	4.4M	N(M)			3.6	1085	22
23	-5.8	-12.0	-8.9	***	****	****	***	****	***			0.0	2063	23
24	-10.1	-13.4	-11.8	279M	1.5M	4.2M	315M	11.4M	NW(M)	63	-18.0	0.0	2180	24
25	-9.1	-15.1	-12.1	095	2.1	2.7	098	7.6	ESE	57	-19.7	0.0	2820	25
26	-6.8	-14.7	-10.8	091	.5	1.3	040	4.4	E	61	-18.1	0.0	2945	26
27	-3.5	-12.5	-8.0	101	.7	1.4	024	4.4	NNE	60	-15.2	0.0	2713	27
28	1.5	-5.9	-2.2	067	.7	1.0	026	3.2	NNE			.2	1550	28
29	3.3	-1.3	1.0	094	1.5	2.4	099	11.4	E			6.4	743	29
30	4.1	-.9	1.6	205	.6	2.1	151	17.8	WSW			13.0	1425	30
MONTH	6.0M	-15.1M	-1.3M	102M	.7M	1.7M	151M	17.8M	NNE(M)	62M	-9.9M	108.0	73147M	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 15.9
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 15.2
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 12.1
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 7.6

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THAN ONE METER PER SECOND. SUCH READINGS HAVE NOT BEEN INCLUDED IN THE DAILY OR MONTHLY MEAN FOR RELATIVE HUMIDITY AND DEW POINT.

**** SEE NOTES AT THE BACK OF THIS REPORT ****

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
September, 1983



R & M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT

WIND FREQUENCY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING September, 1983

DIRECTION	VELOCITY (M/S)							TOTAL
	0.2	1.0	3.0	6.0	10.0	15.0	20.0	
	TO	TO	TO	TO	TO	TO	OR GREATER	
	1.0	3.0	6.0	10.0	15.0	20.0		
N	1.12	3.57	.04	0.00	0.00	0.00	0.00	4.74
NNE	3.53	8.03	.16	0.00	0.00	0.00	0.00	11.72
NE	2.65	7.43	.40	0.00	0.00	0.00	0.00	10.48
ENE	3.09	7.83	.52	.04	0.00	0.00	0.00	11.48
E	3.61	5.38	1.04	.36	0.00	0.00	0.00	10.40
ESE	3.85	5.38	1.49	.12	0.00	0.00	0.00	10.84
SE	1.12	3.21	2.45	.04	0.00	0.00	0.00	6.82
SSE	1.16	4.09	2.69	.04	0.00	0.00	0.00	7.99
S	1.08	3.05	.68	.04	0.00	0.00	0.00	4.86
SSW	.96	2.85	.16	0.00	0.00	0.00	0.00	3.97
SW	1.04	2.77	.12	0.00	0.00	0.00	0.00	3.93
WSW	.72	2.21	.64	0.00	0.00	0.00	0.00	3.57
W	.92	1.24	.08	0.00	0.00	0.00	0.00	2.25
WNW	.28	1.32	.12	0.00	0.00	0.00	0.00	1.73
NW	.56	1.41	.12	.04	0.00	0.00	0.00	2.13
NNW	.52	2.01	.08	.04	0.00	0.00	0.00	2.65
CALM								.44
TOTAL	26.25	61.78	10.80	.72	0.00	0.00	0.00	100.00

NOTE: ALL FREQUENCIES ARE EXPRESSED IN PERCENT
2491 VALID WIND OBSERVATIONS USED TO DEVELOP FREQUENCY SUMMARY

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
September, 1983

