

OKLAHOMA MONTHLY SUMMARY AUGUST 1989

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AUGUST 1989 OKLAHOMA SUMMARY

The third consecutive month of unseasonably cool weather broke records in the first half of August and resulted in Oklahoma's 20th coolest August on record (1892-1989). Nearly all stations recorded an unusual run of at least 10 consecutive August days with maximum temperatures below 90 degrees. Such conditions occur in Oklahoma only about once per decade. Fronts delivering the cooler air, and transient low pressure systems contributed to above normal precipitation amounts in the northern two-thirds of the State (see Figure 1). Statewide, the month ranks as the 25th wettest August in the last 97 years.

The remnants of Hurricane Chantal served as the first significant August rain producer, bringing showers to southern and eastern Oklahoma during the first two days of the month. Few precipitation totals exceeded one inch as the weakening system and accompanying showers eventually exited the State northward through central Oklahoma.

Clearing skies and warm southerly winds restored near-normal 90-degree weather to the State. Temperatures climbed on August 4-6 when many locations recorded monthly maximums, including several stations which experienced their first 100 degree readings of the summer (see Table 1 and Figure 2). On August 5, however, a strong build-up of cool, Canadian air began surging southward into the State. This cold front served as the mechanism to lift the existing unstable, moist air and generate vigorous thunderstorms. 70-mph winds caused an estimated \$200,000 structural damage in Bartlesville. Severe thunderstorms in northwest Oklahoma on August 6 dropped golfball-size hail and street-flooding rains in Harper County.

Record-breaking cool air behind the front produced most stations' lowest temperatures of the month on the mornings of the 8th, 9th and 10th (see Table 2). Temperatures from 5 to 20 degrees below normal persisted for several days with the Canadian high pressure system. Cloudiness associated with a succession of upper level troughs maintained these cool conditions for several additional days. A powerful low pressure system produced violent weather across the State on August 13 and 14. Guthrie reported widespread street flooding which resulted from over 3 inches of rain. Several stations in the area reported rainfall exceeding 2 inches. Another disturbance on August 16 produced generous rainfall in southern and central Oklahoma, including 2.82 inches at Seminole, 3.55 inches at Clayton, and 1.80 inches at Centrahoma. A third group of storms crossed the State on August 19 and 20 producing nickel-sized hail in Kay County. Although Tulsa recorded 5.37 inches of rain from this system, area creeks, which were low following 20 days of less than 1 inch total rainfall, handled most of the flow so that only minor flooding resulted.

A warmer air mass and clearing skies finally boosted Oklahoma temperatures into the 90's Statewide by August 20. Temperatures averaged several degrees above normal during the last 10 days of August. Scattered thunderstorms developed over the State on August 28. One strong storm produced a possible tornado near Oneta in Wagoner County. The isolated showers, however, did not prevent a diminishing soil moisture supply. Although the end-of-month supplies still adequately provided for most row crops, cooler or wetter weather in early September was needed to prevent crop stress development.

Figure 1: August 1989 Percent of Normal Precipitation.

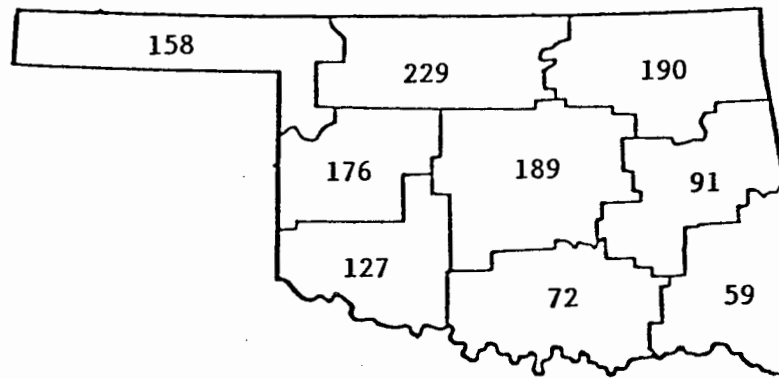


TABLE 1

Number of days during the summer months of June, July, and August with a maximum temperature of at least 100°F for selected stations.

CD	Station	Long Term Mean	1989
1	Buffalo	28	9
2	GSP Dam	29	8
3	Tulsa	11	0
4	Clinton	27	12
5	Oklahoma City	10	0
6	McAlester	12	0
7	Mangum	38	9
8	Durant	20	0

Figure 2. Mean 1989 Summer (June, July and August) Temperature Deviation.

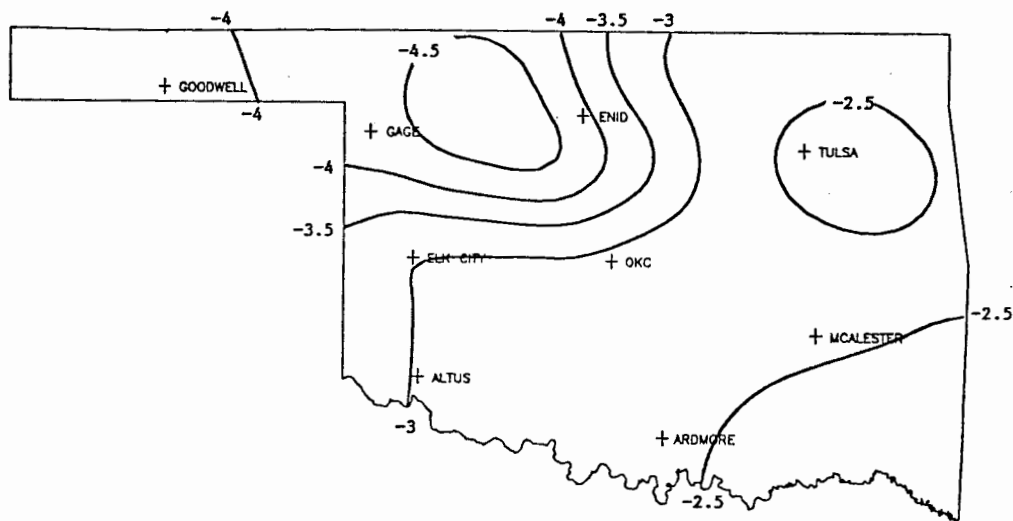


TABLE 2

Record breaking minimum temperatures for selected Oklahoma stations.

CD	Station	Date	Previous Record*		
			Minimum Temp	Temp	Year
1	Gage	8	52	57	1981
2	Ponca City	8	53	60	1959
3	Tulsa	8	57	63	1959
4	Weatherford	9	52	58	1954
5	Oklahoma City	8	54	61	1957
6	McAlester	9	51	61	1965
7	Hobart	9	55	62	1959
8	Durant	10	56	61	1981

* Period of Record = 1948-1989

TABLE OF 1988/1989 COMPARISONS

Station	August Temperature (F)		August Precipitation (in.)	
	88	89	88	89
ARNETT	80.4	76.8	0.33	3.84
ENID	84.3	*	0.43	*
MUTUAL	81.6	*	0.81	*
TULSA	83.5	80.6	2.43	6.69
ELK CITY	81.7	78.7	1.20	2.67
OKLAHOMA CITY	83.3	78.5	1.60	5.55
MCALESTER	*	80.2	*	1.77
ALTUS IRR. STA.	84.2	80.3	0.60	2.01
DURANT	82.7	79.0	3.49	1.86
ADA	83.4	*	1.60	*
ANTLERS	83.2	79.8	1.89	1.01

EXTREMES

Variable	Station	Divison	Observation	Date
Minimum temperature (F)	Jay Tower	3	48	8
	Stilwell	6	48	8
	Marlow	8	48	8
Maximum temperature (F)	Reydon	4	107	5
Maximum 24-hour precipitation	Oneta	3	5.59"	20

AUGUST 1989 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	DEV				HEAT		DEV		COOL		DEV		TOT	NUM	FROM	MAX	DAY
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	PPT					
ARNETT	332	1	76.8	31	-2.5	102.	6	53.	9	1.0	1.0	367.0	-76.0	3.844	31	1.43	1.39	6	
BEAVER	593	1	76.0	31	-3.6	103.	5	53.	9	.5	.5	341.0	-112.0	5.701	31	2.89	2.54	30	
BOISE CITY 2 E	908	1	74.3	31	-1.4	100.	4	55.	16	.0	.0	288.5	-43.5	2.351	31	-.03	.69	15	
BUFFALO	1243	1	79.0	31	-2.8	104.	5	51.	12	.0	.0	435.5	-85.5	5.940	31	2.60	3.10	30	
FARGO	3070	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.991	31	2.52	1.42	7	
GAGE FAA APT	3407	1	77.4	31	-2.7	100.	5	52.	8	.0	.0	383.0	-85.0	3.914	31	1.49	1.27	7	
GATE	3489	1	76.4	31	*****	100.	5	54.	8	.5	*****	354.0	*****	3.721	31	*****	.98	1	
GOODWELL RES	ST3628	1	75.8	31	-1.6	106.	5	55.	15	.0	.0	336.0	-48.0	2.989	31	.62	1.04	7	
GUYMON	3835	1	76.9	27	*****	105.	4	58.	15	.0	*****	320.5	*****	4.811	28	*****	1.22	30	
HOOKER	4298	1	76.2	31	-2.0	105.	5	57.	9	.0	.0	348.0	-61.0	2.232	31	-.55	.56	13	
KENTON	4766	1	74.5	31	-2.0	100.	5	56.	8	.0	.0	293.5	-63.5	2.732	31	.23	.91	21	
LAVERNE	5045	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.563	31	.59	.75	14	
OPTIMA LAKE	6740	1	76.5	31	*****	105.	5	56.	8	.0	*****	357.5	*****	1.823	31	*****	.62	23	
RANGE	7412	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.250	31	*****	.65	22	
REGNIER	7534	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.584	31	-.33	.57	6	
TURPIN 4 SSE	9017	1	76.4	31	*****	102.	5	57.	8	.0	*****	352.0	*****	3.310	31	*****	1.31	1	

AUGUST 1989 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	DEV				HEAT		DEV		COOL		DEV		TOT	NUM	FROM	MAX	DAY
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	PPT					
ALVA 1 ENE	194	2	78.0	31	-4.0	100.	27	51.	8	.0	.0	404.5	-122.5	8.090	31	5.20	2.26	1	
VANCE AFB	302	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.947	30	*****	2.76	14	
BILLINGS	755	2	77.3	31	*****	99.	6	51.	8	3.0	*****	385.5	*****	5.290	31	2.40	2.05	14	
BLACKWELL 2E	818	2	79.0	31	*****	101.	5	50.	8	.0	*****	432.5	*****	4.971	31	*****	2.20	14	
BRAMAN	1075	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.901	31	*****	1.48	14	
CEDARDALE	1620	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.480	31	*****	1.44	29	
CHEROKEE	1724	2	79.0	22	*****	100.	28	59.	11	.0	*****	309.0	*****	12.180	31	9.60	3.25	13	
ENID	2912	2	78.7	31	-3.4	100.	5	54.	8	.0	.0	423.5	-106.5	6.900	31	3.54	2.53	14	
FREEDOM	3358	2	77.2	31	*****	101.	4	50.	8	.5	*****	380.0	*****	6.311	31	*****	1.77	13	
GREAT SALT PLNS	3740	2	78.4	31	*****	104.	6	56.	14	3.0	*****	418.0	*****	9.821	31	6.96	4.81	14	
HARDY	3909	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.686	31	*****	3.25	19	
HELENA 1 SSE	4019	2	77.0	31	*****	101.	6	53.	8	2.5	*****	375.0	*****	8.922	31	6.31	2.73	14	
JEFFERSON	4573	2	79.0	31	-3.1	99.	28	52.	8	.0	.0	433.0	-97.0	7.681	31	4.43	3.20	13	
LAMONT	5013	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.230	31	*****	2.20	14	
MEDFORD	5768	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.481	31	*****	2.97	13	
MORRISON	6065	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.651	31	*****	1.66	14	
MUTUAL	6139	2	77.5	31	-3.5	105.	6	53.	8	.0	.0	387.0	-109.0	3.432	31	1.23	1.22	29	
NEWKIRK	6278	2	78.4	31	-2.7	99.	28	51.	8	.0	.0	415.5	-83.5	5.911	31	2.41	1.48	29	
ORIENTA	6751	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.560	29	*****	3.11	14	
PERRY	7012	2	77.6	31	-4.5	99.	6	59.	8	.0	.0	392.0	-138.0	4.211	31	.88	2.24	14	
PONCA CITY FAA	7201	2	79.3	31	-1.6	100.	5	53.	8	.0	.0	442.5	-50.5	4.941	31	1.58	1.84	14	
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.251	31	2.31	2.88	14	
RENFROW	7556	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.471	31	4.59	3.10	14	
WAYNOKA	9404	2	77.6	31	-4.5	100.	5	52.	8	.5	.5	390.0	-140.0	5.960	31	3.26	1.78	14	
WOODWARD	9760	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.051	31	*****	1.62	7	

AUGUST 1989 SUMMARY FOR NORTHEAST DIVISION (CD3)

NAME	ID	CD	DEV				HEAT		DEV		COOL		DEV		TOT	NUM	OBS	FROM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	DEG	DAY	FROM	NORM	DEG	DAY	FROM	NORM							
BARNSDALL	535	3	77.6	31	*****	98.	5	49.	8	.0	*****	389.5	*****	11.000	31	7.83	3.80	20			
BARTLESVILLE ZW	548	3	79.0	31	-1.6	98.	24	50.	8	.0	.0	432.5	-51.5	3.771	31	.75	2.10	20			
BIXBY	782	3	78.3	31	-2.0	98.	6	51.	8	.0	.0	413.5	-60.5	4.891	31	2.10	4.20	20			
BURBANK	1256	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.043	31	*****	1.94	5			
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.890	31	*****	.86	20			
CLAREMORE	1828	3	78.3	31	-2.0	97.	6	52.	9	.0	.0	411.5	-62.5	5.513	31	2.60	1.42	6			
CLEVELAND 5 WSW	1902	3	78.7	31	*****	97.	28	52.	8	.0	*****	423.5	*****	5.082	31	*****	2.18	14			
FORAKER	3250	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.971	31	1.46	2.47	20			
HOLLOW	4258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.720	31	1.42	3.21	20			
HOMINY	4289	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.322	31	4.29	3.46	20			
HULAH DAM	4393	3	76.4	29	*****	103.	28	49.	8	3.0	*****	333.0	*****	6.762	25	*****	3.53	20			
JAY TOWER	4567	3	76.9	31	*****	94.	29	48.	8	3.0	*****	371.0	*****	2.640	31	*****	1.60	20			
KANSAS 1 ESE	4672	3	76.7	31	*****	94.	24	49.	8	2.0	*****	365.0	*****	6.713	31	*****	2.85	20			
KEYSTONE DAM	4812	3	78.2	30	*****	99.	6	51.	8	1.5	*****	397.5	*****	3.951	30	*****	2.29	20			
LENAPAH	5118	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.471	31	*****	2.50	20			
MANNFORD 6 NW	5522	3	78.5	31	*****	102.	5	49.	8	.0	*****	419.0	*****	4.961	31	1.88	1.50	13			
MIAMI	5855	3	76.1	27	*****	93.	24	50.	10	2.0	*****	302.5	*****	4.600	31	1.09	4.08	20			
NOWATA	6485	3	77.9	31	-2.9	97.	5	52.	8	.0	.0	399.5	-90.5	3.254	31	-.14	1.30	6			
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.031	31	*****	5.59	20			
PAWHUSKA	6935	3	77.6	31	-2.9	97.	5	50.	8	.0	.0	389.5	-91.5	10.441	31	7.10	3.64	20			
PAWHUSKA	6937	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.600	31	*****	3.62	20			
PAWNEE	6940	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.310	31	5.30	2.90	6			
PRYOR 6 N	7309	3	77.1	31	-3.2	97.	6	49.	9	2.5	2.5	377.0	-97.0	2.973	31	-.43	1.38	20			
QUAPAW	7358	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.321	31	-.12	1.35	20			
RALSTON	7390	3	80.0	31	*****	104.	5	52.	8	.0	*****	464.0	*****	10.130	31	7.21	2.37	6			
RAMONA 4 N	7394	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.100	31	*****	2.95	20			
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.590	31	4.73	4.53	20			
SPAVINAW	8380	3	78.9	31	*****	94.	25	54.	8	.0	*****	431.0	*****	7.012	31	3.41	2.20	1			
TULSA WSO APT	8992	3	80.6	31	-1.1	98.	24	57.	8	.0	.0	483.5	-34.5	6.692	31	3.68	5.25	20			
UPPER SPAVINAW	9101	3	82.1	31	*****	102.	5	54.	8	.0	*****	531.0	*****	7.090	31	*****	2.56	17			
VINITA 2 N	9203	3	77.6	30	-2.2	95.	5	50.	8	.0	.0	378.5	-80.5	5.400	31	1.79	3.03	20			
WAGONER	9247	3	79.6	31	-1.5	95.	31	52.	8	.0	.0	453.5	-45.5	3.434	31	.58	1.76	20			
WANN	9298	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.160	31	*****	2.67	20			
WYNONA	9792	3	81.4	31	*****	99.	28	58.	8	.0	*****	508.5	*****	8.532	31	*****	3.00	20			

AUGUST 1989 SUMMARY FOR WEST CENTRAL DIVISION (CD4)

NAME	ID	CD	DEV				HEAT		DEV		COOL		DEV		TOT	NUM	OBS	FROM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	DEG	DAY	FROM	NORM	DEG	DAY	FROM	NORM							
CANTON DAM	1445	4	76.3	31	-5.4	102.	6	51.	8	4.5	4.5	355.5	-162.5	6.301	31	4.05	1.65	13			
CLINTON	1909	4	80.5	31	-1.5	105.	5	53.	8	.0	.0	480.5	-46.5	3.620	31	.83	1.02	13			
COLONY	2039	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.900	31	*****	.74	14			
CORDELL	2125	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.492	31	1.86	2.00	7			
ELK CITY 1 E	2849	4	78.7	28	*****	101.	5	55.	9	.0	*****	383.5	*****	2.672	31	.34	.56	7			
ERICK 4 E	2944	4	78.6	31	-2.0	103.	5	56.	8	.0	.0	422.5	-61.5	3.390	31	1.27	1.39	29			
GEARY	3497	4	76.8	27	*****	96.	31	55.	9	3.0	*****	320.5	*****	3.730	31	1.54	1.20	14			
HAMMON 1 NNE	3871	4	77.3	31	-3.8	104.	5	53.	8	.0	.0	380.0	-119.0	5.754	31	3.31	2.80	6			
LEEDEY	5090	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.420	31	.84	1.07	6			
MACKIE 4 NNW	5463	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.690	31	*****	.74	7			
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.493	31	3.43	3.71	7			
OKEENE	6629	4	79.2	31	-3.3	104.	5	55.	8	.0	.0	439.5	-103.5	5.960	31	3.39	2.76	14			
RETROP	7565	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.200	31	*****	1.90	7			
REYDON	7579	4	78.5	31	*****	107.	5	52.	8	.0	*****	420.0	*****	1.652	31	-.58	1.02	7			
SAYRE	7952	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.870	31	1.82	1.20	29			
SWEETWATER 2 E	8652	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.800	31	*****	1.25	6			
TALOGA	8708	4	78.6	31	-2.1	104.	5	50.	8	.0	.0	421.5	-65.5	3.365	31	.92	.90	29			
THOMAS	8815	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.080	31	*****	1.42	13			
VICI	9172	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.112	31	*****	2.90	7			
WATONGA	9364	4	77.8	31	*****	101.	5	52.	8	.0	*****	395.5	*****	4.453	31	2.40	1.40	14			
WEATHERFORD	9422	4	78.6	31	-3.0	106.	6	52.	9	.0	.0	421.5	-93.5	2.832	31	.14	.55	14			

AUGUST 1989 SUMMARY FOR CENTRAL DIVISION (CD5)

NAME	ID	CD	DEV				MIN		HEAT		DEV		COOL		DEV		TOT	NUM	FROM	MAX	DAY
			MEAN	NUM	FROM	MAX	TEMP	DAY	TEMP	DAY	DEG	FROM	DEG	FROM	DAY	NORM					
AMBER	200	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	2.600	31	*****	1.53	14	
ARCADIA	288	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	7.970	31	*****	3.04	14	
TINKER AFB	325	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	4.284	31	*****	2.01	15	
BLANCHARD 2 SSW	830	5	79.6	31	*****	99.	5	52.	8	.0	*****	451.5	*****	*****	*****	3.263	31	*****	1.35	15	
BRISTOW	1144	5	79.3	31	-1.9	99.	5	51.	8	.0	.0	442.5	-59.5	*****	*****	3.291	31	.67	1.33	6	
CHANDLER	1684	5	78.8	31	-3.0	97.	5	52.	8	.0	.0	428.0	-93.0	*****	*****	4.940	31	2.69	1.95	14	
CHICKASHA EX ST1750	5	80.0	31	-1.2	100.	5	50.	8	.0	.0	465.0	-37.0	*****	*****	*****	*****	3.190	31	.67	2.15	14
COX CITY 1 E	2196	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	1.052	31	*****	.55	14	
CRESCENT	2242	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	4.970	31	*****	2.32	14	
CUSHING	2318	5	78.4	31	-3.0	98.	6	56.	8	.0	.0	415.0	-93.0	*****	*****	4.110	31	1.42	1.50	14	
EL RENO 1 N	2818	5	79.0	31	-2.3	97.	28	54.	8	.0	.0	433.0	-72.0	*****	*****	7.810	31	5.51	3.81	14	
GUTHRIE	3821	5	80.4	31	-1.7	101.	6	55.	8	.0	.0	476.0	-54.0	*****	*****	7.291	31	4.91	3.10	6	
HENNESSEY 2 SE	4055	5	77.4	31	-4.9	100.	31	53.	8	.0	.0	384.5	-151.5	*****	*****	7.505	31	4.81	3.38	14	
INGALLS	4489	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	7.463	31	*****	2.75	14	
KINGFISHER 2 SE	4861	5	78.5	31	-3.9	99.	5	54.	8	.0	.0	418.0	-121.0	*****	*****	8.000	31	5.61	4.46	14	
KONAWA	4915	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	8.120	31	5.66	3.36	17	
MARSHALL	5589	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	2.920	31	.17	1.99	14	
MEEKER 4 W	5779	5	78.2	31	-3.1	98.	5	50.	8	.0	.0	409.5	-95.5	*****	*****	5.221	31	2.69	3.10	15	
MULHALL	6110	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	4.800	31	*****	1.90	6	
NORMAN 3 S	6386	5	79.7	31	*****	102.	5	54.	9	.0	*****	456.5	*****	*****	*****	3.252	31	.69	2.01	14	
OILTON 2 SE	6616	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	5.120	31	*****	2.09	6	
OKEMAH	6638	5	79.8	31	-1.4	98.	24	56.	8	.0	.0	460.0	-42.0	*****	*****	2.172	31	-.43	.94	14	
OKLAHOMA CITY WS	6661	5	78.5	31	-2.6	99.	5	54.	8	.0	.0	417.0	-82.0	*****	*****	5.555	31	3.15	2.85	14	
PERKINS	7003	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	3.420	31	.81	1.41	6	
PIEDMONT	7068	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	7.580	31	*****	4.60	14	
PRAGUE	7264	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	2.820	31	.31	1.20	14	
PURCELL 5 SW	7327	5	79.2	31	-2.7	100.	5	49.	9	.0	.0	439.0	-85.0	*****	*****	3.401	31	.98	1.35	15	
SEMINOLE	8042	5	80.5	31	-2.1	98.	29	53.	9	.0	.0	480.5	-65.5	*****	*****	6.260	31	3.38	2.82	17	
SHAWNEE	8110	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	3.080	31	.18	1.40	14	
STELLA	8479	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	5.390	31	*****	2.70	15	
STILLWATER 2 W	8501	5	78.6	31	-2.4	97.	29	51.	8	.0	.0	420.5	-75.5	*****	*****	5.034	31	2.20	2.15	6	
STROUD 1 N	8563	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	5.121	31	*****	2.29	17	
TECUMSEH	8751	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	6.000	31	*****	2.75	15	
TROUSDALE	8960	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	3.450	31	*****	1.73	15	
UNION CITY 1 SE	9086	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	3.961	31	1.41	1.74	14	
WELTY 1 SSE	9479	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	2.801	31	*****	1.40	14	
WELWOKA	9575	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	*****	*****	6.880	31	4.03	2.10	16	

AUGUST 1989 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

NAME	ID	CD	DEV				HEAT		DEV	COOL		DEV	TOT	NUM	DEV					
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG			FROM	FROM	NORM	MAX		
			TEMP	OBS	NORM	TEMP	DAY	TEMP	DAY		DEG	DAY	DEG	DAY	NORM	PPT	OBS	NORM	24-HR	DAY
ASHLAND	364	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	1.684	31	*****	.60	15
BEGGS	631	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	.712	31	*****	.59	14
BOYNTON	1027	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	.670	31	*****	.40	14
CALVIN	1391	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	4.141	31	1.56	2.82	17
CHECOTAH	1711	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.001	31	-.70	1.22	1
CLAYTON 11 WNW	1858	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	4.550	31	*****	3.55	17
DEWAR 2 NE	2485	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	1.270	31	-1.34	.64	14
DUSTIN	2690	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.610	31	*****	.75	2
EUFULA	2993	6	80.1	31	*****	98.	29	57.	9	.0	*****	468.5	*****	*****	*****	1.310	31	-1.42	.45	14
HANNA	3884	6	79.4	31	*****	100.	29	51.	9	.0	*****	447.0	*****	*****	*****	1.041	31	-1.78	.57	14
HARTSHORNE	3946	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.521	31	*****	1.18	17
HASKELL	3956	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	4.590	31	2.26	3.50	20
HOLDENVILLE	4235	6	79.1	31	-2.8	97.	29	51.	9	.0	.0	438.5	-85.5	*****	*****	5.040	31	2.38	3.15	17
LAKE EUFAULA	4975	6	80.9	31	*****	101.	30	56.	8	.0	*****	493.0	*****	*****	*****	1.430	31	*****	.66	15
LYONS 2 N	5437	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	1.250	31	-1.62	.88	30
MARBLE CITY	5546	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	1.493	31	*****	1.15	30
MCALESTER FAA	5664	6	80.2	31	-1.5	99.	29	51.	9	.0	.0	470.5	-47.5	*****	*****	1.771	31	-1.48	.63	17
MCCURTAIN 1 SE	5693	6	80.9	31	*****	102.	27	53.	9	.0	*****	492.0	*****	*****	*****	1.522	31	-1.49	1.20	31
MUSKOGEE	6130	6	79.8	31	-1.7	99.	25	54.	9	.0	.0	458.0	-54.0	*****	*****	1.911	31	-1.12	.73	18
OKMULGEE W W	6670	6	78.8	29	*****	99.	29	49.	11	.0	*****	400.5	*****	*****	*****	2.590	31	-.04	.90	1
OKTAHA 2 NE	6678	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.031	31	*****	.86	1
QUINTON	7372	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	.804	31	-2.30	.49	15
SALLISAW 2 NE	7862	6	79.7	31	-1.3	101.	24	51.	9	.0	.0	454.5	-41.5	*****	*****	.501	31	-2.67	.50	1
SCIPIO	7979	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.700	31	*****	.78	17
SCRAPER	7993	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	3.700	31	*****	1.60	20
SHORT	8170	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	.591	31	*****	.49	17
STILWELL 1 NE	8506	6	77.9	31	*****	96.	24	48.	8	2.0	*****	402.5	*****	*****	*****	2.862	31	-.49	1.18	31
TAHLEQUAH	8677	6	78.4	31	-1.5	98.	24	51.	9	.0	.0	414.5	-47.5	*****	*****	4.920	31	1.86	2.14	1
WEBBERS FALLS	9445	6	79.0	31	-1.7	100.	30	52.	9	.0	.0	434.0	-53.0	*****	*****	1.490	31	-1.39	.67	1
WESTVILLE	9523	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.320	31	*****	1.06	20
WETUMKA 3 NE	9571	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	3.167	31	.75	1.10	1

AUGUST 1989 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	DEV				HEAT		DEV	COOL		DEV	TOT	NUM	DEV					
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG			FROM	FROM	NORM	MAX		
			TEMP	OBS	NORM	TEMP	DAY	TEMP	DAY		DEG	DAY	DEG	DAY	NORM	PPT	OBS	NORM	24-HR	DAY
ALTUS IRR STA	179	7	80.5	31	-2.6	101.	31	54.	8	.0	.0	479.5	-81.5	*****	*****	2.010	31	-.23	.61	6
ALTUS DAM	184	7	81.0	31	*****	104.	6	60.	9	.0	*****	494.5	*****	*****	*****	3.501	31	1.37	1.72	7
ANADARKO	224	7	78.8	22	*****	98.	5	45.	8	3.0	*****	307.0	*****	*****	*****	3.030	31	.55	1.55	13
APACHE	260	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.561	31	*****	.79	14
ALTUS AFB	447	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	3.041	30	*****	1.00	6
CARNEGIE 2 ENE	1504	7	80.6	30	-1.7	102.	5	52.	8	.0	.0	468.0	-68.0	*****	*****	3.360	30	*****	1.34	14
CHATTANOOGA	1706	7	81.4	30	-1.9	102.	31	55.	9	.0	.0	491.0	-76.0	*****	*****	.630	30	*****	.36	26
DUNCAN 12 W	2668	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.110	31	*****	.48	15
FREDERICK	3353	7	80.5	31	-4.1	102.	6	58.	9	.0	.0	479.0	-129.0	*****	*****	1.910	31	-.55	.79	7
GRANDFIELD 4 NW	3709	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.710	31	.32	1.20	3
HOBART FAA APT	4204	7	79.7	31	-2.4	102.	5	55.	9	.0	.0	455.0	-75.0	*****	*****	3.114	31	1.23	1.33	6
HOLLIS	4249	7	80.6	31	-2.8	104.	5	57.	9	.0	.0	485.0	-85.0	*****	*****	3.653	31	1.62	2.00	21
LAWTON	5063	7	81.1	26	*****	102.	23	55.	8	.0	*****	419.5	*****	*****	*****	2.620	31	.47	.90	1
FORT SILL	5068	7	79.9	31	*****	99.	31	57.	9	.0	*****	462.5	*****	*****	*****	2.155	31	.01	.67	2
LOOKEBA 2 ENE	5329	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	4.140	26	*****	1.23	8
MANGUM RES STA	5509	7	78.1	31	-4.5	105.	5	54.	7	.0	.0	407.0	-139.0	*****	*****	1.781	31	-.27	.39	7
RANDLETT 9 E	7403	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.040	31	*****	1.06	7
ROOSEVELT	7727	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	3.670	31	1.53	1.80	7
SEDAN	8016	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.980	31	*****	1.28	6
SNYDER	8299	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	2.851	31	.64	1.26	7
VINSON 3 WNW	9212	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	1.800	31	-.46	.55	7
WALTERS	9278	7	81.2	31	-2.5	101.	30	54.	8	.0	.0	501.0	-79.0	*****	*****	2.750	31	.18	.76	2
WICHITA MT WLR	9629	7	78.9	31	-2.6	102.	1	50.	9	1.5	1.5	433.0	-79.0	*****	*****	2.441	31	.40	.80	7
WILLOW	9668	7	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	*****	5.571	31	*****	3.52	7

AUGUST 1989 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

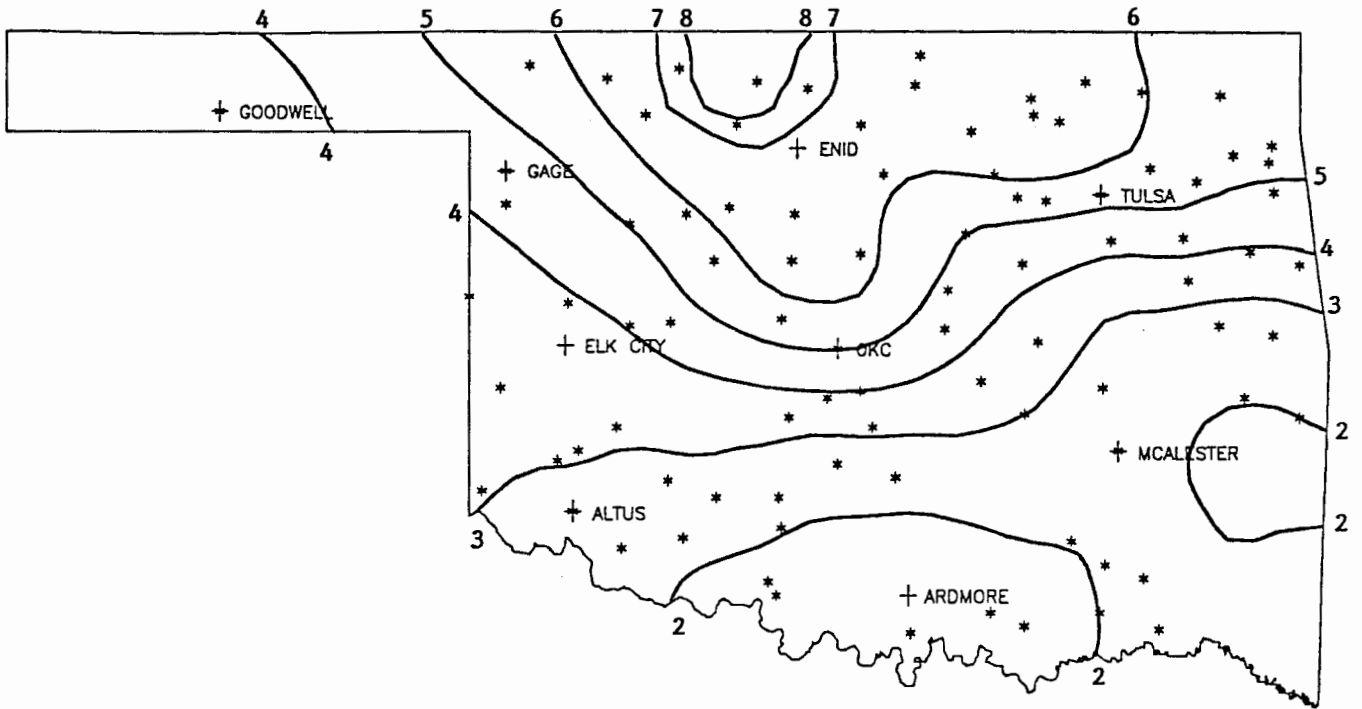
NAME	ID	CD	DEV						HEAT		DEV		COOL		DEV		TOT	PPT	OBS	NORM	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DAY	DEG	FROM	DEG	FROM	DEG	FROM	DEG	FROM						
ADA	17	8	79.3	31	-2.4	97.	30	51.	8	.0	.0	444.0	-74.0	11.130	31	8.04	6.42	17				
ALLEN	147	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.450	25	*****	10.25	16				
ARDMORE	292	8	80.1	31	-3.9	98.	29	55.	8	.0	.0	467.5	-121.5	2.660	31	.13	1.95	16				
ATOKA DAM	394	8	81.0	31	*****	102.	30	55.	9	.0	*****	497.0	*****	1.350	31	*****	.46	18				
BOKCHITO	917	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.500	31	*****	2.25	18				
CANEY	1437	8	79.8	26	*****	99.	29	55.	9	.0	*****	383.5	*****	1.400	26	*****	.90	19				
CENTRAHOMA	1648	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.770	31	*****	1.80	17				
CHICKASAW NRA	1745	8	79.0	31	*****	98.	30	49.	8	2.5	*****	437.5	*****	.910	31	*****	.44	14				
COLEMAN	2011	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.470	31	*****	.27	17				
COMANCHE	2054	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.750	31	*****	.71	15				
DAISY 4 ENE	2354	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.050	31	-1.46	.80	18				
DUNCAN	2660	8	79.7	31	-3.3	99.	6	56.	9	.0	.0	454.5	-103.5	1.820	31	-.53	.64	15				
DURANT USDA	2678	8	78.8	31	*****	99.	24	56.	10	.0	*****	429.0	*****	1.860	31	-.61	1.15	17				
ELMORE CITY	2872	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.303	31	*****	.60	14				
FARRIS 3 WNW	3083	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.350	31	*****	.83	18				
GRADY	3688	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.110	31	*****	.47	14				
HENNEPIN	4052	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.892	31	*****	1.82	30				
KETCHUM RANCH	4780	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.034	31	*****	.72	14				
KINGSTON	4865	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.830	31	-1.66	.43	14				
LEHIGH	5108	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.822	31	*****	.80	15				
LINDSAY 2 W	5216	8	80.5	31	*****	100.	23	49.	8	.0	*****	480.0	*****	.554	31	-1.76	.29	15				
LOCO 6 SE	5247	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.180	31	*****	.92	14				
MADILL	5468	8	80.6	31	-2.5	99.	29	53.	9	.0	.0	482.5	-78.5	.672	31	-1.76	.43	14				
MARLETTA	5563	8	81.0	31	-1.9	100.	31	55.	8	.0	.0	496.5	-58.5	1.651	31	-.93	.58	17				
MARLOW 1 WSW	5581	8	80.5	31	*****	102.	29	48.	8	.0	*****	479.0	*****	3.560	31	1.14	1.41	15				
MCGEE CREEK DAM	5713	8	79.8	31	*****	99.	30	54.	9	.0	*****	459.5	*****	2.790	31	*****	1.70	19				
PAULS VALLEY	6926	8	79.7	31	-3.4	100.	29	50.	8	.0	.0	455.5	-105.5	1.352	31	-.97	.55	14				
PONTOTOC	7214	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.400	31	.69	1.90	17				
TISHOMINGO NWLR	8884	8	80.4	29	*****	100.	24	51.	8	.0	*****	447.0	*****	.880	31	-1.64	.37	14				
TUSSY	9032	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.480	31	*****	.86	14				
WAURIKA	9395	8	82.0	31	-1.8	104.	29	55.	8	.0	.0	528.0	-55.0	.570	31	-1.98	.39	7				
WAURIKA DAM	9399	8	81.0	31	*****	102.	30	56.	9	.0	*****	496.0	*****	1.165	31	*****	.34	14				

AUGUST 1989 SUMMARY FOR SOUTHEAST DIVISION (CD9)

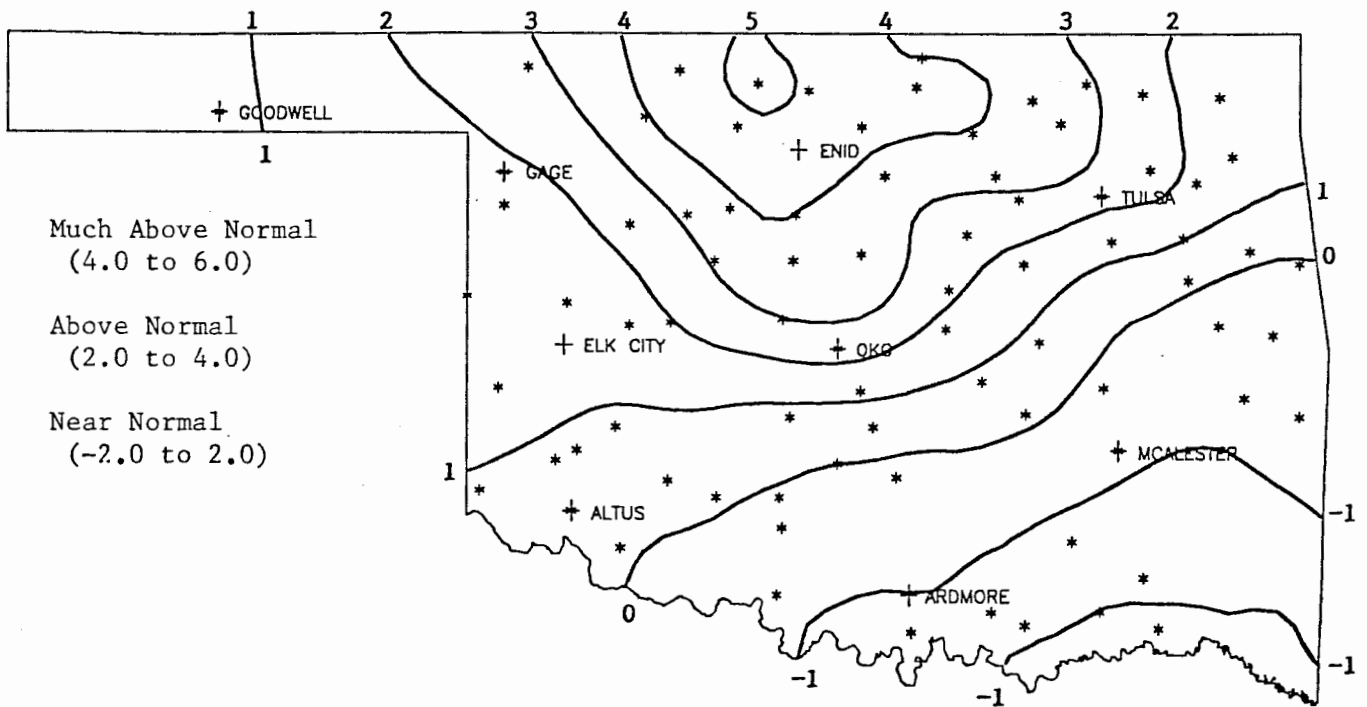
NAME	ID	CD	DEV						HEAT		DEV		COOL		DEV		TOT	PPT	OBS	NORM	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DAY	DEG	FROM	DEG	FROM	DEG	FROM	DEG	FROM						
ANTILERS	256	9	79.8	31	-1.3	98.	29	53.	9	.0	.0	459.5	-39.5	1.010	31	-2.22	.83	17				
BATTIEST 1 SSW	567	9	77.0	31	*****	96.	29	49.	9	.0	*****	373.5	*****	3.853	31	*****	2.52	16				
BEAR MT TWR	584	9	78.7	31	*****	99.	29	53.	9	.0	*****	424.0	*****	2.690	28	*****	2.11	17				
BENGAL	670	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.300	31	*****	.68	1				
BOSWELL 4 NNW	980	9	79.6	31	*****	100.	29	52.	9	.0	*****	451.5	*****	1.640	31	-1.04	1.44	31				
BROKEN BOW 1 N	1162	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.910	31	-.05	1.49	17				
BROKEN BOW DAM	1168	9	78.0	31	*****	97.	29	53.	9	.0	*****	404.5	*****	3.670	31	*****	2.41	7				
CARNASAW TWR	1499	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.760	31	-1.34	.60	7				
CARTER TWR	1544	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.140	31	-.53	1.70	17				
FANSHAW	3065	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.420	31	-2.65	.30	1				
FLAGPOLE TWR	3169	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.830	31	*****	.35	14				
HEAVENER 1 SE	4008	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.180	31	-2.17	.80	7				
HEE MT TWR	4017	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.553	31	*****	.24	15				
HUGO	4384	9	79.9	31	-2.3	97.	29	56.	9	.0	.0	462.5	-70.5	3.311	31	-.13	1.50	17				
HOUEAU W W	7254	9	79.3	31	*****	100.	28	52.	8	.0	*****	443.5	*****	.940	31	*****	.54	29				
SMITHVILLE 1 W	8285	9	76.6	31	*****	97.	29	49.	9	.0	*****	360.5	*****	.283	31	*****	.20	14				
SOBAL TOWER	8305	9	72.3	24	*****	95.	31	53.	11	18.5	*****	194.5	*****	3.560	31	.20	1.97	16				
SPIRO	8416	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.221	31	-.38	.74	26				
TUSKAHOMA	9023	9	79.6	31	*****	102.	29	50.	9	.0	*****	453.5	*****	1.301	31	*****	.57	31				
VALLIANT 3 W	9118	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.450	31	-.31	.91	18				
WILBURTON 9 ENE	9634	9	80.0	22	*****	101.	29	52.	13	.0	*****	329.0	*****	.452	22	*****	.35	14				

AUGUST 1989 CLIMATE DIVISION SUMMARY

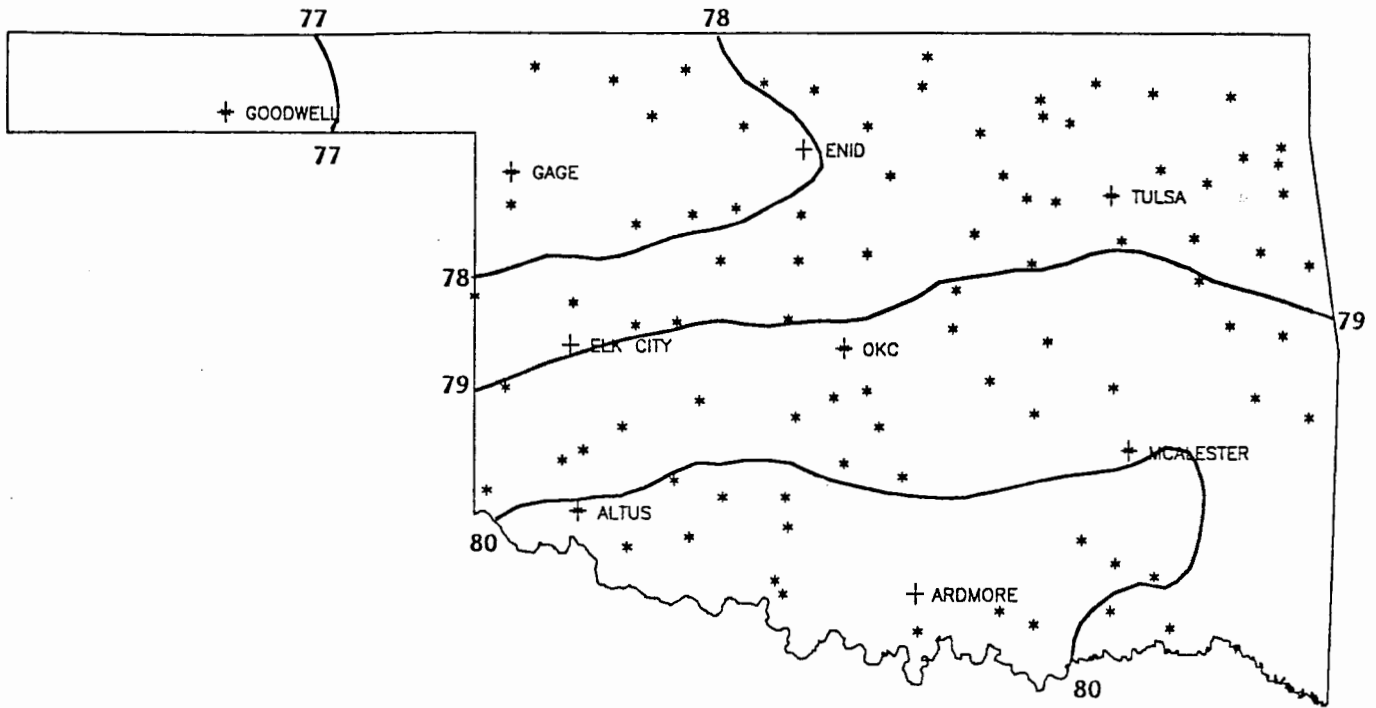
CLIMATE DIV	MEAN TEMP	NUM STA	DEV		MIN		HEAT DEGREE		DEV	COOL		DEV	TOT	NUM	DEV	
			FROM NORM	MAX	DAY	TEMP	DAY	DAYS	FROM NORM	DEGREE	FROM NORM	PPT	STA	FROM NORM	MAX	24-HR
1	76.3	11	-2.3	106.0	5	51.0	12	.2	.2	350.5	-70.3	3.40	15	.82	3.10	30
2	78.1	13	-3.7	105.0	6	50.0	8	.7	.7	406.1	-112.6	6.47	23	3.52	4.81	14
3	78.7	19	-1.8	104.0	5	48.0	8	.5	.5	423.1	-56.9	5.96	32	2.78	5.59	20
4	78.4	9	-3.1	107.0	5	50.0	8	.5	.5	415.2	-97.0	4.04	21	1.68	3.71	7
5	79.1	16	-2.5	102.0	5	49.0	9	.0	.0	437.3	-78.1	4.87	37	2.29	4.60	14
6	79.6	11	-1.5	102.0	27	48.0	8	.2	.2	452.1	-46.3	2.23	31	-.61	3.55	17
7	80.2	11	-2.6	105.0	5	45.0	8	.1	.1	468.7	-84.6	2.76	20	.53	3.52	7
8	80.2	14	-2.9	104.0	29	48.0	8	.2	.2	471.9	-88.8	2.06	30	-.53	10.25	16
9	78.7	9	-2.7	102.0	29	49.0	9	.0	.0	425.9	-82.4	1.91	19	-1.25	2.52	16



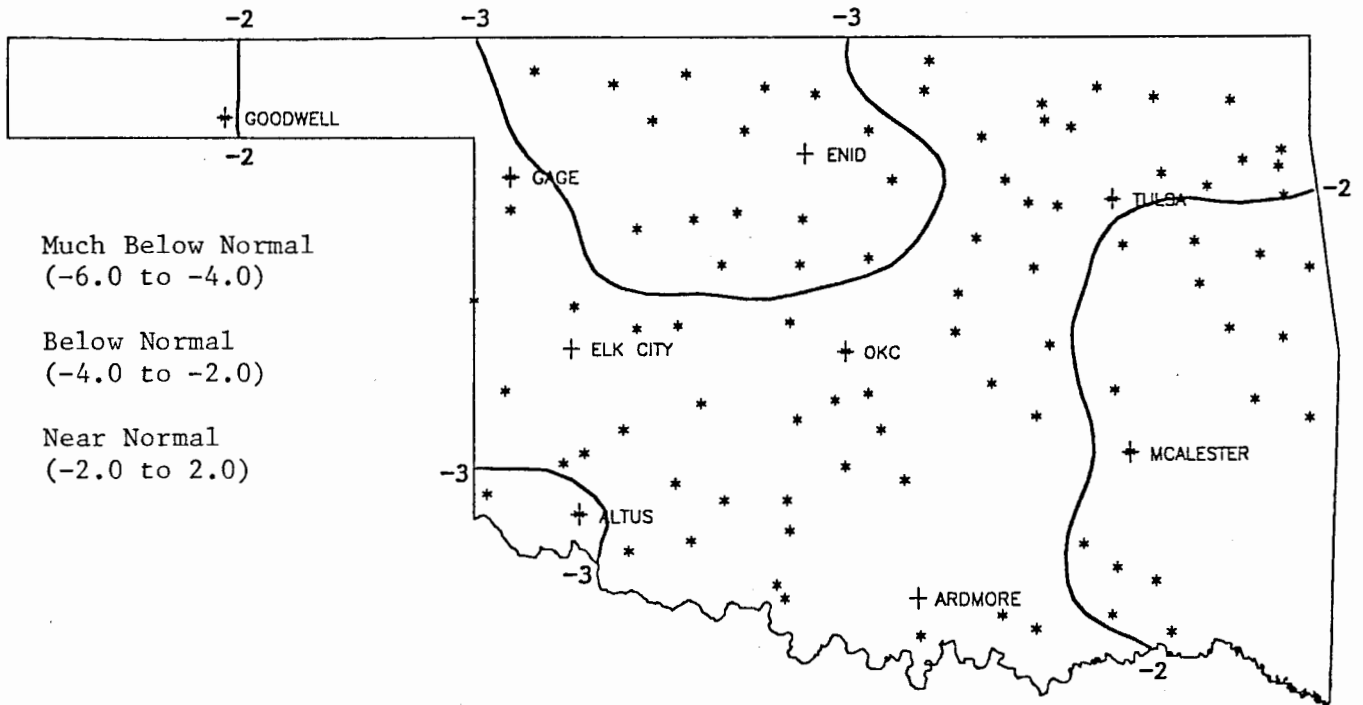
AUGUST 1989 TOTAL PRECIPITATION
(Inches)



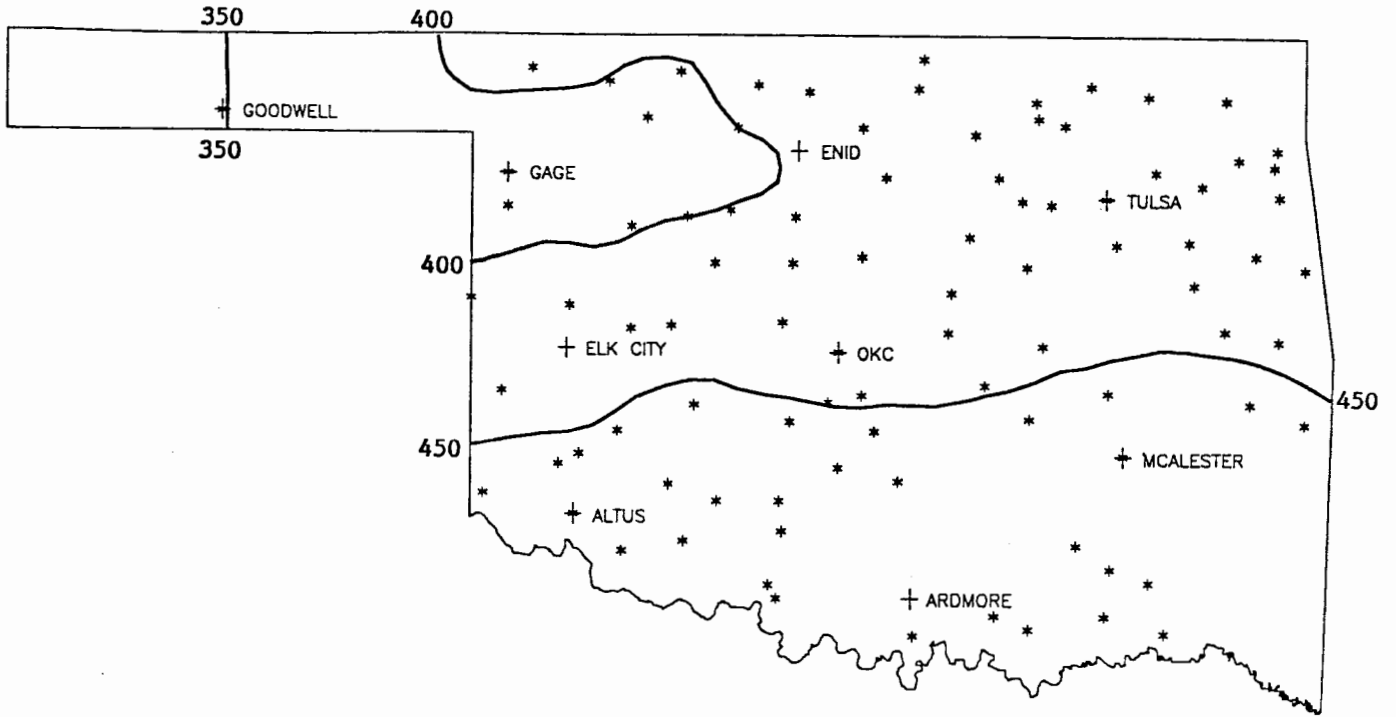
AUGUST 1989 DEVIATION FROM NORMAL PRECIPITATION
(Inches)



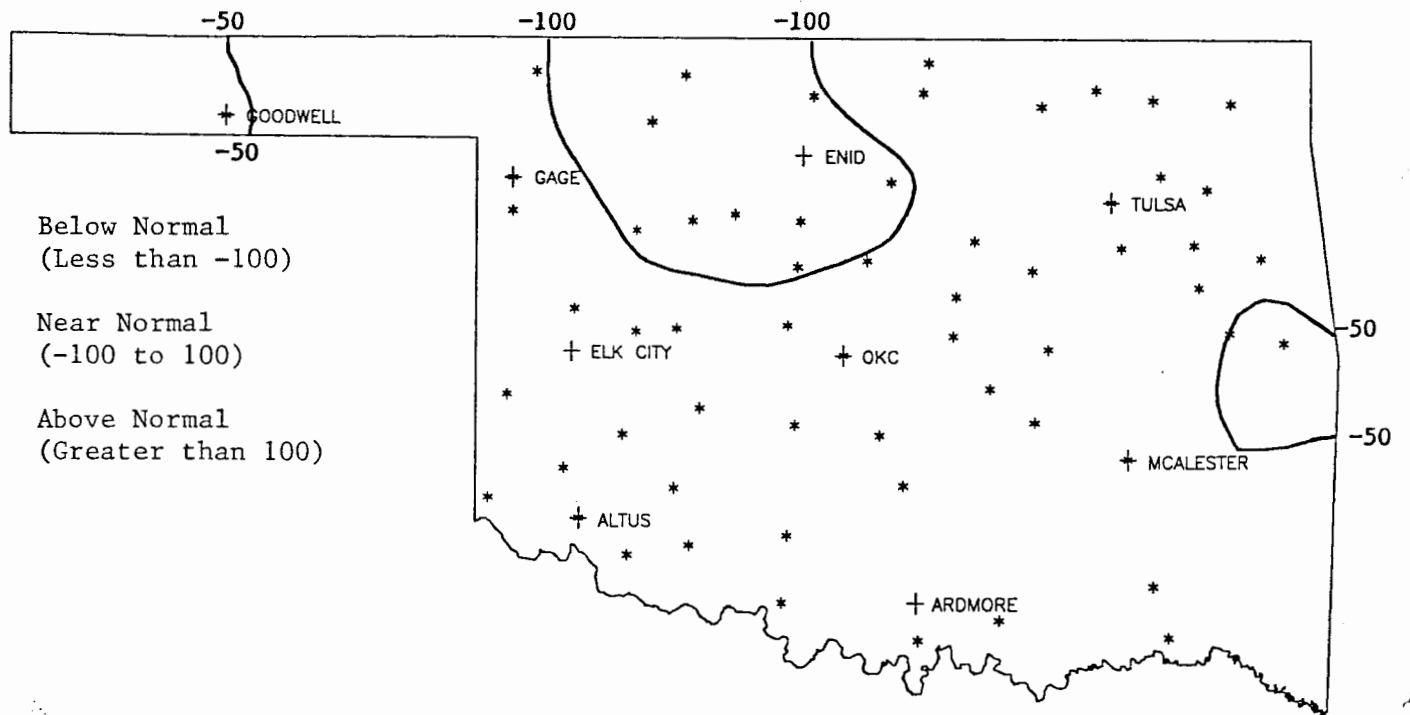
AUGUST 1989 AVERAGE MONTHLY TEMPERATURES
(Degrees F)



AUGUST 1989 DEVIATION FROM NORMAL TEMPERATURES
(Degrees F)

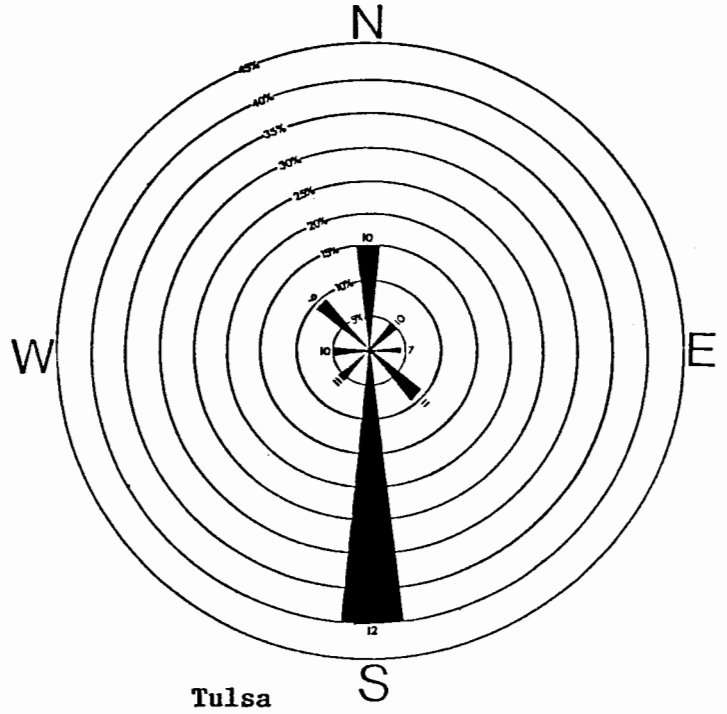
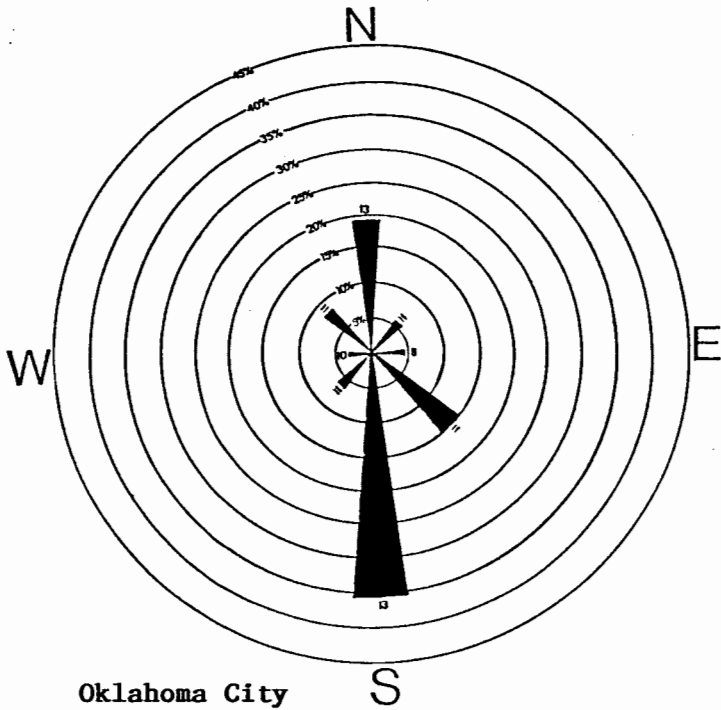


AUGUST 1989 COOLING DEGREE DAYS



AUGUST 1989 DEVIATION FROM NORMAL COOLING DEGREE DAYS

October wind roses for Oklahoma City and Tulsa for 10-year (1965-1974) mean winds (data adapted from NOAA Airport Climatology Series). Percents represent the percentage for winds coming from a direction. The numbers at the end of the bars indicate the average speed (miles per hour) of winds from that direction.



OCTOBER 1989 SUNRISE AND SUNSET *

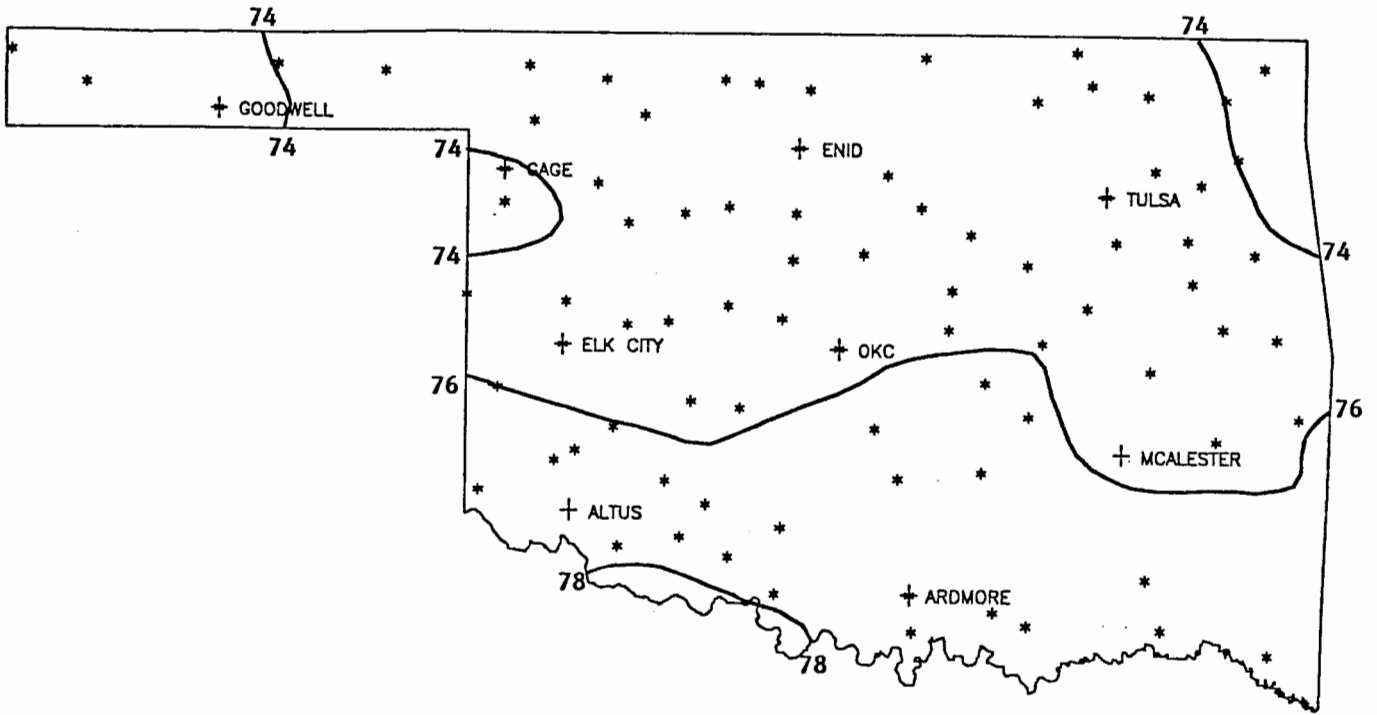
Oklahoma City

DATE	SUNRISE	SUNSET	DAYLIGHT
891001	7:24AM	7:16PM LT	11:52
891002	7:24AM	7:14PM LT	11:50
891003	7:25AM	7:13PM LT	11:48
891004	7:26AM	7:11PM LT	11:46
891005	7:27AM	7:10PM LT	11:43
891006	7:28AM	7: 9PM LT	11:41
891007	7:28AM	7: 7PM LT	11:39
891008	7:29AM	7: 6PM LT	11:37
891009	7:30AM	7: 5PM LT	11:35
891010	7:31AM	7: 3PM LT	11:32
891011	7:32AM	7: 2PM LT	11:30
891012	7:32AM	7: 1PM LT	11:28
891013	7:33AM	6:59PM LT	11:26
891014	7:34AM	6:58PM LT	11:24
891015	7:35AM	6:57PM LT	11:22
891016	7:36AM	6:55PM LT	11:19
891017	7:37AM	6:54PM LT	11:17
891018	7:38AM	6:53PM LT	11:15
891019	7:39AM	6:52PM LT	11:13
891020	7:39AM	6:50PM LT	11:11
891021	7:40AM	6:49PM LT	11: 9
891022	7:41AM	6:48PM LT	11: 7
891023	7:42AM	6:47PM LT	11: 5
891024	7:43AM	6:46PM LT	11: 3
891025	7:44AM	6:45PM LT	11: 1
891026	7:45AM	6:44PM LT	10:59
891027	7:46AM	6:43PM LT	10:57
891028	7:47AM	6:42PM LT	10:55
891029	7:48AM	6:40PM LT	10:53
891030	7:49AM	6:39PM LT	10:51
891031	7:50AM	6:38PM LT	10:49

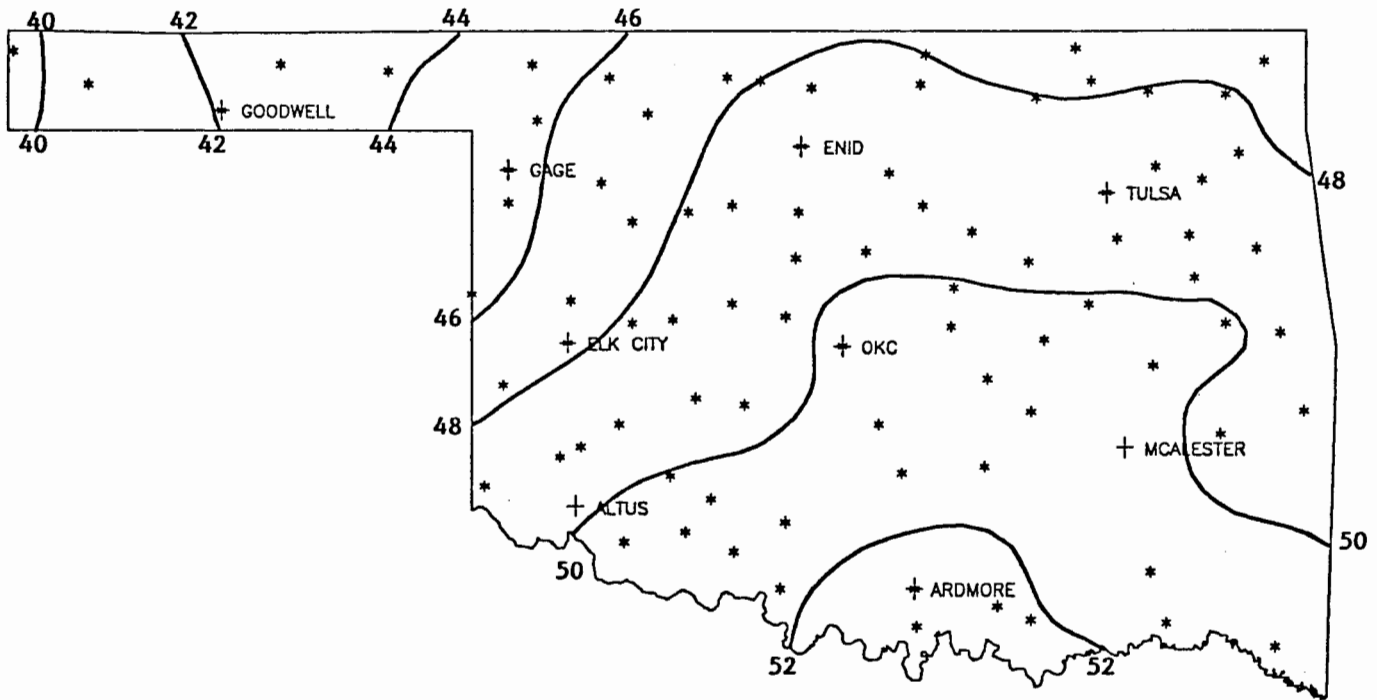
Tulsa

DATE	SUNRISE	SUNSET	DAYLIGHT
891001	7:17AM	7: 9PM LT	11:52
891002	7:18AM	7: 7PM LT	11:49
891003	7:19AM	7: 6PM LT	11:47
891004	7:19AM	7: 4PM LT	11:45
891005	7:20AM	7: 3PM LT	11:43
891006	7:21AM	7: 1PM LT	11:40
891007	7:22AM	7: 0PM LT	11:38
891008	7:23AM	6:59PM LT	11:36
891009	7:24AM	6:57PM LT	11:34
891010	7:24AM	6:56PM LT	11:31
891011	7:25AM	6:55PM LT	11:29
891012	7:26AM	6:53PM LT	11:27
891013	7:27AM	6:52PM LT	11:25
891014	7:28AM	6:51PM LT	11:23
891015	7:29AM	6:49PM LT	11:20
891016	7:30AM	6:48PM LT	11:18
891017	7:31AM	6:47PM LT	11:16
891018	7:32AM	6:45PM LT	11:14
891019	7:32AM	6:44PM LT	11:12
891020	7:33AM	6:43PM LT	11: 9
891021	7:34AM	6:42PM LT	11: 7
891022	7:35AM	6:40PM LT	11: 5
891023	7:36AM	6:39PM LT	11: 3
891024	7:37AM	6:38PM LT	11: 1
891025	7:38AM	6:37PM LT	10:59
891026	7:39AM	6:36PM LT	10:57
891027	7:40AM	6:35PM LT	10:55
891028	7:41AM	6:34PM LT	10:53
891029	7:42AM	6:33PM LT	10:51
891030	7:43AM	6:32PM LT	10:49
891031	7:44AM	6:31PM LT	10:47

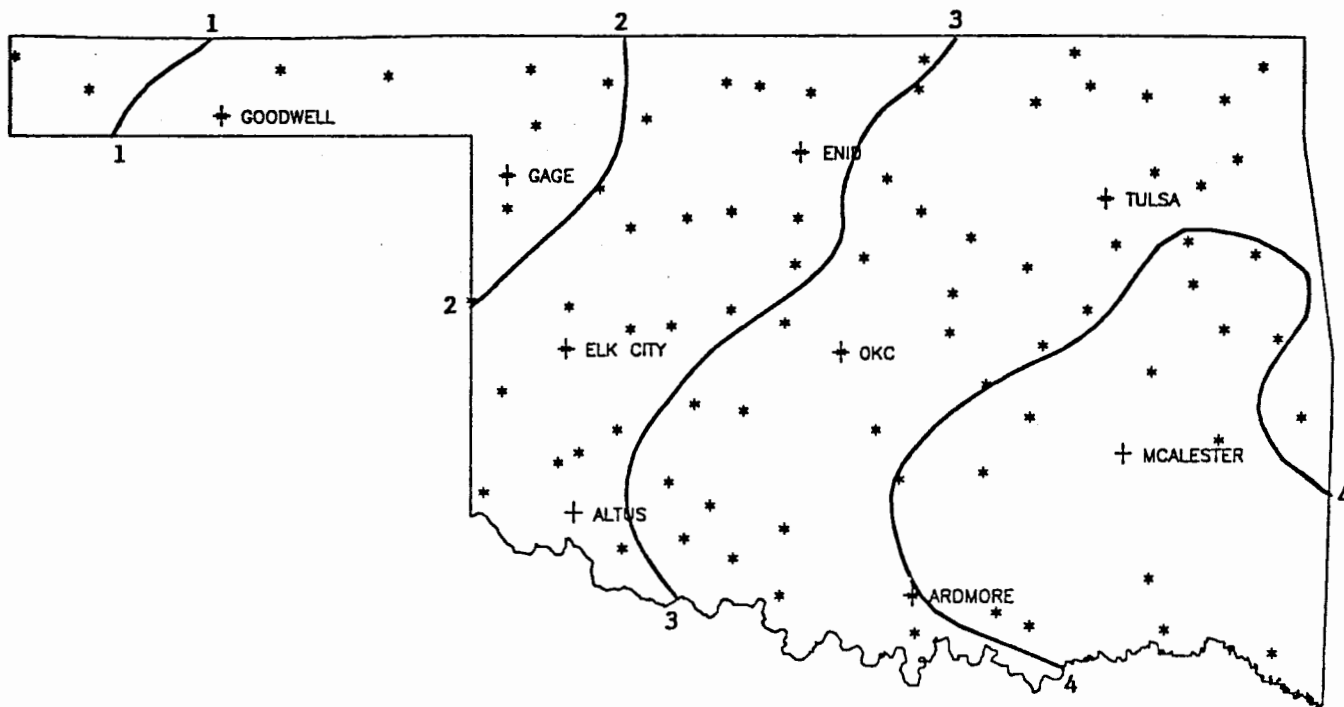
*Daylight Savings Time



30-YEAR MEAN OCTOBER DAILY MAXIMUM TEMPERATURE



30-YEAR MEAN OCTOBER DAILY MINIMUM TEMPERATURE



30-YEAR MEAN OCTOBER PRECIPITATION

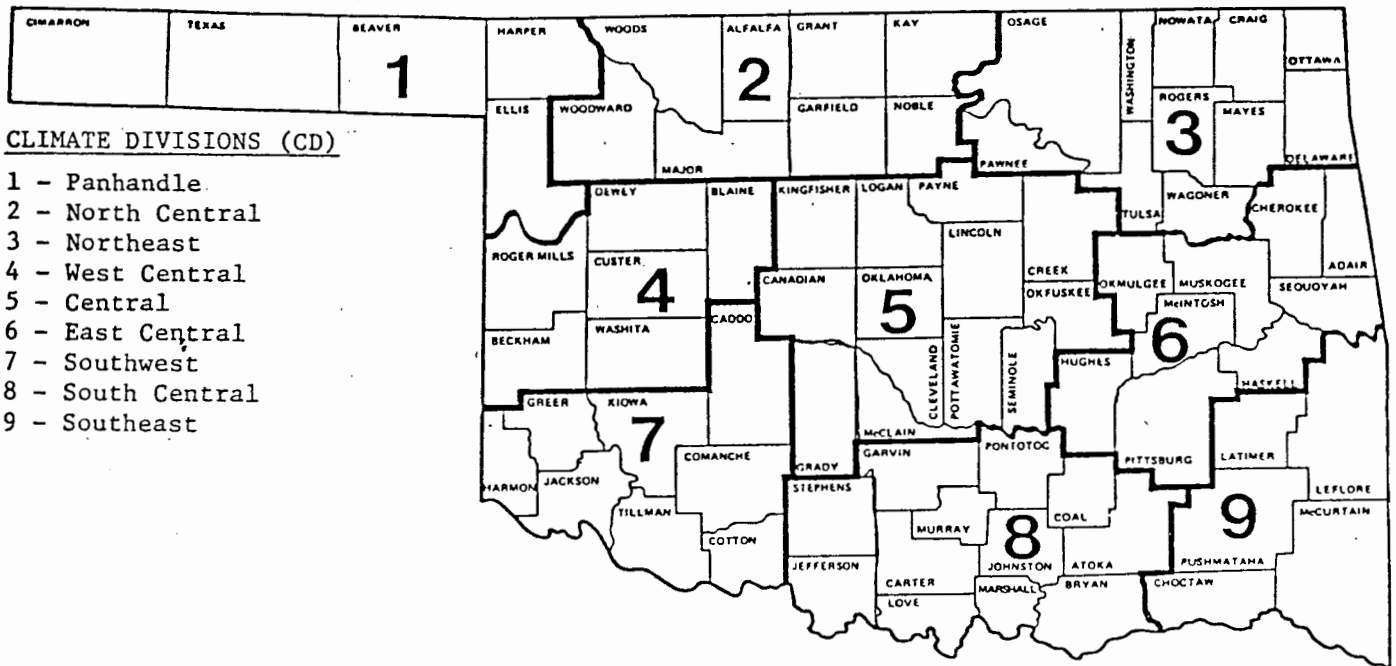
30- and 90-DAY NATIONAL WEATHER SERVICE OUTLOOK

30-DAY OUTLOOK (MID-SEPTEMBER-MID-OCTOBER)

Precipitation - Near Normal Statewide
Temperature - Near Normal Statewide

90-DAY OUTLOOK (SEPTEMBER-NOVEMBER)

Precipitation - Near Normal Statewide
Temperature - Below Normal Statewide



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 summed. 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:

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

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 summed. 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.

EXPLANATION OF MAPS

To give a Statewide perspective, a series of maps is produced each month from the information contained in the station tables. Each map is calculated using between 50 and 200 observations. Only stations with complete monthly records are used. Each observation is put into one of three categories and assigned a plus (+), minus (-), or a dot (.). The minus is the lowest numeric category, the dot is the middle and the plus the highest numeric category. If a map location has no report, a value is estimated. Each map is accompanied by its own legend. The categories will vary from month to month throughout the year. The categories for the deviations from normal maps will always remain constant. This is to facilitate comparisons between months and across years.

