SUSITNA HYDROELECTRIC PROJECT

1982

FIELD DATA

COLLECTION AND PROCESSING

SUPPLEMENT 1

DECEMBER 1982

PREPARED BY:

R&M CONSULTANTS, INC.

PREPARED FOR:

ACRES

ALASKA POWER AUTHORITY

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ALASKA POWER AUTHORITY
SUSITNA HYDROELECTRIC PROJECT

TASK 3 - HYDROLOGY

FIELD DATA COLLECTION AND PROCESSING
SUPPLEMENT 1
1982 FIELD DATA

DECEMBER 1982

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TASK 3 - HYDROLOGY

FIELD DATA COLLECTION AND PROCESSING - SUPPLEMENT 1

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ACKNOWLEDGMENTS

Data contained in the present report were collected, analyzed, and reduced by R&M Consultants under contract to Acres American, Inc. as part of the Susitna Hydroelectric Feasibility Study conducted for the Alaska Power Authority. Assistance and additional data provided by the individuals and organizations named below are gratefully acknowledged.

Alaska Department of Fish and Game provided additional stream and slough discharge data and made periodic staff gage readings at the various gaging sites. Water quality analyses were performed by Chemical and Geological Laboratories of Alaska (Anchorage) and Northern Testing Laboratories (Fairbanks). The Water Resources Division of the U.S. Geological Survey provided continuous gage height records from the streamgaging station at Gold Creek. Glacial observations were made by Dr. William Harrison of the Geophysical Institute of the University of Alaska at Fairbanks. Snow surveys were performed cooperatively with the Soil Conservation Service of the U.S. Department of Agriculture. River ice observations were supplemented by data supplied by Leon Dick at the Deshka River. Evaporation data were collected at Watana Camp by Granville Couey and Onnalee Logsdon of Acres American, Inc.

1 - INTRODUCTION

The objective of the Hydrologic Field Data Collection and Processing has been to supplement available streamflow and climatologic data within the Susitna River Basin. Specifically, the existing data base was augmented to meet the requirements of the FERC license application and to fill other data gaps present in the flow forecasting network for future project operation.

Collection and processing of the field data was performed by R&M Consultants and reviewed by Acres American, Inc. Portions of the field effort were done cooperatively with other data collection agencies, such as the U.S. Geological Survey, the U.S. Soil Conservation Service, and the Alaska Geophysical Institute, as is detailed in the following sections.

This report presents summaries of field data collected during the 1982 water year, October 1981 to September 1982, inclusive. A previous report, Field Data Collection and Processing, Volumes 1-3, February 1982 (R&M Consultants, 1982a), presents an overview of the Data Collection Program and a general description of the field work undertaken relative to each of the hydrologic parameters. The reader is referred to this previous report for background information on the data contained herein.

SECTION 2

1982

FIELD DATA SUMMARIES

SECTION 2.1

STREAMFLOW (CONTINUOUS)

2.1 - Streamflow

A continuously-recording manometer streamgage was installed in the Susitna River at River Mile 182.1, about two miles downstream from the proposed Watana Damsite. Collection of stage records began in early July, 1980, and has continued during open water periods through 1982. In 1982, daily discharge data were obtained from May 29 through November 11; however, due to a streamgage malfunction, no record was obtained from August 21 through September 1. Estimates of discharge have been made for these days based on a comparison with Susitna River at Gold Creek streamflows.

To assist the Alaska Department of Fish and Game (ADF&G) in their studies of fish spawning habitat, R&M Consultants installed Stevens F-1 continuously-recording streamgages in Sloughs 8A, 9, 11, 16 and 21. Collection of stage records began in early August and continued through to freezeup in mid-October, 1982. Daily flows from each site are presented herein with the exception of data from Slough 8A; artifically elevated gage heights were recorded at that site due to ponding behind a beaver dam constructed in late August downstream of the gaging site.

Two tributaries, Portage Creek and Indian River were gaged continuously by the ADF&G using Datapod recorders. In other sloughs and tributaries, miscellaneous measurements of stage were collected by the ADF&G. At all of these sites, discharge measurements were made to generate stage-discharge rating curves. These rating curves are compiled in Section 2.2 - Streamflow-(Partial).

TABLE 2.1.1

(1)

Daily Gage Height, in feet, and discharge, in cubic feet per second
Susitna River near Watana Damsite for the year ending September 30, 1982

Day	April		May		June		July		August		September	
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge
1					38.90	23100	38.39	20100	38.84	22700	e	15900
2					39.31	25600	38.25	19300	38.24	19400	37.16	13600
3					39.77	28600	37.71	16400	37.85	17100	36.82	12100
4					39.00	23700	37.45	15100	37.71	16400	36.80	12000
5					38.25	19300	37.45	15100	37.68	16200	36.66	11300
6					38.28	19300	37.40	14800	37.56	15600	36.38	10100
7					39.28	25400	37.31	14400	37.50	15300	36.29	9800
8					40.07	30700	37.62	15900	37.52	15400	36.44	10400
9					39.61	27600	38.30	19600	37.56	15600	36.91	12500
10					38.98	23600	38.67	21700	37.48	15200	37.00	12900
11					38.73	22100	38.82	22600	37.18	13700	36.80	12000
12					38.56	21100	39.30	25600	37.03	13000	36.68	11400
13					38.20	19000	39.46	26600	37.00	12900	36.94	12600
14					37.66	16100	39.34	25800	37.06	13200	37.60	15800
15					37.60	15800	39.02	23800	37.31	14400	38.70	21900
16					38.05	18200	39.10	24300	37.47	15200	39.47	26700
17					38.21	19100	38.95	23400	37.26	14100	39.48	26700
18					38.41	20200	38.90	23100	37.10	13400	38.57	21100
19					38.93	23300	38.85	22800	36.92	12500	37.99	17900
20					39.60	27500	38.56	21100	36.74	11700	38.00	17900
21					40.40	33000	38.41	20200		11400	38.26	19400
22					39.48	26700	38.45	20400	e	11400	37.88	17300
23					38.93	23300	38.40	20200	e	11500	37.48	15200
24					38.68	21800	38.48	20600	e	11700	37.09	13300
25					38.89	23000	38.97	23500	e	12500	36.74	11700
26					39.27	25400	39.19	24900	e	12700	36.58	11000
27					39.23	25100	39.12	24400	e	12100	36.45	10400
28					39.60	27500	38.69	21800	e	11600	36.28	9700
29			38.75	22200	39.51	26900	38.46	20500	e	11400	36.18	9300
30			38.30	19600	38.81	22500	38.74	22100	e	12100	36.20	9400
31			38.45	20400			39.22	25100	e	14500		
					704,500		655,200		435,900		431,300	
	Mean				23,483		21,135		14,061			
	Maximum				33,000		26,600		22,700		26,700	
	Minimum				15,800		14,400		e 11,400		9,300	
	CFSM				4.35		4.08		2.71		2.78	
	Runoff(inches)				5.06		4.71		3.13		3.10	

1- Gage height values are elevation mean sea level plus 1400 feet.
2- e- estimated based on USGS records Susitna River at Gold Creek.

TABLE 2.1.2

(1)

Daily Gage Height, in feet and discharge, in cubic feet per second
Susitna River near Watana Damsite for the year ending September 30,1983

Day	October		November		December		January		February		March		Day
	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	Gage height	Discharge	
1	36.19	9400	34.67	4100									1
2	36.10	9000	34.84	4600									2
3	36.00	8600	35.03	5200									3
4	35.89	8200	35.08	5400									4
5	35.76	7700	35.07	5300									5
6	35.58	7000	35.12	5500									6
7	35.47	6700	35.10	5400									7
8	35.41	6400	35.09	5400									8
9	35.46	6600	35.16	5600									9
10	35.47	6700	35.03	5200									10
11	35.58	6300	35.21	5800									11
12	35.28	6000											12
13	35.37	6300											13
14	35.21	5800											14
15	34.88	4700											15
16	34.92	4900											16
17	34.91	4800											17
18	34.99	5100											18
19	34.99	5100											19
20	34.98	5100											20
21	34.80	4500											21
22	34.63	4000											22
23	34.26	3100											23
24	34.16	2800											24
25	34.18	2900											25
26	34.47	3600											26
27	34.48	3600											27
28	34.25	3000											28
29	34.39	3400											29
30	34.34	3300											30
31	34.54	3800											31
Year													
Total													
Mean		168,400											
Maximum		5,432											
Minimum		9,400											
Cfsm		2800											
Runoff in inches		1.04											

1- Gage height are elevation mean s[illegible]el plus 1400 feet.

TABLE 2.1.3

DAILY DISCHARGE SLOUGH 9: 8/10/82 - 10/14/82

Date	Gage Height (ft)	Water Surface (ft, msl)	Discharge (cfs)
8/10/82	1.03	593.71	10.0
8/11/82	1.01	593.69	8.7
8/12/82	0.98	593.66	6.9
8/13/82	0.96	593.64	5.9
8/14/82	0.95	593.63	5.5
8/15/82	0.95	593.63	5.5
8/16/82	0.94	593.62	5.0
8/17/82	0.94	593.62	5.0
8/18/82	0.93	593.61	4.6
8/19/82	0.93	593.61	4.6
8/20/82	0.91	593.59	3.9
8/21/82	0.90	593.58	3.6
8/22/82	0.89	593.57	3.3
8/23/82	0.88	593.56	3.0
8/24/82	0.87	593.55	2.7
8/25/82	-	-	-
8/26/82	-	-	-
8/27/82	-	-	-
8/28/82	-	-	-
8/29/82	-	-	-
8/30/82	-	-	-
8/31/82	-	-	-
9/1/82	-	-	-
9/2/82	-	-	-
9/3/82	-	-	-
9/4/82	-	-	-
9/5/82	-	-	-
9/6/82	-	-	-
9/7/82	-	-	-
9/8/82	-	-	-
9/9/82	0.88	593.56	3.0
9/10/82	0.88	593.56	3.0
9/11/82	0.89	593.57	3.3
9/12/82	0.89	593.57	3.3
9/13/82	0.98	593.66	6.9
9/14/82	1.06	593.74	12.4
9/15/82	-	-	-
9/16/82	-	-	-
9/17/82	-	-	-
9/18/82	-	-	-

TABLE 2.1.3 (Continued)

DAILY DISCHARGE SLOUGH 9: 8/10/82 - 10/14/82

Date	Gage Height (ft)	Water Surface (ft, msl)	Discharge (cfs)
9/19/82	-	-	-
9/20/82	1.74	594.42	339
9/21/82	1.72	594.40	315
9/22/82	1.51	594.19	138
9/23/82	1.24	593.92	37.3
9/24/82	1.11	593.79	17.2
9/25/82	1.02	593.70	9.3
9/26/82	1.00	593.68	8.0
9/27/82	1.07	593.75	13.2
9/28/82	1.02	593.70	9.3
9/29/82	1.01	593.69	8.7
9/30/82	1.02	593.70	9.3
10/1/82	1.03	593.71	10.0
10/2/82	0.98	593.66	6.9
10/3/82	0.95	593.63	5.5
10/4/82	0.98	593.66	6.9
10/5/82	0.92	593.60	4.3
10/6/82	0.90	593.58	3.6
10/7/82	0.92	593.60	4.3
10/8/82	0.88	593.56	3.0
10/9/82	0.87	593.55	2.7
10/10/82	0.86	593.54	2.5
10/11/82	0.86	593.54	2.5
10/12/82	0.87	593.55	2.7
10/13/82	0.85	593.53	2.3
10/14/82	0.84	593.52	2.1

Note: A dash (-) indicates missing records.

TABLE 2.1.4

DAILY DISCHARGE SLOUGH 11: 8/9/82 - 10/21/82

Date	Gage Height (ft)	Water Surface (ft, msl)	Discharge (cfs)
8/9/82	1.00	670.79	5.0
8/10/82	1.00	670.79	5.0
8/11/82	1.00	670.79	5.0
8/12/82	0.99	670.78	4.6
8/13/82	0.99	670.78	4.6
8/14/82	0.98	670.77	4.1
8/15/82	0.98	670.77	4.1
8/16/82	0.98	670.77	4.1
8/17/82	0.98	670.77	4.1
8/18/82	0.97	670.76	3.7
8/19/82	0.97	670.76	3.7
8/20/82	0.97	670.76	3.7
8/21/82	0.96	670.75	3.4
8/22/82	0.96	670.75	3.4
8/23/82	0.95	670.74	3.0
8/24/82	0.95	670.74	3.0
8/25/82	0.95	670.74	3.0
8/26/82	-	-	-
8/27/82	-	-	-
8/28/82	-	-	-
8/29/82	-	-	-
8/30/82	-	-	-
8/31/82	-	-	-
9/1/82	-	-	-
9/2/82	-	-	-
9/3/82	-	-	-
9/4/82	-	-	-
9/5/82	-	-	-
9/6/82	-	-	-
9/7/82	-	-	-
9/8/82	0.93	670.72	2.4
9/9/82	0.93	670.72	2.4
9/10/82	0.93	670.72	2.4
9/11/82	0.94	670.73	2.7
9/12/82	0.93	670.72	2.4
9/13/82	0.94	670.73	2.7
9/14/82	0.95	670.74	3.0
9/15/82	0.97	670.76	3.7
9/16/82	0.99	670.78	4.6
9/17/82	1.01	670.80	5.5
9/18/82	1.01	670.80	5.5

TABLE 2.1.4 (Continued)

DAILY DISCHARGE SLOUGH 11: 8/9/82 - 10/21/82

Date	Gage Height (ft)	Water Surface (ft, msl)	Discharge (cfs)
9/19/82	1.00	670.79	5.0
9/20/82	1.00	670.79	5.0
9/21/82	1.00	670.79	5.0
9/22/82	1.00	670.79	5.0
9/23/82	0.99	670.78	4.6
9/24/82	0.99	670.78	4.6
9/25/82	0.98	670.77	4.1
9/26/82	0.98	670.77	4.1
9/27/82	0.97	670.76	3.7
9/28/82	0.96	670.75	3.4
9/29/82	0.97	670.76	3.7
9/30/82	0.96	670.75	3.4
10/1/82	0.96	670.75	3.4
10/2/82	0.95	670.74	3.0
10/3/82	-	-	-
10/4/82	-	-	-
10/5/82	0.96	670.75	3.4
10/6/82	0.96	670.75	3.4
10/7/82	0.96	670.75	3.4
10/8/82	0.97	670.76	3.7
10/9/82	0.97	670.76	3.7
10/10/82	0.96	670.75	3.4
10/11/82	0.96	670.75	3.4
10/12/82	0.95	670.74	3.0
10/13/82	0.95	670.74	3.0
10/14/82	0.95	670.74	3.0
10/15/82	0.94	670.73	2.7
10/16/82	0.94	670.73	2.7
10/17/82	0.93	670.72	2.4
10/18/82	0.93	670.72	2.4
10/19/82	0.93	670.72	2.4
10/20/82	0.93	670.72	2.4
10/21/82	0.92	670.71	2.1

Note: A dash (-) indicates missing records.

TABLE 2.1.5

DAILY DISCHARGE SLOUGH 16: 8/9/82 - 10/22/82

Date	Gage Height (ft)	Water Surface (ft, msl)	Discharge (cfs)
8/9/82	0.69	700.13	1.9
8/10/82	0.69	700.13	1.9
8/11/82	0.68	700.12	1.7
8/12/82	0.68	700.12	1.7
8/13/82	0.67	700.11	1.5
8/14/82	0.67	700.11	1.5
8/15/82	0.67	700.11	1.5
8/16/82	0.68	700.12	1.7
8/17/82	0.68	700.12	1.7
8/18/82	0.67	700.11	1.5
8/19/82	0.67	700.11	1.5
8/20/82	0.66	700.10	1.4
8/21/82	0.66	700.10	1.4
8/22/82	0.65	700.09	1.2
8/23/82	0.64	700.08	1.1
8/24/82	0.64	700.08	1.1
8/25/82	-	-	-
8/26/82	-	-	-
8/27/82	-	-	-
8/28/82	-	-	-
8/29/82	-	-	-
8/30/82	-	-	-
8/31/82	-	-	-
9/1/82	-	-	-
9/2/82	-	-	-
9/3/82	-	-	-
9/4/82	-	-	-
9/5/82	-	-	-
9/6/82	-	-	-
9/7/82	0.64	700.08	1.1
9/8/82	0.64	700.08	1.1
9/9/82	0.65	700.09	1.2
9/10/82	0.66	700.10	1.4
9/11/82	0.66	700.10	1.4
9/12/82	0.66	700.10	1.4
9/13/82	0.69	700.13	1.9
9/14/82	0.74	700.18	3.0
9/15/82	0.83	700.27	5.8
9/16/82	2.33	701.77	280
9/17/82	2.16	701.60	224
9/18/82	1.51	700.95	71
9/19/82	1.28	700.72	39
9/20/82	1.21	700.65	32
9/21/82	1.22	700.66	33

TABLE 2.1.5 (Continued)

DAILY DISCHARGE SLOUGH 16: 8/9/82 - 10/22/82

Date	Gage Height (ft)	Water Surface (ft, msl)	Discharge (cfs)
9/22/82	0.98	700.42	13
9/23/82	0.79	700.23	4.5
9/24/82	0.77	700.21	3.8
9/25/82	0.77	700.21	3.8
9/26/82	0.76	700.20	3.6
9/27/82	0.77	700.21	3.8
9/28/82	0.77	700.21	3.8
9/29/82	0.76	700.20	3.6
9/30/82	0.76	700.20	3.6
10/1/82	-	-	-
10/2/82	-	-	-
10/3/82	-	-	-
10/4/82	-	-	-
10/5/82	-	-	-
10/6/82	0.73	700.17	2.8
10/7/82	0.72	700.16	2.5
10/8/82	0.72	700.16	2.5
10/9/82	0.72	700.16	2.5
10/10/82	0.72	700.16	2.5
10/11/82	0.72	700.16	2.5
10/12/82	0.72	700.16	2.5
10/13/82	0.72	700.16	2.5
10/14/82	0.72	700.16	2.5
10/15/82	0.72	700.16	2.5
10/16/82	0.71	700.15	2.3
10/17/82	0.71	700.15	2.3
10/18/82	0.70	700.14	2.1
10/19/82	0.70	700.14	2.1
10/20/82	0.70	700.14	2.1
10/21/82	0.70	700.14	2.1
10/22/82	0.70	700.14	2.1

Note: A dash (-) indicates missing records.

TABLE 2.1.6

DAILY DISCHARGE SLOUGH 21: 8/10/82 - 10/22/82

Date	Gage Height (ft)	Water Surface (ft, msl)	Discharge (cfs)
8/10/82	0.68	744.81	1.8
8/11/82	0.71	744.84	2.5
8/12/82	0.72	744.85	2.7
8/13/82	0.72	744.85	2.7
8/14/82	0.73	744.86	2.9
8/15/82	0.74	744.87	3.1
8/16/82	0.74	744.87	3.1
8/17/82	0.74	744.87	3.1
8/18/82	0.73	744.86	2.9
8/19/82	0.72	744.85	2.7
8/20/82	0.72	744.85	2.7
8/21/82	0.71	744.84	2.5
8/22/82	0.71	744.84	2.5
8/23/82	0.71	744.84	2.5
8/24/82	0.71	744.84	2.5
8/25/82	-	-	-
8/26/82	-	-	-
8/27/82	-	-	-
8/28/82	-	-	-
8/29/82	-	-	-
8/30/82	-	-	-
8/31/82	-	-	-
9/1/82	-	-	-
9/2/82	-	-	-
9/3/82	-	-	-
9/4/82	-	-	-
9/5/82	-	-	-
9/6/82	-	-	-
9/7/82	-	-	-
9/8/82	-	-	-
9/9/82	-	-	-
9/10/82	0.78	744.91	4.1
9/11/82	0.80	744.93	4.5
9/12/82	0.79	744.92	4.3
9/13/82	0.80	744.93	4.5
9/14/82	0.81	744.94	4.8
9/15/82	1.41	745.54	7.4
9/16/82	2.17	746.30	51
9/17/82	2.13	746.26	49
9/18/82	1.32	745.45	19.5
9/19/82	1.02	745.15	10.3

TABLE 2.1.6 (Continued)

DAILY DISCHARGE SLOUGH 21: 8/10/82 - 10/22/82

Date	Gage Height (ft)	Water Surface (ft, msl)	Discharge (cfs)
9/20/82	1.06	745.19	11.5
9/21/82	1.08	745.21	12.2
9/22/82	1.08	745.21	12.2
9/23/82	1.07	745.20	11.8
9/24/82	1.06	745.19	11.5
9/25/82	1.05	745.18	11.2
9/26/82	1.02	745.15	10.3
9/27/82	1.00	745.13	9.8
9/28/82	0.98	745.11	9.2
9/29/82	0.96	745.09	8.7
9/30/82	0.94	745.07	8.2
10/1/82	0.89	745.02	6.8
10/2/82	0.88	745.01	6.6
10/3/82	0.87	745.00	6.3
10/4/82	0.85	744.98	5.8
10/5/82	0.84	744.97	5.5
10/6/82	0.82	744.95	5.0
10/7/82	0.80	744.93	4.5
10/8/82	0.78	744.91	4.2
10/9/82	0.77	744.90	3.8
10/10/82	0.76	744.89	3.6
10/11/82	0.75	744.88	3.4
10/12/82	0.74	744.87	3.1
10/13/82	0.73	744.86	2.9
10/14/82	0.72	744.85	2.7
10/15/82	0.72	744.85	2.7
10/16/82	0.72	744.85	2.7
10/17/82	0.71	744.84	2.5
10/18/82	0.70	744.83	2.3
10/19/82	0.70	744.83	2.3
10/20/82	0.70	744.83	2.3
10/21/82	0.70	744.83	2.3
10/22/82	0.70	744.83	2.3

Note: A dash (-) indicates missing records.

TABLE 2.1.7
DISCHARGE MEASUREMENTS USED FOR ESTABLISHMENT OF RATING TABLES
FOR TRIBUTARIES AND SLOUGHS

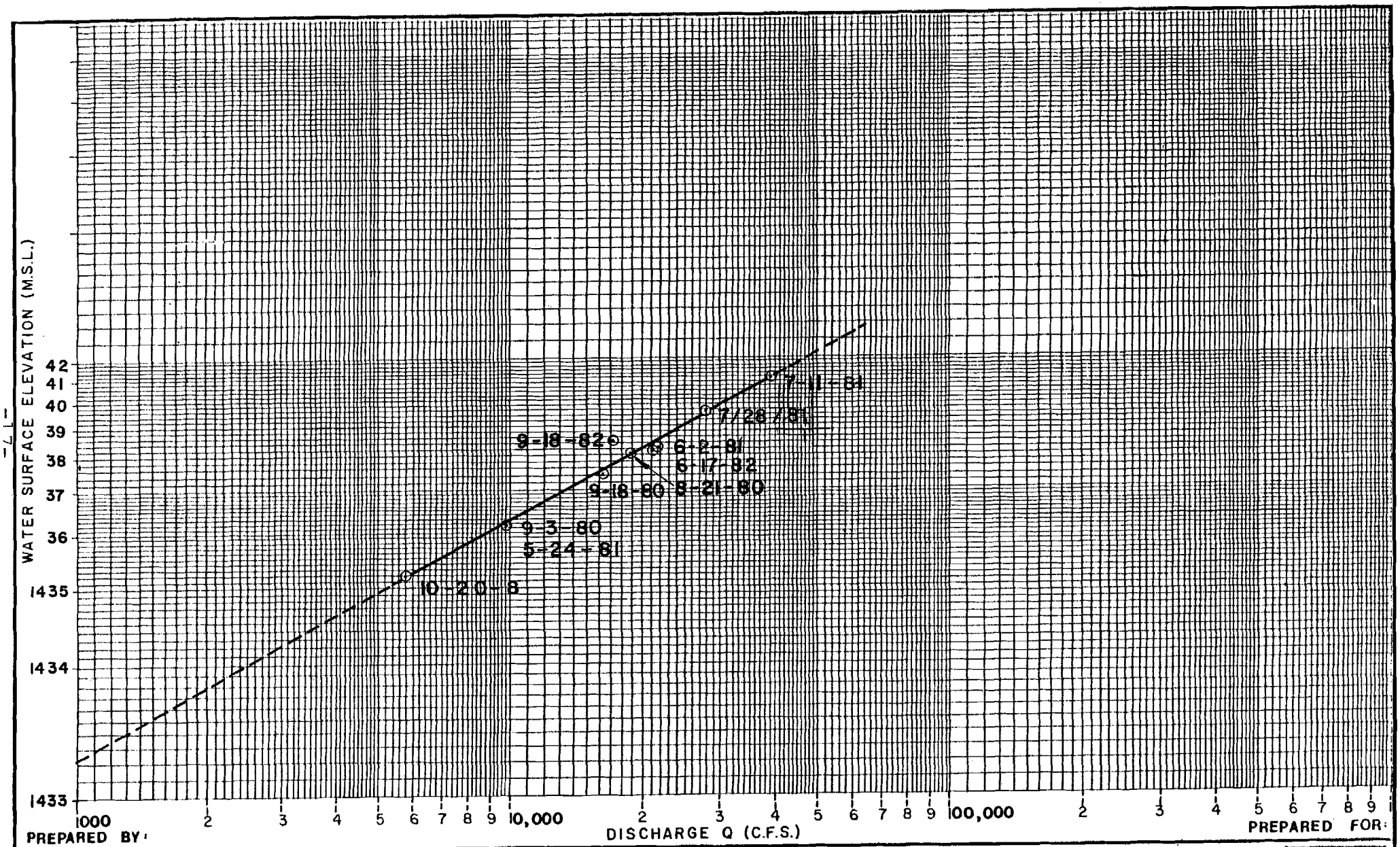
Site	Date	Water Surface Elevation (ft.m.s.l.)	Discharge (cfs)	Data Source
Portage Creek	7/8/82	841.93	1200	R&M
	8/5/82	840.98	690	R&M
	9/4/82	840.94	620	R&M
	9/15/82	842.17	2200	R&M
	10/6/82	840.52	430	R&M
Slough 22	9/15/82	785.09	120	ADF&G
	9/18/82	784.28	31	ADF&G
	9/19/82	783.84	5.1	ADF&G
Slough 21*	8/2/82	744.93	5.0	ADF&G
	8/31/82	744.90	3.2	ADF&G
	9/16/82	746.52	59	ADF&G
Slough 20	7/13/82	727.22	39	R&M
	8/2/82	726.99	16	ADF&G
	8/20/82	726.76	2.6	ADF&G
	9/1/82	726.88	12	ADF&G
	9/16/82	728.06	160	ADF&G
	9/18/82	727.27	45	ADF&G
Indian River	9/10/82	(S.G. 4.93)**	270	R&M
	9/21/82	(S.G. 5.76)	930	R&M
	10/7/82	(S.G. 4.75)	180	R&M
Slough 16B*	7/13/82	701.62	110	R&M
	8/1/82	700.85	55	ADF&G
	9/7/82	700.08	1.1	R&M
	9/15/82	701.70	260	ADF&G
	9/19/82	700.58	24	ADF&G
Slough 11*	7/15/82	670.76	3.0	R&M
	8/30/82	670.72	3.1	ADF&G
	9/18/82	670.80	5.5	ADF&G
Fourth of July Creek	(Insufficient Data)			
Slough 9*	6/23/82	594.27	180	R&M
	7/15/82	594.10	110	R&M
	7/20/82	593.92	28	R&M
	8/25/82	593.51	1.7	R&M
	9/9/82	593.56	3.0	R&M

s5/w1

TABLE 2.1.7 (Continued)
DISCHARGE MEASUREMENTS USED FOR ESTABLISHMENT OF RATING TABLES
FOR TRIBUTARIES AND SLOUGHS

Site	Date	Water Surface Elevation (ft. m.s.l.)	Discharge (cfs)	Data Source
Slough 8A	(Insufficient Data)			
Lane Creek	8/16/82	475.74	36	R&M
	8/17/82	475.76	28	ADF&G
	8/31/82	475.94	57	R&M
	9/2/82	475.79	52	R&M
Whiskers Creek Slough	7/20/82	365.77	5.2	R&M
	8/16/82	365.33	0.2	ADF&G
	9/3/82	365.38	0.7	ADF&G
	9/20/82	366.22	35	ADF&G
	10/9/82	365.58	2.0	ADF&G
Sunshine Creek	(Insufficient Data)			
Birch Creek Slough	8/5/82	284.58	89	ADF&G
	9/2/82	284.42	75	ADF&G
	9/19/82	285.33	130	ADF&G
	10/3/82	284.42	86	ADF&G
Birch Creek	9/2/82	282.46	68	ADF&G
	9/19/82	282.81	110	ADF&G
	10/3/82	282.56	76	ADF&G
Goose 2 Creek	8/30/82	212.85	84	ADF&G
	9/15/82	213.76	250	ADF&G
	10/1/82	213.06	140	ADF&G

* Stevens F-1 continuous stream gage recorder site.
** Elevation of staff gage was not surveyed.



PREPARED BY:

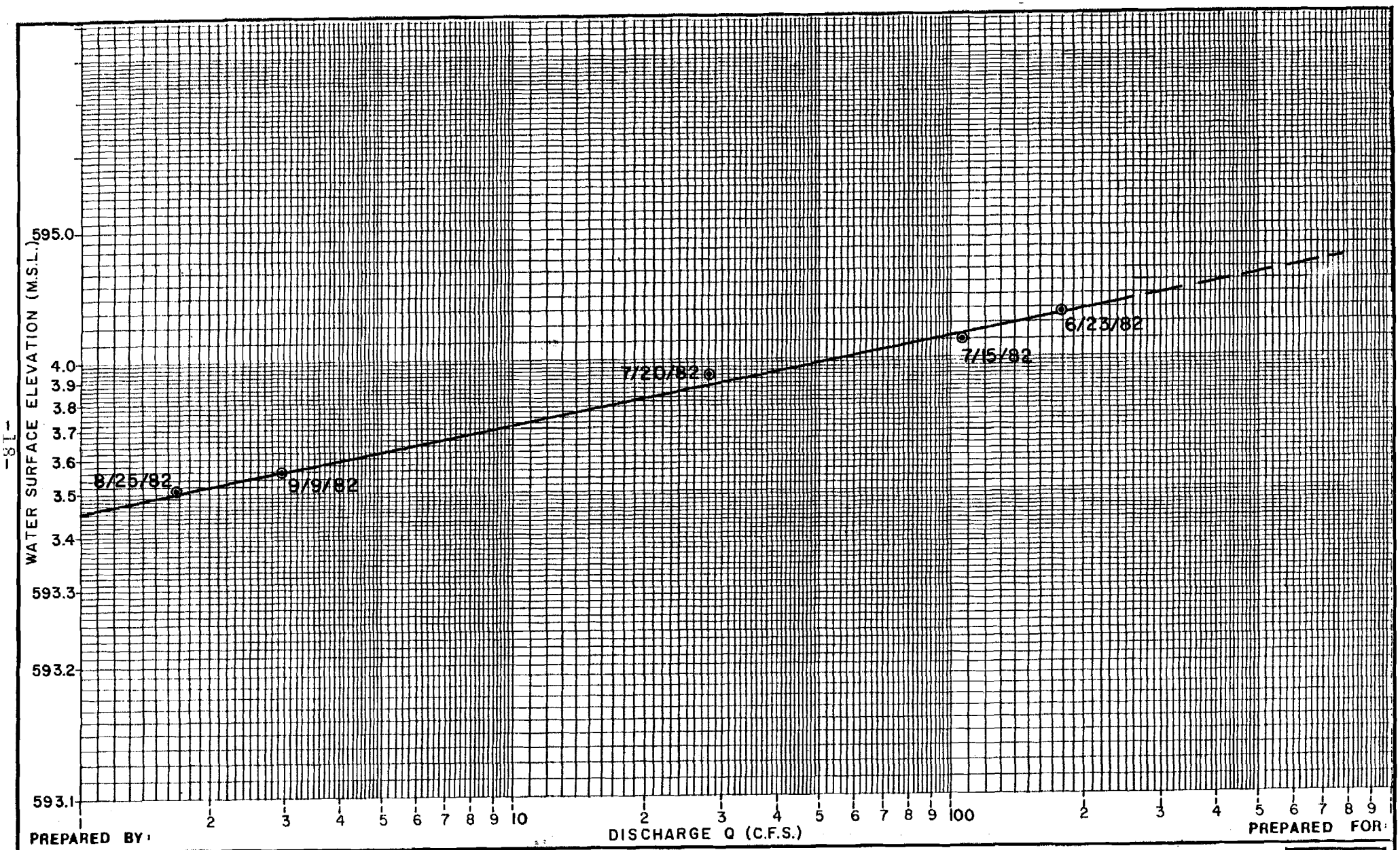
R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE
SUSITNA RIVER NEAR WATANA

PREPARED FOR:

ACRES

Figure 2.1.1

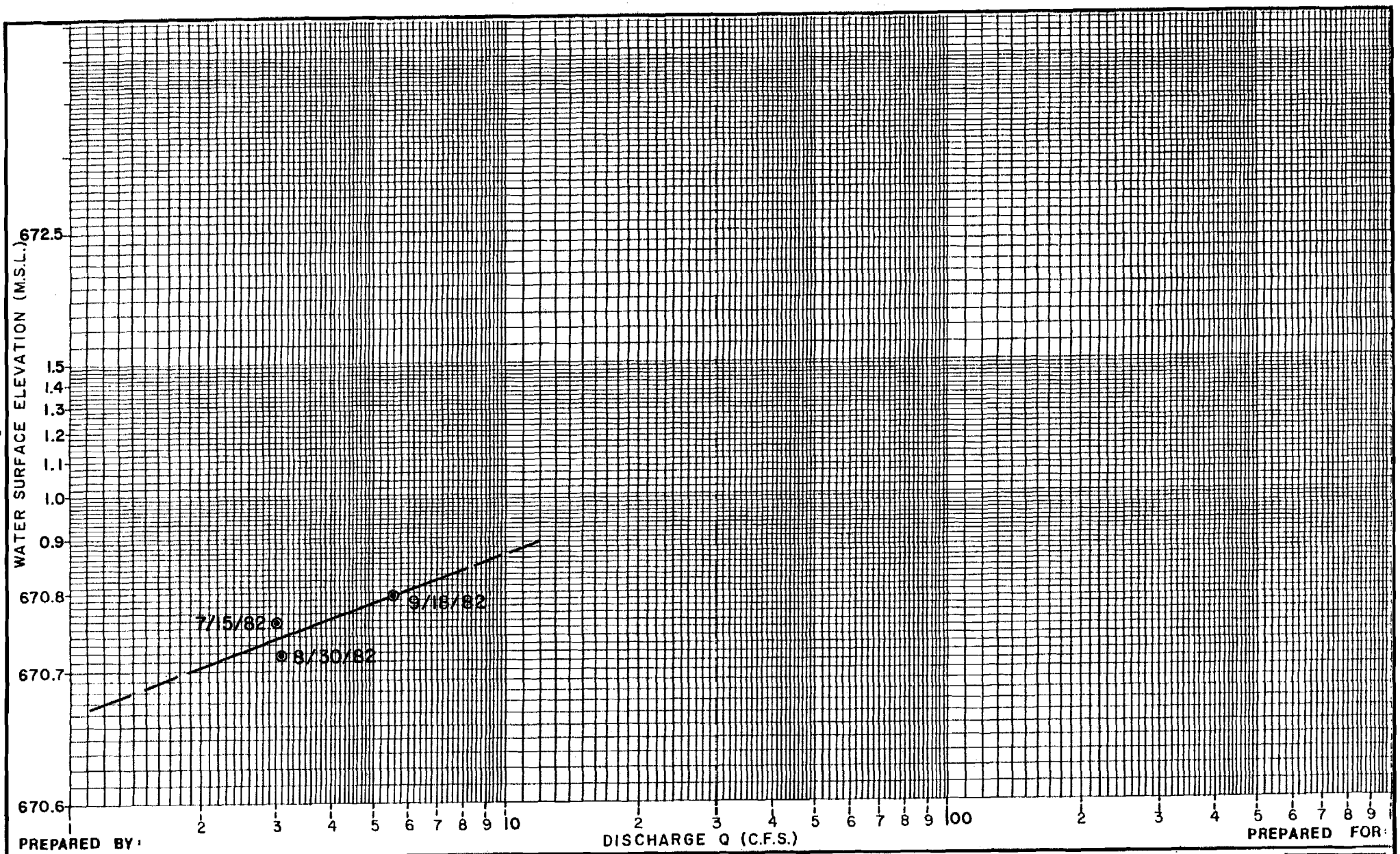


R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE
SLOUGH 9

Figure 2.1.2

ACRES



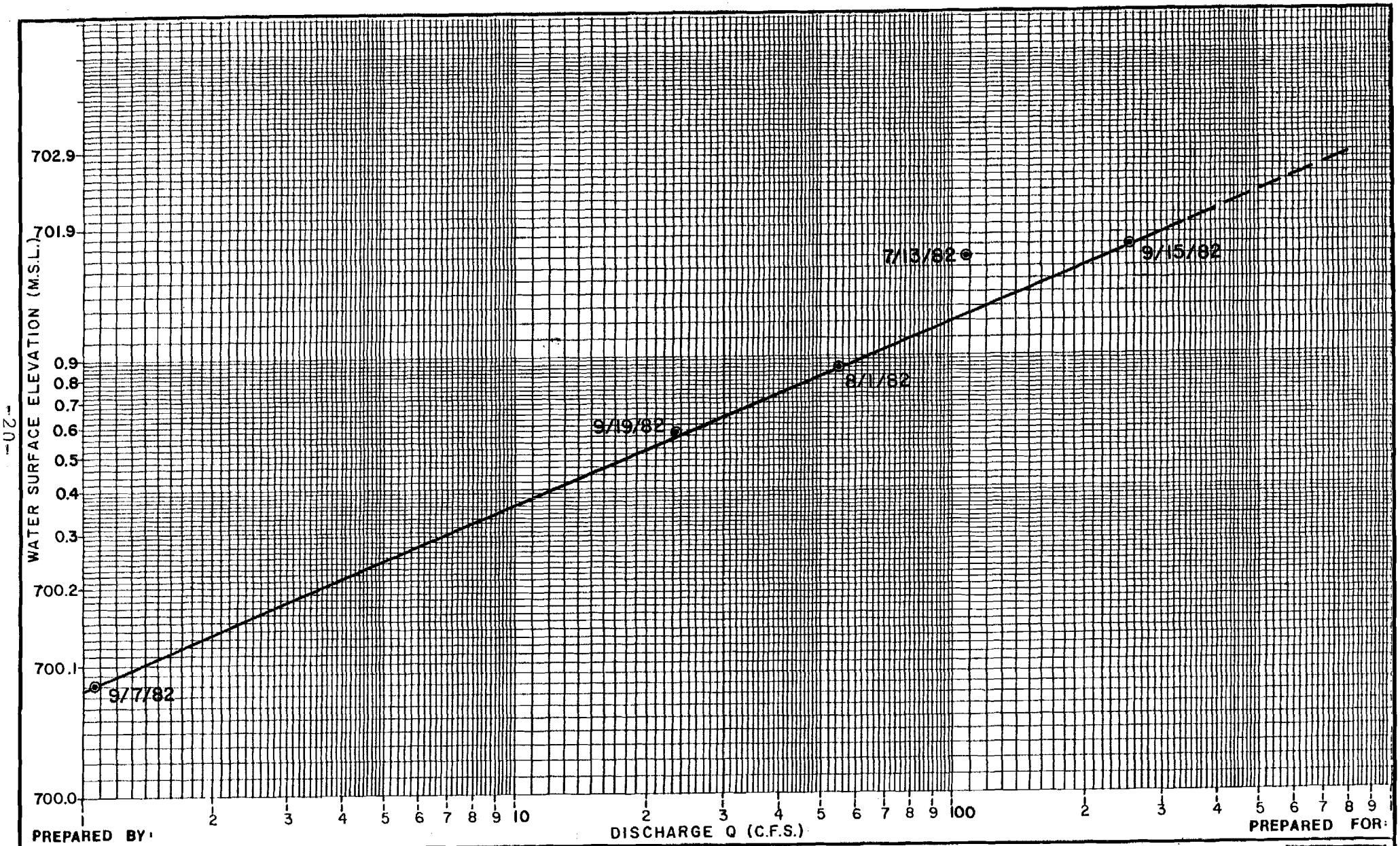
R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE

SLOUGH 11

Figure 2.1.3

ACRES

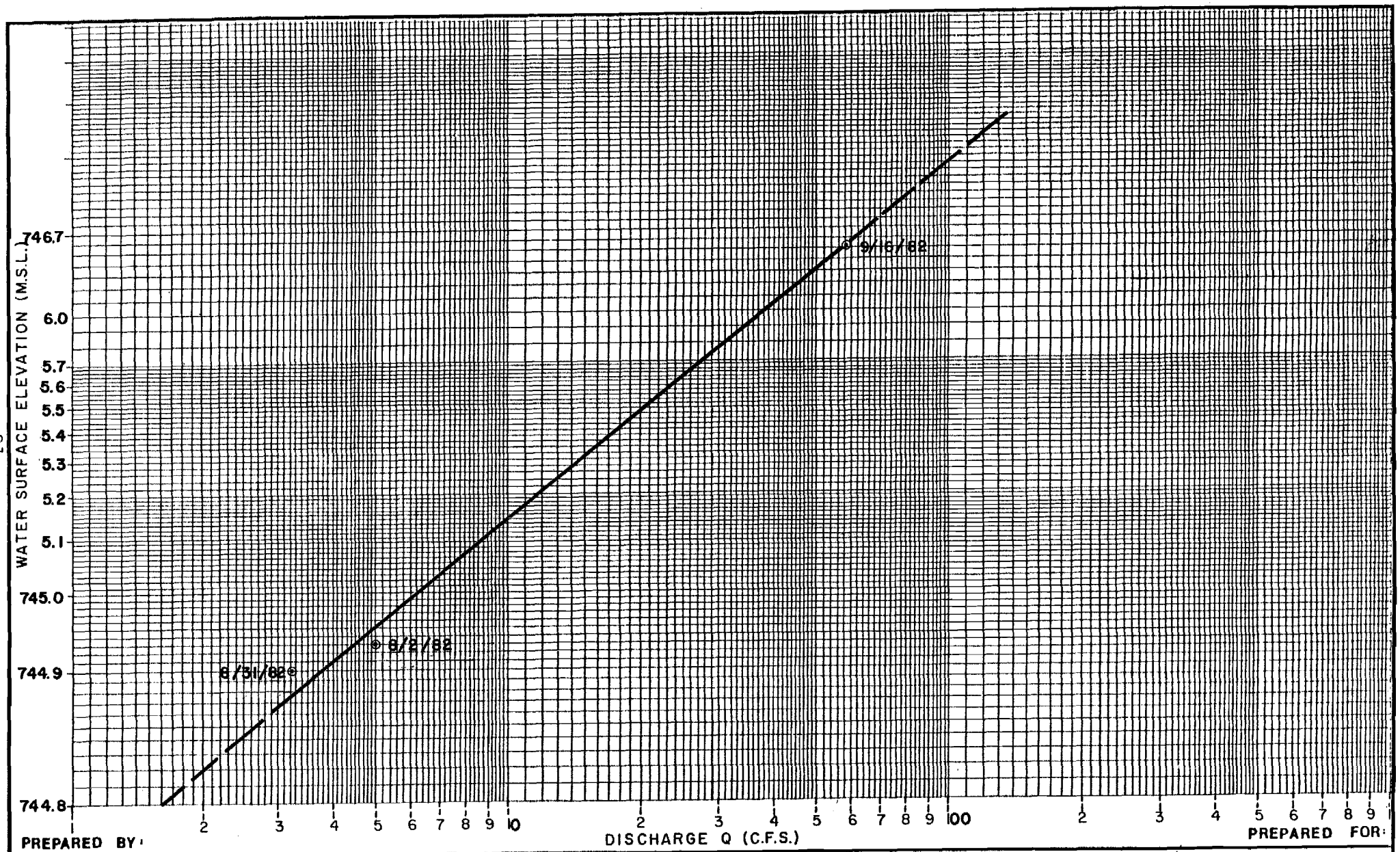


R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE
SLOUGH 16

Figure 2.1.4

ACRES



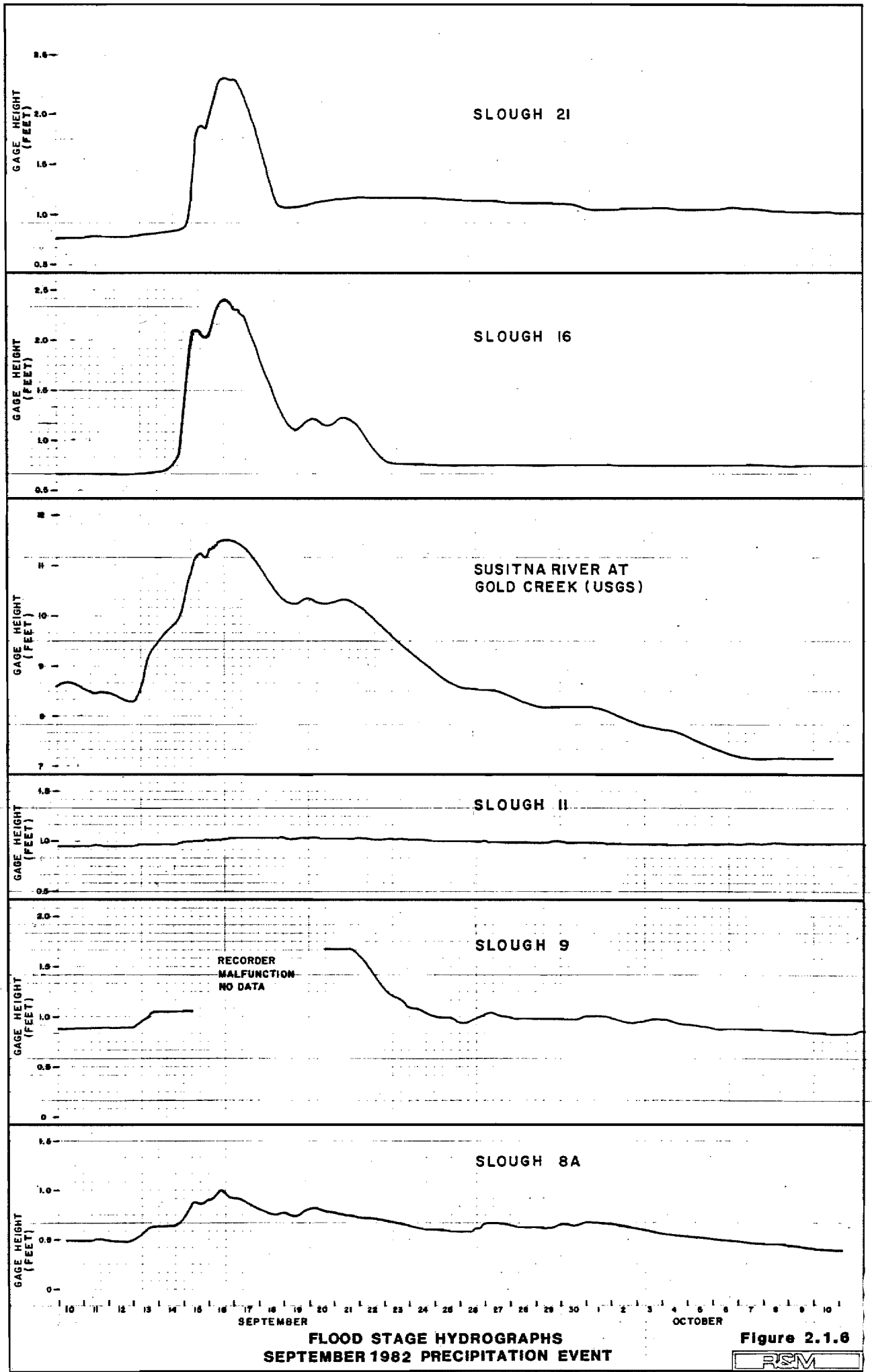
R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE

SLOUGH 21

Figure 2.1.5

ACRES



FLOOD STAGE HYDROGRAPHS
SEPTEMBER 1982 PRECIPITATION EVENT

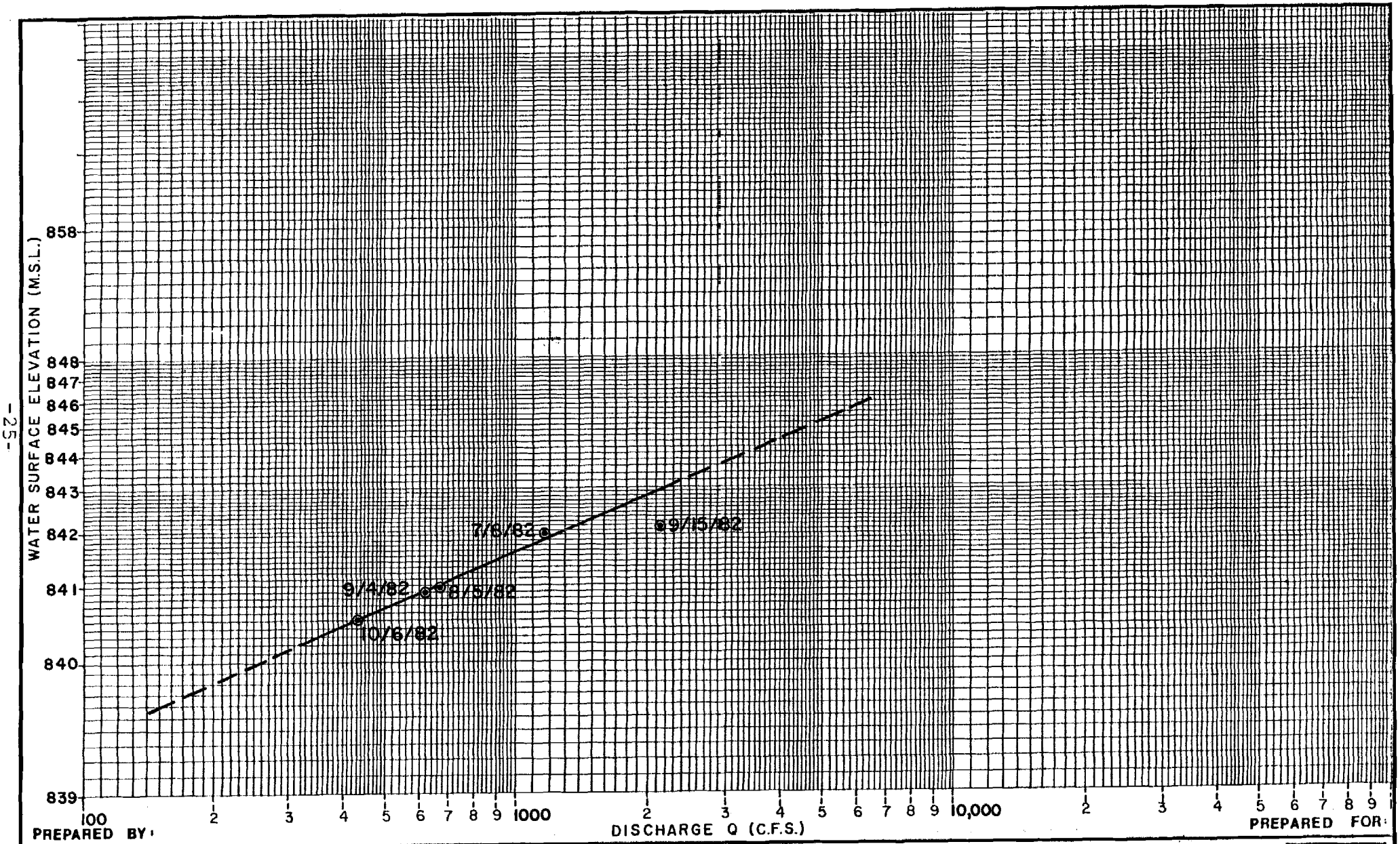
Figure 2.1.6

SECTION 2.2

STREAMFLOW (PARTIAL)

2.2 - Streamflow (Partial)

Streamgaging sites in several tributary streams and sloughs between Talkeetna and Devil Canyon were established cooperatively with the Alaska Department of Fish and Game to assist in their studies of fish spawning habitats. Miscellaneous measurements of stage were collected at these sites. Discharge measurements made at these sites by both R&M and ADF&G were utilized to generate the following stage-discharge rating curves.



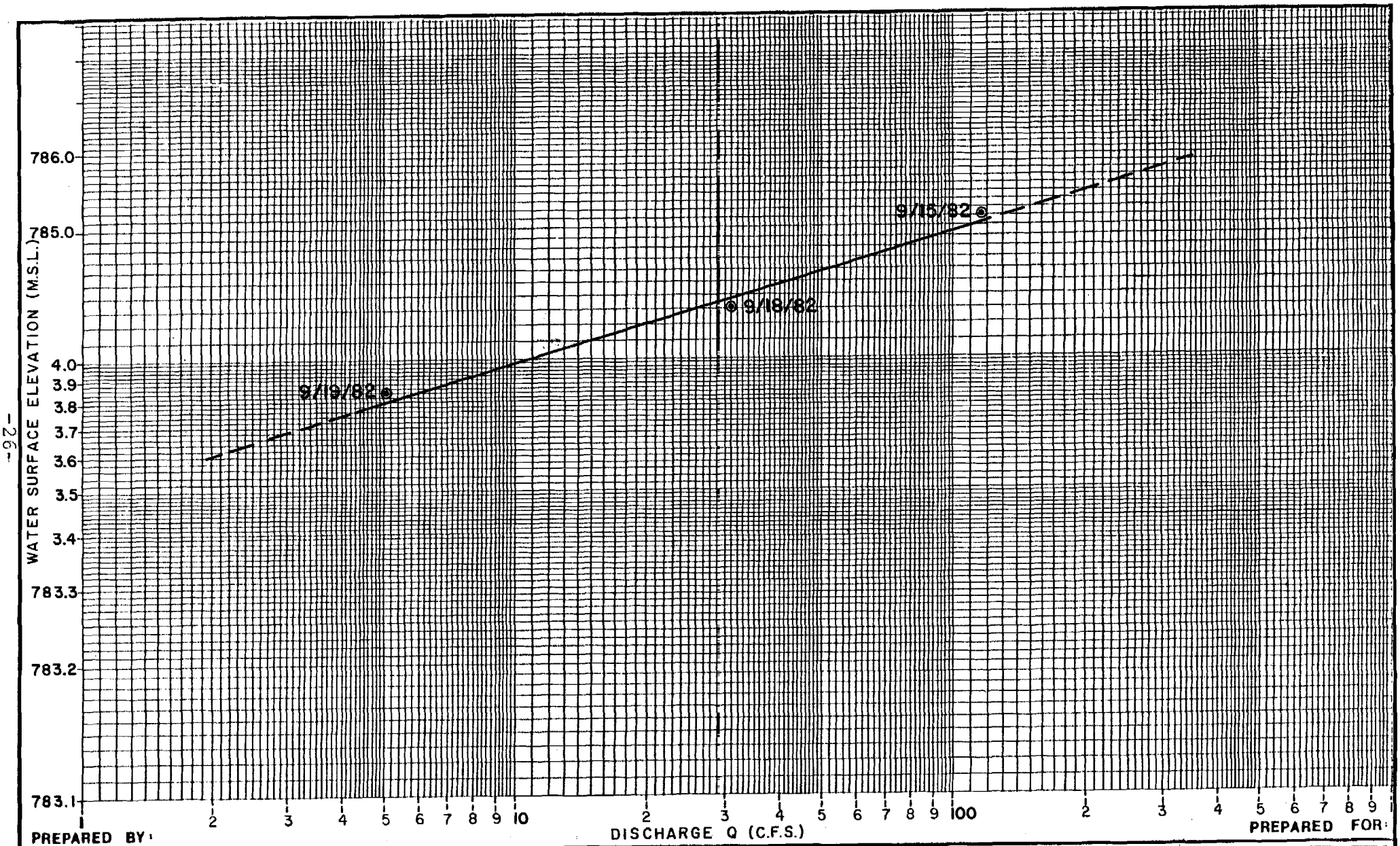
R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE

PORTAGE CREEK

Figure 2.2.1

ACRES



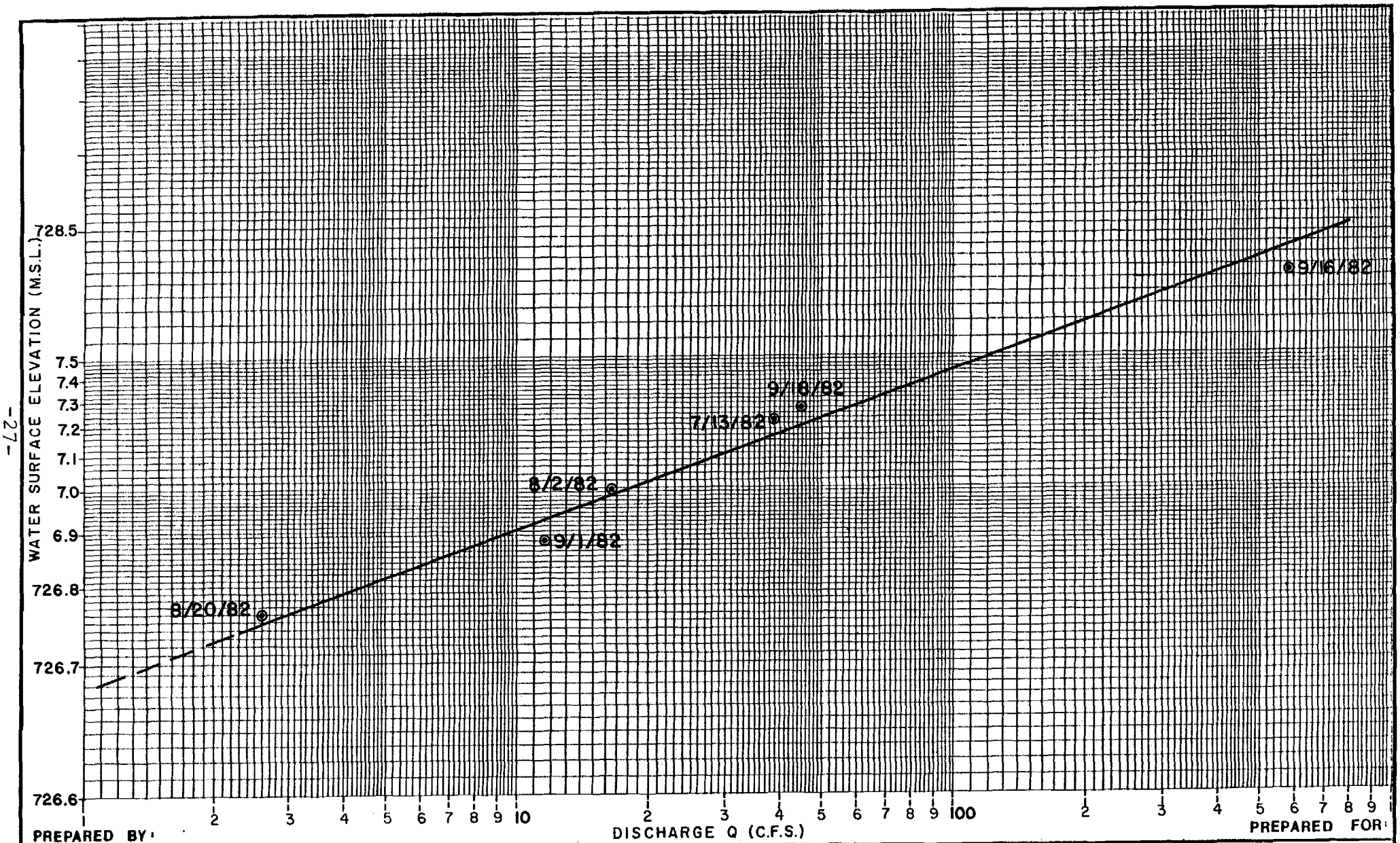
R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE

SLOUGH 22

Figure 2.2.2

ACRES

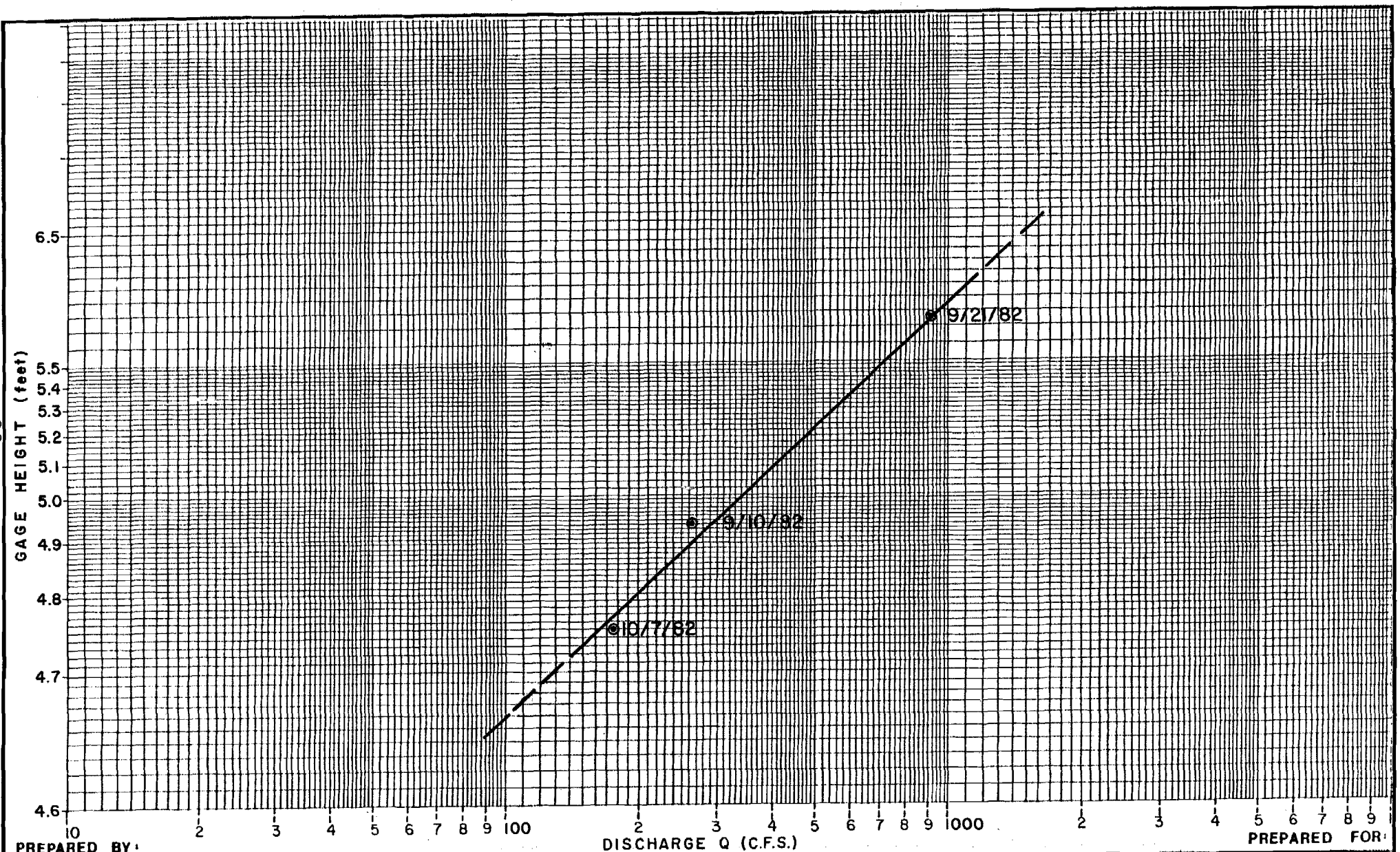


R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE
SLOUGH 20

Figure 2.2.3

ACRES



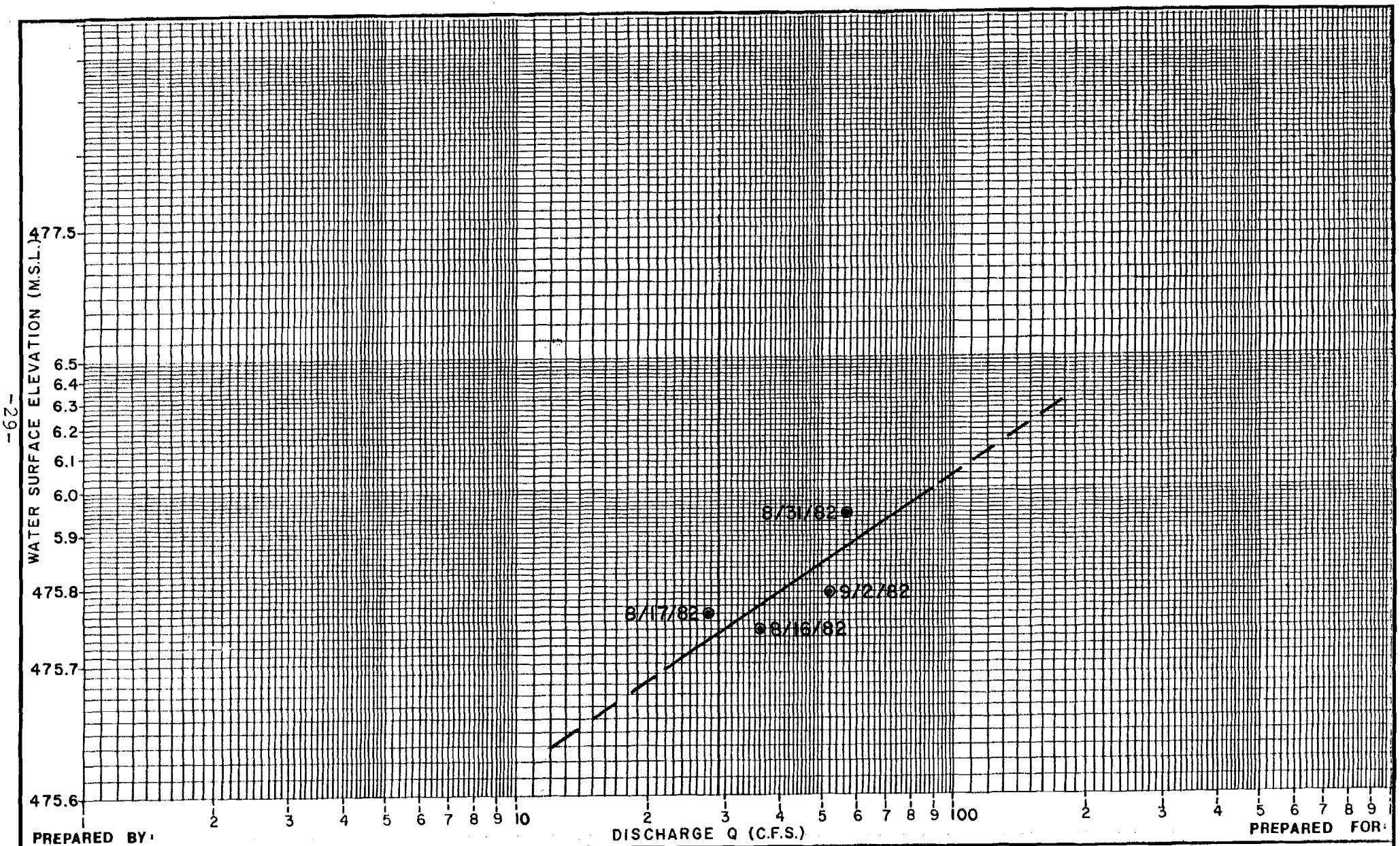
R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE

INDIAN RIVER

Figure 2.2.4

ACRES



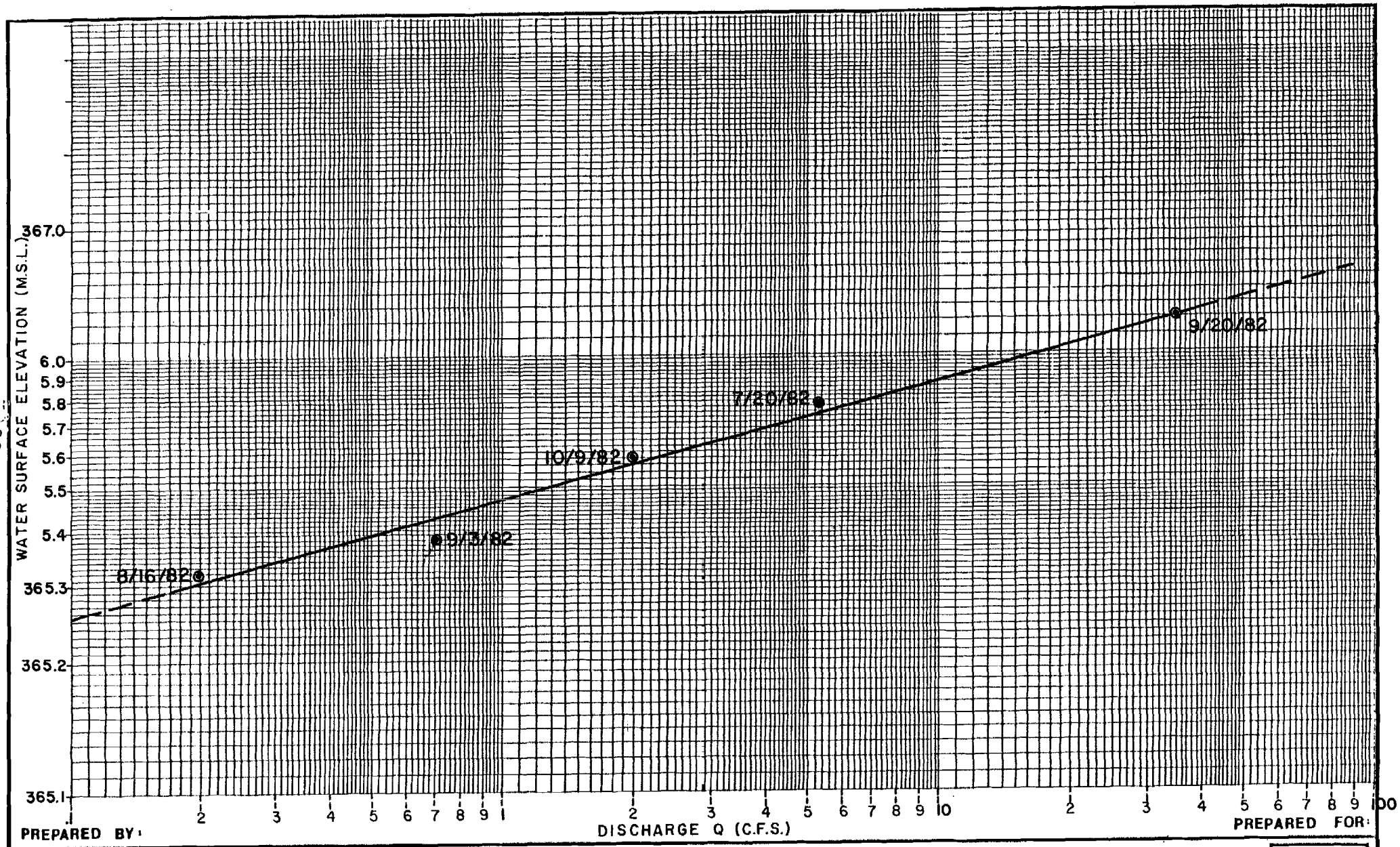
R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE

LANE CREEK

Figure 2.2.5

ACRES

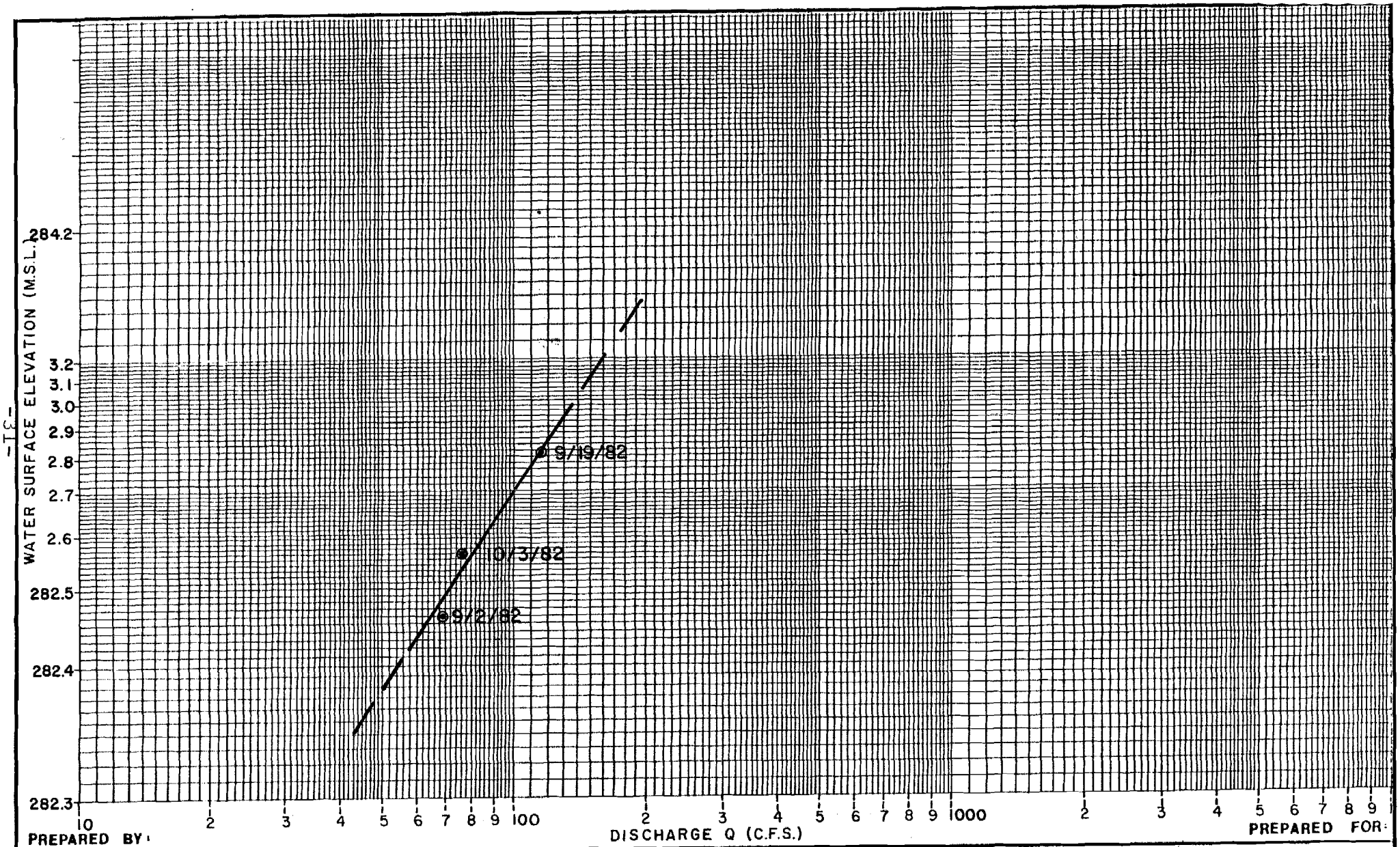


R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE
WHISKERS CREEK

Figure 2.2.6

ACRES



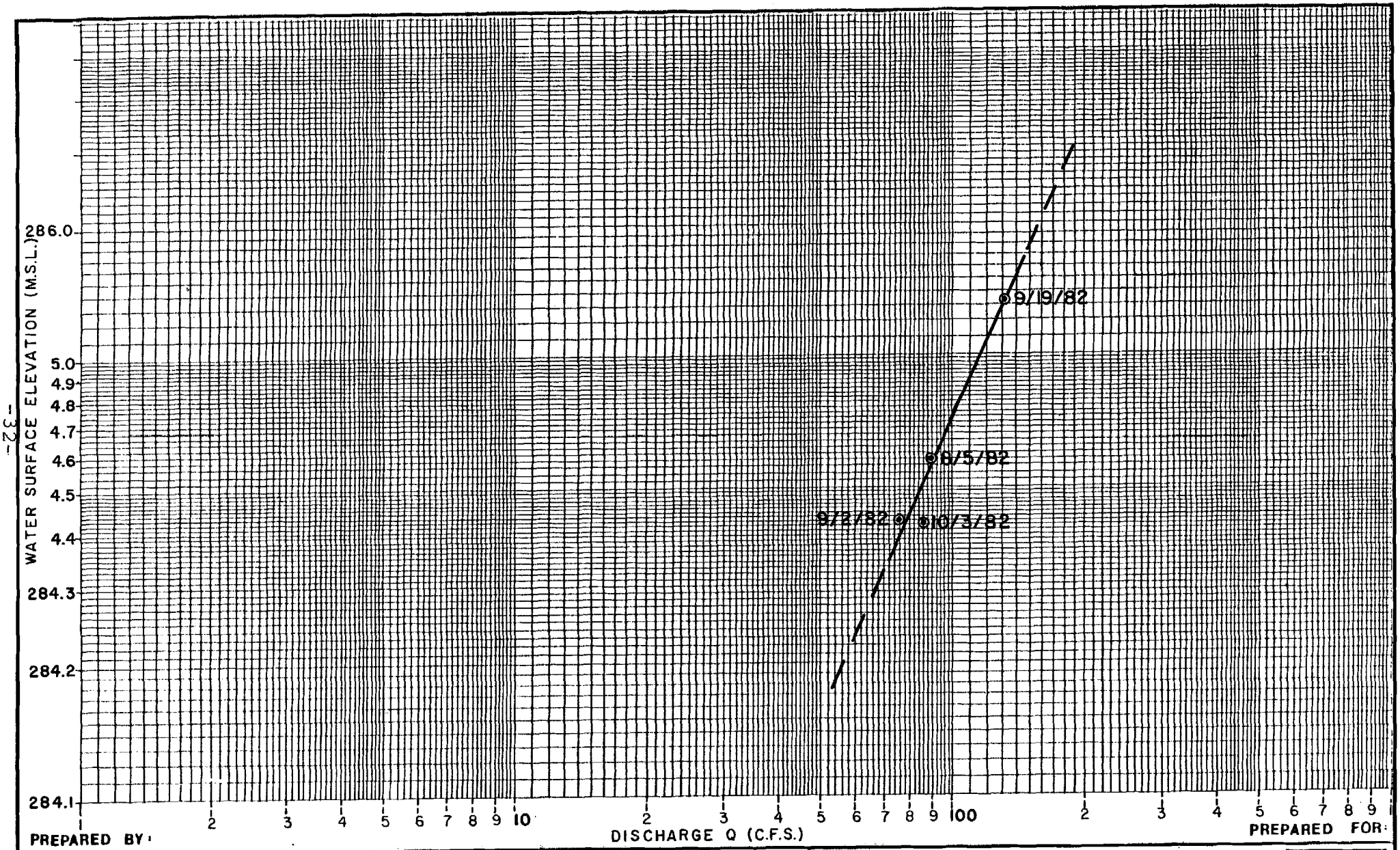
R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE

BIRCH CREEK

Figure 2.2.7

ACRES

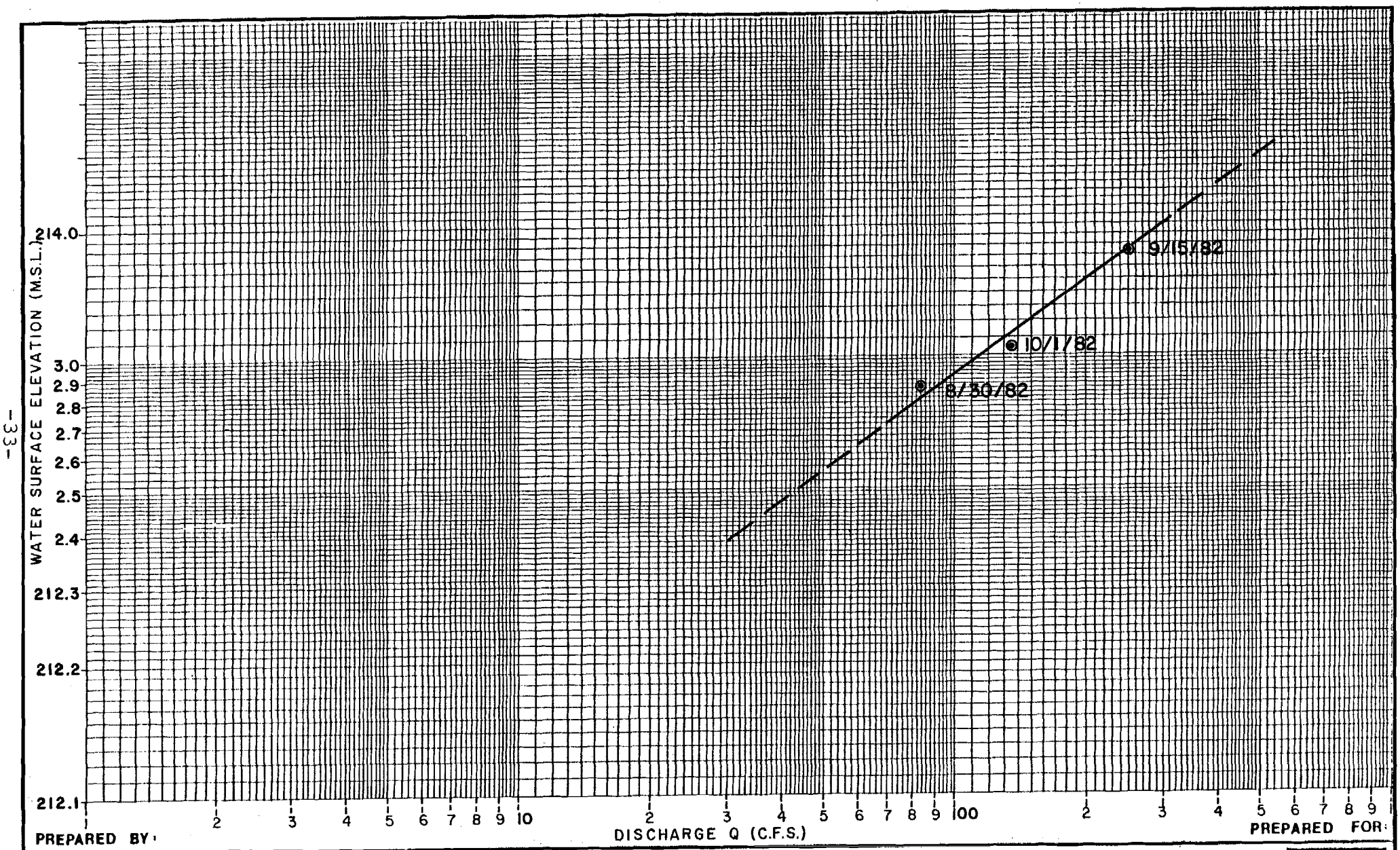


R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE
BIRCH CREEK SLOUGH

Figure 2.2.8

ACRES



R&M CONSULTANTS, INC.

STAGE DISCHARGE RATING CURVE

GOOSE 2 CREEK

Figure 2.2.9

ACRES

SECTION 2.3

WATER QUALITY DATA FROM SUSITNA RIVER AT GOLD CREEK

2.3 - Water Quality Data from Susitna River at Gold Creek

A water quality sampling program was initiated by R&M Consultants in 1980 to define baseline parameters on the Susitna River. In 1982, this program was redesigned to fill gaps which existed in the data and was reduced from two sampling sites to sampling at a single site (Gold Creek). The following table is a summary of 1980-1982 data that has been updated using these recent data. Complete field data for the 1982 season are included in the R&M Consultants 1982 Water Quality Annual Report (R&M Consultants, 1982c).

The data listed are broken up into summer, winter, and break-up time periods. Breakup samples are defined as samples taken during the month of May, with exceptions made for samples taken when break-up did not occur during this time period. Summer is the period from breakup until winter. Winter is defined as the day when the river temperatures reach 0°C, or October 15th if no temperature data are available.

TABLE 2.3.1

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: GOLD CREEK 1980 - 1982
Elevation: 676.5 FT.

	Summer/Winter/Break-Up				
	Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Field Parameters (1)					
Dissolved Oxygen	13.4/14.1/11.5	8.6/13.3/11.2	11.7/13.8/11.4	14/3/2	14/3/2
Percent Saturation	116/101/102	81/100/101	106/101/102	13/3/2	13/3/2
pH, pH Units	7.8/7.8/6.7	6.8/7.1/6.4	7.3/7.4/6.5	8/3/2	8/3/2
Conductivity, umhos/cm @ 25°C	183/249/106	75/84/105	128/179/106	15/5/2	15/5/2
Temperature, °C	12.8/0.8/10.5	6.8/0.0/10.3	9.8/0.2/10.4	15/5/2	15/5/2
Free Carbon Dioxide (2)	8.6/20/-	2.1/3.2/-	4.4/10.7/-	5/3/0	5/3/0
Alkalinity, as CaCO3	64/74/-	25/46/-	44/65/-	5/3/0	5/3/0
Settleable Solids, ml/l	0.6/-/-	0.1/-/-	0.4/-/-	7/3/2	7/3/2
Laboratory Parameters (1)(3)					
Ammonia Nitrogen	.21/.52/.08	.02/.32/.08	.09/.42/.08	11/2/1	14/4/2
Organic Nitrogen	.74/.81/.34	.05/.34/.27	.49/.54/.31	10/3/2	10/3/2
Kjeldahl Nitrogen	4.8/.99/.35	.06/.66/.34	.87/.82/.35	11/3/2	14/5/2
Nitrate Nitrogen	.86/.34/-	.14/.12/-	.32/.21/-	10/3/0	16/5/2
Nitrite Nitrogen	-/-/-	-/-/-	-/-/-	0/0/0	14/4/2
Total Nitrogen	5.66/1.34/0.35	.35/.66/.34	1.22/1.00/.35	11/4/2	11/4/2
Ortho-Phosphate	.10/.02/-	.01/.02/-	.06/.02/-	2/2/0	15/4/2
Total Phosphorus	.43/.02/.08	.01/.01/.08	.12/.02/.08	10/2/1	16/5/2

TABLE 2.3.1

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: GOLD CREEK 1980 - 1982
Elevation: 676.5 FT.

Laboratory Parameters (1) (3) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Alkalinity, as CaCO3	36/57/-	28/57/-	32/57/-	2/1/0	2/1/0
Chemical Oxygen Demand	24/16/12	1.3/2/8	10.9/8.4/10	14/5/2	16/5/2
Chloride	14/29/10	4/9/6	7.3/19/8	10/5/2	12/5/2
Conductivity, umhos/cm @ 25°C	37/165/-	37/165/-	37/165/-	2/1/0	2/1/0
True Color, Color Units	110/40/15	5/10/10	50/20/10	7/3/2	7/3/2
Hardness, as CaCO3 (4)	97/121/43	31/67/43	50/87/43	11/5/2	11/5/2
Sulfate	14.8/17/6	1.0/9.5/5	6.7/13.6/5.5	16/5/2	16/5/2
Total Dissolved Solids	103/188/90	63/100/87	86/135/89	16/5/2	16/5/2
Total Suspended Solids	1255/8/56	56/1/49	268/6/53	16/5/2	16/5/2
Turbidity, NTU	728/1.2/19	14/0.3/15	199/0.8/17	22/3/2	22/3/2
Uranium	-/-/-	-/-/-	-/-/-	0/0/0	4/2/0
Radioactivity, Gross Alpha, pCi/l	5.5/2.0/-	2.6/2.0/-	4.1/2.0/-	2/1/0	2/1/0
Total Organic Carbon	41/39/25	1.4/1.0/15	9/22/20	13/3/2	13/3/2
Total Inorganic Carbon	61/90/44	8.6/4/41	25/47/43	14/2/2	14/2/2
Organic Chemicals					
Endrin	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
Lindane	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0

TABLE 2.3.1

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: GOLD CREEK 1980 - 1982
Elevation: 676.5 FT.

Laboratory Parameters (1) (3) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
Methoxychlor	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
Toxaphene	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
2, 4-D	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
2, 4, 5-TP Silvex	-/-/-	-/-/-	-/-/-	0/0/0	3/1/0
Elements (Dissolved)					
Ag, Silver	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Al, Aluminum	.70/.18/-	.08/.18/-	.39/.18/-	2/1/0	6/3/2
As, Arsenic	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Au, Gold	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
B, Boron	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Ba, Barium	.11/.05/.07	.06/.05/.05	.09/.05/.06	7/1/2	7/3/2
Bi, Bismuth	.19/.07/-	.19/.07/-	.19/.07/-	1/1/0	7/3/2
Ca, Calcium	33.5/34.4/14	10/21/14	16.0/26.5/14	12/5/2	12/5/2
Cd, Cadmium	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Co, Cobalt	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Cr, Chromium	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Cu, Copper	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Fe, Iron	2.3/.35/.07	.07/.35/.07	.77/.35/.07	6/1/1	7/3/2
Hg, Mercury	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2

TABLE 2.3.1

WATER QUALITY DATA SUMMARY
SUSITNA RIVER

Agency: R&M CONSULTANTS, INC.
Station: GOLD CREEK 1980 - 1982
Elevation: 676.5

Laboratory Parameters (1) (3) (Continued)	Summer/Winter/Break-Up Maximum	Minimum	Mean	Number of Detectable Values	Total Number of Observations
K, Potassium	2.0/2.7/1.9	0.9/1.2/1.8	1.6/2.1/1.9	12/4/2	12/4/2
Mg, Magnesium	3.1/10.0/2.0	1.2/3.2/2.0	2.2/4.9/2.0	12/5/2	12/5/2
Mn, Manganese	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Mo, Molybdenum	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Na, Sodium	10.2/21.1/4.1	2.8/7.4/3.9	5.1/11.7/4.0	12/5/2	12/5/2
Ni, Nickel	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Pb, Lead	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Pt, Platinum	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Sb, Antimony	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Se, Selenium	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Si, Silicon	5.9/5.0/2.5	2.6/3.9/2.4	3.5/4.4/2.5	7/3/2	7/3/2
Sn, Tin	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Sr, Strontium	.09/.19/.07	.06/.10/.06	.07/.13/.07	4/3/2	7/3/2
Ti, Titanium	.14/-/-	.11/-/-	.13/-/-	2/0/0	7/3/2
W, Tungsten	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
V, Vanadium	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Zn, Zinc	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2
Zr, Zirconium	-/-/-	-/-/-	-/-/-	0/0/0	7/3/2

(1) Table values are mg/l unless noted otherwise.

(2) All values for free CO2 determined from nomograph on p. 297 of Standard Method, 14th edition.

(3) Samples for all parameters except chemical oxygen demand, dissolved and suspended solids, and turbidity were filtered.

(4) Hardness calculated by R&M personnel.

SECTION 2.4

CLIMATE DATA SUMMARIES

2.4 - Climate Data Summaries

Recording climatic stations were installed in the spring and summer of 1980 at six sites throughout the Upper Susitna Basin. Data parameters recorded on magnetic tape at 15-minute intervals are air temperature, average wind speed, resultant wind direction, relative humidity, cumulative precipitation, solar radiation intensity, and peak wind gust speed. Climate data were continuously collected at each site between October 1981 and September 1982, inclusive, with the following exceptions:

Station	Missing Months	Comments
Glacier	March 1982	
Denali	July 1982 August 1982 September 1982	
Tyone River	June 1982 July 1982 August 1982 September 1982	Station terminated May 13, 1982.
Kosina Creek	October 1981 December 1981	
Watana	February 1982	
Sherman	October 1981 - April 1982	Station established May 15, 1982.

SECTION 2.4. - PART 1

SUSITNA GLACIER CLIMATE DATA

TABLE 2.4.1

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING October, 1981

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	-10.4	-5.2	149	1.2	3.8	186	16.5	ESE	**	*****	****	2473	1
2	-2.6	-10.9	-6.8	030	1.0	1.4	045	4.4	NNE	**	*****	****	2453	2
3	-1.6	-6.8	-4.2	098	.4	.9	157	4.4	SSE	**	*****	****	2183	3
4	-2.5	-7.1	-4.8	054	1.4	1.7	087	8.9	NE	**	*****	****	1835	4
5	3.2	-5.1	-1.0	064	.9	1.3	075	9.5	ENE	**	*****	****	2078	5
6	.4	-7.9	-3.8	058	1.4	2.5	098	10.8	E	**	*****	****	1613	6
7	0.0	-8.7	-4.4	039	1.3	1.7	035	4.4	NNE	**	*****	****	2245	7
8	-3.0	-8.4	-5.7	042	.8	1.2	015	5.1	NNE	**	*****	****	1340	8
9	-1.4	-5.4	-3.4	063	.9	1.4	023	5.1	ESE	**	*****	****	1265	9
10	-2.4	-7.6	-5.0	062	1.6	1.8	042	7.0	NE	**	*****	****	1385	10
11	-.8	-7.4	-4.1	043	1.1	1.4	051	3.8	NNE	**	*****	****	1435	11
12	2.5	-1.6	.5	058	1.1	1.4	105	5.7	NNE	**	*****	****	1308	12
13	5.1	-.4	2.4	071	.5	.8	117	3.8	ESE	**	*****	****	1085	13
14	7.5	-3.1	2.2	057	.7	1.1	049	3.8	ENE	**	*****	****	1978	14
15	3.3	-3.1	.1	063	1.0	1.3	057	4.4	ENE	**	*****	****	1460	15
16	2.8	-3.3	-.3	078	1.0	1.3	097	6.3	ESE	**	*****	****	1318	16
17	1.7	-4.7	-1.5	052	2.0	3.1	014	15.2	E	**	*****	****	1290	17
18	-3.7	-10.1	-6.9	048	1.0	1.8	352	6.3	NE	**	*****	****	1423	18
19	.4	-9.4	-4.5	066	1.2	1.5	055	4.4	NE	**	*****	****	1405	19
20	-2.8	-7.0	-4.9	060	1.3	1.5	094	5.7	NNE	**	*****	****	995	20
21	2.6	-3.0	-.2	072	1.2	2.0	111	11.4	NE	**	*****	****	758	21
22	1.0	-1.6	-.3	079	.4	.8	125	7.0	NNW	**	*****	****	935	22
23	1.8	-1.6	.1	030	.7	1.2	117	5.1	NNW	**	*****	****	610	23
24	1.9	-7.5	-2.8	277	.3	1.0	215	4.4	NNW	**	*****	****	638	24
25	-3.5	-7.6	-5.6	315	1.9	1.4	296	2.5	WNW	**	*****	****	610	25
26	-4.2	-10.4	-7.3	064	.9	1.3	341	3.2	ENE	**	*****	****	1543	26
27	-3.3	-10.8	-7.1	065	1.1	1.4	031	5.1	ENE	**	*****	****	990	27
28	-1.9	-9.7	-5.8	063	1.2	1.3	073	5.7	NE	**	*****	****	1225	28
29	-1.5	-9.2	-5.4	077	1.8	1.9	125	5.1	ENE	**	*****	****	1338	29
30	-4.9	-9.6	-7.3	065	1.1	1.2	047	4.4	ENE	**	*****	****	815	30
31	-7.1	-12.6	-9.9	063	.8	1.1	064	3.8	ENE	**	*****	****	668	31
MONTH	7.5	-12.6	-3.6	061	1.0	.9	186	16.5	NE	**	*****	****	42691	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 8.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 12.7
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.2
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.

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

TABLE 2.4.1

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

GLACIER WEATHER STATION

October, 1981

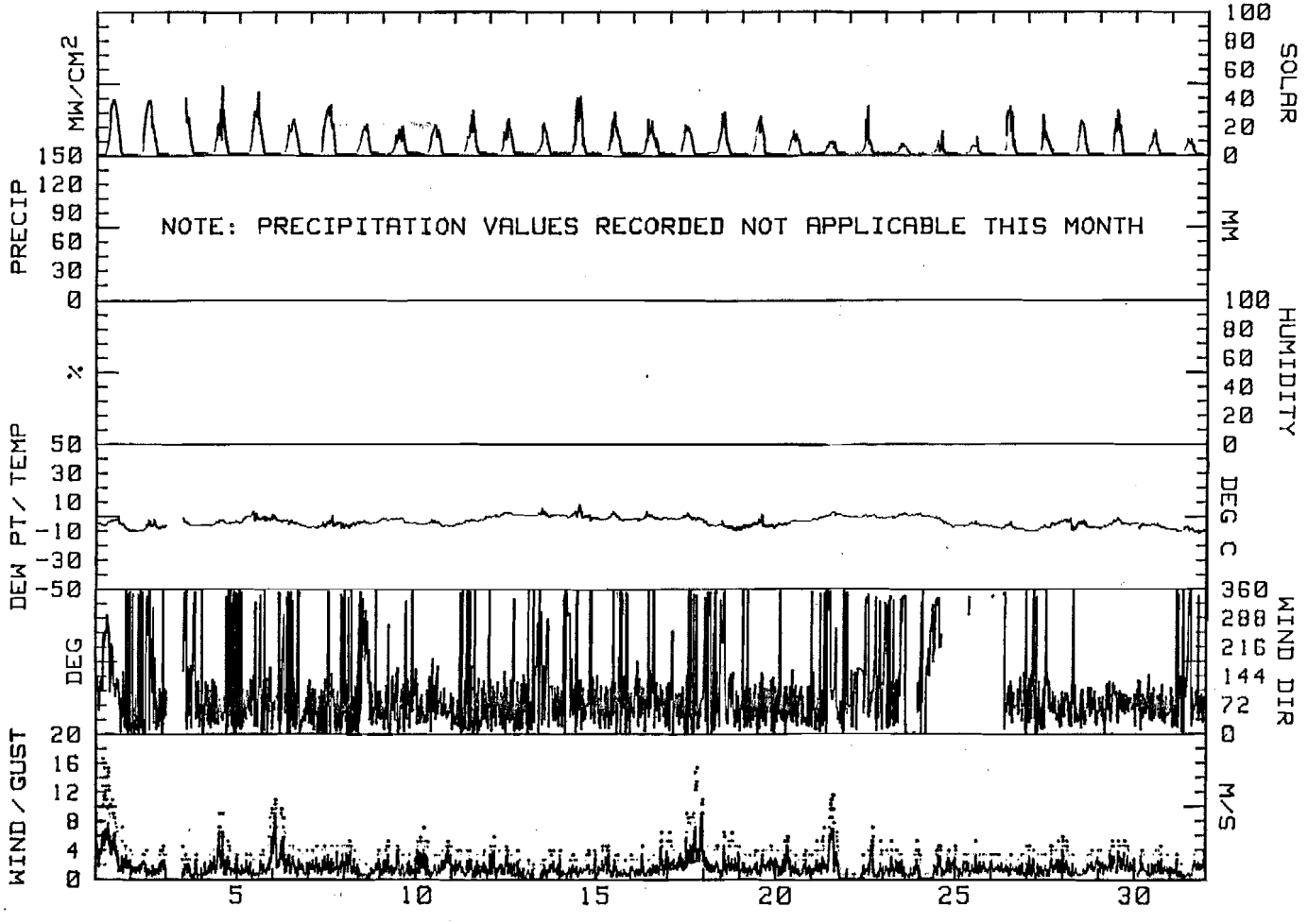


TABLE 2.4.2

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING November, 1981

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	-7.2	-11.3	-9.3	075	1.2	1.5	103	5.1	ENE	**	*****	****	680	1
2	-4.2	-12.0	-8.1	108	4.2	5.0	079	13.3	E	**	*****	****	725	2
3	-6.1	-15.9	-11.0	081	2.6	3.2	119	10.2	E	**	*****	****	633	3
4	-6.6	-15.7	-11.2	061	.7	1.7	071	5.7	ESE	**	*****	****	633	4
5	-12.5	-21.3	-16.9	071	.6	1.0	355	3.8	SE	**	*****	****	385	5
6	-13.0	-21.5	-17.3	065	.9	1.2	115	4.4	NNE	**	*****	****	375	6
7	-3.4	-13.0	-8.2	084	2.6	2.8	089	9.5	E	**	*****	****	405	7
8	-3.3	-9.0	-6.2	063	1.3	1.6	076	5.7	NE	**	*****	****	850	8
9	6.1	-5.2	.5	077	3.0	3.2	110	12.1	ENE	**	*****	****	650	9
10	5.8	-.5	2.7	114	4.1	4.7	128	21.6	ESE	**	*****	****	695	10
11	2.4	-3.3	-.5	077	2.8	3.2	118	15.2	ENE	**	*****	****	770	11
12	-.8	-5.3	-3.1	078	3.1	3.2	089	8.9	ENE	**	*****	****	640	12
13	-2.4	-5.6	-4.0	068	1.5	1.6	054	5.1	ENE	**	*****	****	523	13
14	-4.2	-10.3	-7.3	050	1.4	1.6	011	5.1	NE	**	*****	****	365	14
15	-8.1	-12.2	-10.2	050	1.3	1.6	358	5.1	NE	**	*****	****	253	15
16	-9.1	-12.8	-11.0	062	1.2	1.3	032	3.8	ENE	**	*****	****	202	16
17	-9.2	-14.1	-11.7	055	1.1	1.3	016	3.8	ENE	**	*****	****	185	17
18	-8.4	-19.5	-14.0	077	1.8	2.1	100	9.5	E	**	*****	****	168	18
19	-11.8	-17.5	-14.7	067	1.2	1.4	109	3.8	E	**	*****	****	190	19
20	-11.4	-15.0	-13.2	049	.9	1.2	014	4.4	ENE	**	*****	****	348	20
21	-10.1	-17.1	-13.6	055	.8	1.1	359	4.4	NNE	**	*****	****	113	21
22	-7.3	-15.5	-11.4	069	.9	1.2	054	3.8	E	**	*****	****	240	22
23	-6.4	-11.1	-8.8	053	.7	1.0	092	5.1	N	**	*****	****	323	23
24	-6.4	-9.2	-7.8	083	2.2	2.5	097	11.4	E	**	*****	****	390	24
25	-7.8	-12.3	-10.1	029	.5	1.8	256	5.7	NE	**	*****	****	335	25
26	-5.8	-10.8	-8.3	075	2.9	3.0	081	10.2	ENE	**	*****	****	280	26
27	-5.4	-10.8	-8.1	048	.6	1.0	016	3.8	NNE	**	*****	****	400	27
28	-9.9	-13.3	-11.6	060	.7	.9	053	3.8	ENE	**	*****	****	298	28
29	-9.4	-14.3	-11.9	073	1.4	1.7	077	9.5	E	**	*****	****	268	29
30	-2.8	-9.2	-6.0	072	2.9	3.1	078	11.4	ENE	**	*****	****	275	30
MONTH	6.1	-21.5	-9.1	077	1.6	2.1	128	21.6	ENE	**	*****	****	12592	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 12.1
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 16.5
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 15.2
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 13.3

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 ****

FIG 2.4.2

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

GLACIER WEATHER STATION

November, 1981

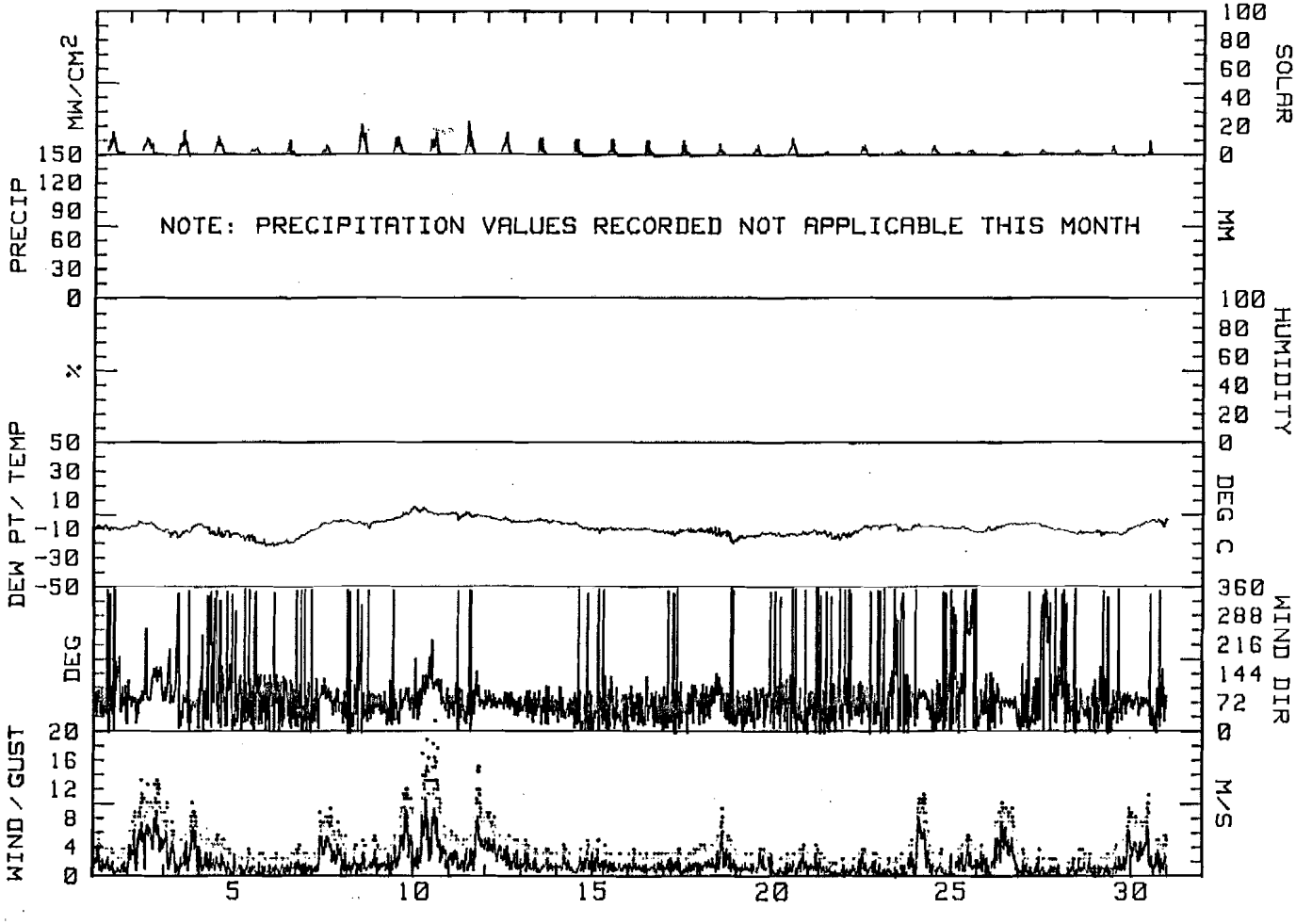


TABLE 2.4.3

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING December, 1981

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	-2.6	-9.7	-6.2	101	5.1	5.4	110	18.4	E	**	*****	****	343	1
2	-7.6	-14.6	-11.1	086	2.0	3.0	254	11.4	E	**	*****	****	310	2
3	-2.8	-8.6	-5.7	125	3.6	4.8	123	21.0	ESE	**	*****	****	335	3
4	-8.6	-12.3	-10.5	111	3.2	4.1	158	17.1	ENE	**	*****	****	193	4
5	-10.2	-15.1	-12.7	053	1.1	1.6	069	6.3	ENE	**	*****	****	100	5
6	-9.7	-14.8	-12.3	068	1.2	1.4	099	5.1	ENE	**	*****	****	200	6
7	-10.5	-13.4	-12.0	065	1.4	1.5	050	3.8	ENE	**	*****	****	85	7
8	-10.5	-13.4	-12.0	069	1.2	1.4	067	3.8	ENE	**	*****	****	91	8
9	-10.5	-14.0	-12.3	053	1.1	1.3	038	5.7	ENE	**	*****	****	128	9
10	-10.4	-13.7	-12.1	067	1.1	1.4	108	3.8	E	**	*****	****	90	10
11	-9.4	-15.5	-12.5	042	1.0	1.4	110	6.3	NNE	**	*****	****	278	11
12	-2.6	-9.3	-6.0	057	1.7	2.0	081	8.9	ENE	**	*****	****	245	12
13	-2.4	-6.6	-4.5	075	2.2	2.3	092	7.6	ENE	**	*****	****	119	13
14	-4.5	-9.6	-7.1	068	1.3	1.5	073	3.8	ENE	**	*****	****	68	14
15	-4.0	-9.8	-6.9	066	1.2	1.6	082	11.4	E	**	*****	****	165	15
16	-1.4	-5.1	-3.3	081	3.6	4.2	093	12.7	E	**	*****	****	250	16
17	2.3	-3.3	-.5	111	6.4	6.9	131	22.9	ESE	**	*****	****	285	17
18	2.1	-5.6	-1.8	111	4.1	4.5	126	21.6	ESE	**	*****	****	348	18
19	-5.1	-10.6	-7.9	061	1.6	1.7	070	10.2	ENE	**	*****	****	265	19
20	-6.7	-11.1	-8.9	049	.8	1.1	008	3.8	E	**	*****	****	270	20
21	-8.4	-15.3	-11.9	063	.6	.9	083	3.2	ENE	**	*****	****	298	21
22	-8.7	-13.1	-10.9	065	1.6	1.7	056	4.4	ENE	**	*****	****	53	22
23	-4.6	-9.3	-7.0	055	.9	1.8	118	8.9	NE	**	*****	****	273	23
24	-6.1	-11.1	-8.6	048	.8	1.1	030	5.7	NNE	**	*****	****	310	24
25	-10.7	-15.1	-12.9	047	1.1	1.4	085	5.1	NE	**	*****	****	138	25
26	-14.4	-19.8	-17.1	117	1.8	3.1	257	10.8	ESE	**	*****	****	50	26
27	-18.5	-21.9	-20.2	046	1.8	1.9	050	5.7	NE	**	*****	****	80	27
28	-18.3	-21.2	-19.8	057	1.3	1.5	046	4.4	ENE	**	*****	****	75	28
29	-19.5	-22.8	-21.2	047	1.5	1.8	122	5.7	NE	**	*****	****	78	29
30	-15.5	-22.1	-18.8	065	1.1	1.4	046	5.1	E	**	*****	****	95	30
31	-14.4	-19.3	-16.9	071	1.2	1.6	084	7.0	E	**	*****	****	103	31
MONTH	2.3	-22.8	-10.7	083	1.7	2.0	131	22.9	ENE	**	*****	****	5706	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 17.8
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 18.4
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 18.4
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 ****

FIG 2.4.3

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

GLACIER WEATHER STATION

December, 1981

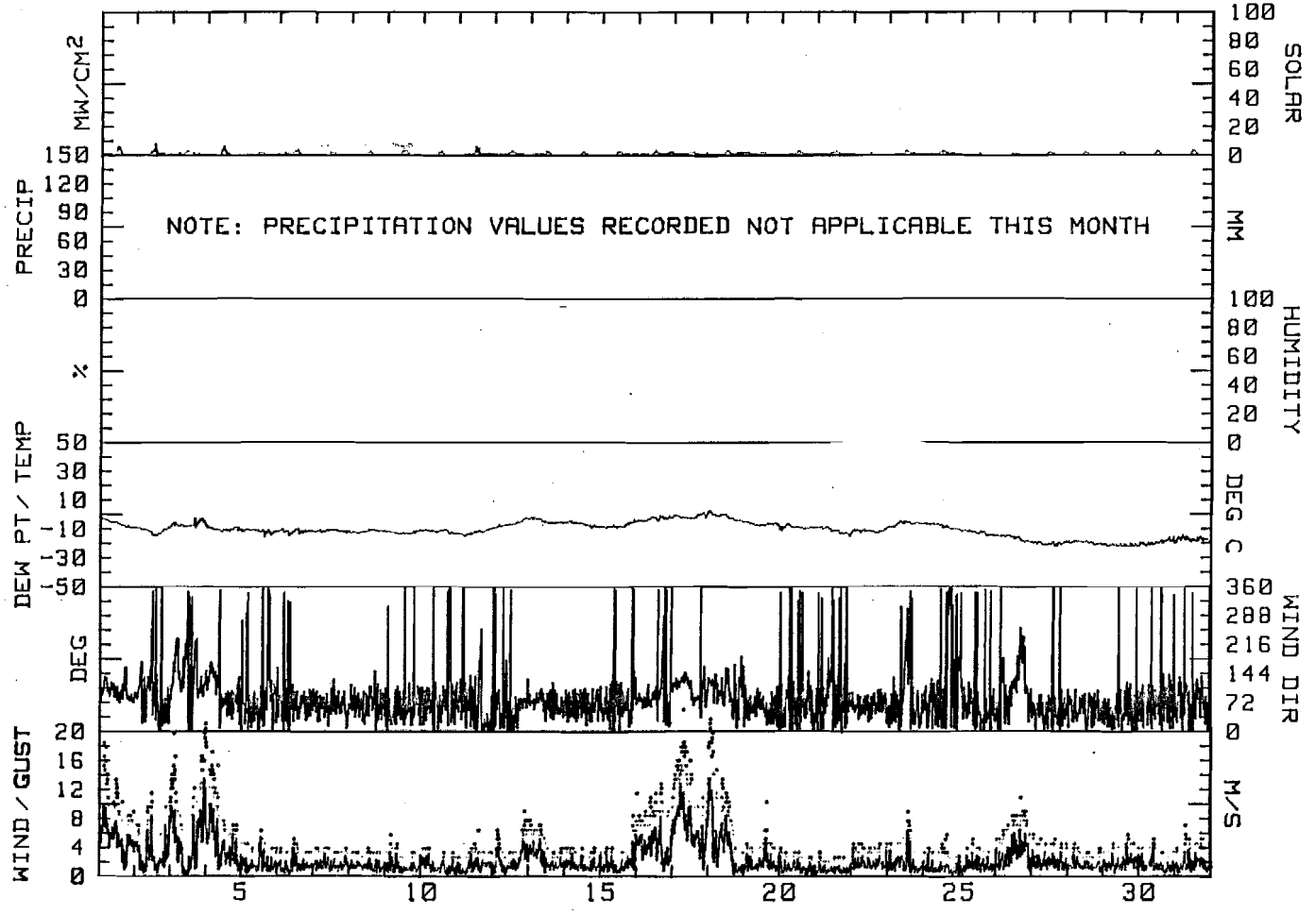


TABLE 2.4.4

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING January, 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	-17.1	-20.7	-18.9	060	1.2	1.4	062	3.8	ENE	**	*****	****	78	1
2	-16.2	-19.0	-17.6	083	.9	1.2	056	3.8	ESE	**	*****	****	203	2
3	-14.6	-17.7	-16.2	068	1.3	1.5	062	4.4	ENE	**	*****	****	128	3
4	-13.4	-21.9	-17.7	061	1.0	1.6	024	5.7	NNE	**	*****	****	245	4
5	-22.1	-31.2	-26.7	093	2.1	2.5	090	10.8	ESE	**	*****	****	90	5
6	-18.9	-33.1	-26.0	064	1.9	2.4	091	8.9	ENE	**	*****	****	80	6
7	-17.2	-22.5	-19.9	083	1.9	2.2	084	7.6	ESE	**	*****	****	90	7
8	-11.2	-21.5	-16.4	076	5.7	6.3	077	20.3	E	**	*****	****	95	8
9	-6.9	-21.7	-14.3	061	.8	1.2	043	5.7	N	**	*****	****	140	9
10	-5.7	-11.6	-8.7	069	.9	1.1	098	3.2	ENE	**	*****	****	385	10
11	-6.2	-9.0	-7.6	072	1.1	1.3	085	4.4	ENE	**	*****	****	218	11
12	-5.8	-10.1	-8.0	067	1.1	1.3	064	4.4	NE	**	*****	****	288	12
13	-9.6	-17.4	-13.5	075	1.9	2.3	122	8.3	ENE	**	*****	****	98	13
14	-5.8	-18.3	-12.1	058	1.3	1.6	039	5.1	NE	**	*****	****	98	14
15	-4.6	-10.8	-7.7	075	1.6	1.8	043	6.3	E	**	*****	****	95	15
16	-6.7	-15.1	-10.9	059	1.3	1.6	115	4.4	ENE	**	*****	****	103	16
17	-15.5	-20.1	-17.8	037	1.8	2.2	020	5.7	N	**	*****	****	213	17
18	-14.8	-19.3	-17.1	094	.9	1.8	280	7.0	SE	**	*****	****	223	18
19	-15.1	-19.3	-17.2	071	1.7	1.9	070	6.3	ENE	**	*****	****	110	19
20	-11.5	-17.3	-14.4	064	1.3	1.5	054	4.4	E	**	*****	****	145	20
21	-15.4	-21.4	-18.4	054	1.3	1.7	087	5.7	E	**	*****	****	140	21
22	-8.6	-24.3	-16.5	035	1.4	1.8	085	8.9	N	**	*****	****	138	22
23	-9.8	-22.7	-16.3	037	1.3	1.6	082	7.6	ENE	**	*****	****	148	23
24	-17.7	-21.5	-19.6	068	.9	1.1	354	3.2	ENE	**	*****	****	175	24
25	-17.0	-19.7	-18.4	067	1.1	1.2	102	3.2	NE	**	*****	****	200	25
26	-17.6	-20.8	-19.2	054	1.1	1.2	038	3.2	NNE	**	*****	****	238	26
27	-12.1	-20.8	-16.5	059	1.3	1.5	063	3.8	ENE	**	*****	****	265	27
28	-5.6	-12.3	-9.0	050	1.3	1.7	107	7.0	NNE	**	*****	****	488	28
29	-7.8	-9.9	-8.9	064	.8	1.0	034	3.8	ENE	**	*****	****	513	29
30	-8.1	-10.6	-9.4	054	1.9	2.0	036	8.3	NE	**	*****	****	395	30
31	-8.6	-11.8	-10.2	066	1.8	1.9	056	6.3	ENE	**	*****	****	495	31
MONTH	-4.6	-33.1	-15.2	066	1.4	1.8	077	20.3	ENE	**	*****	****	6313	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 18.4
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 19.7
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 19.0
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 19.0

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 ****

FIG 2.4.4

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

GLACIER WEATHER STATION

January, 1982

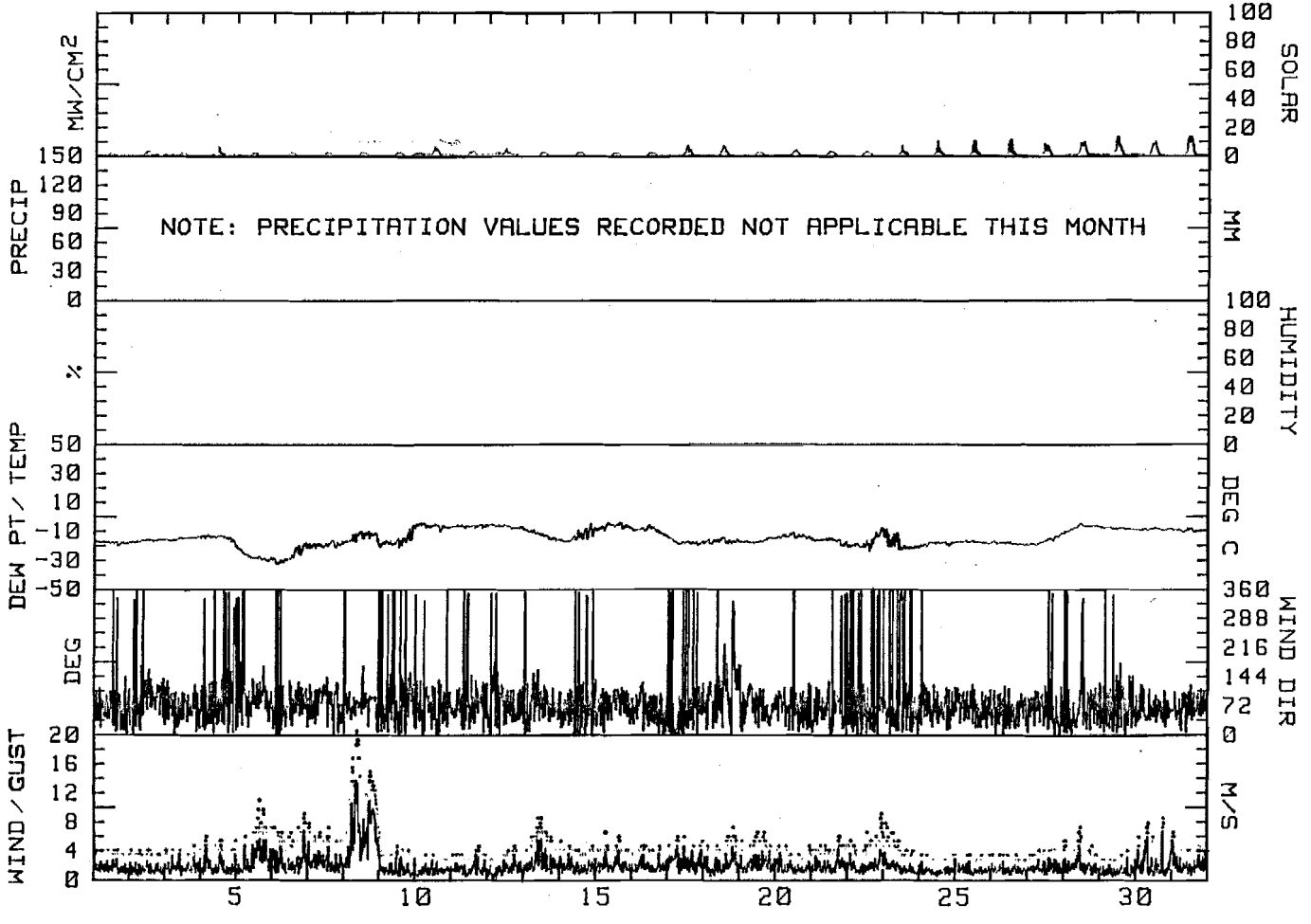


TABLE 2.4.5

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING February, 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	-2.1	-9.9	-6.0	058	1.3	1.5	038	5.1	NE	**	*****	****	395	1
2	4.2	-3.4	.4	073	1.3	1.6	086	6.3	NE	**	*****	****	663	2
3	5.1	.1	2.6	047	1.2	1.7	106	5.7	NNE	**	*****	****	695	3
4	2.7	-1.6	.6	054	.5	1.0	052	5.1	NE	**	*****	****	470	4
5	5.8	.1	3.0	063	1.4	1.6	032	5.7	ENE	**	*****	****	677	5
6	3.6	-1.1	1.3	070	1.3	1.6	050	5.1	ESE	**	*****	****	855	6
7	3.0	-1.7	.7	066	1.6	1.9	054	6.3	NE	**	*****	****	923	7
8	.9	-8.4	-3.8	034	1.1	1.6	115	7.6	ENE	**	*****	****	643	8
9	-5.0	-12.4	-8.7	340	6.6	7.6	336	26.0	NNW	**	*****	****	1143	9
10	-11.6	-16.8	-14.2	093	.5	3.5	022	12.7	E	**	*****	****	1113	10
11	-11.2	-19.2	-15.2	072	3.4	4.9	092	15.9	ENE	**	*****	****	1165	11
12	-8.9	-17.1	-13.0	068	1.2	1.4	039	8.9	ENE	**	*****	****	1088	12
13	-14.3	-20.4	-17.4	091	1.5	1.9	056	8.3	E	**	*****	****	785	13
14	-18.6	-30.9	-24.8	033	.9	2.7	074	14.0	ENE	**	*****	****	705	14
15	-16.8	-32.7	-24.8	059	1.9	2.8	133	13.3	E	**	*****	****	1093	15
16	-15.9	-21.4	-18.7	091	3.8	4.2	122	13.3	E	**	*****	****	1133	16
17	-17.2	-20.1	-18.7	083	2.5	2.9	095	9.5	E	**	*****	****	1025	17
18	-12.6	-24.2	-18.4	068	2.4	2.7	046	11.4	ENE	**	*****	****	1280	18
19	-18.0	-29.4	-23.7	070	1.3	1.8	095	6.3	ENE	**	*****	****	1392	19
20	-21.2	-26.7	-24.0	050	1.5	2.1	105	7.0	NNE	**	*****	****	1358	20
21	-22.7	-31.7	-27.2	058	2.2	2.9	115	9.5	N	**	*****	****	1403	21
22	-14.3	-32.0	-23.2	103	2.5	2.8	125	7.6	ESE	**	*****	****	1465	22
23	-11.7	-19.3	-15.5	080	2.0	2.5	083	9.5	E	**	*****	****	1528	23
24	-11.9	-17.8	-14.9	087	2.2	2.5	087	7.6	ESE	**	*****	****	1585	24
25	-11.9	-17.9	-14.9	076	2.3	2.6	083	9.5	ENE	**	*****	****	1645	25
26	-12.2	-17.5	-14.9	094	1.6	2.2	088	7.0	ESE	**	*****	****	1718	26
27	-9.3	-16.2	-12.8	033	1.2	1.5	022	5.1	NNE	**	*****	****	1683	27
28	-4.9	-15.1	-10.0	060	1.1	1.3	029	5.1	ENE	**	*****	****	1978	28
MONTH	5.8	-32.7	-12.7	063	1.6	2.5	336	26.0	ENE	**	*****	****	31599	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 24.8
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 19.7
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 21.6
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 23.5

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 ****

FIG 2.4.5

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

GLACIER WEATHER STATION

February, 1982

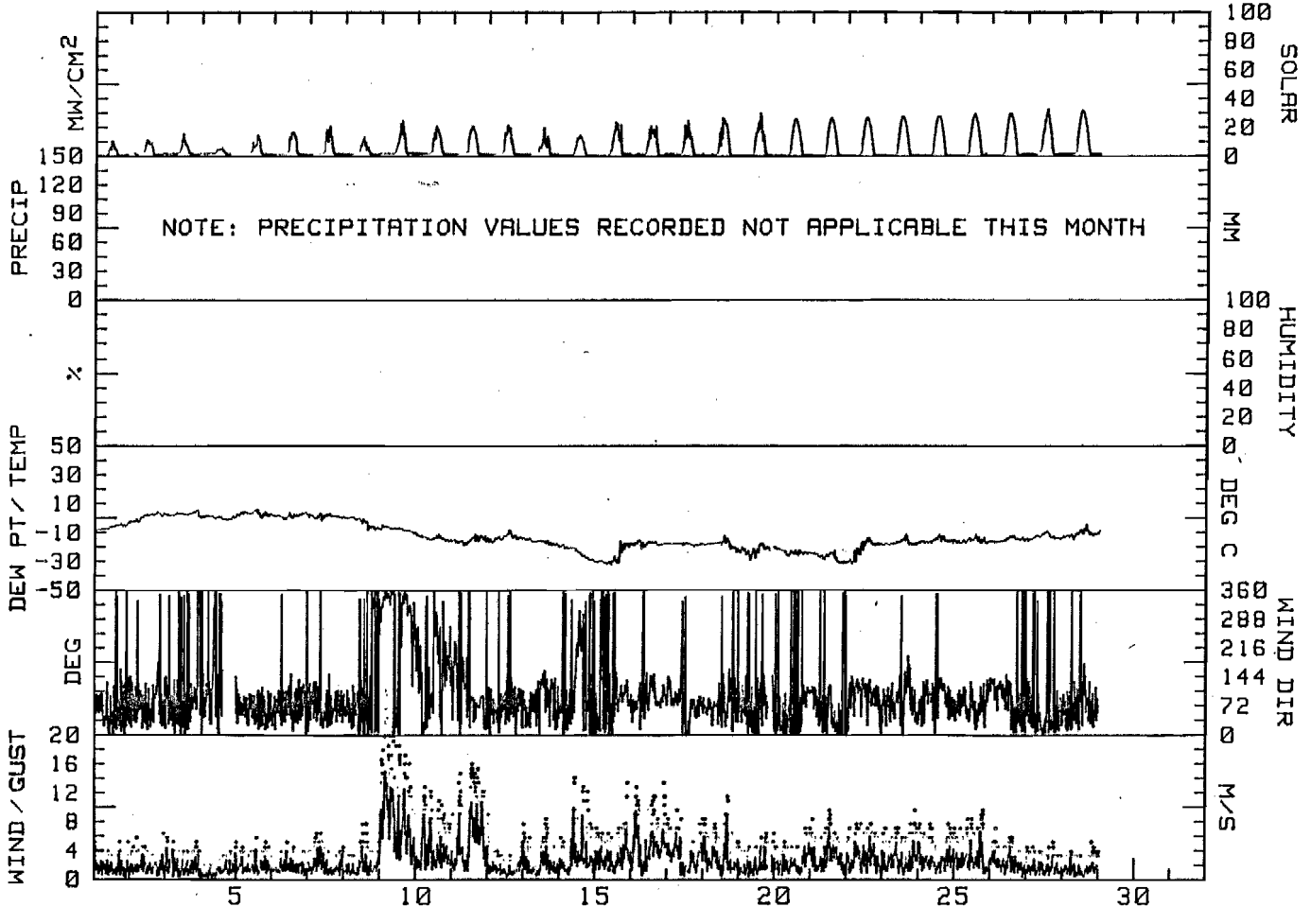


TABLE 2.4.6

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING April, 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	-4.2	-8.0	-6.1	090	1.8	2.3	089	7.0	E	**	*****	.2	5026	14
15	.7	-8.0	-3.7	083	1.6	2.1	113	6.3	ENE	**	*****	1.8	5105	15
16	2.7	-8.2	-2.8	076	1.3	1.5	121	6.3	ENE	**	*****	.8	5140	16
17	.4	-9.7	-4.7	080	.6	1.0	135	3.8	E	**	*****	.8	5460	17
18	-5.6	-11.4	-8.5	130	1.7	3.3	143	17.1	E	**	*****	0.0	4610	18
19	-1.6	-11.1	-6.4	070	1.9	2.5	109	15.9	ENE	**	*****	.2	4385	19
20	-.5	-6.5	-3.5	109	3.2	3.9	130	19.0	E	**	*****	0.0	4888	20
21	-1.4	-6.8	-4.1	357	.6	.9	346	2.5	NNW	**	*****	2.2	3975	21
22	-2.3	-8.4	-5.4	330	.7	1.2	275	3.2	W	**	*****	1.2	3548	22
23	5.6	-8.8	-1.6	079	.8	1.2	061	5.7	E	**	*****	1.8	5845	23
24	3.5	-8.4	-2.5	070	.7	1.2	114	7.0	ESE	**	*****	2.6	4255	24
25	.5	-6.8	-3.2	122	2.6	4.3	122	16.5	E	**	*****	0.8	5303	25
26	3.4	-8.4	-2.5	060	.9	1.8	088	7.0	ENE	**	*****	3.2	6048	26
27	2.8	-3.0	-.1	078	2.6	2.9	085	9.5	E	**	*****	0.0	4455	27
28	.5	-4.7	-2.1	099	3.0	3.8	084	11.4	E	**	*****	.4	5280	28
29	3.5	-7.0	-1.8	066	.7	1.2	072	5.1	E	**	*****	.4	6398	29
30	2.9	-7.5	-2.3	083	.4	.8	073	3.2	ENE	**	*****	1.0	5665	30
MONTH	5.6	-11.4	-3.6	089	1.3	1.5	130	19.0	E	**	*****	16.6	85384	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.7
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 12.1
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 16.5
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 ****

FIG. 2.4.6

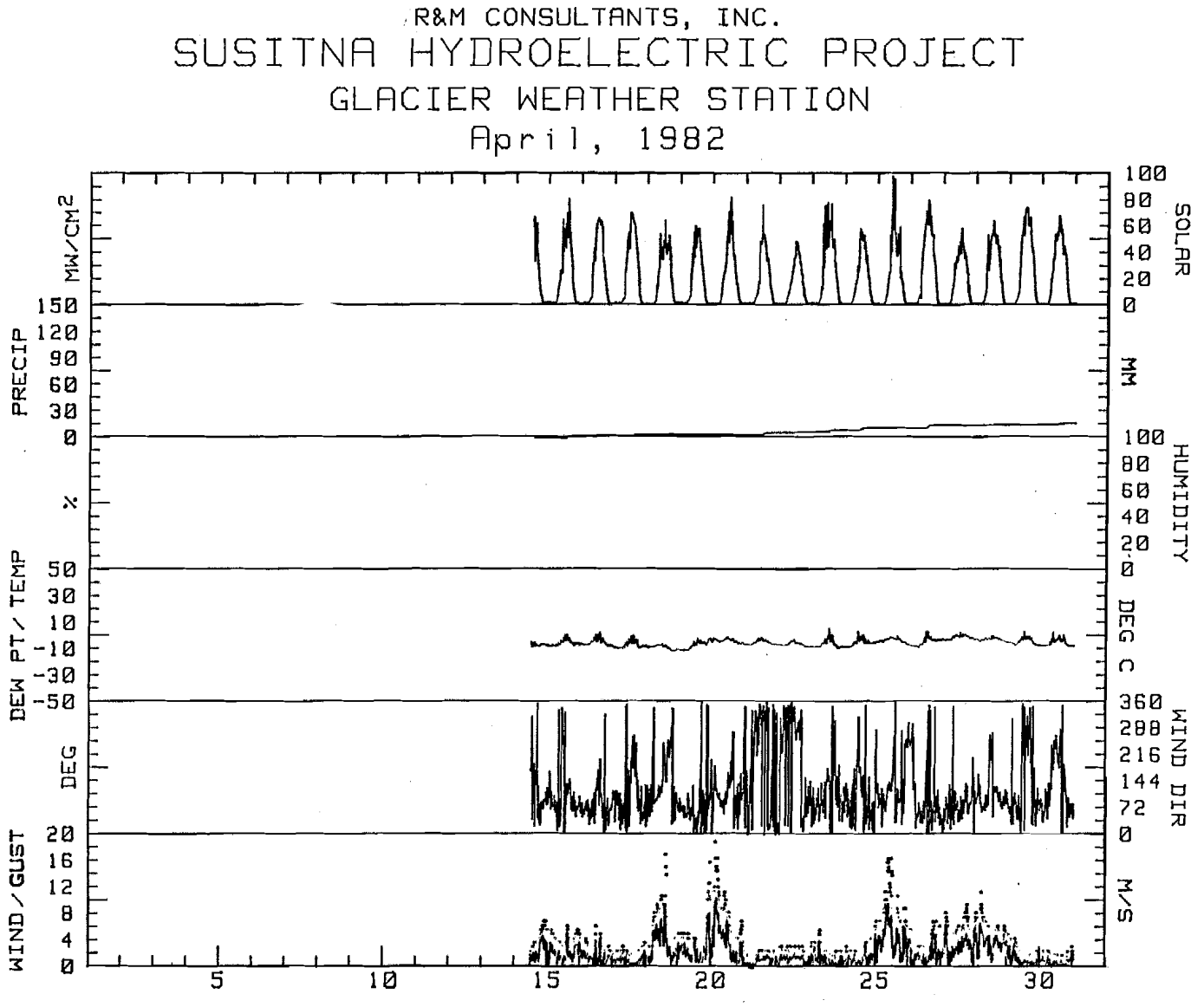

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
April, 1982
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
MM
150
120
90
60
30
0
HUMIDITY
%
100
80
60
40
20
0
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.7

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING May, 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	4.3	-7.9	-1.8	073	.8	1.0	052	3.8	ENE	**	*****	0.0	6695	1
2	-.7	-8.2	-4.5	091	.9	1.5	148	6.3	NE	**	*****	0.0	6860	2
3	3.4	-7.8	-2.2	106	.7	1.2	143	5.1	ESE	**	*****	0.0	6653	3
4	3.0	-7.5	-2.3	107	.8	1.3	097	5.7	E	**	*****	.4	7043	4
5	6.8	-6.8	0.0	067	1.6	1.9	061	7.0	NE	**	*****	0.0	6643	5
6	8.2	-2.1	3.1	074	.6	.9	055	3.8	ENE	**	*****	0.0	6505	6
7	9.2	-1.7	3.8	063	.5	.9	134	3.2	NNE	**	*****	0.0	6223	7
8	5.7	-2.3	1.7	027	.5	1.2	092	4.4	N	**	*****	1.0	5068	8
9	3.4	-1.7	.9	054	.3	1.1	035	3.8	NNE	**	*****	2.2	5008	9
10	9.7	-1.6	4.1	086	.5	.9	053	3.8	SSE	**	*****	.8	6460	10
11	.9	-4.2	-1.7	274	1.4	1.8	246	5.1	WSW	**	*****	2.2	5365	11
12	5.4	-4.8	.3	326	.2	.8	298	3.2	WNW	**	*****	3.2	5935	12
13	8.0	-5.8	1.1	102	.3	.9	078	3.8	E	**	*****	0.0	7420	13
14	9.4	-4.2	2.6	073	.6	.9	046	3.8	NE	**	*****	0.0	7383	14
15	8.3	-3.6	2.4	063	.7	1.0	067	4.4	ENE	**	*****	0.0	7005	15
16	6.1	-3.3	1.4	085	1.8	2.3	083	7.6	ENE	**	*****	0.0	7570	16
17	7.9	-2.0	3.0	076	.8	1.4	071	6.3	NE	**	*****	0.0	7148	17
18	6.1	-2.1	2.0	064	.6	1.3	274	5.7	ESE	**	*****	0.0	6543	18
19	5.9	-4.2	.9	069	1.1	1.5	063	5.1	ENE	**	*****	0.0	7418	19
20	5.0	-3.8	.6	110	.4	1.6	153	5.7	E	**	*****	1.6	5095	20
21	3.9	-4.2	-.2	041	.5	1.3	078	4.4	NNE	**	*****	4.2	7053	21
22	8.8	-2.2	3.3	088	.7	1.1	057	4.4	ENE	**	*****	0.0	7775	22
23	7.3	-1.6	2.9	080	.9	1.5	270	5.7	ENE	**	*****	0.0	7540	23
24	6.6	-.5	3.1	041	.3	1.1	058	3.8	N	**	*****	0.0	7658	24
25	6.1	-1.5	2.3	242	.5	1.3	238	6.3	W	**	*****	.6	5833	25
26	13.0	-1.6	5.7	131	1.0	1.5	141	5.7	SE	**	*****	2.8	4890	26
27	6.6	-1.1	2.8	161	1.3	2.5	212	10.8	SE	**	*****	0.0	4995	27
28	3.8	-2.2	.8	249	.4	1.5	233	6.3	N	**	*****	4.8	5123	28
29	3.4	-2.5	.5	044	.3	1.2	052	5.7	NNE	**	*****	0.0	5833	29
30	6.7	-1.6	2.6	007	.0	1.2	165	4.4	N	**	*****	2.2	6563	30
31	9.3	.9	5.1	107	.7	1.6	161	6.3	ENE	**	*****	0.0	8020	31
MONTH	13.0	-8.2	1.4	083	.5	1.3	212	10.8	ENE	**	*****	26.0	201312	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 8.9
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 9.5
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 6.3
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 4.4

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 ****

FIG. 2.4.7

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

GLACIER WEATHER STATION

May, 1982

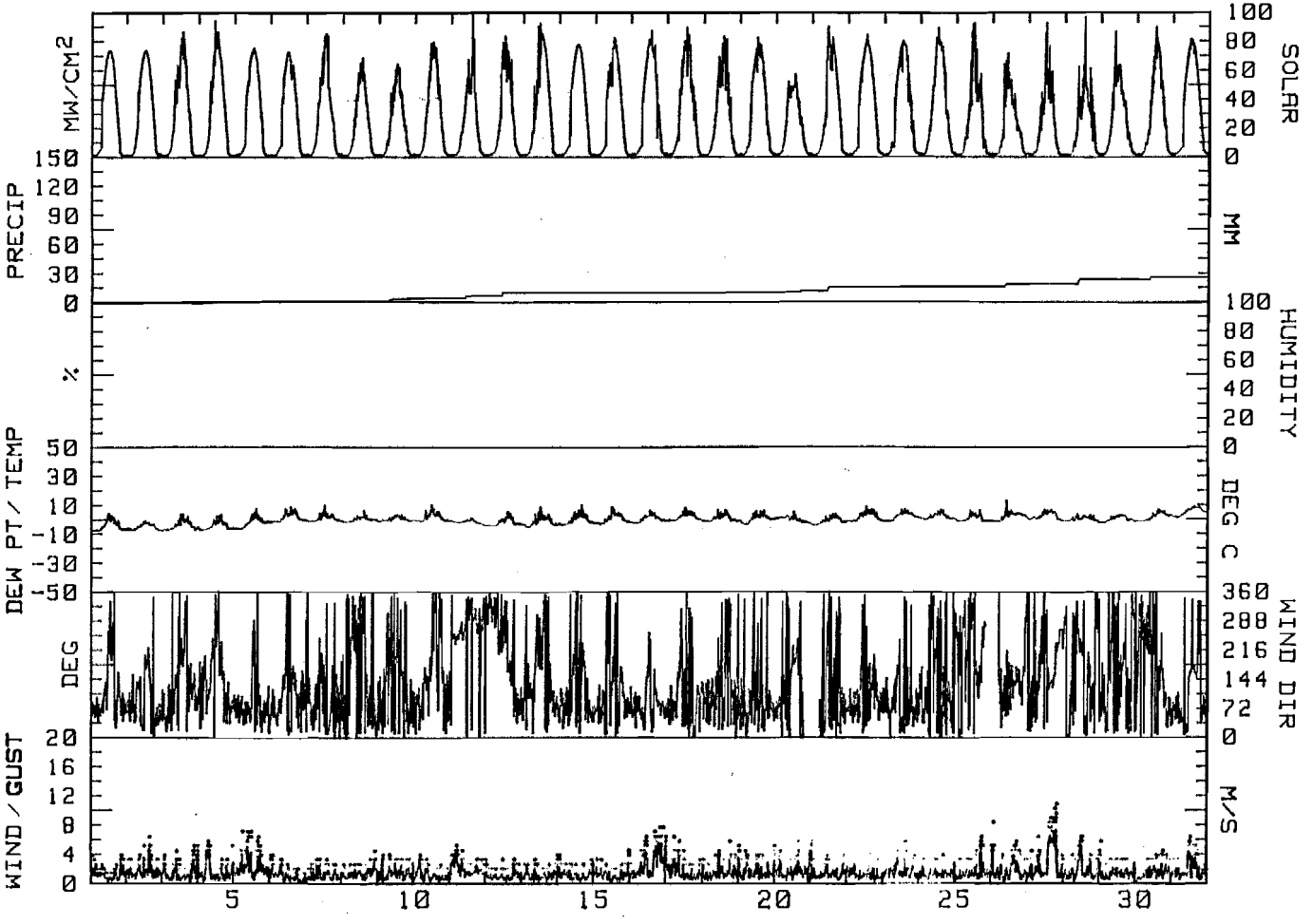


TABLE 2.4.8

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING June, 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	11.8	2.9	7.4	116	.7	1.7	216	7.6	E	23	-14.2	.2	6835	1
2	4.0	-.7	1.7	221	.2	1.6	242	7.0	ESE	28	-15.3	18.6	3408	2
3	4.2	-2.1	1.1	015	.8	1.5	002	5.1	NNE	23	-18.4	0.0	8163	3
4	8.5	-.3	4.1	103	1.3	2.3	100	6.3	NE	22	-16.3	0.0	6798	4
5	7.7	1.6	4.7	119	1.5	2.1	094	7.0	SE	27	-12.9	0.0	4223	5
6	11.0	3.5	7.3	106	2.1	2.8	102	10.8	ESE	28	-10.9	1.2	4533	6
7	8.1	.6	4.4	123	1.3	2.6	215	10.8	ESE	28	-12.4	2.4	4763	7
8	10.0	.9	5.5	106	.8	1.6	170	5.1	E	26	-13.0	0.0	6630	8
9	7.6	3.4	5.5	081	.7	1.4	146	5.1	E	28	-12.0	.4	4385	9
10	8.2	2.8	5.5	103	2.7	3.3	118	10.2	ESE	27	-12.2	1.6	4213	10
11	5.3	1.7	3.5	116	.9	2.1	130	8.3	ENE	29	-13.2	1.2	3775	11
12	7.6	-1.2	3.2	135	2.4	3.8	194	14.6	SE	28	-14.3	2.4	5370	12
13	7.1	-1.2	3.0	114	.8	1.6	164	5.7	NE	18	-20.5	6.0	8465	13
14	8.6	2.1	5.4	112	1.2	2.1	042	7.6	SSE	20	-16.3	0.0	7073	14
15	6.8	.5	3.7	018	.5	.8	331	3.2	N	26	-15.8	31.4	3670	15
16	10.0	.1	5.1	010	.6	.8	033	3.2	NNE	25	-15.8	7.6	5293	16
17	8.1	-.5	3.8	098	.6	1.3	166	5.1	ENE	20	-21.0	6.8	7735	17
18	8.5	3.2	5.9	101	1.0	1.9	118	9.5	SE	33	-14.2	.4	5153	18
19	10.0	.6	5.3	108	1.3	1.8	089	7.0	ESE	25	-13.3	8.2	4485	19
20	6.0	0.0	3.0	300	.6	1.1	257	4.4	WNW	26	-17.3	13.2	4483	20
21	6.8	-.2	3.3	332	.2	1.3	214	3.8	N	26	-15.1	.6	5365	21
22	10.3	2.4	6.4	121	.7	1.9	142	5.7	SE	23	-14.0	0.0	6425	22
23	15.1	5.8	10.5	105	.3	1.6	346	6.3	ENE	21	-11.7	0.0	7568	23
24	15.2	9.1	12.2	164	.5	1.8	159	5.7	ENE	20	-11.1	0.0	8340	24
25	17.0	10.6	13.8	053	.2	1.8	208	5.7	ENE	20	-9.7	0.0	7970	25
26	17.5	12.1	14.8	109	2.8	3.4	135	8.3	SE	20	-9.5	0.0	7475	26
27	18.0	11.7	14.9	116	3.8	4.3	156	12.7	SE	20	-9.6	0.0	7420	27
28	12.5	3.9	8.2	130	5.0	5.6	135	20.3	SE	23	-12.0	0.0	5123	28
29	10.2	3.2	6.7	129	2.0	2.6	135	7.6	SE	22	-14.2	.2	5588	29
30	11.3	4.7	8.1	091	.6	1.9	083	7.6	E	24	-12.4	1.4	4568	30
MONTH	18.0	-2.1	6.2	113	1.1	2.1	135	20.3	SE	24	-14.0	183.8	175490	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 14.6
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 19.7
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 13.3
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 20.3

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 ****

FIG. 2.4.8

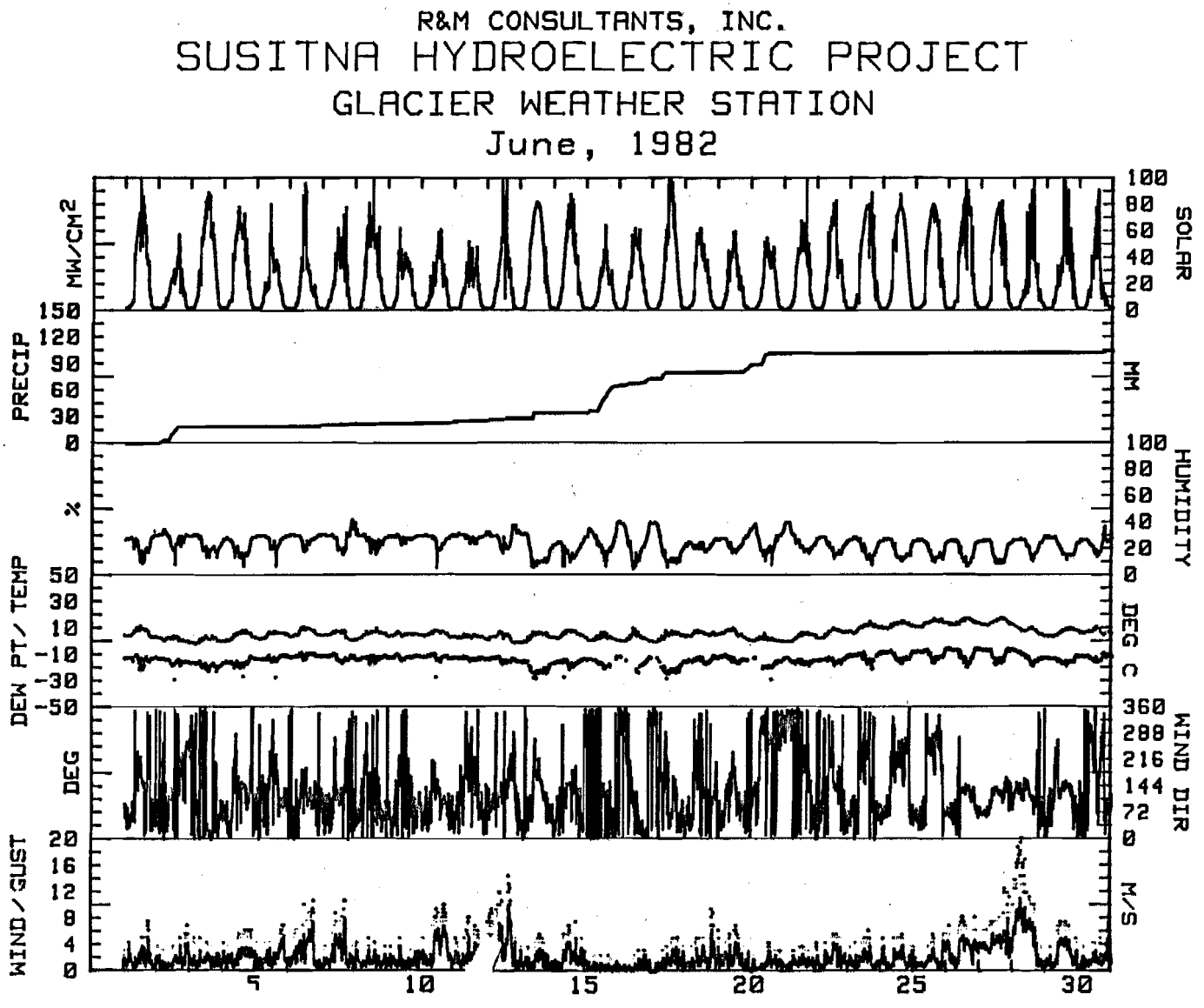

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
June, 1982
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
MM
150
120
90
60
30
0
HUMIDITY
%
DEW PT/ TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND/GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.9

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING July, 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	5.4	-.2	2.6	122	.3	2.0	258	9.5	E	**	*****	5.4	3188	1
2	9.9	1.0	5.5	115	2.4	3.1	133	8.3	SE	**	*****	1.6	7195	2
3	13.3	5.3	9.3	237	.2	1.5	179	5.1	NE	**	*****	0.0	7158	3
4	13.4	5.5	9.5	126	.7	1.9	127	8.3	SE	**	*****	0.0	5558	4
5	12.5	5.1	8.8	137	1.3	2.0	117	5.1	S	**	*****	0.0	5450	5
6	15.1	7.5	11.3	124	1.8	2.5	142	7.0	SE	**	*****	0.0	6418	6
7	18.7	10.2	14.5	072	.8	2.0	038	7.0	ENE	**	*****	0.0	7480	7
8	18.7	6.7	12.7	055	.6	2.1	230	7.6	ENE	**	*****	9.6	5368	8
9	10.0	5.7	7.9	091	.4	1.4	006	5.1	NE	**	*****	4.0	3240	9
10	13.3	5.1	9.2	249	.5	1.7	076	5.1	NW	**	*****	15.8	5015	10
11	9.5	4.7	7.1	203	.7	1.2	197	4.4	SSW	**	*****	7.8	4430	11
12	7.4	4.9	6.2	259	.4	1.1	296	3.8	NNW	**	*****	12.6	2890	12
13	10.4	4.1	7.3	230	.6	1.3	230	3.8	SSW	**	*****	1.0	5325	13
14	12.6	5.3	9.0	170	.5	1.5	088	6.3	SSW	**	*****	11.2	5720	14
15	8.1	4.3	6.2	058	.3	1.3	137	3.8	N	**	*****	3.6	2468	15
16	6.0	2.6	4.3	216	.5	1.4	113	4.4	WSW	**	*****	5.0	3273	16
17	6.8	1.8	4.3	195	.8	1.2	186	3.8	S	**	*****	5.2	4323	17
18	11.5	2.3	6.9	030	.5	2.5	001	12.1	SW	**	*****	2.4	5898	18
19	15.1	7.5	11.3	114	1.8	2.5	021	7.6	ESE	**	*****	0.0	7188	19
20	16.4	9.4	12.9	169	.7	1.6	152	5.1	SSE	**	*****	0.0	7118	20
21	11.9	5.1	8.5	173	.7	1.8	111	7.6	SSW	**	*****	8.2	2325	21
22	5.7	3.2	4.5	256	.7	1.8	233	6.3	WSW	**	*****	3.4	1643	22
23	7.3	4.5	5.9	111	.3	1.6	193	7.6	NNE	**	*****	19.8	1285	23
24	6.5	4.2	5.4	118	.2	1.7	206	8.3	SE	**	*****	7.4	1908	24
25	6.2	4.3	5.3	059	1.0	1.5	033	5.1	NNE	**	*****	29.2	1893	25
26	11.9	3.7	7.8	118	.2	1.3	049	4.4	N	**	*****	2.2	4620	26
27	13.5	7.7	10.6	147	.4	1.2	154	5.1	SE	**	*****	0.0	4093	27
28	13.4	6.7	10.1	074	.8	1.8	163	10.2	NE	**	*****	3.2	3278	28
29	8.2	5.6	6.9	098	.8	1.6	031	5.1	ESE	**	*****	11.6	1883	29
30	8.1	3.3	5.7	356	.8	1.7	034	5.7	NNW	**	*****	23.8	3238	30
31	8.4	2.0	5.2	198	.7	1.9	258	8.3	SSW	**	*****	.2	5603	31
MONTH	18.7	-.2	7.8	129	.4	1.4	001	12.1	SSW					
999.664 DD											*****	194.2	136467	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 10.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 9.5
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.2
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 ****

FIG. 2.4.9

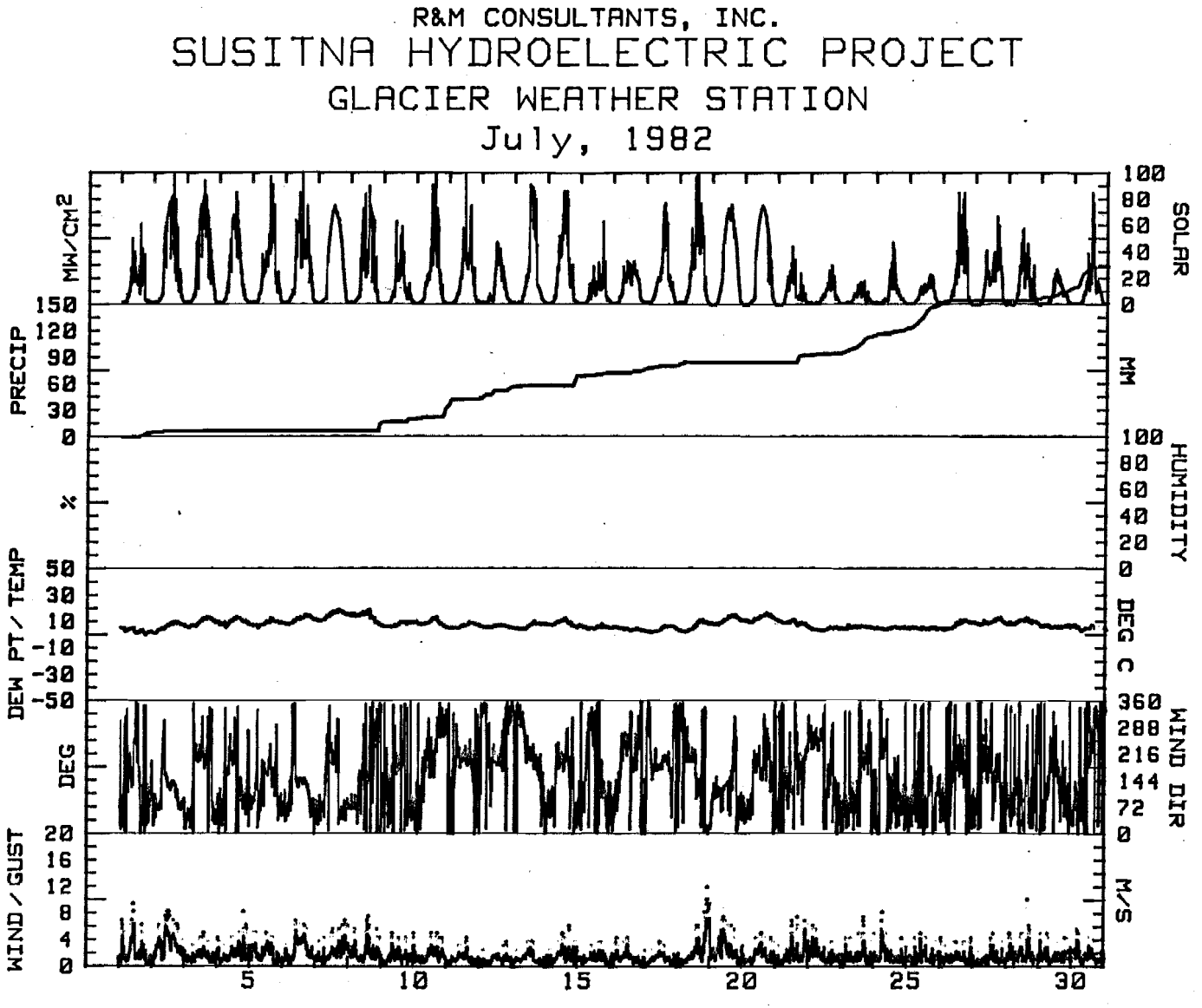

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
July, 1982
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
MM
150
120
90
60
30
0
HUMIDITY
%
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.10

MONTHLY SUMMARY FOR GLACIER WEATHER STATION
DATA TAKEN DURING August, 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	8.6	1.9	5.3	124	.7	2.3	153	7.0	N	**	*****	0.0	5995	1
2	10.6	3.3	7.0	139	.7	1.8	147	7.0	SSE	**	*****	0.0	6430	2
3	11.1	5.2	8.2	192	.6	1.3	181	3.8	SSW	**	*****	0.0	5145	3
4	11.3	4.5	7.9	131	1.4	1.9	150	7.6	SSE	**	*****	0.0	5985	4
5	11.0	6.0	8.5	051	.4	2.2	313	7.6	ESE	**	*****	0.0	5335	5
6	13.1	5.5	9.3	118	.8	2.0	094	6.3	E	**	*****	0.0	6035	6
7	12.0	5.9	9.0	139	.9	1.8	136	7.6	E	**	*****	0.0	4125	7
8	10.2	3.4	6.8	111	.7	2.1	244	8.3	E	**	*****	2.8	3375	8
9	5.1	2.1	3.6	360	.7	1.4	250	4.4	NNE	**	*****	3.8	1915	9
10	6.4	2.3	4.4	027	.4	1.5	254	7.6	NNE	**	*****	2.2	1950	10
11	10.2	1.6	5.9	138	1.5	2.2	152	7.0	SSE	**	*****	0.0	6255	11
12	12.6	4.4	8.5	156	.6	1.5	179	4.4	S	**	*****	0.0	5770	12
13	14.6	8.7	11.7	169	.2	1.3	136	4.4	NE	**	*****	0.0	4820	13
14	12.3	6.2	9.3	072	.8	1.4	041	6.3	ENE	**	*****	8.2	953	14
15	8.5	3.4	6.0	024	.8	1.9	087	10.8	N	**	*****	2.8	2495	15
16	8.7	2.9	5.8	056	.5	1.6	135	6.3	NNE	**	*****	1.6	3933	16
17	4.4	1.9	3.2	349	.8	1.2	030	3.2	NNE	**	*****	8.0	2303	17
18	8.7	1.8	5.3	171	.3	1.3	169	4.4	SSW	**	*****	0.0	5190	18
19	10.0	3.8	6.9	187	.7	1.3	187	4.4	SSW	**	*****	0.0	5450	19
20	10.6	5.2	7.9	311	.1	1.2	234	4.4	NNE	**	*****	0.0	4635	20
21	10.6	7.3	9.0	102	.3	1.1	106	3.2	NNE	**	*****	0.0	2408	21
22	12.7	5.7	9.2	158	.8	1.6	124	5.1	SSW	**	*****	0.0	4850	22
23	8.9	5.1	7.0	120	.5	1.2	052	5.1	ESE	**	*****	6.0	2095	23
24	10.0	5.4	7.7	160	.3	1.2	077	3.8	SSW	**	*****	.4	3450	24
25	8.5	3.6	6.1	111	.5	1.3	138	3.8	ESE	**	*****	0.0	3018	25
26	10.2	4.2	7.2	017	2.8	3.5	357	10.2	N	**	*****	0.0	4768	26
27	10.9	3.1	7.0	133	.6	1.7	191	7.0	NE	**	*****	0.0	4965	27
28	8.3	2.9	5.6	003	.3	1.3	009	5.7	N	**	*****	0.0	2685	28
29	5.4	.5	3.0	035	.3	1.2	240	5.1	N	**	*****	13.2	1193	29
30	3.7	.2	2.0	036	.8	1.1	035	4.4	NNE	**	*****	22.8	1628	30
31	5.1	-.5	2.3	268	.3	.8	202	3.8	SSW	**	*****	6.8	3533	31
MONTH	14.6	-.5	6.6	096	.3	1.6	087	10.8	NNE	**	*****	78.6	122685	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	4.4
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	8.9
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	8.9
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS	3.8

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 ****

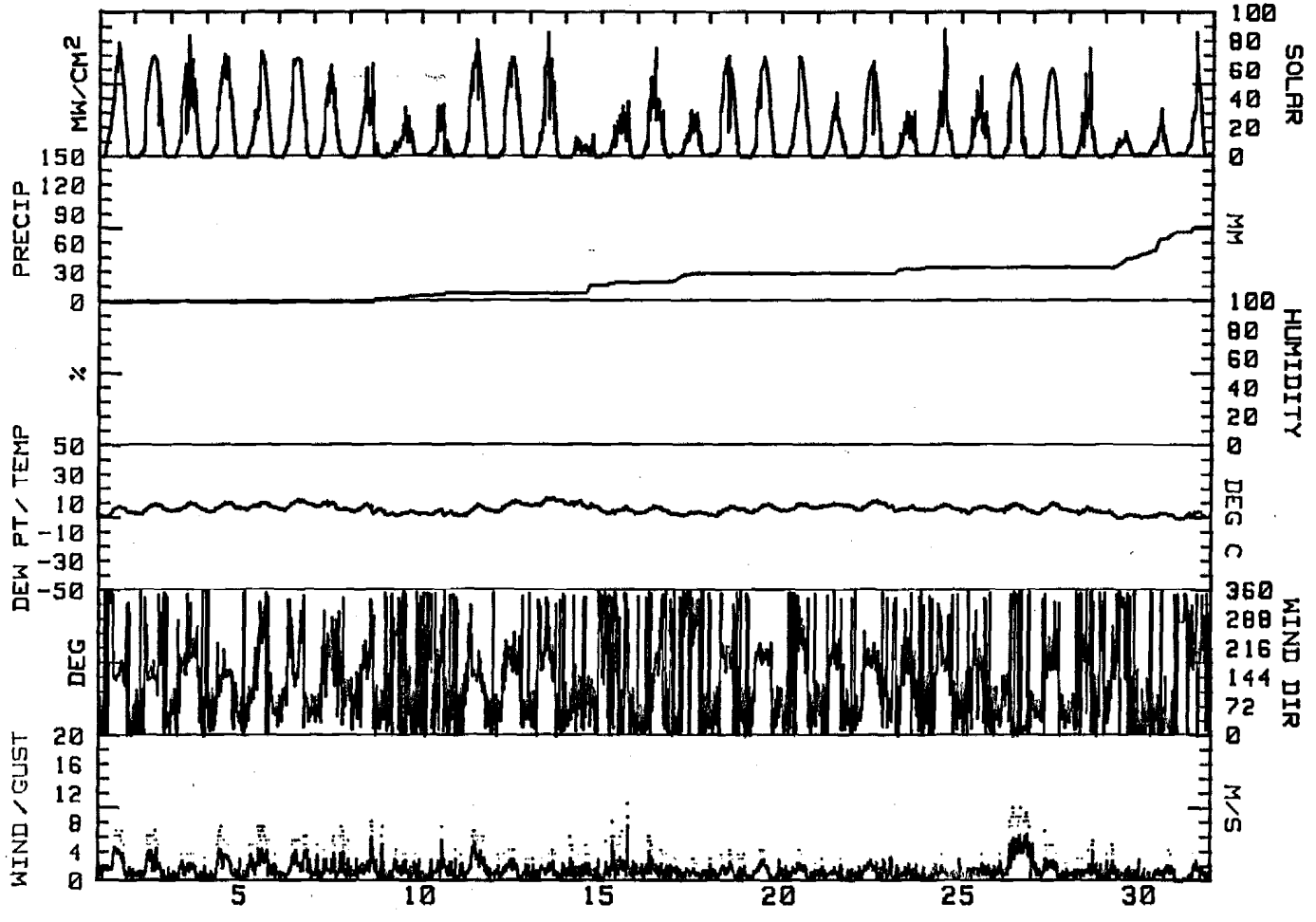
FIG. 2.4.10

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

GLACIER WEATHER STATION

August, 1982



R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TABLE 2.4.11

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

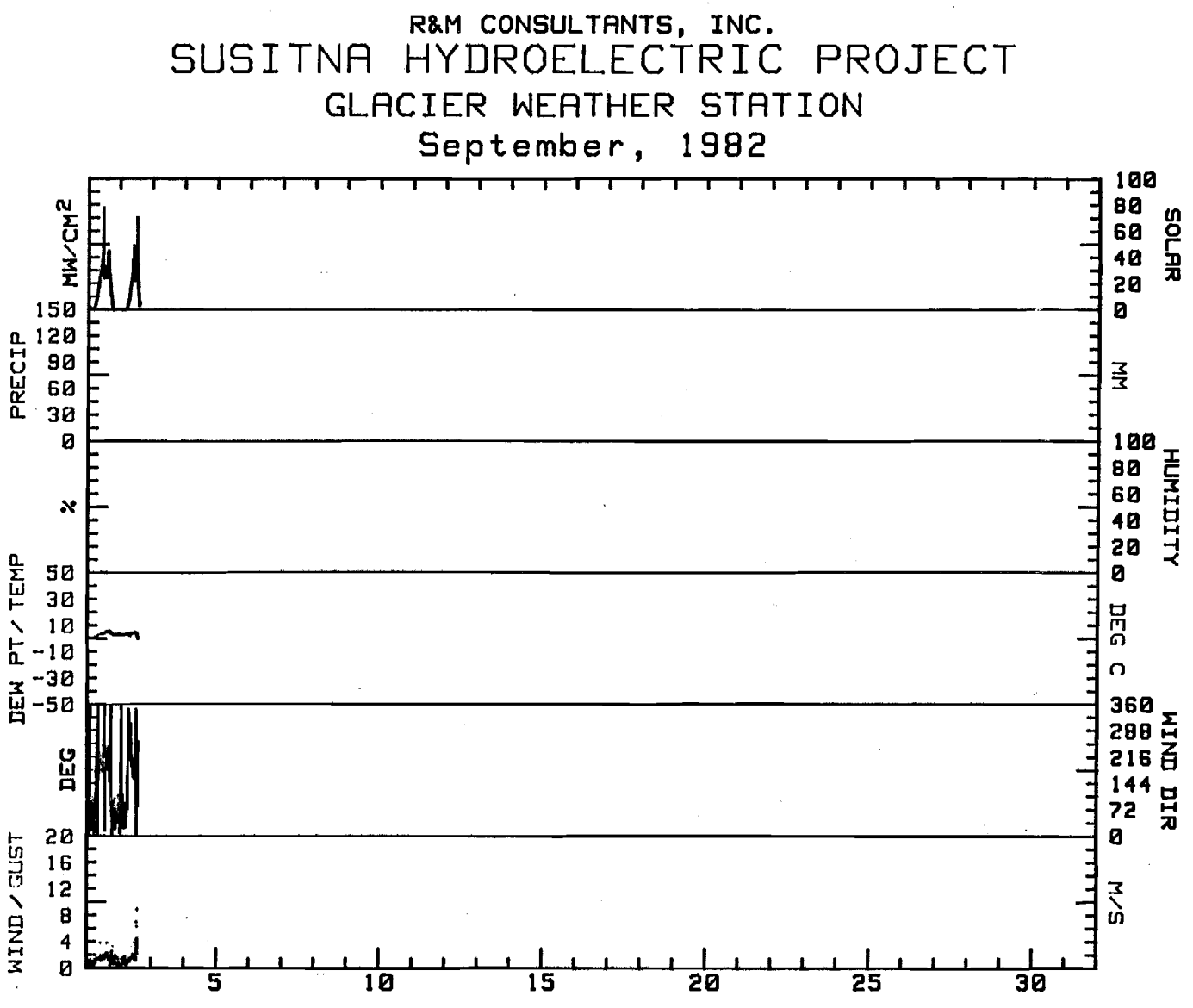
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	6.4	.8	3.6	140	.1	1.3	211	3.8	ENE	**	*****	.4	3275	1
2	5.1	.1	2.6	139	.1	1.4	220	8.9	SSE	**	*****	0.0	3754	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	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	20
21	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	21
22	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	22
23	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	23
24	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	24
25	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	25
26	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	26
27	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	27
28	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	28
29	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	29
30	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	30
MONTH	6.4	.1	3.1	140	.1	1.3	220	8.9	ENE	**	*****	.4	7029	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	7.0
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	6.3
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	4.4
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS	2.5

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 ****

FIG. 2.4.11


R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
GLACIER WEATHER STATION
September, 1982
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
MM
150
120
90
60
30
0
HUMIDITY
%
100
80
60
40
20
0
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

SECTION 2.4. - PART 2

DENALI CLIMATE DATA

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TABLE 2.4.12

MONTHLY SUMMARY FOR DENALI WEATHER STATION
DATA TAKEN DURING October, 1981

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	0.0	-6.4	-3.2	012	5.4	5.5	356	11.4	NNE	40	-14.6	****	2575	1
2	-2.5	-10.9	-6.7	012	3.4	3.5	359	7.0	N	44	-16.7	****	2583	2
3	-1.4	-12.7	-7.1	201	.3	1.2	209	6.3	NNE	55	-13.8	****	1617	3
4	-.8	-4.9	-2.9	351	1.8	4.1	357	9.5	N	64	-9.2	****	1453	4
5	-.5	-4.2	-2.4	001	4.7	4.7	359	9.5	N	60	-9.4	****	2415	5
6	-1.7	-5.1	-3.4	004	3.5	3.5	355	10.8	N	56	-10.9	****	1630	6
7	-3.6	-6.8	-5.2	004	4.9	4.9	002	10.2	N	54	-13.6	****	2253	7
8	-4.2	-6.2	-5.2	003	3.3	3.3	001	8.9	N	51	-15.2	****	1400	8
9	1.0	-6.9	-3.0	293	.4	2.3	007	7.0	N	61	-9.8	****	1635	9
10	2.3	-5.2	-1.5	196	1.0	1.7	146	5.7	SSW	54	-10.9	****	1768	10
11	1.4	-4.3	-1.5	165	2.8	3.5	145	15.2	SSW	55	-10.4	****	1193	11
12	2.2	-.7	.8	195	3.8	3.8	205	8.9	SSW	50	-10.7	****	1333	12
13	4.0	.4	2.2	192	.9	1.6	183	7.0	S	61	-6.9	****	1410	13
14	3.5	.4	2.0	234	.4	1.4	195	5.1	N	60	-7.9	****	1535	14
15	1.7	-2.0	-.2	358	.4	.9	150	5.7	N	68	-4.6	****	1140	15
16	4.1	-1.6	1.3	185	2.5	2.1	152	16.5	SSW	60	-5.1	****	1345	16
17	4.2	-1.8	1.2	029	2.0	3.9	150	15.2	N	50	-8.6	****	1268	17
18	-1.6	-5.5	-3.6	011	5.1	5.2	004	11.4	N	46	-13.0	****	1230	18
19	-1.1	-12.4	-6.8	168	.3	1.9	185	6.3	S	49	-15.9	****	1830	19
20	1.8	-5.2	-1.7	172	3.5	4.5	191	15.9	S	51	-10.7	****	1090	20
21	6.8	.9	3.9	145	6.8	7.0	150	19.7	SE	54	-4.8	****	803	21
22	3.6	.6	2.1	168	1.7	2.1	151	15.9	SSE	62	-7.9	****	835	22
23	3.9	1.0	2.5	168	3.3	3.7	155	12.7	SSE	64	-4.5	****	790	23
24	4.0	-2.1	1.0	353	1.5	2.0	357	7.0	N	58	-6.8	****	953	24
25	-.8	-5.2	-3.0	359	2.8	2.7	359	5.7	N	65	-8.6	****	1238	25
26	-2.4	-4.6	-3.5	***	****	2.9	***	****	***	52	-12.2	****	880	26
27	-3.7	-9.0	-6.4	***	****	1.5	***	****	***	59	-11.5	****	688	27
28	-1.6	-12.4	-7.0	352	.6	1.2	239	2.5	N	59	-15.6	****	1793	28
29	-6.0	-14.2	-10.1	185	1.3	2.1	190	8.3	S	60	-15.9	****	1575	29
30	-3.8	-13.8	-8.8	360	.6	.9	356	3.2	N	58	-16.3	****	1945	30
31	-7.4	-16.1	-11.8	173	.9	1.9	185	7.6	S	62	-17.5	****	1150	31
MONTH	6.8	-16.1	-2.8	037	.5	2.9	150	19.7	N	55	-11.0	****	45347	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 17.8
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 14.6
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 13.3
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 14.6

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 ****

FIG. 2.4.12

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DENALI WEATHER STATION

October, 1981

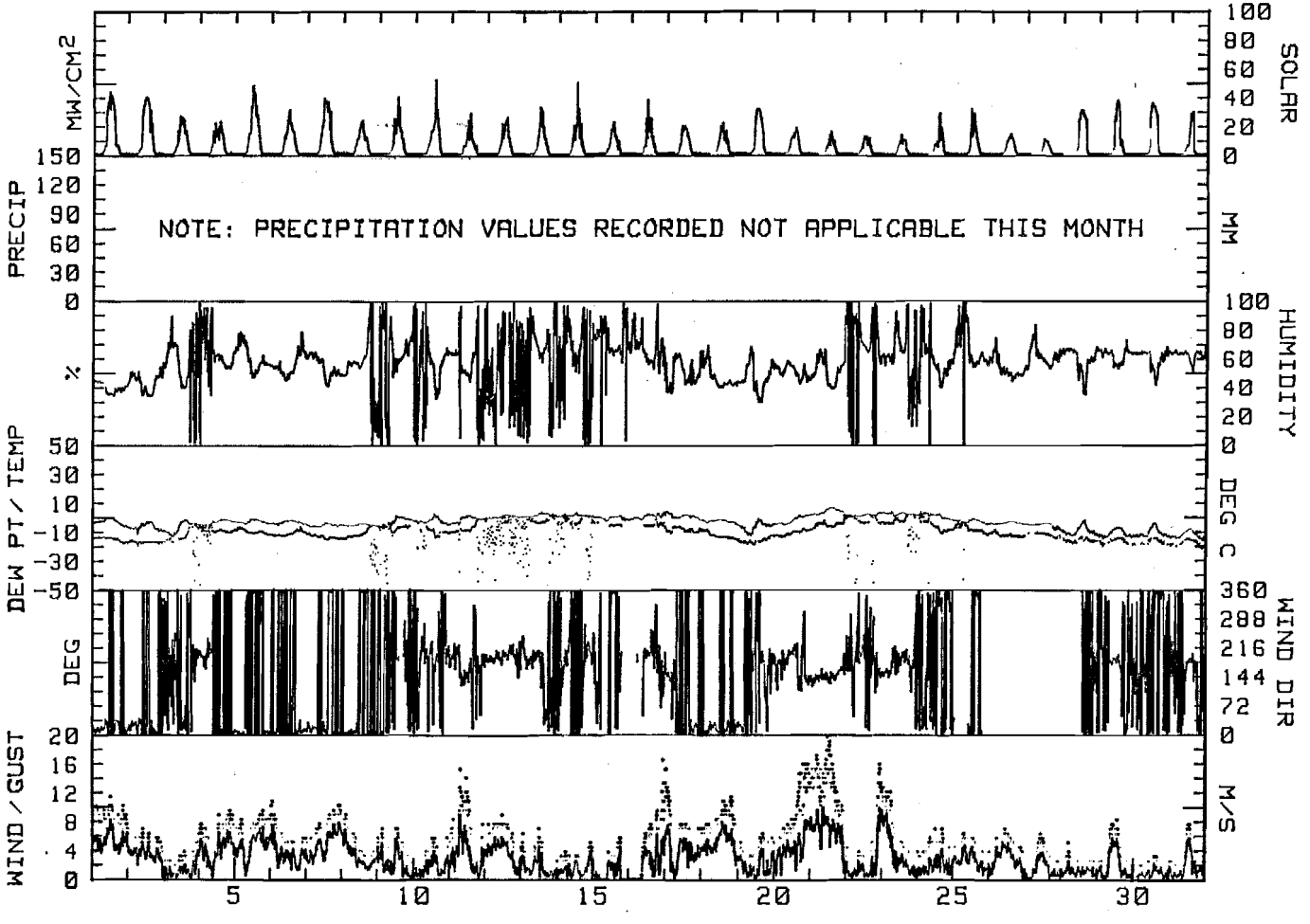


TABLE 2.4.13

MONTHLY SUMMARY FOR DENALI WEATHER STATION
DATA TAKEN DURING November, 1981

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	-9.4	-17.2	-13.3	192	1.5	3.1	188	8.9	S	62	-17.4	****	755	1
2	-1.3	-12.7	-7.0	174	1.8	3.1	008	19.0	SSE	56	-14.6	****	528	2
3	-9.9	-15.5	-12.7	003	1.3	2.3	008	8.3	N	57	-19.0	****	800	3
4	-8.3	-16.2	-12.3	002	4.2	4.2	003	10.2	N	57	-17.9	****	640	4
5	-13.5	-19.7	-16.6	010	3.8	3.8	003	8.9	N					
105.875 DD														
											-24.9	****	792	5
6	-14.0	-21.9	-18.0	353	.7	2.1	007	5.1	N	49	-26.7	****	913	6
7	-2.5	-13.7	-8.1	184	.9	2.1	136	13.3	SSW	50	-16.1	****	590	7
8	-5.8	-14.4	-10.1	187	1.8	2.7	188	10.8	S	59	-15.9	****	710	8
9	-1.5	-14.6	-8.1	291	.2	1.2	174	7.6	N	61	-12.9	****	628	9
10	6.6	-1.4	2.6	157	4.2	5.0	130	23.5	SSE	41	-9.9	****	958	10
11	3.7	-6.8	-1.6	179	1.5	2.9	142	17.1	S	52	-11.2	****	815	11
12	-.8	-12.7	-6.8	093	.3	1.3	164	5.7	NNE	50	-14.3	****	833	12
13	-7.3	-19.1	-13.2	329	.2	.9	309	2.5	N	58	-20.8	****	1230	13
14	-10.7	-21.1	-15.9	347	.2	.6	286	3.2	NNE	55	-25.2	****	1230	14
15	-9.6	-22.6	-16.1	339	.3	.9	353	2.5	N	53	-26.2	****	1085	15
16	-14.3	-25.2	-19.8	358	.3	.8	006	3.2	NNE	52	-28.7	****	1153	16
17	-14.3	-26.2	-20.3	336	.3	.8	164	2.5	N	50	-30.2	****	1148	17
18	-15.9	-27.1	-21.5	011	.6	1.1	096	4.4	N	49	-30.4	****	1080	18
19	-15.1	-27.3	-21.2	359	.3	1.0	359	2.5	NNE	48	-31.2	****	1098	19
20	-18.5	-29.4	-24.0	359	.5	1.0	013	3.2	NNE	47	-34.5	****	1088	20
21	-18.5	-29.0	-23.8	348	.4	1.0	276	3.2	N	48	-33.2	****	1040	21
22	-15.1	-24.8	-20.0	018	1.3	1.4	016	4.4	NNE	53	-25.9	****	530	22
23	-12.8	-17.2	-15.0	195	1.2	1.8	192	9.5	SSW	58	-20.4	****	365	23
24	-5.9	-13.1	-9.5	193	2.0	2.6	192	10.8	S	63	-15.6	****	320	24
25	-4.8	-17.4	-11.1	344	.2	1.4	306	6.3	NNE	58	-16.7	****	438	25
26	-2.0	-11.8	-6.9	217	2.3	3.1	131	12.7	S	60	-12.7	****	280	26
27	-3.3	-6.0	-4.7	347	1.7	2.1	293	8.3	N	63	-11.1	****	343	27
28	-5.0	-15.7	-10.4	000	2.1	2.3	356	8.3	N	60	-16.9	****	545	28
29	-9.0	-16.2	-12.6	196	3.7	4.0	193	14.0	SSW	60	-17.9	****	348	29
30	-4.8	-12.8	-8.8	132	.9	2.4	140	11.4	N	42	-19.5	****	495	30
MONTH	6.6	-29.4	-12.9	201	.1	2.1	130	23.5	N	56	-20.6	****	22772	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 15.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 22.2
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 16.5
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 17.8

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 ****

FIG. 2.4.13

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DENALI WEATHER STATION

November, 1981

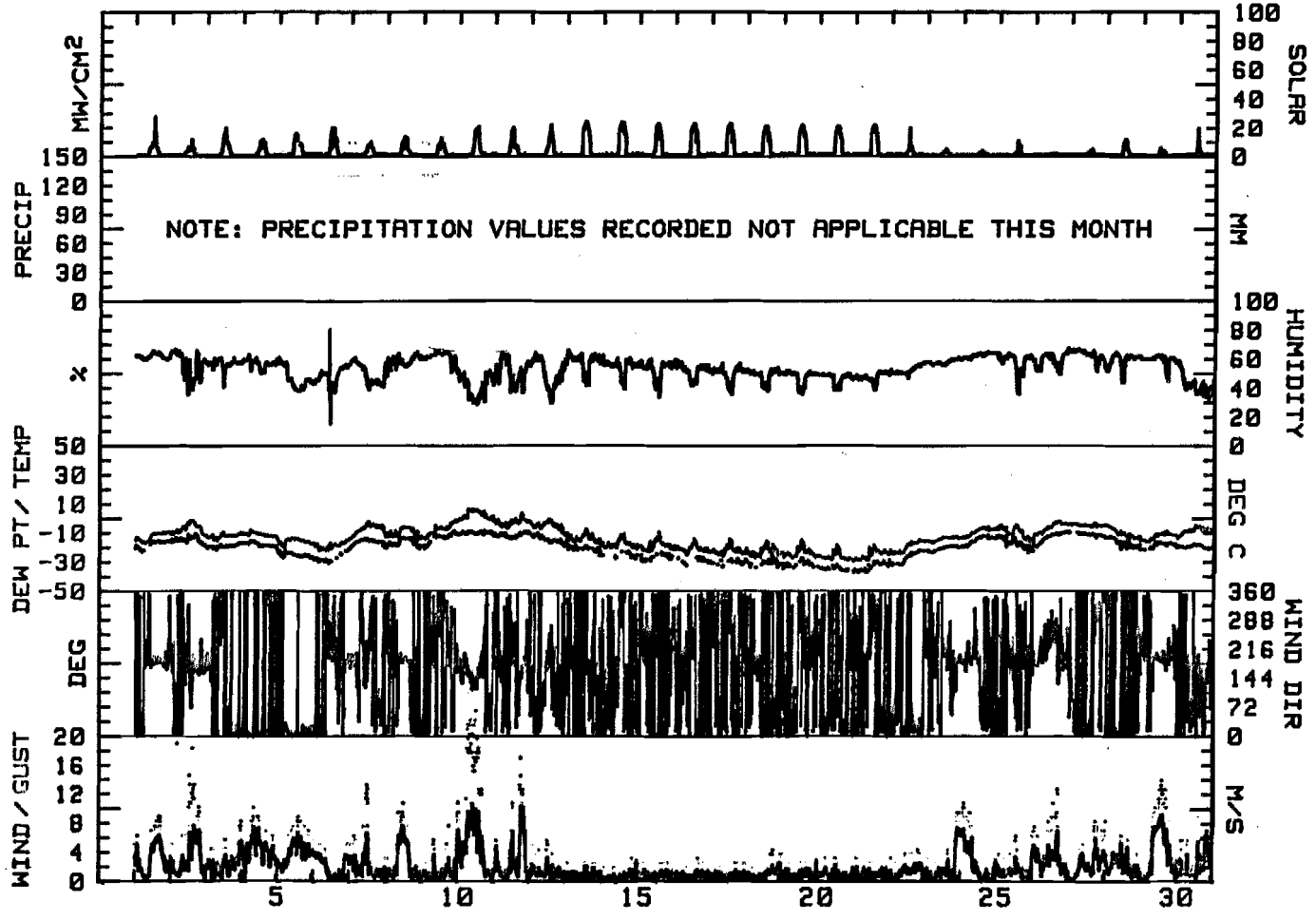


TABLE 2.4.14

MONTHLY SUMMARY FOR DENALI WEATHER STATION
DATA TAKEN DURING December, 1981

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	-1.9	-11.8	-6.9	167	5.7	6.4	147	17.8	SE	42	-17.1	****	403	1
2	-7.3	-15.4	-11.4	220	.6	1.9	228	6.3	SSW	57	-17.0	****	403	2
3	-4.7	-10.2	-7.5	267	.4	3.1	181	12.7	N	61	-14.6	****	288	3
4	-5.9	-17.5	-11.7	004	.5	2.4	191	10.2	N	51	-20.3	****	393	4
5	-14.4	-21.5	-18.0	332	.6	1.5	206	5.7	N	52	-25.2	****	423	5
6	-10.8	-25.9	-18.4	207	.3	1.5	171	6.3	N	55	-23.2	****	500	6
7	-19.8	-29.5	-24.7	345	.4	.9	357	4.4	N	51	-33.4	****	590	7
8	-22.3	-32.0	-27.2	008	.4	.7	339	2.5	N	48	-35.4	****	610	8
9	-21.9	-26.1	-24.0	179	.3	.5	158	1.9	S	51	-30.9	****	343	9
10	-20.3	-30.2	-25.3	032	.5	1.0	094	5.1	NNE	49	-32.5	****	353	10
11	-11.5	-24.1	-17.8	228	.6	2.0	196	6.3	N	55	-25.6	****	398	11
12	-6.6	-12.6	-9.6	202	2.0	2.6	222	7.6	SSW	62	-15.3	****	328	12
13	-10.2	-18.7	-14.5	354	.6	1.0	277	3.2	N	60	-21.8	****	478	13
14	-16.8	-25.3	-21.1	002	.4	.8	122	2.5	N	55	-27.6	****	413	14
15	-10.8	-19.9	-15.4	009	.4	.8	173	3.8	N	69	-21.7	****	318	15
16	1.2	-18.4	-8.6	188	2.7	3.2	187	20.3	S	59	-15.2	****	290	16
17	5.7	-3.4	1.2	174	4.0	5.1	145	22.2	SSW	63	-9.4	****	333	17
18	5.6	-3.5	1.1	164	4.7	5.3	139	31.7	SSW	51	-9.5	****	330	18
19	-2.6	-9.5	-6.1	007	2.7	3.5	005	10.2	N	56	-14.3	****	423	19
20	-7.8	-11.7	-9.8	055	.1	2.4	170	8.3	N	57	-17.0	****	335	20
21	-8.9	-15.6	-12.3	024	.3	1.5	066	5.1	N	61	-16.8	****	290	21
22	-10.7	-22.6	-16.7	195	.8	1.6	200	7.6	SSW	59	-22.0	****	295	22
23	-5.8	-17.0	-11.4	200	2.2	3.2	188	11.4	S	59	-16.5	****	293	23
24	-5.9	-11.5	-8.7	354	1.2	2.0	356	4.4	N	63	-14.6	****	335	24
25	-9.4	-17.1	-13.3	001	1.3	1.7	014	5.7	N	60	-19.5	****	375	25
26	-11.8	-18.7	-15.3	018	4.1	4.1	005	8.3	NNE	32	-29.2	****	440	26
27	-17.2	-35.6	-26.4	012	1.1	1.8	035	6.3	NNE	34	-39.3	****	478	27
28	-30.3	-38.3	-34.3	334	.3	.9	001	3.2	N	43	-42.4	****	508	28
29	-32.9	-40.7	-36.8	012	.2	.8	233	2.5	N	40	-42.4	****	583	29
30	-30.3	-41.7	-36.0	234	.1	.7	182	2.5	SSW	40	-41.6	****	453	30
31	-15.9	-34.5	-25.2	357	1.1	1.6	356	5.1	N	44	-33.5	****	398	31
MONTH	5.7	-41.7	-16.5	171	.2	2.1	139	31.7	N	53	-24.0	****	12391	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 29.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 27.9
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 21.0
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 ****

FIG. 2.4.14

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DENALI WEATHER STATION

December, 1981

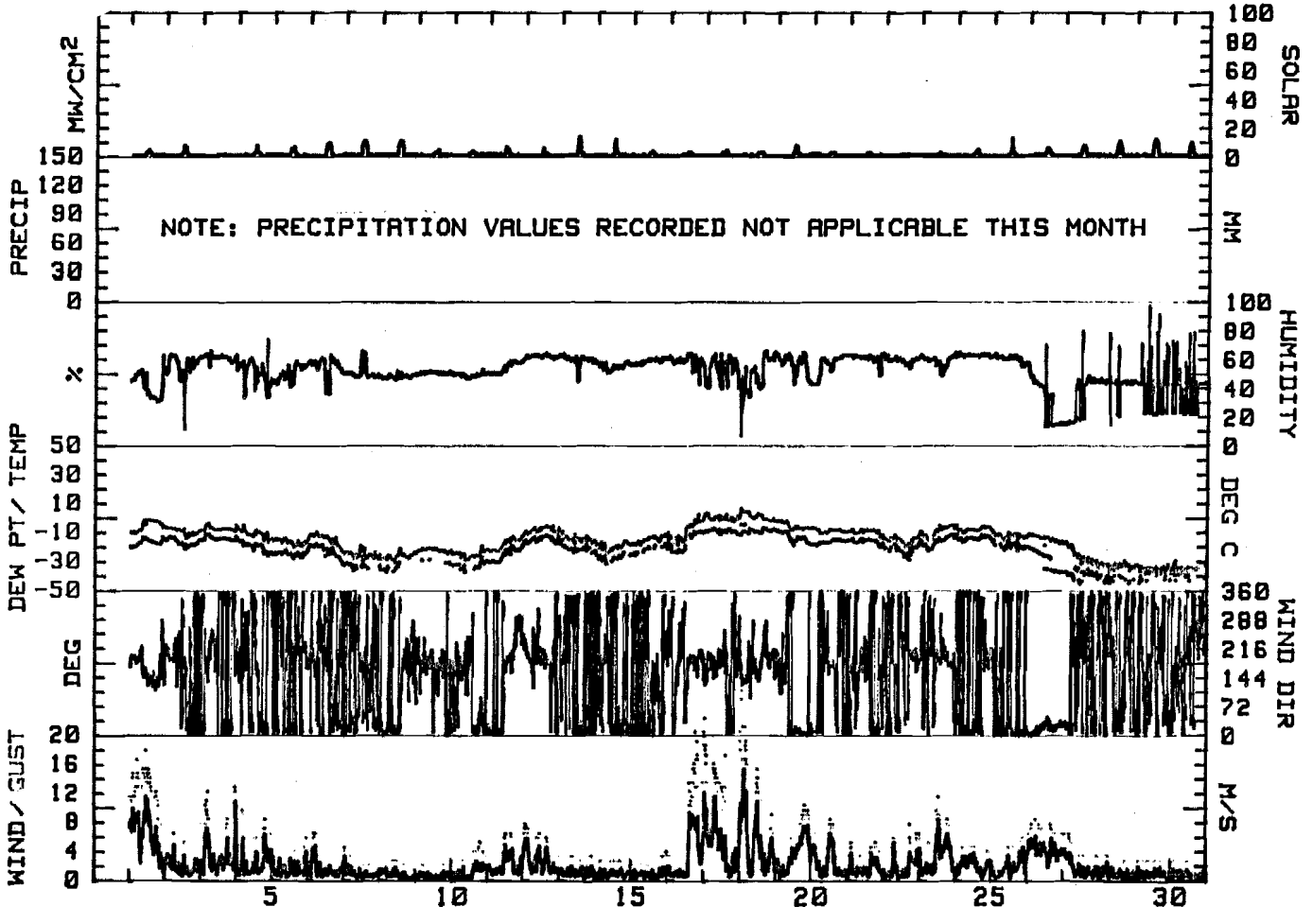


TABLE 2.4.15

MONTHLY SUMMARY FOR DENALI WEATHER STATION
DATA TAKEN DURING January, 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	-26.1	-33.6	-29.9	194	.2	.8	139	3.2	SSW	46	-37.7	****	535	1
2	-26.0	-30.4	-28.2	205	.3	.6	213	2.5	SSW	45	-37.4	****	505	2
3	-29.6	-33.9	-31.8	311	.2	.6	116	1.9	N	43	-39.6	****	568	3
4	-17.4	-31.2	-24.3	019	.7	1.5	137	8.3	NNE	49	-28.8	****	403	4
5	-18.3	-29.0	-23.7	011	7.7	7.8	359	14.6	N	83	-41.0	****	341	5
6	-28.4	-39.8	-34.1	014	1.5	2.3	015	8.9	NNE	22	-45.1	****	435	6
7	-33.1	-42.4	-37.8	346	.7	1.3	346	3.8	N	23	-39.8	****	540	7
8	-22.2	-42.2	-32.2	353	1.6	2.1	359	5.7	N	24	-42.4	****	603	8
9	-19.0	-25.8	-22.4	150	3.6	4.6	138	12.1	SSE	21	-38.6	****	413	9
10	-18.1	-23.3	-20.7	035	1.1	1.8	166	8.3	NNE	43	-30.0	****	445	10
11	-16.8	-21.6	-19.2	011	1.4	1.5	018	5.1	NNE	54	-26.7	****	408	11
12	-15.3	-20.9	-18.1	359	.8	1.2	025	3.8	N	56	-24.0	****	375	12
13	-11.4	-24.7	-18.1	008	1.6	2.1	266	7.6	N	45	-28.7	****	688	13
14	-16.8	-29.5	-23.2	150	1.1	3.1	153	13.3	N	31	-36.6	****	578	14
15	-20.3	-31.6	-26.0	145	.2	2.1	192	11.4	N	37	-39.5	****	433	15
16	-13.4	-33.7	-23.6	004	1.1	1.6	011	7.6	N	36	-37.6	****	733	16
17	-13.0	-27.9	-20.5	014	3.2	3.6	018	9.5	NNE	29	-34.2	****	598	17
18	-11.7	-30.7	-21.2	010	2.6	2.9	010	13.3	N	42	-29.7	****	495	18
19	-12.4	-27.1	-19.8	003	2.0	2.2	007	11.4	N	40	-30.2	****	715	19
20	-23.4	-32.0	-27.7	357	.8	1.2	004	5.1	N	46	-36.4	****	630	20
21	-17.7	-29.4	-23.5	188	7.4	7.7	185	19.0	S	28	-37.0	****	823	21
22	-21.9	-33.4	-27.7	198	1.9	3.6	190	14.0	N	19	-43.6	****	648	22
23	-24.3	-34.4	-29.4	350	.9	1.3	000	7.0	N	34	-41.7	****	845	23
24	-25.4	-33.5	-29.5	350	.9	1.2	009	5.1	N	41	-40.4	****	540	24
25	-27.0	-35.6	-31.3	206	.2	.7	198	2.5	S	37	-42.8	****	1059	25
26	-28.7	-38.1	-33.4	350	.4	1.0	019	4.4	N	39	-41.7	****	1078	26
27	-21.0	-36.3	-28.7	178	1.9	3.8	189	14.0	N	44	-35.5	****	493	27
28	-13.5	-22.6	-18.1	187	1.1	3.7	186	15.9	NNE	52	-25.0	****	445	28
29	-14.5	-21.2	-17.9	006	1.0	1.6	031	5.1	N	53	-24.9	****	603	29
30	-16.6	-23.8	-20.2	297	.6	1.2	342	3.2	NNW	52	-26.8	****	715	30
31	-15.1	-25.0	-20.1	004	1.1	1.2	017	3.2	N	52	-29.5	****	940	31
MONTH	-11.4	-42.4	-25.2	016	.4	2.3	185	19.0	N	41	-35.3	****	18622	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 13.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 13.3
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 16.5
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 ****

FIG. 2.4.15

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DENALI WEATHER STATION

January, 1982

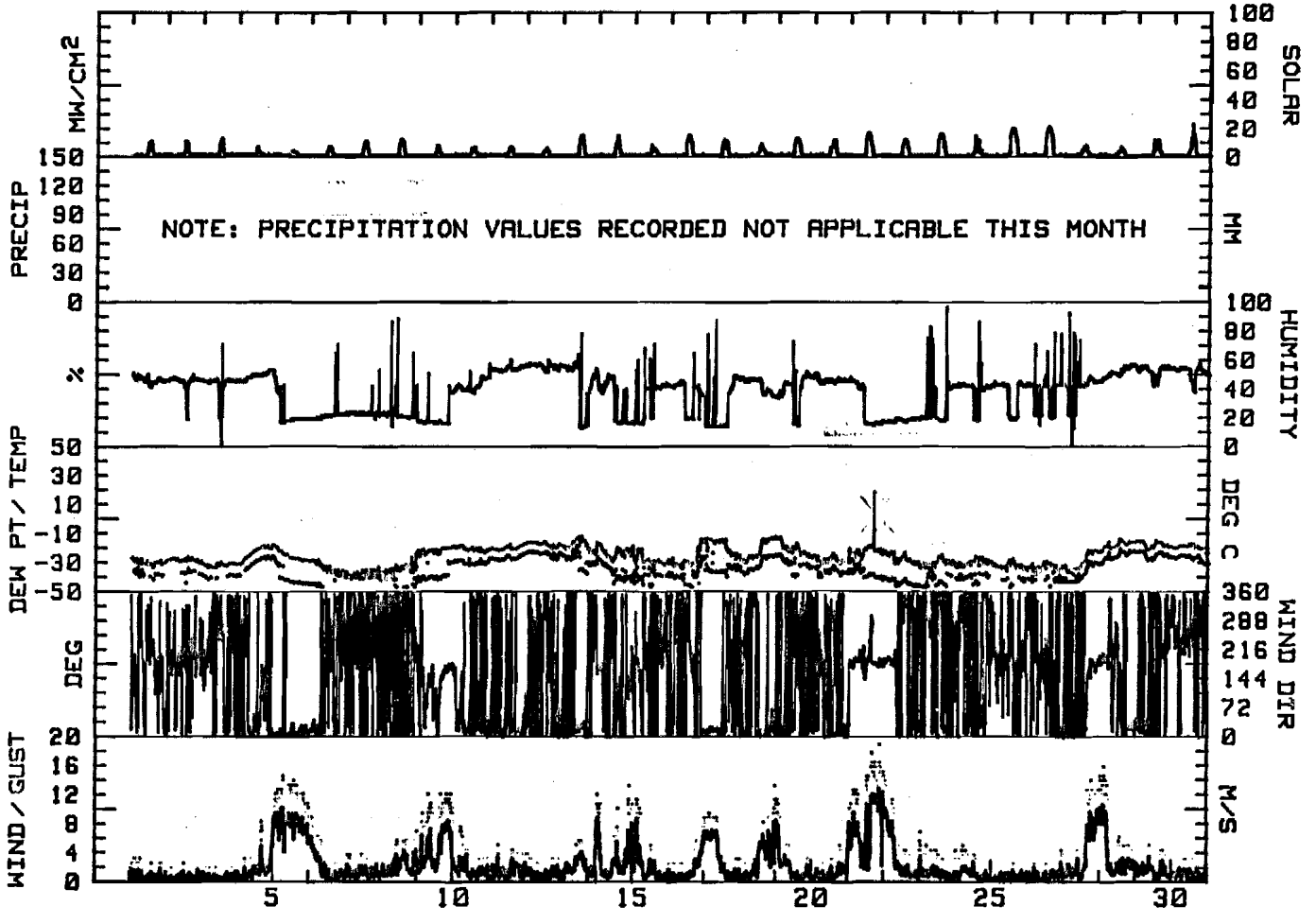


TABLE 2.4.16

MONTHLY SUMMARY FOR DENALI WEATHER STATION
DATA TAKEN DURING February, 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	-5.7	-22.8	-14.3	186	2.7	3.4	156	10.2	S	59	-17.0	****	568	1
2	-.8	-9.1	-5.0	185	7.2	7.3	190	14.6	S	58	-11.0	****	730	2
3	3.7	-5.0	-.7	188	5.5	5.6	186	10.8	S	59	-7.0	****	633	3
4	3.0	-.9	1.1	005	1.6	1.7	004	6.3	N	64	-4.8	****	636	4
5	-.8	-8.0	-4.4	***	0.0	0.0	248	.6	***	**	*****	****	1060	5
6	-3.8	-13.1	-8.5	350	.4	.4	347	1.9	NNW	60	-14.8	****	1313	6
7	-5.0	-10.9	-8.0	322	.5	1.6	199	4.4	N	59	-14.3	****	1258	7
8	-2.8	-15.7	-9.3	126	4.6	1.9	118	10.2	ESE	60	-14.4	****	510	8
9	-2.8	-8.4	-5.6	358	7.4	7.6	350	17.8	N	43	-16.4	****	1118	9
10	-7.9	-17.6	-12.8	011	5.4	5.5	021	13.3	N	27	-29.0	****	1145	10
11	-14.5	-25.9	-20.2	006	1.3	2.0	016	6.3	N	31	-33.8	****	1367	11
12	-19.8	-30.1	-25.0	334	.3	1.3	355	4.4	N	31	-38.3	****	1576	12
13	-11.7	-29.4	-20.6	002	1.9	2.4	356	9.5	N	26	-35.2	****	1093	13
14	-19.0	-28.7	-23.9	010	4.8	5.1	017	14.0	N	32	-37.7	****	887	14
15	-27.6	-30.6	-29.1	004	6.8	6.9	005	12.1	N	20	-44.8	****	1119	15
16	-21.4	-48.9	-35.2	355	1.9	3.3	359	14.1	N	29	-40.3	****	1346	16
17	-22.2	-29.8	-26.0	348	1.3	1.8	003	6.3	N	40	-36.1	****	1225	17
18	-19.7	-27.8	-23.8	002	7.6	7.6	002	15.9	N	32	-37.1	****	1510	18
19	-23.3	-28.2	-25.8	005	6.2	6.2	359	11.4	N	18	-42.4	****	1365	19
20	-22.4	-25.6	-24.0	019	6.1	6.2	006	10.8	NNE	18	-41.7	****	1613	20
21	-23.1	-28.7	-25.9	021	5.3	5.4	001	12.1	NNE	18	-42.8	****	1690	21
22	-24.4	-35.8	-30.1	011	1.0	1.8	025	7.0	NNE	20	-45.0	****	1728	22
23	-21.4	-36.8	-29.1	355	1.3	1.7	028	5.7	N	20	-43.7	****	1870	23
24	-21.8	-36.6	-29.2	353	.7	1.4	358	4.4	N	19	-43.8	****	1910	24
25	-18.9	-33.5	-26.2	353	1.4	1.7	006	4.4	N	18	-43.1	****	1933	25
26	-18.6	-31.8	-25.2	339	.5	1.2	337	4.4	N	18	-41.7	****	2003	26
27	-10.9	-24.4	-17.7	352	.4	1.1	358	3.8	N	16	-39.3	****	1923	27
28	-12.9	-26.2	-19.6	346	.5	1.1	306	3.2	N	21	-38.4	****	2109	28
MONTH	3.7	-48.9	-18.7	005	1.9	3.3	350	17.8	N	33	-31.6	****	37233	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 12.7
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 15.2
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 17.8
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 14.0

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 ****

FIG. 2.4.16

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DENALI WEATHER STATION

February, 1982

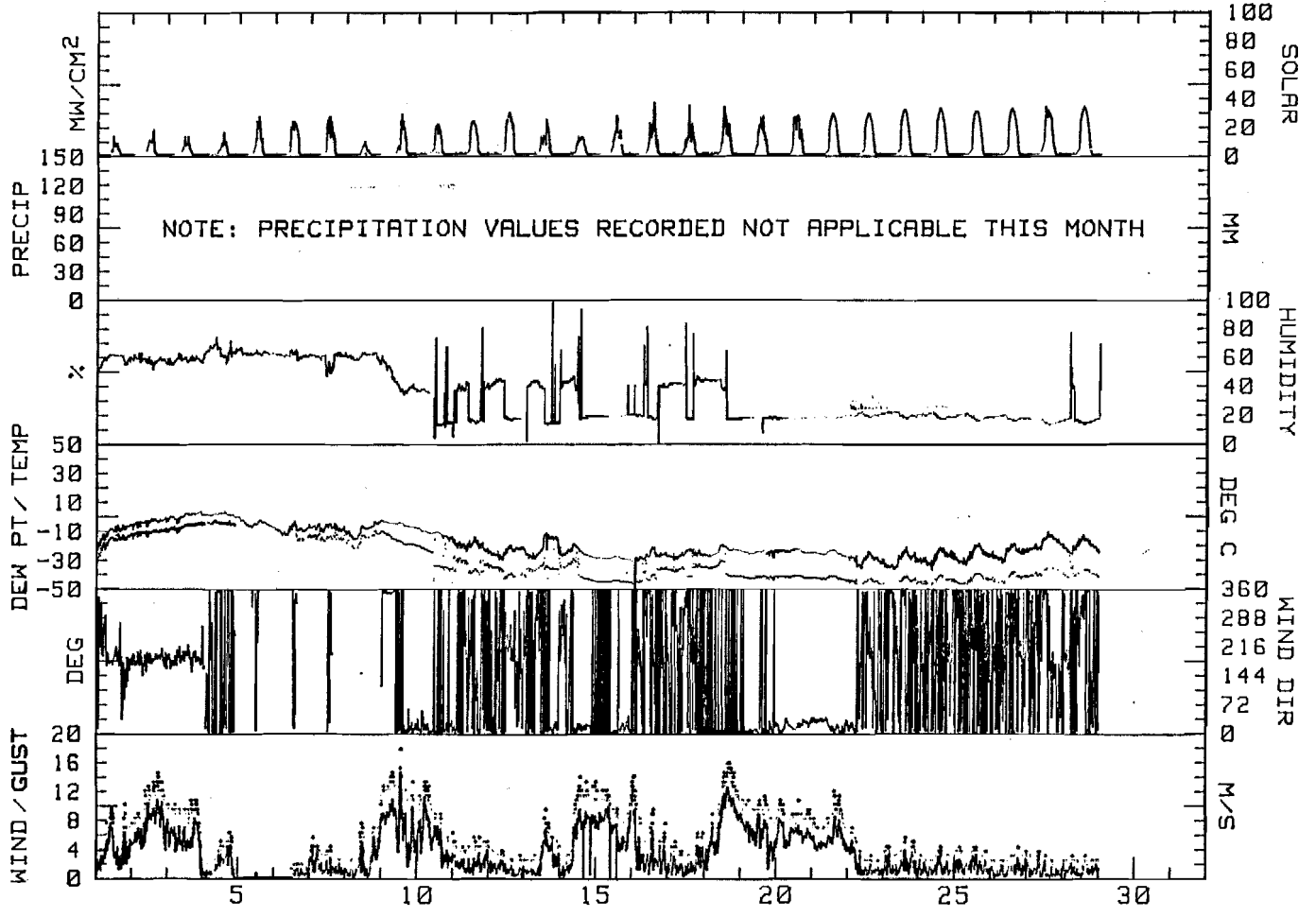


TABLE 2.4.17

MONTHLY SUMMARY FOR DENALI WEATHER STATION
DATA TAKEN DURING March, 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	-13.5	-27.9	-20.7	359	.7	1.2	215	3.8	N	23	-37.6	****	2313	1
2	-12.6	-26.7	-19.7	346	.6	1.1	013	5.1	N	16	-39.7	****	2188	2
3	-12.8	-28.3	-20.6	356	.9	1.0	066	4.4	N	16	-39.1	****	2268	3
4	-15.3	-28.3	-21.8	286	.1	.9	136	3.2	N	21	-37.9	****	2068	4
5	-9.2	-19.0	-14.1	183	1.2	1.8	184	6.3	S	17	-34.0	****	1808	5
6	-8.3	-14.7	-11.5	167	1.5	2.9	181	8.9	S	40	-22.6	****	1650	6
7	-4.1	-13.5	-8.8	357	1.4	1.8	167	4.4	N	48	-17.9	****	2625	7
8	-5.2	-14.6	-9.9	003	1.3	1.5	004	4.4	N	49	-18.0	****	2058	8
9	-5.4	-15.9	-10.7	185	2.3	3.1	156	12.1	SSW	50	-17.5	****	1564	9
10	-6.2	-13.1	-9.7	005	2.5	2.6	353	6.3	N	52	-18.4	****	2491	10
11	-5.0	-15.8	-10.4	357	1.2	1.3	355	3.8	N	48	-21.4	****	1680	11
12	-9.6	-17.7	-13.7	013	3.6	3.6	000	8.9	NNE	25	-30.6	****	3156	12
13	-13.1	-24.9	-19.0	001	1.4	2.0	028	6.3	N	19	-36.3	****	3407	13
14	-14.2	-26.9	-20.6	357	1.5	1.5	356	3.2	N	40	-27.0	****	1809	14
15	-7.9	-16.5	-12.2	351	1.2	1.2	357	3.2	N	47	-22.4	****	1645	15
16	-7.2	-15.9	-11.6	194	2.6	3.2	192	9.5	SSW	48	-18.6	****	1715	16
17	2.2	-6.7	-2.3	161	8.9	9.1	146	18.4	SSE	36	-14.7	****	2283	17
18	-.3	-5.0	-2.7	169	3.1	3.8	158	12.7	SSE	39	-14.6	****	1910	18
19	2.4	-6.7	-2.2	153	7.0	7.4	150	19.0	SE	36	-14.6	****	2578	19
20	2.3	-3.2	-.5	155	7.8	8.4	135	17.8	SE	35	-14.2	****	3020	20
21	.6	-3.0	-1.2	157	8.2	8.0	162	15.9	SSE	40	-13.6	****	1953	21
22	.6	-6.4	-2.9	195	3.5	3.7	178	10.2	SSW	44	-13.9	****	3430	22
23	.5	-8.2	-3.9	196	1.6	2.5	165	10.8	S	41	-17.2	****	2913	23
24	-5.1	-12.2	-8.7	001	5.8	5.8	007	11.4	N	37	-22.5	****	3445	24
25	-8.9	-14.8	-11.9	004	7.1	7.1	357	12.1	N	22	-30.4	****	3523	25
26	-11.7	-19.6	-15.7	009	3.3	3.6	000	8.3	N	18	-34.9	****	3773	26
27	-7.2	-22.3	-14.8	285	.2	1.2	198	5.7	N	29	-30.5	****	3115	27
28	-7.4	-17.6	-12.5	356	1.4	1.8	357	5.1	N	29	-28.6	****	3815	28
29	-3.5	-17.8	-10.7	003	1.2	1.6	357	4.4	N	30	-27.6	****	4090	29
30	-10.3	-18.7	-14.5	012	3.4	3.4	358	6.3	NNE	20	-33.1	****	4168	30
31	-14.0	-24.5	-19.3	001	3.5	3.8	357	8.3	N	18	-36.8	****	4213	31
MONTH	2.4	-28.3	-11.5	106	.4	3.3	150	19.0	N	34	-25.4	****	82666	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 14.0
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 15.9
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 17.1
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 15.9

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 ****

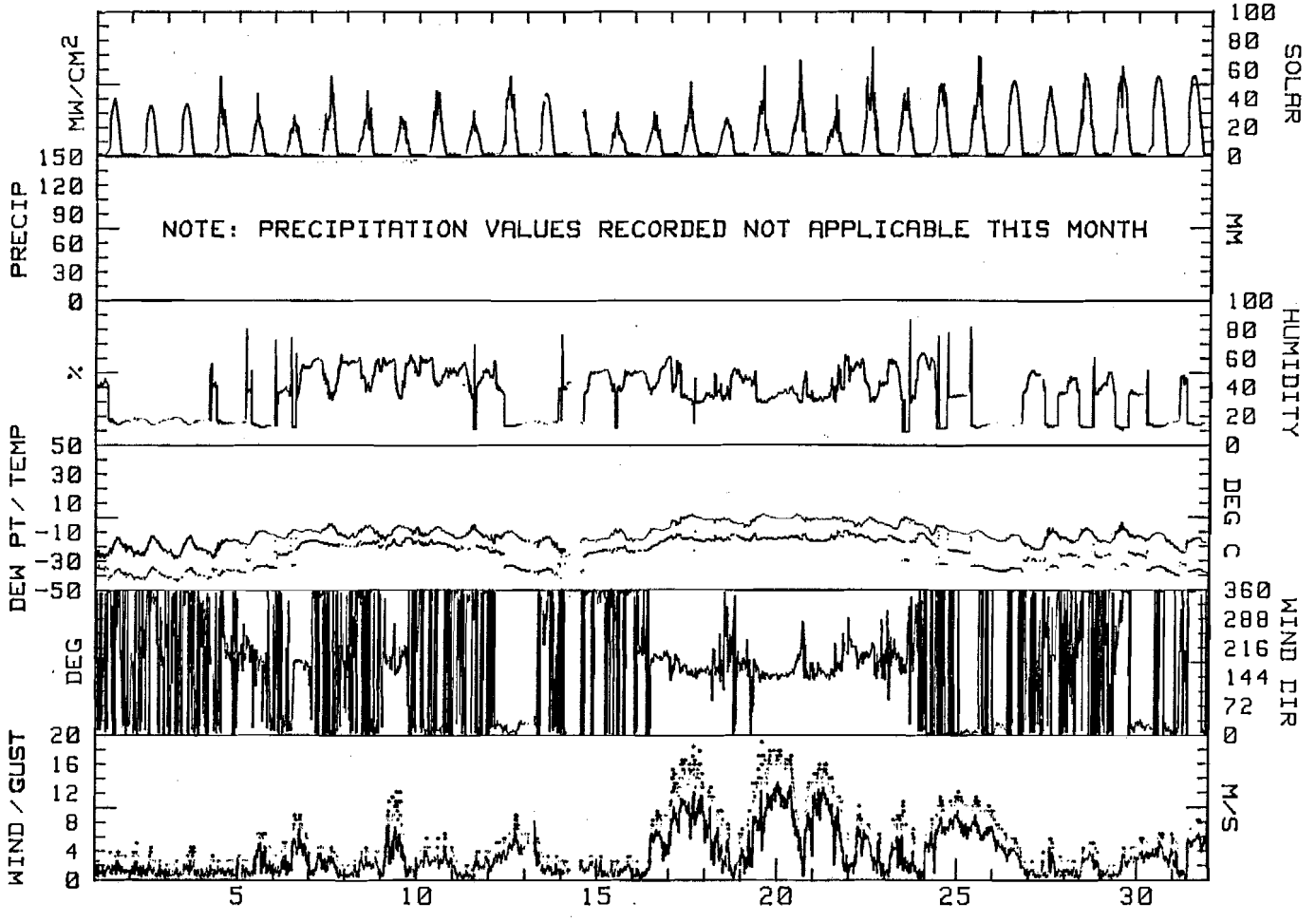
FIG. 2.4.17

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DENALI WEATHER STATION

March, 1982



R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TABLE 2.4.18

MONTHLY SUMMARY FOR DENALI WEATHER STATION
DATA TAKEN DURING April, 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	-13.7	-19.7	-16.7	013	5.2	5.3	003	9.5	NNE	15	-37.3	0.0	4268	1
2	-14.3	-23.6	-19.0	011	4.1	4.2	002	7.6	N	15	-38.0	0.0	4325	2
3	-8.5	-25.6	-17.1	346	.6	1.0	002	4.4	N	21	-36.2	0.0	4548	3
4	-5.5	-22.2	-13.9	319	.2	1.4	193	6.3	N	13	-34.1	0.0	4115	4
5	1.7	-13.7	-6.0	322	.5	1.0	356	3.2	N	17	-28.6	0.0	4410	5
6	.8	-9.5	-4.4	191	2.8	3.2	182	10.8	SSW	11	-29.8	0.0	4578	6
7	2.6	-8.4	-2.9	350	2.3	3.1	355	8.9	N	22	-21.8	0.0	4155	7
8	1.2	-9.9	-4.4	221	.5	2.4	161	8.9	N	27	-22.7	0.0	3490	8
9	-2.0	-13.4	-7.7	006	3.3	3.3	001	7.6	N	35	-21.9	0.0	4988	9
10	-3.3	-15.8	-9.6	248	.3	1.8	173	9.5	N	26	-26.9	0.0	4668	10
11	-3.7	-11.2	-7.5	001	5.1	5.1	002	9.5	N	33	-23.1	0.0	5173	11
12	-5.3	-10.2	-7.8	358	8.4	8.4	356	13.3	N	12	-32.7	0.0	4475	12
13	-6.4	-11.8	-9.1	358	6.6	6.6	358	10.8	N	12	-33.0	0.0	4848	13
14	-.8	-13.4	-7.1	156	1.0	3.2	117	16.5	N	15	-29.8	0.0	4835	14
15	1.1	-8.7	-3.8	184	.8	2.8	141	12.7	SSW	15	-27.1	0.0	3763	15
16	-1.6	-13.4	-7.5	358	3.6	3.6	355	8.3	N	21	-27.6	0.0	5283	16
17	-3.5	-9.8	-6.7	005	3.9	4.0	005	7.6	N	12	-31.6	0.0	5328	17
18	-1.6	-11.8	-6.7	225	1.0	3.0	139	12.1	N	34	-22.1	0.0	4378	18
19	-5.6	-16.9	-11.3	005	2.6	2.7	004	8.9	N	46	-19.0	0.0	4060	19
20	3.5	-7.0	-1.8	141	1.7	4.3	159	17.1	N	37	-16.8	.6	4783	20
21	5.5	-6.5	-.5	290	.9	1.8	305	7.0	N	33	-18.8	0.0	5623	21
22	2.0	-4.1	-1.1	297	.6	2.0	282	9.5	WNW	25	-21.6	0.0	5323	22
23	.1	-8.0	-4.0	203	1.5	1.9	175	5.7	SSW	40	-16.8	0.0	4968	23
24	1.8	-5.0	-1.6	188	3.1	3.9	158	15.2	S	38	-15.5	0.0	5748	24
25	4.3	-2.8	.8	157	5.2	5.9	150	18.4	SSE	27	-18.6	0.0	5410	25
26	3.2	-5.9	-1.4	003	.7	1.9	347	7.0	N	33	-19.4	.2	5498	26
27	6.8	-3.6	1.6	113	1.1	3.1	148	18.4	N	27	-19.4	.2	4970	27
28	5.0	-1.5	1.8	124	2.1	3.5	127	15.9	SE	17	-24.2	0.0	5420	28
29	3.4	-5.7	-1.2	245	1.0	2.0	275	6.3	SSW	27	-22.1	0.0	6615	29
30	5.9	-7.2	-.7	357	3.3	3.3	356	6.3	N	37	-15.7	0.0	6343	30
MONTH	6.8	-25.6	-5.9	004	1.1	3.3	150	18.4	N	25	-25.1	1.0	146382	

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 14.0
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 ****

FIG. 2.4.18

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DENALI WEATHER STATION

April, 1982

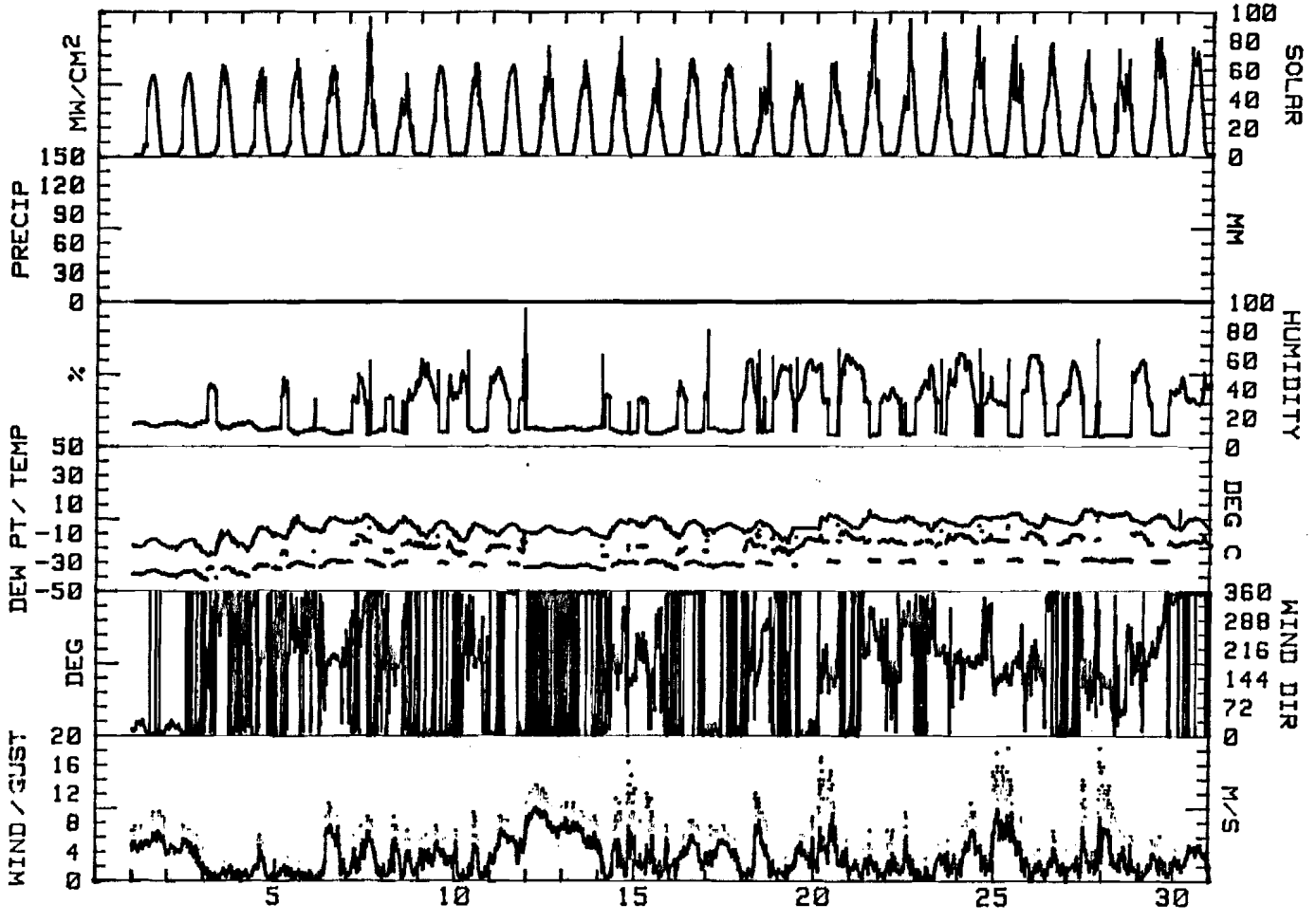


TABLE 2.4.19

MONTHLY SUMMARY FOR DENALI WEATHER STATION
DATA TAKEN DURING May, 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	3.4	-10.2	-3.4	355	1.4	1.6	345	3.8	N	24	-24.6	0.0	7010	1
2	.4	-8.1	-3.9	356	3.2	3.4	354	7.0	N	30	-19.9	0.0	6938	2
3	1.8	-9.1	-3.7	355	2.0	2.1	359	5.1	N	30	-21.6	0.0	6815	3
4	3.4	-6.9	-1.8	334	.9	2.0	356	7.0	N	33	-20.6	0.0	6238	4
5	4.9	-9.1	-2.1	004	2.4	2.7	332	6.3	N	17	-26.3	0.0	7018	5
6	7.4	-4.9	1.3	321	.8	2.2	199	7.0	N	20	-21.9	0.0	7065	6
7	6.9	.9	3.9	314	.6	1.5	288	6.3	N	33	-12.2	0.0	5343	7
8	7.0	1.2	4.1	235	.5	1.5	187	7.0	WSW	38	-10.7	0.0	4343	8
9	4.5	.6	2.6	197	3.5	3.7	183	10.2	SSW	52	-6.5	0.0	3330	9
10	6.9	.1	3.5	188	.9	1.8	173	4.4	S	50	-6.9	.4	4195	10
11	4.4	-.2	2.1	276	2.1	2.7	280	8.3	WNW	36	-15.6	2.2	6013	11
12	4.0	-2.3	.9	017	.8	1.6	185	5.1	N	65	-14.2	0.0	2967	12
13	4.5	-2.8	.9	346	1.9	2.0	353	7.6	N	25	-21.1	1.6	6120	13
14	6.6	-5.0	.8	350	2.4	2.6	319	6.3	N	21	-21.5	0.0	7295	14
15	7.4	-4.0	1.7	342	2.3	2.4	340	5.7	N	18	-23.2	0.0	7673	15
16	8.4	-3.8	2.3	032	2.2	2.7	068	7.0	N	15	-24.3	0.0	7198	16
17	6.8	-1.2	2.8	177	1.1	2.0	125	7.0	S	19	-24.8	0.0	4858	17
18	7.4	-.5	3.5	207	.1	1.5	350	7.6	N	51	-8.7	1.2	3570	18
19	6.9	-2.4	2.3	023	.9	2.6	195	7.6	N	25	-18.5	0.0	6840	19
20	4.6	-.8	1.9	237	.8	2.7	156	8.3	SSW	40	-10.6	.2	3393	20
21	6.8	-1.7	2.6	319	1.4	2.5	332	7.0	NW	23	-22.3	.2	6693	21
22	8.1	-2.8	2.7	041	.3	3.1	056	9.5	N	17	-23.2	0.0	6180	22
23	10.3	-.6	4.9	086	1.3	2.0	067	7.0	ENE	17	-24.4	0.0	7208	23
24	9.4	1.3	5.4	245	.5	2.6	292	9.5	S	22	-17.1	0.0	5178	24
25	8.7	2.2	5.5	307	1.7	2.4	278	9.5	WNW	29	-14.2	.2	4043	25
26	10.9	-.3	5.3	202	1.8	2.2	185	7.0	SSW	25	-18.2	0.0	4498	26
27	13.1	3.1	8.1	181	2.7	4.3	164	14.0	SSE	12	-23.5	0.0	6210	27
28	7.1	2.1	4.6	282	2.1	2.9	276	9.5	W	22	-18.9	0.0	5418	28
29	8.4	1.1	4.8	334	1.3	2.0	351	5.1	N	21	-19.3	0.0	4133	29
30	11.0	.9	6.0	356	3.3	3.4	000	7.6	N	25	-18.1	.2	6493	30
31	14.8	-.9	7.0	350	2.6	2.8	321	7.0	N	10	-25.2	0.0	8330	31
MONTH	14.8	-10.2	2.5	331	.7	2.4	164	14.0	N	28	-18.7	6.2	178601	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 9.5
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 11.4
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 11.4
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 8.9

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 ****

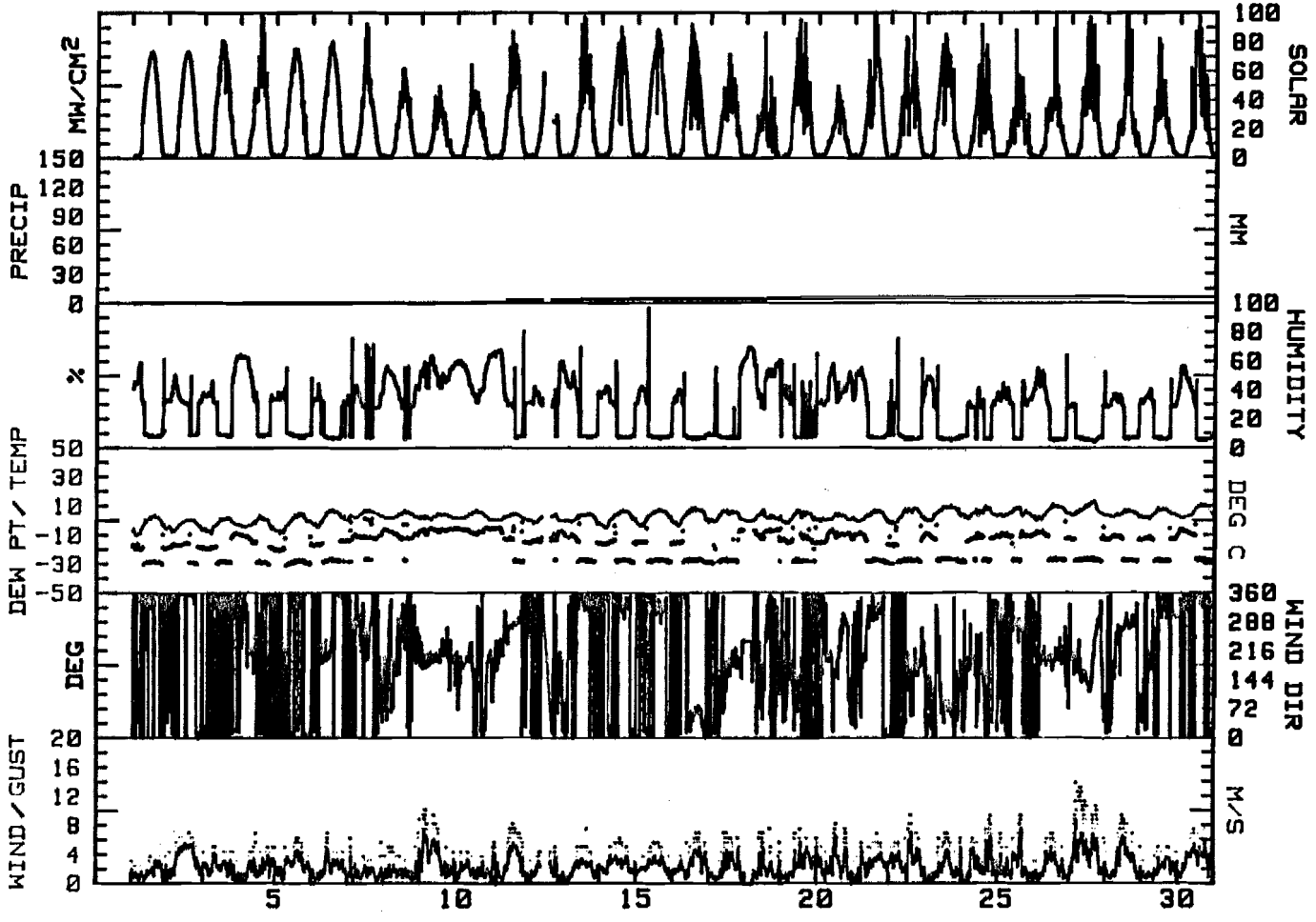
FIG. 2.4.19

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DENALI WEATHER STATION

May, 1982



R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TABLE 2.4.20

MONTHLY SUMMARY FOR DENALI WEATHER STATION
DATA TAKEN DURING June, 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	16.7	.6	8.7	305	1.0	2.4	233	7.6	N	8	-25.5	0.0	6590	1
2	8.8	2.3	5.6	350	1.6	2.1	010	8.3	N	39	-8.5	1.2	2308	2
3	9.0	.7	4.9	359	3.6	3.6	353	8.3	N	14	-22.9	0.0	8055	3
4	14.3	-1.3	6.5	207	1.6	2.5	271	7.6	S	10	-25.1	0.0	6668	4
5	14.1	4.2	9.2	162	4.8	5.0	160	14.6	SSE	9	-24.3	0.0	4040	5
6	16.4	5.2	10.8	171	4.6	5.2	178	15.9	SSE	8	-25.4	0.0	5583	6
7	12.7	4.0	8.4	141	.2	2.8	159	15.2	N	42	-5.6	.8	2745	7
8	14.5	.8	7.7	326	1.0	1.8	297	6.3	N	17	-21.0	0.0	6165	8
9	12.4	2.3	7.4	158	2.5	3.1	170	12.1	SSE	24	-13.7	.2	4160	9
10	14.4	3.9	9.2	166	4.6	5.0	185	17.8	SSE	14	-21.1	0.0	******	10
11	11.1	6.1	8.6	145	4.7	5.2	138	15.2	SE	6	-27.1	0.0	******	11
12	13.1	2.5	7.8	156	4.0	4.9	149	15.9	SSE	15	-22.1	.2	******	12
13	11.5	.9	6.2	329	1.2	1.6	308	5.1	N	14	-22.3	0.0	******	13
14	13.8	3.1	8.5	334	.6	2.9	169	8.9	N	14	-21.8	0.0	******	14
15	4.8	2.2	3.5	269	2.0	2.9	289	8.9	WNW	45	-7.6	2.2	******	15
16	7.3	3.2	5.3	304	2.3	3.0	286	9.5	WNW	43	-6.6	.4	******	16
17	13.0	3.6	8.3	003	2.6	2.9	007	8.3	N	27	-14.3	0.0	******	17
18	12.5	3.3	7.9	345	1.5	3.1	196	8.9	N	37	-8.6	2.0	******	18
19	14.8	3.1	9.0	188	1.2	2.4	334	11.4	S	25	-15.1	3.8	******	19
20	7.9	3.0	5.5	305	1.4	2.3	247	7.0	WNW	39	-8.0	6.0	******	20
21	12.2	4.0	8.1	322	1.5	1.9	311	5.1	WNW	16	-20.6	0.0	******	21
22	14.4	5.8	10.1	328	.3	1.9	159	7.0	N	13	-21.8	0.0	******	22
23	20.6	4.3	12.5	305	.9	2.2	233	6.3	N	12	-21.8	0.0	******	23
24	22.9	6.1	14.5	345	2.2	2.5	263	6.3	N	5	-26.8	0.0	******	24
25	23.9	6.7	15.3	005	1.5	2.2	178	9.5	N	3	-28.0	0.0	******	25
26	23.2	10.4	16.8	171	3.5	3.8	147	10.8	S	2	-28.1	0.0	******	26
27	23.9	8.4	16.2	154	4.7	5.2	140	17.8	S	2	-28.0	0.0	******	27
28	16.6	6.7	11.7	155	5.1	6.7	131	17.8	SSE	5	-26.5	0.0	******	28
29	13.4	5.1	9.3	193	1.1	2.3	170	10.2	SSE	27	-13.1	0.0	******	29
30	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	30
MONTH	23.9	-1.3	9.1	173	.7	3.2	185	17.8	N	18	-19.4	16.8	46313	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 17.1
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 14.6
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 15.9
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 ****

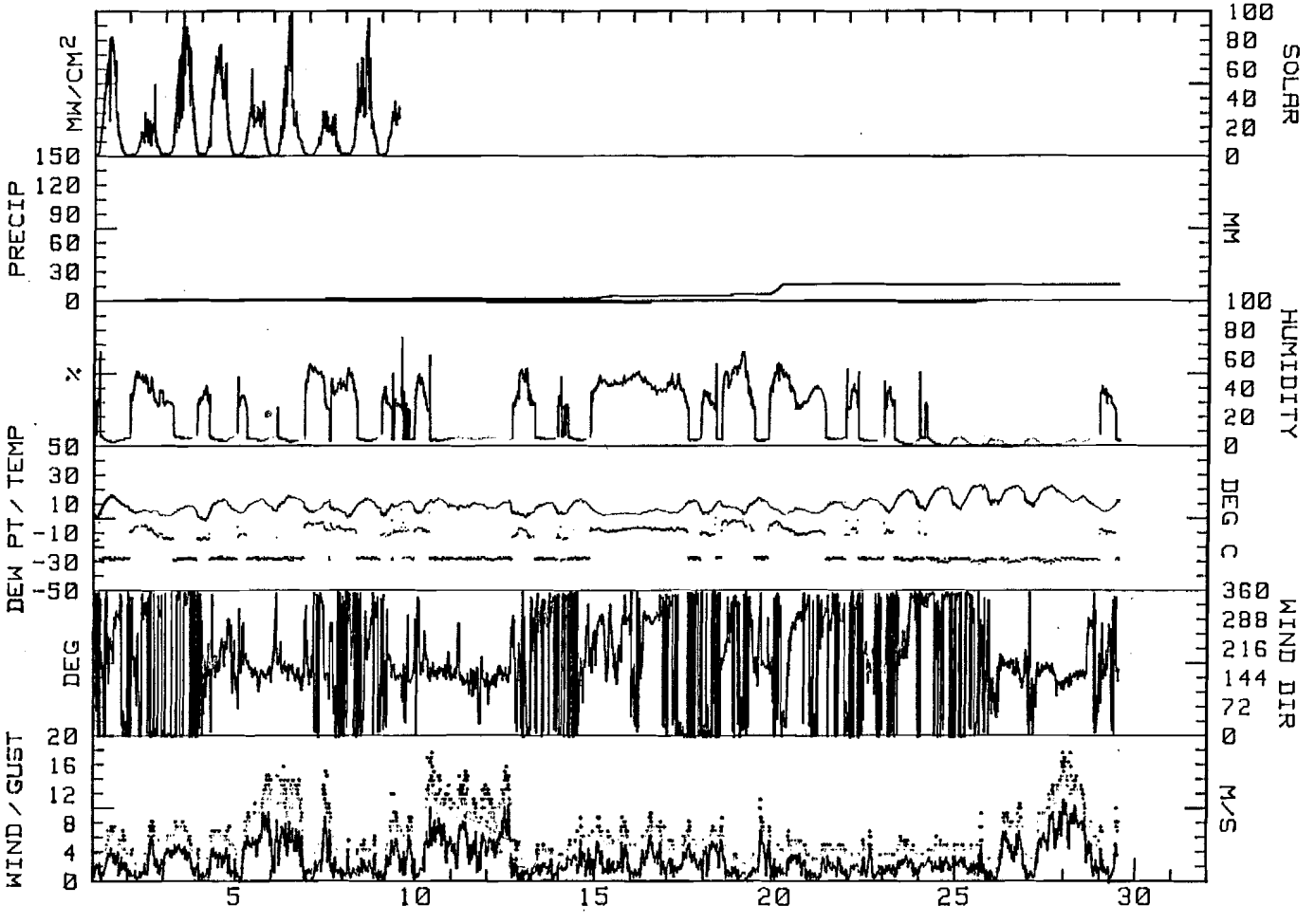
FIG. 2.4.20

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DENALI WEATHER STATION

June, 1982



SECTION 2.4. - PART 3

TYONE RIVER CLIMATE STATION

TABLE 2.4.21

MONTHLY SUMMARY FOR TYONE WEATHER STATION
DATA TAKEN DURING October, 1981

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	3.3	-6.0	-1.4	337	2.4	2.5	003	7.6	NNW	40	-13.4	****	2863	1
2	2.1	-10.5	-4.2	331	1.5	1.8	357	6.3	N	44	-15.9	****	2855	2
3	1.1	-15.5	-7.2	082	.5	.7	088	3.2	ENE	64	-10.3	****	1813	3
4	0.0	-4.2	-2.1	048	.9	1.1	043	5.7	NE	86	-2.9	****	480	4
5	2.8	-6.2	-1.7	332	1.2	1.6	348	5.7	NNW	68	-7.3	****	2338	5
6	2.6	-10.0	-3.7	027	1.2	1.8	019	5.7	N	67	-9.2	****	1468	6
7	-1.8	-14.4	-8.1	352	2.5	2.9	001	8.3	N	61	-12.3	****	1995	7
8	-.5	-4.7	-2.6	360	1.3	1.4	012	7.6	N	65	-9.7	****	1353	8
9	1.1	-3.8	-1.4	177	.1	.6	022	2.5	ESE	77	-5.2	****	838	9
10	2.9	-7.9	-2.5	172	.4	.7	140	3.2	SSE	62	-10.8	****	2570	10
11	0.0	-7.0	-3.5	093	.6	.8	075	4.4	E	66	-3.1	****	610	11
12	1.1	-2.8	-.9	266	.2	.3	269	1.9	WNW	31	-1.9	****	568	12
13	5.1	.2	2.7	242	.4	.5	306	2.5	SW	49	-1.1	****	1218	13
14	4.3	-.1	2.1	244	.3	.7	254	2.5	WSW	49	-9.2	****	1210	14
15	3.9	-1.1	1.4	156	.1	.5	107	2.5	W	47	-2.4	****	1373	15
16	1.9	-1.5	.2	197	.3	.7	107	3.8	WSW	56	-9.0	****	770	16
17	3.5	-5.0	-.8	350	1.0	1.3	343	6.3	N	53	-6.5	****	940	17
18	.2	-12.1	-6.0	323	1.4	1.9	002	5.7	N	71	-7.1	****	1275	18
19	-4.9	-17.1	-11.0	213	.5	.6	219	2.5	SSW	69	-14.7	****	1723	19
20	-.3	-7.4	-3.9	150	.4	.9	087	4.4	E	77	-10.1	****	875	20
21	6.1	-.3	2.9	097	.9	1.2	083	3.8	E	59	-8.7	****	1345	21
22	2.1	-.6	.8	198	.3	.8	219	2.5	WSW	43	-9.1	****	1030	22
23	4.9	.9	2.9	105	.4	.9	075	3.8	ENE	63	-5.8	****	785	23
24	3.7	-2.5	.6	295	1.1	1.5	332	6.3	W	45	-7.9	****	1225	24
25	1.9	-5.9	-2.0	271	.8	1.2	331	3.8	WSW	66	-7.5	****	1478	25
26	-1.2	-5.9	-3.6	269	.4	.8	295	3.2	W	73	-8.6	****	785	26
27	-3.4	-11.2	-7.3	128	.5	1.1	103	3.8	E	69	-9.9	****	825	27
28	0.0	-16.9	-8.5	216	.2	.5	241	2.5	ENE	69	-14.0	****	2063	28
29	-8.4	-17.3	-12.9	233	.3	.5	234	2.5	SW	78	-11.7	****	635	29
30	-6.6	-19.5	-13.1	189	.3	.5	228	2.5	SW	71	-14.7	****	1855	30
31	-7.7	-19.3	-13.5	236	.8	.9	199	4.4	WSW	73	-14.6	****	953	31
MONTH	6.1	-19.5	-3.5	337	.3	1.1	001	8.3	SW	62	-8.9	****	42108	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.1
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 5.7
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 7.6
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 ****

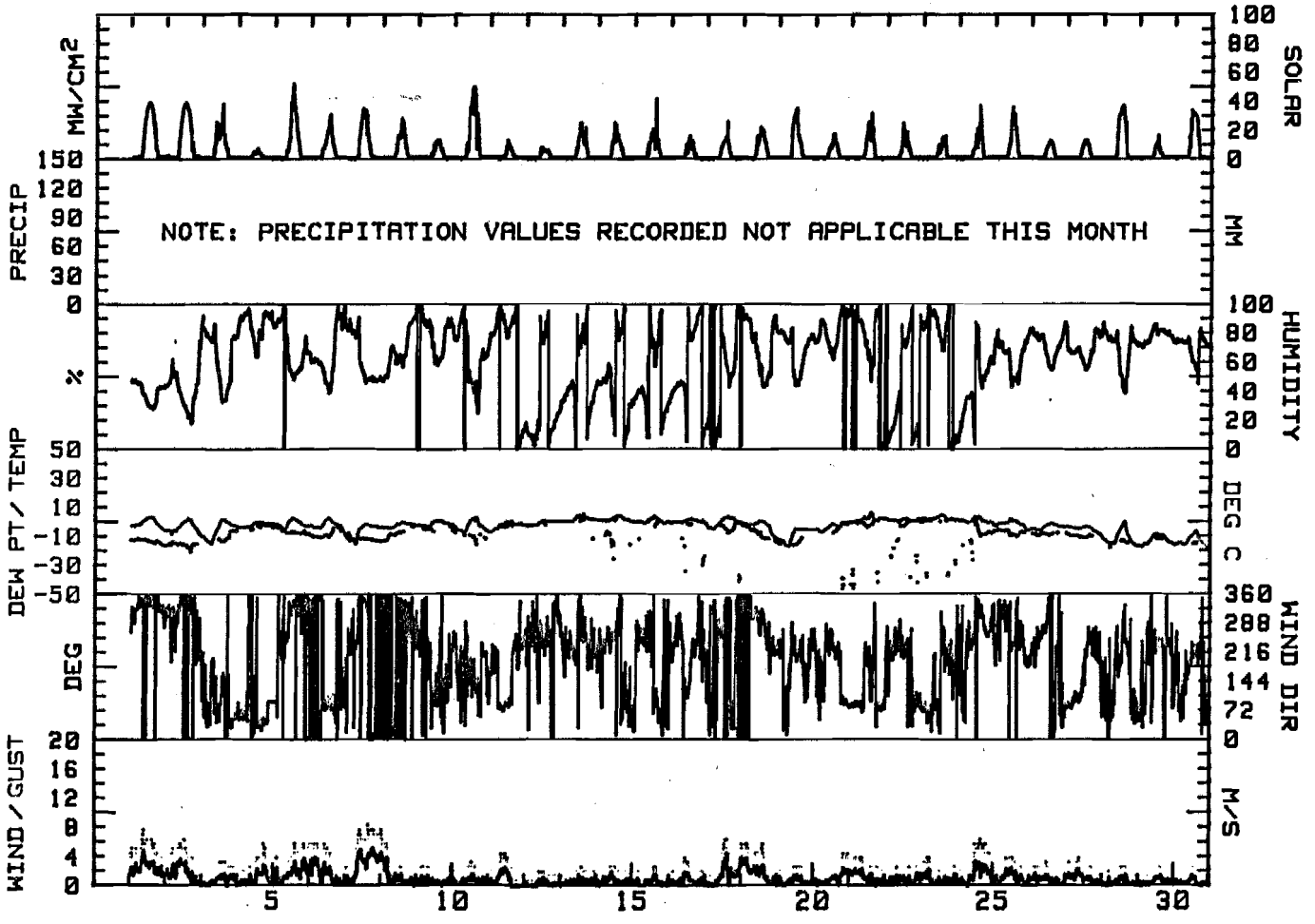
FIG. 2.4.21

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TYONE WEATHER STATION

October, 1981



R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TABLE 2.4.22

MONTHLY SUMMARY FOR TYONE WEATHER STATION
DATA TAKEN DURING November, 1981

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	-11.1	-17.2	-14.2	239	.7	.9	296	4.4	SW	73	-17.1	****	830	1
2	-1.6	-17.8	-9.7	133	.6	1.4	085	7.0	WSW	71	-11.5	****	893	2
3	-10.1	-21.2	-15.7	261	.6	1.0	346	3.8	WSW	71	-16.1	****	1033	3
4	-4.8	-12.7	-8.8	335	1.1	1.7	002	5.7	N	72	-12.5	****	655	4
5	-11.5	-16.8	-14.2	316	1.6	2.0	351	6.3	NNW	61	-20.3	****	628	5
6	-16.0	-20.7	-18.4	240	.7	1.1	343	4.4	SSW	56	-24.7	****	690	6
7	-9.2	-17.9	-13.6	231	.4	.6	211	2.5	SW	64	-16.9	****	500	7
8	-4.6	-14.2	-9.4	180	.3	.8	119	3.8	SW	69	-12.2	****	618	8
9	-5.8	-10.7	-8.3	234	.2	.6	203	2.5	SSW	83	-11.6	****	468	9
10	4.0	-8.4	-2.2	103	1.5	1.9	092	7.0	E	64	-6.3	****	855	10
11	-4.1	-11.7	-7.9	240	.3	.6	202	2.5	SW	80	-9.3	****	775	11
12	-4.0	-22.5	-13.3	320	.1	.4	010	2.5	NE	71	-12.8	****	1080	12
13	-10.1	-27.0	-18.6	062	.1	.3	142	1.9	NE	**	*****	****	1175	13
14	-13.4	-29.2	-21.3	155	.1	.2	172	1.3	SSW	**	*****	****	1265	14
15	-12.4	-29.0	-20.7	107	.1	.4	209	1.9	NE	52	-23.1	****	1208	15
16	-18.8	-30.5	-24.7	155	.1	.2	061	1.3	NE	**	*****	****	880	16
17	-17.8	-31.3	-24.6	160	.0	.3	029	1.3	SSW	55	-26.1	****	1120	17
18	-20.9	-33.1	-27.0	096	.0	.3	197	1.9	SSW	**	*****	****	1085	18
19	-17.7	-32.4	-25.1	119	.1	.4	114	1.9	NNE	51	-27.7	****	1058	19
20	-21.7	-31.9	-26.8	240	.6	.7	231	2.5	WSW	61	-28.4	****	388	20
21	-23.4	-33.4	-28.4	212	.1	.3	275	1.9	SSW	**	*****	****	855	21
22	-18.6	-33.3	-26.0	214	.1	.2	234	1.3	NE	**	*****	****	393	22
23	-12.6	-22.6	-17.6	184	.1	.3	070	1.3	WSW	**	*****	****	353	23
24	-9.0	-18.1	-13.6	245	.2	.4	246	1.9	WSW	74	-16.2	****	265	24
25	-10.2	-25.3	-17.8	066	.1	.4	111	1.9	ENE	**	*****	****	393	25
26	-6.6	-18.0	-12.3	223	.4	.6	199	2.5	SW	79	-12.9	****	233	26
27	-2.5	-12.2	-7.4	243	.9	1.1	274	7.0	WSW	79	-7.8	****	258	27
28	-10.1	-25.6	-17.9	043	.3	.4	286	2.5	NNE	71	-23.0	****	288	28
29	-11.8	-16.4	-14.1	267	.1	.4	249	2.5	SW	73	-18.4	****	273	29
30	-10.9	-17.7	-14.3	326	.2	.3	342	1.3	NNW	**	*****	****	278	30
MONTH	4.0	-33.4	-16.4	250	.1	.7	085	7.0	WSW	68	-16.9	****	20785	

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

FIGURE 2.4.22

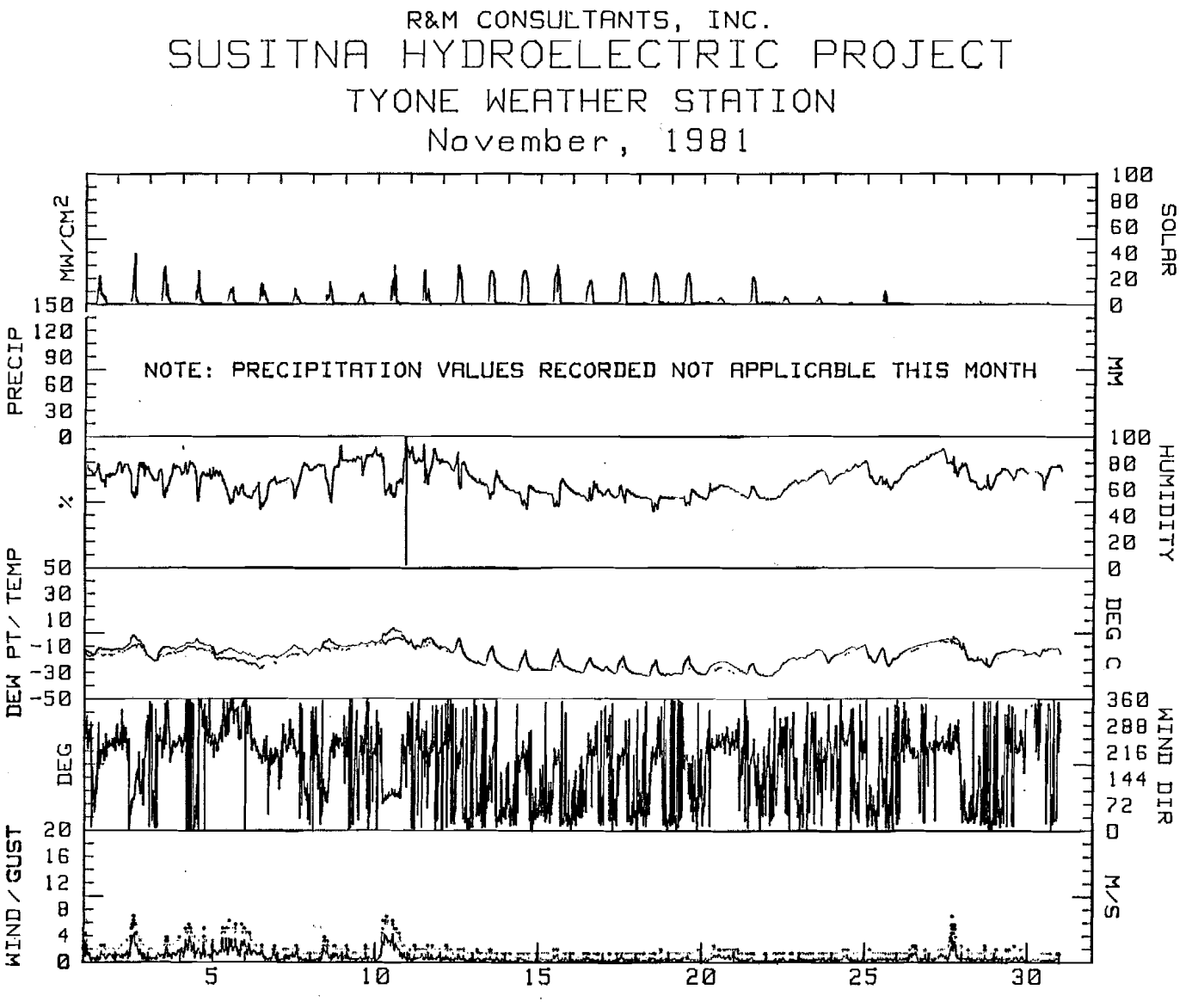

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
TYONE WEATHER STATION
November, 1981
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
150
120
90
60
30
0
MM
NOTE: PRECIPITATION VALUES RECORDED NOT APPLICABLE THIS MONTH
HUMIDITY
%
DEW PT/ TEMP
50
30
10
-10
-30
-50
DEG C
WIND DIR
DEG
360
288
216
144
72
0
WIND/GUST
20
16
12
8
4
0
M/S
5
10
15
20
25
30

TABLE 2.4.23

MONTHLY SUMMARY FOR TYONE WEATHER STATION
DATA TAKEN DURING December, 1981

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	-14.2	-24.9	-19.6	006	.2	.4	309	2.5	NNE	**	*****	****	298	1
2	-6.1	-20.7	-13.4	056	.4	.5	036	4.4	NNE	80	-12.6	****	278	2
3	-5.7	-11.4	-8.6	189	.4	.9	188	4.4	WSW	81	-10.5	****	230	3
4	-9.3	-31.7	-20.5	091	.1	.4	089	3.2	NE	76	-13.2	****	298	4
5	-17.0	-27.6	-22.3	352	.2	.4	342	3.2	WNW	66	-22.7	****	328	5
6	-15.4	-35.0	-25.2	165	.1	.3	192	1.9	NE	70	-20.5	****	348	6
7	-28.0	-39.4	-33.7	257	.2	.2	226	.6	SW	**	*****	****	475	7
8	-32.4	-40.2	-36.3	186	.3	.1	287	1.3	S	48	-43.7	****	513	8
9	-22.7	-36.6	-29.7	238	.1	.3	246	.6	SSW	52	-39.5	****	330	9
10	-26.0	-37.1	-31.6	***	0.0	0.0	***	0.0	***	52	-38.6	****	355	10
11	-16.8	-26.9	-21.9	219	.3	.2	230	1.9	SW	58	-30.4	****	243	11
12	-11.3	-21.8	-16.6	359	.2	.2	281	1.3	W	**	*****	****	245	12
13	-20.2	-27.9	-24.1	006	.3	.2	001	1.9	WNW	**	*****	****	270	13
14	-21.7	-27.9	-24.8	254	.1	.2	300	1.3	WNW	**	*****	****	273	14
15	-17.3	-27.1	-22.2	249	.0	.2	225	1.9	NE	**	*****	****	288	15
16	-6.6	-29.3	-18.0	250	.1	.2	239	1.9	WSW	67	-22.3	****	240	16
17	-.3	-6.9	-3.6	133	.5	1.0	113	5.7	ESE	86	-4.3	****	255	17
18	0.0	-11.3	-5.7	116	1.0	1.2	118	7.6	ESE	78	-5.1	****	230	18
19	-9.0	-19.6	-14.3	261	.5	.7	260	4.4	WSW	79	-14.4	****	260	19
20	-9.3	-20.4	-14.9	327	.4	.4	326	3.8	NNW	77	-14.0	****	238	20
21	-10.0	-21.7	-15.9	***	****	.3	***	****	***	80	-13.6	****	258	21
22	-13.4	-21.1	-17.3	279	.4	.4	271	1.9	W	**	*****	****	240	22
23	-9.3	-23.6	-16.5	308	.2	.3	320	1.9	NNW	70	-21.4	****	240	23
24	-7.5	-15.1	-11.3	251	.6	.4	241	2.5	WSW	82	-11.6	****	278	24
25	-12.6	-26.0	-19.3	331	.2	.3	298	2.5	NE	77	-18.0	****	270	25
26	-11.8	-35.6	-23.7	261	.6	1.3	326	3.8	WSW	62	-20.1	****	285	26
27	-33.1	-42.8	-38.0	316	.0	.2	282	1.9	NNW	47	*****	****	465	27
28	-37.9	-43.6	-40.8	050	.1	.2	056	1.9	NE	**	*****	****	505	28
29	-37.2	-45.2	-41.2	319	.1	.2	173	1.3	NNW	**	*****	****	525	29
30	-36.5	-45.6	-41.1	047	.0	.2	262	1.3	NE	**	*****	****	515	30
31	-26.5	-39.0	-32.8	297	.1	.2	287	1.9	NNW	52	-40.9	****	396	31
MONTH	0.0	-45.6	-22.7	219	.0	.0	118	7.6	NE	64	-20.9	****	9966	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	7.0
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	7.0
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	5.7
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 ****

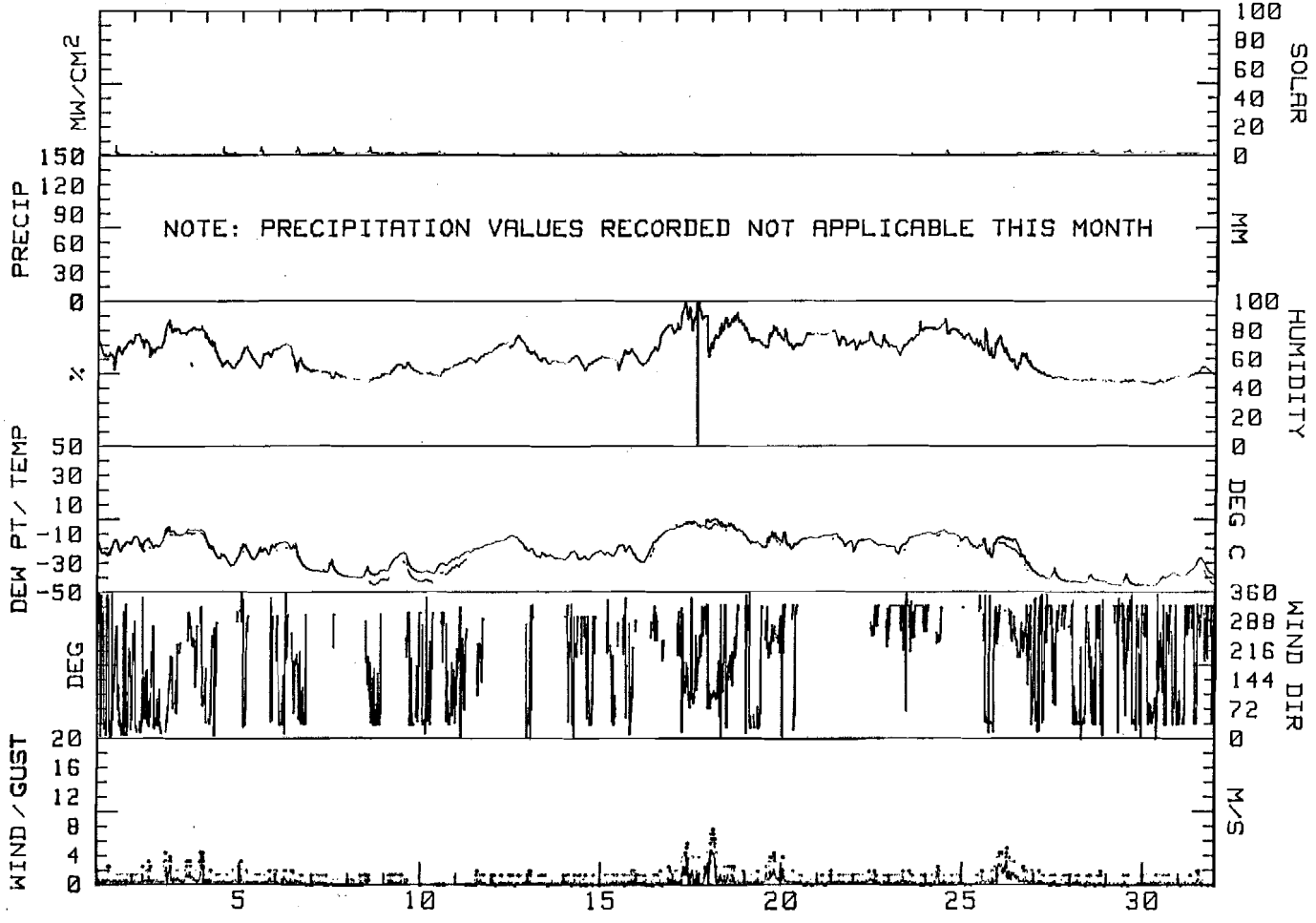
FIG. 2.4.23

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TYONE WEATHER STATION

December, 1981



R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TABLE 2.4.24

MONTHLY SUMMARY FOR TYONE WEATHER STATION
DATA TAKEN DURING January, 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	-31.3	-40.8	-36.1	***	****	****	***	****	***	49	-42.9	****	421	1
2	-26.6	-37.2	-31.9	***	****	****	***	****	***	52	-37.9	****	350	2
3	-33.7	-39.6	-36.7	***	****	****	***	****	***	48	-44.6	****	473	3
4	-19.3	-26.5	-22.9	219	.2	.4	243	1.9	W	54	-32.1	****	497	4
5	-23.6	-29.4	-26.5	330	3.3	3.4	347	11.4	NNW	39	-36.7	****	661	5
6	-28.8	-47.0	-37.9	280	.2	.6	309	4.4	NE	42	-40.7	****	633	6
7	-35.2	-48.0	-41.6	070	.3	.5	087	3.8	NE	42	*****	****	693	7
8	-30.6	-46.3	-38.5	129	.2	.9	009	4.4	ENE	45	-41.3	****	703	8
9	-23.6	-35.1	-29.4	070	.2	.4	022	1.9	NE	**	*****	****	383	9
10	-17.7	-26.4	-22.1	127	.2	.5	207	2.5	SSW	47	-28.3	****	613	10
11	-17.6	-27.7	-22.7	156	.1	.4	118	1.9	SW	**	*****	****	405	11
12	-13.6	-18.8	-16.2	224	.3	.5	262	2.5	SW	67	-21.7	****	540	12
13	-15.1	-30.5	-22.8	286	.1	.5	260	3.2	NNE	71	-20.3	****	638	13
14	-30.6	-40.9	-35.8	046	.2	.4	157	2.5	NE	50	-43.1	****	655	14
15	-35.4	-42.0	-38.7	085	.1	.3	016	3.2	NE	47	*****	****	595	15
16	-30.0	-41.2	-35.6	086	.1	.3	058	1.9	NE	**	*****	****	935	16
17	-27.2	-41.3	-34.3	127	.2	.5	085	3.8	E	48	-42.8	****	818	17
18	-12.0	-40.3	-26.2	296	.7	1.1	330	8.3	WSW	50	-26.6	****	518	18
19	-12.2	-39.2	-25.7	112	.1	.6	321	5.7	NE	45	-27.7	****	885	19
20	-29.6	-40.2	-34.9	061	.1	.3	037	1.9	NE	**	*****	****	860	20
21	-30.1	-44.8	-37.5	075	.2	.4	136	3.2	NE	43	-46.4	****	1128	21
22	-30.3	-45.6	-38.0	092	.2	.5	295	3.2	NE	43	*****	****	1153	22
23	-28.8	-44.2	-36.5	112	.2	.4	166	3.2	NE	**	*****	****	1255	23
24	-27.8	-44.2	-36.0	079	.2	.3	059	1.9	ENE	**	*****	****	1163	24
25	-30.3	-43.9	-37.1	113	.0	.2	015	1.3	NNE	**	*****	****	1348	25
26	-29.5	-44.4	-37.0	123	.1	.3	073	1.3	NE	**	*****	****	1408	26
27	-24.4	-44.8	-34.6	080	.0	.3	082	1.3	ENE	**	*****	****	663	27
28	-16.4	-24.4	-20.4	066	.3	.4	049	1.9	NE	63	-22.4	****	348	28
29	-17.1	-27.1	-22.1	110	.1	.3	083	2.5	ENE	62	-23.1	****	358	29
30	-19.6	-28.1	-23.9	066	.0	.3	224	1.3	NE	**	*****	****	433	30
31	-17.5	-30.9	-24.2	111	.0	.3	246	1.9	ENE	**	*****	****	520	31
MONTH	-12.0	-48.0	-31.1	021	.1	.5	347	11.4	NE	49	-34.0	****	22045	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	.6
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	1.3
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	9.5
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS	8.9

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 ****

FIG. 2.4.24

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TYONE WEATHER STATION

January, 1982

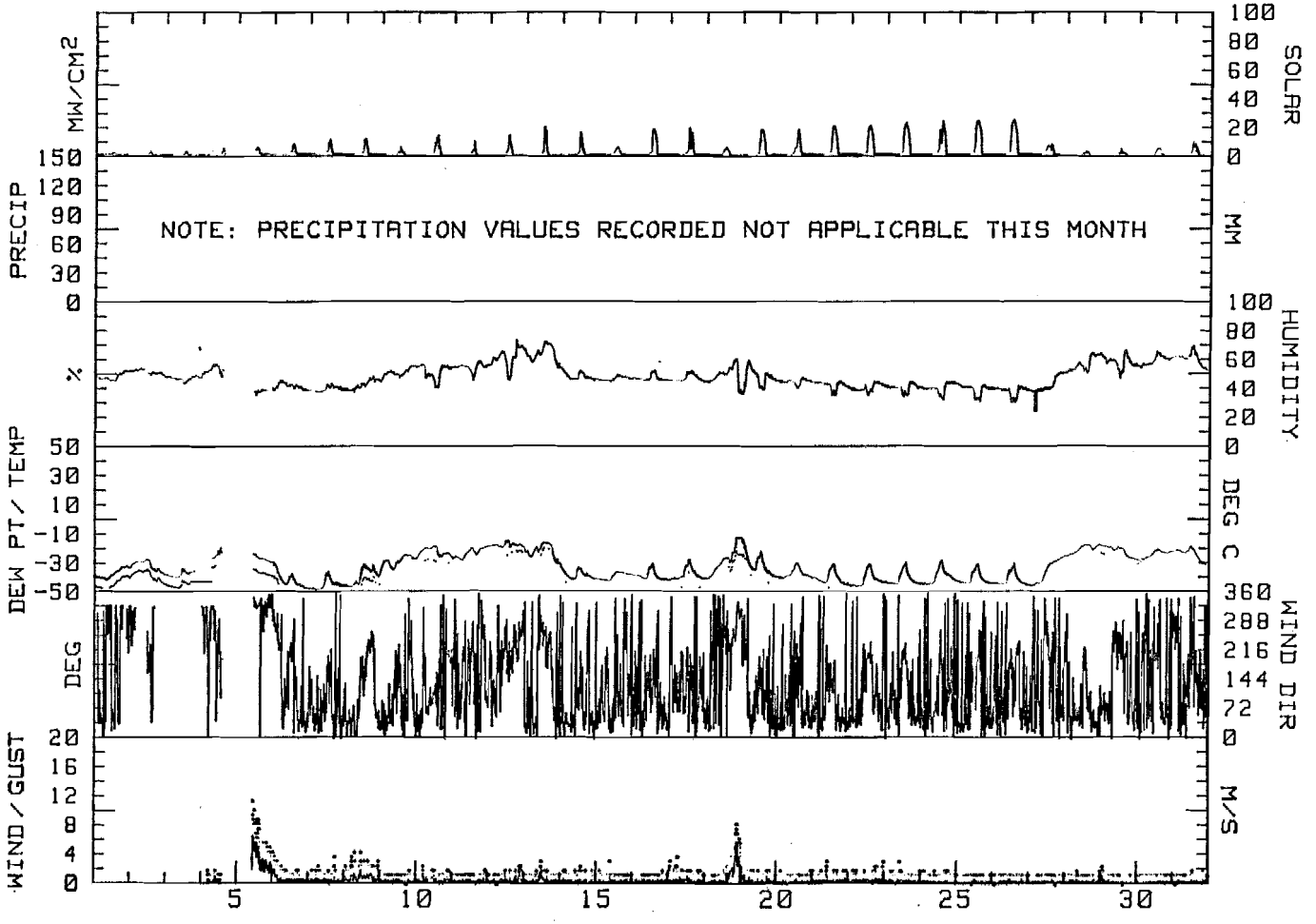


TABLE 2.4.25

MONTHLY SUMMARY FOR TYONE WEATHER STATION
DATA TAKEN DURING February, 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	-10.0	-28.7	-19.4	104	.0	.4	248	1.9	NE	**	*****	****	568	1
2	-7.4	-12.7	-10.1	131	.1	.4	219	1.9	NE	**	*****	****	398	2
3	-2.7	-11.2	-7.0	155	.1	.6	122	1.9	ENE	87	-7.7	****	385	3
4	3.7	-6.7	-1.5	246	.5	.4	254	2.5	WSW	51	-10.0	****	645	4
5	-3.0	-10.5	-6.8	***	****	0.0	***	****	***	**	*****	****	668	5
6	-7.6	-15.6	-11.6	***	****	0.0	***	****	***	**	*****	****	1108	6
7	-5.3	-19.9	-12.6	192	.1	.1	253	1.9	SSE	**	*****	****	1318	7
8	-2.5	-20.4	-11.5	***	****	0.0	***	****	***	**	*****	****	570	8
9	-2.1	-8.4	-5.3	335	4.7	4.3	334	9.5	NNW	40	-16.3	****	1663	9
10	-8.2	-18.2	-13.2	356	2.8	3.2	356	8.3	N	37	-23.4	****	1610	10
11	-13.5	-29.8	-21.7	104	.3	1.4	064	7.0	E	33	-31.2	****	1780	11
12	-16.4	-36.8	-26.6	156	.1	.5	236	3.2	NE	39	-35.1	****	1858	12
13	-21.8	-36.8	-29.3	108	.2	.5	156	3.2	ENE	48	-38.9	****	1120	13
14	-19.1	-32.0	-25.6	356	3.2	3.6	353	10.8	N	45	-32.3	****	825	14
15	-25.1	-31.1	-28.1	356	2.9	3.4	003	10.2	N	42	-36.4	****	1220	15
16	-22.3	-30.5	-26.4	250	.6	1.0	329	5.1	WSW	40	-36.4	****	1430	16
17	-18.6	-30.0	-24.3	215	.4	.7	200	3.8	SSW	44	-31.8	****	1165	17
18	-18.4	-25.3	-21.9	351	2.4	2.9	356	9.5	N	37	-32.1	****	973	18
19	-21.8	-32.9	-27.4	331	2.3	2.7	348	7.6	NW	33	-36.9	****	1203	19
20	-19.6	-42.2	-30.9	256	.5	.9	266	4.4	W	30	-39.6	****	1403	20
21	-20.6	-47.5	-34.1	288	.2	.8	340	5.1	NE	24	-40.2	****	1555	21
22	-23.1	-46.4	-34.8	301	.2	.7	262	3.8	NE	22	-41.3	****	1600	22
23	-18.5	-45.6	-32.1	129	.1	.6	131	4.4	NE	22	-39.4	****	1683	23
24	-16.4	-45.6	-31.0	180	.1	.7	222	3.8	NE	20	-38.1	****	1780	24
25	-14.5	-41.5	-28.0	261	.4	1.0	029	4.4	NE	20	-37.1	****	2090	25
26	-12.8	-42.0	-27.4	203	.1	.7	050	2.5	NE	20	-36.3	****	2548	26
27	-13.0	-34.5	-23.8	182	.2	.6	203	2.5	NE	19	-36.0	****	2215	27
28	-13.9	-38.4	-26.2	205	.2	.6	217	2.5	NE	18	-34.7	****	2905	28
MONTH	3.7	-47.5	-21.4	340	.7	1.2	353	10.8	NE	35	-32.3	****	38280	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 10.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.2
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 9.5
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 10.8

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 ****

FIG. 2.4.25

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TYONE WEATHER STATION

February, 1982

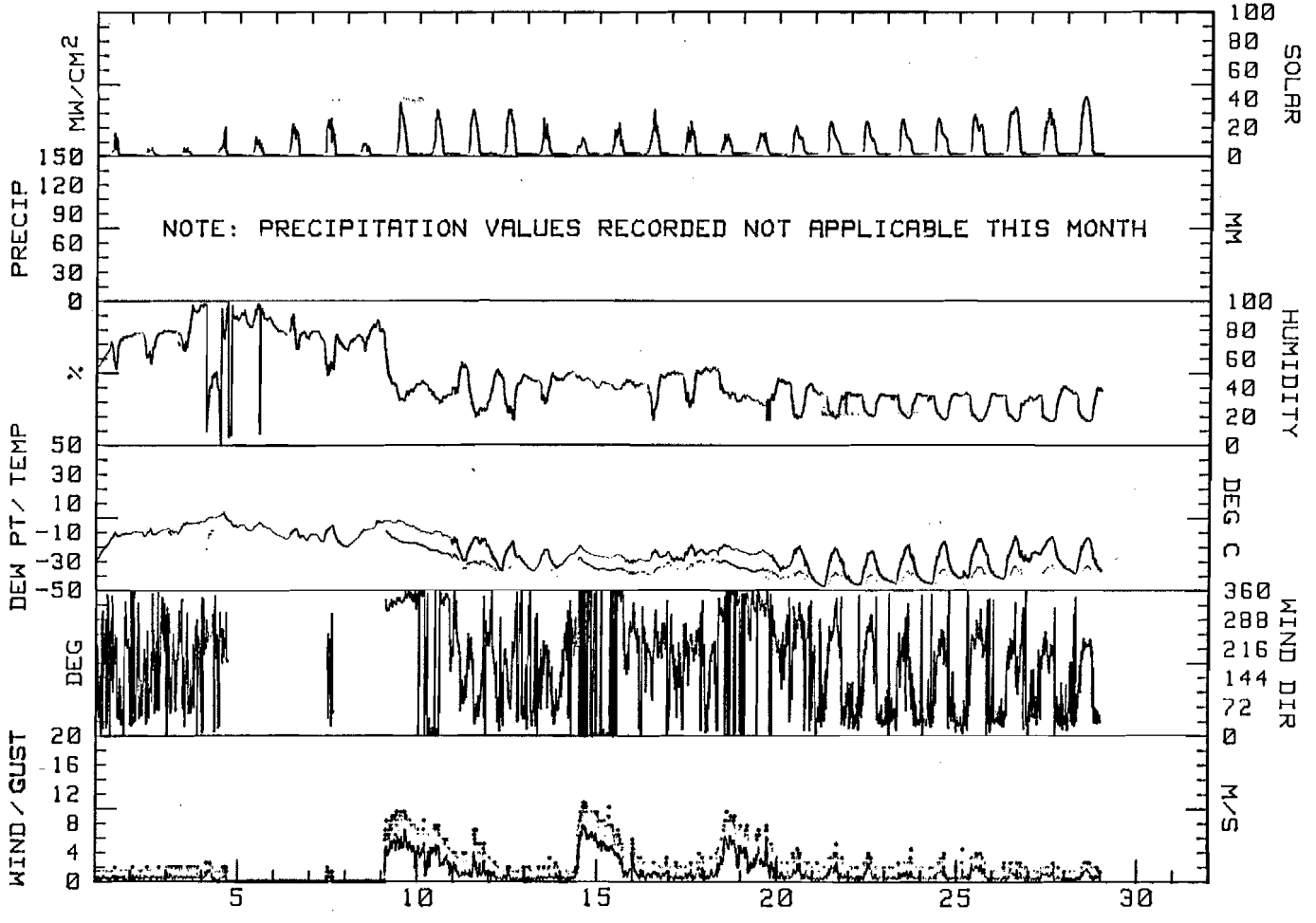


TABLE 2.4.26

MONTHLY SUMMARY FOR TYONE WEATHER STATION
DATA TAKEN DURING March, 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	-10.5	-41.1	-25.8	122	.2	.8	042	3.2	NE	29	-36.9	****	2990	1
2	-12.8	-41.5	-27.2	159	.2	.6	073	2.5	SSW	28	-34.6	****	3080	2
3	-13.5	-39.5	-26.5	175	.1	.4	207	1.9	SSW	29	-35.8	****	3113	3
4	-15.1	-40.7	-27.9	176	.1	.4	197	1.9	NNE	31	-33.0	****	2755	4
5	-8.8	-33.8	-21.3	119	.1	.4	182	2.5	NE	32	-29.6	****	3068	5
6	-9.3	-32.1	-20.7	224	.2	.4	220	3.2	SW	35	-32.3	****	1995	6
7	-2.7	-25.3	-14.0	250	.4	.6	255	2.5	WSW	43	-21.4	****	1488	7
8	-3.4	-25.3	-14.4	284	.5	.9	245	4.4	W	43	-22.1	****	1110	8
9	-6.9	-25.6	-16.3	235	.7	.8	245	2.5	WSW	45	-20.0	****	713	9
10	-2.5	-23.1	-12.8	322	.9	1.3	319	6.3	NW	37	-24.8	****	1533	10
11	-6.2	-24.3	-15.3	255	.4	.6	234	2.5	SW	52	-19.9	****	873	11
12	-8.0	-32.0	-20.0	321	1.2	1.6	347	6.3	NNW	52	-30.3	****	1780	12
13	-9.8	-37.8	-23.8	221	.7	1.0	266	4.4	SW	32	-33.1	****	2705	13
14	-11.4	-39.4	-25.4	242	.3	.6	254	3.2	WSW	32	-32.0	****	2163	14
15	-7.3	-16.0	-11.7	222	.2	.4	192	1.9	SSW	38	-28.6	****	1145	15
16	-5.5	-13.8	-9.7	017	.1	.2	348	1.9	NNE	37	*****	****	1345	16
17	3.0	-13.2	-5.1	116	1.3	1.4	137	7.6	ESE	29	-22.1	****	2118	17
18	1.8	-13.7	-6.0	113	.6	1.1	077	3.8	E	26	-21.6	****	2560	18
19	3.4	-17.8	-7.2	116	1.1	1.3	121	6.3	ESE	32	-21.0	****	3270	19
20	4.3	-13.1	-4.4	154	1.1	1.5	162	5.7	SSE	28	-21.8	****	3965	20
21	3.6	-13.7	-5.1	149	1.2	1.8	115	5.7	ESE	29	-20.9	****	3188	21
22	2.8	-15.1	-6.2	168	.4	.5	171	2.5	SW	39	-21.8	****	4038	22
23	-1.1	-20.9	-11.0	221	.6	.8	226	3.2	SSW	43	-22.8	****	3398	23
24	-1.8	-11.9	-6.9	351	2.6	2.9	350	8.3	N	30	-25.7	****	3805	24
25	-5.3	-13.4	-9.4	352	4.4	4.5	000	8.9	N	16	-29.9	****	3418	25
26	-6.8	-28.5	-17.7	341	1.9	2.1	354	8.9	N	21	-31.2	****	4120	26
27	-6.3	-33.5	-19.9	234	.4	.7	254	2.5	NNE	28	-26.8	****	4878	27
28	-5.9	-30.3	-18.1	217	.5	.8	219	3.2	SSW	28	-27.2	****	4508	28
29	-4.2	-26.2	-15.2	317	.4	1.0	332	5.7	SSW	26	-27.7	****	4228	29
30	-6.9	-20.9	-13.9	327	1.2	1.8	342	5.1	NNW	25	-30.0	****	4890	30
31	-10.1	-31.9	-21.0	349	2.1	2.4	343	7.6	N	24	-31.8	****	5213	31
MONTH	4.3	-41.5	-15.5	331	.3	1.2	000	8.9	SSW	33	-27.2	****	89430	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 7.0
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 7.6
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 7.0
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 ****

FIG. 2.4.26

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TYONE WEATHER STATION

March, 1982

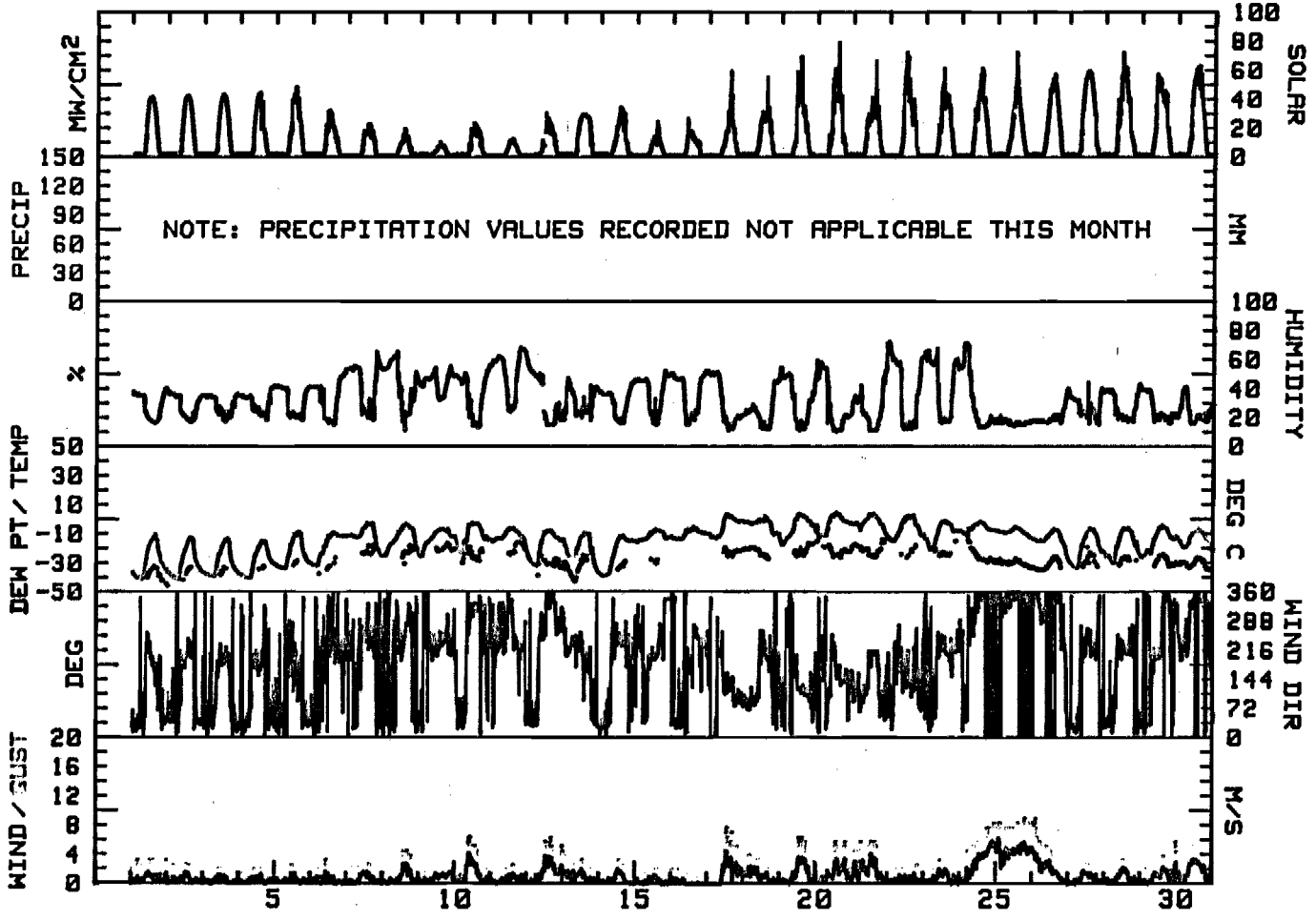


TABLE 2.4.27

MONTHLY SUMMARY FOR TYONE WEATHER STATION
DATA TAKEN DURING April, 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	-10.4	-18.0	-14.2	341	3.5	3.6	349	7.6	NNW	21	-32.4	0.0	5198	1
2	-10.7	-26.9	-18.8	308	1.5	2.2	345	5.7	W	22	-33.7	0.0	5300	2
3	-7.6	-33.9	-20.8	207	.4	.7	242	1.9	SSW	28	-28.1	0.0	5428	3
4	-3.1	-30.5	-16.8	213	.4	.5	219	2.5	SW	26	-22.4	0.0	5198	4
5	2.6	-21.3	-9.4	207	.4	.7	237	2.5	SSW	26	-22.4	0.0	5313	5
6	3.6	-11.8	-4.1	221	.4	.7	249	2.5	WSW	24	-19.1	.8	4655	6
7	4.3	-13.6	-4.7	300	1.4	1.9	299	7.6	NW	22	-23.7	3.8	4248	7
8	1.8	-14.6	-6.4	287	.8	1.2	299	6.3	WNW	29	-21.7	.2	3673	8
9	.1	-19.1	-9.5	326	1.3	1.8	339	7.0	NNW	28	-23.1	0.0	5408	9
10	-.7	-21.6	-11.2	195	.0	1.1	137	3.8	SE	32	-23.4	0.0	5060	10
11	.2	-10.3	-5.1	355	1.8	2.3	006	6.3	NNW	26	-22.9	.2	5023	11
12	-.6	-8.4	-4.5	004	3.4	3.6	007	7.6	N	16	-26.9	0.0	4285	12
13	-2.1	-9.4	-5.8	358	3.8	3.8	000	7.0	N	17	-27.8	0.0	5383	13
14	1.5	-15.6	-7.1	262	.5	1.3	328	3.8	SW	24	-26.0	.4	6115	14
15	3.3	-15.6	-6.2	166	.8	1.0	179	6.3	SSE	28	-21.5	1.4	5508	15
16	3.2	-14.3	-5.6	329	1.4	2.0	336	5.7	NNW	24	-23.9	.2	6078	16
17	1.3	-10.0	-4.4	325	1.6	1.9	006	5.7	NNW	19	-25.2	.4	5495	17
18	1.8	-17.1	-7.7	209	.4	1.1	201	6.3	W	29	-23.8	.2	6490	18
19	-1.1	-18.9	-10.0	352	1.0	1.4	351	5.7	N	39	-18.9	0.0	3418	19
20	4.3	-5.2	-.5	132	1.7	2.1	129	7.6	SE	26	-20.0	3.4	5395	20
21	4.2	-9.0	-2.4	229	.9	1.0	227	3.2	SW	27	-23.6	0.0	5283	21
22	5.2	-10.1	-2.5	243	1.2	1.3	241	4.4	WSW	22	-23.1	0.0	6623	22
23	2.3	-15.0	-6.4	192	.2	.8	199	3.2	SSW	31	-22.8	0.0	5233	23
24	6.2	-4.1	1.1	104	1.0	1.5	101	4.4	ENE	24	-19.8	0.0	5935	24
25	6.0	-5.0	.5	147	1.7	2.1	133	7.6	SE	21	-21.4	0.0	6508	25
26	4.5	-8.6	-2.1	355	.9	1.4	357	5.1	N	30	-20.5	1.8	5200	26
27	8.1	-1.2	3.5	094	1.3	1.8	099	6.3	ESE	25	-18.0	.4	5218	27
28	6.6	-4.2	1.2	135	1.2	1.8	152	7.0	ESE	18	-20.9	0.0	6390	28
29	5.1	-9.1	-2.0	227	.7	1.1	333	5.1	SSW	25	-21.5	0.0	7430	29
30	4.5	-9.8	-2.7	243	1.0	1.2	226	3.8	WSW	26	-21.6	0.0	6888	30
MONTH	8.1	-33.9	-6.1	331	.4	1.3	349	7.6	N	25	-23.3	13.2	163373	

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 7.6
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 5.1

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 ****

FIG. 2.4.27

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TYONE WEATHER STATION

April, 1982

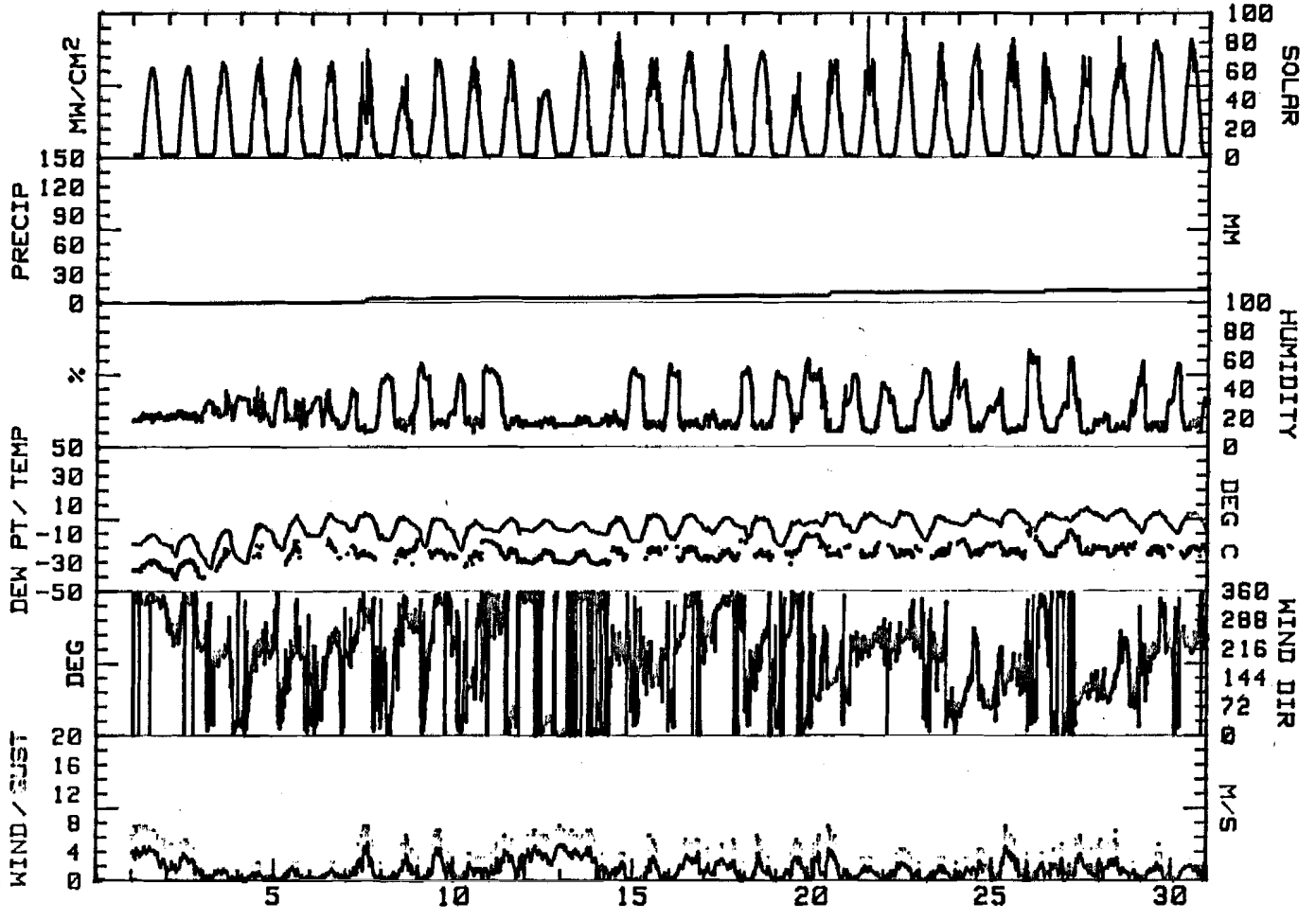


TABLE 2.4.28

MONTHLY SUMMARY FOR TYONE WEATHER STATION
DATA TAKEN DURING May, 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	4.3	-10.9	-3.3	231	1.2	1.4	238	3.8	WSW	21	-22.9	0.0	7670	1
2	3.7	-12.6	-4.5	312	1.2	1.6	350	5.1	NNW	24	-22.8	0.0	7588	2
3	5.4	-7.5	-1.1	229	.8	1.1	214	3.8	SW	30	-19.4	0.0	7045	3
4	4.8	-5.6	-.4	285	.3	1.1	249	4.4	WSW	25	-22.8	2.6	7618	4
5	6.5	-9.6	-1.6	244	.9	1.2	319	4.4	SW	21	-22.5	0.0	7215	5
6	8.0	-4.9	1.6	224	.9	1.1	176	3.2	WSW	21	-19.5	0.0	7935	6
7	8.1	-.8	3.7	223	.6	1.1	218	3.8	SW	26	-19.0	0.0	5830	7
8	9.1	0.0	4.6	226	.7	1.0	228	4.4	SSW	26	-19.7	0.0	6165	8
9	6.5	-.8	2.9	119	.5	1.1	058	3.8	ENE	36	-12.0	.4	3760	9
10	6.5	-1.7	2.4	219	.6	1.0	224	3.2	SW	51	-10.9	4.0	4600	10
11	5.7	-1.8	2.0	296	.8	1.4	319	5.7	WSW	41	-13.0	2.6	5565	11
12	5.5	-3.1	1.2	257	.5	1.1	299	3.8	SSW	35	-16.0	1.0	4590	12
13	5.2	-.8	2.2	311	1.0	1.2	319	5.1	NW	43	-16.1	1.4	5472	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	9.1	-12.6	.7	249	.6	1.2	319	5.7	SW	30	-18.2	12.0	81052	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.1
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 4.4
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 5.1
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 5.1

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 ****

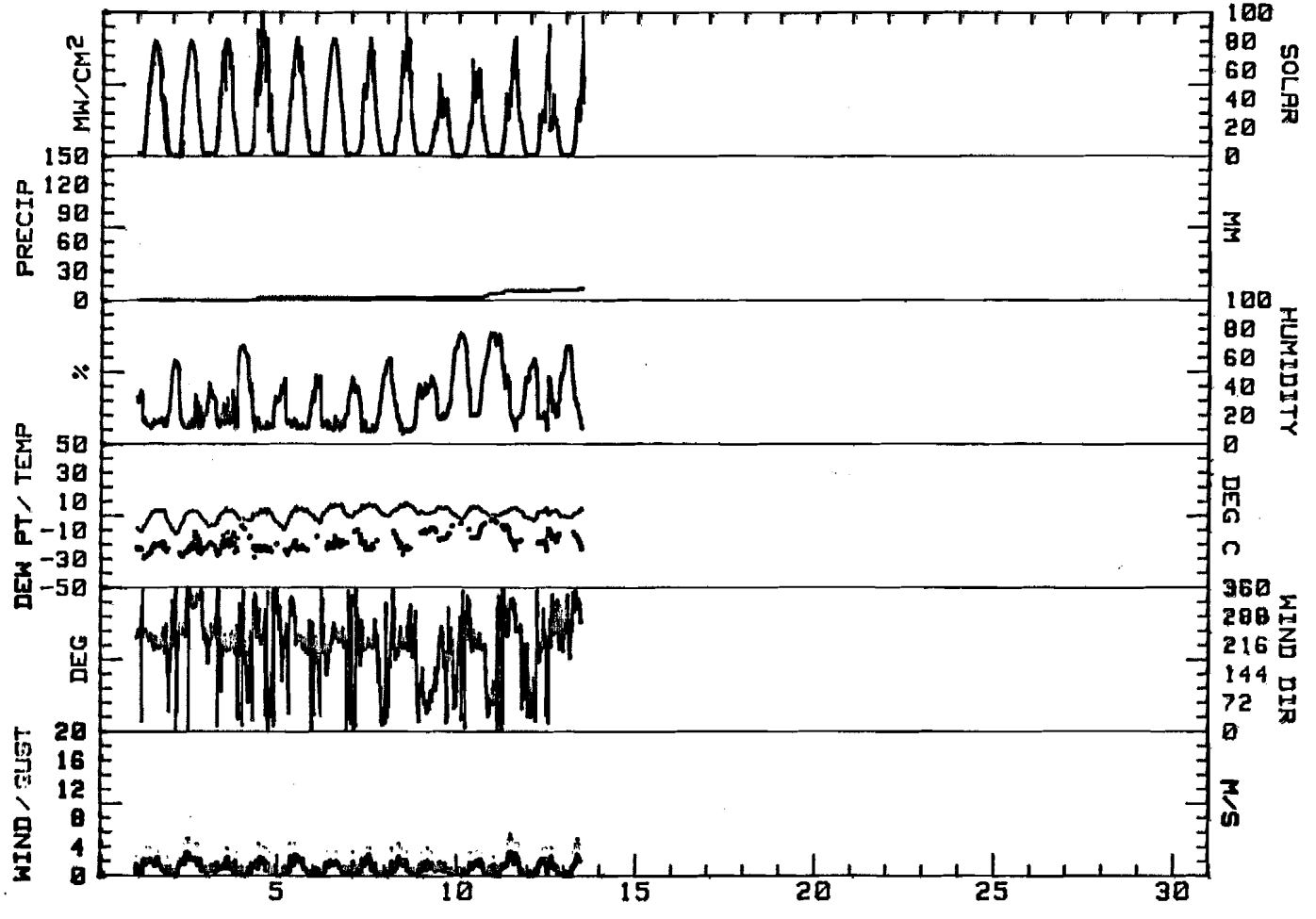
FIG. 2.4.28

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TYONE WEATHER STATION

May, 1982



SECTION 2.4 - PART 4

KOSINA CREEK CLIMATE DATA

TABLE 2.4.29

MONTHLY SUMMARY FOR KOSINA WEATHER STATION
DATA TAKEN DURING November, 1981

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	-5.8	-13.3	-9.6	036	3.0	3.8	076	8.9	NNE	51	-18.2	****	266	2
3	-11.3	-16.1	-13.7	182	1.4	1.7	202	7.0	SSW	46	-23.1	****	1138	3
4	-6.6	-18.5	-12.6	031	.4	2.5	029	8.9	NNE	57	-17.6	****	495	4
5	-11.7	-21.0	-16.4	210	.9	1.3	153	3.8	SSW	49	-25.5	****	760	5
6	-16.0	-24.0	-20.0	187	1.7	1.9	179	4.4	S	48	-27.5	****	715	6
7	-9.7	-17.9	-13.8	186	3.0	3.1	187	5.7	S	49	-21.4	****	483	7
8	-4.5	-15.2	-9.9	158	2.4	2.9	090	9.5	S	50	-17.9	****	835	8
9	-2.3	-15.3	-8.8	139	1.9	3.0	100	9.5	S	55	-14.3	****	603	9
10	.9	-4.0	-1.6	104	3.2	4.6	105	15.9	E	56	-9.2	****	495	10
11	.8	-4.6	-1.9	146	2.4	3.1	110	10.2	SSE	47	-12.2	****	728	11
12	-2.9	-13.0	-8.0	197	2.7	2.9	179	7.0	SSW	53	-15.7	****	1020	12
13	-6.2	-14.3	-10.3	187	2.7	2.9	188	5.7	S	39	-22.3	****	1095	13
14	-10.5	-17.5	-14.0	179	2.8	2.9	156	7.0	S	35	-26.4	****	1008	14
15	-11.1	-19.7	-15.4	186	2.2	2.4	171	5.1	SSW	43	-25.2	****	913	15
16	-14.8	-22.6	-18.7	173	3.2	3.5	145	7.6	S	47	-26.4	****	1105	16
17	-16.9	-23.9	-20.4	193	2.4	2.6	176	6.3	SSW	46	-29.4	****	1120	17
18	-16.5	-25.3	-20.9	198	2.8	2.9	192	7.0	SSW	44	-29.7	****	1103	18
19	-12.6	-21.5	-17.1	164	2.8	3.0	141	5.7	SSE	43	-27.2	****	1120	19
20	-20.1	-26.9	-23.5	144	5.5	5.5	144	10.2	SE	44	-33.4	****	1025	20
21	-15.7	-24.4	-20.1	185	2.6	2.9	153	6.3	SSW	44	-29.3	****	985	21
22	-15.0	-23.5	-19.3	185	2.5	2.8	138	5.7	SSW	44	-27.4	****	495	22
23	-11.8	-17.4	-14.6	163	3.0	3.2	135	7.0	SSE	44	-24.5	****	710	23
24	-9.4	-14.8	-12.1	165	2.2	2.5	139	5.7	SSE	51	-20.7	****	423	24
25	-7.0	-15.7	-11.4	188	2.0	2.2	145	5.7	SSW	52	-19.7	****	723	25
26	-7.0	-10.9	-9.0	178	2.3	2.6	140	7.6	S	56	-16.6	****	298	26
27	-2.3	-7.9	-5.1	232	1.5	2.9	250	14.6	S	57	-13.1	****	385	27
28	-6.8	-15.3	-11.1	185	1.7	2.2	105	5.1	SSW	51	-19.4	****	653	28
29	-10.9	-16.8	-13.9	192	3.1	3.1	189	7.0	SSW	53	-21.6	****	600	29
30	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	30
MONTH	.9	-26.9	-13.3	173	2.1	2.5	105	15.9	S	48	-22.0	****	21294	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 15.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 14.0
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 14.6
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 12.7

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 ****

FIG. 2.4.29

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

KOSINA WEATHER STATION

November, 1981

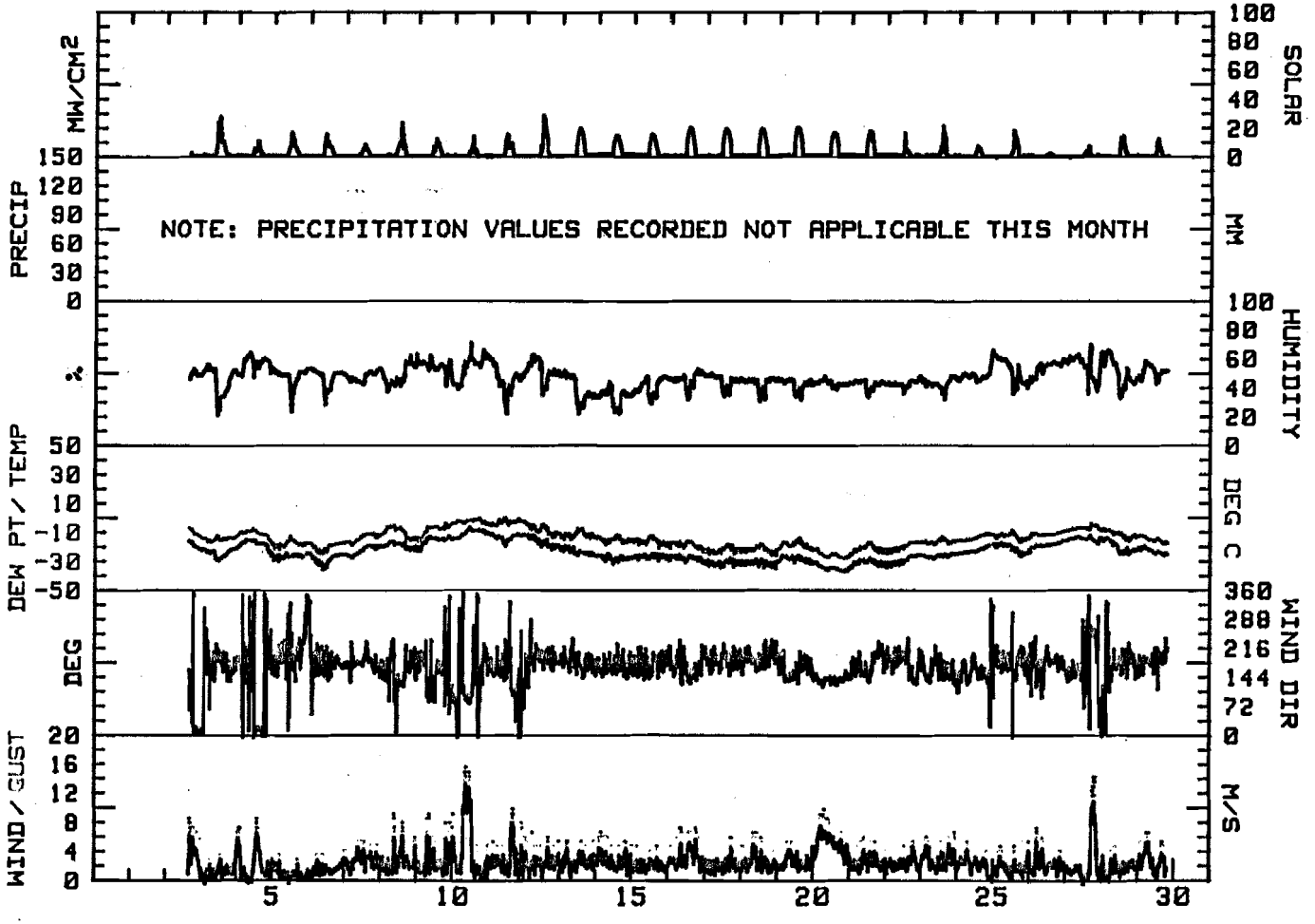


TABLE 2.4.30

MONTHLY SUMMARY FOR KOSINA WEATHER STATION
DATA TAKEN DURING January, 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	-24.9	-28.9	-26.9	312	7.9	8.1	295	14.6	NW	49	-39.0	****	736	5
6	-27.9	-34.6	-31.3	178	2.7	2.9	179	6.3	S	28	-44.2	****	793	6
7	-23.1	-31.7	-27.4	166	3.4	3.6	153	7.6	SSE	24	-42.1	****	848	7
8	-19.4	-27.4	-23.4	180	2.4	2.7	192	7.6	S	21	-39.4	****	908	8
9	-17.7	-22.8	-20.3	116	3.3	3.8	146	13.3	ESE	26	-34.6	****	745	9
10	-17.1	-21.2	-19.2	147	6.2	6.4	139	11.4	SSE	40	-29.6	****	643	10
11	-13.2	-21.5	-17.4	147	6.9	7.1	137	11.4	SE	43	-27.5	****	473	11
12	-11.1	-15.8	-13.5	149	4.7	4.8	138	8.9	SSE	51	-21.7	****	420	12
13	-11.2	-23.1	-17.2	157	2.3	3.2	091	15.2	SSE	40	-27.6	****	943	13
14	-16.1	-26.5	-21.3	143	2.9	3.7	105	10.2	SE	22	-36.5	****	895	14
15	-20.4	-27.0	-23.7	163	4.0	4.3	156	8.9	SSE	25	-38.3	****	858	15
16	-16.4	-24.1	-20.3	166	2.6	3.0	145	8.3	SSE	23	-35.9	****	973	16
17	-14.1	-24.7	-19.4	176	2.3	2.8	155	7.0	SSE	29	-33.1	****	893	17
18	-13.5	-24.4	-19.0	162	2.2	3.0	040	7.6	SSE	36	-31.3	****	718	18
19	-15.0	-25.0	-20.0	180	2.8	3.0	199	8.9	S	28	-33.2	****	900	19
20	-18.5	-26.5	-22.5	169	3.1	3.5	132	8.3	SSW	30	-34.7	****	848	20
21	-16.8	-25.0	-20.9	133	2.3	3.4	077	11.4	SE	25	-36.1	****	983	21
22	-22.3	-28.7	-25.5	184	3.0	3.3	158	8.3	S	22	-40.5	****	1070	22
23	-19.2	-26.2	-22.7	159	3.4	3.6	134	7.6	SSE	23	-38.1	****	1090	23
24	-21.9	-29.2	-25.6	185	2.5	2.7	137	5.7	SSW	24	-40.5	****	1105	24
25	-24.2	-28.3	-26.3	164	3.6	3.8	151	8.3	SSE	27	-39.9	****	1050	25
26	-23.0	-29.6	-26.3	165	3.7	3.8	157	8.3	SSE	30	-38.9	****	1028	26
27	-21.9	-32.1	-27.0	178	3.0	3.4	129	8.3	S	34	-37.3	****	825	27
28	-14.3	-23.2	-18.8	173	2.9	3.4	211	6.3	SSE	45	-26.7	****	518	28
29	-14.2	-19.1	-16.7	145	6.4	6.4	135	9.5	SE	47	-25.7	****	695	29
30	-14.2	-18.5	-16.4	154	5.3	5.4	149	8.3	SSE	50	-24.7	****	1118	30
31	-15.3	-21.1	-18.2	177	2.4	2.6	145	6.3	S	50	-25.5	****	675	31
MONTH	-11.1	-34.6	-21.7	161	3.2	3.5	091	15.2	SSE	33	-34.2	****	22743	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 13.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 14.6
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.

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

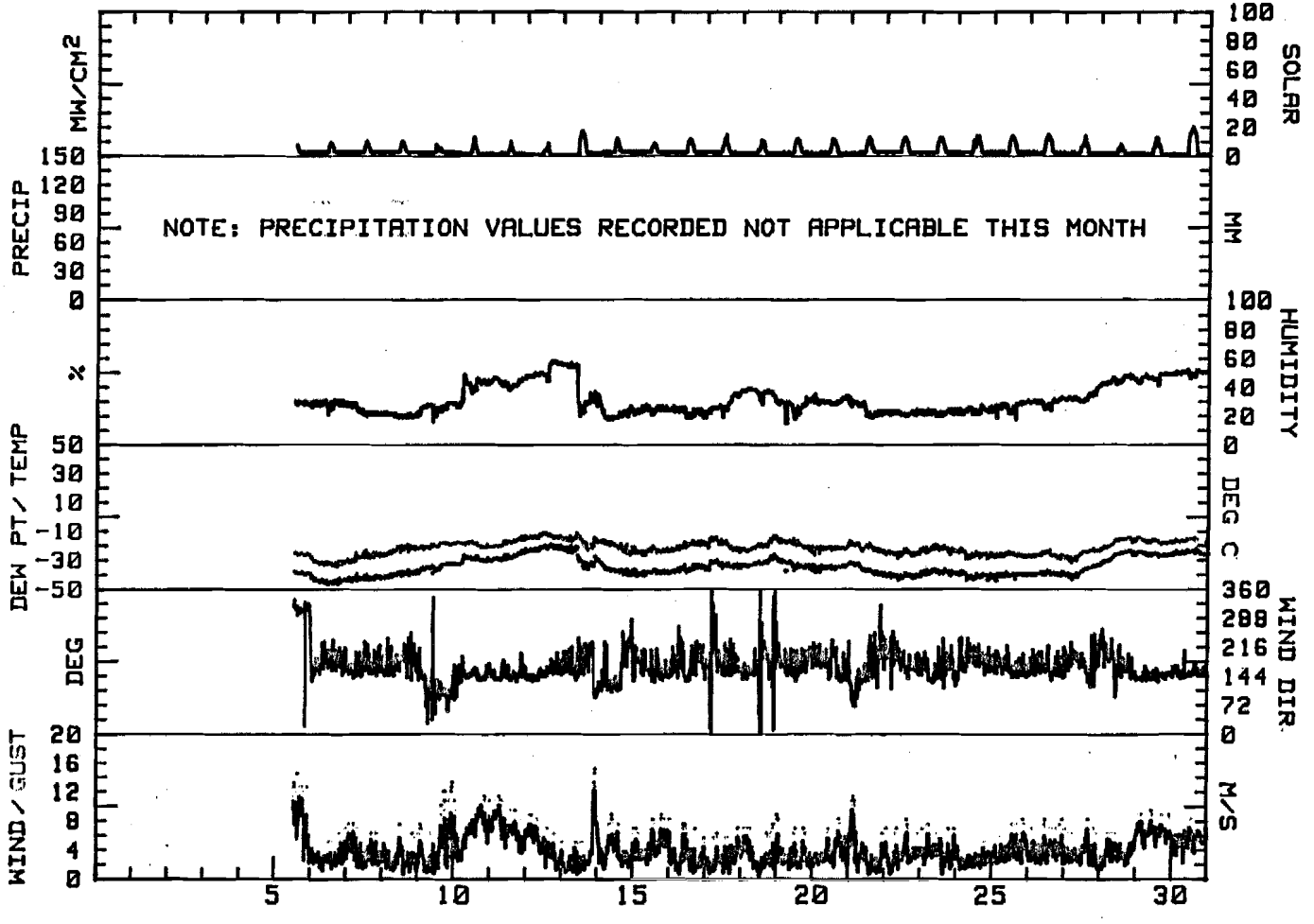
FIG. 2.4.30

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

KOSINA WEATHER STATION

January, 1982



R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TABLE 2.4.31

MONTHLY SUMMARY FOR KOSINA WEATHER STATION
DATA TAKEN DURING February, 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	-7.1	-17.7	-12.4	174	2.5	2.8	187	5.7	S	53	-19.1	****	580	1
2	-4.3	-8.5	-6.4	161	3.4	3.8	138	8.3	SSE	59	-12.8	****	523	2
3	.1	-6.4	-3.2	168	2.8	3.1	130	7.6	S	59	-9.9	****	625	3
4	3.1	-4.9	-.9	175	.8	.9	150	3.2	SSE	69	-3.9	****	657	4
5	-2.5	-7.0	-4.8	***	0.0	0.0	***	0.0	***	**	*****	****	950	5
6	-1.4	-9.7	-5.6	176	.3	.4	147	4.4	SSW	34	-17.4	****	1710	6
7	1.3	-6.2	-2.5	173	1.8	2.1	145	8.3	S	48	-12.0	****	1283	7
8	-2.5	-10.1	-6.3	142	2.5	3.8	133	9.5	SE	64	-12.5	****	653	8
9	-1.6	-8.4	-5.0	316	4.5	5.4	288	15.9	NNW	36	-18.1	****	995	9
10	-7.5	-20.8	-14.2	310	4.0	6.0	315	15.9	NW	30	-26.8	****	1380	10
11	-16.2	-22.5	-19.4	184	2.1	2.5	109	7.6	S	26	-34.4	****	1605	11
12	-15.8	-22.8	-19.3	150	4.7	4.9	136	10.2	SSE	22	-35.9	****	1775	12
13	-12.0	-24.6	-18.3	142	4.7	5.0	123	10.2	SE	30	-33.0	****	1218	13
14	-17.7	-27.0	-22.4	315	4.4	6.2	315	14.0	NW	37	-33.1	****	1103	14
15	-26.5	-30.1	-28.3	200	1.0	2.4	331	7.6	S	36	-38.7	****	1413	15
16	-22.8	-29.0	-25.9	170	2.3	3.3	057	9.5	S	35	-36.9	****	1595	16
17	-19.3	-26.9	-23.1	174	2.6	2.7	142	6.3	S	37	-33.3	****	1725	17
18	-18.8	-24.6	-21.7	186	2.5	2.7	195	7.0	S	41	-31.3	****	1305	18
19	-22.0	-29.7	-25.9	177	2.1	2.4	145	5.7	SSW	37	-36.5	****	1798	19
20	-23.8	-30.3	-27.1	179	2.2	2.5	133	7.0	S	27	-40.7	****	2383	20
21	-21.9	-32.9	-27.4	219	1.2	3.0	306	12.7	S	24	-42.6	****	2380	21
22	-24.9	-34.0	-29.5	165	3.4	3.5	150	7.0	SSE	24	-43.3	****	2213	22
23	-18.7	-29.2	-24.0	166	3.3	3.5	147	8.3	SSE	23	-39.8	****	2295	23
24	-17.9	-26.4	-22.2	165	3.4	3.6	166	7.0	SSE	20	-39.1	****	2380	24
25	-16.1	-24.9	-20.5	165	3.0	3.2	145	7.0	SSE	20	-38.2	****	2423	25
26	-15.1	-24.7	-19.9	172	3.0	3.2	172	7.0	S	19	-37.3	****	2475	26
27	-13.2	-20.9	-17.1	162	3.0	3.3	136	7.6	SSE	19	-35.1	****	2235	27
28	-14.2	-20.2	-17.2	177	3.3	3.5	136	7.6	S	19	-35.9	****	2628	28
MONTH	3.1	-34.0	-16.8	176	1.8	3.2	288	15.9	S	34	-29.5	****	44299	

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

FIG. 2.4.31

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

KOSINA WEATHER STATION

February, 1982

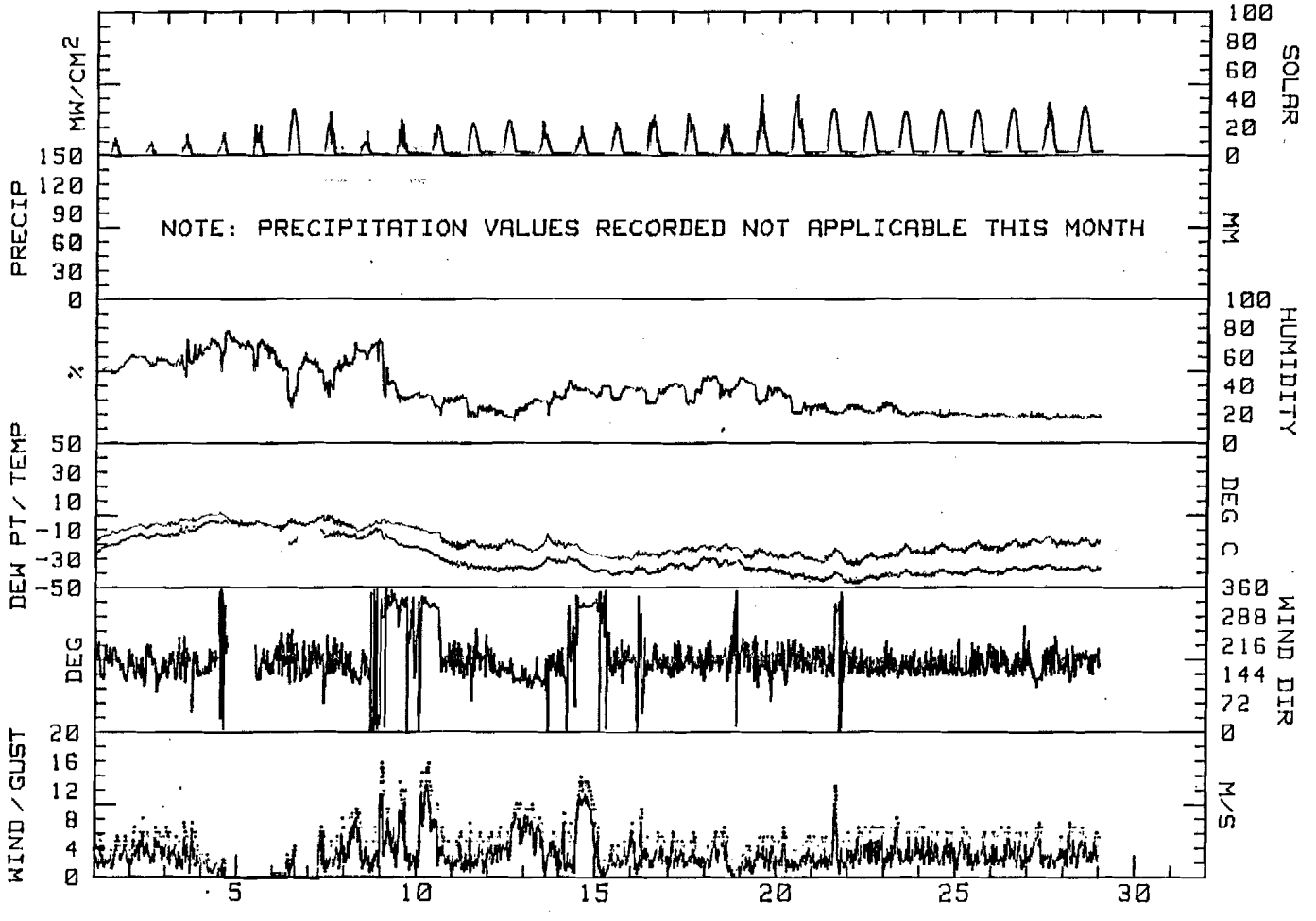


TABLE 2.4.32

MONTHLY SUMMARY FOR KOSINA WEATHER STATION
DATA TAKEN DURING March, 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	-10.2	-20.7	-15.5	163	3.8	3.9	152	8.3	SSE	18	-34.6	****	2680	1
2	-14.0	-22.4	-18.2	171	3.4	3.8	168	8.3	SSE	18	-35.8	****	2753	2
3	-15.5	-23.5	-19.5	163	3.6	3.9	142	8.3	S	19	-37.1	****	2775	3
4	-13.1	-22.9	-18.0	162	2.6	2.9	140	7.0	SSE	20	-34.9	****	2535	4
5	-9.2	-18.0	-13.6	148	4.2	4.4	142	7.6	SE	23	-30.2	****	2700	5
6	-9.2	-15.9	-12.6	153	4.1	4.4	131	8.3	SE	39	-22.8	****	1858	6
7	-5.1	-12.6	-8.9	183	1.7	1.8	171	4.4	S	48	-18.4	****	2145	7
8	-.5	-13.0	-6.8	157	1.8	2.3	111	6.3	S	45	-18.4	****	2230	8
9	-7.7	-16.0	-11.9	135	1.8	3.6	087	12.1	SSW	44	-21.2	****	2178	9
10	-4.8	-13.4	-9.1	173	1.3	2.6	340	7.0	SE	35	-23.1	****	3000	10
11	-10.9	-16.9	-13.9	187	2.8	3.2	098	7.6	SSW	52	-23.7	****	2294	11
12	-10.0	-17.7	-13.9	223	1.3	2.9	296	9.5	SSE	33	-27.1	****	2305	12
13	-14.5	-24.8	-19.7	191	3.0	3.1	173	6.3	S	25	-34.1	****	3353	13
14	-14.4	-26.0	-20.2	187	2.9	3.1	206	5.7	SSW	34	-30.3	****	2443	14
15	-8.8	-15.1	-12.0	174	2.0	2.2	191	4.4	SSE	48	-20.1	****	2150	15
16	-8.6	-12.8	-10.7	155	3.1	3.5	147	5.7	SE	48	-19.6	****	2408	16
17	-4.2	-10.0	-7.1	188	2.2	2.6	132	7.0	SSW	46	-16.7	****	2955	17
18	-2.3	-8.6	-5.5	186	1.8	2.0	145	3.8	S	48	-15.4	****	2360	18
19	.1	-11.8	-5.9	198	1.7	2.7	064	10.2	SW	38	-18.5	****	2965	19
20	0.0	-9.9	-5.0	213	2.0	2.2	217	7.0	SSW	41	-17.9	****	3265	20
21	1.5	-7.8	-3.2	163	2.5	3.4	165	11.4	SSE	46	-13.4	****	2620	21
22	-4.0	-10.4	-7.2	184	2.4	2.5	194	5.1	S	42	-18.5	****	3275	22
23	-5.2	-9.7	-7.5	177	2.5	2.9	114	7.6	S	49	-16.1	****	2645	23
24	-2.2	-10.7	-6.5	186	1.8	2.2	186	5.7	S	44	-18.1	****	3113	24
25	-3.2	-16.2	-9.7	260	.5	1.6	307	5.7	W	35	-22.8	****	3043	25
26	-10.5	-21.1	-15.8	197	2.5	2.8	193	6.3	SSW	29	-30.4	****	3995	26
27	-11.9	-22.6	-17.3	190	2.9	3.0	197	5.7	S	32	-29.3	****	4125	27
28	-7.6	-17.6	-12.6	176	2.4	2.5	157	5.7	S	29	-27.7	****	3870	28
29	-7.2	-18.0	-12.6	183	1.9	2.1	185	5.1	S	24	-29.4	****	4250	29
30	-9.7	-22.1	-15.9	185	2.0	2.2	176	5.7	S	30	-29.4	****	4365	30
31	-14.4	-24.3	-19.4	203	2.6	2.6	206	5.1	SSW	30	-32.9	****	4845	31
MONTH	1.5	-26.0	-12.1	176	2.3	2.9	087	12.1	S	36	-24.8	****	91494	

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

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 ****

FIG. 2.4.32

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

KOSINA WEATHER STATION

March, 1982

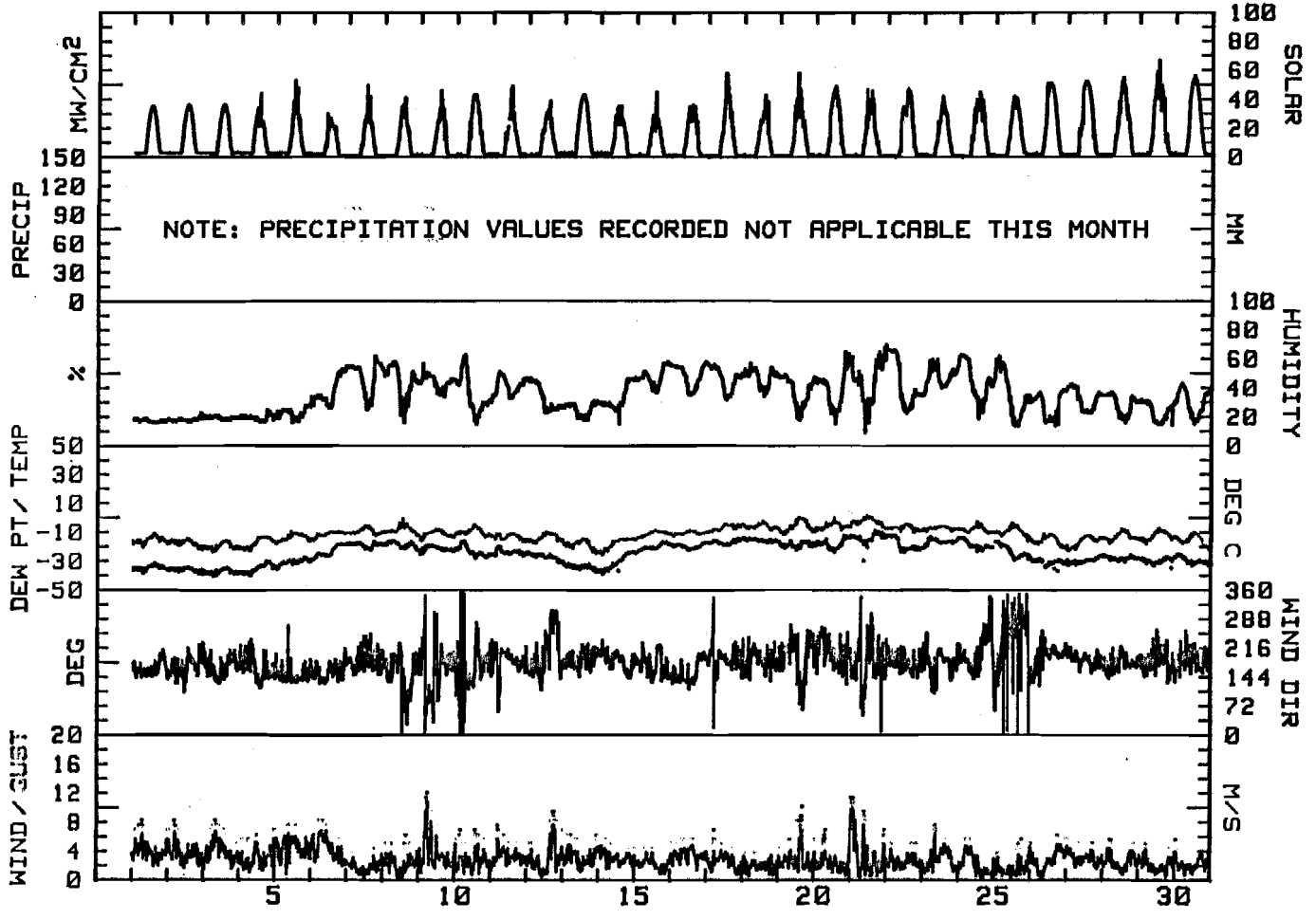


TABLE 2.4.33

MONTHLY SUMMARY FOR KOSINA WEATHER STATION
DATA TAKEN DURING April, 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	-10.9	-23.3	-17.1	219	1.4	2.5	316	10.2	S	24	-33.6	0.0	4665	1
2	-14.1	-25.6	-19.9	178	2.8	2.8	179	6.3	S	20	-37.0	0.0	4858	2
3	-11.2	-24.7	-18.0	173	3.4	3.7	155	8.3	S	21	-34.6	0.0	4804	3
4	-8.5	-18.8	-13.7	194	2.8	2.9	170	6.3	SSW	22	-30.5	0.0	4698	4
5	-2.8	-13.3	-8.1	180	1.8	2.1	151	5.1	SSW	19	-28.0	0.0	4823	5
6	-1.8	-8.1	-5.0	176	2.2	2.4	158	5.7	SSW	22	-24.3	0.0	4358	6
7	2.5	-8.8	-3.2	261	1.5	3.3	272	13.3	S	33	-17.4	.4	4938	7
8	-1.8	-10.7	-6.3	178	1.4	2.1	099	8.3	SSW	40	-17.8	.2	3585	8
9	-2.0	-12.4	-7.2	209	2.0	2.9	326	7.6	S	37	-21.5	0.0	4920	9
10	-5.4	-14.5	-10.0	157	2.4	3.0	106	8.3	S	32	-24.4	0.0	4888	10
11	-3.9	-14.3	-9.1	177	2.3	2.4	178	4.4	S	36	-22.3	0.0	4718	11
12	-3.5	-13.3	-8.4	226	.3	1.4	025	4.4	SSW	23	-26.2	0.0	4490	12
13	-2.9	-14.1	-8.5	186	1.0	1.4	123	4.4	SSW	22	-27.0	0.0	4978	13
14	-4.1	-17.7	-10.9	173	2.7	3.4	095	8.3	SSW	31	-24.0	0.0	4980	14
15	-2.4	-12.6	-7.5	188	2.3	2.4	160	5.1	S	36	-19.6	0.0	4470	15
16	.4	-11.9	-5.8	182	2.6	2.7	155	5.7	S	26	-23.1	0.0	5570	16
17	-2.2	-10.5	-6.4	198	1.6	1.7	219	3.8	S	28	-23.0	0.0	4785	17
18	-1.2	-13.2	-7.2	114	.8	3.0	085	7.0	SSW	39	-19.6	.2	4705	18
19	-4.2	-17.7	-11.0	184	2.3	2.4	148	6.3	S	44	-20.0	0.0	4240	19
20	3.9	-7.5	-1.8	148	1.9	2.9	131	11.4	S	37	-16.1	3.4	5570	20
21	2.5	-7.5	-2.5	180	2.5	2.7	188	6.3	S	34	-17.0	.2	4950	21
22	1.5	-7.6	-3.1	180	1.8	2.2	185	5.7	S	29	-18.8	0.0	5920	22
23	-.5	-10.2	-5.4	189	2.2	2.3	193	5.1	SSW	29	-21.2	0.0	5400	23
24	-1.0	-8.7	-4.9	193	2.2	2.3	192	5.1	S	36	-17.9	0.0	5148	24
25	7.6	-4.2	1.7	113	1.2	2.7	095	7.6	SE	36	-15.6	0.0	5700	25
26	-1.3	-10.3	-5.8	182	2.1	2.3	167	5.7	S	45	-15.4	.2	5498	26
27	6.4	-3.7	1.4	150	1.5	2.2	108	10.8	ESE	45	-11.4	1.6	4723	27
28	2.9	-3.0	-.1	186	2.2	2.9	144	9.5	SSW	33	-15.8	0.0	5580	28
29	2.9	-6.7	-1.9	186	2.0	2.2	194	5.7	SSW	37	-16.4	.4	6053	29
30	1.3	-8.2	-3.5	190	2.5	2.6	198	6.3	SSW	26	-21.4	0.0	6225	30
MONTH	7.6	-25.6	-6.9	182	1.8	2.5	272	13.3	S	31	-22.0	6.6	150232	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 6.3
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 12.7

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 ****

FIG. 2.4.33

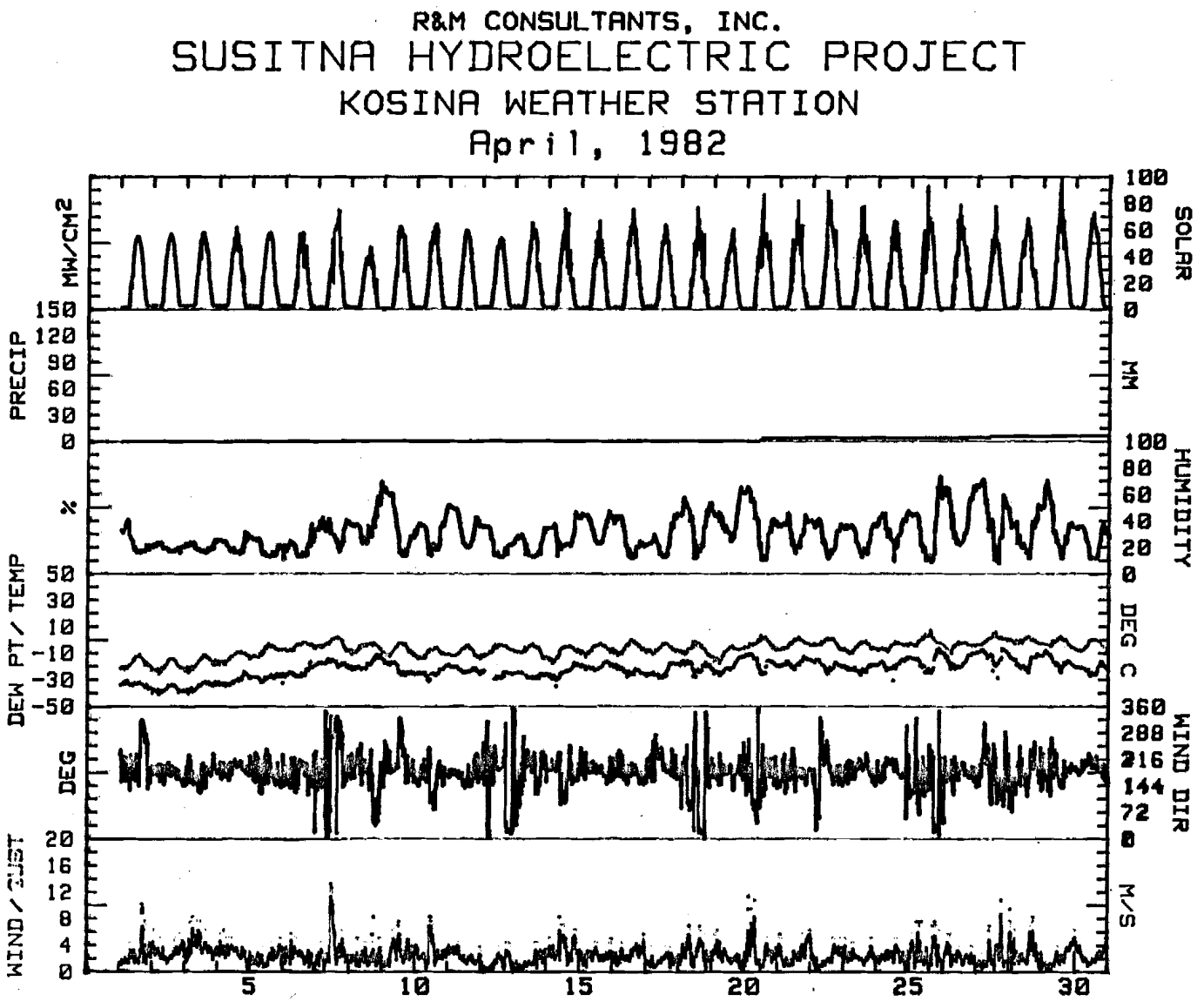

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
KOSINA WEATHER STATION
April, 1982
SOLAR
MW/CM2
150
120
90
60
30
0
100
80
60
40
20
0
PRECIP
MM
HUMIDITY
%
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.34

MONTHLY SUMMARY FOR KOSINA WEATHER STATION
DATA TAKEN DURING May, 1982

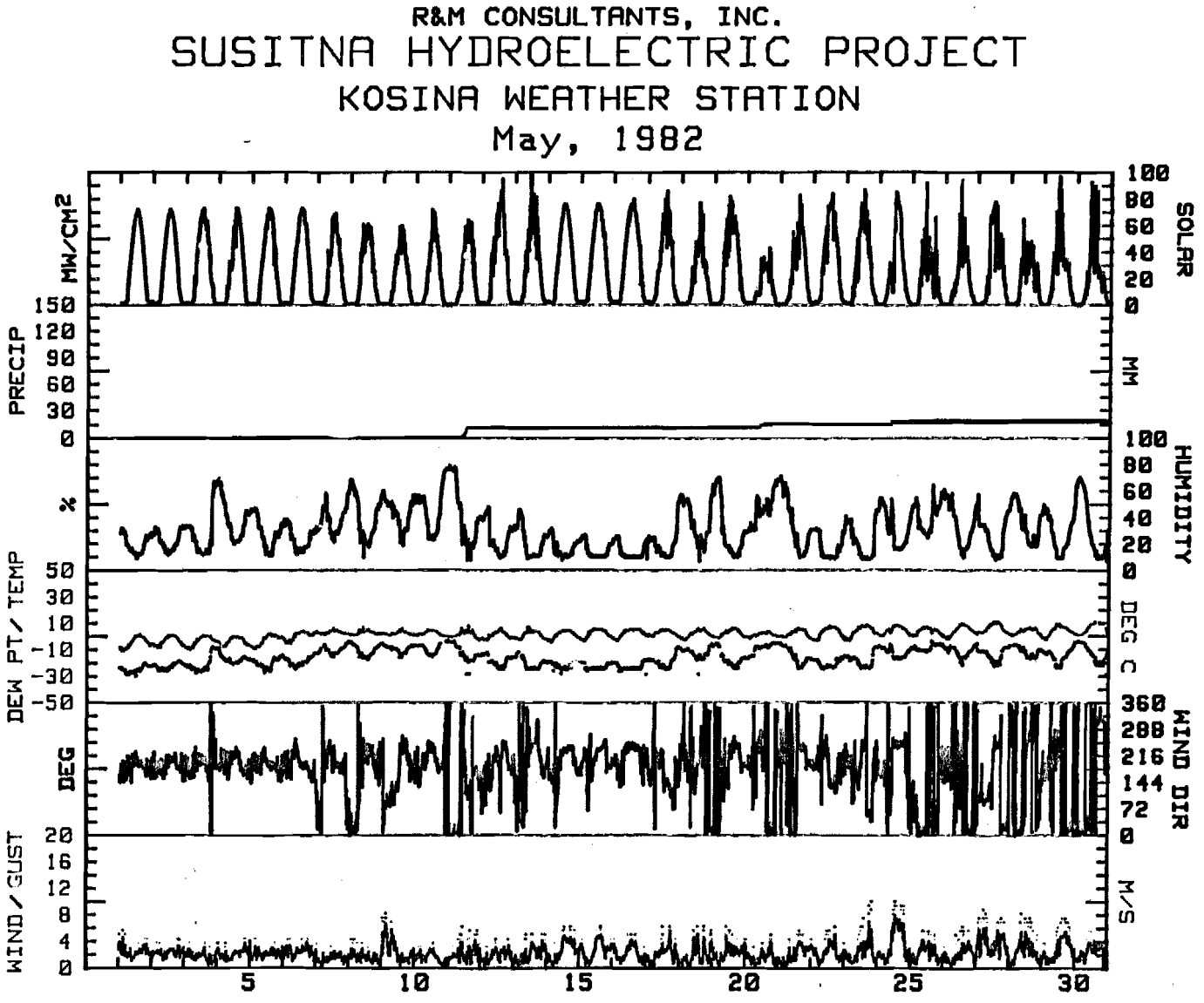
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	1.3	-11.2	-5.0	182	2.3	2.4	145	5.7	S	20	-24.8	0.0	6930	1
2	.9	-8.9	-4.0	191	2.2	2.3	189	4.4	SSW	23	-22.3	0.0	6850	2
3	.4	-10.3	-5.0	196	1.5	1.9	183	3.8	SSW	30	-21.1	0.0	6623	3
4	-.2	-8.4	-4.3	196	2.0	2.1	169	4.4	S	38	-17.1	.4	6018	4
5	1.8	-9.8	-4.0	189	2.0	2.2	143	4.4	SSW	28	-19.8	0.0	6865	5
6	3.7	-5.6	-1.0	190	2.3	2.5	159	4.4	S	24	-18.6	0.0	6988	6
7	5.8	1.0	3.4	188	.8	1.5	118	3.8	SSW	40	-10.4	0.0	5370	7
8	6.8	.5	3.7	210	.4	1.7	016	4.4	SW	40	-10.6	0.0	5383	8
9	5.6	.7	3.2	127	1.6	2.7	087	8.3	E	44	-9.3	.2	4735	9
10	4.8	-.6	2.1	210	1.2	1.6	237	3.8	SSW	48	-9.6	.6	5055	10
11	7.6	-3.3	2.2	076	.4	2.0	339	6.3	N	42	-12.4	10.4	5025	11
12	5.7	-3.3	1.2	196	1.4	1.9	227	4.4	S	25	-18.6	0.0	7163	12
13	7.0	-2.6	2.2	221	1.1	2.0	307	5.1	S	22	-20.7	.2	6708	13
14	4.6	-4.6	0.0	214	2.2	2.6	234	6.3	SW	17	-21.7	0.0	7700	14
15	5.8	-3.6	1.1	215	2.4	2.7	237	6.3	SSW	15	-22.5	0.0	7845	15
16	5.2	-3.4	.9	221	2.0	2.3	248	5.1	WSW	15	-22.9	0.0	7840	16
17	5.3	-.8	2.3	159	1.6	2.1	144	6.3	SE	22	-19.1	0.0	6615	17
18	5.8	-2.9	1.5	230	.5	2.0	213	6.3	SW	37	-12.4	0.0	4875	18
19	6.1	-1.5	2.3	219	1.2	2.4	133	6.3	WSW	30	-16.5	.2	7078	19
20	3.2	-2.1	.6	230	.2	1.7	028	5.1	S	48	-9.5	3.8	3160	20
21	5.9	-2.5	1.7	229	1.2	2.1	241	5.7	WSW	35	-15.6	0.0	5788	21
22	7.7	-3.8	2.0	180	1.9	2.4	116	6.3	SW	19	-20.3	0.0	7550	22
23	8.6	-3.3	2.7	172	.8	2.5	067	10.2	WSW	22	-18.2	0.0	7128	23
24	8.5	-.1	4.2	234	2.5	3.6	248	10.2	WSW	32	-12.1	1.8	6063	24
25	7.1	-.6	3.3	018	1.5	2.3	005	5.7	NNE	43	-8.4	.8	4488	25
26	9.6	-2.4	3.6	004	.7	2.0	009	6.3	N	35	-12.0	0.0	4675	26
27	11.1	1.5	6.3	087	1.2	3.7	084	8.9	ESE	27	-13.6	0.0	6583	27
28	6.5	-.8	2.9	340	1.4	2.5	009	8.3	N	37	-11.4	0.0	4385	28
29	9.4	-2.5	3.5	360	1.3	2.8	358	7.6	NNE	29	-14.4	0.0	5703	29
30	11.0	.9	6.0	349	1.6	2.5	030	5.7	NNE	33	-12.4	.2	5470	30
31	14.4	-.7	6.9	209	1.6	2.7	145	7.6	WSW	15	-18.8	0.0	8200	31
MONTH	14.4	-11.2	1.5	201	.9	2.3	067	10.2	SSW	30	-16.0	18.6	190796	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	3.8
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	8.9
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	6.3
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS	5.1

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 ****

FIG. 2.4.34


R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
KOSINA WEATHER STATION
May, 1982
MW/CM2
SOLAR
100
80
60
40
20
0
PRECIP
150
120
90
60
30
0
MM
%
HUMIDITY
DEW PT / TEMP
50
30
10
-10
-30
-50
DEG C
DEG
360
288
216
144
72
0
WIND DIR
WIND / GUST
20
16
12
8
4
0
M/S
5
10
15
20
25
30

R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TABLE 2.4.35

MONTHLY SUMMARY FOR KOSINA WEATHER STATION
DATA TAKEN DURING June, 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	15.3	1.3	8.3	247	1.6	3.1	143	8.3	W	12	-19.8	0.0	7005	1
2	8.4	.5	4.5	350	2.1	2.8	004	9.5	N	54	-4.6	4.2	3290	2
3	10.5	.2	5.4	265	1.5	2.5	239	7.6	W	25	-17.5	0.0	7980	3
4	14.3	-2.0	6.2	211	.4	2.6	254	8.3	SSW	16	-18.8	0.0	6685	4
5	14.0	2.6	8.3	057	1.3	3.0	143	8.9	N	24	-13.7	0.0	5155	5
6	15.4	4.3	9.9	062	1.6	3.5	104	10.2	N	31	-9.5	0.0	4423	6
7	9.3	1.4	5.4	017	1.8	2.3	074	8.9	NNE	57	-2.3	5.2	2360	7
8	13.7	.8	7.3	352	.5	1.9	330	6.3	N	28	-14.1	0.0	5790	8
9	13.1	2.6	7.9	110	2.5	2.9	102	8.3	ESE	29	-9.7	.6	3643	9
10	13.3	3.9	8.6	103	3.3	4.3	101	10.8	ESE	29	-10.6	0.0	2565	10
11	11.4	.6	6.0	085	2.3	3.5	103	9.5	ESE	25	-14.3	0.0	3663	11
12	13.1	1.2	7.2	090	2.1	3.9	131	12.7	ESE	29	-13.5	.6	5015	12
13	10.4	.1	5.3	295	.3	1.8	337	5.1	SE	27	-15.6	0.0	4778	13
14	12.0	2.7	7.4	039	.9	2.7	005	8.3	NNE	23	-14.7	.2	4973	14
15	4.5	1.7	3.1	019	2.7	2.9	015	5.7	NNE	59	-4.4	6.8	2273	15
16	6.7	3.1	4.9	026	2.8	3.1	028	6.3	NNE	54	-3.8	2.8	3335	16
17	13.8	3.2	8.5	015	2.2	2.9	357	9.5	NNE	30	-10.3	0.0	6955	17
18	11.6	1.6	6.6	068	1.3	2.5	084	12.1	N	43	-5.1	4.8	2860	18
19	13.8	4.2	9.0	122	.5	2.6	086	12.1	NNE	38	-8.1	2.0	5070	19
20	7.2	1.8	4.5	012	2.8	3.9	247	13.3	NNE	50	-5.1	5.6	4318	20
21	11.8	3.2	7.5	007	2.5	2.7	007	6.3	N	37	-8.1	.2	5338	21
22	13.8	4.0	8.9	000	.7	1.6	120	6.3	NNE	25	-13.3	0.0	4593	22
23	20.3	2.8	11.6	271	.2	1.8	271	5.7	SSE	17	-15.5	0.0	8128	23
24	22.0	5.7	13.9	249	.7	2.3	326	6.3	S	12	-17.9	0.0	7640	24
25	24.5	7.9	16.2	150	.9	2.2	127	7.0	S	9	-18.8	0.0	8410	25
26	23.3	5.5	14.4	204	.5	2.2	027	7.6	SW	12	-17.5	0.0	7033	26
27	23.0	5.1	14.1	109	3.8	4.4	091	11.4	ESE	10	-18.9	0.0	7143	27
28	18.4	5.1	11.8	104	2.9	4.9	126	13.3	NNE	16	-16.4	1.8	5500	28
29	15.2	3.9	9.6	093	.6	1.8	158	10.2	NE	30	-13.4	2.4	4950	29
30	13.9	5.6	9.8	085	3.9	4.8	099	11.4	E	31	-7.5	0.0	3870	30
MONTH	24.5	-2.0	8.4	060	1.0	2.9	247	13.3	NNE	29	-12.1	37.2	154737	

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

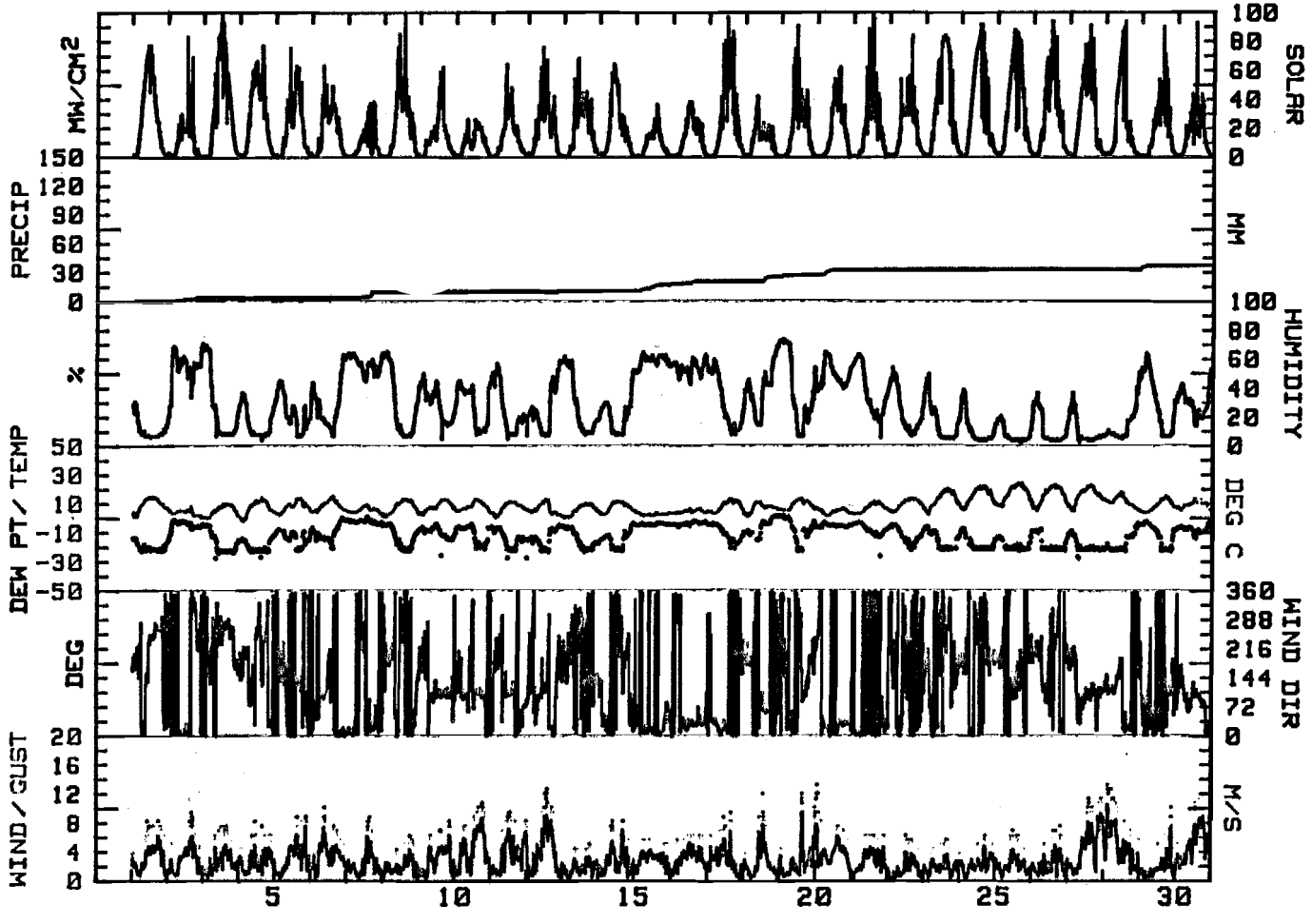
FIG. 2.4.35

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

KOSINA WEATHER STATION

June, 1982



R & M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

TABLE 2.4.36

MONTHLY SUMMARY FOR KOSINA WEATHER STATION
DATA TAKEN DURING July, 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	8.5	3.9	6.2	007	1.0	2.3	017	7.0	NNE	45	-5.7	8.6	3470	1
2	13.8	2.6	8.2	041	1.0	2.0	100	7.0	N	28	-14.7	.2	5838	2
3	18.2	-1.0	8.6	124	1.9	2.8	110	8.3	ESE	16	-18.2	0.0	8308	3
4	17.8	3.4	10.6	083	1.9	3.2	090	8.9	E	16	-16.4	0.0	6055	4
5	16.8	2.5	9.7	043	1.6	2.7	082	9.5	NNE	21	-15.3	0.0	6780	5
6	19.6	3.4	11.5	099	1.7	2.8	117	8.9	E	18	-16.3	0.0	5743	6
7	25.2	3.5	14.4	026	.7	2.2	036	8.3	NNE	13	-17.5	0.0	7468	7
8	19.3	8.9	14.1	345	.8	4.0	247	12.1	NNE	21	-9.9	1.2	4240	8
9	15.0	8.4	11.7	046	1.8	2.6	050	6.3	NNE	33	-5.1	0.0	3218	9
10	13.7	7.5	10.6	049	1.4	1.8	055	8.3	NE	49	-.1	9.8	1700	10
11	14.0	7.2	10.6	038	1.3	2.1	044	5.7	NE	40	-3.7	.6	3170	11
12	13.6	7.6	10.6	357	1.4	2.9	257	10.2	NNE	48	-2.0	2.4	3455	12
13	15.2	6.4	10.8	028	1.7	2.4	055	7.6	NNE	38	-4.4	.4	4020	13
14	13.5	4.9	9.2	017	.3	1.8	023	5.7	NNE	45	-1.3	6.2	2998	14
15	11.0	6.2	8.6	018	2.0	2.3	030	6.3	NNE	42	-4.2	.2	3085	15
16	10.3	5.2	7.8	068	1.5	2.1	063	5.7	ENE	45	-3.9	4.8	3165	16
17	13.6	5.1	9.4	006	2.3	2.6	017	8.3	NNE	40	-5.6	1.0	5310	17
18	14.7	6.2	10.5	352	2.4	3.0	335	7.6	NNE	40	-4.0	.8	4275	18
19	21.8	7.4	14.6	340	.3	2.3	008	5.7	N	13	-16.2	0.0	7703	19
20	21.4	5.4	13.4	325	.8	2.6	270	8.3	N	14	-15.5	0.0	6798	20
21	16.8	6.1	11.5	026	2.0	2.9	032	7.0	NNE	40	-3.0	1.2	3828	21
22	11.6	6.5	9.1	024	3.1	3.3	023	8.9	NNE	46	-3.0	0.0	3825	22
23	11.0	6.3	8.7	012	1.3	2.0	022	5.1	NNE	65	2.5	7.4	2118	23
24	11.6	7.6	9.6	016	2.6	2.6	013	6.3	NNE	58	.6	4.8	3438	24
25	15.4	6.2	10.8	010	1.4	2.3	022	9.5	NNE	47	-2.9	2.4	3565	25
26	15.8	3.4	9.6	001	1.5	2.6	019	7.0	N	33	-7.6	0.0	6230	26
27	15.7	6.8	11.3	007	2.3	2.8	359	7.6	N	34	-6.3	0.0	5975	27
28	19.4	6.5	13.0	010	1.5	2.6	023	8.3	NNE	25	-10.2	.2	5318	28
29	11.1	7.3	9.2	009	1.9	2.2	028	5.1	N	54	.2	1.8	2385	29
30	11.1	5.4	8.3	305	1.1	3.0	269	11.4	NNE	45	-3.7	6.4	2288	30
31	13.4	5.9	9.7	334	2.8	3.3	019	7.0	NW	24	-12.5	0.0	4835	31
MONTH	25.2	-1.0	10.4	021	1.3	2.6	247	12.1	NNE	35	-7.3	60.4	140600	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 11.4
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.8
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 9.5
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 6.3

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 ****

FIG. 2.4.36

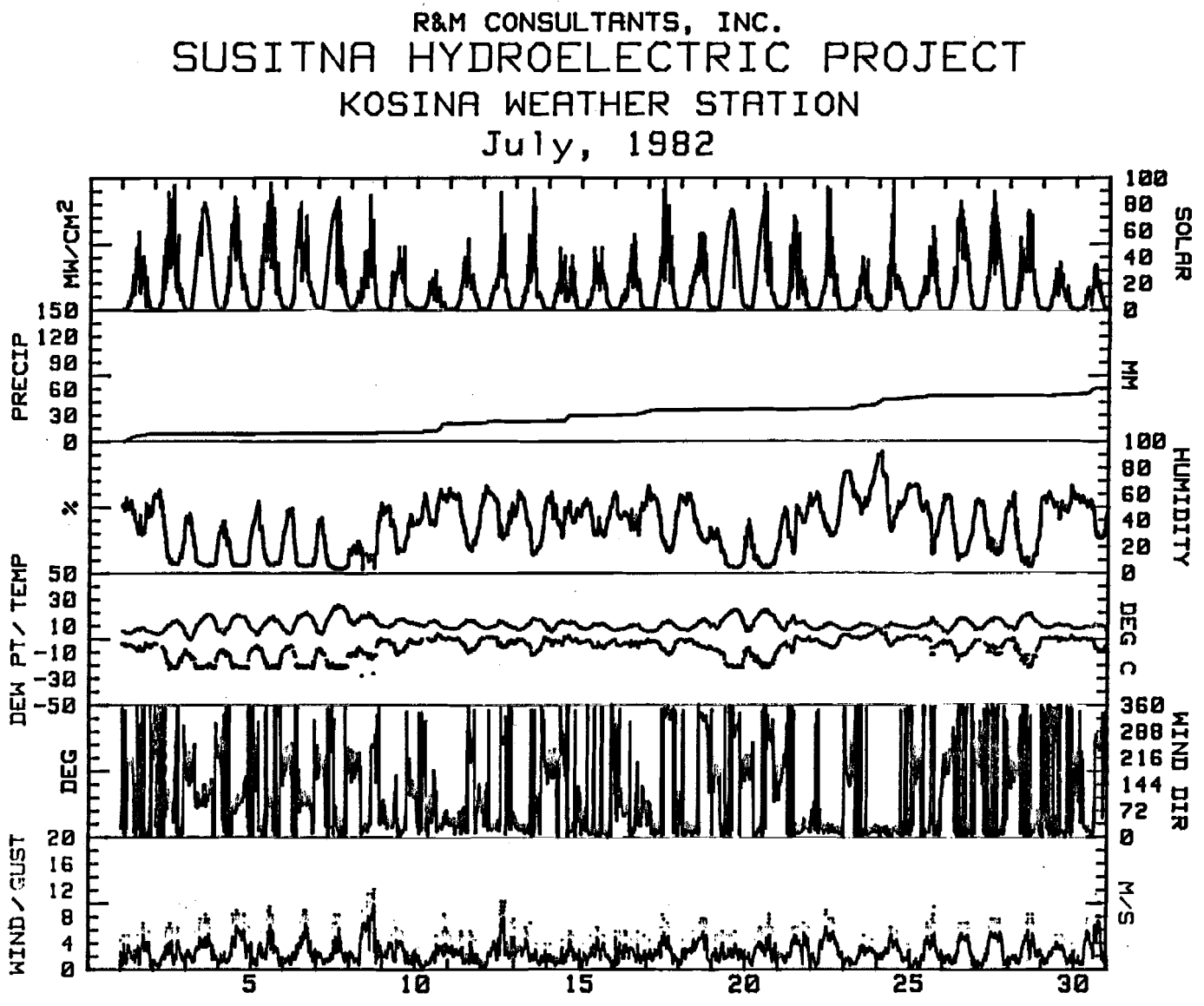

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
KOSINA WEATHER STATION
July, 1982
SOLAR
MW/CM2
PRECIP
MM
HUMIDITY
%
DEW PT / TEMP
DEG C
WIND DIR
DEG
WIND / GUST
M/S
5
10
15
20
25
30

TABLE 2.4.37

MONTHLY SUMMARY FOR KOSINA WEATHER STATION
DATA TAKEN DURING August, 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	14.0	2.6	8.3	316	3.1	3.5	314	7.6	NW	11	-20.0	0.0	7188	1
2	15.3	2.4	8.9	058	.1	1.7	026	7.0	S	16	-17.3	0.0	5383	2
3	17.6	2.3	10.0	323	.6	2.3	330	6.3	N	16	-16.9	0.0	5713	3
4	18.9	2.4	10.7	321	1.0	2.5	329	7.0	SSW	14	-17.5	0.0	6610	4
5	17.8	7.1	12.5	147	.5	2.2	018	9.5	S	17	-14.8	1.0	5555	5
6	18.5	4.0	11.3	129	1.1	2.3	068	7.6	S	14	-17.6	0.0	6018	6
7	13.7	6.0	9.9	090	2.4	3.3	090	9.5	E	25	-10.9	.2	3610	7
8	11.9	5.0	8.5	097	2.9	3.5	108	8.9	E	29	-9.8	.2	3005	8
9	10.2	1.8	6.0	022	1.6	2.3	017	6.3	NNE	40	-6.3	.4	3463	9
10	10.9	4.5	7.7	013	1.6	2.3	292	7.6	NNE	35	-7.4	1.8	3283	10
11	14.3	4.1	9.2	338	1.3	2.0	331	7.0	NW	26	-12.7	1.6	3655	11
12	19.0	2.3	10.7	332	.5	1.8	027	4.4	N	18	-16.0	0.0	6325	12
13	19.5	3.1	11.3	360	1.3	2.4	023	7.0	NNE	19	-14.3	0.0	6098	13
14	16.1	8.4	12.3	020	1.8	2.5	020	8.3	NNE	30	-6.5	.4	3590	14
15	12.7	4.3	8.5	345	1.3	3.2	195	8.3	NNE	33	-8.1	.2	2773	15
16	14.4	2.3	8.4	291	.7	2.5	257	8.9	NNE	28	-13.3	0.0	5568	16
17	10.4	3.1	6.8	025	1.2	2.0	032	6.3	NNE	39	-6.6	2.2	2813	17
18	14.6	.6	7.6	337	.8	1.9	327	6.3	N	24	-14.6	0.0	5193	18
19	15.6	2.2	8.9	359	.8	2.1	021	6.3	NNE	22	-14.4	0.0	5360	19
20	17.3	7.1	12.2	332	.2	1.4	036	4.4	N	14	-16.9	0.0	4615	20
21	15.9	7.9	11.9	014	.5	1.5	359	4.4	N	15	-14.7	0.0	3183	21
22	18.1	2.6	10.4	000	1.3	2.1	002	7.0	N	15	-17.2	0.0	5543	22
23	11.7	6.9	9.3	018	1.4	1.8	030	6.3	NNE	42	-2.4	1.8	2500	23
24	13.8	3.1	8.5	274	.0	1.8	017	5.7	N	35	-8.0	1.2	2925	24
25	12.9	4.6	8.8	026	.4	2.1	199	7.6	N	36	-6.3	2.6	3113	25
26	16.2	2.2	9.2	320	1.6	2.8	314	8.3	NW	28	-13.5	0.0	4410	26
27	15.0	2.1	8.6	141	1.8	2.4	113	7.6	SE	13	-19.5	0.0	5228	27
28	12.8	-.1	6.4	163	.1	2.0	354	5.7	NNE	20	-16.2	1.6	3913	28
29	9.2	3.4	6.3	084	1.2	2.3	093	10.2	E	34	-9.0	4.0	2060	29
30	9.5	3.8	6.7	078	1.3	2.0	101	7.6	E	48	-5.0	12.0	1483	30
31	9.2	2.8	6.0	018	1.0	2.0	036	5.7	N	44	-7.6	7.6	3113	31
MONTH	19.5	-.1	9.1	020	.6	2.3	093	10.2	NNE	26	-12.3	38.8	133283	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 7.6
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 8.9
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.2
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 8.9

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 ****

FIG. 2.4.37

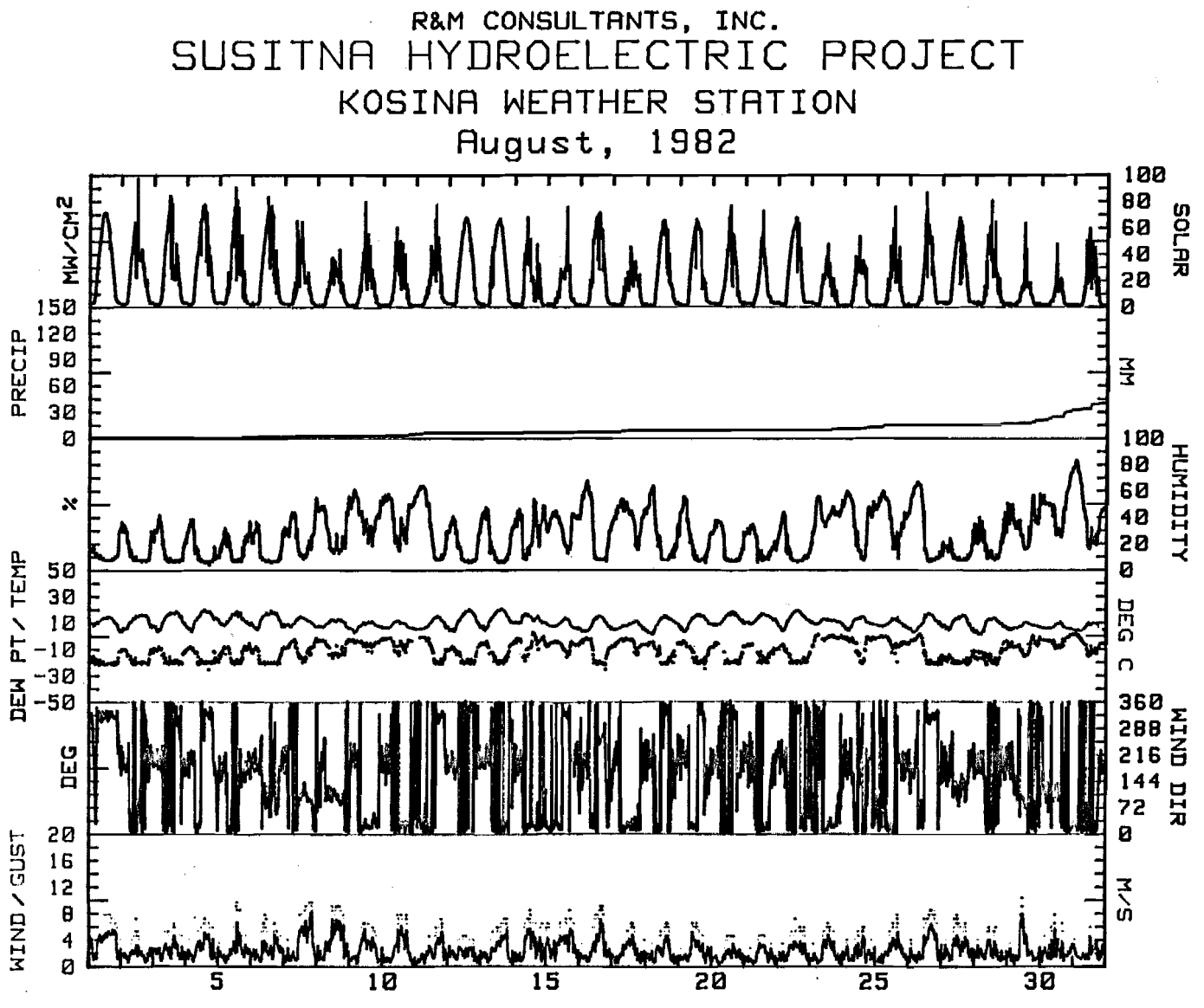

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
KOSINA WEATHER STATION
August, 1982
SOLAR
MW/CM2
PRECIP
MM
HUMIDITY
%
DEW PT / TEMP
DEG C
WIND DIR
DEG
WIND / GUST
M/S
5
10
15
20
25
30

TABLE 2.4.38

MONTHLY SUMMARY FOR KOSINA WEATHER STATION
DATA TAKEN DURING September, 1982

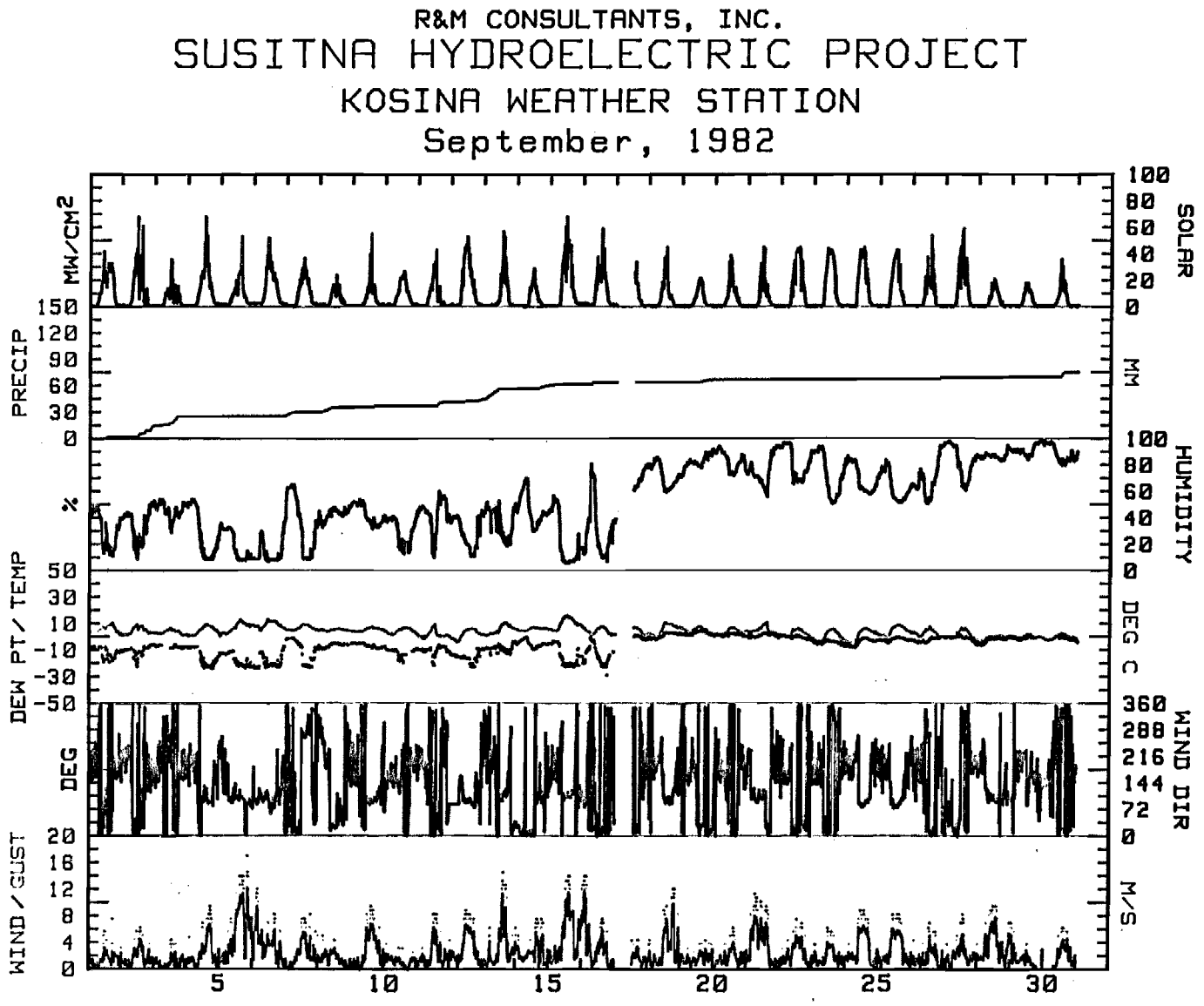
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	10.9	1.4	6.2	130	.4	1.5	068	7.6	SSE	29	-11.8	2.2	2813	1
2	9.6	1.1	5.4	001	.1	1.8	032	6.3	SSW	35	-10.2	12.8	2723	2
3	6.9	1.1	4.0	198	.3	1.1	190	4.4	S	46	-7.3	10.4	1485	3
4	9.9	.6	5.3	115	1.6	2.4	094	9.5	E	26	-15.8	0.0	2968	4
5	13.3	1.2	7.3	103	4.9	5.4	091	17.1	E	18	-17.2	0.0	2148	5
6	13.6	4.7	9.2	103	3.5	3.9	091	12.1	ESE	14	-18.5	1.8	3130	6
7	9.9	4.8	7.4	311	1.2	2.3	282	8.3	W	30	-12.0	3.4	2270	7
8	6.4	4.3	5.4	024	.4	1.7	328	5.1	NNE	43	-6.4	5.6	1280	8
9	7.7	4.0	5.9	102	2.3	2.8	097	9.5	E	40	-6.8	1.2	1505	9
10	7.2	1.4	4.3	165	.9	1.3	140	3.8	SSE	33	-11.4	0.0	1915	10
11	9.6	-1.5	4.1	037	.7	2.2	086	8.3	NNE	43	-10.0	4.6	1693	11
12	6.3	-4.0	1.2	100	2.9	3.2	093	8.9	E	29	-15.1	3.0	3360	12
13	11.1	.7	5.9	104	1.7	3.1	107	14.6	ESE	37	-8.3	11.8	1970	13
14	7.5	4.6	6.1	046	1.7	2.5	091	7.6	N	47	-4.9	4.0	1338	14
15	16.3	4.7	10.5	123	3.6	4.8	112	14.0	ESE	22	-14.2	1.0	3788	15
16	8.1	1.2	4.7	052	2.4	3.6	080	14.0	NNE	29	-13.9	2.2	2763	16
17	7.7	.9	4.3	002	.8	1.8	325	4.4	NNE	71	-.3	0.0	1499	17
18	11.1	.1	5.6	118	2.3	3.2	119	12.1	ESE	71	1.5	0.0	1735	18
19	8.3	2.5	5.4	027	.6	1.7	009	4.4	NNE	84	2.8	3.0	1225	19
20	7.6	2.0	4.8	063	.1	1.8	007	6.3	N	82	1.7	0.0	1655	20
21	11.3	.4	5.9	102	2.7	3.9	107	11.4	ESE	75	1.2	.6	1613	21
22	6.7	-2.1	2.3	023	1.1	2.4	002	7.6	NNE	81	-.1	0.0	3033	22
23	6.2	-4.2	1.0	358	.4	2.0	353	6.3	NNE	72	-4.0	0.0	3133	23
24	6.7	-5.6	.6	118	1.8	3.1	086	8.9	E	70	-3.7	0.0	2903	24
25	9.4	-1.1	4.2	111	2.1	3.0	084	8.3	E	63	-1.7	0.0	2705	25
26	8.0	.1	4.1	035	.4	1.8	009	7.0	NNE	70	-2.0	1.6	1898	26
27	7.1	-4.0	1.6	350	.5	2.1	255	8.3	NNE	81	-1.0	0.0	2603	27
28	1.4	-4.1	-1.4	115	2.9	3.6	097	9.5	ESE	87	-2.0	0.0	1185	28
29	2.5	-1.0	.8	150	.9	1.5	102	7.0	SSE	90	-.8	1.2	1078	29
30	3.1	-2.3	.4	349	1.1	1.5	334	6.3	N	85	-1.2	5.0	1311	30
MONTH	16.3	-5.6	4.4	096	1.2	2.6	091	17.1	E	53	-6.4	75.4	64718	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 9.5
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 14.0
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 14.6
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 14.0

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 ****

FIG. 2.4.38


R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
KOSINA WEATHER STATION
September, 1982
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
MM
150
120
90
60
30
0
HUMIDITY
%
100
80
60
40
20
0
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

SECTION 2.4 - PART 5

WATANA CLIMATE DATA

TABLE 2.4.39

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING October, 1981

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	-.9	-11.0	-6.0	047	2.3	2.4	066	6.3	NE	**	*****	0.0	2003	3
4	.1	-3.8	-1.9	044	5.3	5.5	034	9.5	NE	**	*****	0.0	1518	4
5	2.4	-2.5	-.1	047	2.6	2.8	036	8.3	NE	**	*****	0.0	1883	5
6	.3	-4.2	-2.0	058	2.7	2.9	076	8.3	NE	**	*****	.6	1468	6
7	-1.5	-7.7	-4.6	043	3.9	4.1	017	8.9	NNE	**	*****	0.0	2438	7
8	-.5	-3.0	-1.8	053	3.8	3.9	064	7.6	NE	**	*****	0.0	1605	8
9	2.6	-3.3	-.4	069	2.5	2.7	084	7.0	ENE	**	*****	.2	2080	9
10	1.8	-4.8	-1.5	036	1.7	1.9	064	7.6	NE	**	*****	0.0	2080	10
11	-.1	-2.8	-1.5	060	5.1	5.2	063	11.4	ENE	**	*****	.6	948	11
12	2.3	-.1	1.1	045	4.4	4.5	060	7.6	NE	**	*****	4.4	1320	12
13	3.7	.4	2.1	036	1.2	1.5	054	7.6	NE	**	*****	4.0	1405	13
14	4.5	-.2	2.2	018	.3	.9	258	3.2	E	**	*****	0.0	1330	14
15	3.4	-2.3	.6	002	1.4	1.5	003	3.2	NNW	**	*****	0.0	1598	15
16	2.5	-2.9	-.2	042	3.5	2.7	044	6.3	NE	**	*****	0.0	1325	16
17	3.4	-1.9	.8	019	1.0	2.5	345	8.3	WSW	**	*****	0.0	1373	17
18	.3	-7.3	-3.5	273	.3	.9	056	3.2	WSW	**	*****	1.0	795	18
19	-2.8	-12.3	-7.6	038	2.5	2.7	042	6.3	NE	**	*****	0.0	1328	19
20	-.8	-4.8	-2.8	054	5.2	5.3	066	10.8	ENE	**	*****	0.0	985	20
21	4.3	-1.0	1.7	060	4.7	5.3	067	12.7	ENE	**	*****	6.6	843	21
22	2.6	.1	1.4	060	1.2	1.5	064	7.0	ENE	**	*****	2.0	883	22
23	2.8	1.0	1.9	052	2.5	2.9	073	8.3	NNE	**	*****	4.8	705	23
24	2.8	-2.5	.2	250	2.0	2.6	245	7.0	WSW	**	*****	.8	913	24
25	-.3	-3.1	-1.7	066	2.0	1.9	057	5.1	ENE	**	*****	0.0	733	25
26	-.3	-5.0	-2.7	045	2.9	3.1	024	5.7	NNE	**	*****	0.0	1050	26
27	-2.2	-5.9	-4.1	060	4.7	4.9	078	9.5	NE	**	*****	0.0	1630	27
28	-2.5	-6.0	-4.3	049	5.7	5.8	056	9.5	NE	**	*****	0.0	868	28
29	-5.0	-10.7	-7.9	050	5.2	5.3	066	10.8	NE	**	*****	0.0	960	29
30	-3.6	-11.6	-7.6	057	2.7	2.8	066	7.6	ENE	**	*****	0.0	928	30
31	-6.7	-13.6	-10.2	038	1.9	2.0	058	6.3	NNE	**	*****	0.0	1075	31
MONTH	4.5	-13.6	-2.1	049	2.8	3.2	067	12.7	NE	**	*****	25.0	38063	

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

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 ****

FIG. 2.4.39

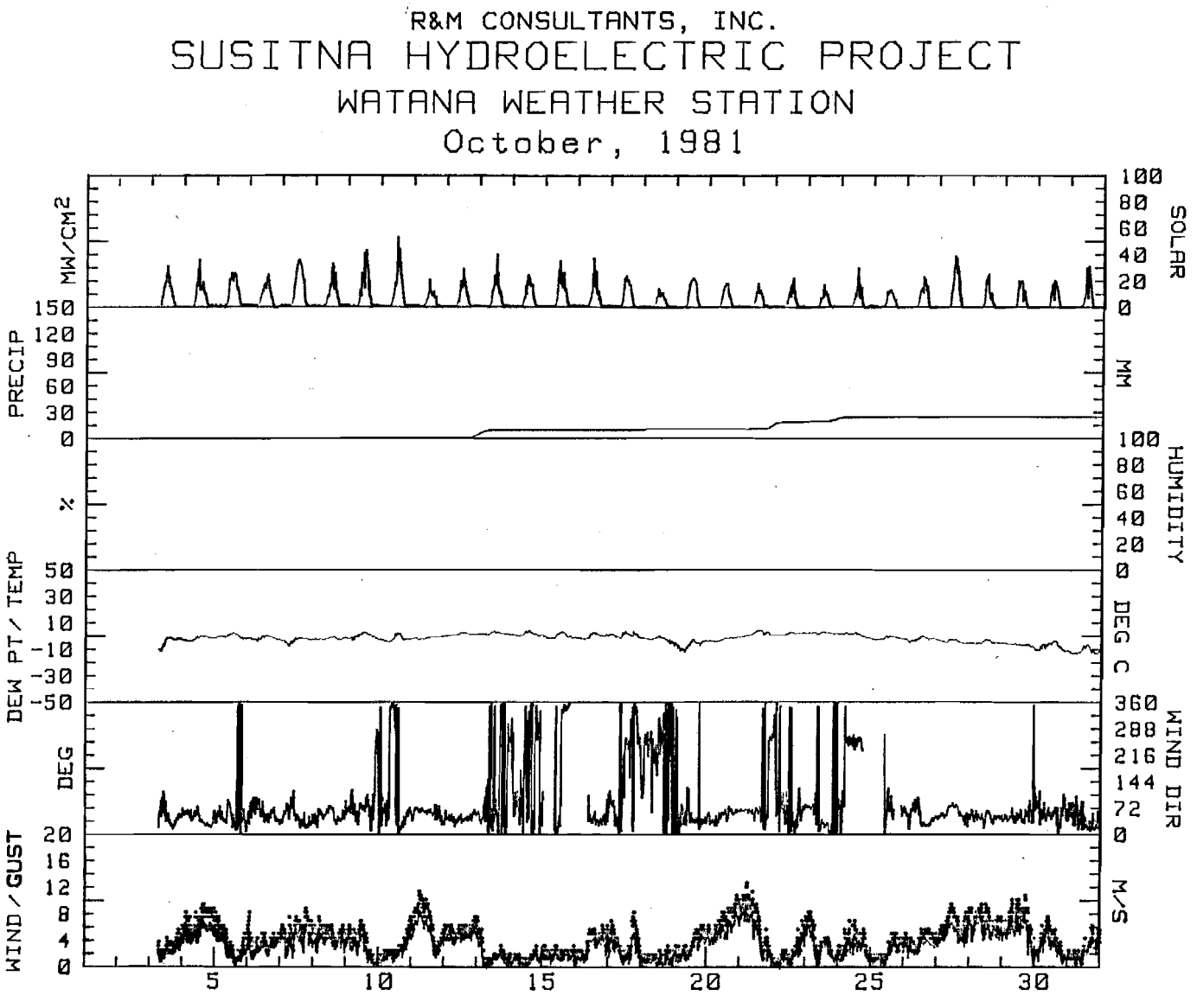

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
WATANA WEATHER STATION
October, 1981
SOLAR
MW/CM2
150
120
90
60
30
0
100
80
60
40
20
0
PRECIP
MM
HUMIDITY
%
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.40

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING November, 1981

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	-7.7	-14.8	-11.3	059	3.8	4.0	057	8.9	ENE	**	*****	0.0	1030	1
2	-2.1	-12.3	-7.2	062	1.4	4.8	079	13.3	NE	**	*****	0.0	720	2
3	-8.6	-15.4	-12.0	052	1.7	2.4	083	7.0	ENE	**	*****	0.0	860	3
4	-6.7	-14.8	-10.8	020	.8	2.1	025	7.0	NNW	**	*****	1.2	440	4
5	-11.5	-17.7	-14.6	359	.8	1.1	023	2.5	NNW	**	*****	0.0	690	5
6	-12.8	-20.5	-16.7	049	2.4	2.8	053	8.9	ENE	**	*****	0.0	640	6
7	-4.8	-12.7	-8.8	049	5.5	5.6	048	9.5	NE	**	*****	.2	388	7
8	-3.1	-12.2	-7.7	059	3.4	3.5	079	9.5	ENE	**	*****	0.0	540	8
9	-.4	-11.9	-6.2	054	5.2	5.6	071	10.8	ENE	**	*****	0.0	475	9
10	2.6	-1.3	.7	073	6.2	6.6	085	14.6	E	**	*****	0.0	438	10
11	2.7	-3.7	-.5	062	4.3	4.4	071	12.1	ENE	**	*****	0.0	620	11
12	.3	-9.3	-4.5	046	4.0	4.1	050	8.9	NE	**	*****	0.0	543	12
13	-4.3	-13.1	-8.7	059	2.2	2.4	083	5.7	ENE	**	*****	0.0	638	13
14	-12.2	-20.2	-16.2	068	1.9	2.0	074	4.4	ENE	**	*****	0.0	348	14
15	-7.5	-14.6	-11.1	075	3.8	4.0	067	7.6	ENE	**	*****	0.0	1158	15
16	-9.8	-14.8	-12.3	074	6.7	6.7	073	10.8	ENE	**	*****	0.0	492	16
17	-11.7	-12.8	-12.3	065	6.4	6.4	071	8.9	ENE	**	*****	0.0	1920	17
18	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	18
19	-15.6	-16.4	-16.0	087	2.0	2.2	099	3.8	E	**	*****	0.0	0	19
20	-18.9	-24.3	-21.6	077	2.4	2.4	082	3.8	E	**	*****	.6	970	20
21	-12.5	-24.2	-18.4	072	4.3	4.5	056	10.8	ENE	**	*****	0.0	606	21
22	-12.2	-18.6	-15.4	059	7.3	7.2	067	10.8	ENE	**	*****	0.0	252	22
23	-10.4	-14.7	-12.6	069	3.2	3.4	070	9.5	ENE	**	*****	0.0	237	23
24	-8.7	-11.8	-10.3	052	2.2	2.6	066	8.9	NE	**	*****	.8	443	24
25	-4.9	-14.6	-9.8	059	.9	1.2	043	7.0	NNE	**	*****	0.0	705	25
26	-4.9	-8.5	-6.7	055	4.6	4.7	060	9.5	NE	**	*****	2.8	288	26
27	-4.2	-7.0	-5.6	250	1.2	2.0	226	6.3	WSW	**	*****	0.0	383	27
28	-5.7	-10.6	-8.2	348	.6	1.0	263	2.5	N	**	*****	0.0	380	28
29	-9.2	-11.7	-10.5	056	4.7	4.9	064	11.4	NE	**	*****	0.0	543	29
30	-4.5	-10.1	-7.3	045	5.4	5.6	062	12.1	NE	**	*****	0.0	253	30
MONTH	2.7	-24.3	-10.4	058	3.2	3.8	085	14.6	ENE	**	*****	5.6	16996	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 13.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 14.0
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 14.6
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 14.0

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 ****

FIG. 2.4.40

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

WATANA WEATHER STATION

November, 1981

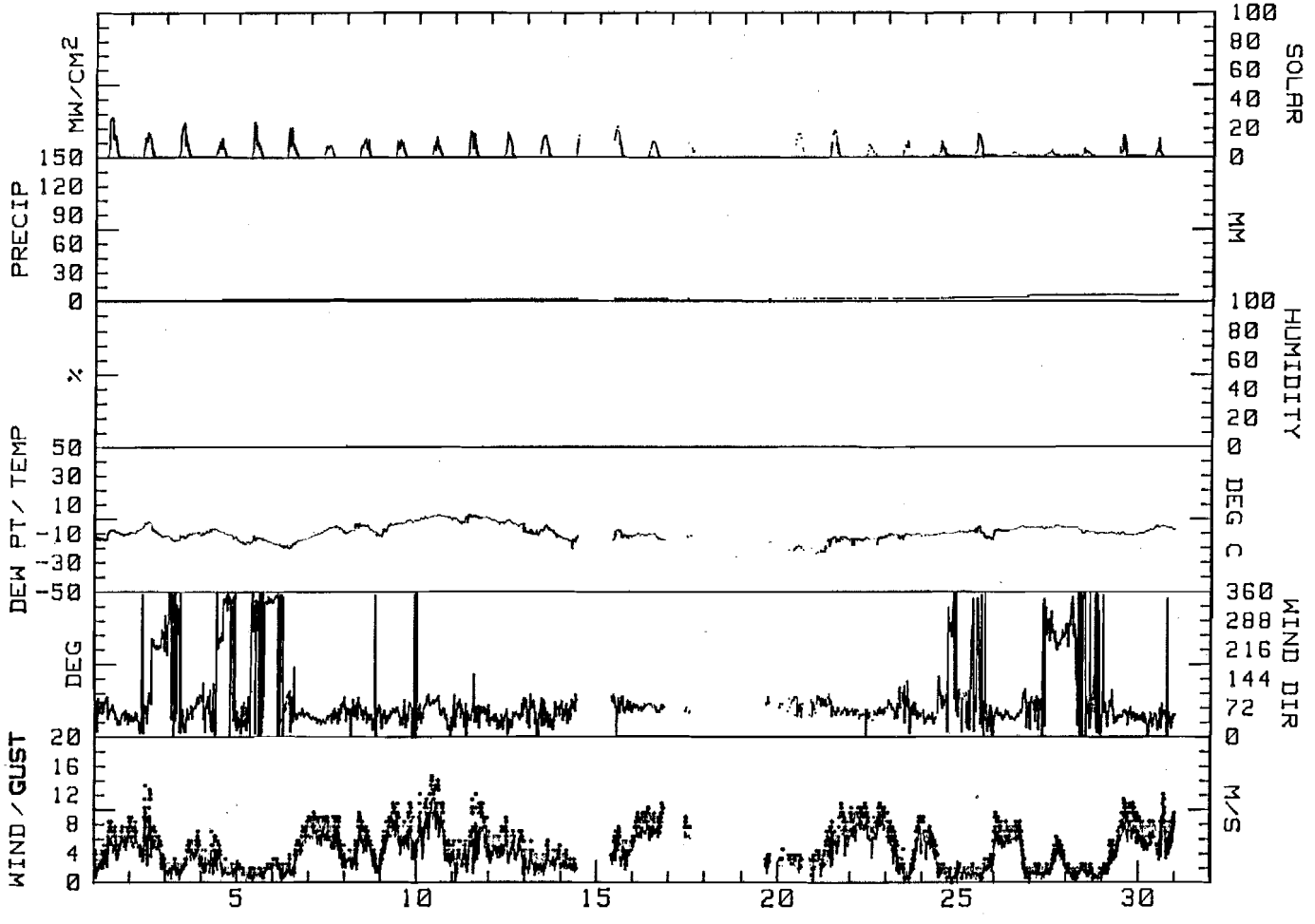


TABLE 2.4.41

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING December, 1981

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	-5.3	-9.8	-7.6	066	6.3	6.4	066	14.6	ENE	**	*****	0.0	235	1
2	-7.4	-14.3	-10.9	057	.2	2.7	231	6.3	ENE	**	*****	1.4	390	2
3	-6.9	-12.1	-9.5	274	.8	1.5	241	8.9	WSW	**	*****	3.0	310	3
4	-8.8	-16.8	-12.8	021	1.7	2.5	066	9.5	N	**	*****	2.4	300	4
5	-10.1	-16.0	-13.1	073	2.4	2.6	068	9.5	E	**	*****	0.0	165	5
6	-9.6	-18.9	-14.3	053	2.8	2.9	073	7.0	NE	**	*****	0.0	198	6
7	-17.1	-23.7	-20.4	058	1.7	1.8	055	5.7	ENE	**	*****	0.0	390	7
8	-16.9	-25.3	-21.1	064	2.7	2.8	053	7.6	ENE	**	*****	0.0	348	8
9	-18.4	-24.2	-21.3	077	2.0	2.1	082	4.4	E	**	*****	0.0	125	9
10	-12.6	-21.5	-17.1	070	4.9	5.1	073	10.2	ENE	**	*****	0.0	123	10
11	-10.8	-16.6	-13.7	047	6.1	6.2	046	9.5	NE	**	*****	0.0	138	11
12	-5.6	-10.5	-8.1	048	6.0	6.1	061	8.9	NE	**	*****	0.0	98	12
13	-4.2	-15.6	-9.9	057	3.7	3.8	054	10.2	ENE	**	*****	0.0	113	13
14	-9.3	-17.1	-13.2	069	2.8	2.9	074	7.0	ENE	**	*****	0.0	148	14
15	-5.5	-12.6	-9.1	054	5.8	5.9	049	10.8	NE	**	*****	0.0	118	15
16	-2.4	-10.3	-6.4	058	7.3	7.6	090	15.9	ENE	**	*****	0.0	178	16
17	.8	-3.2	-1.2	069	6.4	6.6	062	13.3	ENE	**	*****	0.0	255	17
18	1.7	-4.1	-1.2	066	5.1	5.0	062	14.6	ENE	**	*****	0.0	275	18
19	-3.3	-11.7	-7.5	070	1.5	1.5	078	5.1	E	**	*****	.2	320	19
20	-5.5	-11.7	-8.6	053	2.3	2.5	046	6.3	NE	**	*****	0.0	200	20
21	-9.2	-15.8	-12.5	169	.4	1.0	088	3.8	SSW	**	*****	0.0	313	21
22	-11.2	-19.3	-15.3	044	4.5	4.7	053	9.5	NE	**	*****	0.0	293	22
23	-6.2	-11.4	-8.8	048	5.7	5.9	070	13.3	NE	**	*****	0.0	220	23
24	-6.5	-12.1	-9.3	345	1.7	1.8	032	4.4	NNW	**	*****	0.0	335	24
25	-8.8	-14.2	-11.5	063	1.6	2.2	026	7.0	E	**	*****	0.0	295	25
26	-8.7	-20.3	-14.5	004	2.2	2.8	028	8.3	NNE	**	*****	0.0	130	26
27	-17.2	-26.7	-22.0	076	3.1	3.3	073	8.3	E	**	*****	0.0	138	27
28	-19.4	-27.8	-23.6	084	3.4	3.5	083	8.3	E	**	*****	0.0	163	28
29	-25.1	-32.0	-28.6	064	2.3	2.4	061	5.7	ENE	**	*****	0.0	153	29
30	-21.1	-32.5	-26.8	066	3.7	3.7	055	9.5	ENE	**	*****	0.0	155	30
31	-21.5	-26.1	-23.8	078	2.1	2.2	060	7.0	E	**	*****	0.0	110	31
MONTH	1.7	-32.5	-13.7	058	3.2	3.6	090	15.9	ENE	**	*****	7.0	6725	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 12.1
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 13.3
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 14.0
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.

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

FIG. 2.4.41

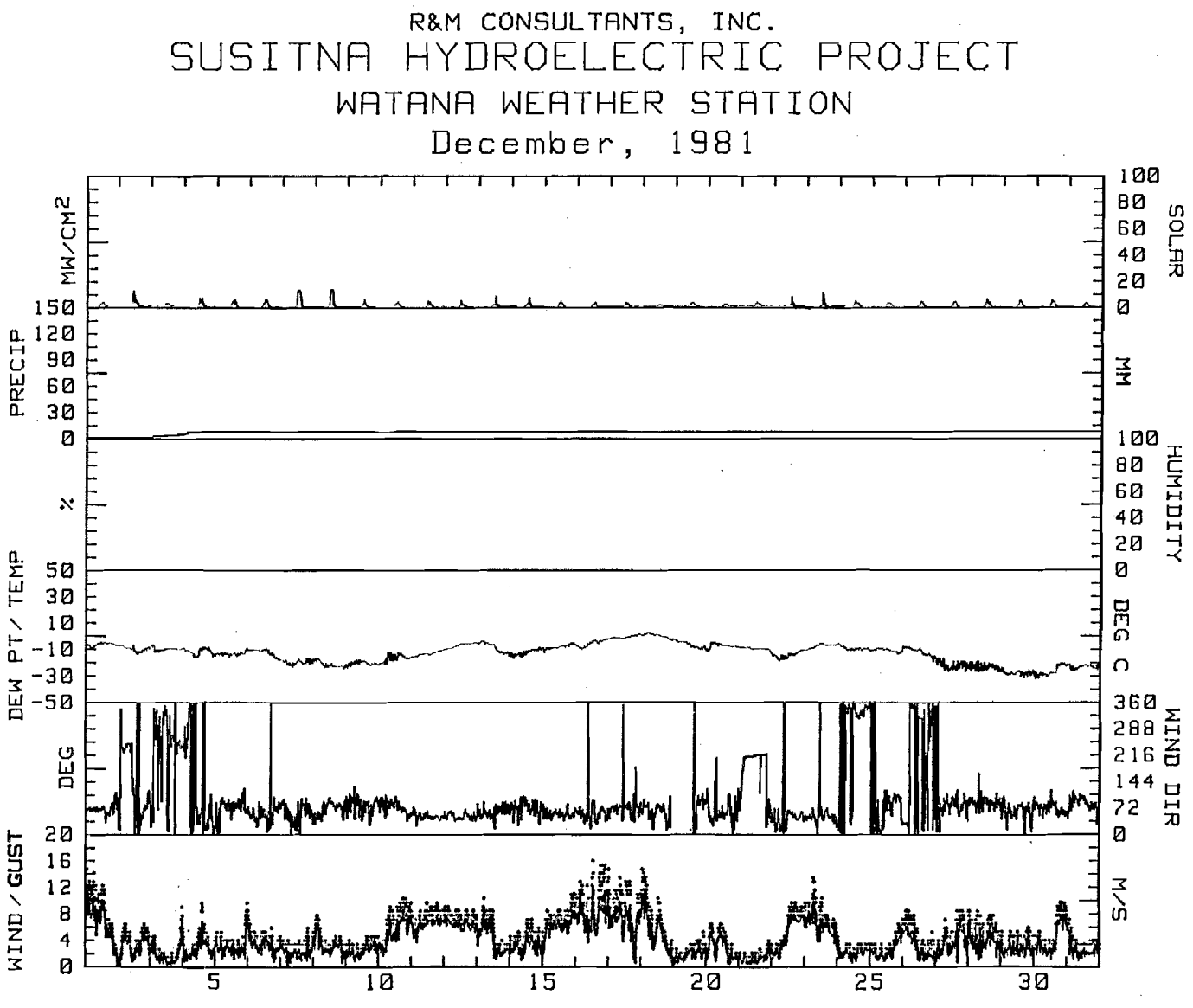

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
WATANA WEATHER STATION
December, 1981
SOLAR
MW/CM2
150
120
90
60
30
0
100
80
60
40
20
0
PRECIP
MM
HUMIDITY
%
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.42

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING January, 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	-20.6	-26.4	-23.5	074	2.0	2.1	085	5.7	E	**	*****	0.0	133	1
2	-22.9	-27.0	-25.0	065	1.8	1.9	071	3.8	ENE	**	*****	0.0	280	2
3	-23.2	-27.2	-25.2	071	2.0	2.1	081	4.4	ENE	**	*****	0.0	223	3
4	-16.3	-23.8	-20.1	086	1.5	1.7	058	5.7	E	**	*****	0.0	130	4
5	-17.9	-27.9	-22.9	087	2.9	3.6	090	10.2	E	**	*****	0.0	185	5
6	-24.6	-33.8	-29.2	085	4.4	4.6	085	10.2	E	**	*****	0.0	165	6
7	-25.5	-32.4	-29.0	052	2.6	2.8	077	6.1	NE	**	*****	0.0	185	7
8	-16.3	-31.4	-23.9	057	4.5	4.8	053	10.2	NE	**	*****	0.0	205	8
9	-17.6	-20.2	-18.9	061	8.2	8.3	064	14.6	ENE	**	*****	0.0	133	9
10	-12.6	-17.7	-15.2	062	5.5	5.6	051	12.7	ENE	**	*****	0.0	215	10
11	-9.8	-16.3	-13.1	070	4.5	4.5	064	8.9	ENE	**	*****	0.0	185	11
12	-8.1	-16.0	-12.1	089	2.5	2.5	085	5.7	E	**	*****	0.0	330	12
13	-11.8	-20.9	-16.4	065	2.7	3.0	054	15.2	ENE	**	*****	0.0	725	13
14	-14.6	-18.7	-16.7	051	8.8	8.9	062	14.6	NE	**	*****	0.0	243	14
15	-18.4	-23.6	-21.0	057	4.1	4.3	042	10.8	ENE	**	*****	0.0	******	15
16	-19.2	-27.8	-23.5	064	2.1	2.2	081	4.4	ENE	**	*****	0.0	129	16
17	-11.8	-24.5	-18.2	065	1.5	1.8	094	6.3	ENE	**	*****	0.0	323	17
18	-16.0	-23.4	-19.7	056	1.5	2.2	075	8.3	ENE	**	*****	0.0	285	18
19	-13.3	-20.8	-17.1	022	2.5	2.9	051	6.3	NNW	**	*****	0.0	413	19
20	-15.1	-21.8	-18.5	068	5.8	5.9	071	10.8	ENE	**	*****	0.0	313	20
21	-14.7	-17.7	-16.2	057	10.4	10.4	055	15.2	ENE	**	*****	0.0	******	21
22	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	22
23	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	23
24	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	24
25	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	25
26	-28.1	-30.3	-29.2	075	2.9	3.1	075	5.7	ENE	**	*****	0.0	******	26
27	-20.3	-24.0	-22.2	050	7.5	7.6	045	10.2	NE	**	*****	0.0	845	27
28	-10.7	-16.2	-13.5	052	6.9	7.0	059	12.7	NE	**	*****	0.0	283	28
29	-10.2	-17.0	-13.6	084	3.0	3.2	067	7.6	E	**	*****	0.0	488	29
30	-11.8	-16.8	-14.3	095	2.2	2.5	095	8.4	E	**	*****	0.0	670	30
31	-10.1	-13.0	-11.6	048	6.6	6.6	058	9.5	NE	**	*****	0.0	566	31
MONTH	-8.1	-33.8	-19.6	063	3.7	4.0	054	15.2	ENE	**	*****	0.0	7640	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 12.7
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 13.3
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 14.0
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 13.3

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 ****

FIG. 2.4.42

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

WATANA WEATHER STATION

January, 1982

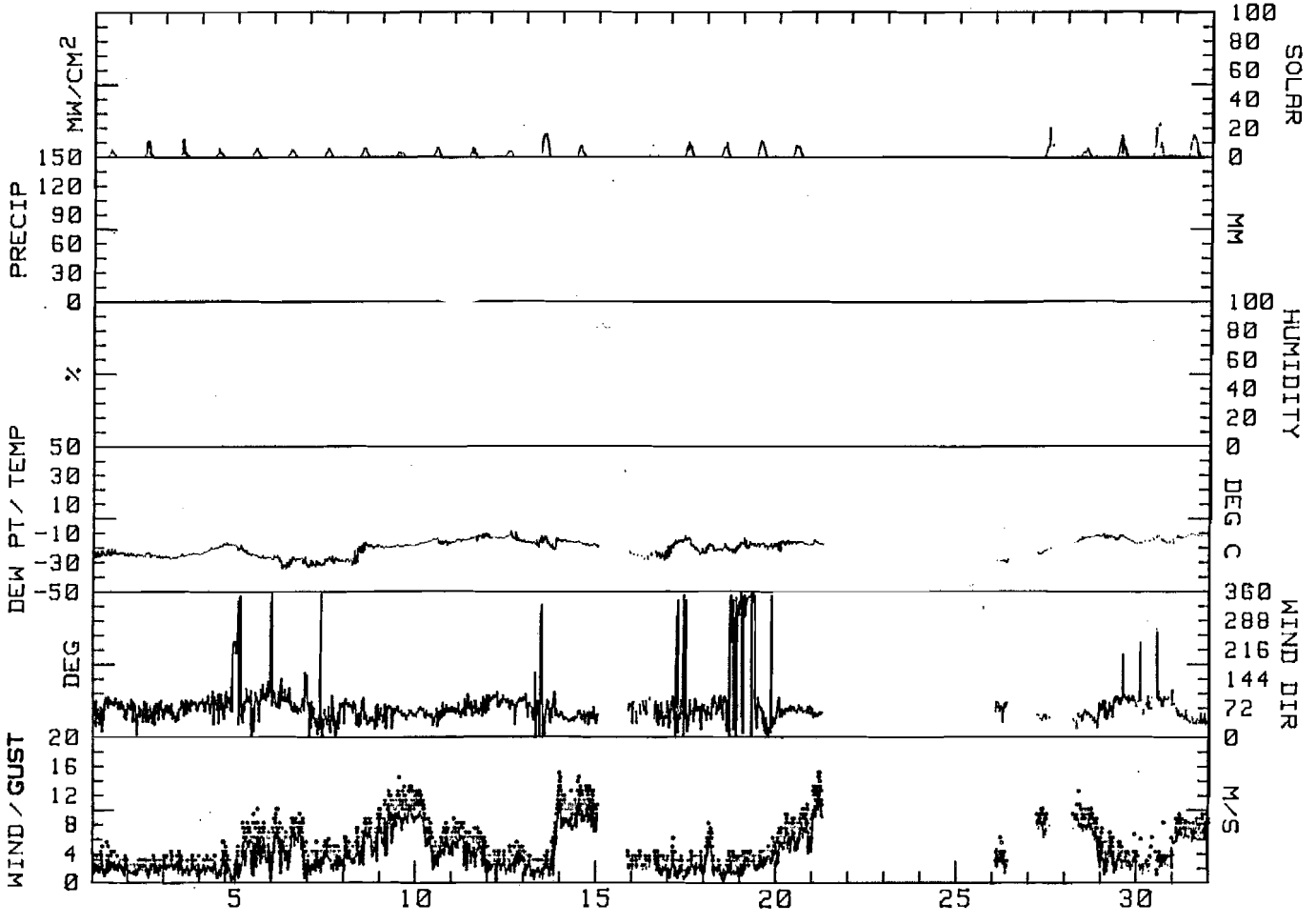


TABLE 2.4.43

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING March, 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	-16.1	-16.1	-16.1	038	2.0	2.0	038	3.2	NE	**	*****	****	******	13
14	-10.3	-19.7	-15.0	048	3.5	3.7	035	7.0	NE	**	*****	0.0	******	14
15	-8.4	-19.3	-13.9	057	4.6	4.7	056	8.9	ENE	**	*****	.2	******	15
16	-5.7	-11.7	-8.7	052	2.9	3.1	062	7.6	ENE	**	*****	.6	******	16
17	2.3	-7.4	-2.6	054	3.7	3.4	064	8.9	NE	**	*****	2.0	******	17
18	-.8	-4.1	-2.5	052	3.0	2.8	069	7.0	ENE	**	*****	0.0	2245	18
19	2.1	-7.0	-2.5	067	2.6	2.9	067	8.9	ENE	**	*****	0.0	2743	19
20	4.1	-3.1	.5	076	1.6	3.5	071	8.3	ENE	**	*****	.2	3020	20
21	1.8	-3.7	-1.0	125	1.3	2.6	212	8.9	ESE	**	*****	11.0	1048	21
22	3.8	-4.5	-.4	062	1.6	2.4	075	5.1	ENE	**	*****	.6	3555	22
23	-1.2	-6.8	-4.0	054	2.1	2.9	075	8.9	ENE	**	*****	.6	3095	23
24	-2.2	-10.5	-6.4	041	3.9	4.3	018	9.5	NNE	**	*****	0.0	3078	24
25	-5.7	-11.8	-8.8	008	4.3	4.4	009	8.9	N	**	*****	0.0	3518	25
26	-8.6	-16.0	-12.3	047	3.9	4.3	067	10.2	NNE	**	*****	0.0	3950	26
27	-7.4	-18.2	-12.8	054	3.9	4.1	063	7.6	ENE	**	*****	0.0	3543	27
28	-4.9	-15.1	-10.0	023	1.9	2.3	064	5.7	NNW	**	*****	0.0	3895	28
29	-5.0	-16.8	-10.9	047	2.2	2.4	066	7.0	NE	**	*****	0.0	3795	29
30	-9.3	-17.4	-13.4	039	3.8	4.2	038	8.9	NNE	**	*****	0.0	4378	30
31	-11.3	-20.8	-16.1	030	4.4	4.5	060	9.5	NNE	**	*****	0.0	4425	31
MONTH	4.1	-20.8	-8.2	046	3.0	3.5	067	10.2	ENE	**	*****	15.2	46285	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	5.7
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	9.5
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	7.6
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 ****

TABLE 2.4.47

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING July, 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	10.2	4.1	7.2	233	.6	1.9	296	7.0	W	**	*****	14.4	3968	1
2	14.4	3.4	8.9	252	.9	1.7	252	6.3	W	**	*****	0.0	6583	2
3	19.7	.7	10.2	083	.7	3.0	239	8.3	E	**	*****	0.0	9383	3
4	19.4	5.1	12.3	124	.6	2.9	252	9.5	E	**	*****	0.0	6760	4
5	15.4	3.9	9.7	264	2.2	2.6	261	7.6	WSW	**	*****	0.0	6513	5
6	19.7	4.6	12.2	269	1.1	2.0	244	7.6	W	**	*****	0.0	7920	6
7	26.4	4.1	15.3	050	1.3	2.2	048	6.3	NNE	**	*****	0.0	8883	7
8	18.3	9.0	13.7	261	3.3	4.0	240	10.2	WSW	**	*****	0.0	4713	8
9	16.1	8.6	12.4	255	2.8	2.9	238	7.0	WSW	**	*****	0.0	4583	9
10	14.2	8.2	11.2	252	4.1	4.2	246	10.2	WSW	**	*****	.4	3455	10
11	13.9	7.8	10.9	253	3.4	3.5	242	7.6	WSW	**	*****	.8	4468	11
12	11.3	7.9	9.6	224	3.3	3.5	231	7.0	SW	**	*****	9.2	2788	12
13	16.5	6.9	11.7	237	1.4	1.9	222	5.1	SW	**	*****	2.6	5675	13
14	17.3	8.1	12.7	240	.4	1.6	263	9.5	W	**	*****	7.2	4770	14
15	12.2	6.8	9.5	260	2.5	2.6	251	7.0	WSW	**	*****	0.0	4618	15
16	11.2	6.2	8.7	263	.3	2.6	247	7.0	WSW	**	*****	5.6	3945	16
17	9.4	5.5	7.5	261	2.7	2.8	252	5.7	W	**	*****	.8	3754	17
18	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	18
19	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	19
20	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	20
21	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	21
22	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	22
23	11.7	9.1	10.4	253	2.4	2.8	272	8.9	WSW	**	*****	25.8	1853	23
24	12.5	8.2	10.4	269	1.8	2.0	264	7.6	W	**	*****	8.2	3348	24
25	11.2	7.9	9.6	272	1.2	2.2	250	6.3	W	**	*****	13.6	2287	25
26	16.0	5.3	10.7	262	1.5	2.0	269	7.0	W	**	*****	0.0	6053	26
27	15.4	9.4	12.4	260	1.6	1.8	252	5.7	W	**	*****	0.0	3906	27
28	19.1	8.1	13.6	278	2.1	2.8	274	8.3	W	**	*****	0.0	5921	28
29	12.0	8.5	10.3	259	1.5	1.7	282	5.1	WSW	**	*****	5.4	2897	29
30	11.2	7.9	9.6	259	2.5	2.7	248	7.0	WSW	**	*****	14.8	3287	30
31	15.7	6.8	11.3	282	.5	1.7	170	5.7	WNW	**	*****	.4	5631	31
MONTH	26.4	.7	10.8	260	1.6	2.4	240	10.2	W	**	*****	109.2	127956	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 7.6
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 8.9
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 8.9
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 8.9

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 ****

FIG. 2.4.43

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

WATANA WEATHER STATION

March, 1982

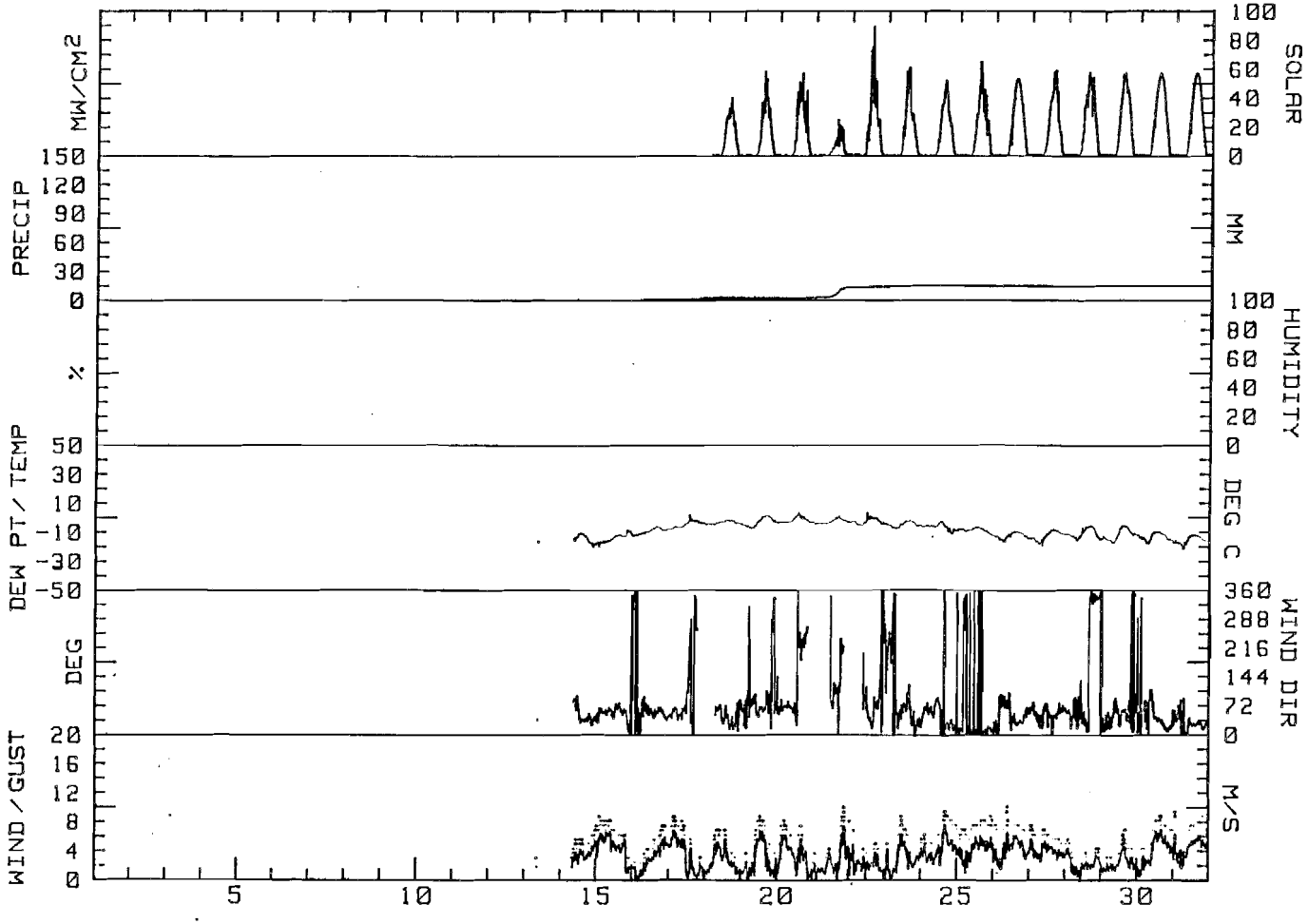


TABLE 2.4.44

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING April, 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	-11.1	-16.8	-14.0	019	4.1	4.4	021	9.5	NNE	**	*****	0.0	4455	1
2	-12.1	-19.8	-16.0	045	4.5	4.7	051	9.5	NE	**	*****	0.0	4583	2
3	-7.7	-21.2	-14.5	068	4.6	4.8	077	9.5	ENE	**	*****	0.0	4663	3
4	-3.9	-14.3	-9.1	049	3.6	3.8	063	9.5	NE	**	*****	0.0	4308	4
5	-.5	-13.9	-7.2	015	1.5	1.7	350	3.8	N	**	*****	0.0	4520	5
6	1.9	-7.1	-2.6	044	1.7	2.2	067	7.0	NE	**	*****	0.0	4310	6
7	2.1	-7.7	-2.8	279	2.1	3.1	240	10.8	WSW	**	*****	1.2	2940	7
8	.8	-9.1	-4.2	039	1.1	2.5	076	8.3	NE	**	*****	3.8	2285	8
9	6.8	-10.1	-1.7	013	1.2	1.6	281	4.4	NE	**	*****	0.0	5603	9
10	-2.8	-13.4	-8.1	059	3.0	3.3	071	7.6	ENE	**	*****	0.0	4773	10
11	-2.7	-9.9	-6.3	036	3.7	4.1	084	8.3	NNE	**	*****	0.0	******	11
12	-3.1	-10.9	-7.0	021	4.0	4.5	010	8.9	NNE	**	*****	0.0	5008	12
13	1.6	-8.6	-3.5	060	2.2	2.7	071	7.6	ENE	**	*****	0.0	4273	13
14	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	14
15	-1.7	-6.9	-4.3	037	3.0	3.2	012	5.1	NNE	**	*****	0.0	240	15
16	2.3	-8.8	-3.3	045	2.4	2.7	053	5.7	NNE	**	*****	0.0	5325	16
17	-1.0	-9.9	-5.5	006	1.9	2.0	359	4.4	NNE	**	*****	0.0	5240	17
18	-2.9	-13.3	-8.1	283	1.4	3.4	232	8.9	W	**	*****	0.0	4855	18
19	-2.5	-14.9	-8.7	044	4.2	4.4	027	8.9	NE	**	*****	0.0	4453	19
20	4.2	-6.5	-1.2	058	3.9	4.3	077	10.8	ENE	**	*****	0.0	5868	20
21	4.5	-4.8	-.2	270	1.2	2.1	263	7.0	WSW	**	*****	0.0	4420	21
22	3.2	-3.9	-.4	244	2.1	2.4	207	7.0	WSW	**	*****	0.0	4345	22
23	3.4	-6.6	-1.6	022	1.0	1.4	082	4.4	ENE	**	*****	.2	4863	23
24	1.8	-4.7	-1.5	057	3.8	3.9	072	8.3	ENE	**	*****	0.0	5125	24
25	5.5	-3.6	1.0	091	1.3	4.2	077	10.8	ENE	**	*****	1.4	5340	25
26	1.9	-6.3	-2.2	045	2.5	3.0	013	7.6	ENE	**	*****	.2	6258	26
27	5.6	-1.2	2.2	057	3.5	3.7	093	10.2	NE	**	*****	0.0	4660	27
28	5.0	-1.6	1.7	055	.9	3.0	236	8.3	ENE	**	*****	0.0	5250	28
29	5.6	-5.7	-.1	266	1.7	2.4	243	5.7	WSW	**	*****	.4	5380	29
30	3.3	-6.4	-1.6	013	2.0	2.1	000	4.4	NNE	**	*****	0.0	6130	30
MONTH	6.8	-21.2	-4.5	038	1.9	3.2	240	10.8	NNE	**	*****	7.2	129469	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.7
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 8.3
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.8
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 9.5

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 ****

FIG. 2.4.44

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

WATANA WEATHER STATION

April, 1982

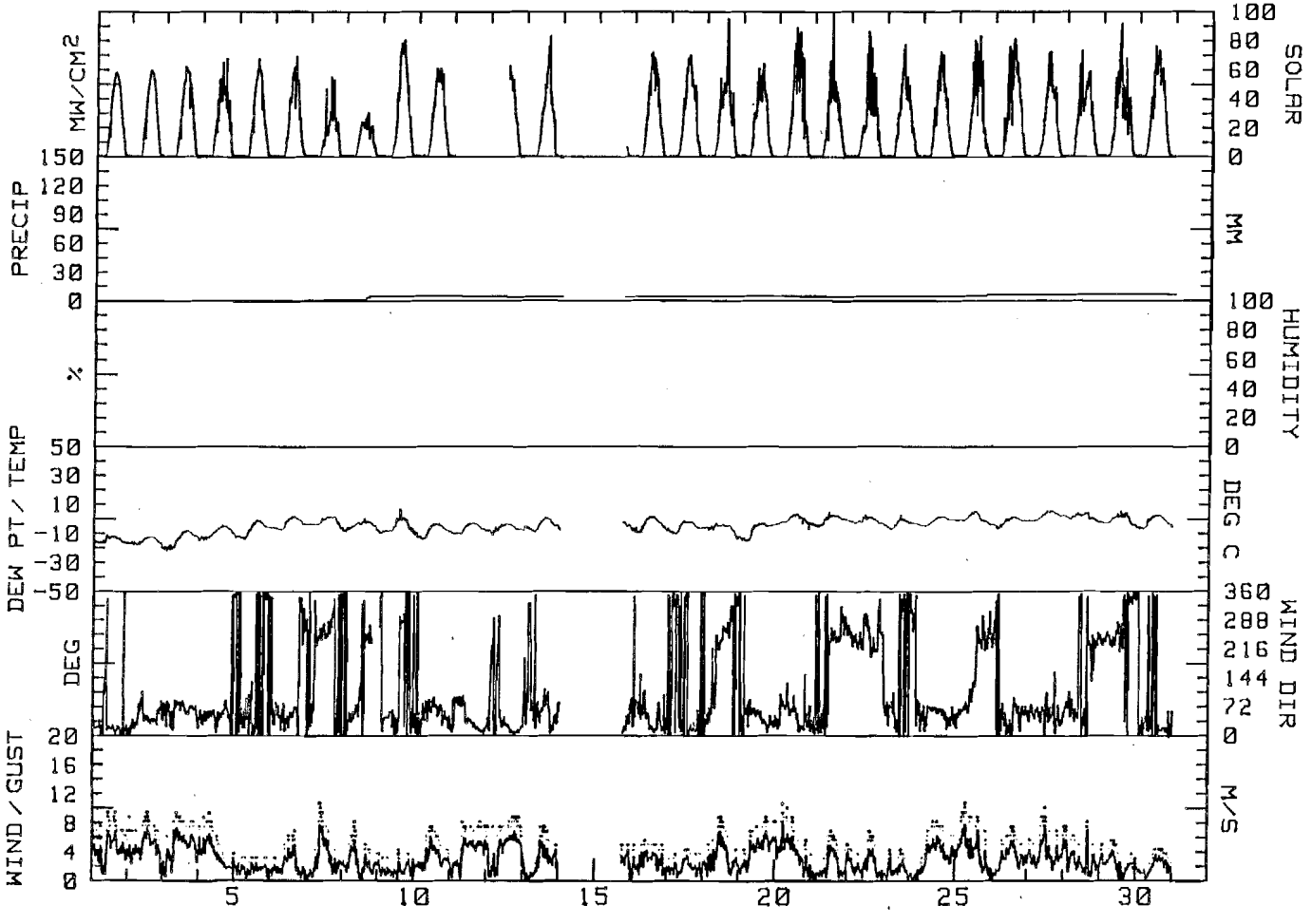


TABLE 2.4.45

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING May, 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	3.8	-8.4	-2.3	002	1.5	1.7	324	5.1	N	**	*****	0.0	6580	1
2	3.0	-5.6	-1.3	021	2.3	2.4	021	5.7	NNE	**	*****	0.0	7343	2
3	2.2	-8.1	-3.0	023	1.6	2.0	007	5.1	N	**	*****	1.2	2734	3
4	5.7	-23.2	-8.8	076	1.8	2.2	098	5.1	E	**	*****	.4	******	4
5	5.1	-27.2	-11.1	046	3.2	3.4	040	6.3	NNE	**	*****	0.0	******	5
6	7.3	-4.1	1.6	039	1.8	2.5	065	6.3	NNW	**	*****	0.0	******	6
7	9.1	1.1	5.1	261	1.2	1.5	230	5.7	WSW	**	*****	0.0	******	7
8	8.5	.2	4.4	267	1.1	2.3	236	5.7	WSW	**	*****	0.0	******	8
9	7.8	0.0	3.9	031	.7	1.7	065	5.7	ENE	**	*****	.8	******	9
10	9.6	-.1	4.8	325	.2	1.1	236	5.1	N	**	*****	3.6	******	10
11	3.6	-1.6	1.0	253	2.7	2.8	251	6.3	WSW	**	*****	7.4	5248	11
12	7.0	-2.1	2.5	259	1.8	2.1	249	5.7	WSW	**	*****	0.0	5863	12
13	5.1	-2.2	1.5	268	1.7	2.3	236	6.3	WSW	**	*****	0.0	5005	13
14	6.8	-4.1	1.4	282	1.8	2.2	239	5.1	WNW	**	*****	0.0	7178	14
15	7.5	-3.3	2.1	304	1.6	2.2	290	5.1	WNW	**	*****	0.0	7170	15
16	7.7	-3.8	2.0	013	2.4	2.6	013	6.3	NNE	**	*****	0.0	7838	16
17	7.5	.1	3.8	032	2.1	3.1	099	7.0	NNE	**	*****	0.0	6418	17
18	7.2	-.2	3.5	236	.4	2.0	145	6.3	SW	**	*****	1.2	4595	18
19	8.2	-.9	3.7	046	1.5	2.7	031	8.3	ENE	**	*****	2.4	7873	19
20	2.8	-1.0	.9	214	.7	2.1	219	7.0	SW	**	*****	6.6	3020	20
21	7.3	-2.3	2.5	312	1.3	1.8	243	5.1	NNW	**	*****	0.0	6038	21
22	9.5	-3.3	3.1	015	1.7	2.2	013	6.3	NNE	**	*****	0.0	7570	22
23	11.1	-.1	5.5	043	2.6	3.2	109	7.0	NNE	**	*****	0.0	7955	23
24	9.4	1.8	5.6	235	3.0	3.8	231	10.2	SW	**	*****	0.0	7360	24
25	7.1	.6	3.9	214	1.1	2.4	261	7.0	WSW	**	*****	1.2	4295	25
26	8.1	.2	4.2	238	1.1	1.9	242	6.3	WSW	**	*****	.2	5283	26
27	11.1	1.6	6.4	259	2.0	3.4	246	9.5	WSW	**	*****	0.0	5815	27
28	6.2	2.0	4.1	227	2.8	3.0	219	8.9	SW	**	*****	.8	4573	28
29	5.5	1.8	3.7	243	2.0	2.5	262	5.7	WSW	**	*****	0.0	4955	29
30	12.2	1.3	6.8	269	1.8	2.6	258	6.3	WSW	**	*****	0.0	7403	30
31	15.6	2.2	8.9	018	2.7	2.9	024	7.0	NNE	**	*****	0.0	9123	31
MONTH	15.6	-27.2	2.3	325	.6	2.4	231	10.2	WSW	**	*****	25.8	147231	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 9.5
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 8.9
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 9.5
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 8.9

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 ****

FIG. 2.4.45

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

WATANA WEATHER STATION

May, 1982

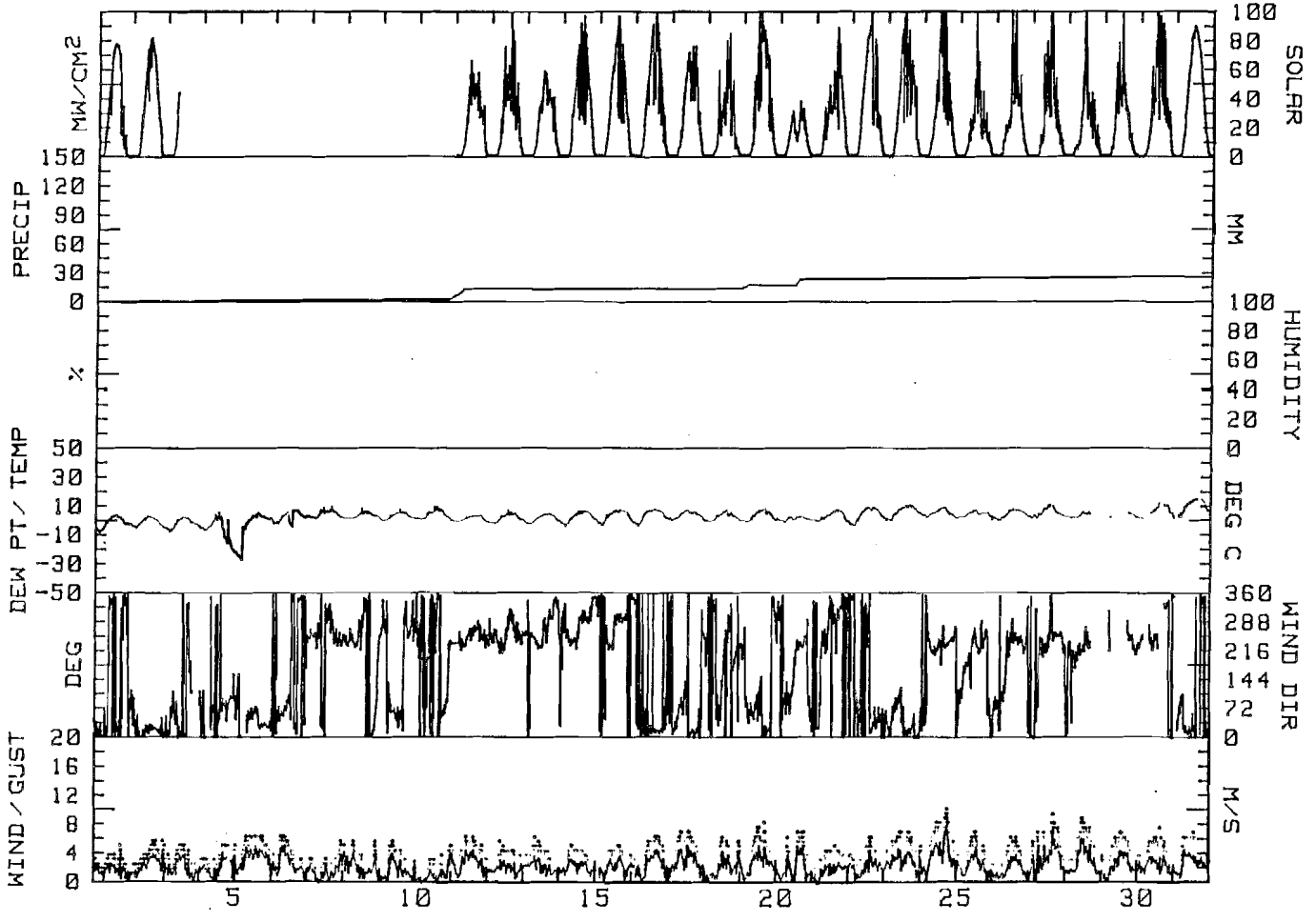


TABLE 2.4.46

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING June, 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	16.3	1.5	8.9	250	2.1	2.9	229	9.5	WSW	**	*****	0.0	7525	1
2	7.5	.8	4.2	267	.6	1.4	249	5.1	WSW	**	*****	20.0	1635	2
3	11.0	.9	6.0	289	1.0	2.2	234	6.3	WSW	**	*****	0.0	6625	3
4	12.8	-.5	6.2	252	1.3	2.7	273	8.9	WSW	**	*****	0.0	7258	4
5	10.6	3.3	7.0	239	1.8	2.1	250	7.0	WSW	**	*****	0.0	4078	5
6	11.4	4.1	7.8	069	1.9	3.1	084	10.2	E	**	*****	4.4	3715	6
7	7.6	3.4	5.5	236	1.8	2.3	245	8.3	WSW	**	*****	6.4	2380	7
8	14.6	1.7	8.2	276	1.2	2.1	275	7.6	WSW	**	*****	0.0	7078	8
9	13.2	3.0	8.1	061	2.5	2.6	018	7.6	ENE	**	*****	1.0	4090	9
10	14.4	6.7	10.6	138	2.7	4.1	149	9.5	E	**	*****	0.0	4028	10
11	11.8	3.4	7.6	183	.4	2.0	236	5.7	SE	**	*****	0.0	3965	11
12	11.9	1.8	6.9	235	1.4	2.2	219	14.6	WSW	**	*****	2.2	5453	12
13	10.0	1.1	5.6	240	.9	1.6	276	4.4	W	**	*****	0.0	5478	13
14	14.6	1.5	8.1	229	2.7	3.7	259	9.5	SW	**	*****	0.0	6718	14
15	4.1	.8	2.5	234	4.5	4.5	234	7.6	SW	**	*****	15.4	2070	15
16	5.8	4.4	5.1	245	2.9	4.1	243	5.7	WSW	**	*****	4.4	2708	16
17	15.0	3.8	9.4	257	2.4	2.4	320	6.3	WSW	**	*****	.2	7218	17
18	13.8	1.3	7.6	064	2.3	2.9	102	9.5	NNE	**	*****	4.2	3740	18
19	15.8	2.7	9.3	243	1.1	2.4	256	8.9	SW	**	*****	0.0	6765	19
20	6.5	1.5	4.0	248	2.5	2.9	239	8.3	WSW	**	*****	23.2	2763	20
21	12.5	3.6	8.1	249	2.3	2.5	240	7.6	WSW	**	*****	0.0	5958	21
22	14.3	4.3	9.3	278	.7	1.8	228	5.1	WSW	**	*****	0.0	5768	22
23	18.4	5.2	11.8	262	1.2	2.1	222	3.8	SW	**	*****	0.0	8948	23
24	21.2	.9	11.1	329	1.1	2.2	308	5.7	NNW	**	*****	0.0	9478	24
25	23.1	7.5	15.3	055	.8	2.1	127	5.1	ESE	**	*****	0.0	7755	25
26	23.9	8.1	16.0	283	1.0	2.2	228	8.9	NW	**	*****	0.0	8105	26
27	23.9	5.3	14.6	075	1.8	3.3	092	9.5	E	**	*****	0.0	7305	27
28	16.6	9.7	13.2	232	2.5	3.8	038	10.2	SW	**	*****	0.0	6338	28
29	15.5	5.5	10.5	099	.5	1.5	133	8.3	ESE	**	*****	1.4	5579	29
30	14.9	5.8	10.4	082	2.7	4.0	102	10.8	E	**	*****	4.6	3975	30
MONTH	23.9	-.5	8.6	241	.7	2.7	219	14.6	WSW	**	*****	87.4	164494	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 4.4
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 7.0
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 14.0
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 ****

FIG. 2.4.46

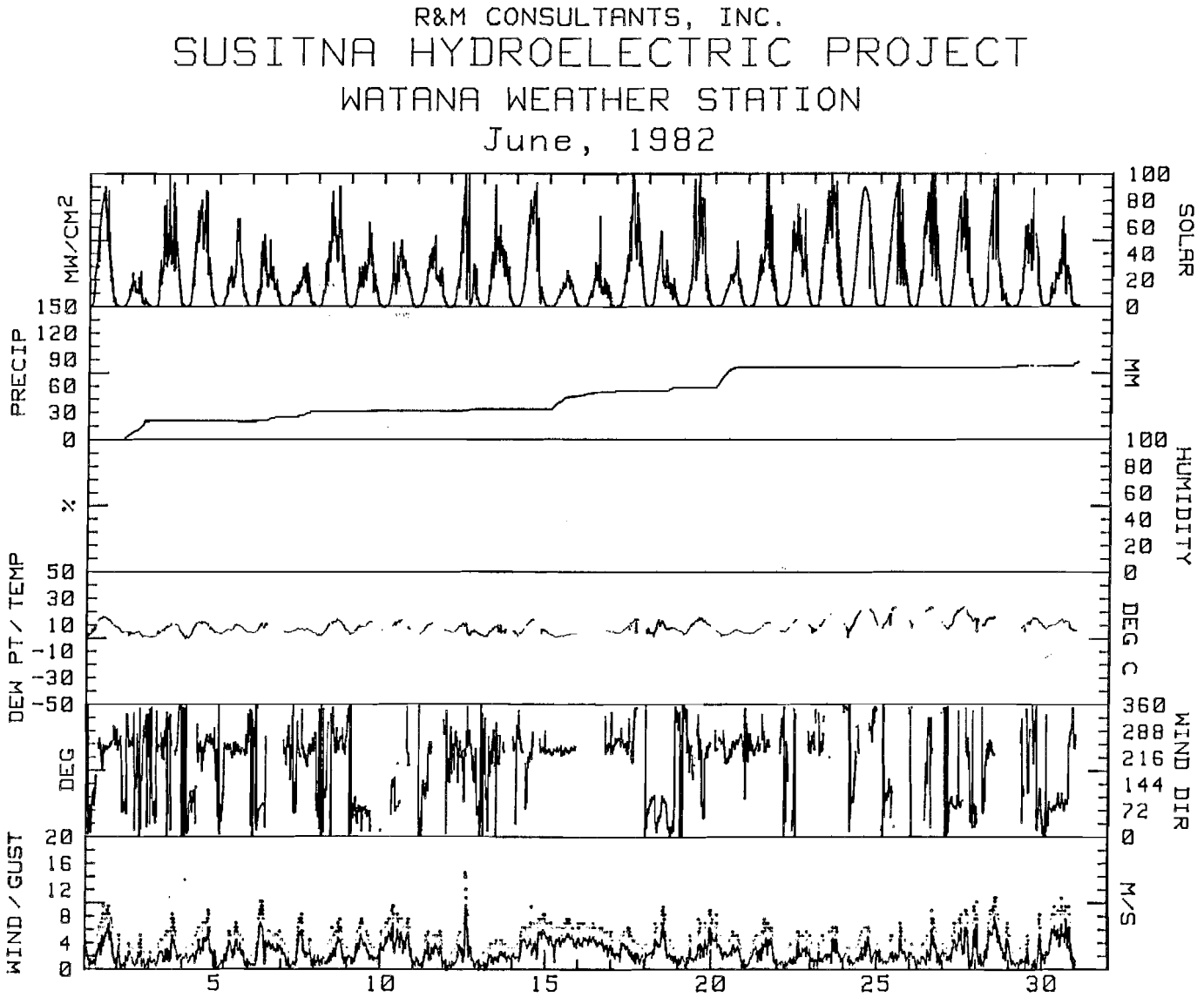

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
WATANA WEATHER STATION
June, 1982
MW/CM2
150
120
90
60
30
0
SOLAR
100
80
60
40
20
0
PRECIP
MM
%
HUMIDITY
DEW PT / TEMP
50
30
10
-10
-30
-50
DEG C
DEG
360
288
216
144
72
0
WIND DIR
WIND / GUST
20
16
12
8
4
0
M/S
5
10
15
20
25
30

FIG. 2.4.47

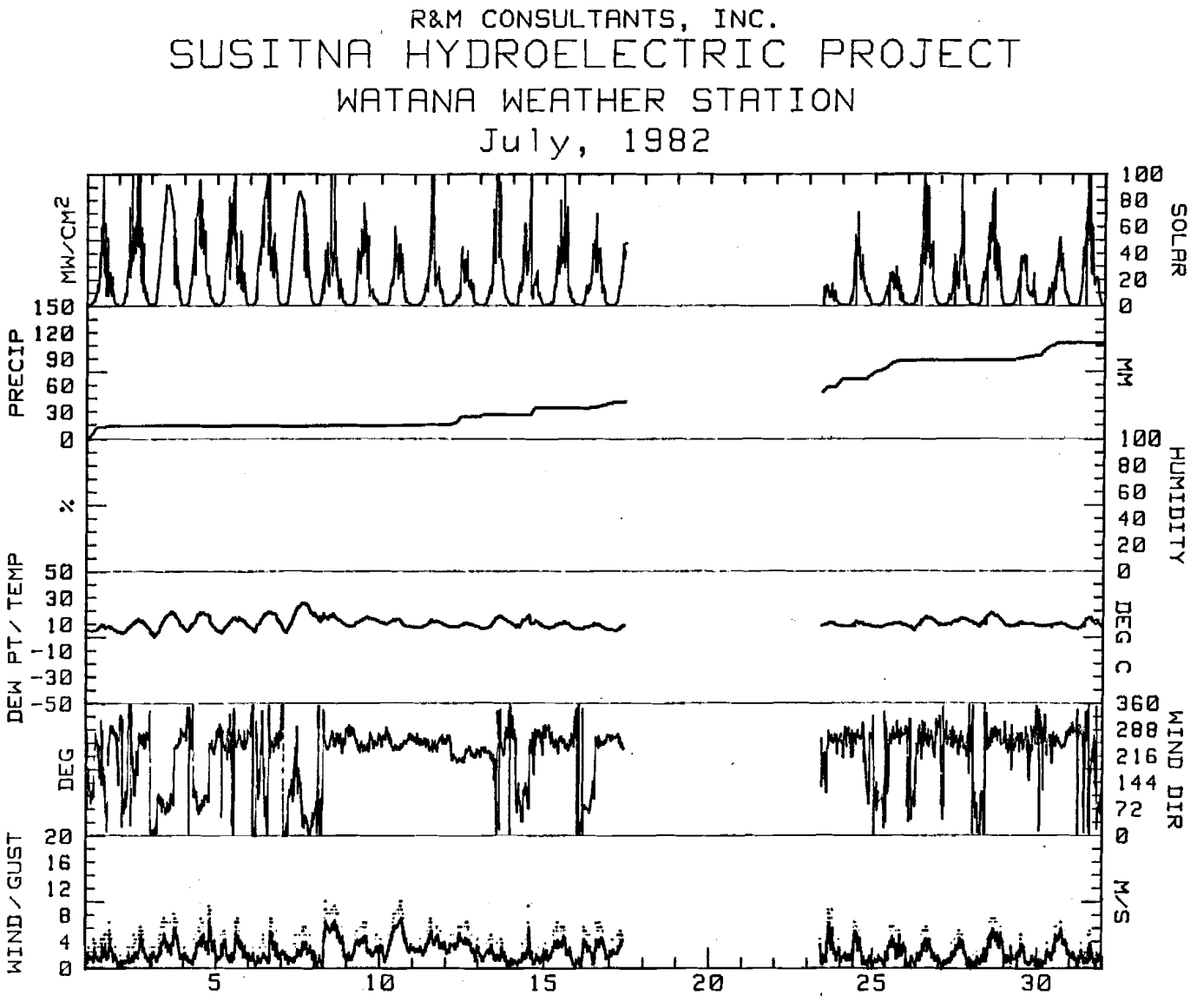

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
WATANA WEATHER STATION
July, 1982
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
MM
150
120
90
60
30
0
HUMIDITY
%
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.48

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING August, 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	15.8	4.8	10.3	032	1.8	2.2	031	8.3	NNE	**	*****	0.0	7368	1
2	17.9	5.7	11.8	064	1.3	1.7	056	7.0	ENE	**	*****	0.0	6608	2
3	19.4	5.1	12.3	298	.8	2.0	246	7.0	W	**	*****	0.0	7160	3
4	20.1	5.3	12.7	275	1.3	2.2	246	7.0	N	**	*****	0.0	7239	4
5	11.1	6.0	8.6	002	2.1	2.1	356	3.2	N	**	*****	0.0	465	5
6	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	6
7	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	7
8	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	8
9	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	9
10	11.0	5.6	8.3	270	2.1	2.2	261	5.7	W	**	*****	9.8	3002	10
11	15.7	5.1	10.4	276	1.3	1.7	266	4.4	W	**	*****	0.0	5803	11
12	19.2	2.3	10.8	319	.6	1.7	269	4.4	WNW	**	*****	0.0	6853	12
13	19.5	5.6	12.6	276	1.5	2.2	251	6.3	WNW	**	*****	0.0	6675	13
14	14.6	7.5	11.1	275	2.0	2.1	276	7.0	W	**	*****	7.0	3045	14
15	13.3	5.5	9.4	265	2.2	2.4	263	6.3	W	**	*****	1.0	4283	15
16	14.0	4.1	9.1	261	2.7	3.0	237	9.5	W	**	*****	0.0	6370	16
17	10.3	4.7	7.5	267	1.7	1.8	251	6.3	W	**	*****	4.6	2860	17
18	15.0	3.2	9.1	294	.9	1.7	262	7.0	N	**	*****	0.0	4850	18
19	17.0	1.8	9.4	304	1.0	2.1	242	6.3	N	**	*****	0.0	6308	19
20	18.7	6.6	12.7	054	1.2	1.6	077	5.7	E	**	*****	0.0	6053	20
21	18.1	7.1	12.6	298	1.0	1.7	281	7.0	WNW	**	*****	0.0	4553	21
22	19.3	3.6	11.5	289	1.3	1.9	239	7.6	WNW	**	*****	0.0	5815	22
23	13.1	8.5	10.8	264	1.7	1.7	276	5.7	W	**	*****	2.8	2848	23
24	14.1	7.3	10.7	257	1.0	1.7	260	6.3	W	**	*****	.8	3433	24
25	14.4	6.3	10.4	269	2.0	2.2	263	5.1	W	**	*****	1.6	4055	25
26	15.3	5.4	10.4	294	1.4	1.8	297	6.3	W	**	*****	0.0	3968	26
27	16.1	3.0	9.6	066	2.4	2.7	085	7.6	ENE	**	*****	0.0	5820	27
28	13.0	2.3	7.7	270	1.0	2.2	263	7.0	W	**	*****	0.0	4573	28
29	9.5	5.1	7.3	089	1.0	1.4	086	4.4	E	**	*****	6.2	2345	29
30	9.4	4.1	6.8	059	1.1	2.5	085	7.0	ENE	**	*****	18.4	1888	30
31	9.2	3.2	6.2	275	.9	1.4	276	6.3	W	**	*****	6.0	3798	31
MONTH	20.1	1.8	10.0	301	.7	2.0	237	9.5	W	**	*****	58.2	128035	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.7
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 8.9
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 7.6
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 ****

FIG. 2.4.48

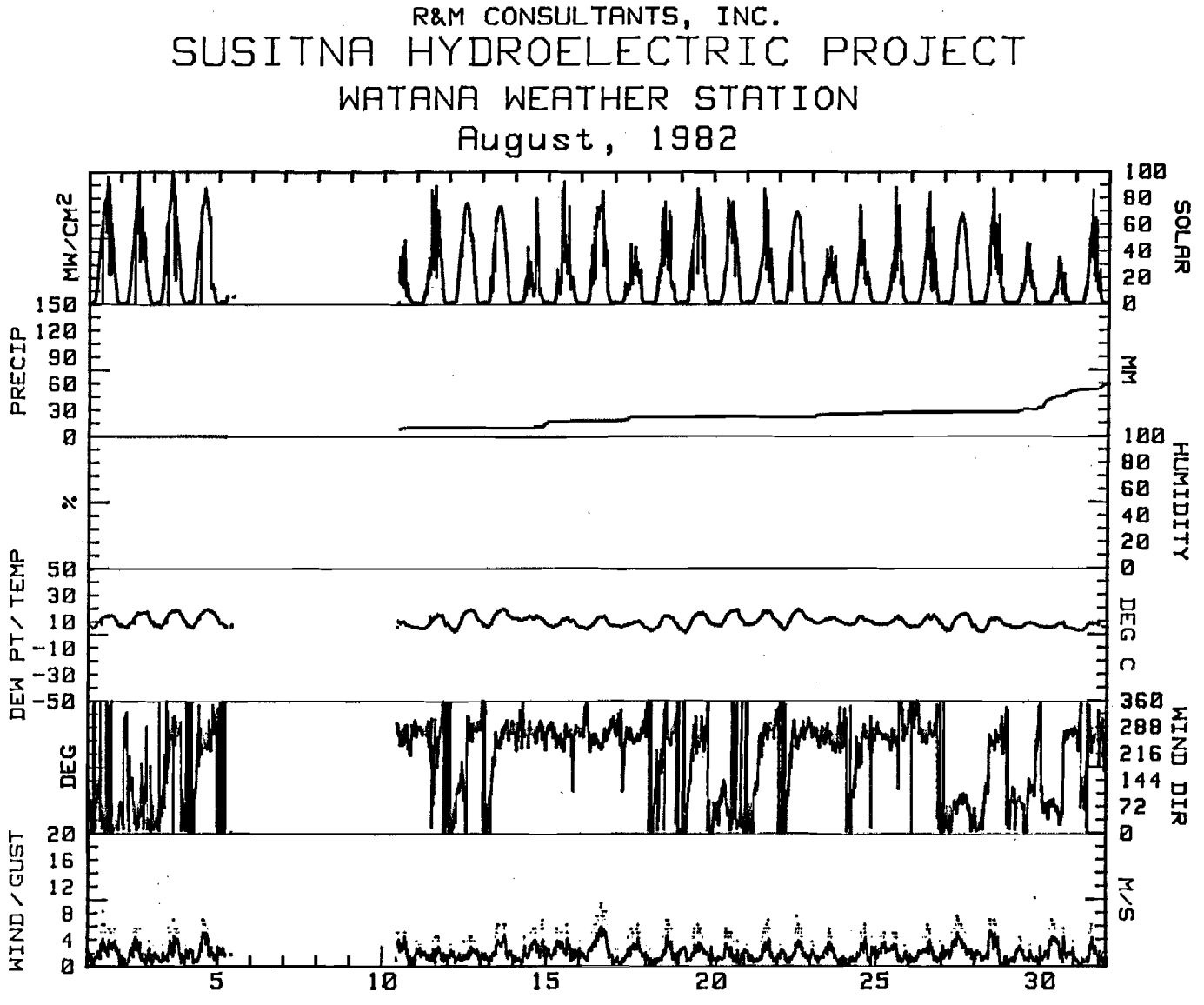

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
WATANA WEATHER STATION
August, 1982
SOLAR
MW/CM2
PRECIP
MM
HUMIDITY
%
DEW PT/ TEMP
DEG C
WIND DIR
DEG
WIND/GUST
M/S
5
10
15
20
25
30

TABLE 2.4.49

MONTHLY SUMMARY FOR WATANA WEATHER STATION
DATA TAKEN DURING September, 1982

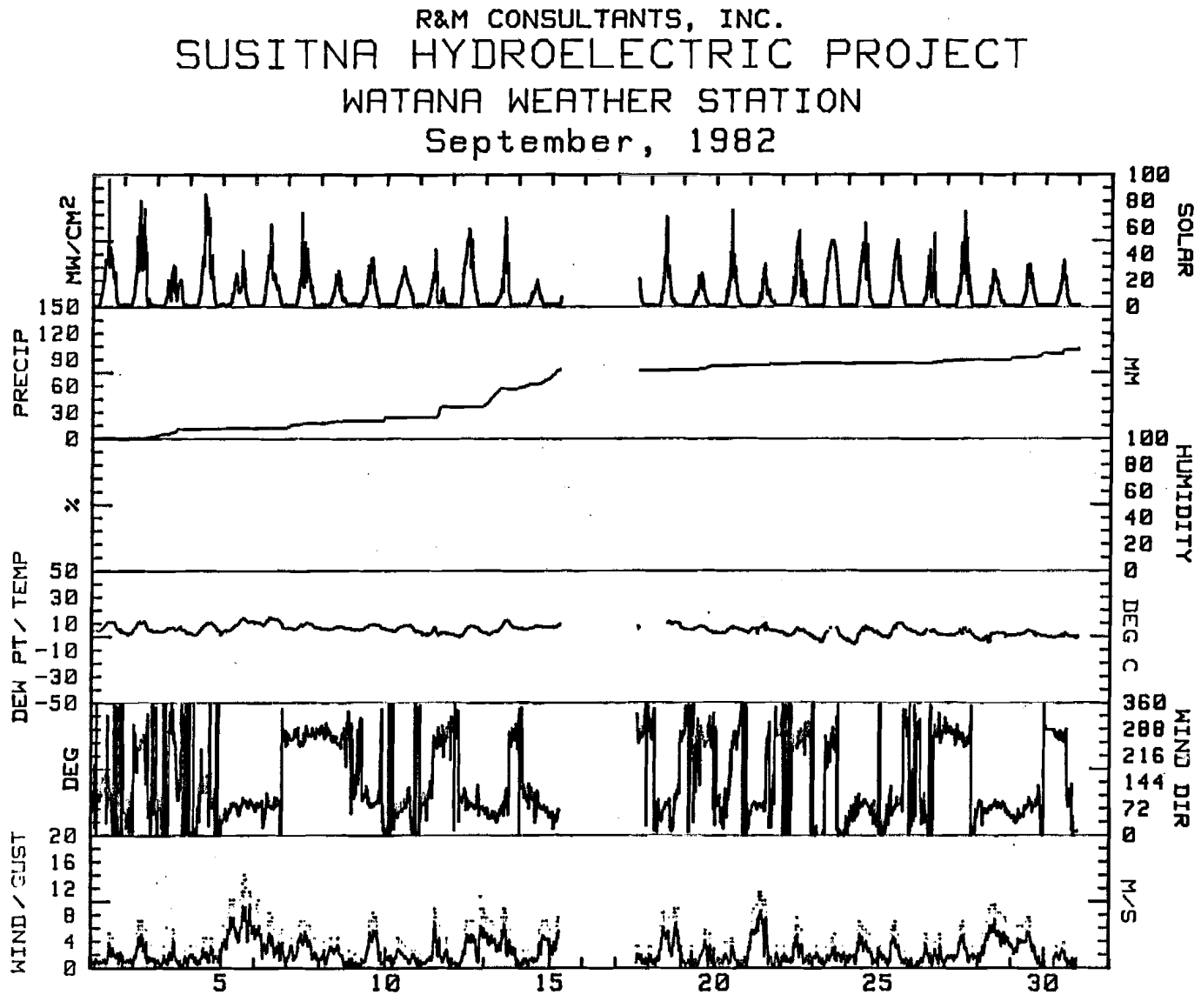
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	11.1	2.6	6.9	058	.7	1.4	145	5.1	N	**	*****	.2	3498	1
2	11.3	1.2	6.3	250	.7	1.9	247	7.0	E	**	*****	2.2	3938	2
3	7.1	2.1	4.6	337	.4	1.1	251	5.7	N	**	*****	8.2	2098	3
4	10.5	.7	5.6	059	.8	1.6	138	4.4	N	**	*****	0.0	4485	4
5	13.6	2.9	8.3	079	5.6	5.8	094	14.0	E	**	*****	.8	2090	5
6	14.5	5.9	10.2	078	2.8	3.5	082	10.2	E	**	*****	1.2	2930	6
7	9.9	5.1	7.5	269	2.8	2.9	254	7.0	W	**	*****	4.4	2865	7
8	7.4	4.9	6.2	266	1.6	1.8	271	4.4	W	**	*****	2.2	1490	8
9	8.8	4.6	6.7	089	1.7	2.1	087	8.3	E	**	*****	4.6	2265	9
10	8.5	3.4	6.0	050	1.2	1.5	067	4.4	N	**	*****	0.0	2220	10
11	6.6	.6	3.6	257	1.1	1.9	255	8.9	W	**	*****	12.0	1695	11
12	7.6	-.6	3.5	081	2.4	2.8	076	10.8	E	**	*****	2.6	3743	12
13	12.1	1.4	6.8	063	2.3	3.7	055	8.9	ENE	**	*****	18.6	2195	13
14	7.8	5.2	6.5	079	1.7	2.0	073	7.0	ENE	**	*****	12.6	1185	14
15	9.1	6.6	7.9	054	3.5	3.6	069	7.6	NE	**	*****	7.6	542	15
16	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	16
17	7.9	6.0	7.0	296	1.1	1.3	330	3.2	WNW	**	*****	0.0	908	17
18	11.4	6.0	8.7	078	2.1	3.2	111	8.9	E	**	*****	0.0	2305	18
19	8.1	2.6	5.4	269	1.1	1.5	251	5.7	W	**	*****	4.8	1410	19
20	7.3	2.4	4.9	353	.1	1.3	238	4.4	W	**	*****	.6	2145	20
21	10.2	2.1	6.2	079	2.4	3.9	088	11.4	E	**	*****	1.6	1413	21
22	6.5	-1.1	2.7	286	1.2	1.9	248	7.6	W	**	*****	1.0	2720	22
23	6.7	-4.1	1.3	325	.8	1.7	226	5.1	N	**	*****	0.0	3958	23
24	7.9	-5.6	1.2	073	2.2	2.3	075	7.0	E	**	*****	0.0	2960	24
25	10.2	-1.0	4.6	058	1.4	1.9	078	7.0	E	**	*****	0.0	2745	25
26	5.2	.9	3.1	326	.6	1.5	045	5.1	WNW	**	*****	2.8	1798	26
27	6.3	-2.0	2.2	285	1.6	2.2	269	7.0	W	**	*****	.6	2755	27
28	3.1	-4.3	-.6	076	4.3	4.4	083	9.5	ENE	**	*****	2.0	1590	28
29	4.7	.1	2.4	070	2.8	3.0	092	7.6	NE	**	*****	5.8	1730	29
30	2.9	-1.1	.9	274	.6	1.0	261	3.8	W	**	*****	4.4	1568	30
MONTH	14.5	-5.6	5.0	062	.9	2.4	094	14.0	E	**	*****	180.8	67240	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 10.8
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 9.5
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 11.4
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 10.2

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 ****

FIG. 2.4.49


R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
WATANA WEATHER STATION
September, 1982
SOLAR
MW/CM2
150
120
90
60
30
0
100
80
60
40
20
0
PRECIP
MM
HUMIDITY
%
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

SECTION 2.4. - PART 6

DEVIL CANYON CLIMATE DATA

TABLE 2.4.50

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING October, 1981

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	5.4	-4.4	.5	117	1.6	1.9	116	5.7	E	52	-9.7	****	2130	1
2	3.2	-7.5	-2.2	116	1.2	1.5	148	3.8	E	47	-13.0	****	2942	2
3	*****	*****	*****	***	****	****	***	****	***	**	*****	****	******	3
4	3.2	.7	2.0	123	1.1	1.4	088	7.0	ESE	56	-5.7	****	720	4
5	5.2	-1.6	1.8	132	.6	1.0	023	4.4	S	60	-5.4	****	1523	5
6	3.3	-2.0	.7	126	1.0	1.3	094	7.0	ESE	64	-5.1	****	1095	6
7	2.6	-6.3	-1.9	137	1.0	1.3	148	5.1	SSE	54	-9.8	****	1833	7
8	1.9	-3.6	-.9	127	1.3	1.5	104	6.3	ESE	58	-7.7	****	1208	8
9	3.8	-3.9	-.1	234	.7	1.1	276	4.4	S	67	-5.5	****	1553	9
10	3.0	-3.2	-.1	110	1.1	1.2	100	5.1	ESE	66	-5.4	****	1463	10
11	.8	-2.8	-1.0	105	.6	.7	104	3.8	ESE	82	-2.6	****	333	11
12	4.3	.1	2.2	142	.7	.9	091	3.2	S	85	.5	****	788	12
13	4.9	1.4	3.2	099	.5	.8	088	3.2	SE	83	1.0	****	1128	13
14	4.6	.5	2.6	116	.7	.9	099	3.2	SE	86	.7	****	975	14
15	5.1	-.5	2.3	109	.8	.9	123	3.8	ESE	74	-1.3	****	1220	15
16	4.7	.1	2.4	119	.9	1.2	119	5.1	ESE	82	-1.0	****	1063	16
17	4.3	-1.7	1.3	169	.7	1.0	120	6.3	SSW	70	-3.8	****	1145	17
18	3.4	-5.6	-1.1	104	.8	1.1	085	3.8	ENE	64	-6.4	****	1113	18
19	-.7	-8.8	-4.8	102	1.5	1.6	113	4.4	ESE	65	-10.2	****	1118	19
20	1.9	-2.2	-.2	110	1.4	1.6	086	6.3	ESE	63	-6.3	****	865	20
21	2.3	.1	1.2	159	.4	.5	193	1.9	S	86	-.2	****	340	21
22	4.0	1.0	2.5	096	.4	.8	080	3.2	NE	89	.7	****	665	22
23	3.8	.9	2.4	134	.3	.6	085	3.2	SW	90	.8	****	595	23
24	4.3	-.5	1.9	301	.8	1.1	295	6.3	WNW	79	-.3	****	850	24
25	2.7	-2.4	.2	157	.5	.5	048	1.9	S	83	-3.4	****	700	25
26	2.1	-5.4	-1.7	149	.9	.8	113	4.4	SSE	64	-8.3	****	598	26
27	-.1	-7.0	-3.6	136	1.0	1.2	106	5.1	ESE	70	-8.1	****	738	27
28	.9	-6.1	-2.6	134	1.7	2.0	118	7.6	ESE	56	-9.4	****	765	28
29	-.8	-6.1	-3.5	139	1.5	1.6	111	5.7	SE	57	-10.3	****	720	29
30	-1.2	-9.9	-5.6	130	1.4	1.6	122	4.4	ESE	68	-10.3	****	570	30
31	-5.7	-12.4	-9.1	121	1.3	1.5	119	3.8	ESE	77	-13.0	****	563	31
MONTH	5.4	-12.4	-.4	126	.8	1.2	118	7.6	ESE	66	-5.3	****	31312	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.7
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 5.7
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 4.4
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 5.1

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 ****

FIG. 2.4.50

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DEVIL CANYON WEATHER STATION

October, 1981

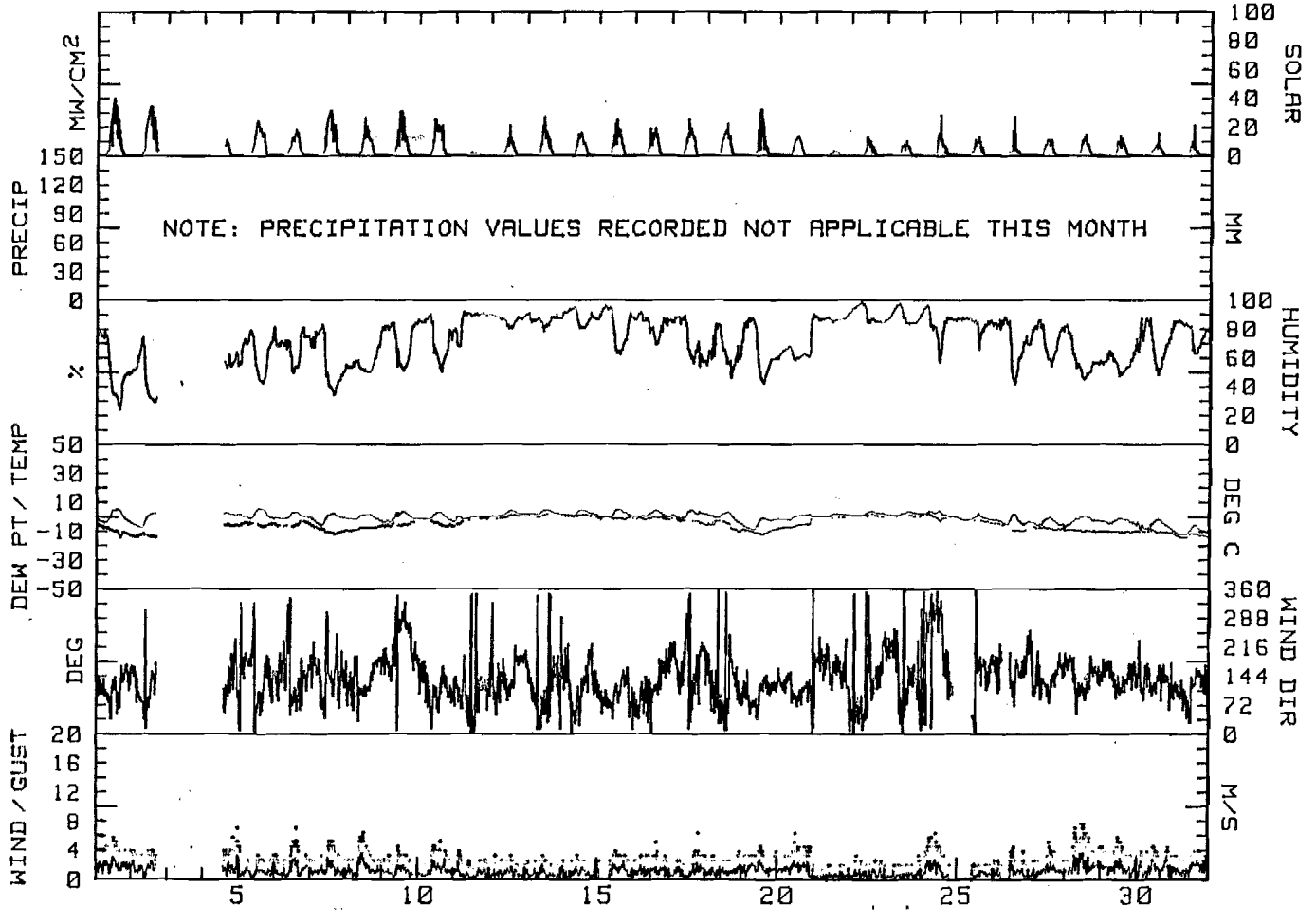


TABLE 2.4.51

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING November, 1981

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	-5.0	-11.9	-8.5	106	1.4	1.6	106	4.4	E	65	-14.0	****	550	1
2	.7	-11.1	-5.2	273	.3	1.5	314	7.6	WNW	75	-10.3	****	728	2
3	-9.5	-15.7	-12.6	139	.7	.9	144	3.2	SE	79	-15.0	****	403	3
4	-7.6	-11.4	-9.5	245	.2	.8	301	4.4	ESE	86	-10.5	****	345	4
5	-10.5	-15.8	-13.2	112	.4	.8	117	2.5	ENE	83	-15.3	****	350	5
6	-11.3	-18.3	-14.8	087	.8	.9	087	3.8	ENE	79	-19.0	****	330	6
7	-3.3	-11.1	-7.2	166	.9	1.2	127	2.5	SSW	80	-8.7	****	310	7
8	-1.2	-9.5	-5.4	174	1.1	1.3	187	3.8	S	77	-9.1	****	323	8
9	2.4	-10.9	-4.3	130	1.5	2.0	074	11.4	S	72	-6.9	****	320	9
10	4.9	-.5	2.2	114	2.6	2.9	107	12.1	ESE	62	-3.7	****	570	10
11	6.0	-.9	2.6	125	1.5	1.7	106	7.6	ESE	56	-4.9	****	555	11
12	2.8	-5.8	-1.5	147	1.3	1.4	138	4.4	SE	60	-7.5	****	415	12
13	-2.7	-11.4	-7.1	107	1.8	1.9	136	5.1	ESE	69	-11.9	****	353	13
14	-8.2	-13.1	-10.7	083	2.2	2.4	071	4.4	ENE	69	-16.0	****	355	14
15	-5.3	-13.9	-9.6	108	1.5	1.7	091	3.8	E	70	-15.3	****	440	15
16	-8.9	-13.3	-11.1	123	1.8	1.9	135	4.4	SE	64	-16.7	****	350	16
17	-8.0	-14.1	-11.1	137	1.5	1.7	117	5.1	SE	55	-18.1	****	350	17
18	-9.8	-13.7	-11.8	136	2.3	2.4	103	7.0	SE	51	-19.4	****	380	18
19	-7.5	-15.4	-11.5	114	2.0	2.2	070	8.3	ESE	52	-18.5	****	353	19
20	-15.4	-19.0	-17.2	116	3.1	3.2	120	7.0	ESE	66	-21.8	****	345	20
21	-6.4	-20.0	-13.2	117	1.9	2.1	135	6.3	ESE	57	-19.8	****	338	21
22	-8.9	-11.6	-10.3	099	2.2	2.2	078	5.7	E	54	-17.9	****	403	22
23	-8.1	-13.5	-10.8	124	1.2	1.4	142	4.4	SE	69	-14.4	****	373	23
24	-6.8	-9.0	-7.9	095	1.6	1.7	098	5.7	E	86	-9.8	****	315	24
25	-4.6	-11.8	-8.2	080	.9	1.2	069	3.8	ENE	85	-10.8	****	425	25
26	-3.8	-10.9	-7.4	097	.9	1.0	096	4.4	E	87	-8.7	****	240	26
27	-3.4	-5.2	-4.3	263	.4	.7	267	2.5	WSW	88	-6.1	****	270	27
28	-4.5	-7.3	-5.9	107	.6	.7	121	3.2	ESE	85	-8.7	****	268	28
29	-7.3	-11.5	-9.4	137	1.6	1.7	119	4.4	SSE	81	-11.5	****	283	29
30	-2.3	-8.1	-5.2	143	1.7	1.9	110	8.3	SSE	59	-11.8	****	278	30
MONTH	6.0	-20.0	-8.3	119	1.3	1.6	107	12.1	ESE	68	-12.7	****	11313	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 9.5
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.2
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.8
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 9.5

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 ****

FIG. 2.4.51

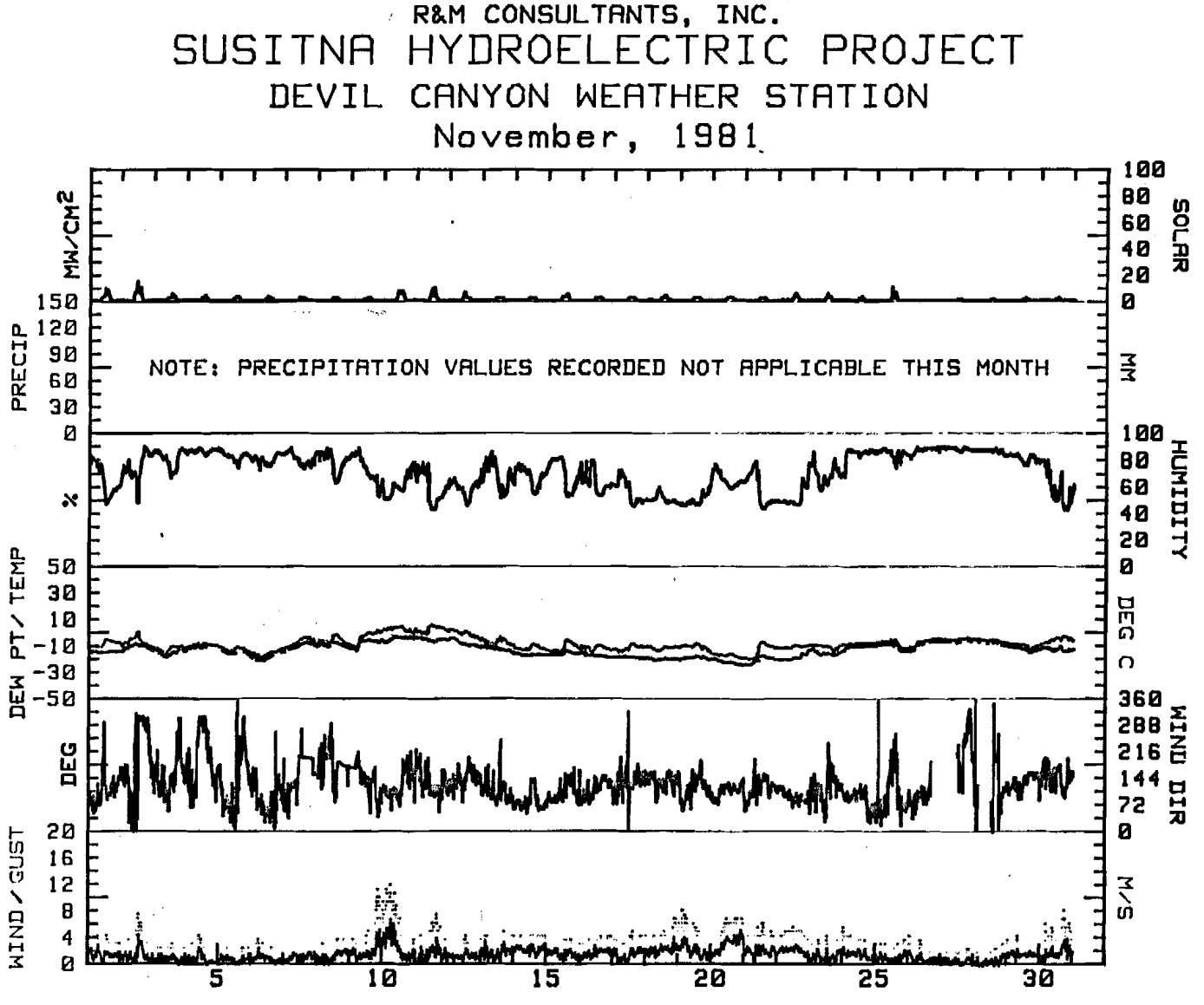

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
DEVIL CANYON WEATHER STATION
November, 1981
MW/CM2
SOLAR
NOTE: PRECIPITATION VALUES RECORDED NOT APPLICABLE THIS MONTH
PRECIP
MM
%
HUMIDITY
DEW PT/ TEMP
DEG C
DEG
WIND DIR
WIND/GUST
M/S
5
10
15
20
25
30

TABLE 2.4.52

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING December, 1981

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	-2.2	-6.4	-4.3	122	1.2	1.5	120	6.3	ESE	73	-8.6	****	300	1
2	-6.6	-14.0	-10.3	270	.1	1.1	319	4.4	NW	84	-12.2	****	285	2
3	-8.4	-10.8	-9.6	224	.3	.5	294	3.8	SSW	88	-11.3	****	258	3
4	-7.0	-14.3	-10.7	142	.5	1.0	209	3.2	SSW	83	-13.7	****	275	4
5	-14.2	-18.5	-16.4	213	.3	.5	119	2.5	SSW	83	-17.4	****	275	5
6	-8.8	-16.9	-12.9	092	.7	1.1	064	3.8	ENE	82	-15.1	****	275	6
7	-16.8	-21.1	-19.0	064	2.1	2.1	065	3.8	ENE	79	-22.1	****	263	7
8	-16.1	-19.7	-17.9	080	1.8	1.9	121	5.1	ENE	73	-21.6	****	263	8
9	-14.7	-19.0	-16.9	056	1.8	1.8	061	4.4	NE	77	-19.5	****	268	9
10	-11.4	-18.3	-14.9	083	2.0	2.2	068	4.4	ENE	76	-18.9	****	278	10
11	-7.6	-14.2	-10.9	115	1.2	1.3	123	4.4	ESE	79	-15.2	****	253	11
12	-2.8	-7.5	-5.2	170	.9	1.2	096	3.2	SSW	78	-8.2	****	248	12
13	-1.7	-13.0	-7.4	107	1.6	1.9	113	4.4	ESE	68	-10.9	****	258	13
14	-9.0	-15.3	-12.2	091	2.5	2.7	069	5.7	ENE	77	-15.3	****	265	14
15	-3.4	-10.3	-6.9	113	1.1	1.5	142	6.3	SE	72	-11.7	****	310	15
16	1.2	-6.9	-2.9	110	2.8	2.9	104	10.2	ESE	59	-8.8	****	290	16
17	3.0	-1.0	1.0	129	1.6	1.9	098	7.6	SE	64	-5.3	****	320	17
18	3.9	-1.9	1.0	122	1.5	1.7	097	10.2	SE	72	-3.2	****	270	18
19	-1.6	-12.1	-6.9	102	.9	1.0	105	4.4	ESE	87	-8.3	****	278	19
20	-4.1	-11.8	-8.0	172	.3	.7	085	2.5	SE	86	-10.2	****	275	20
21	-7.5	-9.5	-8.5	137	.3	.5	139	2.5	SE	88	-10.6	****	268	21
22	-7.0	-17.6	-12.3	106	1.3	1.5	112	4.4	E	79	-15.6	****	263	22
23	-2.5	-7.6	-5.1	116	1.6	1.8	087	6.3	ESE	66	-10.3	****	288	23
24	-5.1	-9.7	-7.4	079	.4	.7	089	3.2	E	85	-9.6	****	298	24
25	-8.2	-9.7	-9.0	072	.5	.6	079	3.2	NE	87	-10.8	****	268	25
26	-8.7	-20.2	-14.5	131	1.1	1.4	125	5.1	E	70	-19.3	****	275	26
27	-16.0	-24.4	-20.2	097	1.5	1.7	101	5.7	E	56	-27.5	****	328	27
28	-19.4	-24.6	-22.0	111	2.5	2.7	141	7.0	ESE	51	-29.3	****	360	28
29	-21.8	-28.9	-25.4	101	3.0	3.4	136	7.6	ENE	53	-32.7	****	308	29
30	-19.8	-28.3	-24.1	086	2.5	2.7	073	5.7	ENE	55	-31.2	****	343	30
31	-17.5	-24.8	-21.2	107	2.1	2.3	124	7.0	ESE	58	-26.9	****	355	31
MONTH	3.9	-28.9	-11.6	103	1.2	1.6	104	10.2	ESE	74	-15.5	****	8853	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	8.9
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	9.5
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	8.9
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 ****

FIG. 2.4.52

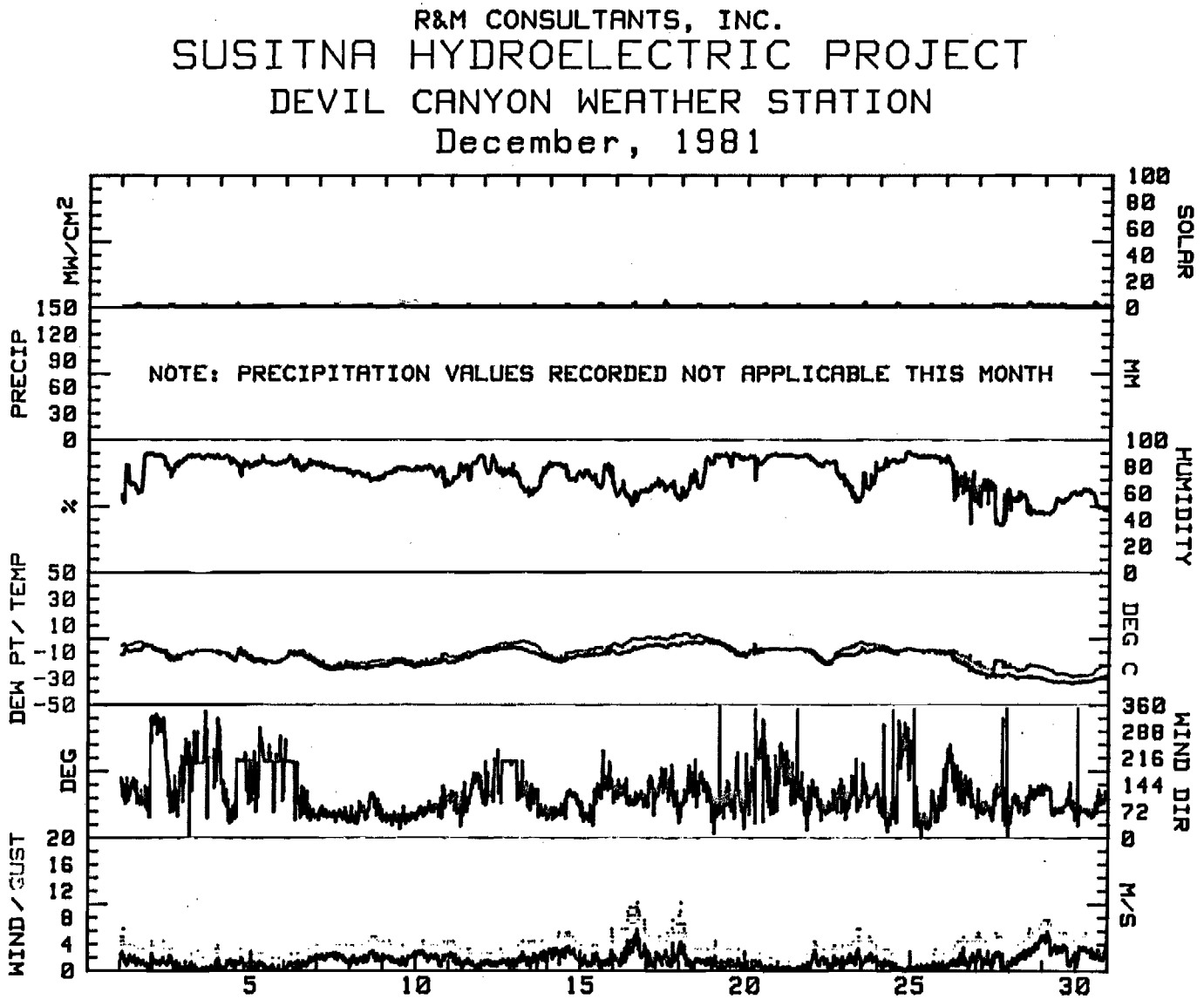

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
DEVIL CANYON WEATHER STATION
December, 1981
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
150
120
90
60
30
0
NOTE: PRECIPITATION VALUES RECORDED NOT APPLICABLE THIS MONTH
MM
HUMIDITY
%
DEW PT/TEMP
50
30
10
-10
-30
-50
DEG C
WIND DIR
DEG
360
288
216
144
72
0
WIND/GUST
20
16
12
8
4
0
M/S
5
10
15
20
25
30

TABLE 2.4.53

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING January, 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	-18.1	-25.2	-21.7	088	1.9	2.1	121	5.1	ENE	69	-26.0	****	320	1
2	-21.2	-24.2	-22.7	052	2.0	2.0	060	5.1	NE	68	-27.3	****	310	2
3	-19.1	-24.0	-21.6	094	2.5	3.0	112	6.3	ESE	67	-26.2	****	303	3
4	-15.1	-19.0	-17.1	117	2.9	2.9	132	6.3	ESE	65	-21.5	****	315	4
5	-16.6	-27.0	-21.8	120	1.7	1.9	108	5.7	ESE	61	-28.7	****	348	5
6	-22.7	-25.6	-24.2	114	1.8	2.0	086	5.7	ESE	44	-33.2	****	425	6
7	-19.2	-28.7	-24.0	108	.9	1.1	105	4.4	E	52	-34.2	****	335	7
8	-15.0	-27.6	-21.3	130	2.2	2.4	103	8.3	SE	26	-33.3	****	583	8
9	-13.0	-16.8	-14.9	102	3.4	3.5	105	11.4	ESE	35	-27.4	****	520	9
10	-11.3	-13.9	-12.6	102	3.5	3.5	101	7.6	ESE	49	-21.1	****	385	10
11	-8.5	-13.9	-11.2	113	3.3	3.3	121	7.6	ESE	59	-17.4	****	353	11
12	-7.5	-13.4	-10.5	105	2.4	2.5	120	5.7	ESE	76	-12.9	****	358	12
13	-10.8	-18.5	-14.7	092	2.0	2.2	103	6.3	ENE	70	-19.4	****	353	13
14	-11.0	-13.8	-12.4	121	2.6	2.7	103	9.5	ESE	24	-28.8	****	650	14
15	-12.6	-17.7	-15.2	111	3.0	3.1	111	8.9	ESE	24	-30.6	****	683	15
16	-17.7	-24.4	-21.1	086	2.7	3.0	100	7.0	ENE	40	-31.5	****	445	16
17	-13.6	-24.7	-19.2	102	1.4	1.5	084	5.1	E	62	-26.1	****	348	17
18	-16.0	-22.7	-19.4	085	1.8	1.9	122	5.1	ENE	57	-25.5	****	388	18
19	-18.2	-24.8	-21.5	105	1.3	1.5	145	4.4	ESE	71	-25.9	****	335	19
20	-11.5	-20.2	-15.9	100	1.9	2.0	120	5.1	ESE	46	-24.7	****	553	20
21	-10.5	-17.6	-14.1	082	3.5	3.6	088	12.1	E	29	-28.2	****	593	21
22	-11.8	-19.7	-15.8	109	2.8	3.2	068	11.4	ESE	27	-30.7	****	598	22
23	-11.7	-16.9	-14.3	094	2.9	3.4	077	10.8	E	27	-29.0	****	608	23
24	-15.4	-19.7	-17.6	132	1.8	2.0	129	5.1	ESE	30	-30.7	****	595	24
25	-19.6	-25.8	-22.7	098	2.3	2.5	121	7.6	ENE	42	-31.7	****	488	25
26	-20.9	-27.5	-24.2	072	2.2	2.3	056	5.7	ENE	54	-31.7	****	355	26
27	-13.0	-22.7	-17.9	104	1.8	1.9	107	5.1	ESE	53	-24.6	****	505	27
28	-7.5	-13.0	-10.3	111	2.0	2.1	109	6.3	ESE	64	-14.8	****	418	28
29	-7.6	-10.3	-9.0	110	2.9	3.0	120	7.0	ESE	60	-15.1	****	543	29
30	-7.1	-11.7	-9.4	118	3.0	3.1	128	7.0	ESE	62	-15.3	****	523	30
31	-6.1	-12.3	-9.2	112	1.8	2.0	114	5.7	ESE	62	-14.9	****	395	31
MONTH	-6.1	-28.7	-17.0	103	2.2	2.5	088	12.1	ESE	51	-25.4	****	13923	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 8.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 10.8
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 10.8
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 10.2

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 ****

FIG. 2.4.53

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DEVIL CANYON WEATHER STATION

January, 1982

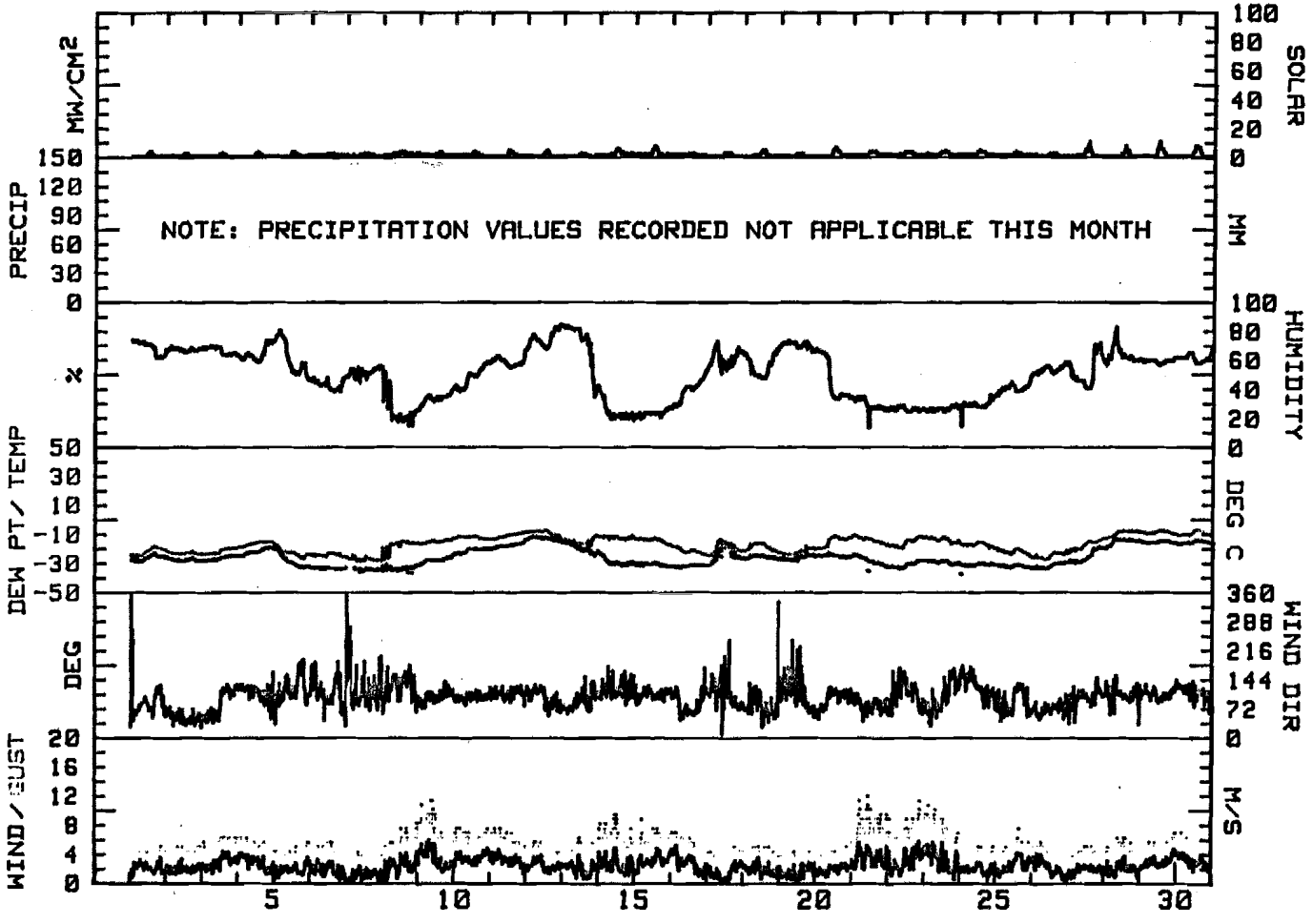


TABLE 2.4.54

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING February, 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	-2.9	-8.6	-5.8	105	1.5	1.6	124	5.1	ESE	70	-9.5	****	390	1
2	3.5	-3.4	.1	108	1.7	1.8	077	5.7	ESE	69	-4.2	****	535	2
3	5.4	-.4	2.5	100	1.2	1.4	111	4.4	E	75	-2.1	****	508	3
4	3.4	-.9	1.3	102	1.0	1.0	129	4.4	SE	85	-.6	****	525	4
5	4.3	-3.4	.5	123	2.4	1.2	124	5.7	ESE	78	-2.5	****	640	5
6	-2.1	-7.3	-4.7	063	.2	.2	081	3.2	NE	84	-5.7	****	428	6
7	.1	-6.2	-3.1	087	.7	.8	080	3.8	E	81	-5.3	****	555	7
8	-2.9	-7.1	-5.0	078	1.2	1.4	092	5.1	ENE	85	-7.0	****	425	8
9	.5	-8.9	-4.2	002	1.1	2.5	356	9.5	ESE	45	-13.2	****	590	9
10	-6.6	-16.8	-11.7	059	1.7	2.9	025	13.3	ESE	46	-19.9	****	530	10
11	-10.3	-20.7	-15.5	129	1.7	1.8	114	8.3	ESE	44	-25.5	****	638	11
12	-7.4	-15.8	-11.6	131	2.3	2.5	114	7.0	ESE	23	-28.9	****	895	12
13	-7.7	-19.4	-13.6	087	1.8	2.1	067	5.1	ENE	39	-25.3	****	1065	13
14	-12.2	-24.1	-18.2	027	2.5	3.5	010	13.3	NNE	41	-29.9	****	745	14
15	-20.4	-25.4	-22.9	081	1.4	2.6	009	10.8	SE	37	-33.9	****	998	15
16	-16.4	-24.6	-20.5	109	1.4	1.6	093	5.7	ESE	43	-29.4	****	895	16
17	-14.8	-23.2	-19.0	111	.8	1.1	112	3.8	ESE	58	-26.5	****	855	17
18	-14.8	-23.1	-19.0	167	.6	1.0	137	3.2	S	55	-26.7	****	933	18
19	-14.3	-25.1	-19.7	113	1.4	1.6	088	6.3	ESE	38	-30.9	****	1288	19
20	-14.8	-26.6	-20.7	103	2.0	2.2	123	8.3	E	33	-33.6	****	1103	20
21	-16.6	-30.0	-23.3	110	1.6	1.9	106	7.6	ESE	31	-35.7	****	1175	21
22	-16.2	-24.7	-20.5	114	2.2	2.4	071	5.7	ESE	26	-35.7	****	1295	22
23	-11.6	-28.4	-20.0	096	1.9	2.3	118	6.3	ENE	30	-34.8	****	1318	23
24	-10.5	-26.1	-18.3	117	1.1	1.5	075	4.4	SE	27	-34.0	****	1395	24
25	-8.6	-24.0	-16.3	116	1.8	1.9	112	7.0	ESE	23	-32.3	****	1500	25
26	-6.7	-21.6	-14.2	120	2.0	2.2	115	8.3	ESE	18	-31.0	****	1580	26
27	-5.0	-10.6	-7.8	128	2.1	2.3	106	5.7	SE	19	-27.8	****	1600	27
28	-4.5	-12.0	-8.3	125	2.8	3.0	112	9.5	ESE	17	-29.1	****	1725	28
MONTH	5.4	-30.0	-12.1	104	1.4	1.9	025	13.3	ESE	43	-22.2	****	26125	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	5.1
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	5.1
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	10.2
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS	8.9

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 ****

FIG. 2.4.54

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DEVIL CANYON WEATHER STATION

February, 1982

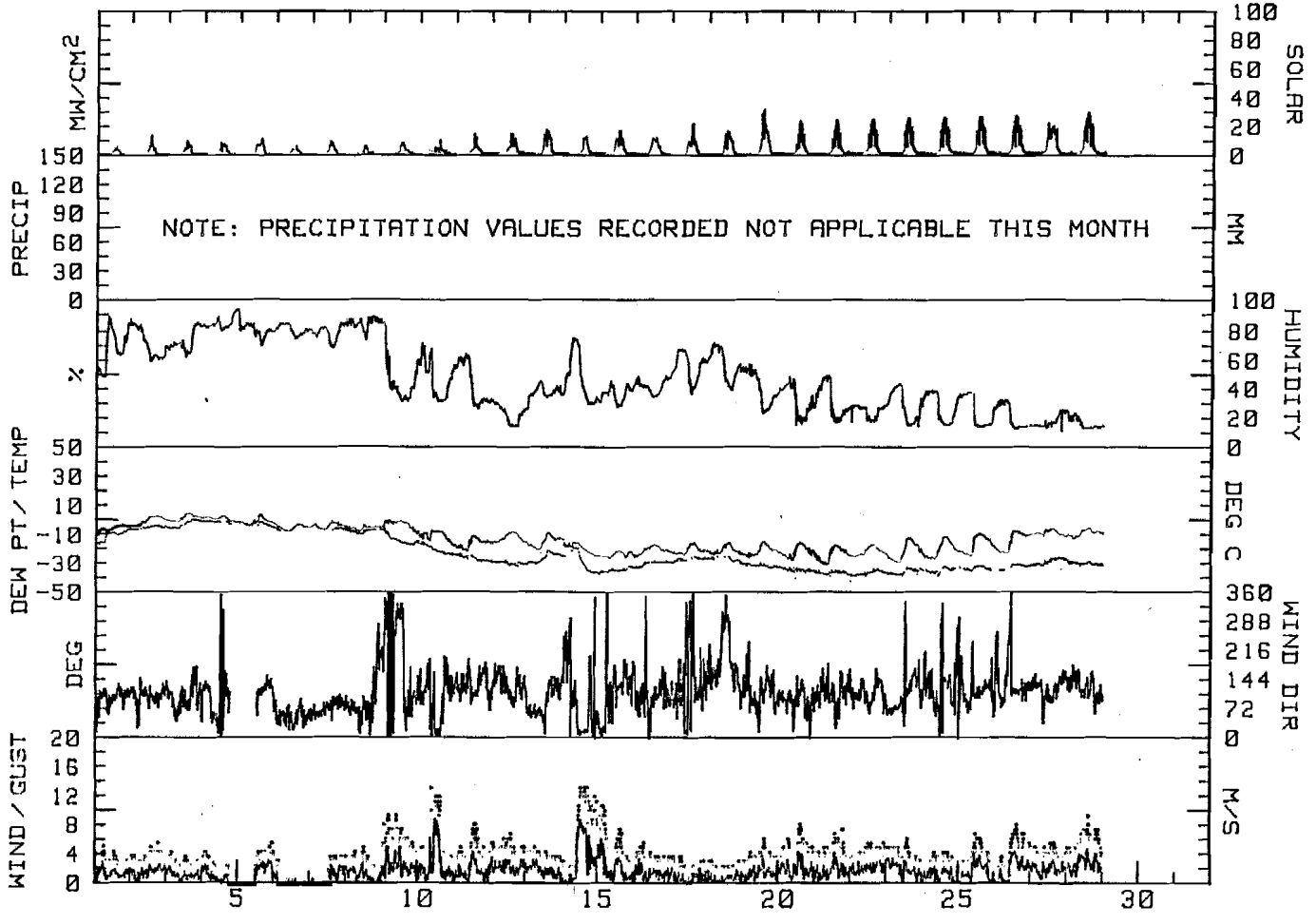


TABLE 2.4.55

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING March, 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	-3.2	-10.1	-6.7	141	2.8	2.9	138	7.6	SE	15	-29.4	****	1830	1
2	-5.0	-13.3	-9.2	117	2.4	2.6	077	7.6	ESE	15	-30.2	****	2142	2
3	-6.7	-18.0	-12.4	106	1.5	1.9	086	5.1	E	20	-30.9	****	******	3
4	-8.8	-22.3	-15.6	080	2.1	2.4	059	5.1	ESE	32	-27.8	****	******	4
5	-4.4	-10.5	-7.5	112	2.1	2.2	131	5.1	ESE	31	-21.9	****	******	5
6	-2.5	-7.5	-5.0	093	1.6	1.7	069	5.1	ESE	44	-16.4	****	******	6
7	.5	-6.4	-3.0	097	1.0	1.2	130	3.8	ESE	61	-10.8	****	******	7
8	-1.7	-7.5	-4.6	056	.4	.9	128	2.5	E	67	-10.4	****	******	8
9	-4.6	-9.7	-7.2	095	1.1	1.3	082	3.8	E	70	-10.8	****	******	9
10	-3.3	-14.3	-8.8	063	.1	.8	102	3.2	E	67	-12.9	****	******	10
11	-3.5	-16.8	-10.2	126	1.2	1.4	124	5.7	ESE	55	-17.2	****	******	11
12	-3.9	-17.1	-10.5	081	1.6	2.1	014	8.9	E	43	-22.0	****	******	12
13	-6.9	-21.3	-14.1	121	1.5	1.7	081	5.1	SE	36	-26.5	****	******	13
14	-7.9	-21.2	-14.6	095	1.8	1.9	095	7.0	E	45	-22.6	****	******	14
15	-3.4	-9.9	-6.7	096	1.4	1.6	117	4.4	ESE	57	-13.9	****	******	15
16	-3.3	-8.3	-5.8	086	1.2	1.3	067	4.4	ENE	55	-12.9	****	******	16
17	.2	-4.8	-2.3	096	.9	.9	085	3.8	E	48	-11.9	****	******	17
18	1.6	-3.2	-.8	124	.5	.8	192	3.2	E	42	-12.1	****	******	18
19	2.1	-3.7	-.8	308	.1	.8	190	3.2	WNW	50	-11.1	****	******	19
20	2.4	-2.4	0.0	302	.6	.9	337	5.7	WNW	46	-9.4	****	******	20
21	1.8	-1.9	-.1	297	1.4	1.0	275	7.0	WNW	47	-9.8	****	******	21
22	4.3	-3.0	.7	352	.3	1.1	283	5.7	WNW	43	-11.2	****	******	22
23	1.4	-5.7	-2.2	064	.2	.7	038	3.8	S	30	-17.4	****	******	23
24	2.4	-9.5	-3.6	055	.8	1.9	014	12.7	S	22	-23.4	****	******	24
25	-2.8	-14.1	-8.5	063	1.8	2.5	026	12.1	E	21	-26.3	****	******	25
26	-4.2	-16.5	-10.4	125	1.7	1.8	103	5.7	SE	19	-29.7	****	******	26
27	-4.2	-17.0	-10.6	088	1.4	1.6	050	5.7	ENE	19	-28.5	****	******	27
28	-1.5	-13.4	-7.5	110	1.3	1.6	060	4.4	ESE	18	-28.3	****	******	28
29	-1.7	-18.2	-10.0	095	1.5	1.8	128	7.0	ENE	21	-28.0	****	******	29
30	-4.3	-17.3	-10.8	106	1.7	2.0	130	5.7	E	18	-29.9	****	******	30
31	-6.9	-20.2	-13.6	103	1.6	1.9	112	7.0	ESE	19	-31.9	****	******	31
MONTH	4.3	-22.3	-7.1	100	1.1	1.6	014	12.7	ESE	35	-20.2	****	3972	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 8.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 11.4
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 12.1
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 10.8

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 ****

FIG. 2.4.55

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DEVIL CANYON WEATHER STATION

March, 1982

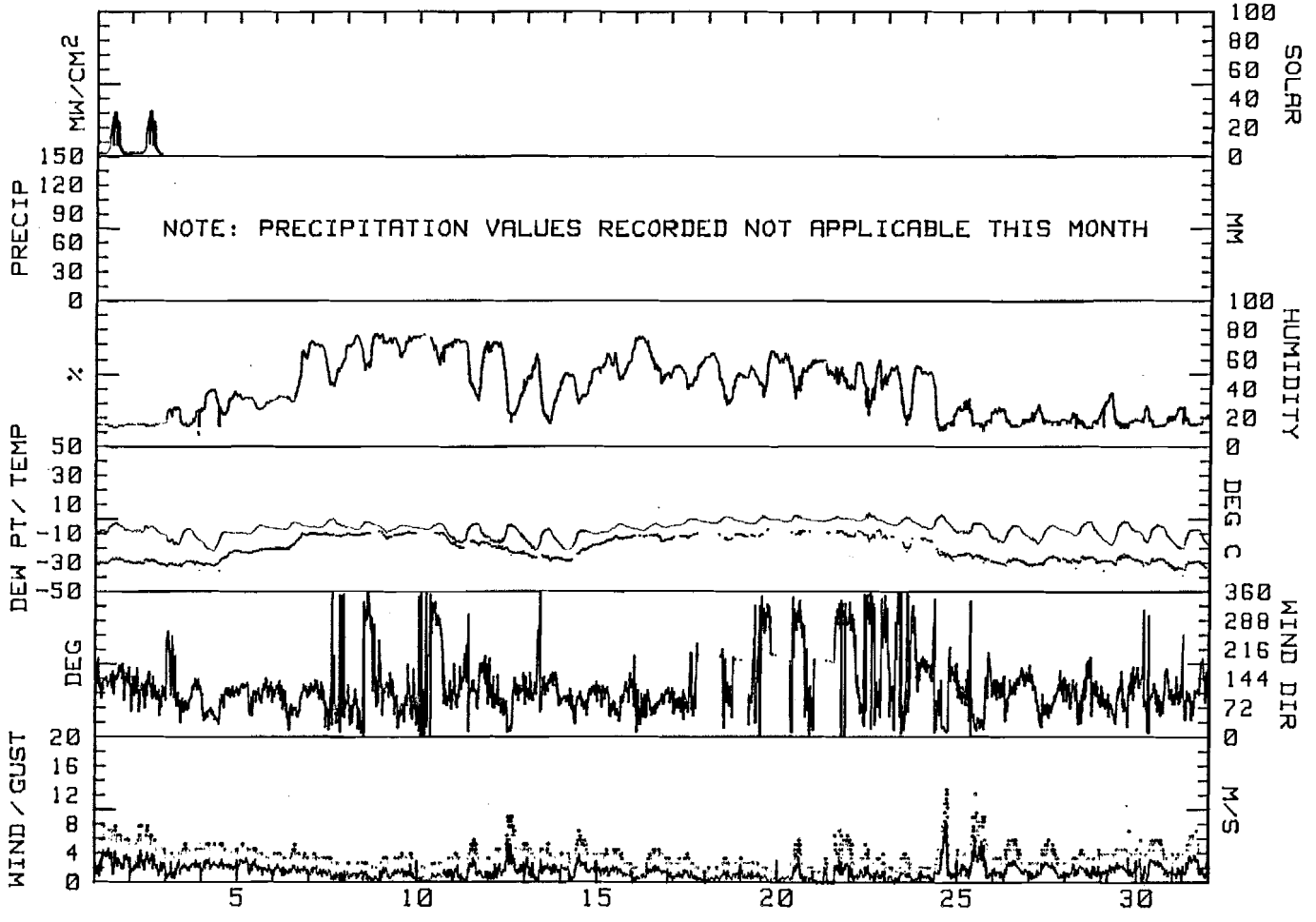


TABLE 2.4.56

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING April, 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	-8.2	-20.8	-14.5	101	2.3	2.6	099	8.3	E	19	-31.7	0.0	******	1
2	-7.6	-21.9	-14.8	113	1.8	2.1	100	7.0	ESE	19	-32.0	0.0	******	2
3	-2.4	-18.7	-10.6	112	1.6	1.8	113	7.0	ESE	17	-29.4	0.0	******	3
4	-.1	-12.9	-6.5	092	1.8	2.0	069	5.7	ENE	16	-28.0	0.0	******	4
5	3.2	-13.0	-4.9	089	1.0	1.5	062	4.4	SE	16	-26.5	0.0	******	5
6	5.0	-4.3	.4	105	1.6	1.7	062	5.1	ESE	21	-21.7	1.4	******	6
7	4.5	-4.2	.2	050	.3	1.4	299	6.3	ESE	33	-15.7	6.0	******	7
8	.4	-5.1	-2.4	062	.5	1.3	138	3.8	ENE	35	-16.9	.2	******	8
9	2.4	-8.8	-3.2	044	.3	1.2	253	5.7	NNW	22	-22.8	1.6	******	9
10	.5	-11.9	-5.7	099	1.5	1.8	043	5.1	E	18	-26.4	0.0	******	10
11	.5	-10.5	-5.0	047	1.7	2.5	027	9.5	NNE	17	-26.1	0.0	******	11
12	1.0	-13.8	-6.4	042	2.5	2.9	024	11.4	NNE	16	-27.3	0.0	******	12
13	-1.8	-10.7	-6.3	050	1.9	2.7	014	8.9	NNE	15	-27.7	0.0	******	13
14	.8	-13.2	-6.2	098	1.6	2.2	112	8.9	ESE	17	-27.0	0.0	******	14
15	3.5	-6.2	-1.4	077	.8	1.6	020	7.6	NNE	22	-20.8	.2	******	15
16	6.0	-7.5	-.8	117	1.3	1.6	079	5.7	SE	16	-22.5	0.0	4505	16
17	1.9	-6.9	-2.5	196	.2	1.2	327	3.8	SSE	22	-21.7	0.0	3825	17
18	-.2	-8.6	-4.4	290	.9	1.7	322	7.6	NW	35	-18.3	1.6	3585	18
19	1.5	-13.7	-6.1	091	1.6	1.9	046	8.3	ENE	27	-22.8	0.0	4418	19
20	6.5	-3.2	1.7	116	1.1	1.6	053	5.7	ESE	24	-18.2	7.0	4053	20
21	6.3	-3.4	1.5	301	.5	1.5	259	7.0	WNW	18	-20.2	0.0	4748	21
22	5.1	-2.7	1.2	274	.9	1.4	345	5.7	W	16	-21.9	0.0	5543	22
23	4.3	-4.1	.1	264	.3	1.3	198	5.7	WSW	22	-20.2	0.0	4678	23
24	4.3	-2.2	1.1	064	.7	1.2	069	5.1	NE	25	-17.7	1.6	3388	24
25	8.8	-.1	4.4	171	.4	1.6	120	6.3	S	22	-17.5	0.0	5298	25
26	5.0	-3.1	1.0	085	1.6	2.0	036	7.0	ENE	20	-20.0	0.0	6023	26
27	8.9	-.5	4.2	082	.6	1.5	094	7.0	S	17	-18.5	0.0	4160	27
28	6.9	0.0	3.5	129	.7	1.5	104	5.1	ESE	32	-13.8	1.4	3678	28
29	6.8	-3.2	1.8	185	.1	1.4	337	5.7	S	16	-20.9	0.0	6713	29
30	6.8	-4.6	1.1	082	1.0	1.6	007	5.1	NE	18	-21.8	0.0	5818	30
MONTH	8.9	-21.9	-2.7	087	.8	1.7	024	11.4	ESE	21	-22.5	21.0	70428	

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 10.8
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 9.5

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 ****

FIG. 2.4.56

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DEVIL CANYON WEATHER STATION

April, 1982

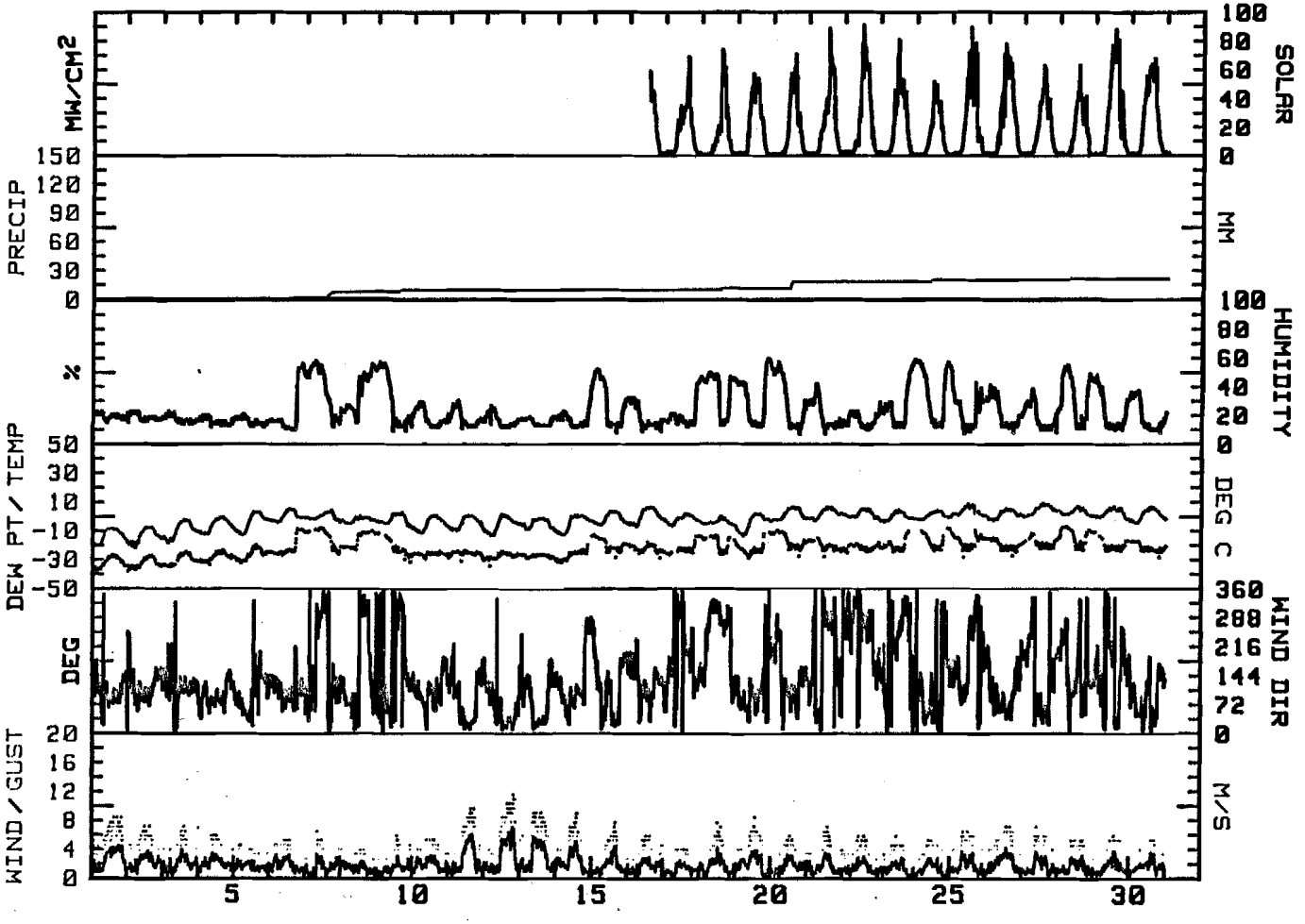


TABLE 2.4.57

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING May, 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	6.9	-4.3	1.3	142	.8	1.7	204	5.7	SE	21	-20.8	0.0	6345	1
2	5.8	-3.1	1.4	020	.8	1.5	014	5.7	NNE	22	-20.8	.2	6080	2
3	4.4	-5.0	-.3	122	.6	1.6	306	5.7	ESE	18	-22.1	0.0	5113	3
4	5.5	-3.9	.8	034	.4	1.4	241	6.3	NNE	26	-19.9	1.8	5360	4
5	7.4	-5.7	.9	071	1.5	2.0	046	8.3	NE	17	-22.1	0.0	6120	5
6	11.2	-1.8	4.7	141	1.1	1.4	095	5.7	SSE	13	-21.7	0.0	6275	6
7	8.2	1.9	5.1	250	.5	.9	208	3.8	SSW	32	-13.7	.2	3188	7
8	8.1	1.7	4.9	236	.5	1.0	094	3.8	SSW	27	-18.3	.6	3543	8
9	5.2	.8	3.0	290	.4	.9	305	3.2	WNW	51	-6.9	4.4	2745	9
10	8.8	1.3	5.1	303	.9	1.1	270	5.1	NW	42	-9.9	3.2	3640	10
11	6.6	-.6	3.0	297	.9	1.3	315	5.7	NW	50	-9.2	3.2	3663	11
12	7.6	-1.1	3.3	290	.6	1.3	256	5.1	NW	33	-14.0	0.0	4090	12
13	7.5	-1.3	3.1	252	.4	1.1	332	5.1	S	30	-16.0	0.0	3935	13
14	9.6	-2.2	3.7	234	.7	1.2	191	5.7	S	26	-19.0	0.0	5363	14
15	10.5	-2.6	4.0	247	.5	1.3	334	5.1	S	20	-20.5	0.0	6810	15
16	10.0	-2.8	3.6	032	1.5	2.1	032	7.6	NNE	18	-20.7	0.0	6948	16
17	10.4	-1.6	4.4	121	.8	1.5	031	6.3	S	19	-19.1	2.6	6550	17
18	9.4	.9	5.2	299	.6	1.1	310	4.4	NW	37	-12.9	1.2	5083	18
19	10.5	0.0	5.3	083	.7	1.7	098	5.7	E	28	-13.5	0.0	6638	19
20	8.6	-.6	4.0	144	.3	1.4	067	5.7	ESE	26	-14.5	0.0	3863	20
21	10.4	-1.3	4.6	223	.7	1.4	210	5.1	WSW	25	-14.4	0.0	7228	21
22	12.7	-2.1	5.3	176	.2	1.4	358	4.4	NE	22	-14.3	0.0	7490	22
23	11.9	-1.3	5.3	045	1.8	2.4	020	7.6	NNE	21	-13.9	0.0	6373	23
24	12.7	3.2	8.0	233	.7	1.4	020	8.3	SW	20	-13.6	0.0	5325	24
25	8.1	1.8	5.0	294	.5	1.1	297	4.4	WNW	43	-7.0	1.4	2610	25
26	8.4	1.2	4.8	326	.5	1.4	274	4.4	NW	34	-10.8	.4	3240	26
27	11.9	2.5	7.2	292	.7	1.2	286	5.7	WNW	41	-9.5	1.4	3518	27
28	8.6	3.0	5.8	286	.6	1.2	310	8.3	SSW	36	-11.0	.8	3290	28
29	8.5	3.4	6.0	272	.9	1.2	308	5.1	SW	27	-13.6	.4	2883	29
30	14.2	3.1	8.7	282	.7	1.3	258	4.4	WNW	32	-11.7	.2	5740	30
31	17.2	.9	9.1	034	1.6	2.2	011	7.0	NNE	25	-9.0	0.0	7800	31
MONTH	17.2	-5.7	4.4	334	.1	1.4	046	8.3	NW	29	-15.0	22.0	156845	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.7
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 5.1
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 5.7
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 ****

FIG. 2.4.57

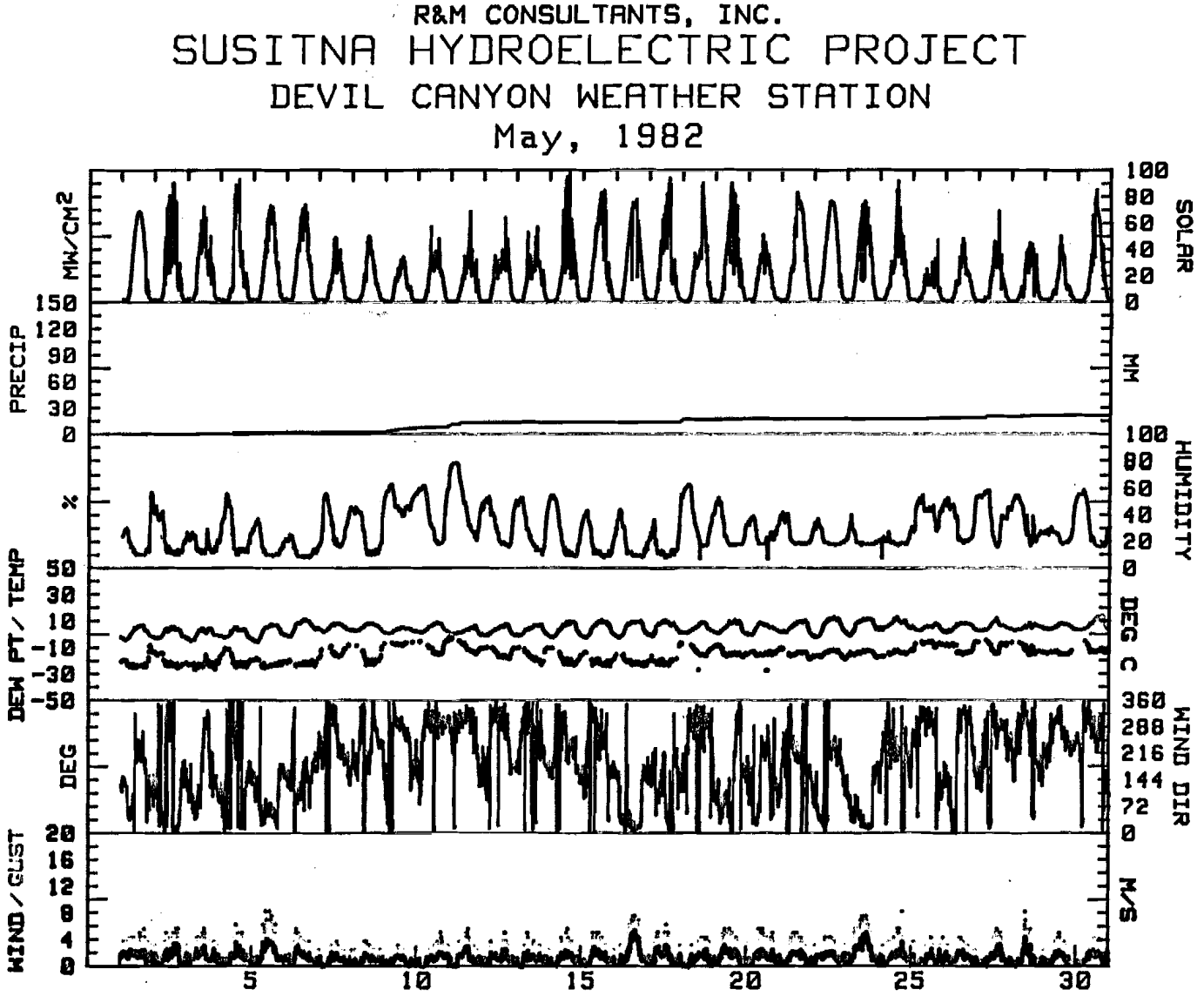

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
DEVIL CANYON WEATHER STATION
May, 1982
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
MM
150
120
90
60
30
0
HUMIDITY
%
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.58

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING June, 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	17.6	2.6	10.1	272	.7	1.7	269	7.0	WSW	25	-8.1	0.0	6323	1
2	9.0	3.2	6.1	119	.5	1.1	139	3.8	ESE	52	-4.1	13.2	1260	2
3	13.6	2.6	8.1	214	.5	1.4	274	5.7	SW	34	-8.3	.4	7338	3
4	14.2	.7	7.5	299	.9	2.0	290	7.6	W	30	-8.8	0.0	5678	4
5	9.0	4.5	6.8	294	.5	1.0	315	5.7	WNW	49	-4.9	3.4	2393	5
6	9.1	5.0	7.1	286	.7	1.0	257	3.2	WNW	57	-.9	11.4	2265	6
7	10.3	3.4	6.9	270	.4	.9	313	4.4	WNW	61	-.9	11.0	2115	7
8	14.8	1.7	8.3	321	.6	1.5	327	5.1	NW	40	-6.2	.2	5553	8
9	13.0	4.4	8.7	318	.6	1.1	302	3.8	WNW	35	-5.6	.4	3170	9
10	15.9	6.0	11.0	053	.3	1.4	101	7.0	E	38	-4.0	4.0	3295	10
11	12.1	5.1	8.6	317	.8	1.5	344	5.1	NW	37	-6.7	.6	3805	11
12	12.9	1.0	7.0	242	.2	1.1	242	10.2	S	45	-5.8	5.8	3658	12
13	12.7	0.0	6.4	340	.6	1.3	327	4.4	NW	36	-7.8	0.0	4798	13
14	16.1	3.1	9.6	302	1.6	1.9	282	7.0	NW	30	-7.4	0.0	6473	14
15	6.3	3.5	4.9	297	1.2	1.4	309	4.4	WNW	54	-4.1	13.8	1573	15
16	6.7	4.3	5.5	289	.8	1.0	295	3.8	NW	57	-3.1	6.0	1230	16
17	17.0	4.7	10.9	309	.6	1.3	010	4.4	WNW	38	-6.4	0.0	6383	17
18	16.3	3.6	10.0	068	1.1	1.7	118	7.6	NNE	39	-5.6	5.0	3673	18
19	17.9	3.6	10.8	306	1.0	1.6	306	6.3	NW	35	-5.8	.2	6083	19
20	8.5	5.2	6.9	299	1.4	1.6	317	7.0	WNW	55	-2.8	6.2	1930	20
21	13.9	5.0	9.5	296	1.2	1.5	292	6.3	WNW	38	-6.7	0.0	4530	21
22	16.2	5.1	10.7	316	.8	1.6	314	7.0	NW	29	-6.6	0.0	5563	22
23	20.5	7.2	13.9	303	.8	1.3	307	4.4	NW	26	-5.4	0.0	6718	23
24	24.6	5.3	15.0	325	.9	1.6	300	5.7	NW	23	-4.7	0.0	7920	24
25	26.4	6.8	16.6	304	.7	1.4	317	6.3	WNW	23	-3.9	0.0	6818	25
26	24.2	8.5	16.4	301	.8	1.5	284	7.0	WNW	23	-5.3	0.0	6785	26
27	24.8	7.7	16.3	344	.6	1.6	275	6.3	NE	20	-8.2	0.0	5548	27
28	18.0	8.4	13.2	298	1.8	2.1	323	10.2	WNW	31	-6.8	2.2	5238	28
29	17.0	6.5	11.8	305	.6	1.2	289	4.4	WNW	25	-9.7	0.0	5440	29
30	17.8	7.5	12.7	098	.5	1.6	080	7.6	E	30	-9.0	1.4	3415	30
MONTH	26.4	0.0	9.9	306	.6	1.4	242	10.2	WNW	37	-5.8	65.2	136964	

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

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 ****

FIG. 2.4.58

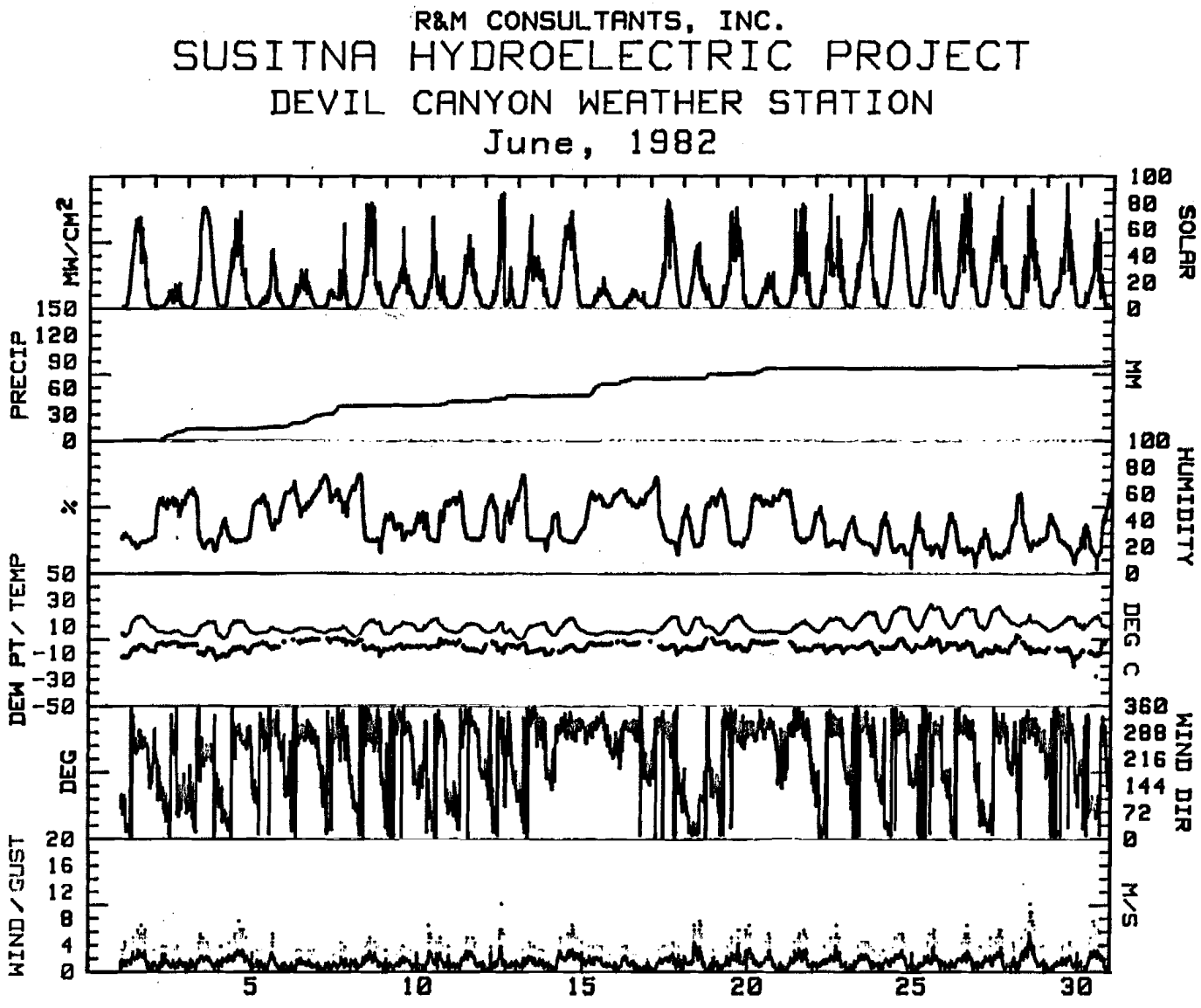

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
DEVIL CANYON WEATHER STATION
June, 1982
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
MM
150
120
90
60
30
0
HUMIDITY
%
100
80
60
40
20
0
DEW PT/ TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND/GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.59

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING July, 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	13.0	4.9	9.0	308	1.0	1.6	255	7.6	NW	41	-6.4	1.0	4125	1
2	14.7	4.1	9.4	303	.3	1.3	325	5.1	WNW	27	-12.7	0.0	5393	2
3	19.7	1.5	10.6	299	.6	1.8	319	7.0	WNW	19	-16.3	0.0	7963	3
4	22.0	5.4	13.7	325	.9	1.6	308	7.0	NW	17	-14.8	0.0	6190	4
5	16.3	5.1	10.7	298	.8	1.4	319	5.1	NW	22	-14.1	.2	5355	5
6	19.9	5.9	12.9	299	.9	1.6	298	7.0	WNW	18	-14.3	0.0	6588	6
7	28.3	6.0	17.2	007	.8	1.6	016	6.3	NNE	14	-16.8	0.0	7423	7
8	17.7	10.3	14.0	308	1.7	2.2	310	7.0	NW	23	-9.4	0.0	4500	8
9	17.7	9.7	13.7	304	.8	1.3	335	5.1	NW	27	-9.4	0.0	4698	9
10	13.1	9.2	11.2	290	1.3	1.4	308	5.1	WNW	51	1.3	2.8	1788	10
11	14.3	9.0	11.7	295	1.0	1.1	311	4.4	WNW	59	2.2	.2	2105	11
12	11.1	8.3	9.7	284	.7	.9	316	3.2	WNW	63	2.7	8.6	1578	12
13	17.4	8.3	12.9	277	.6	1.0	299	4.4	WNW	45	-2.5	1.6	4185	13
14	16.9	8.2	12.6	298	.3	1.2	096	4.4	WNW	40	-1.4	1.6	4318	14
15	13.6	7.7	10.7	307	1.5	1.8	326	7.0	NW	44	-2.4	0.0	3390	15
16	11.7	7.0	9.4	294	.7	.9	295	4.4	WNW	57	.1	8.2	2710	16
17	15.6	6.9	11.3	287	1.3	1.6	288	5.1	WNW	48	-1.9	4.8	4708	17
18	17.3	8.1	12.7	275	.7	1.2	328	3.8	WNW	48	-.5	9.4	3725	18
19	25.1	4.8	15.0	037	.4	1.3	092	3.8	NE	29	-5.2	0.0	7005	19
20	23.1	6.6	14.9	306	1.2	1.8	323	7.6	NW	25	-4.7	0.0	7178	20
21	13.7	8.5	11.1	280	1.0	1.1	299	4.4	W	45	.2	4.0	1755	21
22	11.2	8.1	9.7	301	1.4	1.6	324	6.3	WNW	52	-.9	3.6	1675	22
23	11.6	8.3	10.0	290	.9	1.1	285	5.7	W	69	4.1	22.0	1090	23
24	10.9	8.8	9.9	295	1.1	1.4	267	5.1	WNW	61	1.9	5.8	1170	24
25	11.9	9.0	10.5	287	.9	1.3	292	7.0	WNW	67	3.9	17.4	1338	25
26	14.2	8.6	11.4	267	.7	1.0	305	3.2	WNW	51	.9	0.0	2105	26
27	15.5	10.1	12.8	274	.3	.9	342	3.2	WNW	57	3.5	.6	2253	27
28	18.7	8.5	13.6	312	1.1	1.7	313	7.6	NW	43	-.4	0.0	4563	28
29	11.4	9.2	10.3	295	1.0	1.1	313	4.4	NW	64	3.6	5.4	1985	29
30	11.8	8.7	10.3	277	.6	1.1	301	4.4	WNW	65	3.0	9.2	2143	30
31	15.9	7.1	11.5	273	.6	1.3	289	5.1	WNW	40	-4.7	0.0	4208	31
MONTH	28.3	1.5	11.7	298	.8	1.3	255	7.6	WNW	43	-3.6	106.4	119205	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 4.4
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 3.2
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 3.2
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 3.8

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 ****

FIG. 2.4.59

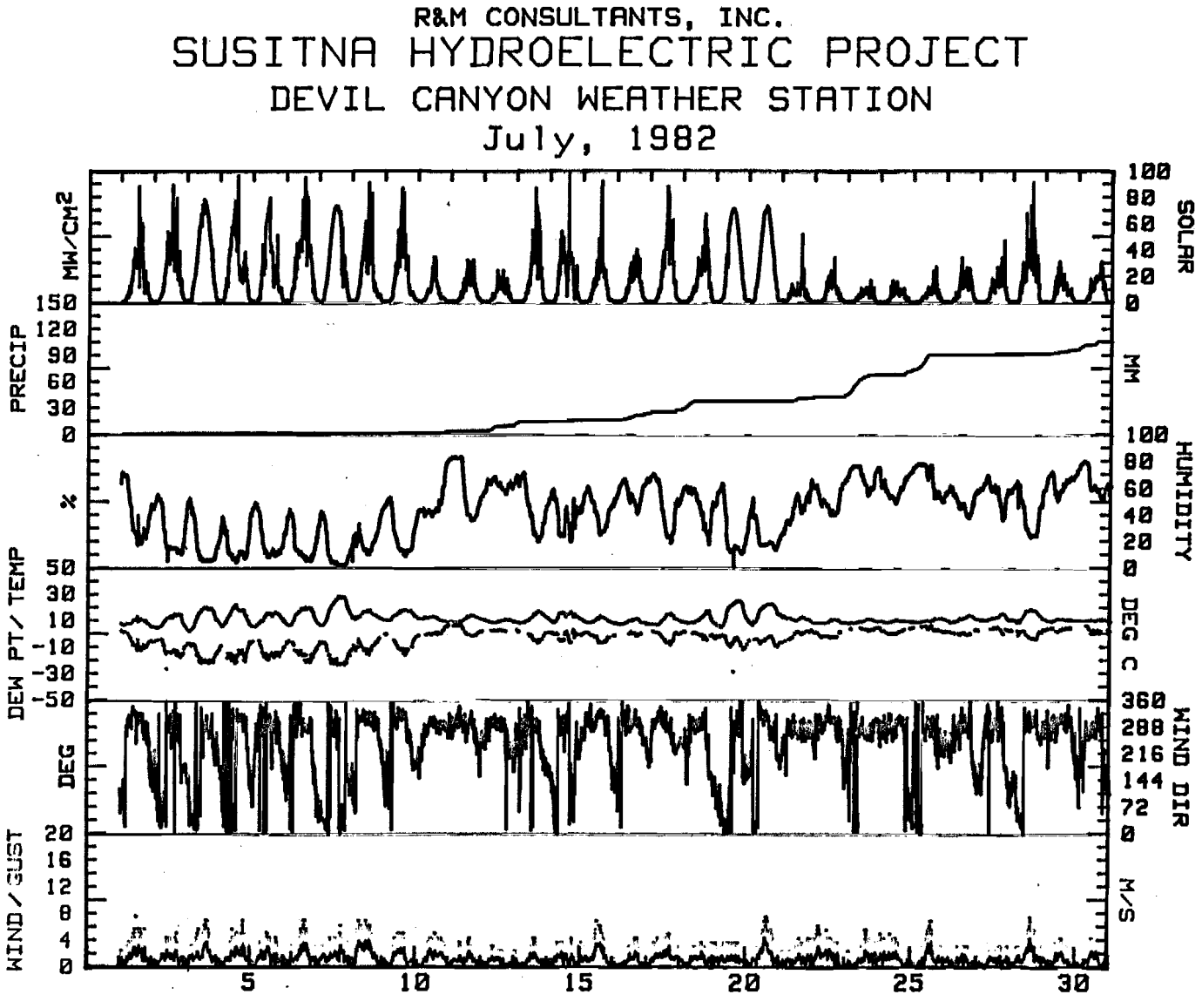

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
DEVIL CANYON WEATHER STATION
July, 1982
SOLAR
MW/CM2
150
120
90
60
30
0
100
80
60
40
20
0
PRECIP
MM
HUMIDITY
%
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.60

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING August, 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	16.8	3.6	10.2	043	1.5	2.1	025	6.3	NNE	27	-8.5	0.0	6638	1
2	19.5	2.3	10.9	039	.5	1.4	322	5.1	NNE	27	-7.6	0.0	5460	2
3	20.0	3.5	11.8	312	.5	1.3	304	5.1	WNW	26	-6.0	0.0	5925	3
4	20.6	5.5	13.1	306	.6	1.5	325	5.1	WNW	26	-5.5	0.0	6388	4
5	20.1	7.5	13.8	358	.2	1.1	293	5.1	WNW	24	-4.9	0.0	5255	5
6	21.6	5.2	13.4	098	1.1	1.5	085	5.7	ESE	33	-4.8	0.0	5510	6
7	18.2	6.0	12.1	302	.6	1.2	299	5.7	WNW	49	-.1	7.4	3550	7
8	17.2	4.2	10.7	095	1.0	1.6	108	5.7	E	41	-3.5	3.8	4508	8
9	10.5	7.3	8.9	313	.3	.9	322	4.4	NW	46	-1.1	.8	1590	9
10	10.3	6.8	8.6	298	.8	1.1	311	5.7	NW	50	-.9	.4	1748	10
11	18.4	4.6	11.5	284	.4	1.0	173	4.4	NNW	29	-5.9	0.0	4540	11
12	19.5	1.8	10.7	344	.3	1.3	318	4.4	WNW	32	-5.5	0.0	5640	12
13	19.5	6.2	12.9	302	.7	1.5	318	7.0	NW	25	-5.2	0.0	5423	13
14	15.2	10.0	12.6	257	.7	1.0	283	4.4	SW	42	-.4	2.2	1998	14
15	14.8	7.0	10.9	282	1.2	1.4	316	5.1	WNW	40	-3.3	.6	3715	15
16	15.1	7.2	11.2	301	1.0	1.3	322	6.3	WNW	26	-6.9	0.0	5160	16
17	11.1	4.7	7.9	256	.4	.8	259	3.2	NW	51	-1.5	4.4	1845	17
18	15.2	4.1	9.7	317	.3	1.0	315	3.8	WNW	38	-3.6	0.0	2765	18
19	17.5	2.7	10.1	334	.3	1.1	301	4.4	WNW	35	-4.9	0.0	3828	19
20	19.9	6.8	13.4	292	.3	1.0	280	3.8	WNW	23	-6.4	0.0	5045	20
21	18.7	6.2	12.5	298	.5	1.2	321	5.7	NW	27	-4.8	0.0	4625	21
22	18.9	3.4	11.2	307	.5	1.3	326	6.3	S	29	-5.1	0.0	4795	22
23	15.1	9.6	12.4	298	.6	1.0	306	3.8	NW	44	.3	2.0	2123	23
24	15.7	8.7	12.2	354	.2	1.2	333	5.7	SE	42	-1.2	1.4	2853	24
25	14.5	8.5	11.5	289	.9	1.1	309	3.8	WNW	36	-3.2	1.4	3308	25
26	19.0	4.9	12.0	302	.3	1.1	013	5.1	WNW	32	-4.5	.8	3760	26
27	18.2	1.2	9.7	098	1.3	1.6	116	6.3	E	30	-8.1	0.0	4833	27
28	12.9	3.4	8.2	036	.2	.9	309	4.4	NNE	44	-3.5	0.0	1843	28
29	9.5	6.9	8.2	336	.0	.7	194	2.5	W	56	.4	9.8	1673	29
30	8.5	5.6	7.1	217	.3	.9	245	3.2	WSW	64	.9	0.0	1203	30
31	9.7	4.6	7.2	055	.2	.9	109	3.2	ESE	60	-.6	0.0	1935	31
MONTH	21.6	1.2	10.8	322	.3	1.2	318	7.0	WNW	35	-3.7	35.0	119478	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	4.4
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	5.7
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	5.1
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS	4.4

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 ****

FIG. 2.4.60

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

DEVIL CANYON WEATHER STATION

August, 1982

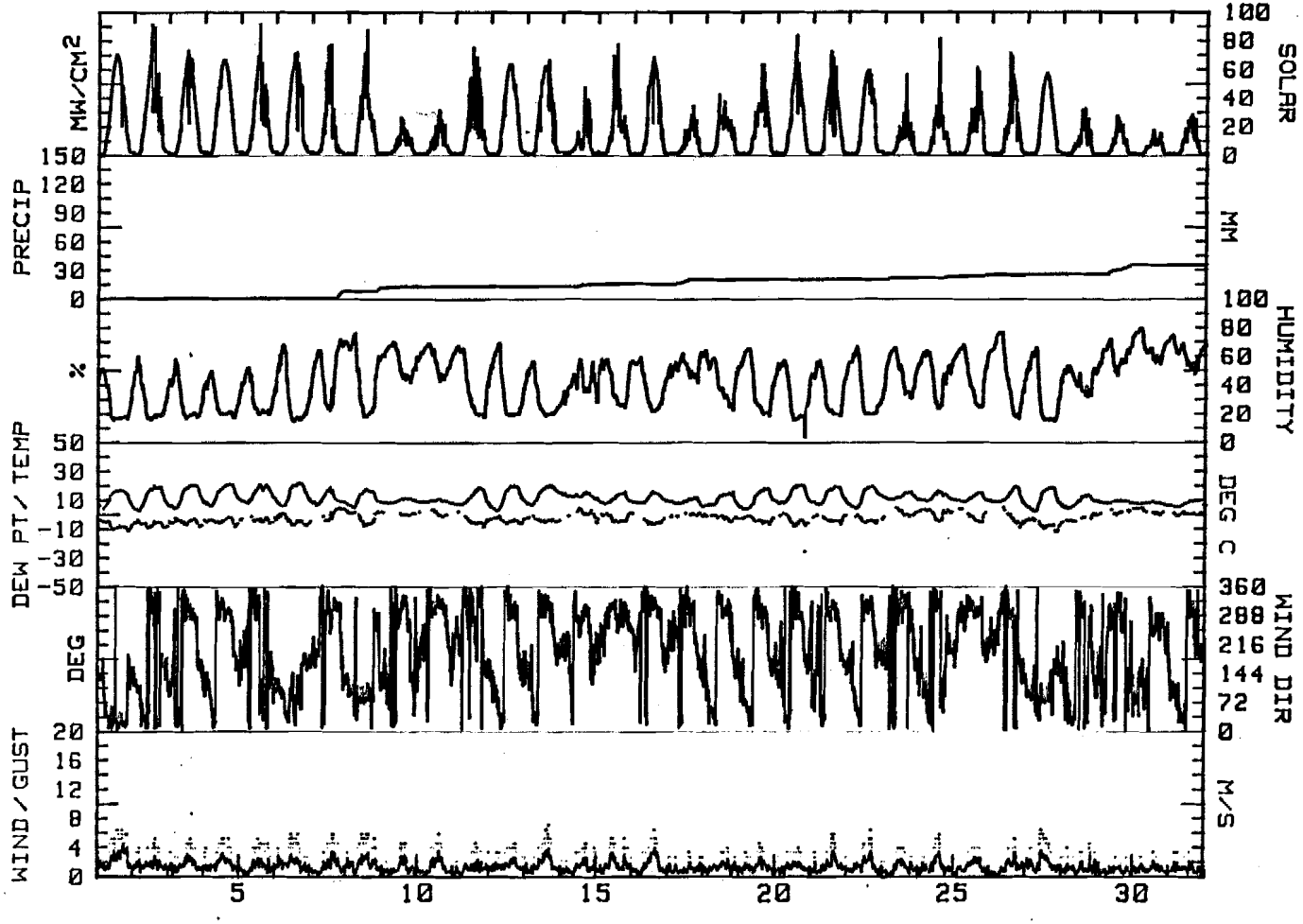


TABLE 2.4.61

MONTHLY SUMMARY FOR DEVIL CANYON WEATHER STATION
DATA TAKEN DURING September, 1982

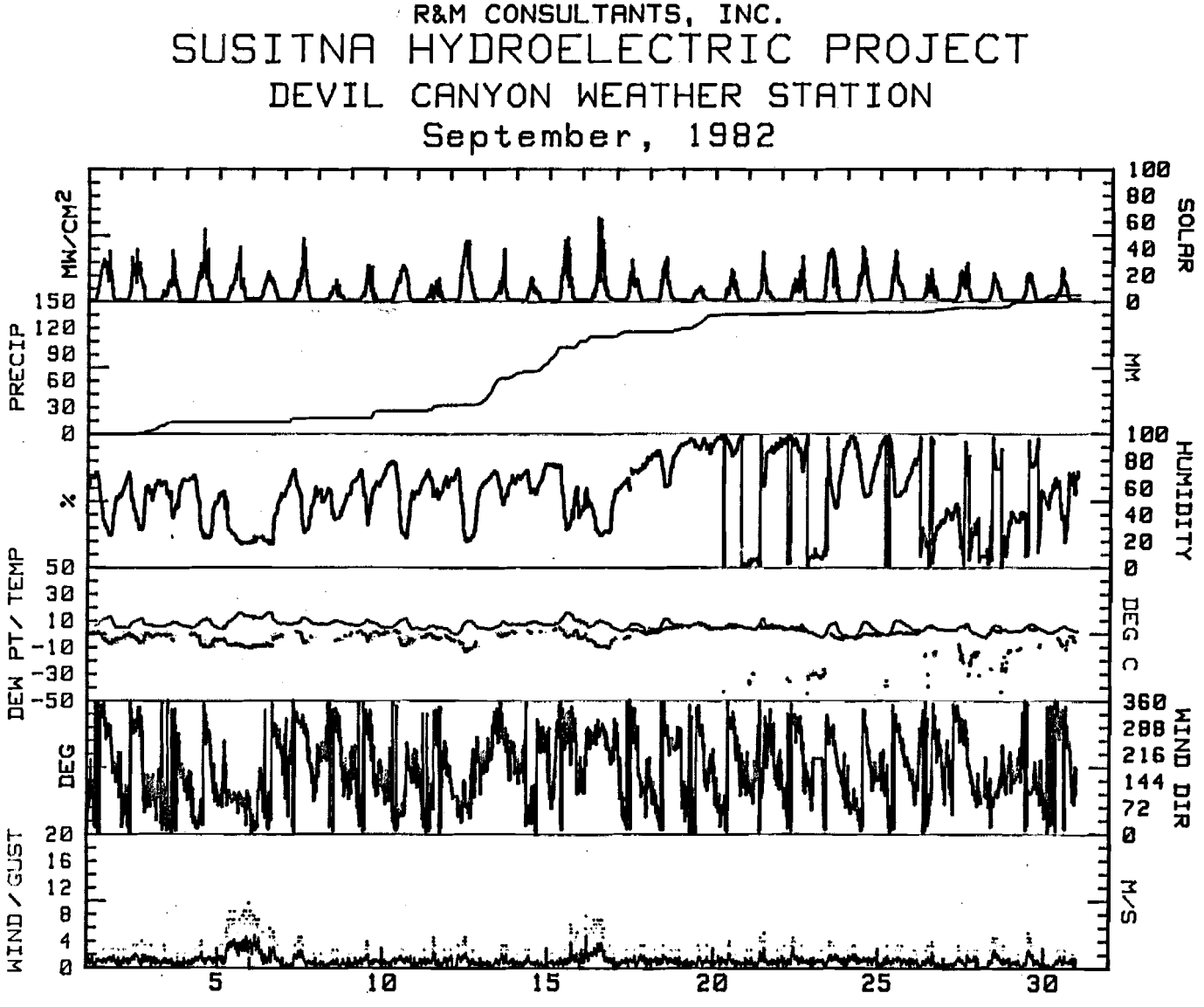
DAY	MAX. TEMP. DEG C	MIN. TEMP. DEG C	MEAN TEMP. DEG C	RES. WIND DIR. DEG	RES. WIND SPD. M/S	AVG. WIND SPD. M/S	MAX. GUST DIR. DEG	MAX. GUST SPD. M/S	P'VAL DIR.	MEAN RH %	MEAN DP DEG C	PRECIP MM	DAY'S SOLAR ENERGY WH/SQM	DAY
1	12.7	4.5	8.6	258	.0	.9	128	3.2	NNE	46	-3.2	0.0	2670	1
2	11.1	4.3	7.7	062	.1	1.1	161	3.8	ESE	49	-2.9	3.4	2358	2
3	8.5	4.9	6.7	093	.3	.7	060	3.2	NNE	57	-2.2	9.0	1650	3
4	11.2	3.8	7.5	069	.3	1.0	057	3.8	ESE	39	-6.6	.2	2565	4
5	15.4	3.1	9.3	096	2.4	2.6	096	9.5	E	27	-8.6	0.0	2105	5
6	15.5	7.1	11.3	046	.6	2.0	020	8.3	NNE	27	-7.5	0.0	1685	6
7	11.7	6.8	9.3	284	.5	.9	300	4.4	WNW	44	-2.6	4.6	2118	7
8	9.2	6.3	7.8	243	.2	.5	321	2.5	SSW	44	-3.8	0.0	888	8
9	10.2	4.3	7.3	173	.1	.8	291	3.8	SE	54	-1.4	7.8	1310	9
10	11.1	3.2	7.2	102	.4	.9	062	2.5	ENE	46	-4.5	.2	2130	10
11	5.8	2.2	4.0	076	.0	.8	297	4.4	SW	62	-2.6	6.4	988	11
12	9.4	-1.4	4.0	107	.6	.9	071	4.4	ENE	39	-9.4	4.6	2923	12
13	8.9	3.0	6.0	242	.5	.8	260	3.2	WSW	57	-.7	31.0	1330	13
14	8.9	6.4	7.7	147	.1	.6	041	2.5	W	61	.9	14.8	1010	14
15	15.5	6.4	11.0	266	.2	1.0	341	6.3	WSW	47	-.3	21.8	2390	15
16	9.7	3.5	6.6	259	1.5	1.9	281	7.6	W	36	-7.4	6.8	2583	16
17	7.2	1.6	4.4	101	.1	.9	138	3.2	ESE	72	.0	4.4	1432	17
18	11.1	2.7	6.9	261	.2	1.0	288	3.2	WSW	79	2.9	4.0	1628	18
19	8.3	4.3	6.3	158	.2	.7	274	3.2	SE	92	5.4	14.4	775	19
20	7.4	3.9	5.7	070	.1	.8	297	3.8	ENE	89	3.1	1.4	1213	20
21	11.4	3.2	7.3	188	.3	.9	314	5.1	ESE	67	-1.7	.6	1285	21
22	6.6	-.4	3.1	255	.1	1.1	311	4.4	WNW	78	-2.4	1.2	1530	22
23	8.1	-2.8	2.7	212	.6	1.8	285	3.8	SSW	47	-10.2	0.0	2788	23
24	8.6	-2.9	2.9	103	.4	1.1	120	3.2	ENE	75	-1.9	0.0	2075	24
25	9.9	-1.1	4.4	203	.2	.9	076	3.2	S	59	-3.3	0.0	1825	25
26	6.2	1.8	4.0	158	.1	.7	318	3.8	WSW	56	-7.4	4.2	1120	26
27	7.3	-1.2	3.1	198	.2	.9	247	3.2	S	26	-16.7	1.8	1565	27
28	6.1	-3.1	1.5	129	.7	.9	109	4.4	ESE	48	-10.2	5.2	1130	28
29	6.9	1.2	4.1	136	.6	.9	112	5.1	SSE	74	1.3	6.6	1250	29
30	5.5	.6	3.1	321	.2	.7	323	2.5	NNW	47	-6.9	2.2	1190	30
MONTH	15.5	-3.1	6.0	139	.1	.7	096	9.5	ESE	52	-3.7	156.6	51505	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.1
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 5.7
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 5.1
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 ****

FIG. 2.4.61


R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
DEVIL CANYON WEATHER STATION
September, 1982
MW/CM2
150
120
90
60
30
0
SOLAR
100
80
60
40
20
0
PRECIP
MM
%
HUMIDITY
DEW PT / TEMP
50
30
10
-10
-30
-50
DEG C
DEG
360
288
216
144
72
0
WIND DIR
WIND / GUST
20
16
12
8
4
0
M/S
5
10
15
20
25
30

SECTION 2.4. - PART 7

SHERMAN CLIMATE DATA

TABLE 2.4.62

MONTHLY SUMMARY FOR SHERMAN WEATHER STATION
DATA TAKEN DURING May, 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	12.7	-1.8	5.5	253	.5	.8	295	4.4	W	17	-19.4	0.0	7080	15
16	13.9	-3.4	5.3	043	.9	1.0	035	5.7	NE	22	-25.0	0.0	8150	16
17	12.6	-1.8	5.4	176	.6	1.3	148	6.3	SSW	23	-21.4	0.0	6988	17
18	11.4	-.6	5.4	198	.7	1.1	199	5.7	SSW	34	-15.1	.2	4478	18
19	12.1	-1.7	5.2	046	.4	1.1	215	7.6	NNE	26	-23.2	0.0	6795	19
20	10.6	-1.6	4.5	175	1.2	1.7	143	7.6	S	29	-19.8	0.0	4990	20
21	12.2	-2.0	5.1	233	.7	1.4	305	5.7	S	27	-19.9	0.0	6700	21
22	14.9	-3.9	5.5	165	.4	1.1	142	4.4	S	19	-25.1	0.0	7715	22
23	15.8	-1.5	7.2	033	1.3	1.5	026	6.3	NNE	16	-24.9	0.0	7945	23
24	14.7	-.8	7.0	184	.6	1.4	181	7.0	SSW	18	-21.5	0.0	5008	24
25	11.1	2.1	6.6	178	.2	.9	213	5.1	S	45	-6.6	2.4	3155	25
26	10.5	1.1	5.8	202	.6	.9	188	3.8	SSW	41	-14.7	.2	2880	26
27	12.3	2.6	7.5	205	.4	.9	179	5.7	SSW	54	-9.6	1.2	3015	27
28	11.2	3.4	7.3	225	1.3	1.4	229	8.3	SW	42	-7.6	2.8	4458	28
29	10.8	4.8	7.8	220	1.5	1.7	232	4.4	SSW	27	-14.3	.4	3460	29
30	16.0	1.1	8.6	302	.2	.9	142	3.8	N	39	-17.2	.2	5933	30
31	20.9	-1.0	10.0	052	.9	1.2	072	5.7	E	23	-22.1	0.0	8378	31
MONTH	20.9	-3.9	6.4	193	.3	1.2	229	8.3	SSW	30	-18.1	7.4	97125	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 6.3
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 5.7
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 3.2
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 3.2

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 ****

FIG. 2.4.62

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

SHERMAN WEATHER STATION

May, 1982

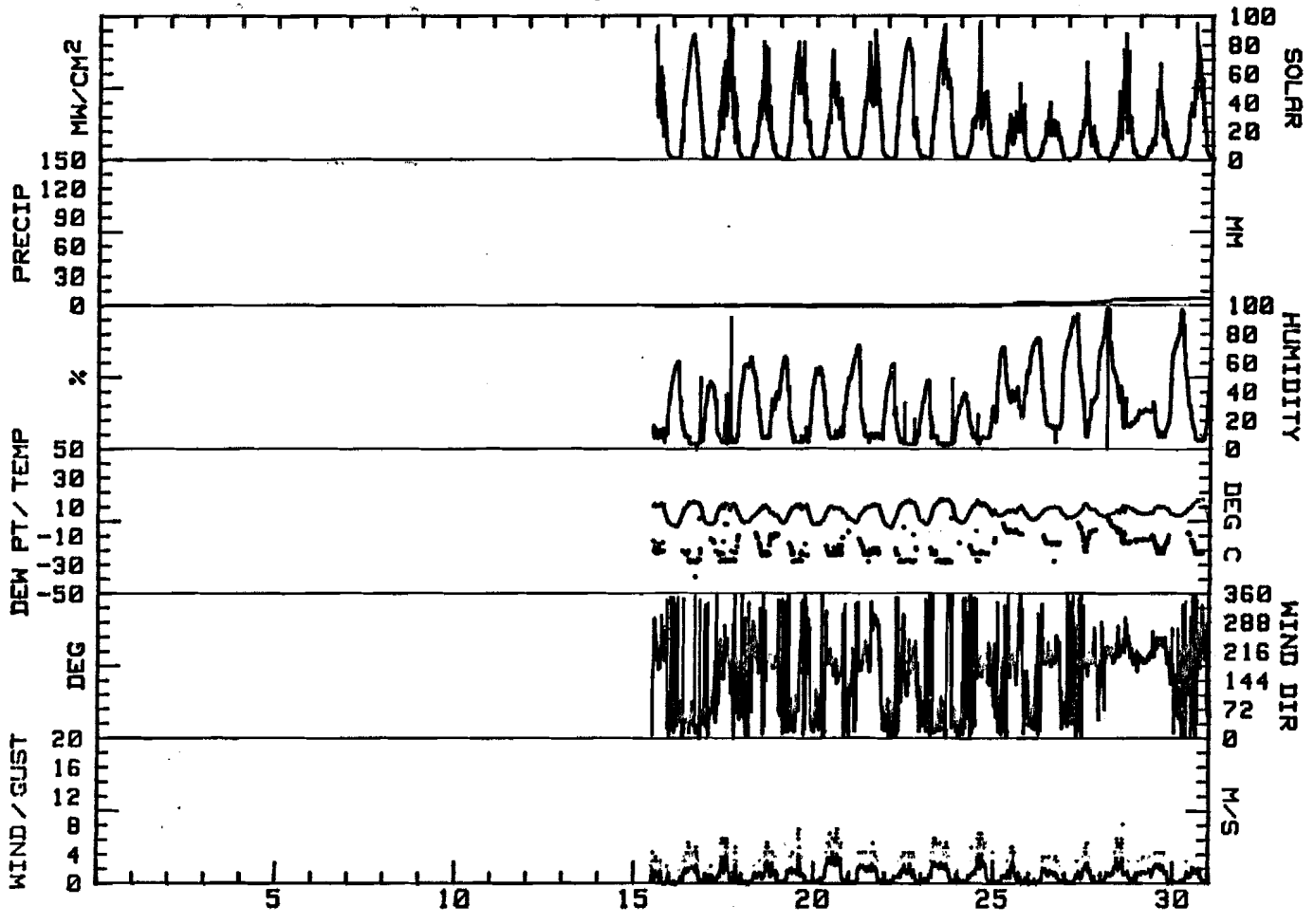


TABLE 2.4.63

MONTHLY SUMMARY FOR SHERMAN WEATHER STATION
DATA TAKEN DURING June, 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	20.0	-.4	9.8	224	1.2	1.5	239	7.6	SW	18	-21.7	0.0	6800	1
2	9.7	3.0	6.4	176	.2	.9	213	3.8	SW	59	-1.0	19.4	1898	2
3	15.3	.6	8.0	293	.4	.9	186	3.8	NW	34	-19.1	0.0	6685	3
4	16.6	-1.2	7.7	241	1.0	1.5	226	8.3	WSW	28	-19.4	1.0	5920	4
5	10.4	6.0	8.2	036	.2	.4	026	1.9	NE	65	-2.1	12.0	2298	5
6	11.5	6.4	9.0	269	.2	.6	012	2.5	SW	61	2.2	10.4	2388	6
7	11.6	5.7	8.7	231	.3	.7	232	5.1	SW	58	-.5	6.8	2573	7
8	17.2	4.3	10.8	226	.5	1.0	232	5.1	SW	43	-15.8	.2	5645	8
9	14.6	4.5	9.6	048	.2	.5	346	2.5	ENE	44	-4.1	.4	3380	9
10	17.7	6.9	12.3	226	.3	.8	228	7.0	SW	49	-5.2	3.8	2965	10
11	13.9	6.1	10.0	218	.5	.9	229	3.8	SSW	31	-11.3	1.0	3853	11
12	13.8	.3	7.1	241	.1	.7	212	6.3	SSW	55	-3.2	4.2	3380	12
13	14.6	.6	7.6	205	.2	.6	246	3.2	SW	37	-21.2	0.0	4705	13
14	17.2	2.9	10.1	224	1.6	1.7	243	7.0	SW	30	-14.7	0.0	6813	14
15	8.3	5.9	7.1	208	1.0	1.1	232	3.2	SSW	53	-3.0	12.6	2205	15
16	9.2	5.9	7.6	214	.9	1.0	253	4.4	SSW	53	-2.5	4.4	2068	16
17	19.2	3.5	11.4	251	.3	.8	184	3.2	SSW	36	-19.4	0.0	6965	17
18	20.1	1.7	10.9	058	.7	.9	051	5.1	NE	43	-22.3	1.8	4558	18
19	20.9	7.7	14.3	230	.9	1.3	237	6.3	SW	23	-13.7	0.0	6740	19
20	9.5	7.0	8.3	225	1.1	1.2	229	4.4	SW	55	-1.5	10.8	2240	20
21	15.9	5.1	10.5	221	1.2	1.3	245	5.1	SW	37	-12.5	.4	5733	21
22	18.5	5.0	11.8	222	.8	1.0	217	5.1	SW	30	-19.2	0.0	6413	22
23	23.0	5.4	14.2	237	.5	.8	219	3.8	SW	30	-24.9	0.0	7355	23
24	26.4	3.1	14.8	219	.5	.8	207	3.8	SW	33	-25.0	0.0	8468	24
25	27.9	5.0	16.5	125	.1	.7	213	3.8	ENE	42	-13.8	2.0	7298	25
26	25.6	6.2	15.9	236	.4	.7	207	3.8	SW	28	-30.0	0.0	6833	26
27	25.9	3.9	14.9	213	.3	.8	221	5.7	SW	35	-19.6	0.0	5430	27
28	18.4	6.9	12.7	215	1.1	1.3	265	5.1	SSW	33	-8.7	.8	5455	28
29	18.8	7.2	13.0	257	.3	.8	117	3.8	SSW	23	-16.6	0.0	6103	29
30	20.0	7.2	13.6	057	.1	.8	224	6.3	NE	42	-11.8	9.2	3823	30
MONTH	27.9	-1.2	10.7	224	.5	.6	226	8.3	SW	40	-12.7	101.2	146985	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 7.0
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 6.3
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 5.7
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 7.0

NOTE: RELATIVE HUMIDITY READINGS ARE UNRELIABLE WHEN WIND SPEEDS ARE LESS THA 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 ****

FIG. 2.4.63

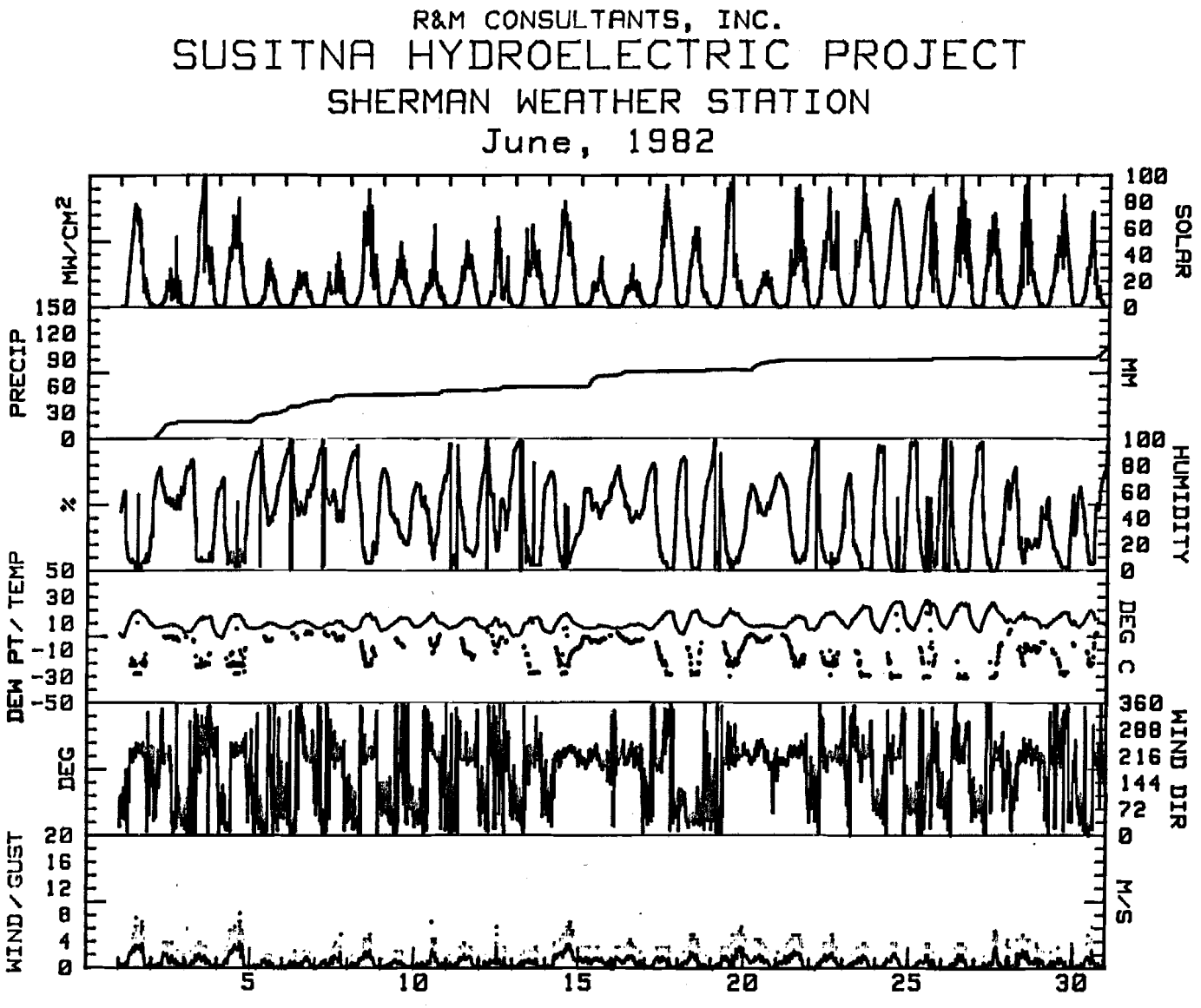

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
SHERMAN WEATHER STATION
June, 1982
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
MM
150
120
90
60
30
0
HUMIDITY
%
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.64

MONTHLY SUMMARY FOR SHERMAN WEATHER STATION
DATA TAKEN DURING July, 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	14.3	5.9	10.1	224	1.0	1.2	245	7.0	SW	32	-9.9	1.6	5283	1
2	17.2	3.6	10.4	217	.3	.7	204	3.8	SSW	32	-19.6	.2	5740	2
3	20.7	1.6	11.2	220	.5	1.0	216	5.1	SW	24	-25.5	0.0	8320	3
4	21.5	2.3	11.9	228	.9	1.3	219	7.0	SW	30	-19.0	0.0	7173	4
5	19.9	5.0	12.5	209	.7	1.1	212	4.4	SSW	28	-19.1	0.0	7458	5
6	21.1	5.5	13.3	220	.4	.8	225	3.8	SW	26	-25.2	0.0	5948	6
7	29.6	2.5	16.1	036	.6	.8	358	5.1	ENE	46	3.0	0.0	8283	7
8	19.5	7.1	13.3	221	1.5	1.7	237	7.0	SSW	38	-4.4	.2	5235	8
9	21.4	9.7	15.6	211	.5	.7	222	3.8	SSW	38	-11.4	0.0	5585	9
10	15.6	9.4	12.5	215	.9	1.1	239	5.1	SSW	62	3.2	1.6	2173	10
11	17.1	10.5	13.8	216	1.2	1.2	222	4.4	SSW	47	.7	.4	4348	11
12	14.3	9.4	11.9	202	1.1	1.1	200	4.4	SSW	50	1.0	3.2	2505	12
13	19.5	7.7	13.6	278	.2	.5	019	3.8	S	49	-11.8	.4	5508	13
14	19.6	4.3	12.0	208	.7	.9	201	3.8	SSW	49	-3.0	1.8	4695	14
15	14.6	8.2	11.4	215	1.2	1.3	228	5.1	SSW	51	-.5	2.2	4350	15
16	14.6	7.6	11.1	225	.5	.8	214	4.4	SW	51	-1.8	7.6	4000	16
17	18.2	8.2	13.2	209	1.0	1.1	208	3.8	SSW	50	-3.4	2.4	5610	17
18	18.1	6.2	12.2	236	.4	.7	211	3.2	SSW	44	1.9	13.2	3995	18
19	27.7	3.6	15.7	058	.2	.6	052	3.2	ENE	32	-14.0	0.0	7688	19
20	25.0	4.9	15.0	220	.8	1.1	208	5.7	SW	23	-17.5	0.0	7395	20
21	15.3	9.7	12.5	214	.7	.8	218	3.8	SSW	53	2.0	11.4	1735	21
22	15.3	9.7	12.5	228	1.2	1.3	244	5.1	SW	52	-.1	11.6	2815	22
23	13.9	9.5	11.7	229	1.1	1.2	246	5.7	SW	59	5.2	31.0	1643	23
24	13.6	10.2	11.9	217	1.2	1.3	242	5.7	SSW	61	2.9	16.2	1903	24
25	15.2	10.5	12.9	218	.8	1.0	230	5.1	SSW	63	4.6	33.6	2225	25
26	17.1	8.5	12.8	348	.0	.5	209	2.5	N	51	-1.0	0.0	3055	26
27	18.3	10.2	14.3	210	.5	.6	203	3.8	SSW	44	2.9	.2	3310	27
28	21.1	7.0	14.1	228	.6	.9	239	4.4	SW	29	-2.6	.2	4450	28
29	14.3	10.2	12.3	223	.9	1.0	220	4.4	SSW	63	3.9	8.4	3150	29
30	12.7	10.0	11.4	210	.5	.7	227	5.7	SSW	60	3.6	23.6	1890	30
31	18.8	7.1	13.0	239	.0	.5	339	3.2	ESE	30	-6.6	0.0	4843	31
MONTH	29.6	1.6	12.8	219	.7	.9	245	7.0	SSW	44	-5.2	171.0	142307	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS	3.8
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL	2.5
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL	1.9
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS	1.3

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 ****

TABLE 2.5.2 (Continued)
SUMMARY OF 1982 SNOW SURVEY DATA COLLECTED BY R&M

Station	Elevation[1] (ft, msl)	Snow Depth on April 1, 1982 (inches)	Water Content on April 1, 1982 (inches)	Comments
Climate Stations				
Denali	2700	8.6	2.1	Wind blown. Snow course.
Tyone R.	2500	27.8	5.8	Snow course.
Kosina Cr.	2600	22.6	5.0	Snow course.
Watana	2200	18.0	5.2	Wind blown. Snow course.
Devil Canyon	1500	38.1	4.3	Snow course.

1 = Elevations estimated from USGS 1:63,360 contour maps.
(a) = aerial marker reading (also applies to following tables).
(e) = estimated (also applies to following tables).

sl3/u3

FIG. 2.4.64

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

SHERMAN WEATHER STATION

July, 1982

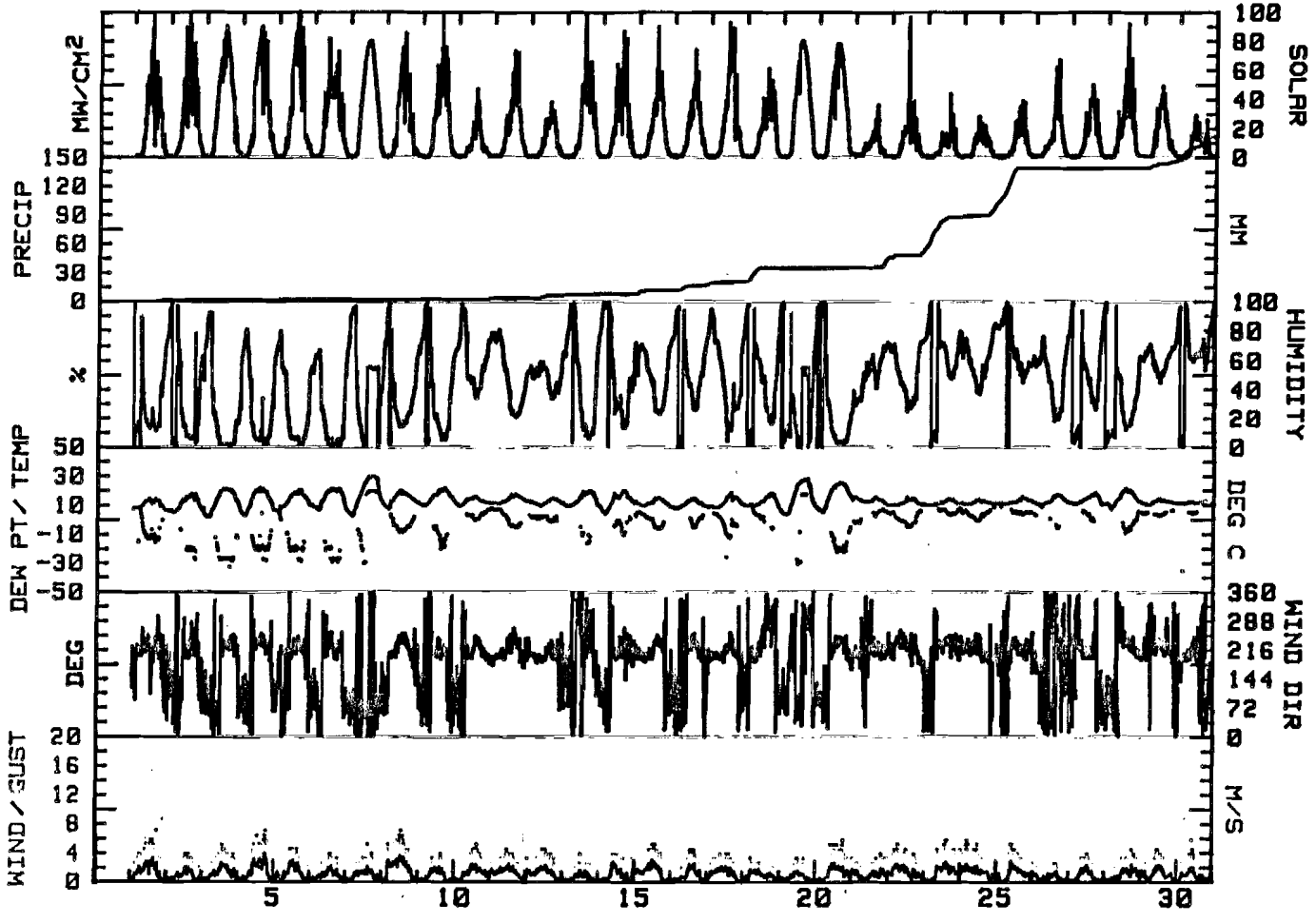


TABLE 2.4.65

MONTHLY SUMMARY FOR SHERMAN WEATHER STATION
DATA TAKEN DURING August, 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	20.2	2.5	11.4	057	.7	.8	071	4.4	ENE	5	-23.1	0.0	6840	1
2	22.8	.9	11.9	050	.6	.7	011	3.8	NE	8	-21.0	0.0	7455	2
3	22.7	1.3	12.0	212	.3	.6	204	3.2	ESE	3	-24.4	0.0	6820	3
4	22.9	2.2	12.6	212	.4	.6	214	3.2	SW	6	-18.9	0.0	6590	4
5	22.0	5.7	13.9	212	.7	.8	193	3.8	SW	20	-6.9	.2	5450	5
6	24.3	3.5	13.9	056	.1	.5	222	3.2	E	10	-18.0	0.0	5045	6
7	17.8	4.1	11.0	216	.4	.7	253	5.1	E	42	-.3	9.6	3203	7
8	20.7	2.7	11.7	059	.2	.8	219	3.8	NNE	22	-8.9	9.2	4788	8
9	13.3	8.3	10.8	211	.5	.6	235	5.1	SSW	43	-.1	6.4	2370	9
10	13.2	7.9	10.6	210	.6	.6	216	5.7	SSW	51	1.2	4.6	2428	10
11	20.0	3.6	11.8	203	.1	.6	088	2.5	SW	9	-16.8	.2	5905	11
12	21.3	1.5	11.4	207	.3	.6	237	3.8	SW	5	-20.8	0.0	6178	12
13	22.0	5.6	13.8	220	.4	.7	250	4.4	E	7	-17.3	0.0	5970	13
14	16.3	9.9	13.1	200	.2	.4	208	3.2	SSW	37	1.0	2.4	1798	14
15	17.7	8.0	12.9	214	.7	.9	212	3.8	SSW	34	-3.9	2.0	4220	15
16	15.3	7.8	11.6	214	.9	1.1	221	5.7	SSW	22	-7.1	.4	5710	16
17	15.3	7.5	11.4	119	.1	.5	216	2.5	SSW	30	-3.3	4.0	2603	17
18	16.1	3.1	9.6	023	.1	.3	022	1.9	ESE	**	*****	0.0	2628	18
19	19.9	2.8	11.4	058	.2	.3	048	1.9	ESE	**	*****	0.0	3783	19
20	22.9	2.6	12.8	060	.2	.4	054	2.5	ENE	7	-18.7	0.0	5388	20
21	21.2	2.0	11.6	212	.5	.7	190	3.8	SW	12	-11.8	0.0	5530	21
22	21.3	1.8	11.6	212	.4	.6	249	3.8	SSW	9	-14.8	0.0	5140	22
23	17.0	8.6	12.8	209	.6	.7	247	3.2	SSW	40	1.0	1.2	2790	23
24	18.6	8.3	13.5	214	.5	.7	225	3.8	SW	30	-2.9	.2	3733	24
25	16.4	8.4	12.4	204	.7	.8	208	3.2	SSW	31	-4.2	1.2	3335	25
26	20.0	2.3	11.2	276	.1	.5	230	3.2	E	17	-7.9	1.0	4063	26
27	21.0	.1	10.6	041	.5	.6	037	4.4	NE	4	-23.6	0.0	4925	27
28	17.3	2.3	9.8	185	.1	.5	201	4.4	ENE	28	-4.2	3.2	2483	28
29	11.1	8.5	9.8	007	.1	.2	047	1.9	NE	**	*****	13.2	1708	29
30	10.2	6.8	8.5	042	.2	.3	043	1.9	NE	**	*****	27.2	1080	30
31	13.0	6.5	9.8	091	.1	.5	204	3.2	NE	44	-.9	7.8	2203	31
MONTH	24.3	.1	11.6	202	.2	.6	216	5.7	SSW	22	-10.2	94.0	132158	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 3.2
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 2.5
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 3.8
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 2.5

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 ****

FIG. 2.4.65

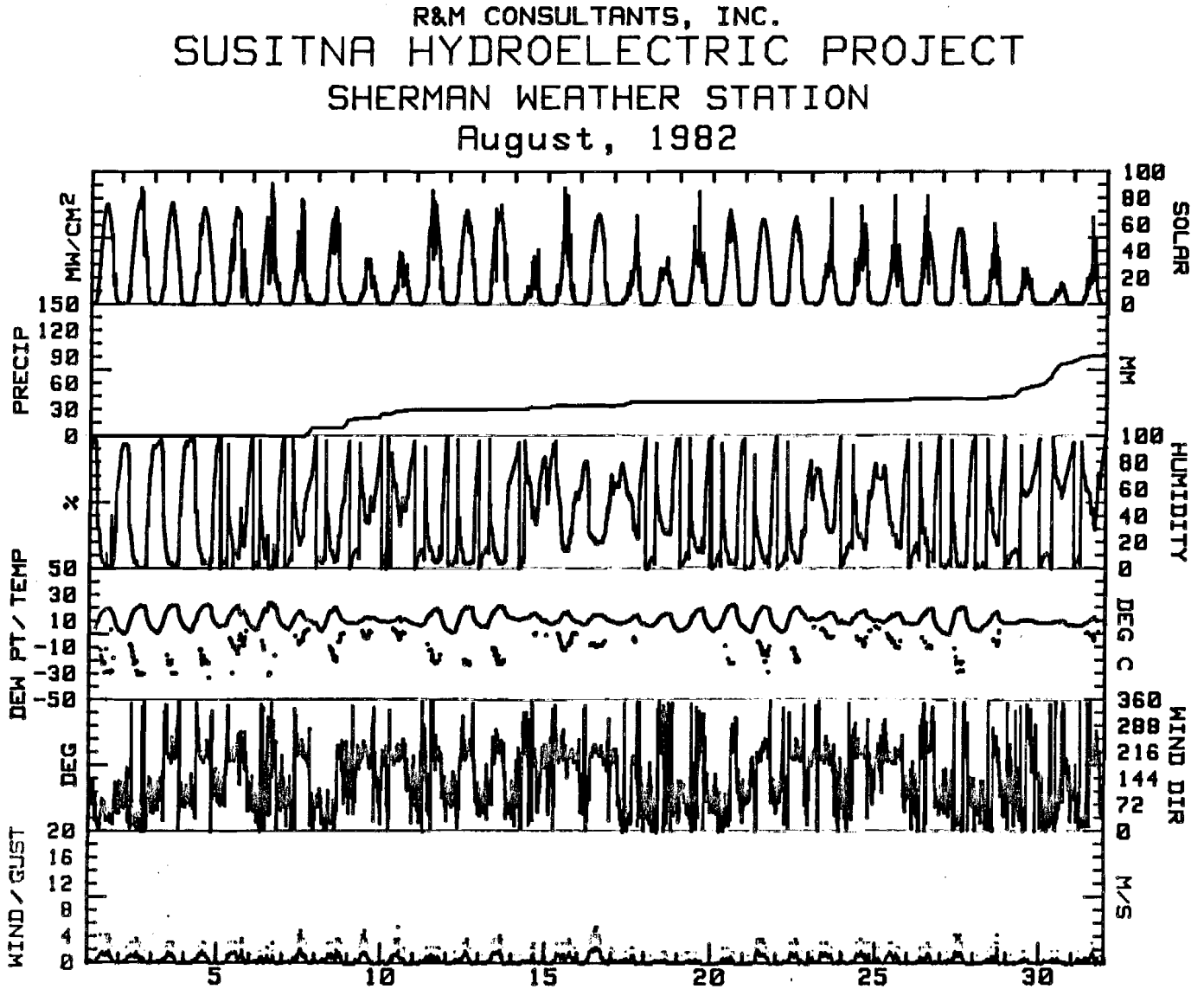

R&M CONSULTANTS, INC.
SUSITNA HYDROELECTRIC PROJECT
SHERMAN WEATHER STATION
August, 1982
SOLAR
MW/CM2
100
80
60
40
20
0
PRECIP
MM
150
120
90
60
30
0
HUMIDITY
%
100
80
60
40
20
0
DEW PT / TEMP
DEG C
50
30
10
-10
-30
-50
WIND DIR
DEG
360
288
216
144
72
0
WIND / GUST
M/S
20
16
12
8
4
0
5
10
15
20
25
30

TABLE 2.4.66

MONTHLY SUMMARY FOR SHERMAN WEATHER STATION
DATA TAKEN DURING September, 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	16.6	3.9	10.3	045	.2	.5	186	5.7	NNE	36	-4.3	9.4	3155	1
2	14.7	3.7	9.2	223	.3	.6	220	3.2	SW	27	-7.5	11.6	2835	2
3	11.5	5.0	8.3	043	.2	.4	043	2.5	NE	50	-.6	7.8	1845	3
4	13.8	1.8	7.8	202	.1	.4	187	2.5	SSW	16	-12.9	.2	3073	4
5	16.7	3.1	9.9	050	.9	1.0	047	5.1	NE	20	-9.9	1.0	2255	5
6	15.3	5.2	10.3	186	.5	1.1	135	6.3	SSW	32	-5.7	0.0	1578	6
7	14.3	7.5	10.9	214	.9	.9	213	4.4	SSW	40	-3.7	1.8	2615	7
8	11.9	6.4	9.2	208	.6	.7	208	3.8	SSW	33	-4.6	.2	1878	8
9	12.9	5.6	9.3	202	.0	.3	215	2.5	ESE	**	*****	.8	1718	9
10	12.6	4.8	8.7	037	.1	.3	021	2.5	NE	**	*****	.2	2030	10
11	7.9	-.6	3.7	044	.1	.5	238	5.1	E	51	-3.2	7.6	1190	11
12	11.8	-.4	5.7	048	.4	.5	074	2.5	NE	46	-7.6	3.6	2968	12
13	8.7	4.4	6.6	037	.3	.6	055	2.5	NNE	61	.2	28.6	978	13
14	10.6	7.1	8.9	047	.2	.3	213	1.9	NNE	**	*****	19.0	940	14
15	17.0	7.3	12.2	246	.1	.8	220	5.1	NNE	48	1.6	29.8	2093	15
16	12.1	5.0	8.6	223	1.7	1.9	220	10.2	SW	33	-7.8	11.2	2313	16
17	8.2	2.5	5.4	053	.4	.4	065	3.2	NE	72	-.1	9.4	1198	17
18	12.0	3.7	7.9	033	.3	.5	212	3.2	E	52	-1.4	10.0	1488	18
19	9.4	6.0	7.7	204	.1	.4	224	3.8	SW	62	.9	18.6	775	19
20	9.5	5.5	7.5	153	.0	.3	243	1.9	ENE	53	.1	6.0	1265	20
21	10.0	5.1	7.6	169	.1	.6	217	3.8	NE	9	-22.6	3.4	1291	21
22	10.2	-.9	4.7	243	.2	.6	214	5.7	WSW	11	-22.8	5.0	2150	22
23	11.8	-3.3	4.3	054	.5	.6	005	3.2	E	11	-21.3	.2	3365	23
24	9.9	-5.1	2.4	070	.3	.5	239	3.2	E	11	-20.5	0.0	2418	24
25	11.1	-3.0	4.1	129	.1	.6	218	3.8	E	11	-20.4	0.0	2200	25
26	8.1	2.2	5.2	049	.3	.5	083	2.5	ENE	11	-22.9	19.4	1248	26
27	9.9	-1.4	4.3	058	.2	.7	207	3.2	NNE	11	-22.7	6.2	1770	27
28	7.3	-3.0	2.2	063	.5	.5	103	1.9	NE	20	-20.5	5.4	1340	28
29	9.4	2.6	6.0	074	.3	.9	208	4.4	ENE	10	-22.7	7.4	1605	29
30	7.2	2.5	4.9	215	1.0	1.1	198	5.1	SSW	11	-23.5	8.4	1785	30
MONTH	17.0	-5.1	7.1	163	.1	.6	220	10.2	ENE	26	-10.6	232.2	57356	

GUST VEL. AT MAX. GUST MINUS 2 INTERVALS 5.7
GUST VEL. AT MAX. GUST MINUS 1 INTERVAL 8.9
GUST VEL. AT MAX. GUST PLUS 1 INTERVAL 8.9
GUST VEL. AT MAX. GUST PLUS 2 INTERVALS 8.9

OTE: 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 ****

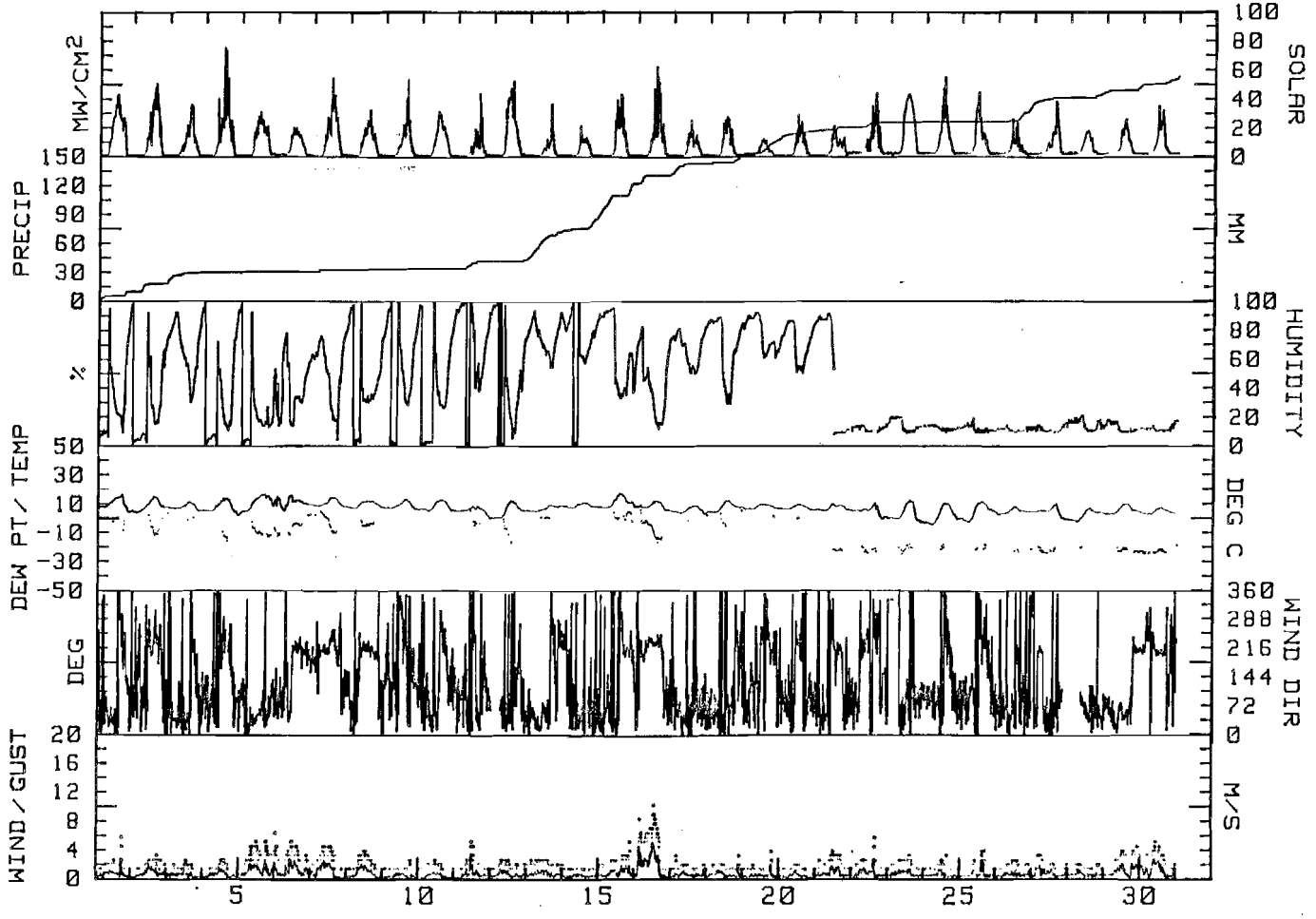
FIG. 2.4.66

R&M CONSULTANTS, INC.

SUSITNA HYDROELECTRIC PROJECT

SHERMAN WEATHER STATION

September, 1982



SECTION 2.5

SNOW SURVEYS

2.5 - Snow Surveys

Snow surveys were undertaken in the basin cooperatively with the Soil Conservation Service (SCS) of the U.S. Department of Agriculture, who has been managing the program statewide for quite a few years. Existing aerial markers were observed jointly, new markers and snow courses were established and observed by R&M. Data for all sites have been assimilated and reported by the SCS.

TABLE 2.5.1
SNOW SURVEY MARKERS INSTALLED BY R&M CONSULTANTS
1982 SITES

Butte Creek

Butte Cr.

West Fork Glacier

Cirque
Ice Cave
West Fork Glacier

Susitna Glacier

Mt. Hayes
Caribou
Malemute

East Fork Glacier

Jatu Pass
Pyramid
East Fork @ 2850'
East Fork @ 5200'

Clearwater Mountains

Valdez Creek
Boulder Creek

s13/u1

TABLE 2.5.2.
SUMMARY OF 1982 SNOW SURVEY DATA COLLECTED BY R&M

Station	Elevation[1] (ft, msl)	Snow Depth on April 1, 1982 (inches)	Water Content on April 1, 1982 (inches)	Comments
Butte Creek Drainage				
Butte Cr.	3000	19(a)	5.5(e)	
West Fork Glacier				
Cirque	4700	20(a)	4.9(e)	
Ice Cave	4000	65(a)	11.6(e)	
West Fork Gl.	5050	83	18.0	Snow course.
Susitna Glacier				
Mt. Hayes	4150	41	18.4	Snow course.
Caribou	4100	33(a)	7.9(e)	
Malemute	2600	16(a)	3.8(e)	
East Fork Glacier				
Jatu Pass	4500	58	22.9	Snow course.
Pyramid	4800	22(a)	8.6(e)	
East Fork @ 2850'	2850	12(a)	4.7(e)	Windblown.
East Fork @ 5200'	5200	35(a)	13.7(e)	
Clearwater Mountains				
Valdez Creek	4360	3(a)	0.9(e)	Windblown.
Boulder Creek	4000	5(a)	1.4(e)	Windblown.

sl3/u2

TABLE 2.5.2 (Continued)
SUMMARY OF 1982 SNOW SURVEY DATA COLLECTED BY R&M

Station	Elevation[1] (ft, msl)	Snow Depth on April 1, 1982 (inches)	Water Content on April 1, 1982 (inches)	Comments
Climate Stations				
Denali	2700	8.6	2.1	Wind blown. Snow course.
Tyone R.	2500	27.8	5.8	Snow course.
Kosina Cr.	2600	22.6	5.0	Snow course.
Watana	2200	18.0	5.2	Wind blown. Snow course.
Devil Canyon	1500	38.1	4.3	Snow course.

1 = Elevations estimated from USGS 1:63,360 contour maps.
(a) = aerial marker reading (also applies to following tables).
(e) = estimated (also applies to following tables).

BUTTE CREEK (B-3)

TABLE 2.5.3
SNOW SURVEY DATA BY SITE
ALASKA NO.

INDEX NO. 0816

ELEVATION: 3000

REGION: Susitna

LAT. 63° 01' N LONG. 147° 54' W

DRAINAGE: Butte Creek

YEAR	Jan.			Feb.			March			April			May			Depth Correc Inches
	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	
1981	1-7	15 a	2.0 e	2-2	11 a	2.0 e	3-6	15 a	2.5 e	4/1	14" a	2.8 e	~~4~~ 4/30	8 a	2.0 e	0
1982	1/5	8 a		2-5	15 a	5.1 e	3/12	18 (e)	5.4 (e)	4/14	19" a	5.5 (e)	5/12	9 (@)		

TABLE 2.5.3 (Cont)

CIRQUE (ω-1)

INDEX NO. 0802

ALASKA NO.

ELEVATION: 4700

REGION: Susitna

LAT. 63° 28' N LONG. 147° 27' W

DRAINAGE: West fork Susitna R.

YEAR	Jan			Feb			Mar			Apr.			May			Depth Correc Inche
	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	
1981	1-7	32"a	10.2e	2/2	32"a	10.5e	3/6	39"a	12.5e	4/2	43a	14.5e	4/30	39	15.0e	
1982	1-6	13a		2-5	10a	3.1e	3/12	12(a)	4(e)	4/14	20a	4.9e	5/12	33(a)		

ICE CAVE (ω-2) TABLE 2.5.3 (Cont) INDEX NO. 0803

ALASKA NO.

ELEVATION: 4000 REGION: Susitna

LAT. 630 30' N LONG. 1470 125' W DRAINAGE: West Fork Susitna R.

YEAR	Jan			Feb			Mar			Apr.			May			Depth Correc Inches
	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	
1981	1/7	16.5 a	5.3 e	NO SURVEY			3/6	32.5" a	8.5e	4/2	32 a	10.0 e	4/30	32.5a	9.5e	+1.5
1982	1/6	51.5a		2-5	26a	8.1e	3/12	51 (a)	11(e)	4/14	64.5a	11.6e	5-12	63(a)		

Marker lost but reinstilled in same area but slightly more sheltered location for 1982

TABLE 2.5.3 (Cont)

WEST FORK GLACIER (W-3)

INDEX NO. 0804

ALASKA NO.

ELEVATION: 5050

REGION: Susitna

LAT 63° 33' N LONG. 147° 10' W DRAINAGE: West Fork Susitna R.

YEAR	Jan (inches)			Feb (inches)			Mar (inches)			Apr (inches)			May (inches)			Depth Correc Inches
	DATE	SNOW DEPTH	WATER CONTENT	DATE	SNOW DEPTH	WATER CONTENT	DATE	SNOW DEPTH	WATER CONTENT	DATE	SNOW DEPTH	WATER CONTENT	DATE	SNOW DEPTH	WATER CONTENT	
1981	1/7	53"	17"	2/3	93.7	31.4	3/6	94"	30.4	4/2	95	33.1	4/30	82.1	33.6	-1
1982	1/6	55.7	17.5"	2-5	61.8	19.2	3/12	62	20	4/14	83.3	18.0	NO SURVEY			

TABLE 2.5.3 (Cont)

INDEX No. 0806

MT. HAYES (S-2)

ALASKA NO.

ELEVATION: 4150'

REGION: Susitna Glacier

LAT. 63° 31' LONG. 146° 54'

DRAINAGE: Susitna River

YEAR	Jan			Feb.			Mar.			Apr.			May			Dept Correc Inches
	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	
1981	1/7	23.5	6.6	2/3	39.8	10.2	3/6	46.5"	12.4	4/2	42	13.9	4/30	30.5	12.0	+2.5
1982	1/6	24.0	6.2	2-5	26.9	7.3	3/12	28.6	7.9	4/14	40.5	18.4	5/12	41(a)		

TABLE 2.5.3 .(Cont)

CARIBOU (S-3)

ALASKA NO.

INDEX NO. 0807.

ELEVATION: 4100'

REGION: Susitna Glacier

LAT. 63° 25' N LONG. 147° 05' W DRAINAGE: Susitna R.

YEAR	Jan			Feb			Mar			Apr.			May			Depth Correc Inches
	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	
1981	1/7	15 a	4.0 e	NO SURVEY			3/6	21" a	6.5 e	4/2	23 a	8.0 e	4/30	18a	6.5e	0
1982	1/16	25a		2-5	15a	4.1 e	3/12	28 (a)	8 (e)	4/14	33a	7.9 e	5/12	32(a)		

MALEMUTE (S-4)

TABLE 2.5.3 (Cont)

INDEX NO. 0808

ALASKA NO.

ELEVATION: 2600

REGION: Susitna Glacier

LAT. 63° 23' N LONG. 147° 11' W

DRAINAGE: Susitna R.

YEAR	Jan			Feb.			March			April			May			Depth Correc. Inches
	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	
1981	1/7	13.5" 14a	2.0e	NO SURVEY			3/6	17.5 18a	3.4e	4/2	17.5 18a	3.8e	4/30	12.5 9a		-2.5
1982	1/6	12.5a		2-5	21.5a		3/12	15(a)	3(e)	4/14	15.5a	3.8e	5/12	9(a)	12(e)	

TABLE 2.5.3 (Cont)

INDEX NO. 0813

ALASKA NO.

ELEVATION: 4500'

REGION: East Fork Glacier

LAT. 63° 27'

LONG. 146° 44' W

DRAINAGE: East Fork Susitna R.

YEAR	Jan (inches)			Feb (inches)			March (inches)			April (inches)			May (inches)			Depth Correc. Inches
	DATE	SNOW DEPTH	WATER CONTENT	DATE	SNOW DEPTH	WATER CONTENT	DATE	SNOW DEPTH	WATER CONTENT	DATE	SNOW DEPTH	WATER CONTENT	DATE	SNOW DEPTH	WATER CONTENT	
1981	1/7	41	11.2	No Survey			3/6	42"	20.1	4/2	65	21.9	4/30	59.4	19.5	0
1982	1/6	39.5	12.0	2-5	42.7	14.1	3/12	46	16	4/14	58.4	22.9	4/12	58	20.6	

PYRAMID (E-1)

TABLE 2.5.3 (Cont)

INDEX NO. 0812

ALASKA NO.

ELEVATION: 4800'

REGION: East Fork Glacier

LAT. 63° 25' N LONG. 146° 53' W

DRAINAGE: East Fork Susitna River

YEAR	Jan			Feb.			Mar.			Apr.			May			Depth Correc. Inches
	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	
1981	1/7	23a	6.5e	2/2	24 a	9.0e	3/6	42" a	13.0e	4/2	42a	14.7e	4/30	35a	14.5e	+2
1982	1/6	25a		2/5	25a	8.3e	3/10	27a	9e	4/14	22a	8.6e	5-12	36(a)	13(e)	

INDEX NUMBER 0811

EAST FORK (E-2) *@ 2850 TABLE 2.5.3 (Cont)

ALASKA NO.

ELEVATION: 2850'

REGION: East Fork Glacier

LAT. 63° 24' N LONG. 146° 51' W

DRAINAGE: East Fork Susitna River

YEAR	Jan			Feb			Mar.			Apr.			May			Depth Correc. Inches
	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	
1981	1/7	9" corr. 2.5 12" obs. 1.6e		2/2	5"	1.0e	3/6	17"a	3.2e	4/2	17a	3.6e	4/30	9	3.0e	-3
1982	1/6	12"		2/5	6(a)		3/16	13(a)	4.5e	4/14	12a	4.7e	5/12	0	0	

*WINDBLOWN, marker not representative of area

TABLE 2.5.3 (Cont)

EAST FORK @ 5200
ELEVATION: 5200

ALASKA NO.

REGION: SUSITNA

LAT. LONG.

DRAINAGE: EAST FORK SUSITNA

YEAR	Jan			Feb			Mar			Apr.			May		
	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT
1982	1/6	27"a		2-5	29a	9.6c	3/10	22	9c	4/14	35(a)	13.7(c)	5/12	39(a)	14(c)

Ta 12.5

ALASKA NO.

ELEVATION: 4360

REGION: Susitna

LAT.

LONG.

DRAINAGE: Valdez Creek

YEAR	Jan			Feb			Mar.			Apr.			May		
	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT
1982	1/6	4½		2-5	3a	0.9a	3/10	0	0	4/12	3½	(0.6)	1		

(Cont)

ALASKA NO.

ELEVATION: 4000 REGION: SUSITNA

LAT. LONG. DRAINAGE: EAST FORK/UPPER SUSITNA

YEAR	Jan.			Feb.			Mar.			Apr.			May		
	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT	DATE	(inches) SNOW DEPTH	WATER CONTENT
1982	1/6	13a		2/5	4a	1.2e	NO SURVEY			4/14	5"a	1.9"(e)	NO SURVEY		

E 2 (C

DENALI CLIMATE STATION INDEX NO. 0815

ALASKA NO.

ELEVATION: 2700 FEET REGION: SOUTH CENTRAL

LAT. 63°06'N LONG. 147°27'W DRAINAGE: SUSITNA

YEAR	JANUARY			FEBRUARY			MARCH			APRIL			MAY		
	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT
1981	1/7	10.3	2.3	2/3	5.7	1.5	NO SURVEY			4/1	5.9	1.6	4/30	0	
1982	1/5	9.4	2.1	2-5	8.8	2.5	3/10	10	3.0	4/14	8.6	2.1	5/12	0	

TYONE RIVER CLIMATE STATION

ALASKA NO.

ELEVATION: 2500 FEET

REGION: SOUTHCENTRAL

LAT. 62°40'N LONG. 147°06'W

DRAINAGE: TYONE RIVER

YEAR	JANUARY			FEBRUARY			MARCH			APRIL			MAY		
	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT
1981	1/8	13.4	1.3	2/3	18	2.6	3/4	18.1	3.0	4/1	19.6	3.7	4/30	0	0
1982	1/4	16.6	3.5	2-5	19	4.1	3/12	24	5	4/12	27.8	5.8	5/14	0	0

BLE).3)t)

KOSINA CREEK CLIMATE STATION

INDEX NO. 0823

ALASKA NO.

ELEVATION: 2600 FEET

REGION: SOUTH CENTRAL

LAT. 62° 42' N LONG. 147° 59' W

DRAINAGE: KOSINA CR.

YEAR	JANUARY			FEBRUARY			MARCH			APRIL			MAY		
	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT
1981	1/9	11.5	2.0	2/3	10.0	1.7	3/4	14.8	2.6	4/1	14.6	2.8	4/30	0	0
1982	1/5	14.5	3.4	2-5	13.7	3.0	3/12	16	4.5	4/12	22.6	5.0	5/14	12	3

WATANA CLIMATE STATION INDEX NO. 0834

ALASKA NO.

ELEVATION: 2200 FEET REGION: SOUTH CENTRAL

LAT. 62° 50' N LONG. 148° 24' W DRAINAGE: SUSITNA

YEAR	JANUARY			FEBRUARY			MARCH			APRIL			MAY		
	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT
1981	1/9	7.4	1.5	2/2	8.3	1.6	No SURVEY			4/2	13	2.3	4/30	0	0
1982	1/4	10.0	2.7	2-5	10	3.4	3/13	10.5	3.1	4/12	18	5.2	5/12	0	0

DEVIL CANYON CLIMATE STATION

INDEX NO. 0835

ALASKA NO.

ELEVATION: 1350

REGION: SOUTHCENTRAL

LAT. 62°49'N LONG. 149°18'W

DRAINAGE: SUSITNA

YEAR	JANUARY			FEBRUARY			MARCH			APRIL			MAY		
	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT	DATE	(inches) SNOW DEPTH	(inches) WATER CONTENT
1981	1/9	13	2.1	No Survey			3/5	29.1	6.1	3/31	29.7	7.0	4/30	21.0	5.1
1982	1/7	22.3	4.5	2-5	21	4.0	3/9	35	6.4	4/16	38.1	4.3	5/14	22	6.0

SECTION 2.6

GLACIAL OBSERVATIONS

2.6 - Glacial Observations

All results of the 1982 Upper Susitna Glacier Study have been compiled and presented in a report prepared by Dr. William Harrison of the Alaska Geophysical Institute, and R&M Consultants, Inc. (R&M Consultants, Harrison, 1982). This report should be consulted for a complete discussion of field procedures and analytical results of glacier mass balance, glacier hydrology, volume changes, glacier sediment yield and glacier dynamics.

SECTION 2.7

SNOW CREEP OBSERVATIONS

2.7 - Snow Creep Observations

The importance of snow creep forces on transmission line towers in the region was investigated by installing two simulated transmission towers on movable plates on steep slopes. The maximum force of the snow on the towers was recorded by a maximum-reading indicator.

Devil Canyon Site - The instrumentation at this site was destroyed by fire in December 1981.

Watana Site (Tsusena Butte) - A maximum reading observed in June 1982 for the winter of 1981-82 was 700 pounds. The dynamometer was initially set at 400 pounds in October 1982. The difference of 300 pounds may have been caused by snow creep or a combination of other forces (e.g. thermal or wind induced loading).

SECTION 2.8

RIVER ICE OBSERVATIONS

2.8 - River Ice Observations

River ice observations were made during 1981 and 1982 for the purpose of monitoring freezeup, winter, and breakup ice conditions. A large amount of data was collected on these processes and is contained in "Ice Observations, Winter 1981-1982 Report" (R&M Consultants, 1982b). All of the data collected, including field notes and photos, are located at the offices of R&M Consultants.

The collection of freezeup observations is continuing into the winter of 1982-83.

SECTION 2.9

EVAPORATION DATA

2.9 - Evaporation Data

An evaporation pan was installed near the proposed Watana Damsite in April of 1981. Observations of daily pan evaporation have been made during the summer months of 1981 and 1982. These data have been utilized to estimate the amount of evaporation to be expected from the two proposed project reservoirs.

TABLE 2.9.1
EVAPORATION DATA COLLECTED AT WATANA CAMP, 1982 (INCHES)

Day	May	June	July	August	September
1	.00(e)	*	.00(t)(e)	.12	.05
2	.00(e)	*	.00(t)	.22	.06
3	.00(e)	.46	.40(t)	.18	.01
4	.00(e)	.16	.18(t)	.21	.02
5	.00(e)	.20	.35(t)	.21	.08
6	.00(e)	.06	*	.18(e)	.14
7	.00(e)	.07	*	*	.06
8	.00(e)	.10	*	.20(t)(e)	.03
9	.00(e)	.18	*	.00(t)(e)	*
10	.00(e)	.07	*	*	.00(e)
11	.00(e)	*	.93(t)	.45(t)(e)	.05
12	.00(e)	*	.00(t)(e)	.07	.11
13	Record Started	*	.19(t)	.14	.71(t)
14	.07	*	*	.21	.14
15	.10	.64	.30(t)	.08	.12
16	.98	.00	.07(t)	*	.00(e)
17	.10(e)	.00(e)	.00(e)	.23	.00(e)
18	.01	.15	.00(e)	.00(t)	.02
19	-	.00(e)	.05(e)	.10	.06
20	-	*	.35(e)	.16	.00(t)(e)
21	-	1.09(a)	.27(e)	.18	.02
22	-	.25(t)	.10(e)	.14	.02
23	-	.16(t)	.00(e)	.16	.02
24	-	.30(t)	.44	.02	.00(e)
25	-	.12(t)	*	.05	.18
26	-	.33(t)	.07	.20	.03
27	-	.05(t)	.18	.00(e)	*
28	-	.30(t)(e)	.10	.17	.13
29	.03	.13(t)	.14	.08	Pan Frozen
30	.10	.30(t)	.00(e)	.05	-
31	.17		.18	.00(e)	
Total Evaporation (1982)	-	5.12(a)	4.30(a)	3.81(a)	2.06(a)
Mean Daily Evaporation (1982)	-	.17(a)	.14(a)	.12(a)	.07(a)
1981 Total Evaporation	4.24	5.15(a)	2.44(a)	1.83	1.16

All values are for 24-hour period ending at 0700 on date shown, except where noted.

(t) Values are for 24-hour period ending @ 1200 on date shown.
* No pan observation on this date. Amount included in following measurement, time distribution unknown.
- Missing data for this date.
(e) Missing data. Value estimated.
(a) Calculated utilizing estimated values.

3 - REFERENCES

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