

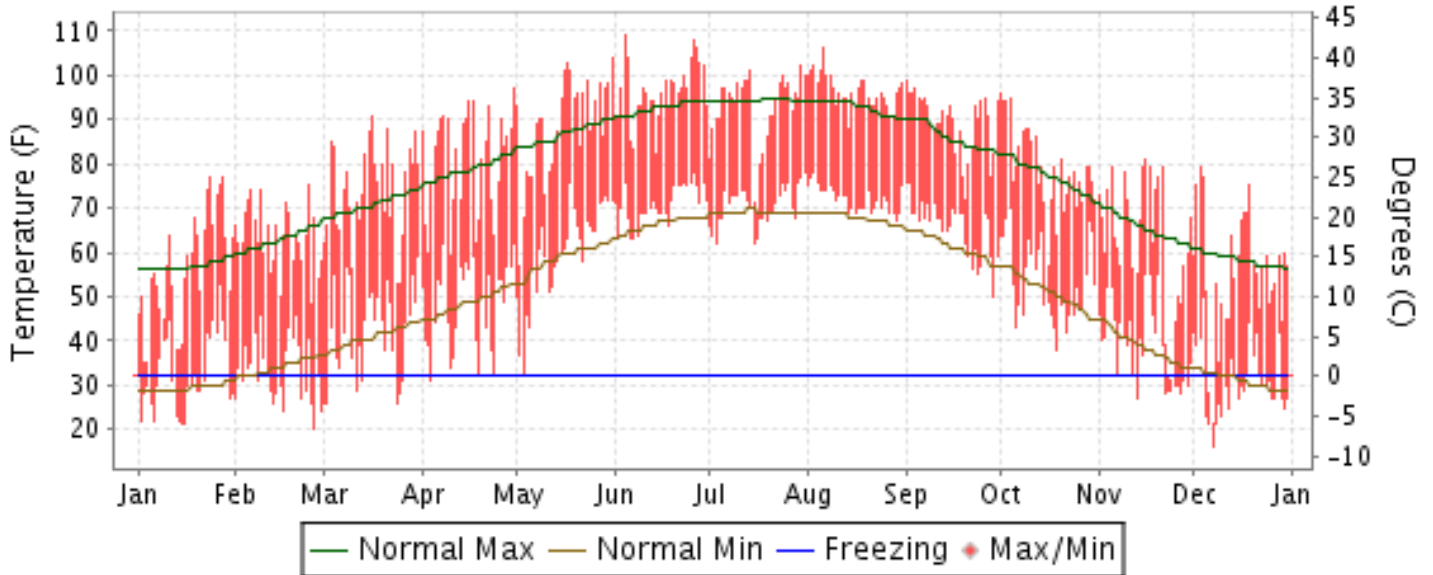


2013 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

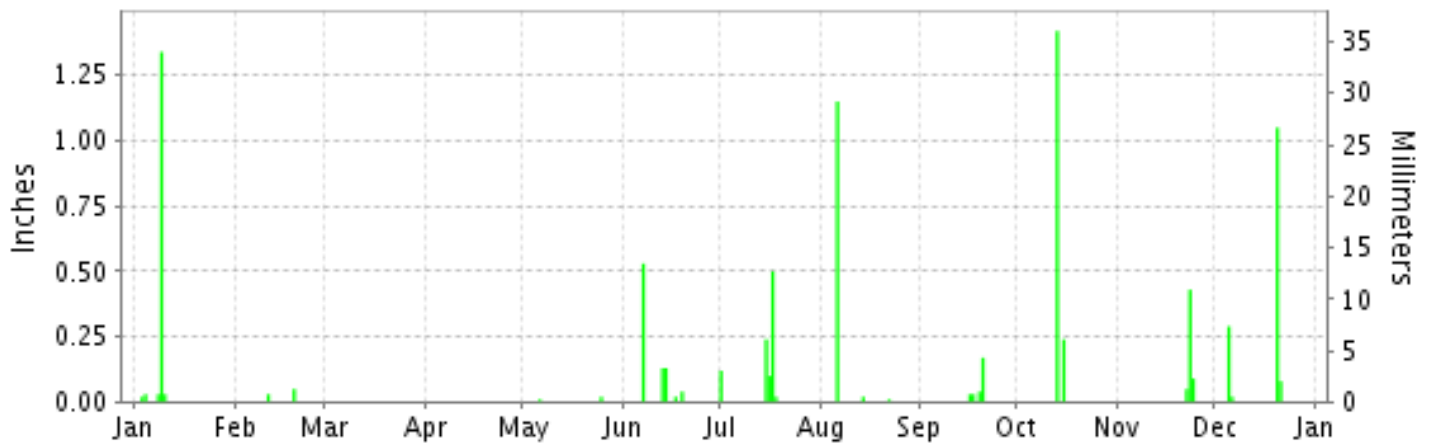
ISSN 0198-5124

MIDLAND, TEXAS (KMAF)

Daily Max/Min Temperature



Daily Precipitation



Daily Station Pressure



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NATIONAL
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NATIONAL
ENVIRONMENTAL SATELLITE, DATA
AND INFORMATION SERVICE

NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2013

MIDLAND (KMAF)

LATITUDE: 31° 56'N LONGITUDE: 102° 12'W ELEVATION (FT): GRND: 2862 BARO: 2866 TIME ZONE: CENTRAL (UTC -6) WBAN: 23023

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	56.4	63.4	74.1	80.9	88.5	96.3	92.4	96.4	89.4	79.0	63.0	55.5	77.9	
	HIGHEST DAILY MAXIMUM	77	75	91	97	104	109	102	106	99	96	81	79	109	
	DATE OF OCCURRENCE	28+	24	16	30	31	04	30	06	01	01	16	03	JUN 04	
	MEAN DAILY MINIMUM	32.8	33.3	42.3	48.0	60.0	70.9	70.5	72.1	65.7	53.5	39.3	31.1	51.6	
	LOWEST DAILY MINIMUM	21	20	26	31	32	63	62	67	50	38	27	16	16	
	DATE OF OCCURRENCE	16+	26	24+	04	03	07+	15+	29	29	19	13	07	DEC 07	
	AVERAGE DRY BULB	44.6	48.4	58.2	64.5	74.3	83.6	81.5	84.2	77.6	66.3	51.1	43.3	64.8	
	MEAN WET BULB	37.9	38.8	44.4	49.8	57.7	67.7	67.2	67.7	64.2	55.4	44.7	36.8	52.7	
	MEAN DEW POINT	29.7	25.0	26.9	34.2	43.1	59.0	59.2	58.7	56.0	45.9	37.3	30.2	42.1	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	1	9	16	27	24	30	18	4	0	0	129	
MAXIMUM <= 32°	0	0	0	0	0	0	0	0	0	0	2	2	4		
MINIMUM <= 32°	18	14	7	2	1	0	0	0	0	0	9	22	73		
MINIMUM <= 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	625	461	238	127	41	0	0	0	0	79	418	665	2654	
	COOLING DEGREE DAYS	0	0	35	119	334	564	519	605	384	125	7	0	2692	
RH	MEAN (PERCENT)	62	46	36	39	40	49	51	45	52	55	63	67	50	
	HOUR 00 LST	72	53	41	44	46	56	55	49	58	63	71	75	57	
	HOUR 06 LST	78	65	56	64	64	70	70	64	70	72	77	81	69	
	HOUR 12 LST	51	33	28	30	27	40	45	37	43	44	53	58	41	
	HOUR 18 LST	44	28	18	20	23	30	36	30	38	40	51	54	34	
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	2	0	0	0	0	0	0	0	0	0	0	3	5	
	THUNDERSTORMS	0	0	0	0	0	3	1	2	0	0	0	0	6	
PR	MEAN STATION PRESS. (IN.)	27.15	27.02	27.05	26.95	26.99	27.00	27.07	27.08	27.03	27.06	27.18	27.14	27.06	
	MEAN SEA-LEVEL PRESS. (IN.)	30.10	29.95	29.95	29.82	29.84	29.82	29.90	29.91	29.88	29.93	30.11	30.09	29.94	
WINDS	RESULTANT SPEED (MPH)	1.2	1.8	2.7	4.5	5.7	10.3	8.3	7.2	6.5	4.3	3.0	1.5	4.3	
	RES. DIR. (TENS OF DEGS.)	25	23	19	18	17	15	15	15	14	17	16	27	17	
	MEAN SPEED (MPH)	9.1	11.2	11.9	13.1	13.7	13.9	10.9	10.2	9.9	10.2	10.2	9.3	11.1	
	PREVAIL.DIR.(TENS OF DEGS.)	20	20	18	17	18	17	16	15	15	17	18	25	17	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	43	48	40	39	41	49	35	41	31	37	35	37	49	
	DIR. (TENS OF DEGS.)	26	32	35	34	22	26	07	01	17	01	04	25	26	
	DATE OF OCCURRENCE	29	25	23	17	23	17	14	09	02	18	12	21	JUN 17	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	55	60	49	48	49	71	41	61	37	44	44	45	71	
DIR. (TENS OF DEGS.)	27	33	36	34	22	25	03	01	16	01	04	25	25		
DATE OF OCCURRENCE	29	25	23	17	23	17	26	09	27	18	12	21	JUN 17		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	1.45	0.08	T	T	0.03	0.85	0.98	1.18	0.27	1.66	0.57	1.44	8.51	
	GREATEST 24-HOUR (IN.)	1.37	0.05	T	T	0.02	0.53	0.50	1.15	0.17	1.42	0.51	1.13	1.42	
	DATE OF OCCURRENCE	08-09	19	29+	10+	25	07	17	06	20	13	23-24	20-21	OCT 13	
	NUMBER OF DAYS WITH:														
PRECIPITATION 0.01	5	2	0	0	2	5	5	3	4	2	3	4	35		
PRECIPITATION 0.10	1	0	0	0	0	3	4	1	1	2	1	2	15		
PRECIPITATION 1.00	1	0	0	0	0	0	0	1	0	1	0	1	4		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	1.0	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	T	1.1	
	GREATEST 24-HOUR (IN.)	1.0	T	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	T	1.0	
	DATE OF OCCURRENCE	04	25									24	20+	JAN 04	
	MAXIMUM SNOW DEPTH (IN.)	1	0	0	0	0	0	0	0	0	0	0	1	1	
	DATE OF OCCURRENCE	04											07+	DEC 07+	
NUMBER OF DAYS WITH:															
SNOWFALL >= 1.0	1	0	0	0	0	0	0	0	0	0	0	0	1		

NORMALS, MEANS, AND EXTREMES MIDLAND (KMAF)

LATITUDE:
31° 56'N

LONGITUDE:
102° 12'W

ELEVATION (FT):
GRND: 2862 BARO: 2866

TIME ZONE:
CENTRAL (UTC -6)

WBAN: 23023

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	57.4	62.4	70.2	79.2	87.6	93.4	94.6	93.6	86.9	77.9	66.6	58.1	77.3
	MEAN DAILY MAXIMUM	65	57.3	62.1	70.2	79.1	86.8	93.3	94.4	93.6	86.7	77.8	66.3	58.7	77.2
	HIGHEST DAILY MAXIMUM	66	84	90	95	104	108	116	112	107	107	101	90	85	116
	YEAR OF OCCURRENCE		1974	2009	1989	2012	2000	1994	1989	1964	1953	2000	1996	1954	JUN 1994
	MEAN OF EXTREME MAXS.	65	76.2	80.6	87.0	93.2	99.8	103.2	101.8	101.4	97.5	91.3	82.2	76.7	90.9
	NORMAL DAILY MINIMUM	30	30.3	34.5	41.0	49.3	59.5	67.3	69.7	68.8	62.0	51.8	39.2	30.8	50.4
	MEAN DAILY MINIMUM	65	30.0	34.0	40.8	49.7	59.2	67.1	69.6	68.8	62.1	51.7	39.1	31.6	50.3
	LOWEST DAILY MINIMUM	66	-8	-11	9	20	32	47	53	54	36	24	11	-1	-11
	YEAR OF OCCURRENCE		1962	1985	1980	1973	2013	1983	1978	1989	1989	1993	2001	1989	FEB 1985
	MEAN OF EXTREME MINS.	65	14.4	18.0	23.5	33.5	44.9	57.4	63.2	62.4	49.1	36.9	23.9	17.2	37.0
	NORMAL DRY BULB	30	43.9	48.5	55.6	64.2	73.6	80.3	82.1	81.2	74.5	64.8	52.9	44.4	63.8
	MEAN DRY BULB	65	43.7	48.1	55.5	64.4	73.0	80.3	82.0	81.2	74.4	64.8	52.7	45.2	63.8
	MEAN WET BULB	30	33.1	35.8	41.2	47.1	56.4	63.8	65.6	65.4	60.9	52.3	41.3	34.1	49.8
	MEAN DEW POINT	30	29.3	32.0	36.4	41.5	52.0	61.0	62.0	62.4	58.0	49.3	37.7	29.9	46.0
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.4	3.7	13.3	21.0	25.6	24.1	11.1	2.1	0.0	0.0	101.3
	MAXIMUM <= 32	30	0.9	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	2.2
	MINIMUM <= 32	30	18.3	10.7	4.7	0.6	0.0	0.0	0.0	0.0	0.0	0.3	6.4	17.2	58.2
MINIMUM <= 0	30	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	
H/C	NORMAL HEATING DEG. DAYS	30	656	465	307	112	16	0	0	0	11	98	370	637	2672
	NORMAL COOLING DEG. DAYS	30	0	2	16	90	281	461	532	502	295	93	7	0	2279
RH	NORMAL (PERCENT)	30	58	55	47	45	51	54	52	55	60	60	59	58	55
	HOURLY 00 LST	30	65	62	54	53	60	63	58	62	68	70	69	65	62
	HOURLY 06 LST	30	72	71	65	67	75	78	73	77	80	80	76	72	74
	HOURLY 12 LST	30	47	44	35	33	38	42	42	44	49	47	45	46	43
	HOURLY 18 LST	30	42	36	28	27	31	34	35	38	43	44	45	44	37
S	PERCENT POSSIBLE SUNSHINE	20	66	69	72	78	78	81	81	77	77	72	74	65	74
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	50	3.5	2.4	0.9	0.7	0.4	0.1	0.0	0.1	0.5	1.3	2.2	2.7	14.8
	THUNDERSTORMS	65	0.3	0.6	1.5	2.8	6.1	5.6	5.6	5.7	3.6	2.6	0.6	0.4	35.4
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS)	48	4.2	4.1	3.8	3.7	3.8	3.2	3.5	3.4	3.4	3.0	3.4	3.8	3.6
	MIDNIGHT-MIDNIGHT (OKTAS)	32	3.9	3.8	3.3	3.3	3.4	3.0	3.1	3.2	3.3	2.8	3.2	3.4	3.3
	MEAN NO. DAYS WITH: CLEAR	48	12.4	11.1	13.1	13.3	12.9	15.0	13.1	14.2	14.2	16.9	14.6	13.8	164.6
	PARTLY CLOUDY	48	6.4	7.0	7.7	8.0	9.6	9.5	11.1	10.4	7.9	6.3	6.5	6.0	96.4
	CLOUDY	48	12.2	10.1	10.2	8.7	8.5	5.5	6.8	6.3	8.0	7.7	8.9	11.2	104.1
PR	MEAN STATION PRESSURE(IN)	30	27.13	27.08	27.03	26.98	26.98	27.00	27.06	27.07	27.08	27.08	27.11	27.12	27.06
	MEAN SEA-LEVEL PRES. (IN)	30	30.08	30.02	29.93	29.86	29.82	29.82	29.89	29.91	29.93	29.97	30.04	30.07	29.95
WINDS	MEAN SPEED (MPH)	30	10.1	11.0	12.0	12.7	12.3	12.3	10.8	9.8	9.7	10.2	10.0	9.9	10.9
	PREVAIL.DIR.(TENS OF DEGS)	42	19	19	19	17	19	17	17	17	17	17	19	19	17
	MAXIMUM 2-MINUTE: SPEED (MPH)	17	46	48	45	47	48	66	59	53	51	44	45	51	66
	DIR. (TENS OF DEGS)		26	32	02	32	16	35	29	23	19	26	01	27	35
	YEAR OF OCCURRENCE		2005	2013	2002	2009	2010	2007	2009	1997	2001	2010	2011	2009	JUN 2007
	MAXIMUM 3-SECOND SPEED (MPH)	17	56	60	58	61	59	93	72	64	70	54	54	63	93
	DIR. (TENS OF DEGS)		27	33	21	32	16	36	28	23	20	01	01	26	36
YEAR OF OCCURRENCE		2012	2013	2007	2009	2010	2007	2009	1997	2001	2011	2011	2009	JUN 2007	
PRECIPITATION	NORMAL (IN)	30	0.56	0.71	0.60	0.65	1.74	1.80	1.82	1.84	1.86	1.73	0.69	0.60	14.60
	MAXIMUM MONTHLY (IN)	66	3.66	2.55	2.86	2.85	7.63	3.97	8.50	5.92	9.70	7.45	5.42	3.30	9.70
	YEAR OF OCCURRENCE		1949	1992	1970	1949	1992	2010	1991	2006	1980	1986	2004	1986	SEP 1980
	MINIMUM MONTHLY (IN)	66	0.00	0.00	T	0.00	0.02	0.00	T	0.03	0.00	0.00	0.00	T	0.00
	YEAR OF OCCURRENCE		1967	1999	2013	1964	1998	2011	2011	2009	2000	1952	1950	2008	JUN 2011
	MAXIMUM IN 24 HOURS (IN)	66	1.45	1.32	2.20	1.62	4.75	3.07	5.99	2.72	4.92	3.59	2.17	1.13	5.99
	YEAR OF OCCURRENCE		2010	1997	1970	1979	1968	1993	1961	2007	2012	1985	2004	2013	JUL 1961
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	3.6	3.8	3.6	2.9	5.6	4.8	4.9	5.7	5.4	4.9	3.0	3.7	51.9
	PRECIPITATION >= 1.00	30	0.0	0.1	0.0	0.1	0.5	0.5	0.4	0.5	0.5	0.5	0.2	0.0	3.3
SNOWFALL	NORMAL (IN)	30	2.0	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.5	4.8
	MAXIMUM MONTHLY (IN)	65	10.6	4.5	5.9	2.0	T	T	0.0	T	T	0.6	8.0	9.8	10.6
	YEAR OF OCCURRENCE		2012	2010	1970	1996	2007	1993	2011	1992	2001	1993	2001	1998	JAN 2012
	MAXIMUM IN 24 HOURS (IN)	59	10.6	4.4	5.0	2.0	T	T	T	T	T	0.6	6.0	9.8	10.6
	YEAR OF OCCURRENCE		2012	2010	1970	1996	1995	1993	1995	1992	2001	1993	2001	1998	JAN 2012
	MAXIMUM SNOW DEPTH (IN)	63	7	5	3	0	0	0	0	0	0	1	8	5	8
	YEAR OF OCCURRENCE		2012	1985	1989							1993	2001	1998	NOV 2001
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	0.8	0.2	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	1.9	

PRECIPITATION (inches) 2013 MIDLAND (KMAF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	0.41	0.17	T	0.01	3.40	2.15	0.84	2.45	1.89	1.99	2.31	0.83	16.45
1985	0.84	0.59	0.63	0.21	0.99	2.23	0.90	0.81	3.15	5.93	0.08	0.05	16.41
1986	0.23	0.17	0.03	0.01	3.89	3.42	1.26	3.94	6.98	7.45	1.45	3.30	32.13
1987	0.10	1.93	1.23	0.63	4.13	2.98	0.33	0.51	1.37	0.44	0.02	0.38	14.05
1988	0.01	0.44	0.74	0.08	2.26	0.84	6.66	1.66	5.07	T	T	0.53	18.29
1989	0.25	1.28	0.34	0.05	0.95	0.61	0.34	1.19	2.78	0.17	0.04	0.14	8.14
1990	0.21	1.09	0.94	1.97	0.35	0.01	1.65	2.15	2.89	1.46	0.75	0.69	14.16
1991	1.80	0.25	T	0.01	0.54	3.50	8.50	1.58	3.76	0.58	0.71	2.23	23.46
1992	1.20	2.55	0.97	1.03	7.63	2.12	1.63	2.75	0.16	0.03	0.70	0.61	21.38
1993	1.28	0.82	0.26	0.57	1.45	3.11	0.89	4.37	2.11	1.11	0.06	0.34	16.37
1994	1.02	0.08	T	0.52	1.30	1.00	2.43	1.75	0.45	0.38	1.30	0.46	10.69
1995	0.72	0.46	0.19	0.40	2.51	1.45	2.28	0.34	1.77	0.34	T	0.24	10.70
1996	0.08	T	0.05	1.22	0.11	1.71	.13	2.94	.97	.20	1.43	T	8.84
1997	0.21	1.69	0.26	2.02	0.73	3.27	2.26	2.41	0.86	1.60	0.44	1.35	17.10
1998	0.24	0.50	0.42	0.00	0.02	0.30	0.65	0.92	0.08	1.30	0.13	0.58	5.14
1999	0.33	0.00	1.22	0.19	1.10	2.87	0.61	0.05	0.95	0.28	0.00	T	7.60
2000	0.61	T	0.76	0.19	1.05	3.14	0.24	0.06	0.00	2.39	0.88	0.33	9.65
2001	0.69	1.24	0.78	T	1.14	0.01	T	3.44	0.95	0.03	1.47	0.10	9.85
2002	0.08	1.00	0.88	0.35	0.11	0.17	1.48	0.17	0.30	3.29	0.47	1.05	9.35
2003	0.27	0.72	0.17	0.02	3.14	1.99	1.14	1.91	0.86	0.79	0.14	T	11.15
2004	0.63	0.84	1.33	1.88	0.10	2.01	1.21	0.77	5.31	2.84	5.42	0.11	22.45
2005	0.41	1.51	0.45	0.01	1.73	0.92	2.52	2.61	T	3.74	0.01	0.07	13.98
2006	0.16	0.82	1.78	0.33	0.13	1.02	1.55	5.92	1.23	1.46	T	1.35	15.75
2007	1.18	0.14	2.18	1.63	5.27	2.63	2.34	3.17	1.25	0.16	0.72	0.60	21.27
2008	0.03	0.01	0.37	0.51	0.18	2.02	0.70	2.42	2.16	1.61	T	T	10.01
2009	0.04	0.22	0.56	0.29	0.45	2.33	6.55	0.03	2.44	0.96	0.04	0.83	14.74
2010	1.64	1.53	0.59	2.03	1.65	3.97	1.85	0.44	2.35	T	0.00	0.02	16.07
2011	0.02	0.05	0.04	0.00	0.05	0.00	T	0.45	1.59	1.46	0.18	1.63	5.47
2012	1.00	0.19	0.11	0.05	2.88	0.43	1.30	0.75	5.89	0.12	T	0.08	12.80
2013	1.45	0.08	T	T	0.03	0.85	0.98	1.18	0.27	1.66	0.57	1.44	8.51
POR= 65 YRS	0.55	0.61	0.52	0.74	1.86	1.58	1.77	1.65	1.98	1.54	0.60	0.53	13.93

WBAN : 23023

AVERAGE TEMPERATURE (°F) 2013 MIDLAND (KMAF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1984	40.1	48.2	55.0	63.6	74.1	79.8	80.9	80.2	71.5	61.7	50.7	48.0	62.8
1985	37.5	44.3	56.7	66.9	74.8	77.3	81.2	84.1	74.2	63.7	54.6	41.1	63.0
1986	46.3	51.3	58.9	68.4	72.8	77.2	80.8	79.6	74.2	61.7	50.7	43.7	63.8
1987	42.6	47.5	49.5	59.2	69.2	75.7	80.5	81.3	73.1	66.3	50.8	44.2	61.7
1988	39.3	46.2	54.3	63.1	70.8	78.5	77.7	79.3	72.5	64.7	54.9	43.7	62.1
1989	45.9	43.3	56.9	66.8	76.9	78.7	83.1	80.5	71.7	65.2	53.6	38.7	63.4
1990	46.4	50.5	54.9	64.7	73.0	86.5	79.0	78.6	75.0	63.8	55.6	43.4	64.3
1991	41.7	50.6	56.9	65.9	76.6	79.5	79.2	77.6	69.9	64.6	47.7	45.8	63.0
1992	41.3	50.9	57.3	63.2	68.0	77.0	79.9	76.9	74.8	66.4	49.2	46.5	62.6
1993	43.4	47.1	54.6	63.3	71.2	78.9	83.5	81.1	71.9	61.9	49.5	46.9	62.8
1994	44.1	48.0	57.2	63.3	72.0	84.5	83.3	81.8	73.6	66.0	55.5	48.7	64.8
1995	45.9	51.8	54.5	64.0	71.8	78.1	83.0	81.8	73.9	66.6	54.8	46.4	64.4
1996	44.6	51.3	51.2	63.4	81.1	82.9	84.5	80.0	72.3	64.1	52.9	47.4	64.6
1997	41.4	44.8	57.9	59.1	70.8	77.9	82.8	81.9	77.0	65.0	50.2	42.0	62.6
1998	48.1	49.3	53.8	62.2	79.0	85.7	86.9	81.5	79.6	69.0	56.4	44.0	66.3
1999	48.0	54.8	55.9	65.0	73.8	79.3	82.6	84.3	75.0	63.9	56.5	45.1	65.4
2000	47.4	55.3	59.1	67.4	78.8	78.7	85.4	83.2	77.8	64.2	47.0	40.4	65.4
2001	41.5	48.5	51.9	66.9	75.9	83.8	86.7	82.0	75.1	65.9	54.3	44.7	64.8
2002	45.9	44.4	52.5	66.2	74.1	82.3	82.4	85.3	75.8	62.3	49.9	43.8	63.7
2003	44.3	46.5	57.0	67.1	76.0	79.1	82.7	83.3	75.1	67.3	55.2	46.8	65.0
2004	46.8	45.1	58.9	62.6	75.0	80.5	81.2	79.1	73.1	65.1	50.5	44.3	63.5
2005	48.0	47.7	52.9	62.6	71.6	81.3	81.6	78.8	77.9	63.8	54.4	44.6	63.8
2006	49.3	48.4	57.5	69.1	77.1	82.1	84.8	81.0	71.5	64.2	54.7	43.8	65.3
2007	38.7	48.3	58.2	60.5	68.4	77.2	78.7	80.3	76.9	68.5	53.9	46.0	63.0
2008	42.8	51.1	56.1	65.5	75.2	84.4	81.4	79.2	70.9	64.1	52.7	45.9	64.1
2009	44.9	52.8	58.6	66.1	74.6	82.2	82.5	82.5	72.6	62.5	54.4	41.1	64.6
2010	42.0	43.8	54.7	63.5	71.7	84.1	79.7	83.7	76.4	66.1	53.0	47.1	63.8
2011	42.5	45.7	61.9	71.6	75.2	88.0	87.0	87.8	76.6	66.9	54.4	41.9	66.6
2012	47.5	49.2	61.1	71.8	76.1	84.4	83.7	84.3	75.8	64.4	58.0	47.9	67.0
2013	44.6	48.4	58.2	64.5	74.3	83.6	81.5	84.2	77.6	66.3	51.1	43.3	64.8
POR= 65 YRS	43.7	48.1	55.5	64.4	73.0	80.3	82.0	81.2	74.4	64.8	52.7	45.2	63.8

HEATING DEGREE DAYS (base 65°F) 2013 MIDLAND (KMAF)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	0	0	66	135	426	521	843	573	277	53	2	1	2897
1985-86	0	0	30	87	308	734	575	390	192	39	11	0	2366
1986-87	0	0	2	137	423	653	689	484	473	205	14	0	3080
1987-88	0	0	2	38	427	636	788	540	338	100	11	0	2880
1988-89	0	0	10	54	321	654	586	601	279	102	2	0	2609
1989-90	0	0	36	98	341	806	569	401	324	105	58	0	2738
1990-91	0	0	2	101	295	662	715	398	260	47	8	0	2488
1991-92	0	0	47	107	513	587	728	404	235	113	29	0	2763
1992-93	0	0	1	32	475	564	665	494	322	118	16	0	2687
1993-94	0	3	10	185	457	556	639	468	265	117	18	0	2718
1994-95	0	0	3	80	284	500	586	363	343	119	8	0	2286
1995-96	0	0	29	45	301	573	626	410	423	139	0	0	2546
1996-97	0	0	25	101	358	538	726	560	232	206	22	0	2768
1997-98	0	0	3	119	437	704	518	434	367	129	0	0	2711
1998-99	0	0	0	48	259	644	522	282	285	104	9	0	2153
1999-00	0	0	16	106	250	610	542	274	195	83	13	0	2089
2000-01	0	0	12	127	535	755	720	455	399	56	0	0	3059
2001-02	0	0	5	51	329	619	586	572	394	94	8	0	2658
2002-03	0	0	0	160	449	652	634	512	252	56	10	0	2725
2003-04	0	0	0	41	318	556	556	570	229	113	22	0	2405
2004-05	1	0	1	46	431	632	521	478	371	116	49	0	2646
2005-06	0	0	3	121	325	625	478	459	243	34	5	0	2293
2006-07	0	0	5	104	305	655	805	463	231	175	33	0	2776
2007-08	0	0	0	70	335	589	681	399	301	92	13	0	2480
2008-09	0	0	1	101	368	583	613	347	231	97	0	0	2341
2009-10	0	0	13	162	313	733	705	587	322	110	30	0	2975
2010-11	0	0	0	32	355	549	690	536	152	20	27	0	2361
2011-12	0	0	3	74	315	709	535	454	186	20	9	0	2305
2012-13	0	0	11	123	225	525	625	461	238	127	41	0	2376
2013-	0	0	0	79	418	665							

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COOLING DEGREE DAYS (base 65°F) 2013 MIDLAND (KMAF)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1984	0	0	10	69	296	447	500	482	267	39	2	0	2112
1985	0	1	26	115	311	376	505	599	310	56	3	0	2302
1986	0	13	13	147	259	371	496	460	286	38	0	0	2083
1987	0	0	0	39	151	328	487	511	251	86	7	0	1860
1988	0	0	13	51	198	414	397	452	242	52	22	0	1841
1989	0	0	36	164	376	416	569	487	244	111	4	0	2407
1990	0	0	15	103	312	651	441	428	310	68	19	0	2347
1991	0	1	17	80	374	440	447	399	200	101	0	0	2059
1992	0	0	1	68	131	367	468	377	303	83	4	0	1802
1993	0	0	6	75	213	422	579	510	224	95	0	0	2124
1994	0	0	27	74	240	594	576	526	271	118	7	0	2433
1995	0	0	26	94	227	398	566	529	302	97	3	0	2242
1996	0	18	6	98	510	546	611	471	252	77	4	0	2593
1997	2	0	18	35	211	395	557	531	373	125	0	0	2247
1998	0	0	27	52	441	626	684	519	444	178	6	1	2978
1999	0	5	8	111	289	436	553	604	320	77	3	0	2406
2000	0	2	18	162	446	418	640	570	404	110	0	0	2770
2001	0	0	1	118	348	566	674	533	313	88	18	0	2659
2002	0	2	14	135	296	521	546	636	329	84	3	0	2566
2003	0	0	12	128	354	428	553	575	306	122	31	0	2509
2004	0	0	46	47	338	471	508	444	251	57	0	0	2162
2005	0	0	0	52	261	497	522	437	397	93	13	0	2272
2006	0	0	18	164	388	517	621	506	205	85	1	0	2505
2007	0	3	29	47	145	376	434	479	361	184	12	5	2075
2008	0	2	32	115	336	590	513	448	184	78	6	0	2304
2009	0	11	38	135	304	525	548	550	246	89	1	0	2447
2010	0	0	10	73	247	580	465	587	347	74	2	0	2385
2011	0	3	63	226	354	699	689	714	359	145	7	0	3259
2012	0	3	74	228	360	591	584	607	342	111	21	0	2921
2013	0	0	35	119	334	564	519	605	384	125	7	0	2692

SNOWFALL (inches) 2013 MIDLAND (KMAF)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1984-85	0.0	0.0	0.0	0.0	0.0	T	9.0	0.7	0.0	0.0	0.0	0.0	9.7
1985-86	0.0	0.0	0.0	0.0	0.0	0.5	2.0	0.2	0.0	0.0	0.0	0.0	2.7
1986-87	0.0	0.0	0.0	0.0	T	8.5	1.1	2.0	0.1	0.0	0.0	0.0	11.7
1987-88	0.0	0.0	0.0	0.0	0.0	1.2	T	3.2	0.1	0.0	0.0	0.0	4.5
1988-89	0.0	0.0	0.0	0.0	0.0	1.5	0.6	T	5.5	0.0	0.0	T	7.6
1989-90	0.0	0.0	0.0	0.0	0.4	0.3	0.0	0.0	0.0	0.3	0.0	0.0	1.0
1990-91	0.0	0.0	0.0	0.0	T	0.2	5.8	T	0.0	0.0	0.0	T	6.0
1991-92	0.0	0.0	0.0	0.1	0.0	T	5.8	2.1	T	0.0	T	T	8.0
1992-93	0.0	T	0.0	0.0	T	4.2	T	T	T	0.0	0.0	T	4.2
1993-94	0.0	0.0	0.0	0.6	0.0	0.9	5.5	T	T	T	T	0.0	7.0
1994-95	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	T	0.0	T	0.0	2.1
1995-96	T	0.0	0.0	0.0	0.0	T	0.6	0.2	0.2	2.0		0.0	
1996-97	0.0	0.0	0.0		.2	T	4.5	1.0	0.0	0.0	0.0	0.0	
1997-98	0.0	T	0.0	0.0	T	3.0	T	0.0	T	0.0	0.0	T	3.0
1998-99	0.0	0.0	0.0	0.0	0.0	9.8	0.8	0.0	0.0	0.0	0.0	0.0	10.6
1999-00	0.0	0.0	0.0	0.0	0.0	0.3	T	0.0	0.0	0.0	0.0	0.0	0.3
2000-01	0.0	0.0	0.0	0.0	1.2	0.3	2.2	T	0.0	0.0	T	0.0	3.7
2001-02	0.0	0.0	T	0.0	8.0	T	0.8	T	T	0.0	0.0	0.0	8.8
2002-03	T	0.0	0.0	0.0	0.0	T							
2003-04							0.0	0.3	0.0	0.0	0.0	0.0	
2004-05	0.0	0.0	0.0	0.0	T	0.3	0.0	1.6	0.0	0.0	0.0	0.0	1.9
2005-06	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0	1.5
2006-07	0.0	0.0	0.0	0.0	0.2	0.0	4.0	0.3	0.0	1.5	T	0.0	6.0
2007-08	0.0	0.0	0.0	0.0	6.2	0.0	T	0.0	T	0.0	0.0	0.0	6.2
2008-09	0.0	0.0	0.0	0.0	0.0	T	T	0.0	0.0	0.0	0.0	0.0	T
2009-10	0.0	0.0	0.0	0.0	0.0	2.9	0.3	4.5	0.0	0.0	0.0	0.0	7.7
2010-11	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.5	0.0	0.0	0.0	0.0	3.0
2011-12	0.0	0.0	0.0	0.0	0.0	8.9	10.6	T	0.0	0.0	0.0	0.0	19.5
2012-13	0.0	0.0	0.0	0.0	0.0	0.0	1.0	T	0.0	0.0	0.0	0.0	1.0
2013-	0.0	0.0	0.0	0.0	0.1	T							
POR= 66 YRS	T	T	T	0.0	0.6	1.0	1.7	0.8	0.3	0.1	T	T	4.5

WBAN : 23023

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. 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 CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS.</p> <p>GENERAL CONTINUED: 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</p>	<p>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. 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. STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED STATION HISTORY INFORMATION GO TO "Historical Observing Metadata Repository", URL IS: http://www.ncdc.noaa.gov/homr/ SNOWFALL STOPPED MONTH & YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.</p> <p>NOTE: The "Period of Record:(POR)" for all "averages" is based on "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p>
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2013 MIDLAND TEXAS (KMAF)

The Midland-Odessa region is on the southern extension of the South Plains of Texas. The terrain is level with only slight occasional undulations.

The climate is typical of a semi-arid region. The vegetation of the area consists mostly of native grasses and a few trees, mostly of the mesquite variety.

Most of the annual precipitation in the area comes as a result of very violent spring and early summer thunderstorms. These are usually accompanied by excessive rainfall, over limited areas, and sometimes hail. Due to the flat nature of the countryside, local flooding occurs, but is of short duration. Tornadoes are occasionally sighted.

During the late winter and early spring months, blowing dust occurs frequently. The flat plains of the area with only grass as vegetation offer little resistance to the strong winds. The sky is occasionally obscured by dust but in most storms visibilities range from 1 to 3 miles.

Daytime temperatures are quite hot in the summer, but there is a large diurnal range of temperature and most nights are comfortable. The temperature drops below 32 degrees in the fall about mid-November and the last temperature below 32 degrees in spring comes early in April.

Winters are characterized by frequent cold periods followed by rapid warming. Cold frontal passages are followed by chilly weather for two or three days. Cloudiness is at a minimum. Summers are hot and dry with numerous small convective showers.

The prevailing wind direction in this area is from the southeast. This, together with the upslope of the terrain from the same direction, causes occasional low cloudiness and drizzle during winter and spring months. Snow is infrequent. Maximum temperatures during the summer months frequently are from 2 to 6 degrees cooler than those at places 100 miles southeast, due to the cooling effect of the upslope winds.

Very low humidities are conducive to personal comfort, because even though summer afternoon temperatures are frequently above 90 degrees, the low humidity with resultant rapid evaporation, has a cooling effect. The climate of the area is generally quite pleasant with the most disagreeable weather concentrated in the late winter and spring months.

Station History

MIDLAND, TX

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
MIDLAND BANKHEAD HWY	1935-10-01	1936-08-31	31° 55'	-102° 12'			MILITARY
MIDLAND GULF OIL PUMP STN	1946-11-30	1948-02-01	31° 55'	-102° 12'			AIRWAYS
MIDLAND INTERNATIONAL AP	2011-11-05	Present	31° 56'	-102° 12'	2862		ASOS, COOP, UNKNOWN
MIDLAND ODESSA REGIONAL AP	1967-02-15	1972-01-01	31° 55'	-102° 12'	2871		AIRWAYS, COOP
MIDLAND SLOAN FIELD	1940-04-01	1942-02-28	31° 55'	-102° 12'			MILITARY
MIDLAND REGIONAL AIR TERMINAL	1974-07-01	1996-03-01	31° 57'	-102° 10'	2862		COOP, WXSVC
MIDLAND INTERNATIONAL AP	1996-08-29	1997-02-01	31° 56'	-102° 11'	2862		ASOS, COOP, WXSVC
MIDLAND INTERNATIONAL AP	2006-06-05	2011-11-05	31° 56'	-102° 11'	2862		ASOS, COOP, UNKNOWN
MIDLAND AIR TERMINAL	1948-02-01	1953-11-14	31° 55'	-102° 12'	2858		AIRWAYS
MIDLAND ODESSA REGIONAL AP	1972-01-01	1972-04-24	31° 57'	-102° 10'	2871		AIRWAYS, COOP
MIDLAND ODESSA REGIONAL AP	1973-01-01	1974-07-01	31° 57'	-102° 10'	2862		COOP, WXSVC
MIDLAND INTERNATIONAL AP	1996-03-01	1996-08-29	31° 56'	-102° 11'	2862	1 MI N	ASOS, COOP, WXSVC
MIDLAND INTERNATIONAL AP	1997-02-01	2006-06-05	31° 56'	-102° 11'	2862		ASOS, COOP, UNKNOWN
MIDLAND AIR TERMINAL	1960-01-01	1967-02-15	31° 55'	-102° 12'	2871		AIRWAYS, COOP
MIDLAND SLOAN FIELD	1930-06-01	1934-12-31	31° 55'	-102° 12'			MILITARY
MIDLAND AFB	1944-11-01	1946-03-01	31° 55'	-102° 12'			AIRWAYS, MILITARY
MIDLAND GULF OIL PUMP STN	1946-03-01	1946-11-30	31° 55'	-102° 12'			AIRWAYS, MILITARY
MIDLAND AIR TERMINAL	1959-12-31	1960-01-01	31° 55'	-102° 12'	2858		AIRWAYS, COOP
MIDLAND AIR TERMINAL	1953-11-14	1959-12-31	31° 55'	-102° 12'	2858	14 MI WSW	AIRWAYS, COOP
MIDLAND ODESSA REGIONAL AP	1972-04-24	1973-01-01	31° 57'	-102° 10'	2862		AIRWAYS, COOP
MIDLAND SLOAN FIELD	1937-01-01	1939-12-31	31° 55'	-102° 12'			MILITARY
MIDLAND AFB	1942-02-28	1944-11-01	31° 55'	-102° 12'			MILITARY

Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
PRECIP	1973-08-01	1988-12-12	HOURLY	2400			
TEMP	1995-07-01	1996-08-29	DAILY	2400	HYGR		
PRECIP	1995-07-01	1996-08-29	DAILY	2400	UNIV	RCRD	
PRECIP	2002-02-26	2002-06-26	HOURLY	2400	TB	RCRD	
TEMP	2006-06-05	2011-11-05	DAILY	2400	ATEMP		
PRECIP	1930-06-01	1973-08-01	DAILY	2400	UNIV	RCRD	
PRECIP	2006-06-05	2011-11-05	DAILY	2400	PCPN1		
TEMP	1988-12-12	1995-07-01	DAILY	2400	HYGR		
TEMP	1996-08-29	2002-02-26	DAILY	2400	HYGR		
PRECIP	1996-08-29	2002-02-26	DAILY	2400	TB	RCRD	
PRECIP	1973-08-01	1988-12-12	DAILY	2400	UNIV	RCRD	
PRECIP	1996-08-29	2002-02-26	HOURLY	2400	TB	RCRD	
TEMP	2002-02-26	2002-06-26	DAILY	2400			
PRECIP	2002-02-26	2002-06-26	DAILY	2400	TB	RCRD	
TEMP	2011-11-05	Present	DAILY	2400	ATEMP		
TEMP	1930-06-01	1973-08-01	DAILY	2400			
TEMP	1973-08-01	1988-12-12	DAILY	2400			
PRECIP	1988-12-12	1995-07-01	DAILY	2400	UNIV	RCRD	
TEMP	2002-06-26	2006-06-05	DAILY	2400	ATEMP		
PRECIP	2011-11-05	Present	DAILY	2400	PCPNX		
PRECIP	1995-07-01	1996-08-29	HOURLY	2400	UNIV	RCRD	
PRECIP	2002-06-26	2006-06-05	DAILY	2400	TB	RCRD	
PRECIP	2006-06-05	2011-11-05	HOURLY	2400	AWPAG	RCRD;HTD	
PRECIP	1988-12-12	1995-07-01	HOURLY	2400			
PRECIP	2002-06-26	2006-06-05	HOURLY	2400	TB	RCRD	
PRECIP	2011-11-05	Present	HOURLY	2400	AWPAG	RCRD;HTD	

* For explanation of codes and abbreviations see Station Metadata link below.

Other Station Information can be found at:

ASOS Implementation by NWS: <http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm>

Station Metadata website: <http://www.ncdc.noaa.gov/homr>

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NOAA/National Climatic Data Center

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Visit our Web Site for other weather data: www.ncdc.noaa.gov