

1999

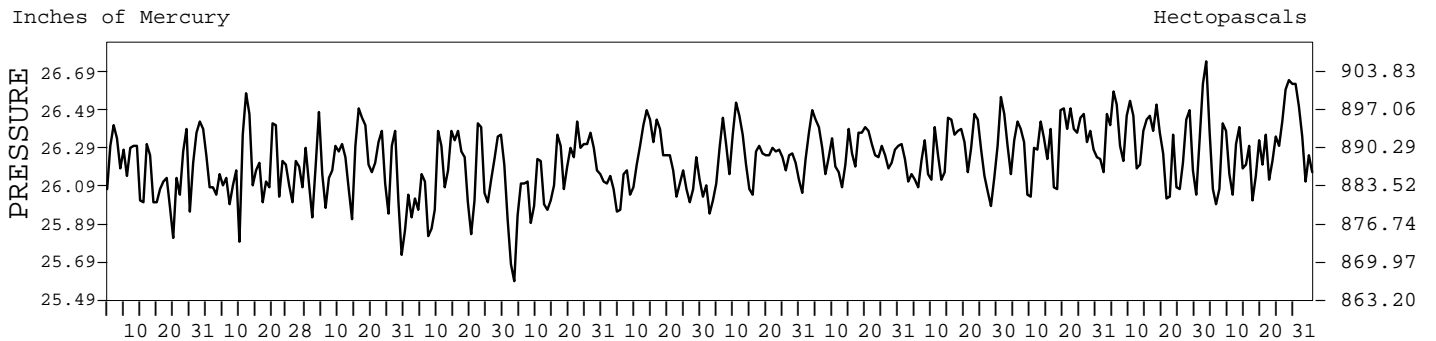
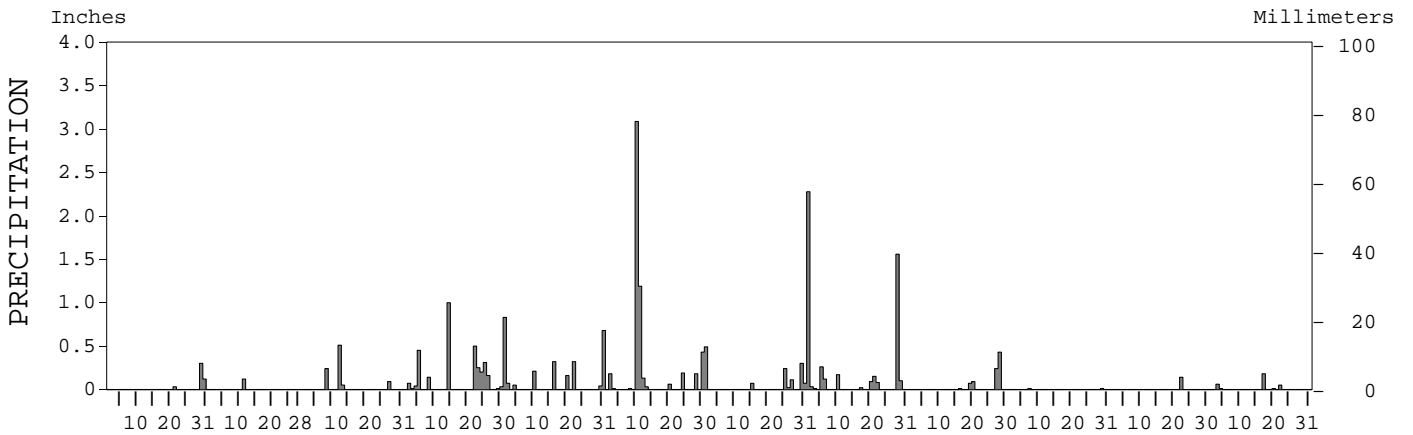
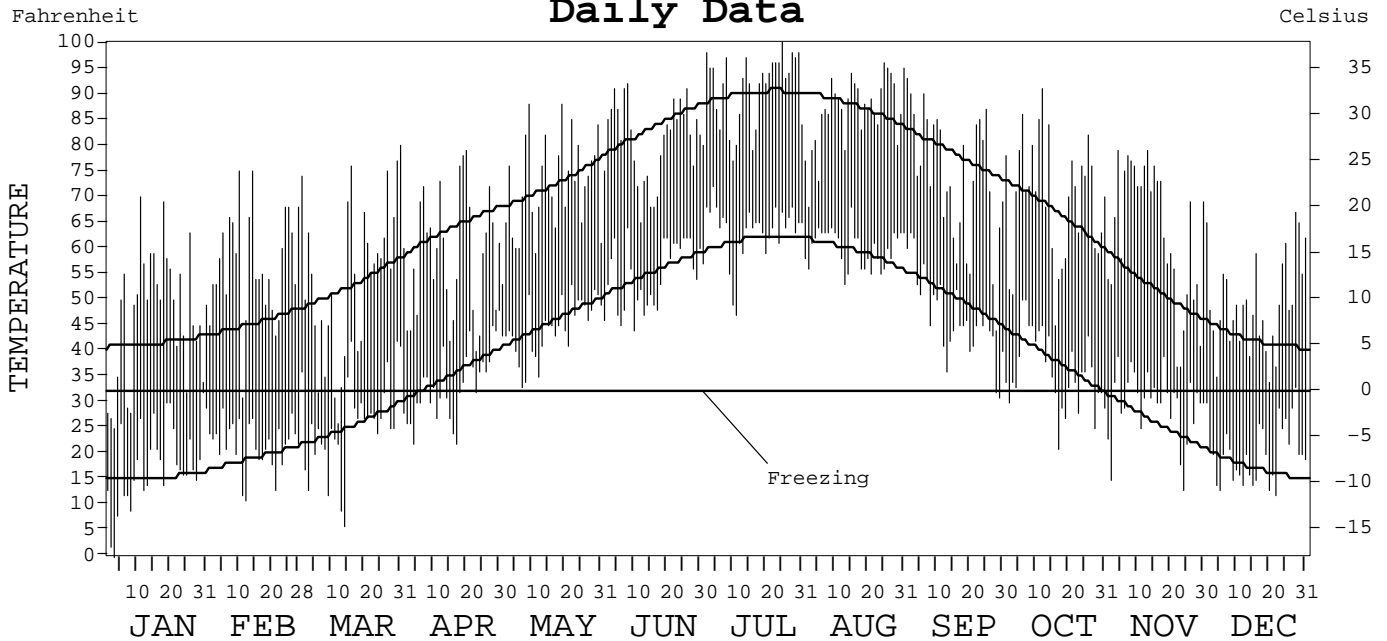
# LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-2176

GOODLAND,  
KANSAS (GLD)

## Daily Data



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 ASHEVILLE, NORTH CAROLINA

# METEOROLOGICAL DATA FOR 1999

## GOODLAND, KS (GLD)

LATITUDE: 39° 22' 03" N      LONGITUDE: 101° 41' 35" W      ELEVATION (FT): GRND: 3655      BARO: 3655      TIME ZONE: MOUNTAIN (UTC + 7)      WBAN: 23065

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	47.0	56.8	54.2	58.7	72.0	81.0	90.9	86.7	73.8	69.5	63.1	49.2	66.9	
	HIGHEST DAILY MAXIMUM	70	75	80	79	88	92	100	96	93	91	79	67	100	
	DATE OF OCCURRENCE	11	14+	31	20	19+	08	25	25	01	12	13+	28	JUL 25	
	MEAN DAILY MINIMUM	18.1	21.8	25.9	33.4	44.5	54.7	63.2	60.0	46.9	36.2	29.7	20.2	37.9	
	LOWEST DAILY MINIMUM	0	11	6	22	33	44	47	53	31	21	13	12	0	
	DATE OF OCCURRENCE	03	12	14	17+	07	10	11	13	29	17	24	22	JAN 03	
	AVERAGE DRY BULB	32.6	39.3	40.1	46.1	58.3	67.9	77.1	73.4	60.4	52.9	46.4	34.7	52.4	
	MEAN WET BULB	26.9	31.4	34.3	40.5	50.8	59.6	65.7	64.7	51.9	42.4	36.1	28.5	44.4	
	MEAN DEW POINT	18.8	18.9	27.0	34.2	44.3	54.1	59.4	60.1	45.3	31.7	23.5	20.1	36.5	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	4	21	11	3	1	0	0	40	
	MAXIMUM ≤ 32°	6	1	3	0	0	0	0	0	0	0	0	0	10	
	MINIMUM ≤ 32°	31	28	25	15	0	0	0	0	2	10	21	30	162	
	MINIMUM ≤ 0°	1	0	0	0	0	0	0	0	0	0	0	0	1	
H/C	HEATING DEGREE DAYS	999	713	766	562	219	45	3	190	373	550	930	5353		
	COOLING DEGREE DAYS	0	0	0	0	17	139	385	270	60	6	0	877		
RH	MEAN (PERCENT)	63	49	66	68	65	66	59	69	64	52	49	61	61	
	HOUR 05 LST	75	66	83	83	85	88	83	88	83	70	63	72	78	
	HOUR 11 LST	51	35	54	57	49	50	44	53	49	36	34	47	47	
	HOUR 17 LST	55	33	50	53	45	44	41	50	47	37	43	55	46	
	HOUR 23 LST	70	60	73	80	77	80	70	82	74	60	57	71	71	
S	PERCENT POSSIBLE SUNSHINE	61	78	68	58	79	88	89	76	72	79	82	68	75	
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	1	2	4	3	0	2	1	6	3	0	2	1	25	
	THUNDERSTORMS	0	0	1	1	8	10	10	11	1	0	0	0	42	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	26.19	26.17	26.20	26.14	26.13	26.19	26.24	26.29	26.28	26.33	26.35	26.30	26.23	
	MEAN SEA-LEVEL PRESS. (IN.)	30.04	29.97	30.01	29.91	29.84	29.87	29.89	29.96	30.00		30.12	30.11		
WINDS	RESULTANT SPEED (MPH)	3.9	5.9	4.8	3.0	2.9	5.6	4.5	2.5	1.4	2.3	4.5	7.4	1.3	
	RES. DIR. (TENS OF DEGS.)	28	26	16	35	21	14	15	12	16	27	28	32	24	
	MEAN SPEED (MPH)	11.9	14.5	13.8	14.5	14.3	13.5	11.9	9.5	9.9	11.4	10.9	12.6	12.4	
	PREVAIL. DIR. (TENS OF DEGS.)	24	17	17	32	18	17	18	17	16	21	25	01	17	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	40	48	44	60	45	41	46	41	33	43	44	46	60	
	DIR. (TENS OF DEGS.)	21	33	16	32	20	18	18	34	36	34	34	36	32	
	DATE OF OCCURRENCE	26+	11	30	08	19	05	02	28	26	29	18	14	APR 08	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	51	57	53	71	58	49	55	55	44	49	53	58	71	
DIR. (TENS OF DEGS.)	32	33	17	31	20	21	17	34	02	34	34	36	31		
DATE OF OCCURRENCE	02	11	30	08	19	05	02	28	26	29	18	14	APR 08		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.45	0.12	0.89	3.17	2.68	5.50	1.30	4.87	0.84	0.02	0.14	0.31	20.29	
	GREATEST 24-HOUR (IN.)	0.41	0.12	0.51	1.00	0.83	4.28	0.49	2.28	0.65	0.01	0.14	0.18	4.28	
	DATE OF OCCURRENCE	29-30	11	12	14	01	10-11	01	1	27-28	29+	22	17	JUN 10-11	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	3	1	4	13	9	11	7	12	5	2	1	5	73	
PRECIPITATION ≥ 0.10	2	1	2	8	6	7	4	7	2	0	1	1	41		
PRECIPITATION ≥ 1.00	0	0	0	1	0	2	0	2	0	0	0	0	5		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	3.5	1.7	11.5	3.6	T	T	T	0.0	0.0	0.0	1.8	1.6	23.7	
	GREATEST 24-HOUR (IN.)	3.1	1.7	9.4	2.1	T	T	T	0.0	0.0	0.0	1.8	0.5	9.4	
	DATE OF OCCURRENCE	29	11	12	05	10	10+	25	0	0	0	22	22+	MAR 12	
	MAXIMUM SNOW DEPTH (IN.)	4	2	10	T	0	0	0	0	0	0	2	1	10	
	DATE OF OCCURRENCE	30	11	13	23+							23	04	MAR 13	
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	1	1	2	2	0	0	0	0	0	0	1	0	7		

# NORMALS, MEANS, AND EXTREMES

## GOODLAND, KS (GLD)

LATITUDE: 39° 22' 03" N      LONGITUDE: 101° 41' 35" W      ELEVATION (FT): GRND: 3655      BARO: 3655      TIME ZONE: MOUNTAIN (UTC + 7)      WBAN: 23065

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	41.5	45.3	52.7	63.6	72.3	83.4	89.8	87.3	78.0	66.5	51.6	42.0	64.5
	MEAN DAILY MAXIMUM	55	40.9	45.2	52.1	63.0	72.5	83.7	89.8	87.7	79.2	67.5	51.4	42.8	64.7
	HIGHEST DAILY MAXIMUM	78	79	81	89	96	99	109	111	110	105	96	87	83	111
	YEAR OF OCCURRENCE		1951	1970	1963	1992	1962	1936	1940	1947	1939	1926	1927	1964	JUL 1940
	MEAN OF EXTREME MAXS.	51	64.7	68.9	77.1	85.6	90.5	99.3	101.8	99.5	95.6	87.4	74.0	66.5	84.2
	NORMAL DAILY MINIMUM	30	15.3	19.0	25.4	35.3	45.6	55.2	61.4	59.1	50.0	37.6	25.7	17.0	37.2
	MEAN DAILY MINIMUM	55	14.6	18.7	24.2	34.5	45.2	55.2	61.1	59.4	49.7	37.4	24.8	17.4	36.8
	LOWEST DAILY MINIMUM	78	-26	-22	-20	0	21	31	42	38	19	7	-12	-27	-27
	YEAR OF OCCURRENCE		1959	1982	1960	1936	1967	1951	1952	1964	1985	1993	1925	1989	DEC 1989
	MEAN OF EXTREME MINS.	51	-6.5	-1.2	4.6	19.5	31.7	43.7	51.4	50.0	34.7	22.3	8.2	-2.0	21.4
	NORMAL DRY BULB	30	28.4	32.2	39.1	49.5	59.0	69.3	75.6	73.2	64.0	52.1	38.7	29.5	50.9
	MEAN DRY BULB	55	27.9	31.9	38.1	48.8	59.0	69.6	75.5	73.6	64.4	52.5	38.2	30.1	50.8
	MEAN WET BULB	55	23.2	27.1	32.1	41.0	50.9	59.1	63.3	62.1	53.9	43.1	32.0	25.4	42.8
	MEAN DEW POINT	55	15.8	19.5	24.0	32.1	44.3	52.7	57.1	56.2	46.3	34.2	24.5	18.1	35.4
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.2	1.5	8.8	18.1	14.9	5.6	0.4	0.0	0.0	49.5	
MAXIMUM ≤ 32°	30	8.1	5.8	3.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	2.8	7.4	27.5	
MINIMUM ≤ 32°	30	30.1	26.4	24.8	11.0	1.3	0.0	0.0	0.0	0.7	7.5	24.0	29.8	155.6	
MINIMUM ≤ 0°	30	4.5	1.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.8	9.6	
H/C	NORMAL HEATING DEG. DAYS	30	1135	918	803	465	211	33	0	11	108	400	789	1101	5974
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	25	162	329	265	78	0	0	0	859
RH	NORMAL (PERCENT)	30	66	66	63	59	64	60	58	60	60	57	65	66	62
	HOUR 05 LST	30	75	78	79	78	83	82	81	82	80	74	77	75	79
	HOUR 11 LST	30	56	56	52	46	51	47	44	46	47	43	52	55	50
	HOUR 17 LST	30	59	53	47	41	46	41	38	40	41	43	57	60	47
	HOUR 23 LST	30	73	74	71	69	75	72	69	70	70	67	72	72	71
S	PERCENT POSSIBLE SUNSHINE	3	62	66	72	59	61	69	72	72	72	74	63	64	67
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	55	2.4	3.1	3.5	2.3	2.7	1.4	1.3	2.3	2.3	2.0	2.7	2.0	28.0
	THUNDERSTORMS	55	0.0	0.3	0.8	2.5	7.6	10.3	11.8	8.8	3.9	1.4	0.2	0.1	47.7
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	2	4.8	5.2	3.6	5.6	3.2	3.0	3.2	4.0	2.8	2.8	3.2	2.8	3.7
	MIDNIGHT-MIDNIGHT (OKTAS)	2	4.8	5.2	3.6	5.6	3.2	3.2	3.2	4.0	2.8	2.8	4.4	1.6	3.7
	MEAN NO. DAYS WITH:														
	CLEAR	2	6.0	8.0	7.3	8.0	8.0	14.0	13.0	14.5	9.0	11.5	8.0	13.5	120.8
PARTLY CLOUDY	2	3.7	3.7	4.0	3.0	5.3	4.0	5.0	4.5		3.0	3.5	2.0		
CLOUDY	2	8.7	7.7	5.0	11.0	6.0	3.7	2.5	6.0	3.0	5.5	5.0	5.0	69.1	
PR	MEAN STATION PRESSURE (IN)	25	26.23	26.21	26.14	26.15	26.16	26.20	26.26	26.27	26.27	26.27	26.22	26.23	26.22
	MEAN SEA-LEVEL PRES. (IN)	53	30.10	30.06	29.95	29.90	29.88	29.85	29.92	29.94	29.97	30.02	30.06	30.08	29.98
WINDS	MEAN SPEED (MPH)	40	12.5	12.6	14.2	14.4	13.5	12.7	11.9	11.3	11.9	11.9	12.3	12.1	12.6
	PREVAIL. DIR (TENS OF DEGS)	24	33	33	33	33	15	15	15	16	18	16	33	33	15
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	7	53	48	47	60	59	51	64	60	37	61	48	49	64
	DIR. (TENS OF DEGS)		34	33	34	32	30	31	30	23	32	27	33	30	30
	YEAR OF OCCURRENCE		1996	1999	1996	1999	1994	1997	1993	1994	1997	1997	1997	1993	JUL 1993
	MAXIMUM 5-SECOND:														
SPEED (MPH)	7	64	57	53	71	96	62	71	92	51	72	56	62	96	
DIR. (TENS OF DEGS)		34	33	35	31	31	29	30	24	32	29	01	32	31	
YEAR OF OCCURRENCE		1996	1999	1996	1999	1994	1998	1993	1994	1997	1997	1994	1994	MAY 1994	
PRECIPITATION	NORMAL (IN)	30	0.41	0.39	1.18	1.30	3.49	3.19	2.87	1.80	1.57	0.90	0.69	0.41	18.20
	MAXIMUM MONTHLY (IN)	78	1.59	2.07	3.60	5.69	8.21	9.46	10.10	9.29	5.39	4.94	2.63	2.90	10.10
	YEAR OF OCCURRENCE		1988	1939	1981	1944	1981	1982	1985	1993	1973	1930	1946	1924	JUL 1985
	MINIMUM MONTHLY (IN)	78	0.00	T	0.03	T	0.31	0.10	0.30	0.13	0.01	T	T	T	0.00
	YEAR OF OCCURRENCE		1933	1970	1997	1963	1927	1976	1924	1964	1992	1988	1959	1981	JAN 1933
	MAXIMUM IN 24 HOURS (IN)	78	1.27	1.79	1.67	3.13	3.49	4.28	3.74	3.45	2.61	2.85	1.47	1.54	4.28
	YEAR OF OCCURRENCE		1988	1939	1981	1981	1972	1999	1985	1991	1940	1930	1975	1924	JUN 1999
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01															
PRECIPITATION ≥ 1.00															
SNOWFALL	NORMAL (IN)														
	MAXIMUM MONTHLY (IN)	58	19.4	25.4	27.4	22.0	6.5	3.5	T	T	5.6	19.5	23.3	17.3	27.4
	YEAR OF OCCURRENCE		1988	1984	1940	1988	1990	1989	1992	1990	1985	1997	1983	1979	MAR 1940
	MAXIMUM IN 24 HOURS (IN)	58	14.0	11.2	15.2	13.0	6.5	3.5	T	T	5.6	19.3	15.1	11.7	19.3
	YEAR OF OCCURRENCE		1988	1984	1940	1988	1990	1989	1992	1990	1985	1997	1983	1979	OCT 1997
	MAXIMUM SNOW DEPTH (IN)	10	10	10	10	3	0	T	0	0	0	16	7	5	16
	YEAR OF OCCURRENCE		1994	1997	1999	1996		1993				1997	1994	1997	OCT 1997
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0															

PRECIPITATION (inches) 1999 GOODLAND, KS (GLD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0.03	T	0.91	1.21	2.27	1.68	1.92	2.37	1.11	1.10	0.57	0.03	13.20
1971	0.53	1.36	0.57	1.93	4.24	2.35	1.62	0.65	1.38	1.32	1.31	0.21	17.47
1972	0.32	0.06	0.15	0.60	6.04	4.76	2.64	2.46	0.73	0.82	1.56	0.94	21.08
1973	0.73	0.02	2.90	1.90	2.96	2.03	1.82	1.16	5.39	0.47	0.66	0.90	20.94
1974	0.17	0.42	0.99	1.52	1.10	3.95	1.15	1.63	0.02	0.96	0.86	0.37	13.14
1975	0.20	0.14	0.64	1.03	4.75	5.25	2.43	0.37	0.19	0.02	1.92	0.06	17.00
1976	0.48	0.21	0.31	0.87	1.17	0.10	2.61	0.60	2.03	0.43	0.40	0.01	9.22
1977	0.38	0.05	1.79	1.94	6.11	1.30	1.28	5.45	1.02	0.15	0.45	0.14	20.06
1978	0.38	0.85	0.29	1.33	3.82	2.25	1.71	1.85	0.12	1.29	0.68	0.43	15.00
1979	0.88	0.08	3.11	1.09	4.48	5.08	4.53	3.17	0.21	2.00	0.78	1.15	26.56
1980	0.61	0.49	2.75	2.67	2.80	1.92	7.25	3.38	2.24	0.19	0.12	T	24.42
1981	1.04	0.03	3.60	3.86	8.21	0.29	1.99	0.77	0.33	0.13	1.91	T	22.16
1982	0.21	0.61	0.39	0.87	5.03	9.46	3.26	0.81	3.42	0.43	0.41	1.58	26.48
1983	0.29	0.87	2.20	1.76	2.43	2.39	3.68	1.39	0.43	0.15	1.78	0.26	17.63
1984	0.74	1.54	1.82	3.35	1.51	3.43	3.24	1.15	0.22	3.25	0.28	0.61	21.14
1985	0.43	0.25	0.33	1.03	4.56	0.71	10.10	0.70	1.74	1.16	0.51	0.44	21.96
1986	0.00	0.44	0.76	1.27	3.37	3.78	1.38	0.84	1.30	1.61	0.50	0.11	15.36
1987	0.34	1.01	2.50	0.48	3.54	5.39	2.96	0.50	1.52	0.03	1.01	0.46	19.74
1988	1.59	0.24	0.41	1.99	4.82	1.85	3.44	3.47	2.19	T	0.39	0.47	20.86
1989	0.23	0.14	0.26	0.89	2.76	8.18	1.09	2.84	1.06	0.32	0.05	0.22	18.04
1990	0.70	0.44	1.63	0.76	4.14	1.74	4.06	1.97	1.49	0.86	1.47	0.14	19.40
1991	0.24	0.11	1.08	0.92	4.03	5.36	3.29	4.07	0.76	0.88	1.32	1.18	23.24
1992	0.20	0.50	1.91	0.01	1.38	6.70	4.03	5.59	0.01	0.90	0.52	0.18	21.93
1993	0.31	0.73	0.81	0.42	2.91	1.94	7.96	9.29	0.30	2.33	0.93	0.01	27.94
1994	0.38	0.10	0.27	2.96	1.53	2.10	2.95	1.58	0.45	1.81	1.26	0.45	15.84
1995	0.36	0.22	1.00	2.40	4.87	3.95	4.19	1.06	1.55	0.77	0.36	0.13	20.86
1996	0.30	0.02	0.24	1.22	4.54	1.38	6.65	3.40	0.70	0.56	0.14	0.04	19.19
1997	0.17	0.88	T	0.76	1.94	2.18	2.96	5.29	0.75	2.56	0.64	0.54	18.67
1998	0.07	0.68	0.16	0.92	1.69	1.63	7.20	1.69	0.35	1.69	2.11	0.12	18.31
1999	0.45	0.12	0.89	3.17	2.68	5.50	1.30	4.87	0.84	0.02	0.14	0.31	20.29
POR= 56 YRS	0.40	0.40	1.03	1.37	3.10	3.02	3.05	2.27	1.19	0.91	0.70	0.38	17.82

WBAN : 23065

AVERAGE TEMPERATURE (°F) 1999 GOODLAND, KS (GLD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	29.6	37.4	33.4	47.0	62.3	69.5	76.1	76.9	62.4	48.9	39.9	33.0	51.4
1971	29.8	30.6	39.8	49.4	56.3	73.2	73.1	74.2	61.8	52.3	39.6	32.6	51.1
1972	28.0	35.1	44.9	49.9	59.0	70.5	72.0	71.3	63.8	50.3	32.1	21.2	49.8
1973	26.8	33.3	39.9	44.7	56.6	69.5	73.7	75.7	59.7	53.0	38.7	29.9	50.1
1974	23.5	35.2	41.7	49.8	61.1	68.8	78.2	68.2	59.9	54.3	37.8	29.5	50.7
1975	30.3	29.3	34.8	47.5	57.8	66.8	74.4	75.7	64.0	55.8	37.5	35.4	50.8
1976	32.6	39.9	38.5	51.0	57.1	69.2	76.2	73.6	62.9	45.9	35.4	33.0	51.3
1977	22.9	37.1	38.8	52.1	61.8	71.7	76.3	71.0	67.0	52.6	38.9	31.4	51.8
1978	18.7	19.7	39.6	49.7	55.1	69.4	76.5	71.4	67.3	52.9	35.7	25.1	48.4
1979	17.5	31.4	41.9	50.7	57.0	68.7	76.0	71.6	67.7	54.2	34.5	35.5	50.6
1980	24.4	32.4	35.1	47.1	56.9	71.9	79.2	75.2	66.6	52.0	41.1	36.4	51.5
1981	33.0	32.1	40.5	55.5	55.5	71.6	75.2	70.8	65.8	51.9	43.2	33.8	52.4
1982	25.7	28.4	40.3	47.0	59.0	64.6	74.5	74.7	64.5	52.4	37.5	31.8	50.0
1983	31.0	36.5	38.8	44.1	54.8	66.4	78.9	82.6	68.4	53.0	37.8	14.6	50.6
1984	25.3	34.1	36.0	42.6	58.5	67.8	74.3	75.0	61.8	48.6	41.0	30.0	49.6
1985	25.1	28.1	42.0	53.3	62.2	69.1	76.7	73.3	61.0	50.6	30.8	26.5	49.9
1986	38.9	33.9	46.2	52.3	59.5	71.7	77.2	73.6	66.2	52.0	39.0	32.9	53.6
1987	31.6	37.5	37.5	51.8	62.6	71.3	76.1	72.5	64.5	52.4	39.7	30.2	52.3
1988	23.8	31.5	39.0	48.5	60.9	75.1	76.1	75.9	64.7	52.7	40.9	34.4	52.0
1989	34.0	22.7	40.8	51.4	60.3	66.1	75.6	72.7	63.4	53.5	42.0	25.9	50.7
1990	32.7	31.7	41.5	50.3	56.9	74.4	74.1	74.2	68.6	53.8	42.7	25.4	52.2
1991	26.1	40.0	41.6	49.7	62.3	72.9	75.7	73.2	65.8	52.7	35.6	33.8	52.5
1992	31.3	40.0	43.8	52.6	60.3	66.7	71.5	68.7	64.2	52.1	32.7	22.8	50.6
1993	22.8	22.5	39.6	46.6	58.3	67.5	72.6	70.4	59.6	49.9	33.5	32.9	48.0
1994	28.1	26.0	43.2	48.2	62.5	73.2	72.3	74.1	66.2	52.3	35.6	33.0	51.2
1995	31.9	36.2	39.4	44.6	51.9	66.4	73.6	77.1	62.7	50.8	42.4	31.9	50.7
1996	25.5	33.8	35.3	49.5	59.0	70.3	73.6	71.2	61.8	51.8	35.2	31.7	49.9
1997	27.3	30.3	42.9	43.5	57.2	69.3	74.7	71.3	66.2	50.9	35.9	29.0	49.9
1998	31.9	36.0	36.5	47.2	62.3	67.3	75.3	73.1	69.4	52.5	42.9	30.1	52.0
1999	32.6	39.3	40.1	46.1	58.3	67.9	77.1	73.4	60.4	52.9	46.4	34.7	52.4
POR= 56 YRS	28.0	32.0	38.2	48.7	58.9	69.5	75.4	73.7	64.4	52.5	38.4	30.2	50.8

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HEATING DEGREE DAYS (base 65°F) 1999 GOODLAND, KS (GLD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	5	1	174	497	747	986	1084	957	777	463	269	5	5965
1971-72	11	0	193	388	756	998	1138	862	615	445	222	10	5638
1972-73	28	24	117	454	980	1355	1177	881	770	602	265	28	6681
1973-74	4	0	188	365	780	1082	1281	825	715	454	148	51	5893
1974-75	0	24	198	329	811	1099	1069	997	929	524	226	43	6249
1975-76	0	4	129	290	823	909	998	724	815	414	259	14	5379
1976-77	0	3	121	587	884	987	1296	776	803	387	100	0	5944
1977-78	2	10	40	377	776	1033	1431	1263	782	456	315	50	6535
1978-79	0	18	63	375	876	1229	1470	936	710	424	269	58	6428
1979-80	0	21	49	337	909	907	1251	936	921	534	254	16	6135
1980-81	0	2	61	402	714	878	985	915	751	289	297	18	5312
1981-82	1	9	59	405	649	958	1216	1019	761	534	197	73	5881
1982-83	1	12	106	383	820	1022	1049	791	805	623	326	72	6010
1983-84	0	0	76	366	807	1556	1226	892	893	664	208	39	6727
1984-85	0	0	178	503	712	1079	1232	1026	704	351	129	48	5962
1985-86	0	4	237	439	1020	1188	804	867	577	375	185	9	5705
1986-87	0	2	58	399	773	987	1026	762	845	410	111	10	5383
1987-88	14	24	76	396	749	1072	1270	966	797	487	180	8	6039
1988-89	3	4	102	375	713	942	953	1180	745	435	189	70	5711
1989-90	0	1	152	361	685	1203	994	928	723	444	266	9	5766
1990-91	13	1	66	347	662	1224	1203	694	718	453	138	0	5519
1991-92	5	8	87	396	878	964	1039	716	650	379	188	38	5348
1992-93	8	31	88	397	963	1301	1301	1184	779	541	218	57	6868
1993-94	0	29	188	474	938	987	1135	1086	669	510	119	1	6136
1994-95	3	7	82	385	873	987	1018	800	788	603	397	65	6008
1995-96	14	3	167	446	671	1017	1219	898	914	460	227	18	6054
1996-97	4	0	151	419	886	1025	1163	965	679	637	251	25	6205
1997-98	5	13	76	460	865	1111	1019	806	876	527	145	81	5984
1998-99	1	0	33	380	660	1076	999	713	766	562	219	45	5454
1999-	3	3	190	373	550	930							

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COOLING DEGREE DAYS (base 65°F) 1999 GOODLAND, KS (GLD)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	0	59	202	355	376	103	6	0	0	1101
1971	0	0	0	0	5	254	270	291	106	2	0	0	928
1972	0	0	0	1	41	183	251	224	85	4	0	0	789
1973	0	0	0	0	13	171	281	338	34	0	0	0	837
1974	0	0	0	5	37	173	416	130	50	3	0	0	814
1975	0	0	0	4	10	106	298	344	104	15	0	0	881
1976	0	0	0	0	22	149	357	275	64	1	0	0	868
1977	0	0	0	7	9	206	360	199	106	0	0	0	887
1978	0	0	0	3	16	192	365	223	137	8	0	0	944
1979	0	0	0	3	29	176	346	235	139	11	0	0	939
1980	0	0	0	4	11	230	447	324	117	6	0	0	1139
1981	0	0	0	11	8	223	323	200	90	3	0	0	858
1982	0	0	0	1	17	71	301	320	98	0	0	0	808
1983	0	0	0	0	17	122	438	551	184	3	0	0	1315
1984	0	0	0	0	12	133	292	316	87	0	0	0	840
1985	0	0	0	6	47	178	372	267	127	1	0	0	998
1986	0	0	0	3	21	213	387	271	104	1	0	0	1000
1987	0	0	0	18	44	205	364	264	69	9	0	0	973
1988	0	0	0	0	59	315	355	350	100	0	0	0	1179
1989	0	0	0	30	49	109	334	248	107	11	0	0	888
1990	0	0	0	9	25	296	305	292	180	5	0	0	1112
1991	0	0	0	3	63	244	342	268	117	23	0	0	1060
1992	0	0	0	10	48	95	216	151	70	5	0	0	595
1993	0	0	0	0	17	137	243	203	32	13	0	0	645
1994	0	0	0	9	49	253	235	298	126	0	0	0	970
1995	0	0	0	0	0	115	286	388	102	16	0	0	907
1996	0	0	0	3	49	182	274	199	60	15	0	0	782
1997	0	0	0	0	16	163	314	215	120	31	0	0	859
1998	0	0	0	0	68	155	327	259	173	0	0	0	982
1999	0	0	0	0	17	139	385	270	60	6	0	0	877

SNOWFALL (inches) 1999 GOODLAND, KS (GLD)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	0.0	5.7	3.4	T	8.3	11.4	8.6	T	0.0	0.0	37.4
1971-72	0.0	0.0	T	1.3	3.6	4.1	5.5	1.7	0.8	T	0.0	0.0	17.0
1972-73	0.0	0.0	0.0	6.3	11.2	16.3	11.7	0.5	15.0	10.1	1.3	0.0	72.4
1973-74	0.0	0.0	0.0	1.7	6.9	12.9	3.2	6.4	8.5	7.2	0.0	0.0	46.8
1974-75	0.0	0.0	0.0	0.0	5.9	5.1	3.6	3.3	3.7	12.0	0.0	0.0	33.6
1975-76	0.0	0.0	0.0	T	15.7	2.2	7.7	3.5	5.8	T	0.0	0.0	34.9
1976-77	0.0	0.0	0.0	5.8	5.2	0.1	5.0	0.3	14.1	5.4	0.0	0.0	35.9
1977-78	0.0	0.0	0.0	T	2.2	0.6	6.2	11.8	4.3	T	2.6	0.0	27.7
1978-79	0.0	0.0	0.0	1.3	3.6	9.1	18.1	1.3	17.1	6.5	T	0.0	57.0
1979-80	0.0	0.0	0.0	17.6	7.9	17.3	13.2	8.7	27.4	9.9	0.0	0.0	102.0
1980-81	0.0	0.0	0.0	0.3	2.6	T	16.6	0.9	20.6	0.8	0.0	0.0	41.8
1981-82	0.0	0.0	0.0	0.0	3.4	0.1	5.6	10.5	2.2	0.8	1.8	0.0	24.4
1982-83	0.0	0.0	0.0	0.2	2.4	14.4	4.3	6.8	13.8	6.3	0.0	0.0	48.2
1983-84	0.0	0.0	T	0.0	23.3	7.2	12.1	17.2	20.0	22.0	T	0.0	101.8
1984-85	0.0	0.0	0.7	6.4	1.1	6.7	6.7	7.5	3.5	T	1.0	0.0	33.6
1985-86	0.0	0.0	5.6	0.0	5.6	6.8	0.0	7.5	5.8	0.7	0.0	0.0	32.0
1986-87	0.0	0.0	0.0	5.5	4.6	1.5	6.1	7.5	21.5	4.5	0.0	0.0	51.2
1987-88	0.0	0.0	0.0	0.0	7.2	9.0	19.4	3.6	7.3	13.4	2.2	0.0	62.1
1988-89	0.0	0.0	0.0	0.0	3.1	2.1	1.0	2.2	2.8	12.5	T	3.5	27.2
1989-90	0.0	0.0	0.0	1.0	0.3	7.0	10.3	6.3	5.8	1.4	6.5	0.0	38.6
1990-91	0.0	0.0	0.0	6.1	13.4	2.1	4.2	0.1	11.4	T	1.4	T	38.7
1991-92	T	0.0	0.0	7.5	3.3	8.3	1.9	0.5	1.3	T	0.0	T	22.8
1992-93	T	0.0			10.5	4.3	11.3	12.5	5.8	0.3		T	
1993-94	T	0.0	0.0	1.3	6.2	0.7	10.8	3.1	1.0	20.4	T	T	43.5
1994-95	T	T	0.0	0.0	10.1	2.5	1.5	5.7	15.1	0.0	0.0	T	34.9
1995-96	0.0	0.0	5.8	5.2	1.7	0.8	13.5	1.0	2.9	4.3	T	0.0	35.2
1996-97	T	T	0.0	T	0.5	0.6	3.0	17.0	T	2.3	T	T	23.4
1997-98	T	0.0	0.0	19.5	6.1	7.2	2.0	1.0	1.7	0.0	T	T	37.5
1998-99	0.0	T	0.0	T	5.0	5.9	3.5	1.7	11.5	3.6	T	T	31.2
1999-	T	0.0	0.0	0.0	1.8	1.6							
POR= 55 YRS	T	T	0.3	0.4	4.7	5.1	6.3	5.1	8.8	4.5	T	0.1	35.3

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REFERENCE NOTES:

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1961 - 1990). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p>	<p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65° F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.</p> <p>ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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1999  
GOODLAND,  
KANSAS (GLD)

Goodland is situated on an intermediate plain with few native trees. The terrain rises from east to west with only minor variations from north to south. The rate of rise is about 1,600 feet per 150 miles east of Goodland and about 2,500 feet per 150 miles west. This gradual slope in terrain makes conditions favorable for upslope fog, low clouds, and drizzle with easterly winds.

This is a typical steppe climate with wide variations in precipitation from year to year. Evaporation generally exceeds precipitation during the summer months. The number of subnormal years of precipitation nearly equals the above normal years. The mean monthly rainfall increases in the spring to a maximum in June. General storms provide the main source of precipitation during the spring months, while thunderstorms are the major factor during the summer months. Inadequate moisture received from March through June, often results in drought conditions throughout the summer months with thunderstorms providing only local relief. The frequency of thunderstorms increases to a maximum in July with a marked decrease in September. Hail is most frequent in May and June. Winds during thunderstorms have been recorded with gusts up to 80 mph.

Snow is an important factor in the production of winter wheat, and residual soil moisture often offsets the effects of subnormal spring precipitation. When snow is accompanied by strong winds it can become a dangerous enemy. As little as 1 inch of snow accompanied by strong winds can result in serious blocking of roads and highways. The heaviest snowfall is most likely to occur in March, although heavy snows have been recorded in every month from October through May. Snow may cover the ground about one third of the time from November through March.

Temperatures are typical of continental climates with January normally the coldest month and July the warmest. Winters are often modified by persistent foehn winds but polar outbreaks have been known to drop the temperature as much as 70 degrees in a 24-hour period. Low relative humidity during the summer months makes most nights comfortable even in the hottest weather.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is October 7 and the average last occurrence in the spring is May 4. The growing season is 156 days.

STATION LOCATION

GOODLAND, KANSAS

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE											* Type M = AMOS H = AUTOB S = ASOS W = AWOS	REMARKS
						SEA LEVEL	GROUND											
							WIND	EXTR	PSYCH	SURFACE	SHAD	TIPO	RAIN	WET	8	H		
<u>COOPERATIVE</u>																		
H. B. Robinson 8th Walnut	6/4/95	4/5/96		39° 21'	101°42'													
William Walker, Jr. 9th & Syracuse Sts.	9/17/96	8/31/97		39° 21'	101°42'	3687												
G. L. Calvert & C. C. Calvert 9th & Caldwell	7/10/06	9/30/16		39° 20'	101°42'	3687		5						3				
A. G. Thomas 12th & Clark Sts.	9/30/16	2/1/18	1 mi. NW	39° 21'	101°42'													
T. A. McCants 17th & Syracuse Sts.	2/1/18	3/31/19	1/2 mi. SE	39° 21'	101°42'													
Frank J. Horton 304 E. 12th Street	8/24/19	12/14/43	1/4 mi. ESE	39° 20'	101°42'	3688	21	5	5				3	3			Instrumental elevations effective 3/11/20 with establishment of 2nd Order Station.	
<u>AIRPORT</u>																		
Old Administration Bldg Municipal AP	12/14/43	5/11/49	1.5 mi. NNE	39° 22'	101°42'	3651	43	5	5				5	3			Airway station, including hourly observations.	
New Administration Bldg Municipal AP	5/11/49	3/22/66	1000 ft. NNE	39° 22'	101°42'	3645	25 b31 c35 d20	5	5				5 a6	2			a - Effective 6/16/53. b - Effective 6/9/60. c - Effective 3/23/64. d - Effective 5/18/65.	
Terminal Building New Addition Renner Field	3/22/66	9/1/92	#	39° 22'	101°42'	3645 f3654	20 j33	5 h05	5 h05	NA	NA i14 m5	6 g05 h05 m5	2 g04 k4	NA k4	NA	#	# - Office moved within building and name of building changed. Instruments not moved. e - Commissioned 1970' SSE of thermometer site 3/31/66. f - Effective 3/31/66. g - Moved 300' SW 7/25/72. h - type change 11/1/76. i - Installed on roof 9/16/81. j - Raised 3/20/85. k - type change 8/21/85. m - Moved 0.5 mile S of previous location 2/20/91	
Renner Field	09/01/92	Present	NA	39°22'	101°42'	3655									S	ASOS Commissioned 9/1/92.		

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801. INQUIRIES/COMMENTS CALL: (828) 271-4800

National Climatic Data Center  
151 Patton Avenue, Rm 120  
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