

**UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120th Street
Waseca, MN 56093-4521
JANUARY 2019**

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow Depth	Frost Depth	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.				Precip.	Snow			2"		4"		8"				20"	40"
	----- °F -----	----- °F -----								Max	Min	Max	Min.	Max.	Min.				
1	29	0	50.5	2573.5	-	-	T	7"	30	26	31	30	33	32	35	40	291	36	
2	12	-1	59.5	2633.0	T	-	T	T	26	22	30	26	32	32	35	40	182	148	
3	24	11	47.5	2680.5	-	-	T	T	25	22	27	26	32	31	34	40	243	108	
4	40	21	34.5	2715.0	-	-	T	T	29	24	29	26	31	30	34	40	195	161	
5	42	24	32.0	2747.0	-	-	T	T	31	28	30	29	31	31	34	40	128	182	
6	43	27	30.0	2777.0	-	-	T	T	31	30	31	30	31	31	34	39	173	185	
7	41	28	30.5	2807.5	-	-	-	11	31	30	31	30	31	31	34	39	432	59	
8	38	30	31.0	2838.5	0.01	0.01	-	-	31	31	31	31	32	31	34	39	211	41	
9	33	5	46.0	2884.5	-	-	-	-	31	19	31	24	32	31	34	39	381	105	
10	14	5	55.5	2940.0	-	-	-	-	25	19	26	23	31	28	34	39	195	191	
11	27	10	46.5	2986.5	-	-	-	12	27	19	27	23	29	28	33	39	221	186	
12	33	19	39.0	3025.5	-	-	-	-	29	23	29	24	30	28	33	39	140	146	
13	30	25	37.5	3063.0	-	-	-	-	29	26	29	27	30	29	33	39	144	59	
14	34	24	36.0	3099.0	-	-	-	12	30	28	30	29	30	30	33	39	194	124	
15	29	26	37.5	3136.5	T	-	-	-	30	28	30	29	30	30	33	38	144	22	
16	32	9	44.5	3181.0	T	-	-	-	30	23	30	26	31	30	33	38	265	33	
17	21	9	50.0	3231.0	0.05	0.06	1.4	1	28	22	28	25	30	28	33	38	143	195	
18	21	7	51.0	3282.0	-	-	-	12	28	26	28	26	29	28	33	38	145	65	
19	11	-6	62.5	3344.5	0.49	0.55	5.0	5	27	26	28	27	29	29	32	38	285	55	
20	3	-10	68.5	3413.0	-	-	-	5	27	27	28	28	29	29	32	38	160	218	
21	1	-11	70.0	3483.0	-	-	-	5	27	27	28	28	29	29	32	38	182	209	
22	15	0	57.5	3540.5	T	-	T	3	27	26	28	27	29	28	32	38	382	114	
23	18	6	53.0	3593.5	T	-	T	3	27	25	27	26	28	27	32	38	133	54	
24	19	3	54.0	3647.5	-	-	-	3	26	25	26	26	27	27	32	38	207	190	
25	3	-16	71.5	3719.0	-	-	-	3	26	20	26	20	27	27	32	37	256	170	
26	3	-13	70.0	3789.0	T	-	T	3	22	18	21	18	23	21	31	37	93	166	
27	11	-20	69.5	3858.5	0.08	0.63	1.2	5	21	18	21	18	23	21	30	37	146	151	
28	6	-18	71.0	3929.5	0.65	1.28	5.8	10	22	18	22	19	23	22	30	37	313	196	
29	6	-9	66.5	3996.0	-	-	-	9	23	22	24	22	25	23	30	37	223	235	
30	-8	-30	84.0	4080.0	-	-	-	8	24	23	24	24	26	25	30	37	309	208	
31	-18	-31	89.5	4169.5	-	-	-	8	23	22	24	23	26	25	30	36	133	251	
Total	19.8	4.0	1646.5	4169.5	1.28	1.28	13.4		27.2	24.0	27.6	25.5	29.0	28.1			6649	4263	
Avg.	11.9								25.6		26.5		28.6		32.6	38.4			
Dept. from Normal																			
	-1.3		39.5	130.5	0.03	0.03	3.9		2.8		2.3		3.7		0.6			-838	

* Since Nov. 1, 2017

** Since Jan. 1, 2018

**UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120th Street
Waseca, MN 56093-4521
FEBRUARY 2019**

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow Depth	Frost Depth	Soil Temperatures						Wind	Solar Radiation			
	Max.	Min.				Precip.	Snow			2"		4"		8"				20"	40"	
	---°F---					-----in.-----				Max	Min	Max	Min.	Max.	Min.					mi.
1	1	-24	76.5	4246.0	T		T	8	19	23	22	24	23	26	25	29	36	255	158	
2	28	1	50.5	4296.5	-		-	7		25	23	25	24	26	26	29	36	285	235	
3	39	25	33.0	4329.5	-		-	4		30	25	29	25	28	26	30	36	215	105	
4	35	6	44.5	4374.0	0.18	1.46	-	3	19	31	30	30	29	30	28	30	36	154	89	
5	7	-3	63.0	4437.0	-		-	3		31	24	30	24	30	27	30	36	258	143	
6	12	3	57.5	4494.5	0.63	2.09	5.5	8		25	23	25	23	27	25	30	36	198	46	
7	16	3	55.5	4550.0	0.14	2.23	1.0	8		26	25	26	25	27	26	30	36	123	143	
8	3	-17	72.0	4622.0	0.03	2.26	0.8	8		27	26	27	26	27	27	30	36	253	132	
9	-5	-21	78.0	4700.0	-		-	8		27	27	27	27	28	27	30	35	129	297	
10	14	-13	64.5	4764.5	-		-	7		27	27	27	27	28	28	30	35	227	210	
11	19	14	48.5	4813.0	0.30	2.56	4.3	11	19	27	27	27	27	28	28	30	35	198	137	
12	23	18	44.5	4857.5	0.34	2.90	4.0	13		28	27	28	27	29	28	30	35	271	138	
13	22	-8	58.0	4915.5	T		T	12		28	28	28	28	29	29	30	35	251	211	
14	22	-7	57.5	4973.0	-		-	11		28	28	28	28	29	29	30	35	203	254	
15	24	-15	60.5	5033.5	-		-	9		29	28	29	28	29	29	30	35	270	238	
16	5	-12	68.5	5102.0	-		-	9		28	28	29	28	29	29	31	35	120	314	
17	18	-6	59.0	5161.0	-		-	8		28	28	28	28	29	29	31	35	222	249	
18	21	1	54.0	5215.0	0.21	3.11	3.3	11	19	28	28	28	28	29	29	31	35	234	197	
19	15	-15	65.0	5280.0	-		-	10		28	28	28	28	29	29	31	35	84	326	
20	22	-12	60.0	5340.0	0.36	3.47	4.1	14		28	28	28	28	29	29	31	35	196	328	
21	27	-4	53.5	5393.5	0.20	3.67	2.4	15		28	28	29	28	29	29	31	35	269	193	
22	16	-3	58.5	5452.0	-		-	15		29	28	29	28	29	29	31	35	108	331	
23	28	13	44.5	5496.5	0.09	3.76	0.90	14		29	29	29	29	29	29	31	35	210	287	
24	32	9	44.5	5541.0	0.54	4.30	4.00	14		29	29	29	29	30	29	31	35	318	156	
25	12	-6	62.0	5603.0	T		T	13	19	29	29	29	29	30	30	31	35	327	328	
26	0	-8	69.0	5672.0	-		-	13		29	29	29	29	30	30	31	35	153	227	
27	6	-1	62.5	5734.5	0.01	4.31	0.5	13		29	29	29	29	30	30	31	35	196	164	
28	6	-12	68.0	5802.5	-		-	13	19	29	29	29	29	30	30	31	35	140	351	
Total	16.7	-3.4	1633.0	5802.5	3.03	4.31	30.8			28.0	27.1	28.0	27.2	28.7	28.2			5867	5987	
Avg.	6.7									27.6		27.6		28.4		30.4	35.3			
Dept. from Normal																				
		-11.8	331.0	461.5	2.03	2.06	21.8			2.9		1.8		2.6		-0.4				-819

* Since Nov. 1, 2017

** Since Jan. 1, 2018

New lowest maximum temperature record

**UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120th Street
Waseca, MN 56093-4521
MARCH 2019**

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow Depth	Frost Depth	Soil Temperatures						Wind mi.	Solar Radiation Langleys		
	Max.	Min.				Precip.	Snow			2"		4"		8"					
	----- °F-----	----- °F-----								Max	Min	Max	Min.	Max.	Min.			20"	40"
1	17	-3	58.0	5860.5	-	-	-	13	19	29	29	29	29	30	30	31	35	142	277
2	19	4	53.5	5914.0	0.22	4.53	4.2	16		29	29	29	29	30	30	31	35	107	168
3	13	-29	73.0	5987.0	-	-	-	15		29	29	29	29	30	30	31	35	141	302
4	-6	-25	80.5	6067.5	-	-	-	15	18	29	29	29	29	30	30	31	35	181	386
5	6	-20	72.0	6139.5	-	-	-	15		29	29	29	29	30	30	31	35	289	384
6	11	-9	64.0	6203.5	-	-	-	15		29	29	29	29	30	30	31	35	181	404
7	17	-9	61.0	6264.5	-	-	-	14		29	29	29	29	30	30	31	35	125	372
8	20	-1	55.5	6320.0	-	-	-	14		29	29	29	29	30	30	31	35	159	311
9	31	18	40.5	6360.5	-	-	-	13		29	29	29	29	30	30	31	35	276	332
10	35	21	37.0	6397.5	0.50	5.53	2.5	13		30	29	30	29	30	30	31	35	301	118
11	26	5	49.5	6447.0	-	-	-	12	18	31	30	31	30	31	30	31	35	203	319
12	31	8	45.5	6492.5	-	-	-	12		31	31	31	31	31	31	31	35	148	443
13	37	31	31.0	6523.5	0.63	6.16	-	10		31	31	31	31	31	31	31	35	312	93
14	43	34	26.5	6550.0	0.32	6.48	-	5		31	31	31	31	31	31	31	35	312	102
15	40	25	32.5	6582.5	0.34	6.82	T	4		31	31	31	31	31	31	31	35	282	60
16	32	19	39.5	6622.0	-	-	-	3		31	31	31	31	31	31	31	35	227	388
17	32	19	39.5	6661.5	-	-	-	2		31	31	31	31	31	31	31	35	112	443
18	36	22	36.0	6697.5	-	-	-	2	17	31	31	31	31	31	31	32	35	165	294
19	38	23	34.5	6732.0	-	-	-	1		31	31	31	31	31	31	32	35	174	430
20	44	29	28.5	6760.5	-	-	-	1		31	31	31	31	31	31	32	35	216	432
21	45	29	28.0	6788.5	-	-	-	T		31	31	31	31	31	31	32	35	199	393
22	46	29	27.5	6816.0	-	-	-	T		32	31	31	31	31	31	32	35	204	470
23	48	29	26.5	6842.5	-	-	-	T		32	31	31	31	31	31	32	35	111	489
24	52	31	23.5	6866.0	T	-	-	-		32	32	32	31	31	31	32	35	127	447
25	50	28	26.0	6892.0	T	-	-	-	0	34	32	32	32	32	31	32	35	209	187
26	41	27	31.0	6923.0	-	-	-	-		41	32	32	32	32	32	32	35	95	296
27	48	30	26.0	6949.0	-	-	-	-		41	32	35	32	32	32	32	35	283	375
28	65	33	16.0	6965.0	-	-	-	-		48	34	41	33	33	32	32	35	286	340
29	51	29	25.0	6990.0	-	-	-	-		47	33	41	33	34	32	32	35	187	395
30	43	28	29.5	7019.5	-	-	-	-		47	32	42	32	35	32	32	35	156	389
31	36	18	38.0	7057.5	-	-	-	-		40	32	37	32	33	32	32	35	235	427
Total	33.8	15.3	1255.0	7057.5	2.01	6.82	6.7			33.1	30.7	31.8	30.6	31.1	30.8			6145	10266
Avg.	24.5									31.9		31.2		31.0		31.5	35.0		
Dept. from Normal																			
	-6.7		207.0	668.5	-0.48	2.08	-3.5			0.0		-0.5		0.7		-0.9			509

* Since Nov. 1, 2017

** Since Jan. 1, 2018

New record lowest maximum and/or minimum temperature.

On the 3rd, a new all time record lowest minimum temperature for the month of March.

On the 4th, a new all time record lowest maximum temperature for the month of March.

First week of March (1-7) avg Temp (-1.0)

UNIVERSITY OF MINNESOTA
 SOUTHERN RESEARCH AND OUTREACH CENTER
 35838 120th Street
 Waseca, MN 56093-4521
 APRIL 2019

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul** Precip.	Snow	Depth	Evap	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.								2"		4"		8"				20"	40"
	----- °F -----									Max	Min	Max	Min.	Max.	Min.			20"	40"
1	37	21	38.0	7095.5	T		T	-	-	37	32	35	32	33	32	32	35	210	388
2	42	25	31.5	7127.0	-		-	-	-	42	32	39	32	34	32	32	35	170	316
3	52	24	27.0	7154.0	0.03	6.35	-	-	-	43	33	39	33	35	32	32	35	239	405
4	48	31	25.5	7179.5	-		-	-	-	43	33	40	33	35	32	32	35	149	346
5	44	35	25.5	7205.0	0.01	6.36	-	-	-	38	35	36	35	34	34	32	35	276	115
6	55	39	18.0	7223.0	0.23	6.59	-	-	-	44	35	41	35	37	34	32	35	217	151
7	57	47	13.0	7236.0	-		-	-	-	48	42	45	40	40	37	33	35	185	123
8	61	37	16.0	7252.0	0.01	6.60	-	-	0.15	53	40	49	41	43	40	36	35	164	229
9	70	31	14.5	7266.5	-		-	-	-	55	39	50	41	45	40	38	36	243	511
10	59	30	20.5	7287.0	-		-	-	-	50	37	48	40	44	42	40	36	270	301
11	32	27	35.5	7322.5	1.23	7.83	7.5	6		37	34	40	35	42	37	39	37	435	81
12	35	28	33.5	7356.0	0.05	7.88	T	3		34	33	35	34	37	36	38	38	396	93
13	33	29	34.0	7390.0	T		T	2		33	33	34	34	36	35	37	38	375	243
14	38	26	33.0	7423.0	-		-	1		33	33	34	33	35	34	36	38	135	418
15	42	28	30.0	7453.0	-		-	T	0.44	38	33	33	33	34	34	35	38	160	541
16	60	34	18.0	7471.0	0.03	7.91	-	-	-	45	33	42	33	38	34	36	38	253	437
17	66	44	10.0	7481.0	T		-	-	0.16	53	40	49	39	43	38	38	37	229	490
18	51	39	20.0	7501.0	1.49	9.40	-	-	0.08	46	41	46	42	44	42	41	38	246	19
19	52	35	21.5	7522.5	-		-	-	-	50	38	48	40	44	42	41	38	192	348
20	60	38	16.0	7538.5	-		-	-	-	58	38	52	40	47	41	41	39	120	604
21	77	47	3.0	7541.5	T		-	-	-	60	41	55	43	49	43	43	39	297	571
22	86	45	0.0	7541.5	0.07	9.47	-	-	0.95	67	50	61	50	54	48	45	40	320	428
23	49	36	22.5	7563.5	0.28	9.75	-	-	-	51	41	53	44	52	46	46	40	267	89
24	64	39	13.5	7577.0	-		-	-	-	62	41	57	44	51	46	46	41	112	608
25	73	51	3.0	7580.0	0.27	10.02	-	-	-	62	45	58	47	52	48	46	42	252	509
26	68	40	11.0	7591.0	0.03	10.05	-	-	-	60	45	56	47	52	49	48	42	219	365
27	57	39	17.0	7608.0	0.10	10.15	-	-	-	60	44	56	46	52	48	48	43	226	573
28	41	29	30.0	7638.0	0.36	10.51	1	-	-	47	38	49	41	50	44	47	43	158	173
29	48	30	26.0	7664.0	-		-	-	1.11	46	38	45	40	45	43	46	43	279	306
30	59	40	15.5	7679.5	0.06	10.57				55	42	51	43	48	43	45	44	176	347
Total	53.9	34.8	622.5	7679.5	4.25	10.57	8.5			48.3	38.0	45.9	39.0	42.8	39.5			6970	10128
Avg.	44.3									43.2		42.4		41.2		39.4	38.3		
Dept. from Normal	-1.8		51.5	719.5	1.04	2.62	5.8			-3.0		-2.4		-1.2		-1.2			-1446

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120TH STREET
WASECA, MINNESOTA 56093-4521
May 2019

Date	Air Temp.		GDU	Cumul.* GDU	Precip.	Cumul.** Precip.	Evap.	Soil Temperatures								Wind mi.	Solar Radiation Langleys
	Max.	Min.						2"		4"		8"		20"	40"		
	----- °F -----							Max.	Min.	Max.	Min.	Max.	Min.	----- ° F -----			
1	45	38	0.0	0.0	0.40	10.97	0.05	46	42	46	43	46	44	45	43	290	67
2	46	38	0.0	0.0	0.02	10.99		48	42	47	43	45	44	45	44	133	172
3	55	34	2.5	2.5	-			54	41	51	43	47	45	45	44	105	291
4	62	39	6.0	8.5	0.03	11.02		56	41	52	43	48	44	45	44	210	482
5	69	42	9.5	18.0	-			63	45	58	46	53	46	46	44	131	552
6	67	43	8.5	26.5	0.03	11.05	0.62	67	48	61	50	55	50	48	44	204	547
7	59	41	4.5	31.0	T			64	49	60	51	55	52	49	44	207	550
8	64	44	7.0	38.0	0.03	11.08		66	49	61	51	56	51	50	45	249	562
9	47	35	0.0	38.0	1.28	12.36	0.79	52	42	54	44	54	47	50	45	378	55
10	52	33	1.0	39.0	-			50	41	49	43	48	46	48	46	205	322
11	59	42	4.5	43.5	-			59	41	55	43	51	46	48	46	146	602
12	61	43	5.5	49.0	T			55	45	53	47	51	48	48	46	281	393
13	60	37	5.0	54.0	-		0.56	59	45	56	48	53	49	49	46	120	447
14	67	45	8.5	62.5	-			63	45	59	48	55	49	49	46	143	486
15	70	49	10.0	72.5	T			65	51	61	52	57	52	50	46	193	464
16	79	56	17.5	90.0	0.01	12.37		74	55	68	55	61	55	52	47	207	590
17	84	54	19.0	109.0	-			76	59	70	61	64	59	54	47	231	501
18	62	50	6.0	115.0	0.81	13.18		63	54	61	55	61	56	55	48	352	222
19	60	43	5.0	120.0	0.74	13.92		63	50	60	52	57	54	55	49	378	389
20	47	35	0.0	120.0	0.07	13.99	1.43	53	43	53	46	54	49	53	49	254	206
21	59	41	4.5	124.5	-			61	43	58	46	54	49	52	49	165	573
22	56	44	3.0	127.5	0.77	14.76	0.27	53	48	52	49	52	50	51	49	449	207
23	63	48	6.5	134.0	0.02	14.78		57	49	55	49	52	50	51	49	396	331
24	60	50	5.0	139.0	0.38	15.16		60	50	57	51	54	51	51	49	200	322
25	73	52	12.5	151.5	0.01	15.17		63	52	59	53	56	52	52	49	280	289
26	71	46	10.5	162.0	-			69	53	64	55	59	55	53	49	176	654
27	74	56	15.0	177.0	0.40	15.57	0.67	74	54	69	55	62	56	54	49	144	651
28	59	47	4.5	181.5	1.10	16.67	0.14	60	53	61	55	60	56	56	50	318	93
29	60	48	5.0	186.5	0.21	16.88		59	53	58	54	57	55	55	51	188	216
30	71	53	12.0	198.5	0.02	16.90		69	54	64	55	59	55	55	51	147	454
31	78	59	18.5	217.0	-		0.44	73	58	68	58	62	57	56	51	120	511
Total	62.5	44.7	217.0	217.0	6.33	16.90	5.0	61.1	48.2	58.1	49.7	54.7	50.7			7000	12201
Avg.	53.6							54.7		53.9		52.7		50.7	47.1		
Dept. from Normal	-5.1		-115.0	-115.0	2.40	5.02	-2.55	-5.7		-4.7		-3.1		-3.1			-2178

* Since May 1, 2018

** Since Jan. 1, 2018

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120TH STREET
WASECA, MINNESOTA 56093-4521
June 2019

Date	Air Temp.		GDU	Cumul.* GDU	Precip.	Cumul.** Precip.	Evap.	Soil Temperatures						20"	40"	Wind mi.	Solar Radiation Langleys
	Max.	Min.						2"		4"		8"					
----- ° F -----				----- in. -----				----- ° F -----									
1	88	58	22.0	239.0	0.08	16.98	0.26	76	60	71	60	65	59	57	51	207	559
2	73	45	11.5	250.5	-			75	57	70	60	65	61	59	52	171	563
3	76	55	15.5	266.0	-		0.65	78	58	72	59	66	60	59	52	164	594
4	80	60	20.0	286.0	-			79	61	73	62	66	62	60	53	281	564
5	89	62	24.0	310.0	0.96	17.94	0.77	83	65	76	65	69	64	61	53	197	454
6	82	62	22.0	332.0	-			82	65	77	66	70	65	62	54	137	658
7	87	67	26.5	358.5	-			85	66	80	67	72	66	63	54	140	663
8	90	65	25.5	384.0	-			90	69	84	70	74	69	65	55	259	648
9	87	62	24.0	408.0	-			90	69	84	71	75	70	66	56	253	681
10	67	48	8.5	416.5	-		1.54	73	60	72	63	71	66	67	56	175	261
11	77	53	15.0	431.5	-			81	61	77	63	70	65	65	57	157	603
12	63	53	8.0	439.5	0.88	18.82	0.31	65	59	66	61	67	62	65	57	165	117
13	67	46	8.5	448.0	-			71	54	68	57	64	60	63	58	211	623
14	72	54	13.0	461.0	-			77	54	73	57	66	60	62	58	194	683
15	81	61	21.0	482.0	T			79	62	74	63	67	63	62	57	335	503
16	81	57	19.0	501.0	0.35	19.17		77	64	73	65	68	65	63	57	200	298
17	72	57	14.5	515.5	0.01	19.18	1.12	76	62	73	64	68	65	63	58	153	468
18	75	60	17.5	533.0	-			74	62	71	64	67	64	63	58	121	377
19	73	57	15.0	548.0	-			79	63	76	65	70	65	64	58	114	539
20	78	61	19.5	567.5	0.00			81	63	78	65	71	66	65	58	161	553
21	72	61	16.5	584.0	0.02	19.20		72	62	71	64	68	65	65	58	222	222
22	71	58	14.5	598.5	T			69	62	68	63	66	64	64	58	273	234
23	73	61	17.0	615.5	-			72	62	70	63	66	64	63	59	178	254
24	75	60	17.5	633.0	0.39	19.59	1.09	74	64	72	65	67	65	64	59	115	199
25	72	58	15.0	648.0	0.13	19.72		72	61	70	63	67	64	64	59	139	367
26	81	56	18.5	666.5	-			78	62	76	63	69	64	64	59	161	666
27	85	65	25.0	691.5	-			84	63	79	65	70	65	64	59	129	499
28	77	65	21.0	712.5	0.50	20.22	0.82	73	67	71	68	68	67	65	59	157	165
29	79	70	24.5	737.0	T			78	67	75	69	70	67	65	59	139	354
30	89	74	30.0	767.0	0.00		0.40	89	71	84	71	75	69	67	59	175	609
Total	77.7	59.0	550.0	767.0	3.32	20.22	7.0	77.7	62.5	74.1	64.0	68.6	64.4			5483	13978
Avg.	68.4							68.3		66.3		66.5		63.3	56.7		
Dept. from Normal	-0.1		12.0	-103.00	-1.37	3.65	-9.1	-3.5		-3.5		-0.4		-0.5			-1552

* Since May 1, 2018

** Since Jan. 1, 2018

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120TH STREET
WASECA, MINNESOTA 56093-4521
July 2019

Date	Air Temp.		GDU	Cumul.* GDU	Precip.	Cumul.**		Soil Temperatures								Wind mi.	Solar Radiation Langleys
	Max.	Min.				Precip.	Evap.	2"		4"		8"		20"	40"		
	° F					in.		° F									
1	86	67	26.5	793.5	0.89	21.11	0.43	83	70	80	71	74	72	68	60	253	343
2	79	68	23.5	817.0	0.18	21.29		76	69	75	70	72	70	68	60	119	202
3	81	68	24.5	841.5	-			82	70	78	70	73	70	68	61	101	389
4	85	67	26.0	867.5	-			86	70	82	71	75	70	69	61	136	572
5	85	66	25.5	893.0	-			90	72	84	73	76	72	70	62	136	470
6	84	65	24.5	917.5	0.07	21.36		90	70	85	72	77	73	70	62	171	442
7	81	63	22.0	939.5	-			91	71	86	72	77	72	71	62	114	623
8	82	63	22.5	962.0	-		1.16	93	73	88	75	79	74	72	63	103	590
9	84	67	25.5	987.5	-		0.30	90	73	86	75	78	74	72	63	212	558
10	83	65	24.0	1011.5	0.33	21.69	0.10	79	69	78	71	75	72	72	64	211	317
11	76	63	19.5	1031.0	0.02	21.71		77	68	75	69	72	70	71	64	222	391
12	80	61	20.5	1051.5	-			90	68	85	69	76	70	70	64	110	646
13	85	64	24.5	1076.0	-			84	71	82	72	76	72	71	64	125	432
14	84	70	27.0	1103.0	-			88	72	84	73	77	73	71	64	128	463
15	90	72	29.0	1132.0	-		1.38	94	75	89	76	80	75	72	64	159	548
16	89	66	26.0	1158.0	0.85	22.56	0.50	93	73	88	75	80	76	74	65	248	524
17	81	65	23.0	1181.0	0.09	22.65		80	70	79	72	76	73	73	65	107	290
18	80	68	24.0	1205.0	0.74	23.39	0.27	80	71	77	72	74	72	72	66	161	303
19	90	70	28.0	1233.0	0.93	24.32	0.14	87	71	83	72	77	72	72	66	91	474
20	93	68	27.0	1260.0	0.98	25.30		88	75	85	76	79	75	73	67	199	582
21	70	58	14.0	1274.0	0.52	25.82		77	65	78	67	77	70	73	67	158	145
22	78	58	18.0	1292.0	T		0.96	80	65	77	67	73	70	71	67	125	497
23	75	54	14.5	1306.5	-			84	65	80	68	74	70	71	67	114	627
24	78	55	16.5	1323.0	-			90	66	84	69	76	70	71	67	71	630
25	80	60	20.0	1343.0	-			91	69	85	71	77	72	72	67	116	629
26	77	64	20.5	1363.5	0.26	26.08		78	67	76	69	74	70	72	67	227	258
27	83	64	23.5	1387.0	0.44	26.52		84	67	81	69	75	70	71	67	173	566
28	84	66	25.0	1412.0	-			87	70	83	72	76	72	72	67	94	631
29	78	59	18.5	1430.5	0.13	26.65	1.47	76	67	75	69	73	71	72	67	151	170
30	75	53	14.0	1444.5	-			80	63	78	67	74	70	71	67	138	569
31	74	55	14.5	1459.0	-		0.46	87	64	82	67	75	69	71	67	95	640
Total	81.6	63.6	692.0	1459.0	6.43	26.65	7.2	85.0	69.3	81.5	71.0	75.7	71.6			4568	14521
Avg.	72.6							75.4		73.4		73.7		71.2	64.6		
Dept. from Normal																	
	0.6		37.0	-66.00	2.01	5.66	-0.73	-3.2		-3.3		-0.2		0.3			-2117

* Since May 1, 2018

** Since Jan. 1, 2018

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120TH STREET
WASECA, MINNESOTA 56093-4521
August 2019

Date	Air Temp.		GDU	Cumul.* GDU	Precip.	Cumul.** Precip. in.	Evap.	Soil Temperatures						20"	40"	Wind mi.	Solar Radiation Langleys
	Max.	Min.						2"		4"		8"					
	° F							Max.	Min.	Max.	Min.	Max.	Min.				
1	77	57	17.0	1476.0	-	26.65	0.20	85	66	81	69	75	70	71	67	110	529
2	81	61	21.0	1497.0	-			90	68	85	71	77	71	71	67	89	568
3	82	65	23.5	1520.5	-			90	71	85	73	78	73	72	67	76	538
4	84	59	21.5	1542.0	-			95	74	89	76	80	75	73	67	54	595
5	85	69	27.0	1569.0	-		0.82	93	74	88	76	80	76	74	67	114	559
6	86	59	22.5	1591.5	2.05	28.70		89	69	85	72	79	74	75	67	118	373
7	82	64	23.0	1614.5	-			84	69	81	72	77	73	74	68	101	556
8	83	56	19.5	1634.0	-		0.62	88	68	84	72	77	73	74	68	135	572
9	75	49	12.5	1646.5	-		0.33	89	67	84	71	77	73	74	68	81	612
10	75	58	16.5	1663.0	0.18	28.88		90	67	84	70	77	72	73	68	78	552
11	79	61	20.0	1683.0	0.09	28.97		79	71	78	73	75	73	73	68	131	355
12	73	62	17.5	1700.5	-		0.48	77	69	76	71	74	72	72	68	78	200
13	81	67	24.0	1724.5	0.30	29.27		82	69	79	71	74	71	72	68	92	273
14	81	61	21.0	1745.5	1.10	30.37	0.41	84	68	79	70	75	71	72	68	115	374
15	74	60	17.0	1762.5	0.03	30.40		76	66	75	68	72	70	71	68	79	299
16	78	61	19.5	1782.0	0.06	30.46		80	66	77	68	73	69	71	68	155	498
17	77	56	16.5	1798.5	-			82	65	78	68	73	70	71	68	113	495
18	80	59	19.5	1818.0	0.42	30.88		87	65	81	68	75	69	71	68	186	543
19	72	50	11.0	1829.0	-		0.91	77	61	74	65	72	68	71	67	89	376
20	78	59	18.5	1847.5	T			81	61	77	64	72	67	70	67	117	549
21	83	60	21.5	1869.0	0.54	31.42	0.42	81	67	77	69	73	70	70	67	116	403
22	74	50	12.0	1881.0	-			78	62	76	65	72	68	70	67	60	433
23	73	53	13.0	1894.0	-			81	62	77	65	72	67	70	67	97	541
24	77	57	17.0	1911.0	-			83	63	78	65	73	67	69	67	138	511
25	74	57	15.5	1926.5	T			81	65	76	67	72	69	70	67	190	500
26	72	60	16.0	1942.5	T		0.87	77	66	74	68	71	69	70	67	199	363
27	70	54	12.0	1954.5	0.57	31.99		71	61	71	64	70	67	69	67	113	168
28	72	51	11.5	1966.0	-			73	58	70	61	68	65	68	67	203	481
29	70	52	11.0	1977.0	-			78	58	72	61	68	64	67	67	159	530
30	74	46	12.0	1989.0	-			81	60	75	63	70	65	67	66	137	528
31	71	50	10.5	1999.5	-		0.87	79	60	75	63	70	65	67	66	72	475
Total	77.2	57.5	540.5	1999.5	5.34	31.99	5.93	82.6	65.7	78.7	68.4	73.9	69.9			3595	14349
Avg.	67.4							72.2		71.1		71.9		71.0	67.3		
Dept. from Normal	-2.4		-56.5	-122.5	0.59	6.25	-0.44	-3.3		-3.4		-0.7		0.1			174

* Since May 1, 2018

** Since Jan. 1, 2018

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120TH STREET
WASECA, MINNESOTA 56093-4521
SEPTEMBER 2019

Date	Air Temp.		GDU	Cumul.* GDU	Precip.	Cumul.** Precip.	Evap.	Soil Temperatures						20"	40"	Wind mi.	Solar Radiation Langleys
	Max.	Min.						2"		4"		8"					
	----- °F -----							Max.	Min.	Max.	Min.	Max.	Min.				
1	70	54	12.0	2011.5	T		0.08	72	62	70	64	68	66	67	66	110	226
2	74	57	15.5	2027.0	T			75	62	72	64	69	65	67	66	111	306
3	78	64	21.0	2048.0	0.03	32.02		80	65	76	67	71	67	67	66	152	332
4	76	46	13.0	2061.0	-			83	63	78	66	73	69	69	66	159	445
5	71	51	11.0	2072.0	-			84	63	77	66	72	68	69	66	91	504
6	80	57	18.5	2090.5	-			81	65	76	66	72	68	69	66	181	420
7	75	52	13.5	2104.0	-			85	67	79	69	73	69	69	66	85	477
8	66	55	10.5	2114.5	0.03	32.05		72	64	72	66	70	68	69	66	93	162
9	59	54	6.5	2121.0	0.25	32.30	1.08	64	61	66	63	68	65	68	66	172	92
10	70	57	13.5	2134.5	0.24	32.54		65	61	65	62	65	64	66	66	203	84
11	81	64	22.5	2157.0	1.24	33.78	0.35	79	65	74	65	69	65	66	66	134	398
12	75	60	17.5	2174.5	1.86	35.64		74	64	72	65	69	67	67	66	153	197
13	71	53	12.0	2186.5	0.49	36.13	0.35	68	61	68	63	67	65	67	66	207	71
14	62	47	6.0	2192.5	T			65	55	64	58	65	61	66	66	161	210
15	77	52	14.5	2207.0	-			70	55	67	58	65	61	65	65	117	307
16	83	59	21.0	2228.0	T		0.30	82	61	76	62	69	63	65	65	84	447
17	84	66	25.0	2253.0	-			79	64	75	66	70	66	66	65	199	329
18	87	67	26.5	2279.5	1.34	37.47	0.43	83	68	78	69	72	68	67	65	258	349
19	80	64	22.0	2301.5	0.16	37.63		75	68	73	69	71	69	69	65	168	253
20	82	65	23.5	2325.0	-			80	68	76	69	72	69	69	65	98	324
21	86	66	26.0	2351.0	0.13	37.60		78	68	75	69	72	69	69	66	203	332
22	79	60	19.5	2370.5	0.06	37.66		74	66	73	67	71	69	69	66	170	152
23	65	47	7.5	2378.0	T		0.51	69	56	68	59	69	64	68	66	83	146
24	75	50	12.5	2390.5	-			74	56	70	59	67	63	66	66	114	426
25	83	55	19.0	2409.5	0.51	38.17	0.37	75	61	72	63	69	64	66	66	182	341
26	68	43	9.0	2418.5	-			68	53	67	57	66	61	66	65	130	287
27	70	45	10.0	2428.5	T			67	53	65	56	63	60	64	65	186	370
28	69	46	9.5	2438.0	-			71	56	68	59	65	62	64	65	131	276
29	63	47	6.5	2444.5	0.34	38.51		71	55	67	58	64	61	64	65	167	363
30	73	50	11.5	2456.0	0.01	38.52	0.53	63	57	63	59	62	60	63	64	253	74
Totals	74.4	55.1	456.5	2456.0	6.69	38.52	4.00	74.2	61.4	71.4	63.4	68.6	65.2			4555	8700
Avg.	64.8							66.4		66.0		66.9		66.9	65.6		
Dept. from Normal	3.5		108.5	-14.0	3.02	9.11	-0.91	1.2		1.1		2.8		1.6			-2016

* Since May 1, 2018

** Since Jan. 1, 2018

UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
 35838 120th Street
 Waseca, MN 56093-4521
 October 2019

Date	Air Temp.		GDU	Cumul* GDU	Precip	Cumul** Precip.	Snow Depth	Frost Depth	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.							2"		4"		8"					
	----- ° F -----								Max	Min	Max	Min.	Max.	Min.			20"	40"
1	87	54	20.0	2476.0	0.46	39.14			73	62	70	63	66	61	63	64	223	225
2	55	48	2.5	2478.5	1.20	40.34			62	54	63	56	65	59	63	64	189	42
3	51	45	0.5	2479.0	0.46	40.80			55	52	56	54	59	56	61	63	152	51
4	48	42	0.0	2479.0	0.01	40.81			55	49	55	51	56	54	60	63	142	133
5	53	42	1.5	2480.5	1.76	42.57			55	49	54	51	55	53	58	63	203	167
6	58	44	4.0	2484.5	0.52	43.09			54	47	54	49	54	52	56	62	214	48
7	65	38	7.5	2492.0	-				59	47	57	49	54	52	56	61	189	371
8	67	40	8.5	2500.5	-				63	46	60	49	56	52	56	60	133	369
9	70	50	10.0	2510.5	-				64	49	60	51	57	53	56	60	266	362
10	73	51	12.0	2522.5	0.14	43.23			66	52	62	54	58	55	57	60	278	307
11	61	34	5.5	2528.0	0.20	43.43			58	46	58	50	57	54	58	60	234	41
12	38	30	-	-	T		T		46	39	50	42	54	47	56	60	351	112
13	36	31			0.02	43.45	T		41	38	42	41	47	45	53	59	282	70
14	41	26			T		T		43	37	44	40	46	44	51	59	135	93
15	53	27			-				50	37	48	40	47	44	50	58	133	315
16	53	38			T				50	43	49	44	48	46	50	57	206	199
17	44	30			-				48	40	48	43	48	46	51	57	104	117
18	59	32			-				55	39	52	42	49	45	50	56	227	325
19	70	45			T				57	45	54	46	52	48	51	56	324	272
20	66	35			0.02	43.47			61	45	58	48	53	50	52	56	78	241
21	66	40			0.32	43.79			56	44	54	47	52	49	53	56	221	225
22	51	39			0.82	44.61			52	45	52	47	51	49	52	56	282	63
23	47	27			0.01	44.62			48	38	48	41	49	46	52	55	241	141
24	42	27			-				44	38	45	41	46	45	50	55	139	123
25	44	24			-				48	36	46	39	46	43	49	55	113	272
26	54	27			-				46	36	45	38	44	42	48	55	265	298
27	54	31			-				48	38	47	40	45	43	48	54	187	284
28	45	21			-				45	36	44	39	44	43	48	54	192	108
29	36	19			T		T		43	35	43	38	43	41	47	53	126	226
30	39	19			-				43	35	43	37	42	40	46	53	100	269
31	31	18							40	34	39	36	40	39	45	53	104	156
Total	53.5	34.6	72.0	2528.0	5.94	44.62	0.0		52.5	42.9	51.6	45.4	51.1	48.3			6033	6025
Avg.	44.0								47.3		48.2		49.7		53.1	58.0		
Dept. from Normal	-4.2		52.0	38.0	3.27	12.54	-0.6		-2.5		-2.3		-1.1		-1.3			-1397

* Since May 1, 2018

** Since Jan. 1, 2018

**UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120th Street
Waseca, MN 56093-4521
NOVEMBER 2019**

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow Depth	Frost Depth	Soil Temperatures						Wind	Solar Radiation			
	Max.	Min.				Precip.	Snow			2"		4"		8"				20"	40"	
	----- ° F -----	----- ° F -----								Max	Min	Max	Min.	Max.	Min.					mi.
1	35	23	36.0	36.0	-	44.62				40	34	39	36	39	39	44	52	162	220	
2	41	31	29.0	65.0	0.01	44.63				40	35	39	36	40	39	44	52	180	69	
3	37	25	34.0	99.0	-					40	35	40	36	40	39	44	51	160	119	
4	49	30	25.5	124.5	0.05	44.68		-		42	35	41	36	41	39	44	51	189	163	
5	40	15	37.5	162.0	-					42	34	41	36	41	40	44	50	197	121	
6	29	17	42.0	204.0	0.30	44.98	4	4		36	33	36	35	40	38	43	50	148	195	
7	27	-1	52.0	256.0	-			3		35	34	36	36	38	38	43	50	147	147	
8	22	2	53.0	309.0	-			2		34	34	36	35	38	37	42	50	137	242	
9	34	19	38.5	347.5	-			1		34	34	35	34	37	37	41	49	292	219	
10	38	24	34.0	381.5	-			T		34	34	35	34	37	37	41	49	156	159	
11	29	12	44.5	426.0	T	T	T	T	5	34	33	35	34	37	36	41	48	246	79	
12	15	-1	58.0	484.0	T		T	T	6	33	27	34	32	36	35	40	48	210	181	
13	21	1	54.0	538.0	-			T		30	27	32	30	35	34	40	48	336	216	
14	30	20	40.0	578.0	T		T	T		31	28	31	30	34	34	39	47	186	79	
15	28	19	41.5	619.5	-			T		31	29	31	30	34	34	38	37	163	185	
16	45	23	31.0	650.5	-			0		31	29	31	30	34	33	38	47	244	201	
17	44	32	27.0	677.5	0.19	45.17	T	-		32	31	32	31	34	34	38	46	294	136	
18	37	30	31.5	709.0	-			-	0	32	32	32	32	34	34	38	46	151	54	
19	37	31	31.0	740.0	0.18	45.35		-		35	32	35	32	35	34	38	46	162	68	
20	42	31	28.5	768.5	-			-		40	34	38	34	37	35	38	45	117	111	
21	50	32	24.0	792.5	0.63	45.98	T	-		41	35	41	35	40	37	39	35	291	114	
22	35	17	39.0	831.5	0.01	45.99	T	-		40	34	40	35	40	37	40	45	251	43	
23	27	17	43.0	874.5	T		T	-		34	33	35	34	37	36	40	45	192	144	
24	41	24	32.5	907.0	-			-		33	33	34	34	36	35	39	45	157	195	
25	41	32	28.5	935.5	T			-	0	34	33	34	34	35	35	39	45	135	74	
26	44	32	27.0	962.5	-			-		37	33	36	34	36	36	39	45	249	109	
27	35	27	34.0	996.5	0.60	46.59	6.5	6		36	34	36	35	36	36	39	45	370	65	
28	29	21	40.0	1036.5	T		T	4		34	34	35	34	36	36	39	45	256	98	
29	28	21	40.5	1077.0	0.02	46.61	0.6	3		34	34	34	34	36	36	39	44	163	90	
30	32	27	35.5	1112.5	0.30	46.91	1.5	3		34	33	34	34	36	36	38	44	276	80	
Total	34.7	21.1	1112.5	1112.5	2.29	46.91	12.6			35.4	32.7	35.6	33.7	37.0	36.2			6217	3976	
Avg.	27.9									34.1		35.4		36.6		40.3	46.7			
Dept. from Normal																				
	-4.8		143.5	143.5	0.13	12.67	4.8			-1.4		-1.8		-1.4		-3.4				-509

* Since Nov. 1, 2018

** Since Jan. 1, 2018

**UNIVERSITY OF MINNESOTA
SOUTHERN RESEARCH AND OUTREACH CENTER
35838 120th Street
Waseca, MN 56093-4521
DECEMBER 2019**

Date	Air Temp.		HDD	Cumul* HDD	Precip	Cumul**		Snow Depth	Frost Depth	Soil Temperatures						Wind	Solar Radiation		
	Max.	Min.				2"	4"			8"		20"	40"						
	----- °F -----									Max	Min			Max.	Min.			° F -----	
						in.								mi.	Langleys				
1	34	27	34.5	1147.0	0.15	47.06	0.8	3		34	33	34	34	36	35	38	44	344	53
2	30	3	48.5	1195.5	T		T	3	3	33	33	34	34	35	35	38	44	228	78
3	28	5	48.5	1244.0	-		-	3		33	33	34	34	35	35	38	44	185	189
4	34	20	38.0	1282.0	-		-	2		33	33	34	34	35	35	38	44	195	171
5	36	15	39.5	1321.5	-		-	2		33	33	34	34	35	35	38	44	117	189
6	37	11	41.0	1362.5	-		-	2		33	33	34	34	35	35	38	43	203	123
7	25	12	46.5	1409.0	-		-	2		33	33	34	34	35	35	38	43	189	187
8	38	24	34.0	1443.0	-		-	2		33	33	34	34	35	35	38	43	380	147
9	33	24	36.5	1479.5	0.05	47.11	0.5	2	4	33	33	34	34	35	35	38	43	163	119
10	26	-8	56.0	1535.5	0.11	47.22	0.8	2		33	33	34	34	35	35	38	43	222	108
11	8	-8	65.0	1600.5	-		-	2		33	33	34	34	35	35	37	43	175	171
12	22	-7	57.5	1658.0	0.03	47.25	0.3	3		33	33	34	33	35	34	37	43	184	176
13	24	1	52.5	1710.5	T		T	3		33	32	33	33	34	34	37	43	112	78
14	21	6	51.5	1762.0	T		0.2	3		32	32	33	33	34	34	37	43	184	86
15	11	-9	64.0	1826.0	T		T	3		32	32	33	33	34	34	37	42	136	142
16	17	-8	60.5	1886.5	-		-	3	8	32	32	33	33	34	34	37	42	167	134
17	24	16	45.0	1931.5	-		-	3		32	32	33	33	34	34	37	42	198	85
18	23	-8	57.5	1989.0	-		-	3		32	32	33	33	34	34	37	42	168	130
19	21	-2	55.5	2044.5	-		-	3		32	32	33	33	34	34	36	42	242	132
20	30	12	44.0	2088.5	-		-	3		32	32	33	33	34	33	36	42	206	146
21	34	14	41.0	2129.5	-		-	3		32	32	33	33	33	33	36	42	170	116
22	39	21	35.0	2164.5	-		-	3		32	32	33	33	33	33	36	42	259	156
23	38	23	34.5	2199.0	-		-	2	7	32	32	33	33	33	33	36	41	189	159
24	35	23	36.0	2235.0	-		-	2		32	32	33	33	34	33	36	41	210	118
25	37	29	32.0	2267.0	-		-	2		32	32	33	33	34	33	36	41	151	118
26	37	27	33.0	2300.0	T		-	2		32	32	33	33	34	34	36	41	199	91
27	30	24	38.0	2338.0	T		-	2	6	32	32	33	33	34	34	36	41	233	61
28	34	22	37.0	2375.0	T		-	2		32	32	33	33	34	34	36	41	175	111
29	38	32	35.0	2410.0	0.95	48.20	-	1		32	32	33	33	34	33	36	41	270	23
30	40	29	30.5	2440.5	T		T	1	0	32	32	33	33	33	33	36	41	245	59
31	31	16	41.5	2482.0	0.29	48.49	1.8	2		32	32	33	33	34	33	36	41	282	61
Total	29.5	12.5	1369.5	2482.0	1.58	48.49	4.4			32.5	32.4	33.4	33.4	34.3	34.1			6381	3717
Avg.	21.0									32.9		33.8		34.2		36.9	42.3		
Dept. from Normal	3.2		-93.5	50.0	0.10	12.77	-8.6			6.1		5.3		4.3		0.9			-245

* Since Nov. 1, 2018

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