

OKLAHOMA MONTHLY SUMMARY AUGUST 1993

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MONTHLY SUMMARY FOR AUGUST 1993

August heat reminiscent of past decades caused most Oklahomans to swelter in a manner unknown in recent years. Daytime temperatures exceeded one hundred degrees somewhere in the state on all but three days during the month, including a stretch of 15 consecutive days through the middle of the month with high temperatures in excess of 105 degrees. The statewide average temperature of 82.9 degrees (2.1 degrees above normal) ranks as the 29th hottest August in state history, but is the highest average for the month since 1983. The three summer months of June, July and August averaged 81.3 degrees, exceeding normal by 1.3 degrees. The summer of 1993 was the 22nd warmest since 1892, but the hottest since 1980.

Precipitation was near normal when averaged statewide, although the Panhandle received only about three-quarters of normal precipitation. In typical August fashion, individual stations varied from more than two inches below normal at Waurika to over four inches above normal at Heavener. Statewide average precipitation for the month was 2.98 inches (.16 inch above normal). The summer month total precipitation was 8.22 inches (1.17 inches below normal). Precipitation for the year-to-date averages 27.76 inches across the state (4.62 inches above normal, ranking 20th all-time).

Locally heavy thunderstorms produced significant wind or hail damage on the 1st and 2nd at locations as diverse as Colbert, Sweetwater and Hooker. Willow reported 4.86 inches of rain. Heavy rains in Alfalfa County on the 4th and 5th led to the flooding of some roads and highways around Cherokee, which reported 4.2 inches of precipitation. Billings, Pawnee and Morrison each reported over 4 inches of rain for the period ending the morning of the 6th. Daytime temperatures at several locations in northern Oklahoma stayed in the 60s on the 5th and 6th.

Cooler air dominated the state on the 7th. Hennessey reported a low temperature of 51 degrees and the highest temperature reported for the day was 89 at three stations. Chattanooga and Taloga each reached 100 degrees on the 9th, beginning a string of 20 consecutive days with triple-digit temperatures somewhere in the state. Although Chattanooga did not provide any of the seven reports of 107 degrees during the period, that Comanche County community did experience temperatures in excess of 100 degrees on 16 consecutive days (the 8th through the 23rd).

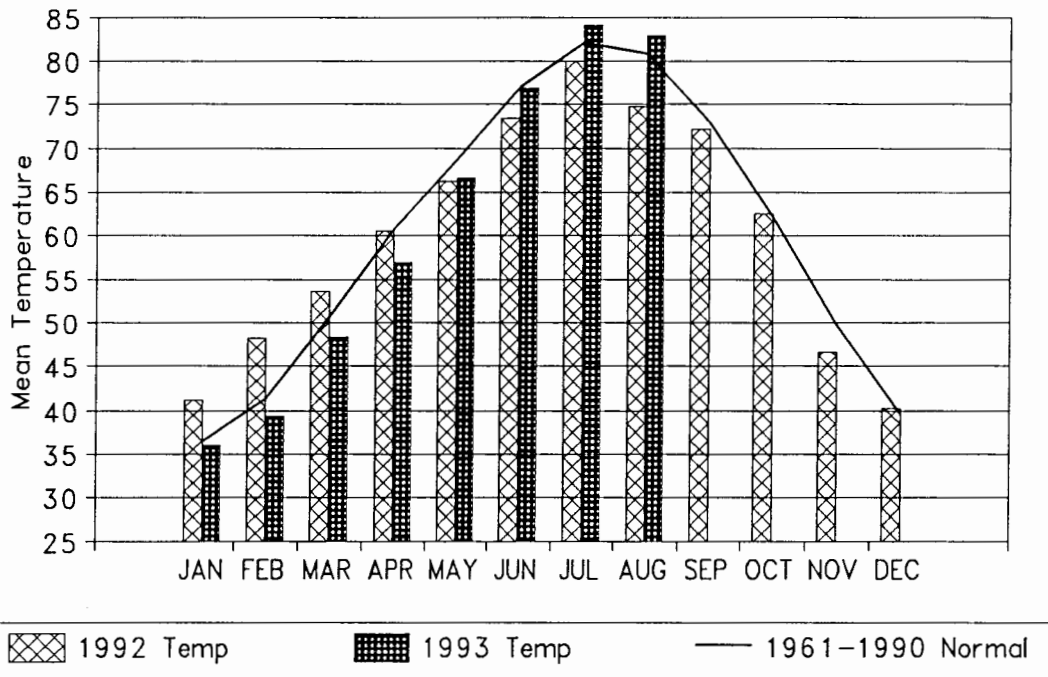
Thunderstorms were reported from time-to-time in northwestern Oklahoma during the heat wave. Large hail was reported in Cimarron County on the 10th (near Kenton), the 11th (near Keyes) and the 12th (just south of Boise City). Arnett reported two inches of rain on the 18th.

Some areas received temporary relief from the heat on the 23rd as thunderstorms variously produced: nickel to quarter sized hail which covered the ground to a depth of one inch at Fort Supply Lake (Woodward County); winds that removed the roof from a house near Kiefer (Creek County); hail, wind and lightning damage in and around Fargo and elsewhere in Ellis County; wind damage near Ninnekah (Grady County) and in Oklahoma, McClain, Cleveland, Tulsa and Wagoner Counties and large hail in Rose (Mayes County).

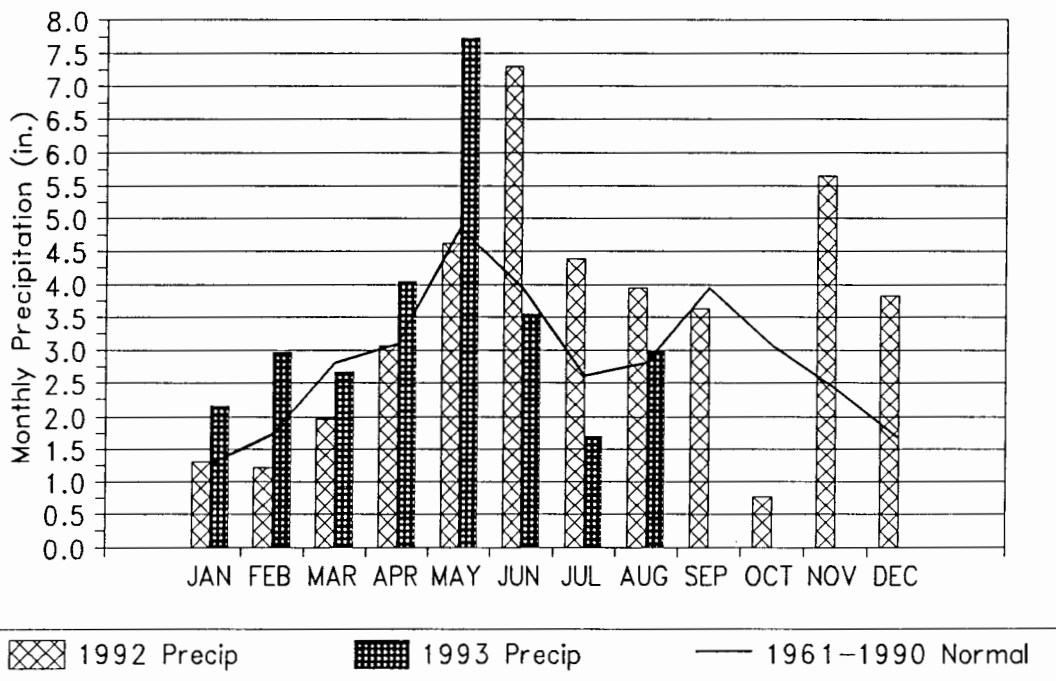
Another strong system swept through the state on the 29th and 30th, producing as much as 4.25 inches of rain (Cordell) and sending temperatures into the 50s and 60s. Hooker reported a low of 50 degrees on the 31st and several stations failed to get out of the 60s, most notably Chickasha which reported a high temperature of 65 degrees on the 31st.

Howard L. Johnson

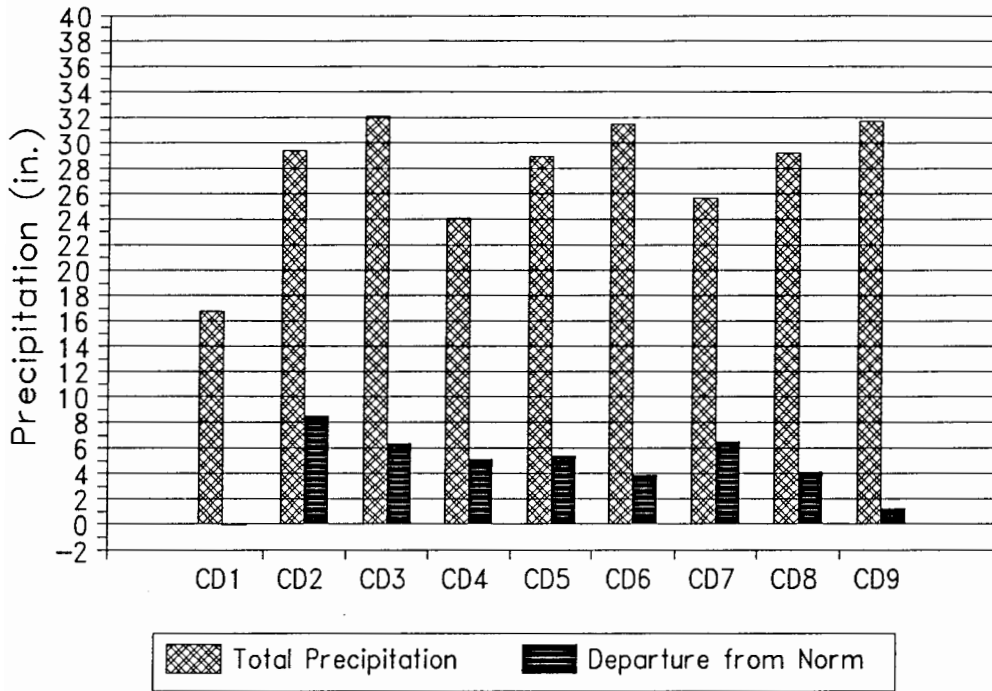
1992 and 1993 STATEWIDE TEMPERATURES Monthly Averages



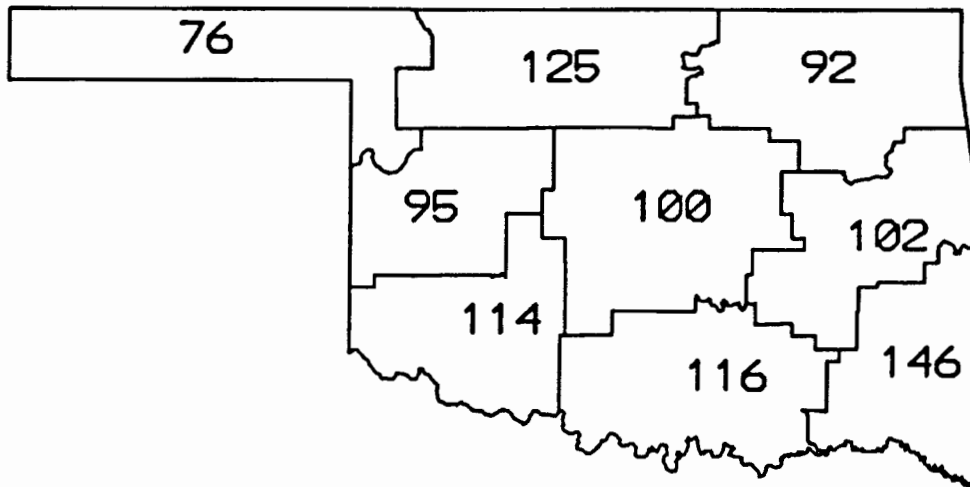
1992 and 1993 STATEWIDE PRECIPITATION Monthly Totals



CD Averaged Precipitation 1993 January through August Totals



CD PERCENT OF NORMAL PRECIPITATION



AUGUST 1993

EXTREME VALUES OF TEMPERATURE AND PRECIPITATION IN EACH CLIMATE DIVISION
August, 1993

CD	MAX			MIN			24-HOUR			MONTHLY	
	TEMP	DATE	LOCATION	TEMP	DATE	LOCATION	PRECIP	DATE	LOCATION	PRECIP	LOCATION
1	109	1	GATE	48	31	BOISE CITY	2.25	3	TURPIN	5.38	BOISE CITY
2	107	1	MUTUAL	54	7	FREEDOM	4.56	6	BILLINGS	6.41	MORRISON
	107	17	MUTUAL	54	8	FREEDOM					
				54	4	WAYNOKA					
3	106	17	UPPER SPAVIN	54	7	PRYOR	4.03	6	PAWNEE	5.56	PAWNEE
4	105	13	WEATHERFORD	52	8	TALOGA	4.25	31	CORDELL	5.70	SWEETWATER
	105	20	WEATHERFORD								
	105	22	WEATHERFORD								
5	106	1	GUTHRIE	51	7	HENNESSEY	2.70	31	PIEDMONT	5.90	KONAWA
	106	21	GUTHRIE								
6	107	21	LAKE EUFAULA	54	7	TAHLEQUAH	3.10	24	HOLDENVILLE	5.39	HOLDENVILLE
	107	20	MCALESTER								
	107	14	MUSKOGEE								
	107	1	WEBBERS FALL								
	107	22	WEBBERS FALL								
7	106	11	CHATTANOOGA	55	7	ANADARKO	4.86	3	WILLOW	7.39	WILLOW
				55	7	WICHITA MT W					
8	107	21	MCGEE CREEK	56	7	MARLOW	2.73	24	LINDSAY	5.92	PONTOTOC
9	107	21	WILBURTON	60	7	SMITHVILLE	3.10	3	POTEAU	7.40	HEAVENER
				60	7	TUSKAHOMA					
				60	8	TUSKAHOMA					

TABLE OF 1992/1993 COMPARISONS

Station	August Temperature (°F)		August Precipitation (in.)	
	1992	1993	1992	1993
Arnett	71.8	78.6	3.21	2.67
Enid	70.3	82.8	9.72	3.69
Mutual	73.6	82.2	4.72	2.14
Tulsa	76.8	83.9	3.07	2.29
Elk City	74.2	80.9	3.04	1.29
Oklahoma City	74.1	82.3	5.82	1.86
McAlester	77.3	85.3	5.38	2.25
Altus Irr Sta	77.2	82.6	5.45	4.68
Durant	75.6	83.3	3.00	4.20
Ada	75.2	83.5	2.69	3.70
Hugo	76.7	85.2	1.08	2.77

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (°F)	Boise City	1	48	31
Maximum temperature (°F)	Gate	1	109	1
Maximum 24-hour precipitation	Willow	7	4.86"	3

AUGUST 1993 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	DEG DAY	DEG FROM NORM	DEG DAY	DEG FROM NORM	DEG DAY	DEG FROM NORM	MAX 24-HR						
ARNETT	332	1	78.6	31	.0	102.	1	56.	31	.0	.0	421.5	- .5	2.670	31	.26	2.00	18		
BEAVER	593	1	79.3	31	.7	104.	1	52.	31	.0	.0	442.5	20.5	1.321	31	-1.63	.62	4		
BOISE CITY 2 E	908	1	75.2	31	-.3	97.	16	48.	31	6.0	6.0	322.5	-3.5	5.384	31	2.93	1.40	12		
BUFFALO	1243	1	83.4	31	2.1	106.	22	56.	31	.0	.0	569.5	64.5	1.750	31	-1.71	.80	5		
FARGO	3070	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.221	31	-1.49	.34	5		
GAGE FAA APT	3407	1	80.9	31	.8	103.	11	55.	7	.0	.0	493.0	25.0	1.502	31	-1.02	.58	13		
GATE	3489	1	81.3	31	1.6	109.	1	53.	31	.0	.0	504.5	48.5	1.942	31	-.94	.71	4		
GOODWELL RES ST	3628	1	75.7	31	-.7	104.	1	49.	31	4.5	4.5	337.0	-16.0	2.440	31	.28	1.07	3		
GUYMON	3835	1	78.3	22	*****	100.	16	52.	31	1.0	*****	293.0	*****	1.511	23	*****	.60	5		
HOOKER	4298	1	77.8	31	.1	102.	1	50.	31	3.5	3.5	399.5	5.5	1.961	31	-.35	1.16	3		
KENTON	4766	1	75.2	31	.0	98.	16	50.	31	6.5	6.5	324.0	5.0	3.250	29	*****	.87	26		
LAVERNE	5045	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.200	31	.34	1.49	5		
OPTIMA LAKE	6740	1	78.3	31	*****	106.	1	50.	31	2.5	*****	416.0	*****	2.974	31	*****	.77	1		
REGNIER	7534	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.843	31	.96	.80	28		
TURPIN 4 SSE	9017	1	78.0	31	*****	105.	1	51.	31	2.0	*****	406.5	*****	3.082	30	*****	2.25	3		

AUGUST 1993 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	DEG DAY	DEG FROM NORM	DEG DAY	DEG FROM NORM	DEG DAY	DEG FROM NORM	MAX 24-HR						
ALVA	193	2	82.5	31	*****	103.	21	60.	31	.0	*****	541.5	*****	4.300	31	*****	3.56	5		
VANCE AFB	302	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.793	29	*****	.78	31		
BILLINGS	755	2	82.3	30	1.3	104.	1	58.	7	.0	.0	519.0	23.0	6.231	31	3.10	4.56	6		
BLACKWELL 2E	818	2	82.7	31	1.6	103.	21	58.	7	.0	.0	548.5	49.5	2.712	31	-.48	1.95	6		
BRAMAN	1075	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.321	31	*****	1.93	31		
CEDARDALE	1620	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.272	31	*****	1.60	31		
CHEROKEE	1724	2	85.4	27	*****	106.	1	60.	31	.0	*****	552.0	*****	4.612	31	1.59	4.20	5		
ENID	2912	2	82.8	31	1.1	102.	1	59.	31	.0	.0	550.5	32.5	3.690	31	.51	1.65	6		
FT SUPPLY DAM	3304	2	79.8	31	.7	105.	1	56.	5	1.5	1.5	461.0	24.0	4.943	31	2.12	2.43	24		
FREEDOM	3358	2	80.6	31	-.5	106.	1	54.	8	.0	.0	484.5	-14.5	1.511	31	-1.49	1.27	5		
GREAT SALT PLNS	3740	2	82.3	31	1.4	104.	1	58.	7	.0	.0	537.5	44.5	4.651	31	1.38	2.15	6		
HARDY	3909	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.071	31	*****	1.60	5		
HELENA 1 SSE	4019	2	81.8	31	1.5	103.	1	58.	7	.0	.0	519.5	45.5	4.000	31	1.24	2.00	5		
JEFFERSON	4573	2	83.2	31	1.5	104.	19	59.	7	.0	.0	563.0	45.0	4.701	31	1.47	3.14	5		
LAMONT	5013	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.520	31	*****	3.14	6		
MEDFORD	5768	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.310	31	*****	1.82	5		
MORRISON	6065	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.411	31	*****	4.00	6		
MUTUAL	6139	2	82.2	31	2.2	107.	17	55.	7	.0	.0	533.5	68.5	2.140	31	-.06	1.65	31		
NEWKIRK	6278	2	82.7	31	1.8	102.	22	59.	31	.0	.0	549.5	56.5	2.530	31	-.92	1.42	6		
ORIENTA	6751	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.930	31	-.81	1.11	31		
PERRY	7012	2	85.0	31	3.3	103.	21	63.	31	.0	.0	619.0	101.0	4.581	31	1.32	2.35	6		
PONCA CITY FAA	7201	2	84.5	31	3.7	104.	21	61.	7	.0	.0	605.0	115.0	3.212	31	-.21	1.60	6		
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.690	31	1.86	3.17	6		
WAYNOKA	9404	2	82.0	31	.6	103.	19	54.	4	.0	.0	526.5	18.5	1.900	31	-1.02	1.37	5		
WOODWARD	9760	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.300	31	-1.61	.90	5		

AUGUST 1993 SUMMARY FOR NORTHEAST DIVISION (CD3)

NAME	ID	CD	DEV						HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX	24-HR DAY	
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN TEMP	DAY										
BARNSDALL	535	3	81.8	30	1.1	103.	21	55.	7	.0	.0	502.5	15.5	3.601	31	.15	2.24	6
BARTLESVILLE 2W	548	3	81.8	31	1.3	103.	21	56.	7	.0	.0	519.5	38.5	1.942	31	-1.21	1.47	6
BIXBY	782	3	82.8	31	3.5	104.	21	57.	8	.0	.0	551.0	108.0	2.280	31	-.47	1.34	31
BURBANK	1256	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.391	31	-.02	1.52	5
CHELSEA 4 S	1717	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.250	31	*****	1.36	6
CLAREMORE	1828	3	82.0	31	2.3	103.	1	56.	8	.0	.0	528.0	72.0	3.911	31	.84	1.88	31
CLEVELAND 5 WSW	1902	3	83.1	31	*****	102.	21	59.	7	.0	*****	561.5	*****	2.681	31	*****	1.86	6
FORAKER	3250	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.510	31	-.95	1.80	6
HOLLOW	4258	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.070	31	-.14	1.88	5
HOMINY	4289	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.801	31	.52	2.46	6
HULAH DAM	4393	3	81.1	22	*****	102.	23	57.	9	.0	*****	354.5	*****	2.200	23	*****	1.66	6
JAY TOWER	4567	3	81.8	27	*****	102.	22	56.	7	.5	*****	454.0	*****	2.760	28	*****	1.70	6
KANSAS 1 ESE	4672	3	81.9	31	3.0	101.	21	56.	7	.0	.0	523.5	92.5	1.904	31	-1.91	1.55	6
KEYSTONE DAM	4812	3	81.8	26	*****	103.	22	55.	7	.0	*****	436.5	*****	3.411	30	*****	2.00	31
LENAPAH	5118	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.730	31	*****	2.00	6
MANNFORD 6 NW	5522	3	84.5	30	3.7	105.	21	57.	7	.0	.0	584.5	94.5	3.520	30	*****	1.98	31
MARAMEC	5540	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.030	31	-.15	1.86	6
MIAMI	5855	3	82.1	28	*****	101.	19	57.	6	.0	*****	477.5	*****	2.730	31	-1.24	2.37	6
NOWATA	6485	3	81.8	31	1.3	102.	19	57.	8	.0	.0	520.0	39.0	2.481	31	-.84	1.87	5
ONETA 1 WNW	6713	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.080	31	*****	1.82	31
PAWHUSKA	6935	3	81.5	31	1.3	101.	21	56.	7	.0	.0	513.0	42.0	2.052	31	-1.53	1.52	6
PAWNEE	6940	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.560	31	2.35	4.03	6
PRYOR 6 N	7309	3	80.4	29	*****	103.	22	54.	7	1.0	*****	447.5	*****	3.561	30	*****	1.86	31
RALSTON	7390	3	82.0	31	1.5	103.	21	57.	8	.0	.0	528.0	47.0	3.000	31	-.31	1.60	31
SKIATOOK	8258	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.570	31	1.41	2.60	31
SPAVINAW	8380	3	84.3	31	3.5	102.	22	60.	7	.0	.0	597.5	107.5	2.671	31	-1.24	1.13	6
TULSA WSO APT	8992	3	83.9	31	2.4	104.	21	58.	7	.0	.0	585.0	73.0	2.286	31	-.83	1.25	6
UPPER SPAVINAW	9101	3	83.5	31	*****	106.	17	59.	7	.5	*****	573.5	*****	2.850	31	*****	1.91	6
VINITA 2 N	9203	3	81.6	27	*****	100.	21	55.	7	.0	*****	449.0	*****	2.650	28	*****	1.72	6
WAGONER	9247	3	84.2	31	3.4	104.	19	59.	7	.0	.0	596.0	106.0	2.800	31	-.23	1.03	31
WANN	9298	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.740	31	*****	1.75	6
WYONOA	9792	3	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.392	31	*****	2.08	5

AUGUST 1993 SUMMARY FOR WEST CENTRAL DIVISION (CD4)

NAME	ID	CD	DEV						HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX	24-HR DAY	
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN TEMP	DAY										
CANTON DAM	1445	4	81.6	31	1.4	103.	17	56.	7	.0	.0	516.0	45.0	2.821	31	.41	1.14	25
CHEYENNE	1738	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	.740	31	-1.59	.74	3
CLINTON	1909	4	82.5	31	.1	102.	12	57.	7	.0	.0	541.5	2.5	1.320	31	-1.85	.66	31
COLONY	2039	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.471	31	*****	1.89	31
CORDELL	2125	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.622	31	1.54	4.25	31
ELK CITY 1 E	2849	4	80.9	31	.8	100.	1	57.	31	.0	.0	492.5	24.5	1.291	31	-1.59	.84	3
ERICK 4 E	2944	4	79.6	31	-.5	100.	22	58.	31	.0	.0	454.0	-14.0	2.001	31	-.51	1.31	3
GEARY	3497	4	83.7	31	2.8	103.	12	61.	31	.0	.0	580.0	87.0	2.430	31	.23	1.63	24
HAMMON 1 NNE	3871	4	82.1	23	*****	102.	1	58.	31	.0	*****	392.5	*****	.730	23	*****	.37	3
LEEDEY	5090	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.430	31	-1.12	1.10	31
MACKIE 4 NNW	5463	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.310	31	*****	2.03	31
MORAVIA 2 NNE	6035	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.810	31	1.30	1.95	31
OKEENE	6629	4	83.1	31	1.2	102.	21	55.	7	.0	.0	561.0	37.0	2.360	31	-.37	1.36	31
RETROP	7565	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.280	31	*****	1.42	31
REYDON	7579	4	81.1	31	2.2	102.	16	57.	31	.0	.0	499.0	68.0	2.440	31	.11	.75	3
SAYRE	7952	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.290	31	.87	2.23	3
SWEETWATER 2 E	8652	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.700	31	*****	2.90	2
TALOGA	8708	4	81.0	31	.7	103.	10	52.	8	.0	.0	495.5	21.5	.981	31	-1.45	.60	31
THOMAS	8815	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.660	31	*****	.70	31
VICI	9172	4	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.041	31	-.24	.95	31
WATONGA	9364	4	82.7	31	1.8	103.	21	53.	7	3.0	3.0	551.0	58.0	.711	31	-1.58	.43	31
WEATHERFORD	9422	4	82.8	31	2.3	105.	22	56.	7	.0	.0	551.5	70.5	3.821	31	.98	1.58	31

AUGUST 1993 SUMMARY FOR CENTRAL DIVISION (CD5)

NAME	ID	CD	DEV					MIN		HEAT		DEV		COOL		DEV		TOT	NUM	DEV		24-HR	DAY
			MEAN	NUM	FROM	MAX	TEMP	DAY	TEMP	DAY	DEG	DEV	FROM	DEG	FROM	DEG	FROM			PPT	OBS		
AMBER	200	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	1.150	31	*****	.68	23				
ARCADIA	288	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.572	31	*****	1.65	31				
TINKER AFB	325	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.422	30	*****	1.37	24				
BLANCHARD 2 SSW	830	5	83.6	31	1.8	102.	21	59.	7	.0	.0	576.5	55.5	2.095	31	-.63	1.07	24					
BRISTOW	1144	5	83.6	31	2.7	104.	21	55.	7	.0	.0	575.5	82.5	1.823	31	-.84	1.18	31					
CHANDLER	1684	5	84.5	29	*****	105.	20	58.	7	.0	*****	564.5	*****	1.471	29	*****	.60	31					
CHICKASHA EX ST	1750	5	83.5	31	2.4	103.	10	57.	7	.0	.0	573.0	74.0	2.640	31	-.12	2.16	24					
COX CITY 1 E	2196	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	3.270	31	*****	2.20	24				
CRESCENT	2242	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	1.090	31	*****	.47	6				
CUSHING	2318	5	83.3	30	2.6	103.	22	60.	7	.0	.0	548.5	61.5	2.810	30	*****	1.60	31					
EL RENO 1 N	2818	5	83.0	31	2.1	102.	12	56.	7	.0	.0	557.0	64.0	3.950	31	1.16	1.89	31					
GUTHRIE	3821	5	85.5	31	3.3	106.	21	59.	7	.0	.0	634.5	101.5	2.402	31	.13	.99	31					
HENNESSEY 4 ESE	4055	5	83.2	24	*****	105.	21	51.	7	.0	*****	436.5	*****	1.851	31	-1.01	.94	31					
INGALLS	4489	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.045	31	*****	1.45	6				
KINGFISHER 2 SE	4861	5	83.5	31	1.6	103.	21	55.	7	.0	.0	573.0	49.0	1.120	31	-1.58	.59	31					
KONAWA	4915	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	5.900	31	3.91	1.78	24				
MARSHALL	5589	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.130	31	-.44	1.75	6				
MEEKER 4 W	5779	5	82.3	28	*****	101.	21	57.	7	.0	*****	483.5	*****	3.421	28	*****	1.30	23					
MULHALL	6110	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	1.841	31	*****	1.30	6				
NORMAN 3 S	6386	5	82.9	31	1.7	104.	20	59.	7	1.0	1.0	554.5	52.5	1.691	31	-1.17	1.40	24					
OILTON 2 SE	6616	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	3.750	31	*****	2.45	30				
OKEMAH	6638	5	83.9	31	3.0	104.	21	60.	7	.0	.0	586.0	93.0	3.561	31	.92	1.55	6					
OKLAHOMA CTY WS	6661	5	82.3	31	1.2	102.	21	57.	7	1.0	1.0	537.5	38.5	1.863	31	-.74	.64	30					
PERKINS	7003	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	1.550	31	-.99	.56	31				
PIEDMONT	7068	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	3.700	31	*****	2.70	31				
PRAGUE	7264	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	4.160	31	1.73	2.20	24				
PURCELL 5 SW	7327	5	83.9	31	2.0	104.	21	58.	7	.0	.0	585.5	61.5	2.452	31	-.24	1.40	24					
SEMINOLE	8042	5	85.0	31	2.4	104.	21	59.	7	.0	.0	618.5	72.5	3.270	31	.63	1.73	24					
SHAWNEE	8110	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	5.531	31	3.03	2.63	4				
STELLA	8479	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.000	31	*****	1.22	24				
STILLWATER 2 W	8501	5	82.8	31	2.5	103.	21	57.	7	.0	.0	552.0	78.0	3.080	31	.32	1.83	6					
STROUD 1 N	8563	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.200	31	*****	1.29	31				
TECUMSEH	8751	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	1.340	31	*****	.50	24				
UNION CITY 1 SE	9086	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	1.921	31	-.96	1.29	24				
WELTY 1 SSE	9479	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.811	31	*****	1.05	4				
WEWOKA	9575	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.610	31	-.16	1.80	24				

AUGUST 1993 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

NAME	ID	CD	DEV					MIN		HEAT		DEV		COOL		DEV		TOT	NUM	DEV		24-HR	DAY
			MEAN	NUM	FROM	MAX	TEMP	DAY	TEMP	DAY	DEG	DEV	FROM	DEG	FROM	DEG	FROM			PPT	OBS		
ASHLAND	364	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	3.581	31	*****	1.46	31				
BEGGS	631	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.680	31	*****	.90	31				
BOYNTON	1027	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	1.591	31	*****	.50	24				
CHECOTAH	1711	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.613	31	-.23	1.48	6				
CLAYTON 14 WNW	1858	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.801	31	*****	1.52	6				
DEWAR 2 NE	2485	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	1.820	31	-.69	.58	31				
DUSTIN	2690	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.150	31	*****	.83	6				
EUFULA	2993	6	85.3	31	3.1	104.	19	64.	7	.0	.0	629.5	96.5	1.100	31	-1.49	.55	23					
HANNA	3884	6	83.6	31	2.6	104.	20	60.	7	.0	.0	578.0	82.0	2.630	31	.07	1.00	6					
HARTSHORNE	3946	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.960	31	*****	1.42	6				
HASKELL	3956	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	4.070	31	1.55	1.32	24				
HOLDENVILLE	4235	6	83.4	31	1.9	105.	20	60.	7	.0	.0	571.0	59.0	5.390	31	2.87	3.10	24					
LAKE EUFAULA	4975	6	84.8	31	*****	107.	21	60.	7	.0	*****	613.5	*****	1.330	31	*****	.60	6					
LYONS 2 N	5437	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	4.190	31	1.03	1.98	24				
MARBLE CITY	5546	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	5.114	31	*****	1.84	24				
MCALISTER FAA	5664	6	85.3	31	4.0	107.	20	62.	7	.0	.0	630.0	125.0	2.252	31	-.80	1.20	6					
MCCURTAIN 1 SE	5693	6	86.0	31	4.6	105.	21	60.	7	.0	.0	650.0	142.0	1.828	31	-1.08	1.03	6					
MUSKOGEE	6130	6	85.4	31	4.3	107.	14	58.	7	.0	.0	631.5	132.5	4.370	31	1.53	2.92	30					
OKMULGEE W W	6670	6	81.6	27	*****	103.	22	57.	8	.0	*****	448.0	*****	2.881	27	*****	.83	6					
OKTAHA 2 NE	6678	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	1.680	31	*****	.64	24				
QUINTON	7372	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	3.121	31	.06	1.23	2				
SALLISAW 2 NE	7862	6	83.5	31	2.5	105.	20	58.	8	.0	.0	572.0	76.0	1.970	31	-1.42	1.56	10					
SCIPIO	7979	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	5.070	31	*****	2.57	24				
SCRAPER	7993	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	1.940	31	*****	.93	6				
SHORT	8170	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	3.871	31	*****	1.53	24				
TAHLEQUAH	8677	6	82.3	30	2.5	102.	21	54.	7	.0	.0	519.0	60.0	2.512	31	-1.20	.99	24					
WEBBERS FALLS	9445	6	84.1	31	3.9	107.	22	58.	8	.0	.0	593.0	122.0	1.801	31	-1.09	.78	6					
WESTVILLE	9523	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.464	31	*****	1.09	24				
WETUMKA 3 NE	9571	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	2.870	31	.28	1.11	25				

AUGUST 1993 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	DEV						HEAT		DEV		COOL		DEV		TOT	NUM	DEV	MAX	DAY
			MEAN	NUM	FROM	MAX	MIN	DAY	DEG	DAY	FROM	DEG	FROM	DEG	FROM	DEG					
ALTUS IRR STA	179	7	82.6	31	-.2	102.	1	60.	31	.0	.0	547.0	-5.0	4.680	31	2.23	1.89	3			
ALTUS DAM	184	7	82.8	31	.3	105.	1	56.	31	.0	.0	553.0	10.0	2.940	31	.55	2.35	3			
ANADARKO	224	7	82.2	29	*****	100.	21	55.	7	.0	*****	498.0	*****	2.901	29	*****	2.60	24			
APACHE	260	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	.730	31	-1.70	.26	24			
ALTUS AFB	447	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.154	31	*****	1.78	3			
CARNEGIE 2 ENE	1504	7	83.0	29	*****	104.	19	57.	7	.0	*****	521.0	*****	2.920	31	.60	1.38	31			
CHATTANOOGA	1706	7	84.4	31	1.3	106.	11	62.	31	.0	.0	600.5	39.5	1.630	31	-1.05	.78	24			
DUNCAN 11 W	2668	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.420	31	*****	.63	30			
FREDERICK	3353	7	82.4	31	-.6	101.	1	59.	31	.0	.0	539.0	-19.0	3.140	31	.43	1.50	31			
GRANDFIELD 4 NW	3709	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.810	31	-.65	.90	24			
HEADRICK	3998	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.130	31	*****	2.10	3			
HOBART FAA APT	4204	7	82.6	31	.6	102.	16	59.	31	2.0	2.0	546.5	19.5	2.862	31	.49	1.53	3			
HOLLIS	4249	7	81.9	31	-.4	102.	17	58.	31	.5	.5	523.0	-13.0	2.071	31	-.37	1.11	3			
LAWTON	5063	7	84.0	31	1.7	104.	1	61.	31	.0	.0	589.5	53.5	1.640	31	-.57	.61	3			
FORT SILL	5068	7	83.6	31	*****	104.	11	62.	31	.5	*****	577.0	*****	1.543	31	*****	.60	1			
LOOKEBA 2 ENE	5329	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.051	31	1.47	1.38	24			
MANGUM RES STA	5509	7	81.1	31	-1.5	101.	16	59.	31	.0	.0	498.5	-47.5	3.330	31	1.05	2.75	3			
RANDLETT 9 E	7403	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	.932	31	*****	.57	24			
ROOSEVELT	7727	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.660	31	1.28	2.20	31			
SEDAN	8016	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.792	31	*****	.85	31			
SNYDER	8299	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.623	31	1.11	1.58	3			
VINSON 3 WNW	9212	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.170	30	*****	1.85	31			
WALTERS	9278	7	84.2	31	1.0	104.	10	62.	7	.0	.0	594.0	30.0	1.050	31	-1.63	.47	30			
WICHITA MT WLR	9629	7	81.4	31	.6	101.	1	55.	7	.0	.0	509.5	19.5	1.750	31	-.41	.62	3			
WILLOW	9668	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	7.390	31	*****	4.86	3			

AUGUST 1993 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

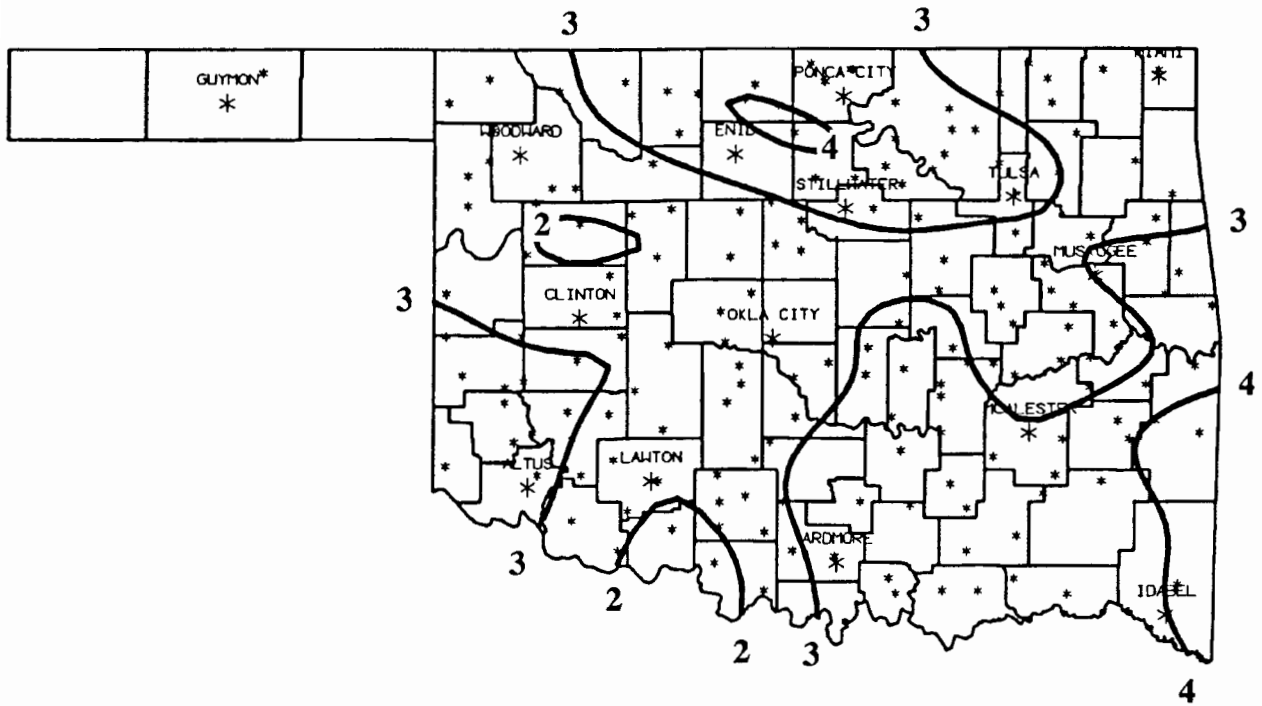
NAME	ID	CD	DEV						HEAT		DEV		COOL		DEV		TOT	NUM	DEV	MAX	DAY
			MEAN	NUM	FROM	MAX	MIN	DAY	DEG	DAY	FROM	DEG	FROM	DEG	FROM	DEG					
ADA	17	8	83.5	31	2.2	102.	22	60.	7	.0	.0	574.5	69.5	3.701	31	.77	1.32	24			
ALLEN	147	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.700	31	*****	.85	31			
ARDMORE	292	8	83.8	31	.4	100.	22	63.	7	.0	.0	584.0	14.0	4.120	31	1.59	1.40	24			
ATOKA DAM	394	8	85.9	22	*****	106.	23	67.	24	.0	*****	459.0	*****	2.530	22	*****	1.09	24			
BOKCHITO	917	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.120	31	*****	2.51	24			
CANEY	1437	8	85.5	31	*****	105.	20	68.	6	.0	*****	636.0	*****	4.030	31	*****	1.92	24			
CENTRAHOMA	1648	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.750	31	*****	1.35	6			
CHICKASAW NRA	1745	8	83.2	31	1.6	102.	20	60.	7	.0	.0	563.0	48.0	3.820	31	1.69	1.93	24			
COLEMAN	2011	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.250	31	*****	2.25	24			
COMANCHE	2054	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.140	31	-1.61	.45	6			
DAISY 4 ENE	2354	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.590	31	-1.61	.85	6			
DUNCAN	2660	8	83.0	31	.9	102.	1	62.	7	.0	.0	558.0	28.0	1.841	31	-.59	.59	6			
DURANT USDA	2678	8	83.3	31	1.8	103.	21	62.	7	.0	.0	568.0	56.0	4.200	31	1.59	2.45	25			
ELMORE CITY	2872	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.940	29	*****	2.60	23			
FARRIS 3 WNW	3083	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.420	31	.16	1.48	24			
GRADY	3688	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.760	31	*****	.73	23			
HEALDTON	4001	8	83.1	31	.9	103.	21	62.	7	.0	.0	561.5	28.5	2.830	31	.39	1.12	6			
KETCHUM RANCH	4780	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.650	31	*****	1.16	24			
KINGSTON	4865	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.530	31	.93	1.45	3			
LEHIGH	5108	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.552	31	*****	1.15	24			
LINDSAY 2 W	5216	8	82.7	31	1.1	100.	21	58.	7	.0	.0	550.0	35.0	2.832	31	.40	2.73	24			
LOCO 6 SE	5247	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.270	31	*****	1.10	6			
MADILL	5468	8	84.0	31	1.2	102.	21	63.	7	.0	.0	590.5	38.5	4.280	31	1.70	2.16	23			
MARIETTA	5563	8	84.9	31	2.3	104.	19	64.	7	.0	.0	618.0	72.0	3.980	31	1.31	1.92	3			
MARLOW 1 WSW	5581	8	82.3	31	.9	105.	21	56.	7	.0	.0	535.0	27.0	1.691	31	-.91	.73	24			
MCGEE CREEK DAM	5713	8	84.5	31	*****	107.	21	62.	7	.0	*****	604.0	*****	2.160	31	*****	1.22	24			
PAULS VALLEY	6926	8	83.9	31	1.5	105.	20	60.	7	.0	.0	587.0	48.0	3.550	31	1.35	2.00	24			
PONTOTOC	7214	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.921	31	3.19	2.58	5			
TISHOMINGO NWLR	8884	8	83.8	21	*****	103.	20	66.	6	.0	*****	394.5	*****	3.710	22	*****	1.57	24			
TUSSY	9032	8	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.991	31	*****	1.71	24			
WAURIKA	9395	8	84.7	31	1.4	104.	21	62.	31	.0	.0	609.5	42.5	.220	31	-2.43	.15	5			
WAURIKA DAM	9399	8	85.3	30	*****	105.	22	64.	31	.0	*****	609.0	*****	.691	27	*****	.44	30			

AUGUST 1993 SUMMARY FOR SOUTHEAST DIVISION (CD9)

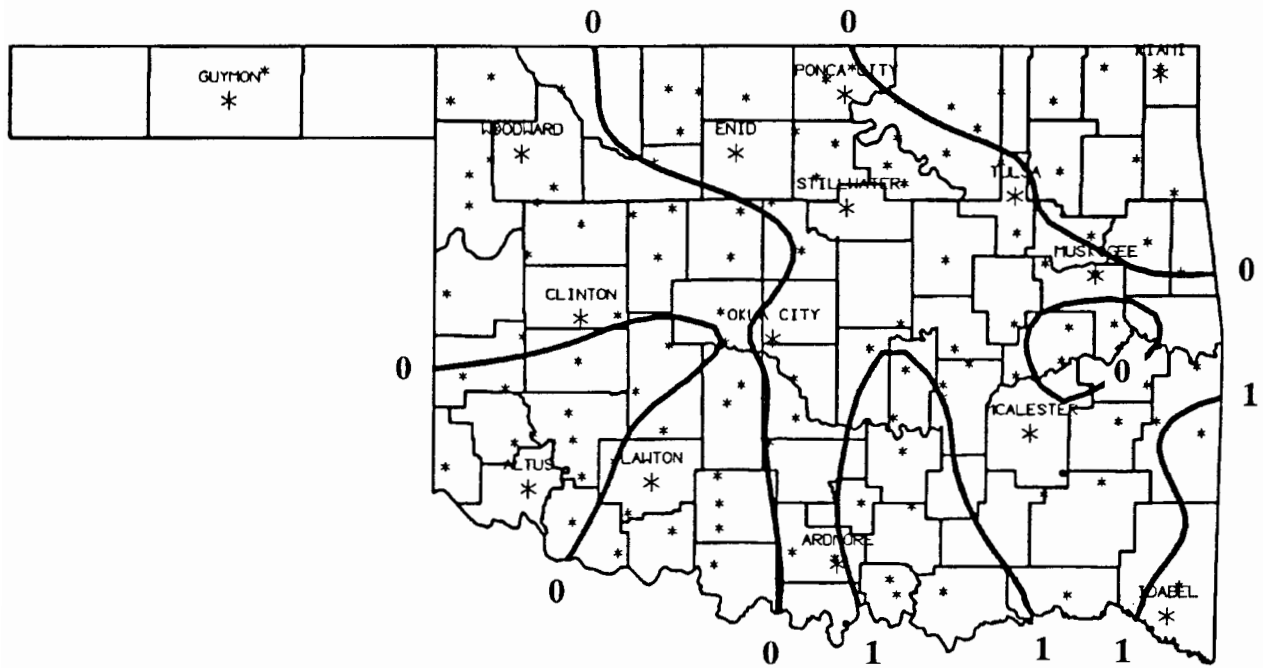
NAME	ID	CD	DEV						HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY	
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN TEMP	DAY										
ANTLERS	256	9	84.0	31	2.8	104.	21	64.	7	.0	.0	590.5	88.5	1.000	26	*****	1.00	24
BATTIEST 1 SSW	567	9	81.2	21	*****	101.	20	65.	30	.0	*****	341.0	*****	4.240	31	*****	1.04	3
BEAR MT TWR	584	9	84.4	31	3.4	104.	21	63.	10	.0	.0	601.0	105.0	4.230	27	*****	1.60	3
BENGAL	670	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.390	31	*****	1.65	6
BOSWELL 4 NNW	980	9	84.2	31	2.9	105.	21	64.	7	.0	.0	596.5	91.5	4.353	31	1.84	2.34	24
BROKEN BOW 1 N	1162	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.690	31	1.76	1.78	2
BROKEN BOW DAM	1168	9	83.7	22	*****	106.	23	64.	9	.0	*****	411.0	*****	3.601	31	.49	1.06	3
CARNASAW TWR	1499	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.170	31	1.22	1.34	5
CARTER TWR	1544	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.370	31	.72	1.18	5
FANSHAWE	3065	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.880	31	1.82	1.21	24
HEAVENER 1 SE	4008	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	7.400	31	4.06	1.90	6
HEE MT TWR	4017	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.950	31	2.02	2.58	3
HUGO	4384	9	85.2	31	3.4	105.	20	66.	7	.0	.0	627.0	106.0	2.773	31	.10	1.67	24
IDABEL	4451	9	84.0	31	3.5	103.	21	67.	24	.0	.0	588.5	107.5	5.110	31	2.55	2.99	9
POTEAU W W	7254	9	82.9	31	*****	103.	21	61.	7	.0	*****	554.5	*****	5.100	31	*****	3.10	3
SMITHVILLE 1 W	8285	9	80.1	31	1.5	100.	20	60.	7	.0	.0	467.0	45.0	4.402	31	1.07	1.85	3
SPIRO	8416	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.180	31	-.15	1.02	10
TUSKAHOMA	9023	9	84.0	31	2.9	106.	20	60.	8	.0	.0	590.5	91.5	2.613	31	-.69	1.25	24
VALLIANT 3 W	9118	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.282	31	-.18	.56	3
WILBURTON 9 ENE	9634	9	83.6	31	3.2	107.	21	61.	7	.0	.0	577.0	100.0	3.911	31	.81	1.78	23

AUGUST 1993 CLIMATE DIVISION SUMMARY

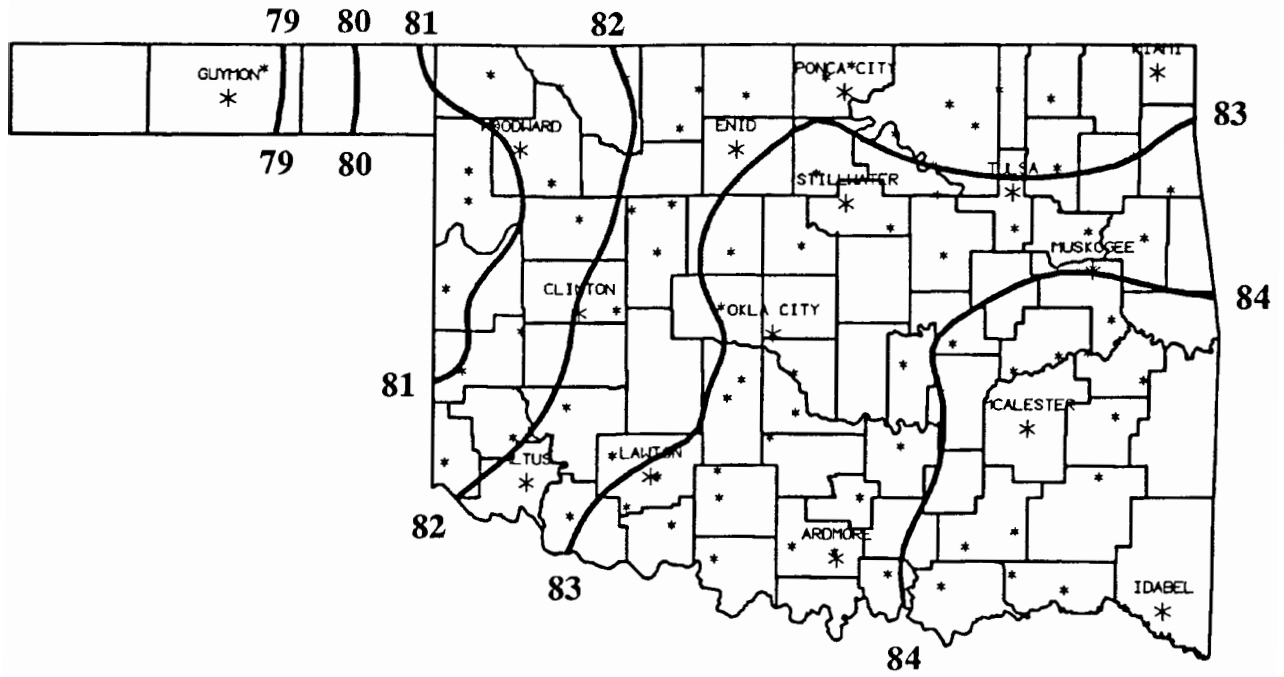
CLIMATE DIV	MEAN TEMP	NUM STA	DEV						HEAT DEGREE DAYS	DEV FROM NORM	COOL DEGREE DAYS	DEV FROM NORM	TOT PPT	NUM STA	DEV FROM NORM	MAX 24-HR	DAY
			FROM NORM	MAX TEMP	MIN TEMP	DAY	MIN TEMP	DAY									
1	78.5	11	.4	109.0	1	48.0	31	2.3	2.3	421.5	14.3	2.43	12	-.17	2.25	3	
2	82.5	14	1.5	107.0	17	54.0	4	.1	.1	539.9	44.7	3.61	24	.59	4.56	6	
3	82.8	14	2.8	106.0	17	54.0	7	.0	.0	548.8	84.2	3.01	26	-.31	4.03	6	
4	81.9	10	1.2	105.0	22	52.0	8	.3	.3	524.2	38.4	2.45	21	-.13	4.25	31	
5	83.6	13	2.3	106.0	21	51.0	7	.2	.2	574.8	69.2	2.61	32	-.02	2.70	31	
6	84.4	10	3.5	107.0	22	54.0	7	.0	.0	598.8	105.6	2.85	28	-.02	3.10	24	
7	82.8	11	.5	106.0	11	55.0	7	.3	.3	552.5	16.2	2.71	23	.28	4.86	3	
8	83.9	15	1.7	107.0	21	56.0	7	.0	.0	583.2	50.0	3.03	28	.46	2.73	24	
9	83.6	9	2.9	107.0	21	60.0	8	.0	.0	576.9	90.9	4.25	18	1.27	3.10	3	



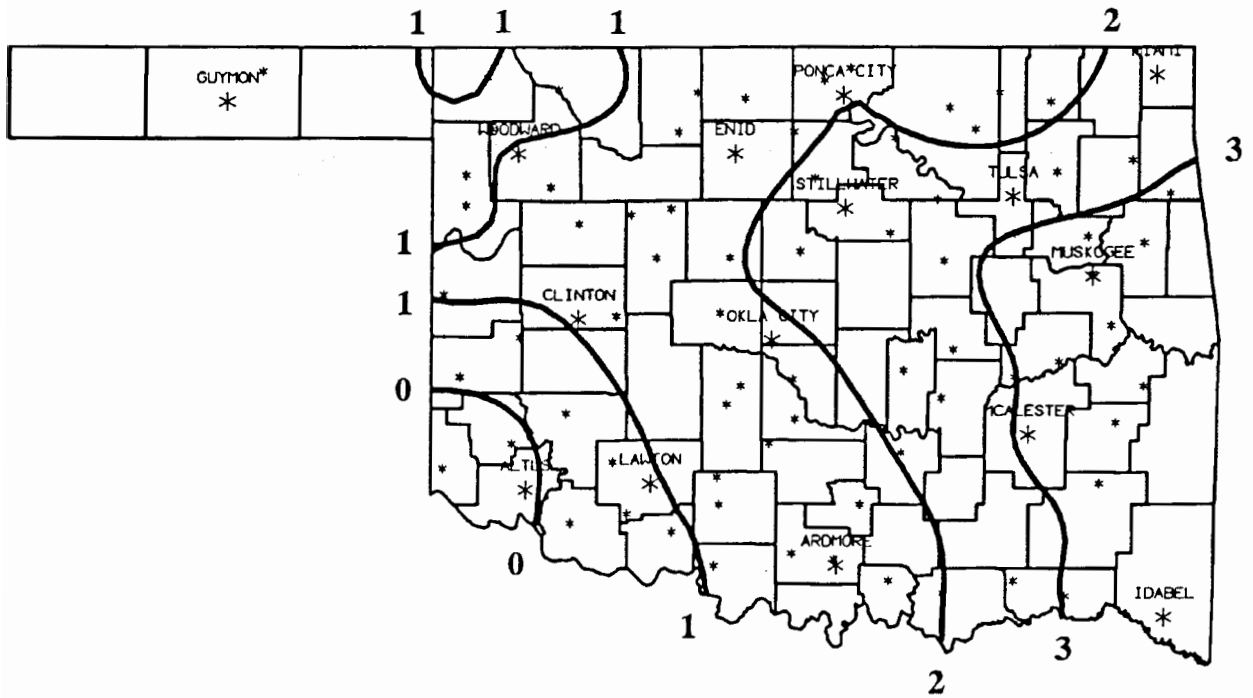
**AUGUST 1993 TOTAL PRECIPITATION
(Inches)**



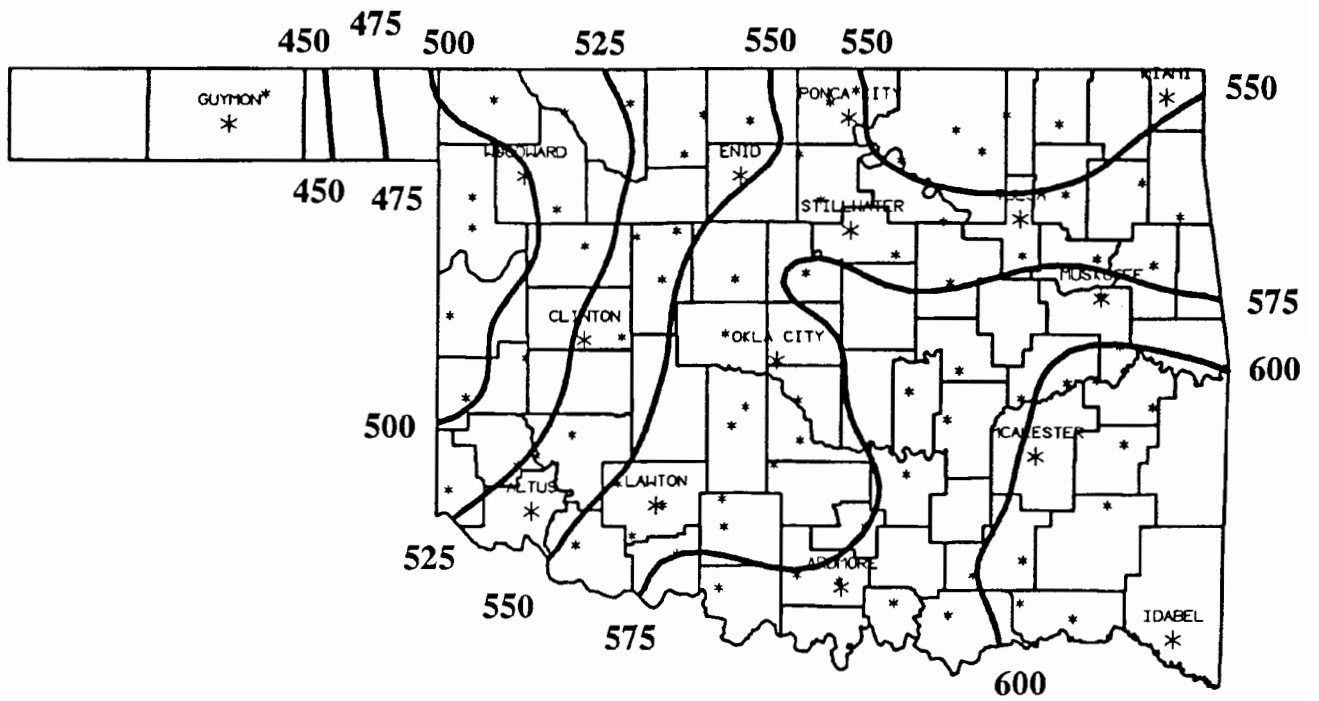
**AUGUST 1993 DEVIATION FROM NORMAL PRECIPITATION
(Inches)**



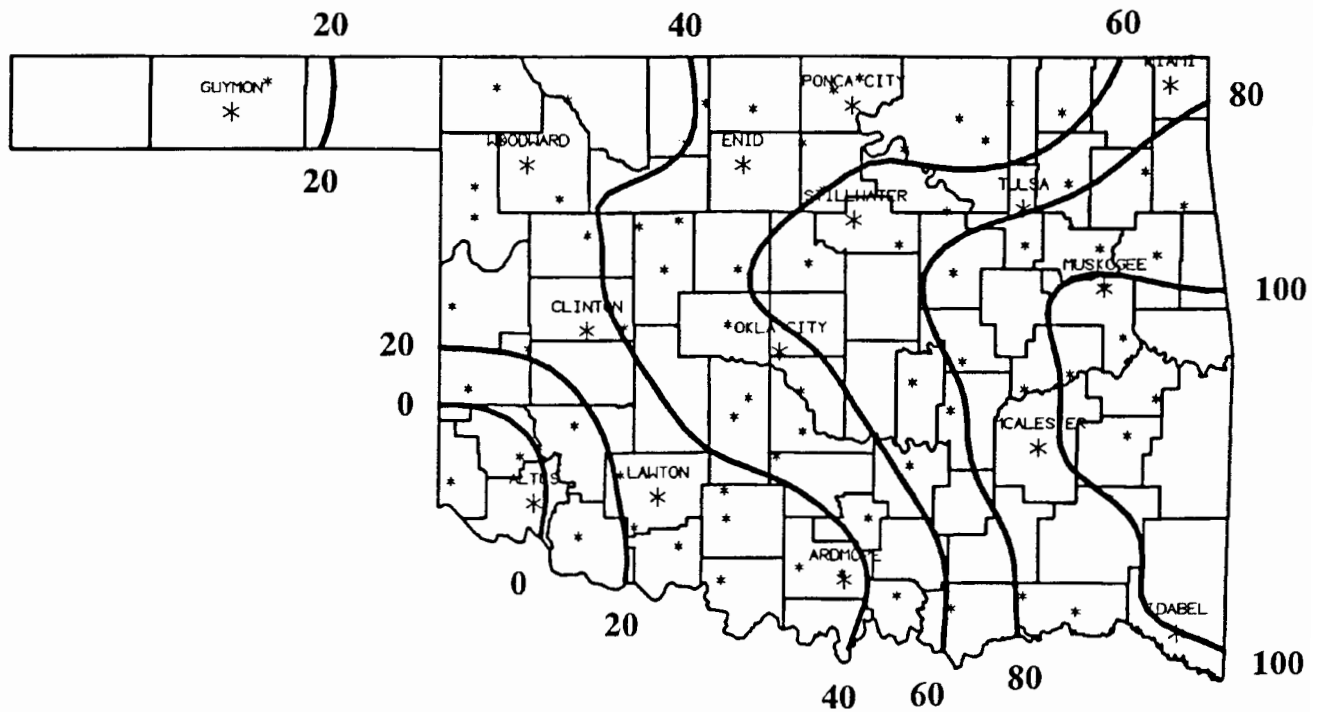
**AUGUST 1993 AVERAGE MONTHLY TEMPERATURES
(Degrees F)**



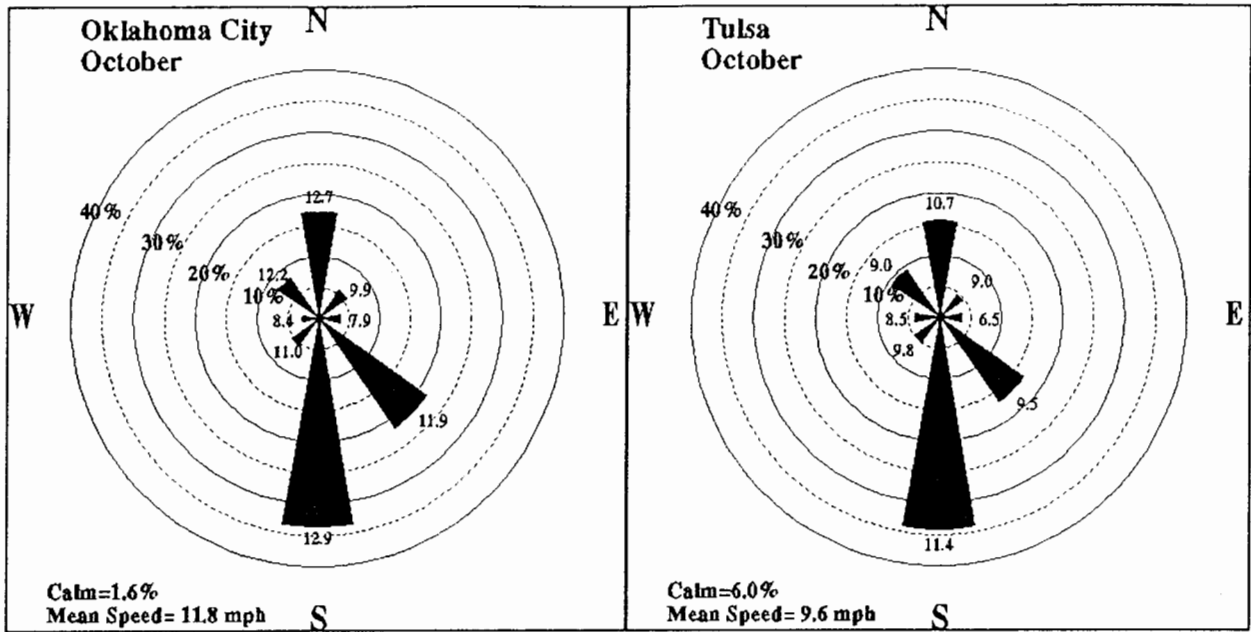
**AUGUST 1993 DEVIATION FROM NORMAL TEMPERATURES
(Degrees F)**



AUGUST 1993 COOLING DEGREE DAYS



AUGUST 1993 DEVIATION FROM NORMAL COOLING DEGREE DAYS



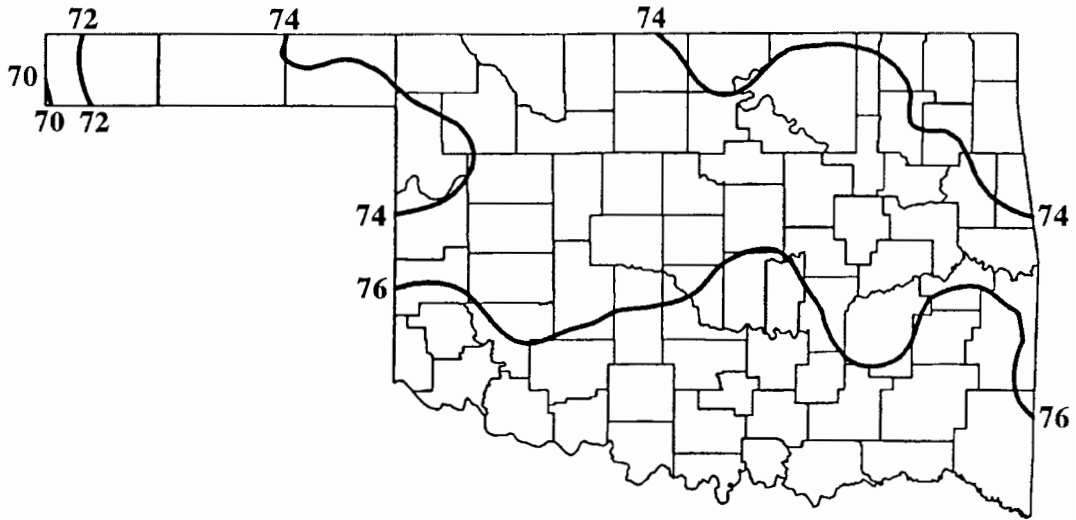
October Wind Roses for Oklahoma City and Tulsa. Percents represent the frequency of winds from each direction. The numbers at the ends of the bars indicate the average wind speed (miles per hour) from that direction.

OCTOBER 1993 SUNRISE AND SUNSET

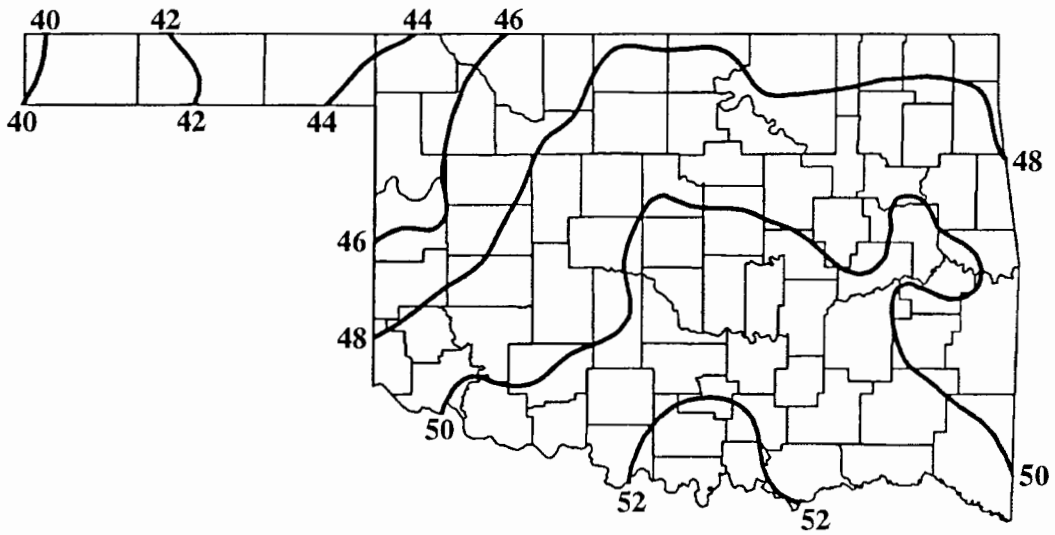
OKLAHOMA CITY

TULSA

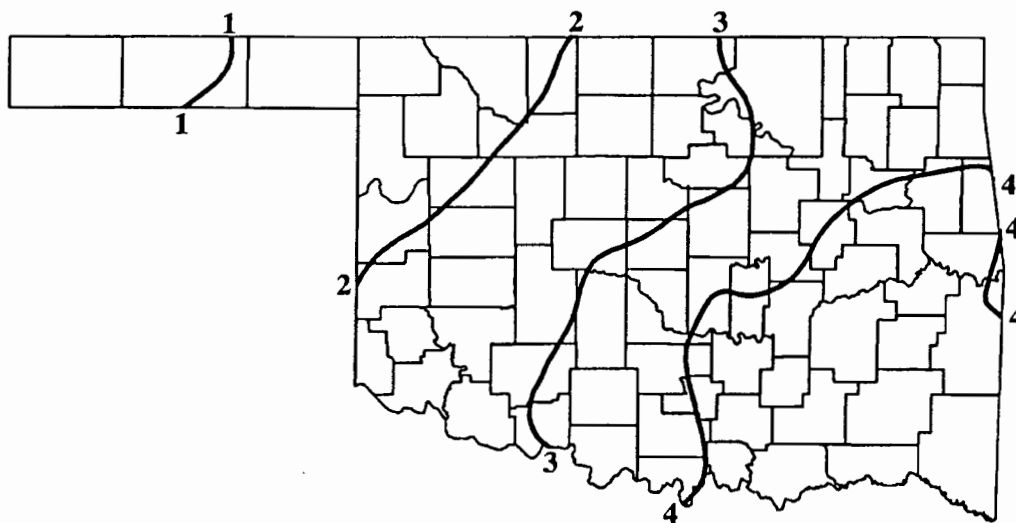
DATE	SUNRISE	SUNSET	DAYLIGHT	DATE	SUNRISE	SUNSET	DAYLIGHT
9310 1	7:24AM	7:16PM CDT	11 hrs 52 mins	9310 1	7:17AM	7: 9PM CDT	11 hrs 52 mins
9310 2	7:24AM	7:14PM CDT	11 hrs 50 mins	9310 2	7:18AM	7: 7PM CDT	11 hrs 49 mins
9310 3	7:25AM	7:13PM CDT	11 hrs 48 mins	9310 3	7:19AM	7: 6PM CDT	11 hrs 47 mins
9310 4	7:26AM	7:11PM CDT	11 hrs 46 mins	9310 4	7:19AM	7: 4PM CDT	11 hrs 45 mins
9310 5	7:27AM	7:10PM CDT	11 hrs 43 mins	9310 5	7:20AM	7: 3PM CDT	11 hrs 43 mins
9310 6	7:28AM	7: 9PM CDT	11 hrs 41 mins	9310 6	7:21AM	7: 1PM CDT	11 hrs 40 mins
9310 7	7:28AM	7: 7PM CDT	11 hrs 39 mins	9310 7	7:22AM	7: 0PM CDT	11 hrs 38 mins
9310 8	7:29AM	7: 6PM CDT	11 hrs 37 mins	9310 8	7:23AM	6:59PM CDT	11 hrs 36 mins
9310 9	7:30AM	7: 5PM CDT	11 hrs 35 mins	9310 9	7:24AM	6:57PM CDT	11 hrs 34 mins
931010	7:31AM	7: 3PM CDT	11 hrs 32 mins	931010	7:24AM	6:56PM CDT	11 hrs 31 mins
931011	7:32AM	7: 2PM CDT	11 hrs 30 mins	931011	7:25AM	6:55PM CDT	11 hrs 29 mins
931012	7:32AM	7: 1PM CDT	11 hrs 28 mins	931012	7:26AM	6:53PM CDT	11 hrs 27 mins
931013	7:33AM	6:59PM CDT	11 hrs 26 mins	931013	7:27AM	6:52PM CDT	11 hrs 25 mins
931014	7:34AM	6:58PM CDT	11 hrs 24 mins	931014	7:28AM	6:51PM CDT	11 hrs 23 mins
931015	7:35AM	6:57PM CDT	11 hrs 22 mins	931015	7:29AM	6:49PM CDT	11 hrs 20 mins
931016	7:36AM	6:55PM CDT	11 hrs 19 mins	931016	7:30AM	6:48PM CDT	11 hrs 18 mins
931017	7:37AM	6:54PM CDT	11 hrs 17 mins	931017	7:31AM	6:47PM CDT	11 hrs 16 mins
931018	7:38AM	6:53PM CDT	11 hrs 15 mins	931018	7:32AM	6:45PM CDT	11 hrs 14 mins
931019	7:39AM	6:52PM CDT	11 hrs 13 mins	931019	7:32AM	6:44PM CDT	11 hrs 12 mins
931020	7:39AM	6:50PM CDT	11 hrs 11 mins	931020	7:33AM	6:43PM CDT	11 hrs 9 mins
931021	7:40AM	6:49PM CDT	11 hrs 9 mins	931021	7:34AM	6:42PM CDT	11 hrs 7 mins
931022	7:41AM	6:48PM CDT	11 hrs 7 mins	931022	7:35AM	6:40PM CDT	11 hrs 5 mins
931023	7:42AM	6:47PM CDT	11 hrs 5 mins	931023	7:36AM	6:39PM CDT	11 hrs 3 mins
931024	7:43AM	6:46PM CDT	11 hrs 3 mins	931024	7:37AM	6:38PM CDT	11 hrs 1 mins
931025	7:44AM	6:45PM CDT	11 hrs 1 mins	931025	7:38AM	6:37PM CDT	10 hrs 59 mins
931026	7:45AM	6:44PM CDT	10 hrs 59 mins	931026	7:39AM	6:36PM CDT	10 hrs 57 mins
931027	7:46AM	6:43PM CDT	10 hrs 57 mins	931027	7:40AM	6:35PM CDT	10 hrs 55 mins
931028	7:47AM	6:42PM CDT	10 hrs 55 mins	931028	7:41AM	6:34PM CDT	10 hrs 53 mins
931029	7:48AM	6:40PM CDT	10 hrs 53 mins	931029	7:42AM	6:33PM CDT	10 hrs 51 mins
931030	7:49AM	6:39PM CDT	10 hrs 51 mins	931030	7:43AM	6:32PM CDT	10 hrs 49 mins
931031	7:50AM	6:38PM CDT	10 hrs 49 mins	931031	7:44AM	6:31PM CDT	10 hrs 47 mins



October Normal Daily Maximum Temperatures (°F)



October Normal Daily Minimum Temperatures (°F)



October Normal Monthly Precipitation (inches)

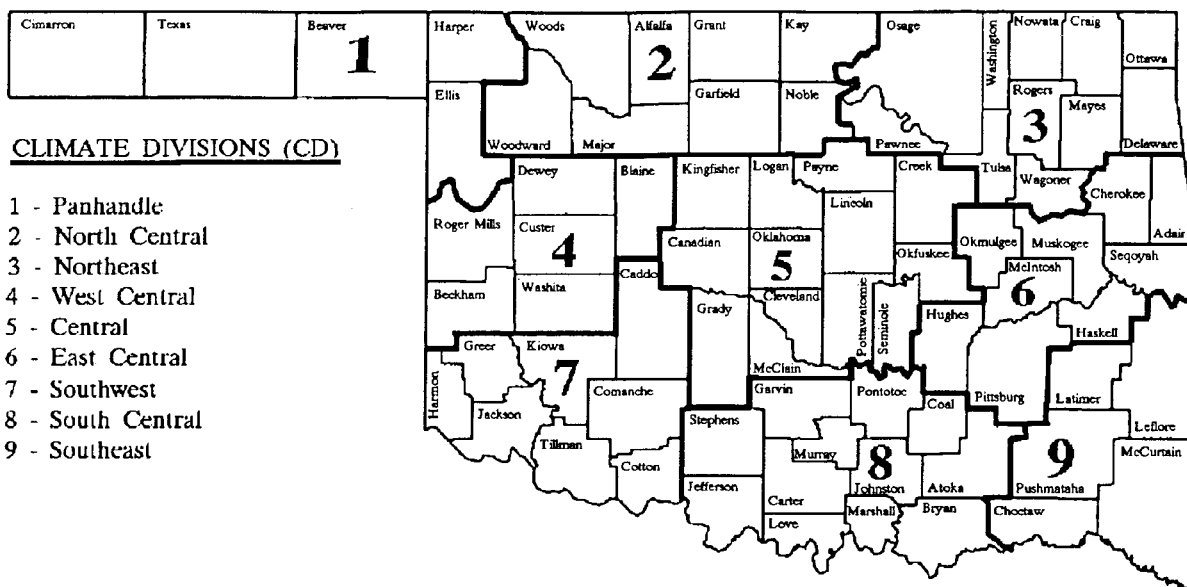
90-DAY NATIONAL WEATHER SERVICE OUTLOOK

(SEPTEMBER 1993 - NOVEMBER 1993)

Precipitation - Near Normal Statewide

Temperature - Near Normal Statewide

OKLAHOMA



CLIMATE DIVISIONS (CD)

- 1 - Panhandle
- 2 - North Central
- 3 - Northeast
- 4 - West Central
- 5 - Central
- 6 - East Central
- 7 - Southwest
- 8 - South Central
- 9 - Southeast

EXPLANATION OF TABLES

Two kinds of tables appear in this summary. The first is a set of tables containing all reporting stations grouped by climate division. The figure above shows the locations of the climate divisions. Each table contains the following information for each station:

- Station Name:
- Station Identification Number: These are usually assigned by the National Climatic Data Center.
- Climate Division: See the figure above.
- Number of Temperature Observations: These are the actual number of temperature reports recorded at the station during the current month. Missing observations may result in artificially high or low mean monthly temperatures.
- Deviation from Normal: The deviation of the observed mean monthly temperature from the monthly station normal. A positive value indicates the month was warmer than normal. A negative value indicates the month was cooler than normal. Normal monthly temperatures may be calculated by subtracting the deviation from the observed temperature.
- Maximum Daily Maximum: The maximum daily maximum temperature observed during the current month and year and the day which it occurred.
- Minimum Daily Minimum: The minimum daily minimum temperature observed during the current month and year and the day which it occurred.
- Heating Degree Days: HDD are calculated each day of the month for which there is a temperature report and the average temperature for the day exceeds 65 degrees. Daily values are summed to arrive at a monthly total. They are a qualitative measure of how much heat was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value. For February 1984 HDD would be calculated as:

$$\sum_{i=1}^{29} 65 - ((TMAX_i + TMIN_i) / 2)$$

Deviation from Normal Heating Degree Days: A positive value indicates higher than normal heating requirements for the month as a whole. A negative value indicates lower than normal heating requirements for the month as a whole. Normal HDD may be calculated by subtracting the deviation from observed HDD.

Cooling Degree Days: CDD are calculated each day of the month for which there is a temperature report and the average temperature for the day is less than 65 degrees. Daily values are summed to give a monthly total. They are a proxy measure of how much cooling was required to maintain a comfortable indoor temperature. Missing observations may result in an artificially high or low value. For June, CDD would be calculated as:

$$\sum_{i=1}^{30} ((TMAX_i + TMIN_i) / 2) - 65$$

Deviation from Normal Cooling Degree Days: A positive value indicates higher than normal cooling requirements for the month as a whole. A negative value indicates lower than normal cooling requirements for the month as a whole. Normal cooling degree days may be found by subtracting the deviation from the observed cooling degree days.

Total Precipitation: Often incorrectly referred to as mean precipitation, this value is the sum of all precipitation reported during the month at a station. If snow occurred, it is to be melted and its water equivalent recorded.

Number of Precipitation Observations: The number of days a rain or no-rain observation was reported. Missing observations frequently result in artificially low total precipitation values.

Deviation from Normal Precipitation: A positive value indicates more rain than normal was received. A negative value indicates less than was expected rainfall was received. Normal rainfall may be calculated by subtracting the deviation from monthly total.

Maximum 24-Hour Report and Day: The maximum amount of precipitation recorded during the station's 24-hour observation period for the current month and year and the day on which it was recorded.

The second set of tables contain similar information but are the average or extreme over all the stations reporting in each climate division.

The data on this calendar are for Oklahoma City.
 Normal values are calculated for the period
 1961-1990. Extremes are found for the period
 of record (1891-present).

OKLAHOMA CITY CLIMATE CALENDAR

October 1993

Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual														
80.2 54.6 .08 2 5 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	97-1938 61-1985 38-1958 74-1911 2-28-1959	77.1 52.8 .08 3 3 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	95-1951 57-1902 41-1975 73-1911 4-52-1955	77.8 55.9 .10 2 4 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	96-1951 51-1902 40-1891 75-1911 2-22-1955	77.7 55.3 .10 2 4 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	95-1947 53-1988 38-1932 69-1981 1-74-1970	74.8 53.8 .08 3 3 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	94-1939 55-1891 40-1976 72-1931 1-38-1989	75.5 52.2 .08 3 2 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	94-1978 50-1976 32-1952 73-1939 1-41-1967	76.0 53.5 .05 4 3 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	94-1979 50-1970 35-1976 71-1949 30-1978	76.6 53.8 .06 3 3 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	94-1978 47-1986 34-1987 70-1928 2-45-1923	77.4 53.8 .06 3 4 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	90-1969 52-1969 36-1893 72-1899 1-44-1923	76.2 52.9 .08 3 3 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	91-1950 47-1923 32-1969 70-1899 2-45-1956	74.2 52.4 .09 4 2 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	92-1902 54-1914 38-1974 68-1968 1-46-1959	71.6 47.3 .14 7 1 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	92-1894 46-1925 25-1917 69-1979 4-98-1983	72.0 48.4 .23 6 1 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	93-1979 42-1910 26-1976 72-1979 5-45-1983	71.8 48.8 .15 6 1 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	90-1978 46-1950 30-1917 66-1941 3-70-1972	71.3 49.2 .13 6 1 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	87-1939 42-1936 31-1898 65-1941 1-87-1953	70.4 46.3 .04 7 1 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	92-1891 42-1936 26-1957 71-1939 3-76-1918	69.3 46.4 .09 8 1 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	86-1922 43-1919 22-1957 66-1940 3-19-1984	57.7 45.6 .07 9 0 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	89-1938 34-1925 22-1925 65-1961 1-38-1991
OCTOBER AVERAGES																																			
TEMPERATURE : 62.1°F																																			
PRECIPITATION : 3.13"																																			
HEATING DEGREE DAYS : 155																																			
COOLING DEGREE DAYS : 67																																			

The data on this calendar are for Tulsa. Normal values are calculated for the period 1948-1991. Temperature extremes are for the period 1905-1992; precipitation extremes are for the period 1948-1992.

TULSA CLIMATE CALENDAR

October 1993

Normal 1 81.0 max 54.0 min .08 ppt 2 hdd 5 cdd Highest Max 97-1910 Lowest Max 62-1985 Lowest Min 38-1985 Highest Min 66-1971 Greatest ppt 2.95-1986	Normal 2 81.0 max 56.0 min .18 ppt 2 hdd 5 cdd Highest Max 96-1978 Lowest Max 65-1961 Lowest Min 39-1975 Highest Min 73-1954 Greatest ppt 5.45-1959	Normal 3 80.0 max 56.0 min .05 ppt 2 hdd 5 cdd Highest Max 95-1963 Lowest Max 63-1959 Lowest Min 39-1987 Highest Min 74-1989 Greatest ppt 1.46-1990	Normal 4 80.0 max 55.0 min .12 ppt 2 hdd 5 cdd Highest Max 97-1991 Lowest Max 64-1950 Lowest Min 39-1988 Highest Min 70-1954 Greatest ppt 2.17-1955	Normal 5 78.0 max 55.0 min .18 ppt 2 hdd 4 cdd Highest Max 95-1947 Lowest Max 50-1988 Lowest Min 37-1964 Highest Min 73-1981 Greatest ppt 2.17-1970	Normal 6 77.0 max 53.0 min .12 ppt 3 hdd 3 cdd Highest Max 98-1939 Lowest Max 57-1988 Lowest Min 35-1932 Highest Min 68-1990 Greatest ppt 3.24-1951	Normal 7 77.0 max 53.0 min .05 ppt 3 hdd 3 cdd Highest Max 98-1979 Lowest Max 52-1988 Lowest Min 33-1952 Highest Min 67-1970 Greatest ppt 1.12-1962	Normal 8 77.0 max 53.0 min .06 ppt 3 hdd 3 cdd Highest Max 97-1979 Lowest Max 56-1990 Lowest Min 32-1952 Highest Min 72-1979 Greatest ppt 1.61-1970	Normal 9 78.0 max 53.0 min .03 ppt 3 hdd 4 cdd Highest Max 97-1963 Lowest Max 53-1990 Lowest Min 32-1917 Highest Min 70-1973 Greatest ppt .91-1968	Normal 10 77.0 max 52.0 min .03 ppt 4 hdd 3 cdd Highest Max 95-1963 Lowest Max 58-1987 Lowest Min 30-1925 Highest Min 72-1973 Greatest ppt .61-1949	Normal 11 78.0 max 52.0 min .17 ppt 4 hdd 3 cdd Highest Max 94-1979 Lowest Max 50-1987 Lowest Min 30-1906 Highest Min 69-1982 Greatest ppt 2.20-1973	Normal 12 76.0 max 54.0 min .18 ppt 3 hdd 4 cdd Highest Max 94-1978 Lowest Max 49-1986 Lowest Min 32-1921 Highest Min 71-1962 Greatest ppt 3.97-1969	Normal 13 77.0 max 54.0 min .09 ppt 3 hdd 4 cdd Highest Max 92-1963 Lowest Max 54-1986 Lowest Min 32-1917 Highest Min 71-1956 Greatest ppt 1.30-1981	Normal 14 77.0 max 53.0 min .19 ppt 3 hdd 3 cdd Highest Max 92-1963 Lowest Max 59-1974 Lowest Min 34-1937 Highest Min 69-1968 Greatest ppt 1.85-1984	Normal 15 75.0 max 52.0 min .10 ppt 4 hdd 3 cdd Highest Max 91-1963 Lowest Max 60-1970 Lowest Min 38-1956 Highest Min 69-1968 Greatest ppt 1.36-1967	Normal 16 74.0 max 50.0 min .06 ppt 5 hdd 2 cdd Highest Max 93-1917 Lowest Max 58-1976 Lowest Min 32-1966 Highest Min 69-1965 Greatest ppt .68-1984	Normal 17 75.0 max 49.0 min .04 ppt 5 hdd 2 cdd Highest Max 90-1947 Lowest Max 52-1965 Lowest Min 30-1976 Highest Min 66-1988 Greatest ppt .97-1983	Normal 18 74.0 max 49.0 min .14 ppt 5 hdd 2 cdd Highest Max 91-1992 Lowest Max 51-1989 Lowest Min 29-1948 Highest Min 66-1979 Greatest ppt 1.94-1960	Normal 19 73.0 max 48.0 min .08 ppt 6 hdd 2 cdd Highest Max 89-1940 Lowest Max 50-1976 Lowest Min 27-1917 Highest Min 73-1979 Greatest ppt 1.73-1983	Normal 20 74.0 max 49.0 min .30 ppt 5 hdd 2 cdd Highest Max 91-1979 Lowest Max 53-1972 Lowest Min 30-1976 Highest Min 76-1979 Greatest ppt 4.96-1971	Normal 21 74.0 max 49.0 min .13 ppt 5 hdd 2 cdd Highest Max 92-1978 Lowest Max 53-1984 Lowest Min 30-1917 Highest Min 66-1963 Greatest ppt 2.98-1972	Normal 22 73.0 max 50.0 min .16 ppt 5 hdd 1 cdd Highest Max 88-1963 Lowest Max 57-1984 Lowest Min 31-1911 Highest Min 69-1953 Greatest ppt 1.20-1953	Normal 23 70.0 max 49.0 min .09 ppt 6 hdd 1 cdd Highest Max 92-1939 Lowest Max 50-1981 Lowest Min 26-1937 Highest Min 70-1991 Greatest ppt 1.24-1970	Normal 24 69.0 max 46.0 min .05 ppt 8 hdd 1 cdd Highest Max 88-1921 Lowest Max 50-1972 Lowest Min 24-1917 Highest Min 65-1963 Greatest ppt .63-1984	Normal 25 69.0 max 46.0 min .11 ppt 8 hdd 1 cdd Highest Max 91-1939 Lowest Max 48-1957 Lowest Min 31-1925 Highest Min 65-1963 Greatest ppt 1.43-1954	Normal 26 71.0 max 46.0 min .06 ppt 7 hdd 1 cdd Highest Max 90-1950 Lowest Max 46-1957 Lowest Min 27-1957 Highest Min 60-1991 Greatest ppt 1.61-1991	Normal 27 70.0 max 46.0 min .11 ppt 8 hdd 1 cdd Highest Max 88-1922 Lowest Max 51-1970 Lowest Min 27-1957 Highest Min 64-1984 Greatest ppt 1.35-1973	Normal 28 69.0 max 45.0 min .12 ppt 8 hdd 0 cdd Highest Max 86-1922 Lowest Max 43-1980 Lowest Min 23-1925 Highest Min 62-1991 Greatest ppt 2.45-1974	Normal 29 69.0 max 46.0 min .14 ppt 8 hdd 1 cdd Highest Max 90-1950 Lowest Max 46-1976 Lowest Min 23-1913 Highest Min 66-1961 Greatest ppt 1.28-1987	Normal 30 70.0 max 48.0 min .19 ppt 7 hdd 1 cdd Highest Max 90-1937 Lowest Max 43-1991 Lowest Min 15-1917 Highest Min 64-1977 Greatest ppt 1.73-1974	Normal 31 69.0 max 49.0 min .18 ppt 7 hdd 1 cdd Highest Max 87-1950 Lowest Max 41-1991 Lowest Min 21-1925 Highest Min 68-1982 Greatest ppt 3.12-1991
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OCTOBER AVERAGES

TEMPERATURE : 62.6°F
 PRECIPITATION : 3.59"
 HEATING DEGREE DAYS : 146
 COOLING DEGREE DAYS : 78