

CUT BANK MT

Latitude = 48.60 N

Longitude = 112.30 W

Period of Record = 1973 to 1996

WMO No. 727796

Elevation = 3855 feet

Average Pressure = 25.98 inches Hg

Design Criteria Data

	Design Value	Mean Coincident (Average) Values			
		Wet Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Dry Bulb Temperature (T)	(°F)				
Median of Extreme Highs	93	61	41	13.0	W
0.4% Occurrence	88	60	43	12.6	W
1.0% Occurrence	84	59	44	12.6	W
2.0% Occurrence	81	58	44	12.2	W
Mean Daily Range	21	-	-	-	-
97.5% Occurrence	-7	-8	3	8.0	N
99.0% Occurrence	-15	-15	2	6.9	N
99.6% Occurrence	-20	-20	1	6.8	N
Median of Extreme Lows	-27	-27	1	5.1	N
	Design Value	Mean Coincident (Average) Values			
		Dry Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Wet Bulb Temperature (T_{wb})	(°F)				
Median of Extreme Highs	65	81	77	10.4	SE
0.4% Occurrence	63	81	68	10.7	SE
1.0% Occurrence	61	80	60	10.6	W
2.0% Occurrence	59	77	55	11.0	W
	Design Value	Mean Coincident (Average) Values			
		Dry Bulb Temperature (°F)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Humidity Ratio (HR)	(gr/lb)				
Median of Extreme Highs	87	70	0.50	9.9	SSE
0.4% Occurrence	77	67	0.45	9.4	SE
1.0% Occurrence	71	66	0.42	9.5	N
2.0% Occurrence	64	63	0.38	9.8	N
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		5	238	0	4

Other Site Data

Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
5	1.5	90	0.0 + 0.2
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
44.7	N/A	N/A	100

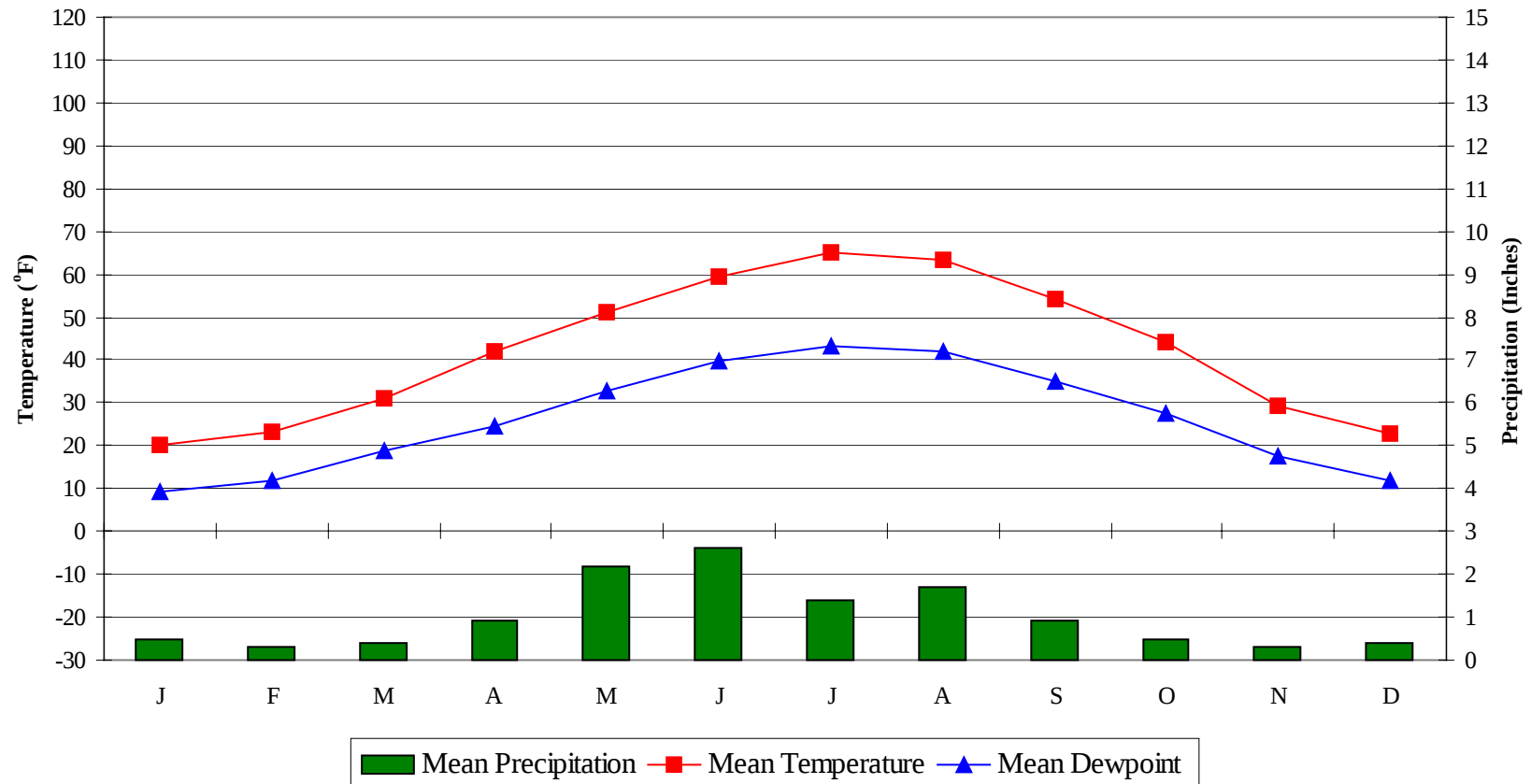
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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Average Annual Climate

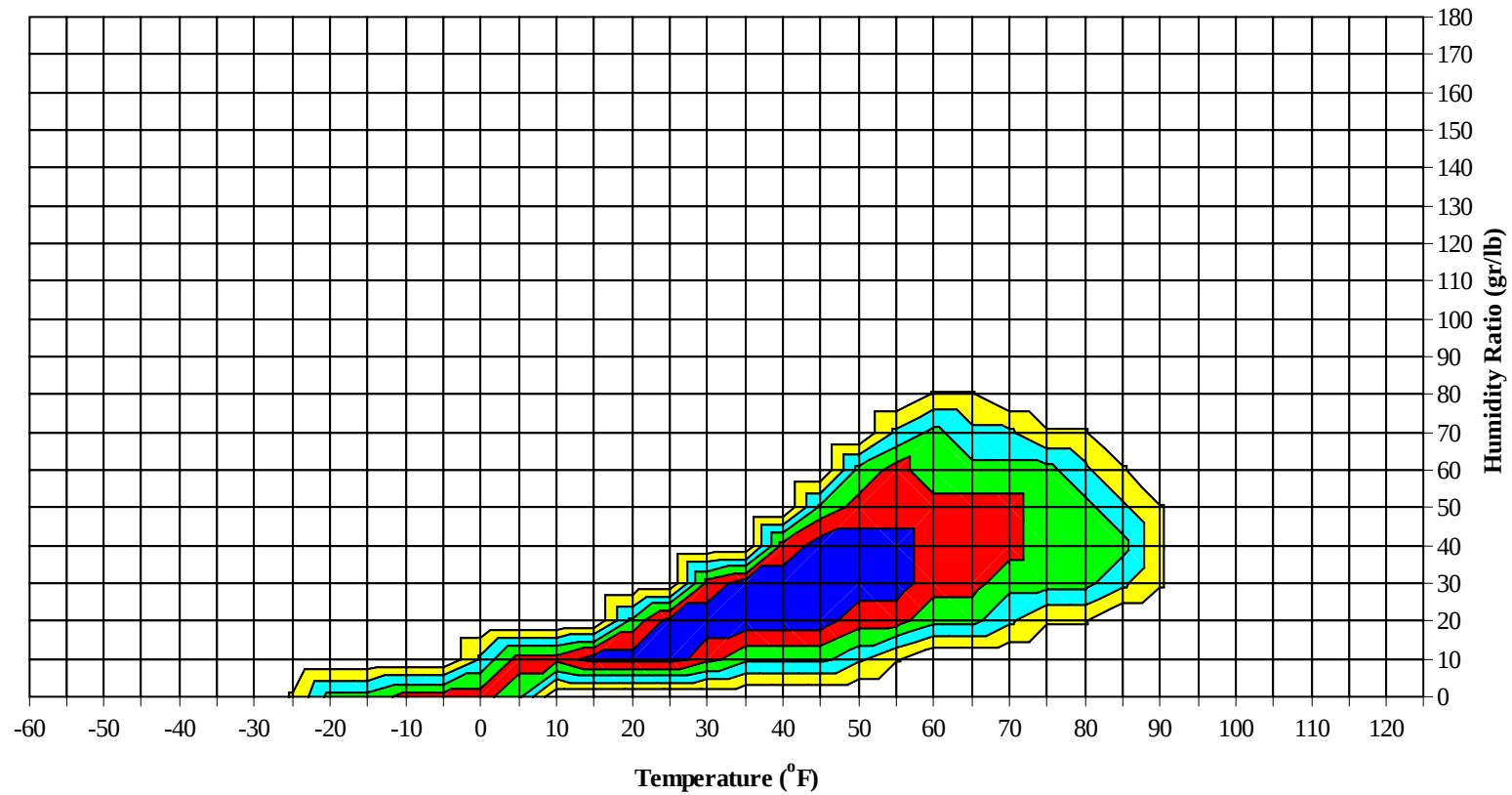


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Long Term Psychrometric Summary



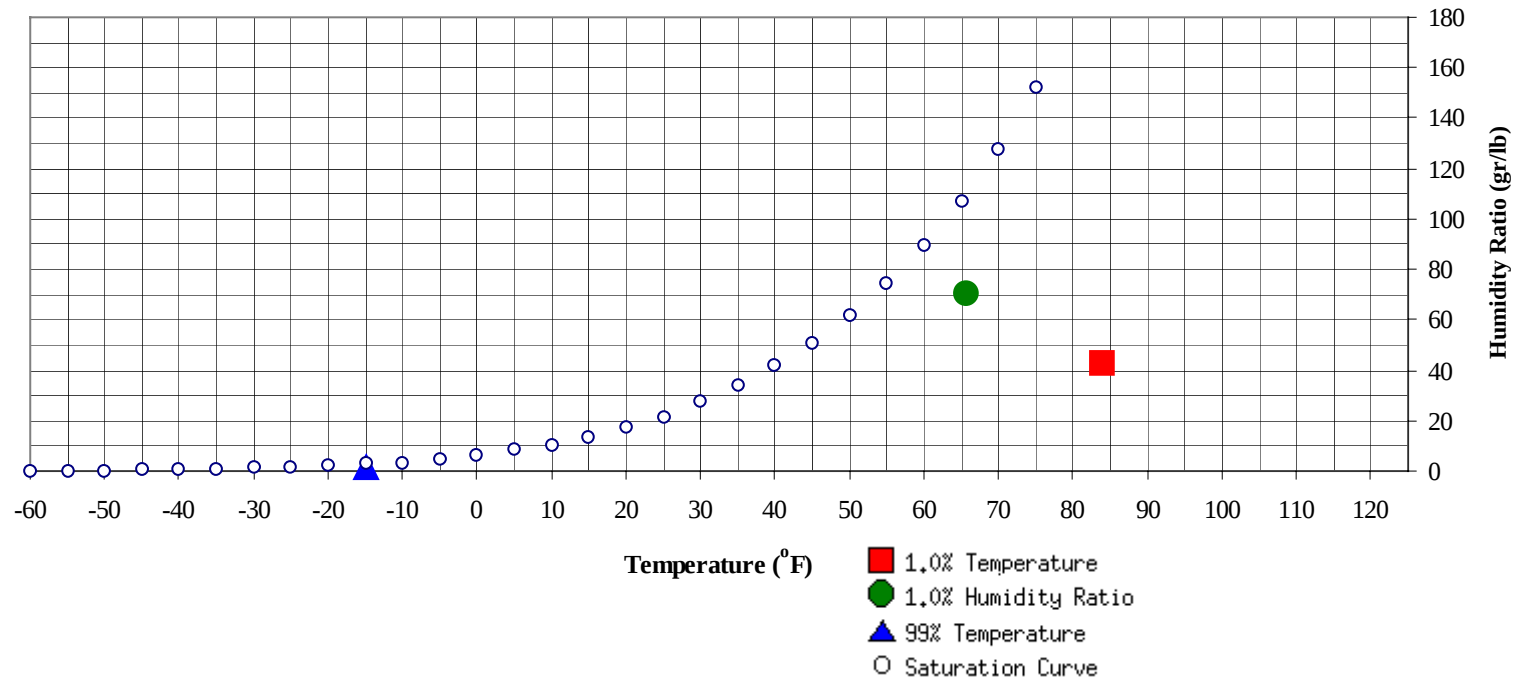
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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Psychrometric Summary of Peak Design Values



99% Dry Bulb	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)	1.0% Humidity Ratio	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
	-15	1.7	-3.3		70.7	65.6	58.2	53.8	26.8

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	84	43.1	58.5	26.9

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Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	January					February					March				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
100 / 104															
95 / 99															
90 / 94															
85 / 89															
80 / 84															
75 / 79															
70 / 74												0		0	50.0
65 / 69							1		1	45.4		1	0	1	46.5
60 / 64		0		0	45.1		2	0	2	43.8		4	1	5	44.2
55 / 59	0	2	0	2	42.0		4	1	5	41.6	0	12	3	15	41.9
50 / 54	0	7	2	9	39.6	0	13	3	16	39.6	1	23	8	32	39.8
45 / 49	5	14	8	27	37.2	3	21	9	34	37.1	4	33	18	55	37.1
40 / 44	14	32	18	63	34.4	14	29	22	65	34.2	15	39	32	86	34.5
35 / 39	23	31	31	85	31.3	26	29	33	88	31.1	28	35	44	107	31.5
30 / 34	27	30	28	84	27.6	30	24	34	88	27.7	47	33	50	130	28.4
25 / 29	28	25	31	84	23.9	29	18	28	75	24.2	52	23	33	107	24.6
20 / 24	25	18	25	69	20.0	24	15	19	58	20.1	40	12	21	73	20.5
15 / 19	25	14	20	59	15.7	19	10	11	39	15.6	19	10	11	40	15.8
10 / 14	17	11	12	41	10.8	15	11	13	40	10.8	15	8	10	33	11.2
5 / 9	14	11	12	37	5.9	12	11	11	33	6.2	9	5	7	22	6.5
0 / 4	16	14	14	44	1.0	10	11	9	31	1.1	6	4	3	13	1.3
-5 / -1	13	11	12	36	-3.3	8	9	9	26	-3.3	4	3	3	9	-3.2
-10 / -6	13	11	14	37	-7.6	13	8	11	32	-7.7	4	2	3	8	-7.3
-15 / -11	12	9	10	30	-12.3	10	5	6	22	-12.0	1	1	1	3	-12.4
-20 / -16	10	6	7	24	-17.0	6	2	3	11	-17.2	1	0	1	2	-16.8
-25 / -21	3	2	3	8	-21.2	3	1	1	5	-21.5	1	0	0	1	-21.5
-30 / -26	2	0	0	2	-26.9	0	1	0	1	-27.8	0			0	-27.3
-35 / -31	1	0	0	1	-32.3	1	0	1	2	-31.4	0			0	
-40 / -36	0			0	-35.0	0		0	0						
-45 / -41						0			0						

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

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Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	April					May					June				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
100 / 104															
95 / 99															
90 / 94								0	0	66.0		1	1	2	61.9
85 / 89		0		0	55.0		1	0	1	59.7		5	2	7	59.8
80 / 84		1	0	1	53.7		4	1	5	56.2	0	13	6	19	58.2
75 / 79		2	0	2	52.6		10	4	14	54.0	0	24	13	37	56.5
70 / 74		6	2	8	49.7	0	16	8	24	52.3	2	37	23	63	54.8
65 / 69	0	14	6	20	47.7	1	27	16	44	50.2	7	44	31	82	52.7
60 / 64	0	20	10	30	45.5	4	40	26	71	47.8	21	49	42	111	50.4
55 / 59	2	27	16	46	43.1	12	50	38	101	45.2	41	34	44	119	48.3
50 / 54	8	36	28	72	40.3	34	42	45	121	43.2	61	21	39	121	46.0
45 / 49	19	40	35	94	37.7	49	27	45	122	40.6	62	10	28	99	42.9
40 / 44	34	33	41	108	35.0	64	18	36	118	37.7	34	3	10	47	38.9
35 / 39	51	25	40	116	32.4	48	10	19	77	33.8	10	0	1	11	35.1
30 / 34	59	18	34	110	29.2	27	3	7	38	30.2	1		0	1	31.0
25 / 29	38	9	15	63	25.2	7	0	1	8	25.7					
20 / 24	17	4	5	26	20.8	1			1	21.5					
15 / 19	5	3	3	10	16.2										
10 / 14	5	2	2	8	11.6										
5 / 9	2	0	1	3	6.8										
0 / 4	1	0	0	1	1.9										
-5 / -1	0			0	-1.3										
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															
-35 / -31															
-40 / -36															
-45 / -41															

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Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	July					August					September				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
100 / 104		0		0	64.0		0	0	0	63.6					
95 / 99		0	0	0	64.3		1	0	1	61.7					
90 / 94		5	2	7	60.4		5	2	7	60.3		1		1	59.8
85 / 89		16	9	25	60.0	0	18	6	24	59.3		4	1	5	57.6
80 / 84	0	31	18	48	58.9	0	31	17	48	58.0		13	3	16	55.9
75 / 79	1	44	27	72	57.3	1	37	23	62	56.5		20	8	29	54.2
70 / 74	5	52	37	95	55.7	3	41	31	75	55.1	0	27	15	42	52.8
65 / 69	16	45	40	101	53.9	11	40	39	90	53.4	2	30	20	52	50.7
60 / 64	38	32	45	115	52.3	30	33	43	106	51.5	9	36	31	76	48.5
55 / 59	66	15	37	118	50.2	54	21	39	115	49.7	20	34	38	92	46.5
50 / 54	73	6	25	104	47.4	73	14	28	115	47.3	39	28	44	111	44.2
45 / 49	37	2	7	45	43.9	52	5	15	72	43.7	49	19	34	103	41.7
40 / 44	10	0	1	11	40.6	18	0	3	22	40.0	55	14	24	93	38.7
35 / 39	1			1	36.2	4	0	1	5	35.8	38	10	16	64	34.6
30 / 34						1	1	0	2	31.4	22	3	5	30	30.6
25 / 29						0			0	29.0	5	0	1	6	25.7
20 / 24											1		0	1	20.9
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															
-35 / -31															
-40 / -36															
-45 / -41															

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Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	October					November					December				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
100 / 104															
95 / 99															
90 / 94															
85 / 89		0		0	55.5										
80 / 84		2		2	54.7										
75 / 79		5	1	6	52.7										
70 / 74		12	2	14	50.8		0		0	48.4					
65 / 69	0	18	5	23	48.7		2		2	47.2					
60 / 64	2	26	12	39	46.6	0	3	1	4	45.3		0	0	0	41.8
55 / 59	9	30	22	61	44.2	1	9	2	12	44.1	0	2	0	2	42.8
50 / 54	20	40	34	93	41.6	6	16	6	28	41.2	1	6	2	9	40.7
45 / 49	31	36	42	109	38.8	13	27	17	57	38.1	6	16	7	29	37.4
40 / 44	43	28	42	113	36.2	22	34	23	78	34.8	18	28	19	64	34.5
35 / 39	41	21	35	97	33.1	24	36	33	93	31.3	25	37	27	89	31.4
30 / 34	45	15	30	90	29.6	39	35	46	120	28.0	30	36	39	104	27.6
25 / 29	32	6	13	51	25.3	39	22	36	97	24.4	36	31	40	107	23.9
20 / 24	13	4	4	21	21.0	28	15	24	66	20.3	31	23	28	81	19.9
15 / 19	8	3	3	14	16.5	19	9	14	42	15.9	21	14	18	53	15.6
10 / 14	3	1	1	5	11.6	14	9	10	33	11.1	19	10	16	45	10.9
5 / 9	1	1	1	3	6.2	12	8	6	26	6.4	14	10	10	35	6.1
0 / 4	1	0	0	1	1.4	7	7	6	20	1.1	13	10	12	35	1.3
-5 / -1	0	1	0	1	-2.8	5	3	5	13	-3.3	6	5	6	17	-3.3
-10 / -6	0	0	0	0	-7.9	7	4	6	17	-7.2	8	6	8	22	-7.9
-15 / -11	0		0	0	-11.3	2	2	2	6	-12.2	7	5	7	19	-12.5
-20 / -16						2	1	1	4	-16.3	5	5	5	15	-16.9
-25 / -21						0	0	1	1	-21.3	5	3	3	11	-22.0
-30 / -26						0			0		2	1	1	4	-26.7
-35 / -31											1	0	1	2	-30.7
-40 / -36											0	0		0	
-45 / -41															

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Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104		0	0	0	63.7
95 / 99		1	0	1	62.8
90 / 94		12	4	16	60.5
85 / 89	0	44	18	61	59.5
80 / 84	0	96	43	139	57.9
75 / 79	2	143	75	220	56.2
70 / 74	12	191	115	318	54.4
65 / 69	41	220	151	411	52.1
60 / 64	108	246	206	560	49.7
55 / 59	211	241	236	688	47.0
50 / 54	324	250	261	835	43.9
45 / 49	335	249	265	849	40.0
40 / 44	343	258	272	873	36.0
35 / 39	319	235	284	837	32.2
30 / 34	325	197	279	801	28.5
25 / 29	262	133	200	595	24.4
20 / 24	175	91	131	397	20.2
15 / 19	112	62	83	256	15.7
10 / 14	85	53	66	204	11.0
5 / 9	60	47	49	156	6.2
0 / 4	52	46	47	145	1.1
-5 / -1	34	31	37	103	-3.3
-10 / -6	43	31	42	116	-7.6
-15 / -11	32	22	28	81	-12.3
-20 / -16	25	14	18	56	-17.0
-25 / -21	12	5	8	26	-21.6
-30 / -26	5	2	2	8	-26.9
-35 / -31	2	1	1	4	-31.3
-40 / -36	1	0	0	1	-35.0
-45 / -41	0			0	

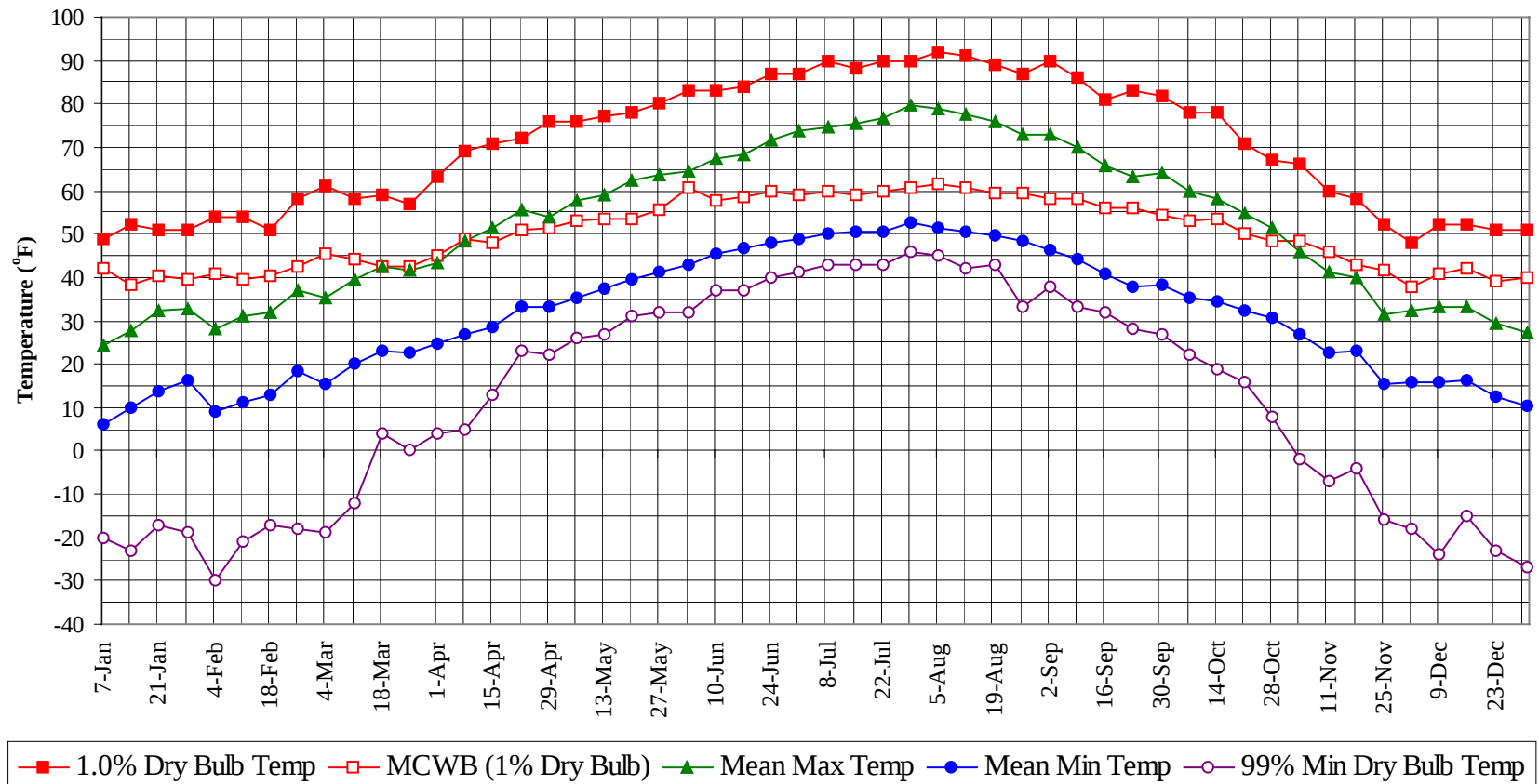
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Annual Summary of Temperatures

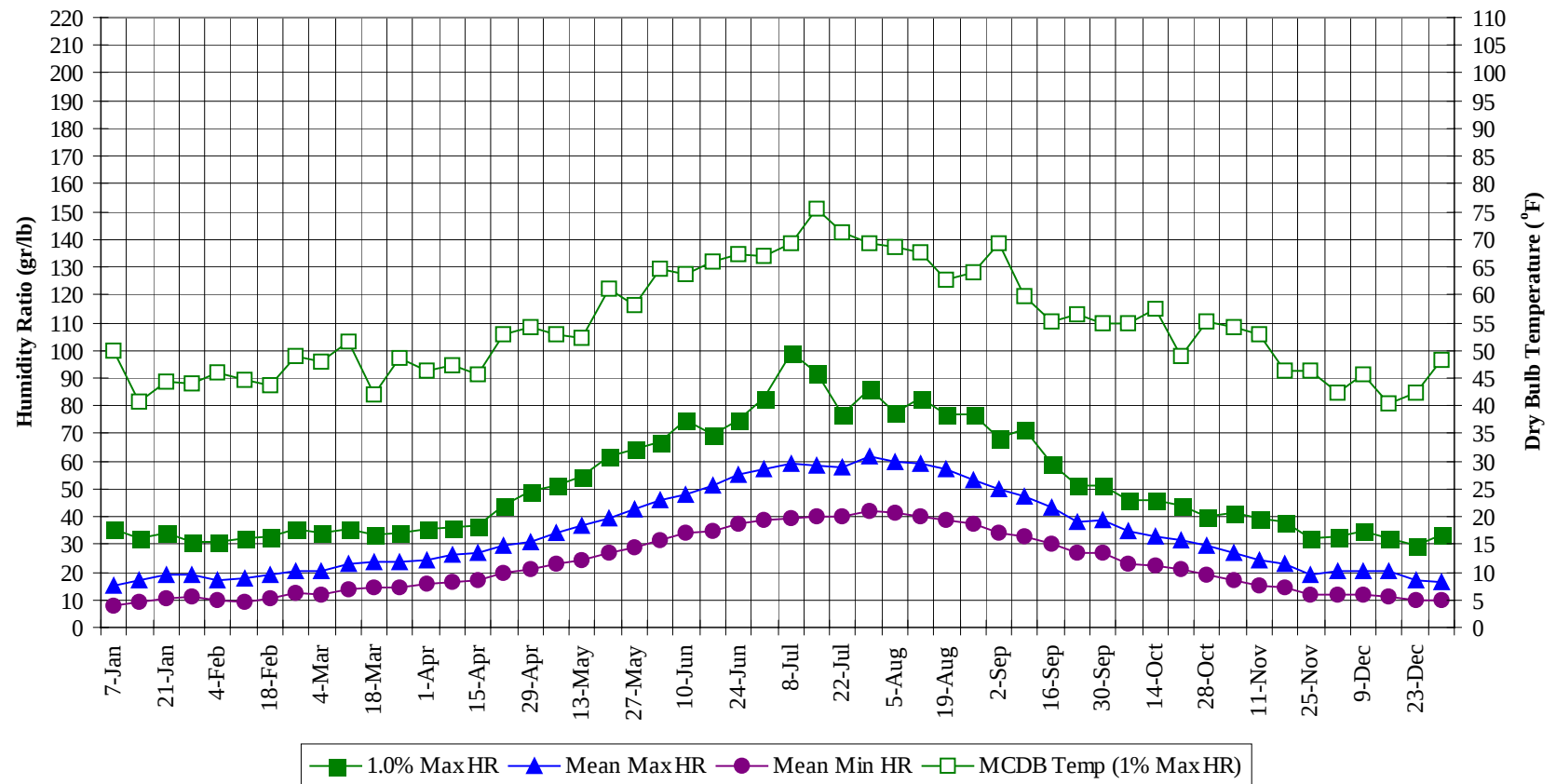


CUT BANK

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Long Term Humidity and Dry Bulb Temperature Summary



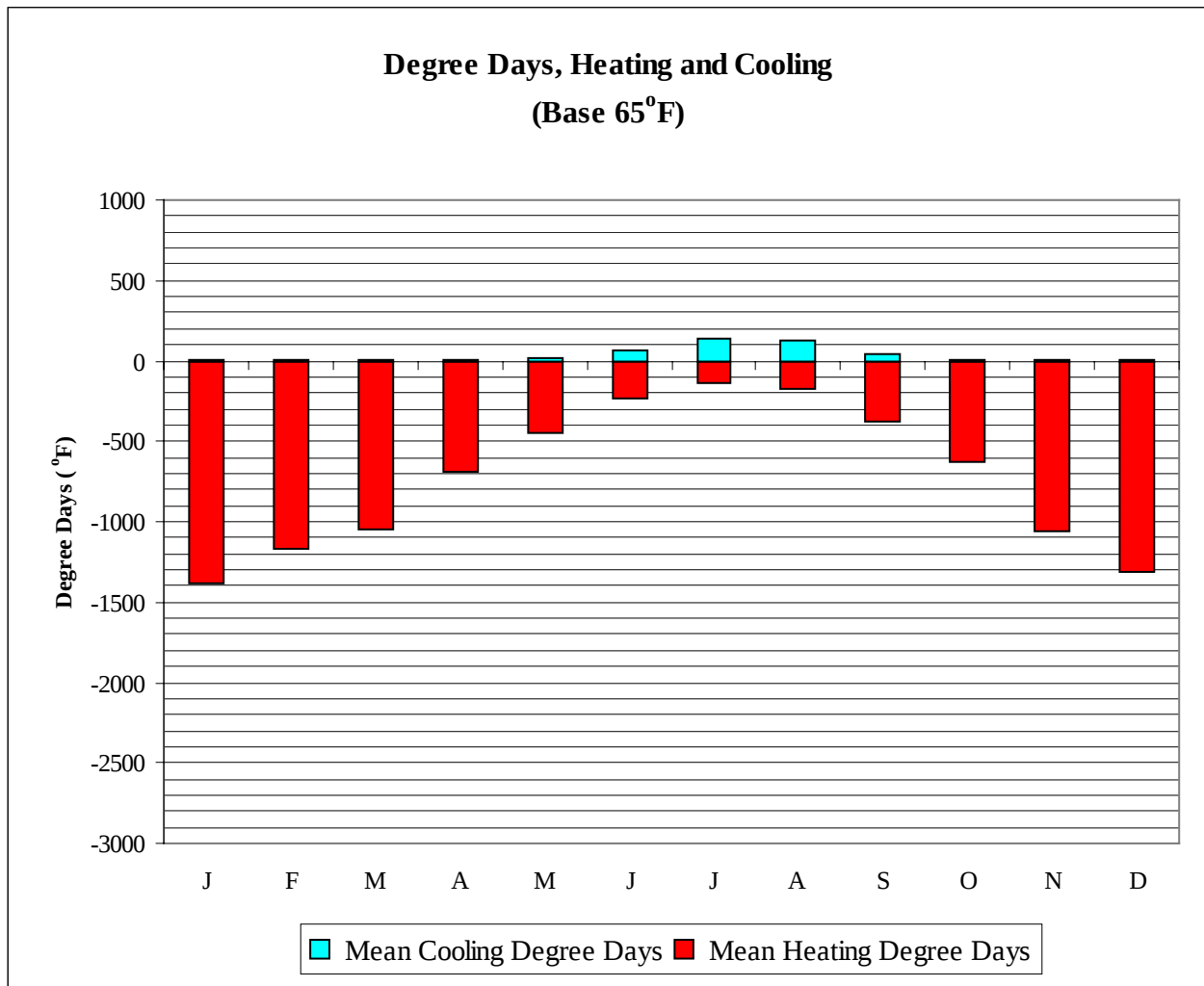
CUT BANK**MT****WMO No. 727796****Long Term Dry Bulb Temperature and Humidity Summary**

Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	49.0	42.2	24.3	6.2	-20.0	35.7	49.8	15.3	8.2
14-Jan	52.0	38.5	27.7	9.8	-23.0	32.2	40.9	17.2	9.3
21-Jan	51.0	40.3	32.3	13.8	-17.0	34.3	44.4	19.2	10.5
28-Jan	51.0	39.7	32.6	16.1	-19.0	30.8	44.1	18.9	11.1
4-Feb	54.0	40.7	28.3	9.3	-30.0	30.8	45.8	17.0	9.6
11-Feb	54.0	39.6	31.3	11.4	-21.0	32.2	44.8	17.4	9.5
18-Feb	51.0	40.3	32.1	12.8	-17.0	32.9	43.7	18.9	10.6
25-Feb	58.0	42.4	36.8	18.5	-18.0	35.7	48.8	20.7	12.5
4-Mar	61.0	45.4	35.1	15.2	-19.0	34.3	48.0	20.3	12.0
11-Mar	58.0	44.3	39.5	19.9	-12.0	35.7	51.6	22.9	14.0
18-Mar	59.0	42.3	42.4	22.9	4.0	33.6	42.2	23.6	14.7
25-Mar	57.0	42.5	41.7	22.5	0.0	34.3	48.6	23.7	14.4
1-Apr	63.0	45.0	43.4	24.5	4.0	35.7	46.3	24.6	15.8
8-Apr	69.0	48.8	48.3	26.6	5.0	36.4	47.2	26.3	16.1
15-Apr	71.0	48.0	51.2	28.5	13.0	37.1	45.5	26.8	16.9
22-Apr	72.0	50.8	55.7	33.3	23.0	44.1	52.9	29.8	19.8
29-Apr	76.0	51.4	54.0	33.3	22.0	49.0	54.1	31.1	20.8
6-May	76.0	53.0	57.7	35.2	26.0	51.1	52.7	34.1	22.8
13-May	77.0	53.6	59.0	37.2	27.0	54.6	52.2	36.6	24.5
20-May	78.0	53.6	62.3	39.7	31.0	61.6	61.1	39.4	27.0
27-May	80.0	55.7	63.7	41.1	32.0	64.4	58.2	42.8	29.1
3-Jun	83.0	60.7	64.5	42.8	32.0	67.2	64.6	46.2	31.5
10-Jun	83.0	57.9	67.6	45.6	37.0	74.9	63.8	48.1	33.9
17-Jun	84.0	58.6	68.4	46.5	37.0	69.3	66.1	51.0	35.0
24-Jun	87.0	59.6	71.7	47.8	40.0	74.9	67.2	54.9	37.1
1-Jul	87.0	59.1	73.6	48.9	41.0	82.6	66.9	57.0	38.7
8-Jul	90.0	59.8	74.6	50.3	43.0	99.4	69.3	59.2	39.7
15-Jul	88.0	59.0	75.3	50.4	43.0	91.7	75.4	58.2	39.9
22-Jul	90.0	60.0	76.6	50.7	43.0	77.0	71.2	58.1	40.4
29-Jul	90.0	60.8	79.7	52.6	46.0	86.1	69.4	61.6	41.9
5-Aug	92.0	61.7	78.9	51.4	45.0	77.7	68.5	59.6	41.4
12-Aug	91.0	60.9	77.7	50.3	42.0	82.6	67.8	58.8	40.1
19-Aug	89.0	59.3	75.8	49.7	43.0	77.0	62.8	57.2	39.0
26-Aug	87.0	59.5	72.9	48.2	33.0	77.0	64.0	53.1	37.3
2-Sep	90.0	58.1	72.9	46.2	38.0	68.6	69.3	49.7	33.9
9-Sep	86.0	58.0	70.0	44.1	33.0	71.4	59.8	47.3	33.0
16-Sep	81.0	55.9	65.6	40.9	32.0	58.8	55.2	43.0	29.9
23-Sep	83.0	56.0	63.1	37.9	28.0	51.1	56.5	38.4	26.8
30-Sep	82.0	54.3	64.1	38.4	27.0	51.1	55.0	38.7	27.1
7-Oct	78.0	53.1	60.0	35.4	22.0	46.2	54.9	34.7	23.1
14-Oct	78.0	53.4	58.1	34.5	19.0	46.2	57.6	32.9	22.4
21-Oct	71.0	50.1	54.9	32.3	16.0	44.1	48.9	31.6	20.7
28-Oct	67.0	48.3	51.3	30.7	8.0	39.9	55.3	29.3	19.1
4-Nov	66.0	48.3	45.8	27.0	-2.0	41.3	54.1	27.0	17.4
11-Nov	60.0	45.8	41.1	22.7	-7.0	39.2	52.8	24.3	15.0
18-Nov	58.0	42.8	39.8	23.1	-4.0	37.8	46.4	22.9	14.1
25-Nov	52.0	41.8	31.5	15.5	-16.0	32.2	46.5	19.1	11.8
2-Dec	48.0	37.9	32.5	16.0	-18.0	32.9	42.5	20.1	11.6
9-Dec	52.0	40.9	33.0	16.0	-24.0	35.0	45.7	20.4	11.8
16-Dec	52.0	42.0	33.1	16.1	-15.0	32.2	40.3	20.2	11.5
23-Dec	51.0	39.2	29.4	12.5	-23.0	29.4	42.5	17.4	9.9
31-Dec	51.0	39.9	27.4	10.4	-27.0	33.6	48.3	16.5	9.6

CUT BANK

MT

WMO No. 727796

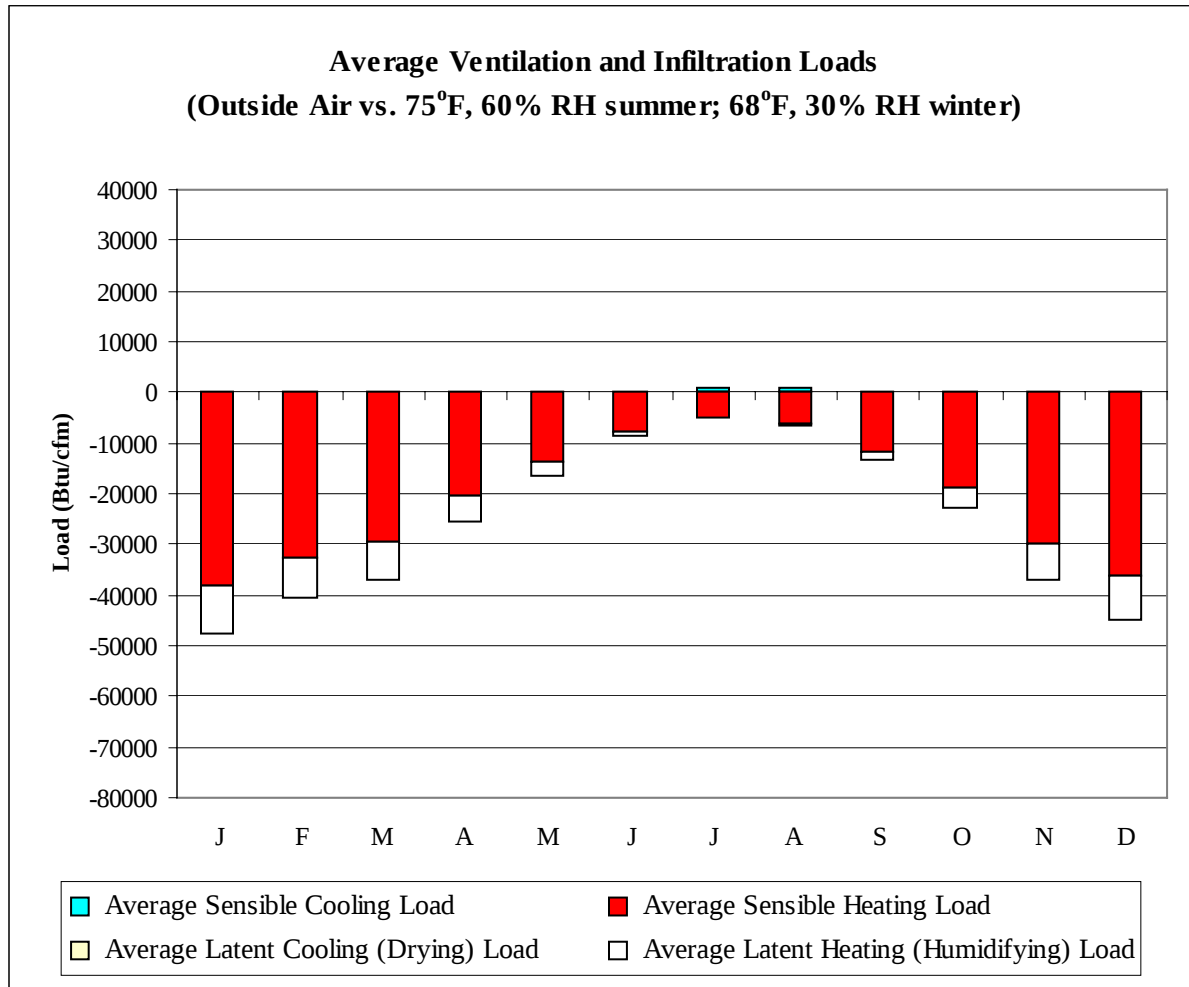


	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1384
FEB	0	1169
MAR	0	1043
APR	5	694
MAY	22	449
JUN	63	230
JUL	137	132
AUG	123	176
SEP	44	377
OCT	9	631
NOV	0	1065
DEC	0	1307
ANN	404	8657

CUT BANK

MT

WMO No. 727796



	Average Sensible Cooling Load	Average Sensible Heating Load	Average Latent Cooling Load	Average Latent Heating Load
	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)
JAN	0	-38282	0	-9284
FEB	0	-32520	0	-7958
MAR	0	-29521	0	-7327
APR	12	-20297	0	-5176
MAY	74	-13861	0	-2465
JUN	301	-7745	2	-669
JUL	863	-4843	30	-299
AUG	857	-6076	0	-359
SEP	223	-11742	0	-1530
OCT	24	-18627	0	-3993
NOV	0	-29994	0	-7047
DEC	0	-36293	0	-8711
ANN	2354	-249801	32	-54818

Average Annual Solar Radiation – Nearest Available Site

(Source: National Renewable Energy Laboratory, Golden CO, 1995)

City: CUT BANK
 State: MT
 WBAN No: 24137
 Lat(N): 48.6
 Long(W): 112.37
 Elev(ft): 3839

Stn Type: Secondary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS
 Window: 1
 Overhang: 0.782
 Vert Gap: 0.322

AVERAGE INCIDENT SOLAR RADIATION (Btu/sq.ft./day), Percentage Uncertainty = 9		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Global	430	710	1100	1540	1870	2070	2190	1830	1320	880	500	350	1240
	Std Dev	29	41	77	112	105	161	106	125	138	53	33	22	32
	Minimum	380	590	890	1340	1690	1800	1980	1610	1030	770	440	300	1180
	Maximum	490	780	1240	1780	2160	2410	2340	2090	1540	960	570	390	1310
	Diffuse	220	330	500	670	780	810	670	590	490	350	240	180	490
Clear Day	Global	580	940	1490	2110	2550	2730	2630	2240	1680	1080	650	480	1600
NORTH	Global	140	210	310	440	580	680	640	480	340	240	150	110	360
	Diffuse	140	210	310	420	510	540	510	430	340	240	150	110	330
Clear Day	Global	110	170	260	400	610	750	680	460	300	200	130	98	350
EAST	Global	330	510	760	1000	1180	1260	1370	1190	900	640	390	280	820
	Diffuse	180	270	400	530	610	650	610	540	430	300	200	150	410
Clear Day	Global	560	810	1130	1430	1620	1670	1640	1470	1210	880	600	470	1130
SOUTH	Global	950	1170	1250	1190	1060	1020	1130	1240	1300	1280	1020	890	1120
	Diffuse	290	390	490	570	610	620	590	550	490	410	310	250	460
Clear Day	Global	1840	2040	2020	1720	1410	1250	1300	1550	1870	1990	1850	1720	1710
WEST	Global	340	520	740	980	1120	1220	1300	1130	880	640	390	290	800
	Diffuse	180	270	400	530	620	660	620	550	430	310	200	150	410
Clear Day	Global	560	810	1130	1430	1620	1670	1640	1470	1210	880	600	470	1130

Average Annual Solar Heat and Illumination – Nearest Available Site

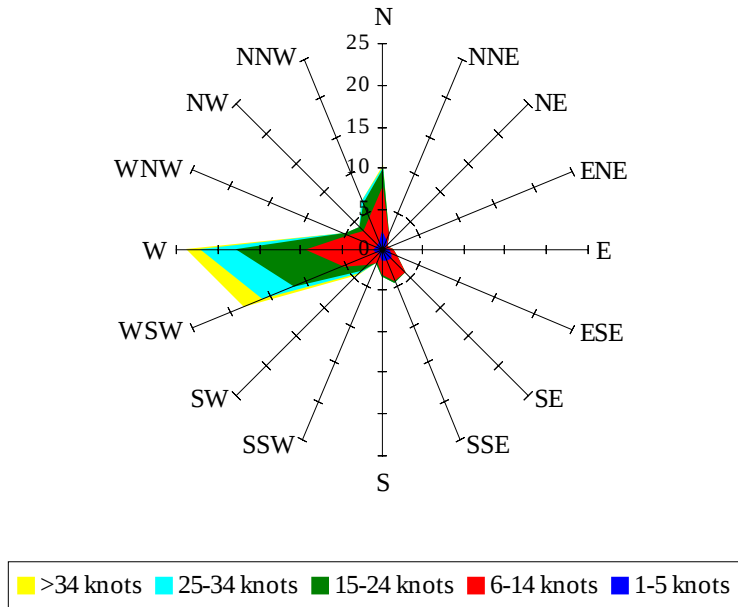
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 9		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Unshaded	250	450	760	1090	1340	1500	1590	1320	920	580	300	200	860
NORTH	Unshaded	96	150	220	300	380	440	410	310	240	170	110	79	240
	Shaded	77	120	180	250	320	370	350	270	200	140	88	64	200
EAST	Unshaded	230	360	540	720	850	910	990	850	640	450	260	190	580
	Shaded	190	300	440	560	650	690	760	670	520	370	220	160	460
SOUTH	Unshaded	720	870	890	810	690	640	710	820	910	950	780	680	790
	Shaded	700	790	650	430	340	350	340	370	570	790	740	660	560
WEST	Unshaded	230	360	530	710	800	880	930	810	630	450	270	190	570
	Shaded	200	300	430	560	620	670	720	630	510	370	230	160	450

AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9		March					June				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	25	55	67	57	29	42	75	93	93	74
	M.Cloudy	17	39	50	42	21	28	55	69	68	55
NORTH	M.Clear	7	11	13	12	8	16	14	16	16	14
	M.Cloudy	7	13	15	13	8	13	16	18	18	16
EAST	M.Clear	67	61	17	12	8	80	77	40	16	14
	M.Cloudy	29	36	17	13	8	40	50	33	18	16
SOUTH	M.Clear	32	73	89	77	38	10	36	58	58	36
	M.Cloudy	16	42	55	46	20	10	28	44	43	28
WEST	M.Clear	7	11	13	55	67	10	14	16	40	76
	M.Cloudy	7	13	15	36	33	10	16	18	32	51
M.Clear	(% hrs)	26	26	22	20	22	42	36	32	27	29
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	18	53	72	71	49	1	22	30	20	0
	M.Cloudy	11	36	51	49	35	1	15	21	14	0
NORTH	M.Clear	6	11	14	13	11	1	7	8	6	0
	M.Cloudy	5	12	15	15	12	1	6	8	6	0
EAST	M.Clear	59	73	37	13	11	6	36	8	6	0
	M.Cloudy	20	40	27	15	12	2	16	8	6	0
SOUTH	M.Clear	15	56	81	80	53	5	64	82	60	0
	M.Cloudy	8	32	51	48	32	2	25	37	26	0
WEST	M.Clear	6	11	14	41	74	1	7	10	37	0
	M.Cloudy	5	12	15	28	42	1	6	9	17	0
M.Clear	(% hrs)	44	40	39	37	35	28	29	28	28	29

Wind Summary - December, January, and February

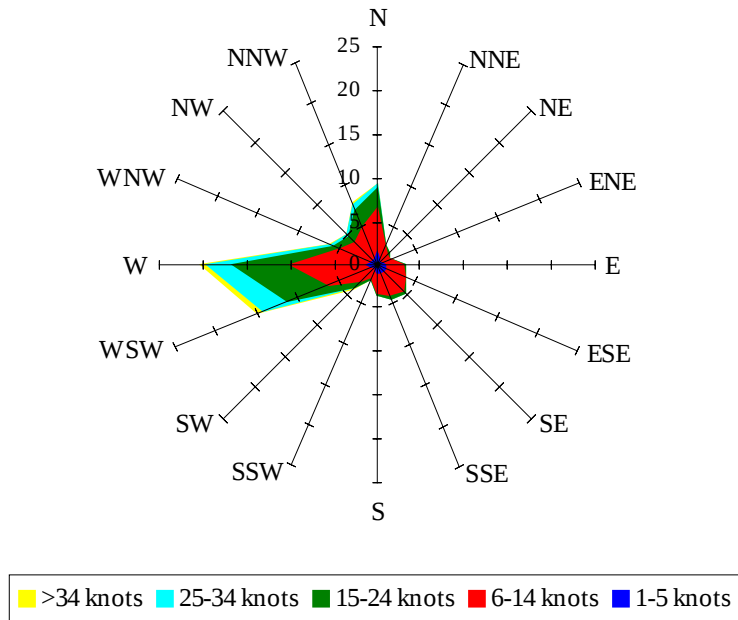
Labels of Percent Frequency on North Axis



Percent Calm = 10.01

Wind Summary - March, April, and May

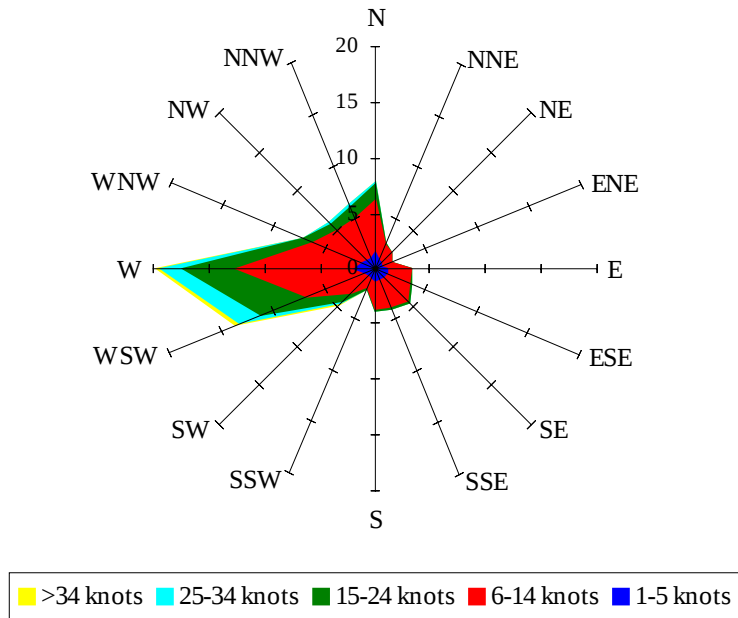
Labels of Percent Frequency on North Axis



Percent Calm = 6.92

Wind Summary - June, July, and August

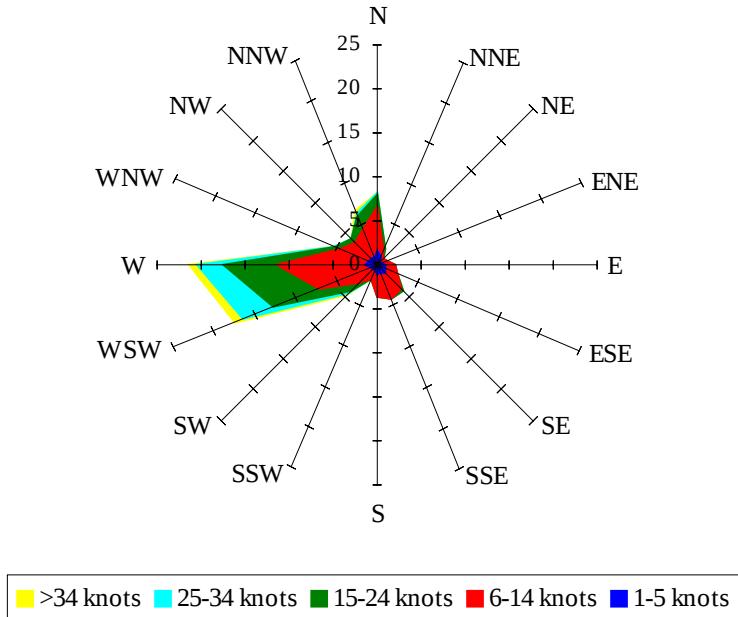
Labels of Percent Frequency on North Axis



Percent Calm = 8.00

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 9.23