

# OKLAHOMA MONTHLY SUMMARY SEPTEMBER 1991

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## SEPTEMBER 1991 OKLAHOMA SUMMARY

Heavy rainfall at the beginning and middle of September pushed the month to the 17th wettest September on record. Preliminary data show a state-average total of 5.23 inches, which is 1.66 inches above the 30-year mean. The heaviest rainfall occurred across southwest, central and northeastern sections of the state. Climate Divisions 5 and 7 (central and southwest) ended with over 200% of their normal September precipitation, while north central sections of the state (Climate Division 2) received only two thirds of normal precipitation, more than an inch below normal. The year-to-date stands 0.86 inch above normal with a state-average annual total of 27.01 inches.

Cloud cover associated with the rains in the first half of the month and frequent cold frontal passages later in the month kept temperatures cool. Record minimum temperatures were set near the 20th at numerous sites across the state. The state-average temperature of 70.9 degrees for September lags the 30-year normal by 2.6 degrees. This ranks the month as the 14th coolest September on record. The year-to-date still stands nearly a full degree above normal, which places it as the 24th warmest year on record.

A nearly stationary low pressure system over Texas helped draw moist air northward from the Gulf of Mexico to Oklahoma, setting up daily heavy rainfall events. The heaviest daily totals were 4.08 inches recorded at Oklahoma City on the 2nd and 4.25 inches at Lake Eufaula on the 5th. Several other stations reported daily totals in excess of three inches from the 1st through the 8th.

Skies cleared on the 9th, as high pressure built over the area and fronts retreated from the state. No measurable precipitation was reported in Oklahoma on the 10th. The clear skies also allowed temperatures to reach into the 90's across most of the state. Nowata hit the 100 degree mark on the 12th, the only such occurrence for the month. Minimum temperatures also remained high, especially in the northeast. Tulsa reported the warmest minimum temperature on four consecutive days from the 9th to 12th, and Nowata did not fall below 80 degrees on the 13th.

Heavy rains returned to the state on the 13th, with daily rainfall totals over an inch statewide. The heaviest rains were reported on the 14th and the 16th, with daily totals once again exceeding three inches. The latter event was associated with a strong cold front, which sent minimum temperatures plunging into the 40's across northern Oklahoma.

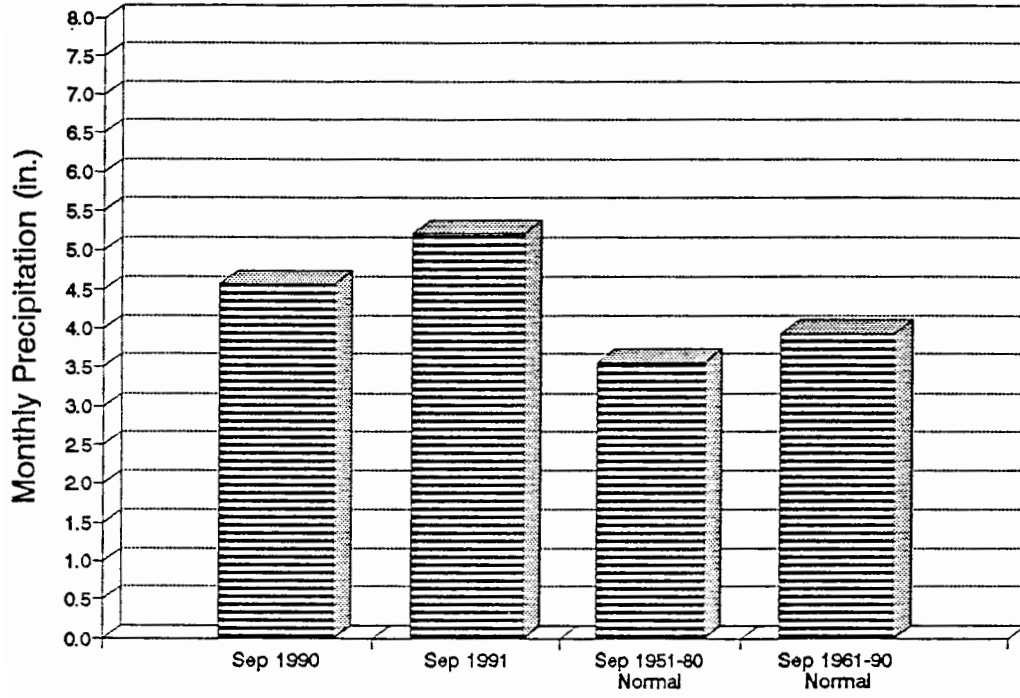
The cold air was reinforced by a much stronger front which crossed through the state on the 18th, bringing much lower temperatures deep into Texas and bringing the year's first significant snowfall to portions of the Rocky Mountains. In Oklahoma, maximum temperatures were held to the 50's and 60's and minimum temperatures dropped into the 30's and 40's across all parts of the state. Jefferson reported a minimum temperature of 30 degrees on the 19th, the month's coldest temperature. Most reporting stations showed maximum temperatures below 70 degrees on the 20th.

Much of the state remained under the influence of the cool air for the remainder of the month. Cold fronts continued to cross Oklahoma, bringing heavy rains to south central parts of the state from the 22nd to the 25th. The fronts also held daily maximum temperatures to the 60's and 70's through the 24th.

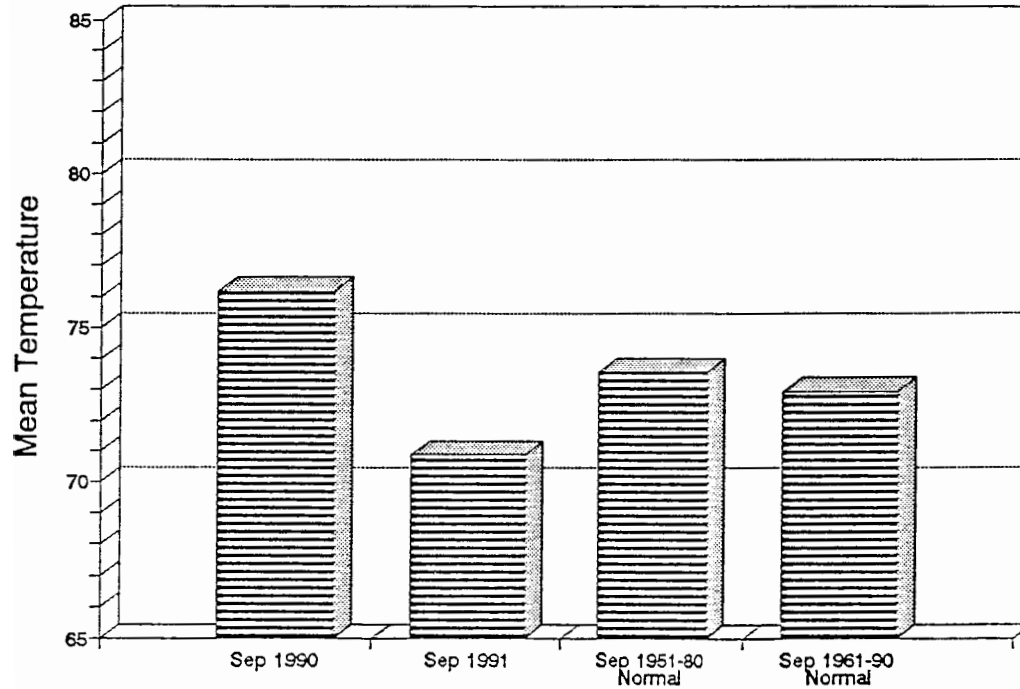
High pressure dominated the state after the 24th, bringing abundant sunshine and warming afternoon temperatures to the 80's. Buffalo reached 92 degrees on the 28th, the first 90-degree reading in Oklahoma since the 16th. However, the clear, dry conditions allowed minimum temperatures to fall to the 40's and 50's through the remainder of the month.

- Mark A. Shafer

### Comparison of Monthly Precipitation Statewide Average for Oklahoma



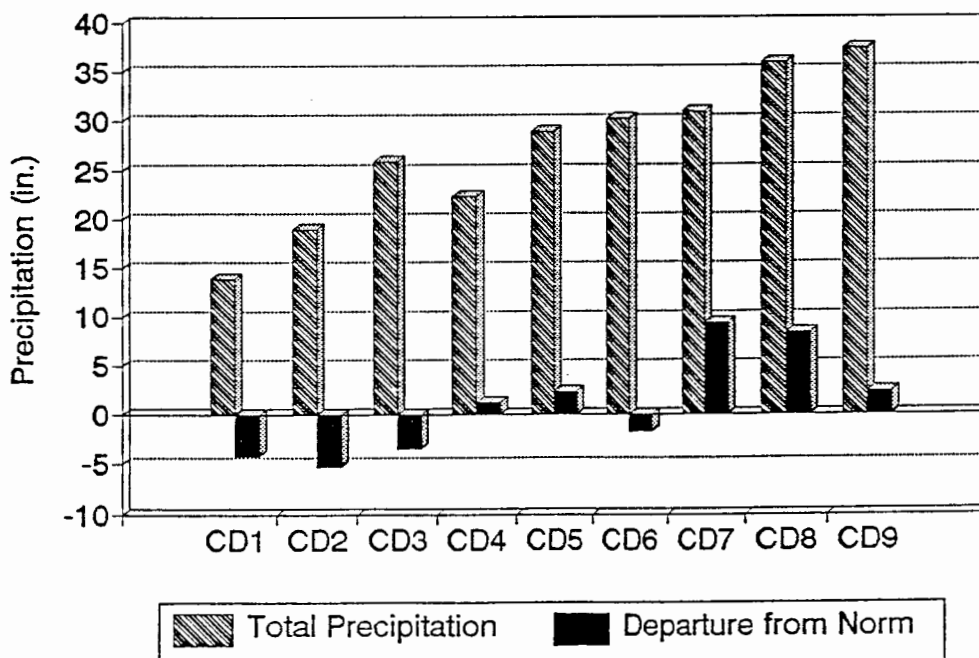
### Comparison of Monthly Temperature Statewide Average for Oklahoma



EXTREME VALUES OF TEMPERATURE AND PRECIPITATION IN EACH CLIMATE DIVISION  
SEPTEMBER, 1991

CD	MAX TEMP	DATE	LOCATION	MIN TEMP	DATE	LOCATION	MONTHLY PRECIP	LOCATION	24-HOUR PRECIP	DATE	LOCATION
1	95	11	BUFFALO	36	19	BUFFALO	3.34	ARNETT	1.97	4	GAGE
	95	9	GOODWELL								
2	96	11	JEFFERSON	30	19	JEFFERSON	4.73	MUTUAL	1.97	1	MUTUAL
3	97	9	MANNFORD	38	25	MANNFORD	9.06	ONETA	3.30	16	HOMINY
				38	19	RALSTON					
4	95	11	CLINTON	39	26	HAMMON	7.92	CLINTON	3.70	16	CLINTON
5	95	9	NORMAN	41	26	BRISTOW	11.85	OKLAHOMA CITY	4.08	2	OKLAHOMA CITY
				41	25	STILLWATER					
6	95	14	LAKE EUFAULA	38	20	STILWELL	11.62	EUFAULA	4.25	5	EUFAULA
	95	15	MCCURTAIN								
	95	11	WEBBERS FALLS								
7	92	9	CARNEGIE	42	26	CARNEGIE	10.01	APACHE	3.08	14	LAWTON
				42	25	HOBART					
8	94	16	ADA	40	25	MARLOW	12.06	HENNEPIN	3.45	8	MARIETTA
	94	12	CANEY								
	94	11	TISHOMINGO								
	94	10	WAURIKA								
9	94	11	WILBURTON	40	27	TUSKAHOMA	7.46	POTEAU	2.15	17	HEAVENER
				40	25	WILBURTON					

## CD Averaged Precipitation Jan-Sep 1991



SEPTEMBER 1991 PERCENT OF NORMAL PRECIPITATION.

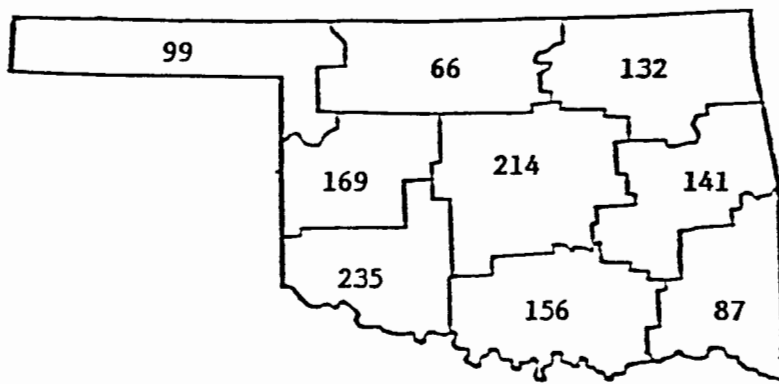


TABLE OF 1990/1991 COMPARISONS

Station	September Temperatures (F)		September Precipitations (in.)	
	1990	1991	1990	1991
Arnett	72.9	66.4	4.03	3.34
Enid	77.7	70.4	2.71	2.77
Mutual	74.6	68.3	1.97	4.73
Tulsa	78.6	73.3	4.29	6.15
Elk City	75.7	69.5	3.88	4.19
Oklahoma City	77.2	70.8	7.28	11.85
McAlester	77.3	72.6	5.00	5.45
Altus Irr Sta	77.2	70.7	1.47	4.59
Durant	77.5	72.6	7.35	3.67
Ada	77.2	70.8	6.91	7.67
Antlers	77.3	73.2	7.48	1.32

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (F)	Jefferson	2	30	19
Maximum temperature (F)	Nowata	3	100	12
	Bear Mt Tw	9	100	2
Maximum 24-hour precipitation	Eufaula	6	4.25"	5

SEPTEMBER 1991 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	DEV						HEAT DEG	DEV FROM	COOL DEG	DEV FROM	TOT PPT	NUM OBS	DEV			
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	DAY							FROM NORM	MAX	24-HR	DAY
ARNETT	332	1	66.4	30	-4.5	88.	4	40.	26	90.0	59.0	132.5	-75.5	3.343	30	1.43	1.42	4
BEAVER	593	1	69.7	30	-1.2	96.	9	35.	21	66.0	35.0	208.0	.0	.820	30	-.70	.70	1
BOISE CITY 2 E	908	1	66.4	30	-1.7	93.	3	38.	23	61.0	24.0	102.5	-27.5	1.800	30	.24	1.00	10
BUFFALO	1243	1	72.7	30	-.5	95.	11	36.	19	29.0	10.0	259.0	-6.0	1.910	30	-.89	1.39	3
FARGO	3070	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.761	30	-.06	.96	3
GAGE FAA APT	3407	1	70.1	29	-1.2	91.	9	37.	19	45.0	19.0	193.5	-21.5	2.794	30	1.19	1.97	4
GATE	3489	1	70.1	30	*****	94.	9	38.	19	56.5	*****	208.5	*****	.920	30	*****	.55	4
GOODWELL RES	ST3628	1	67.8	30	-1.7	95.	9	38.	23	66.5	27.5	151.0	-23.0	1.172	30	-.10	.50	6
GUYMON	3835	1	69.3	28	*****	98.	8	37.	23	53.5	*****	174.5	*****	.301	29	*****	.14	7
HOOKER	4298	1	68.4	30	-1.5	96.	8	42.	22	58.0	29.0	160.5	-15.5	.550	30	-1.07	.34	10
KENTON	4766	1	64.7	30	-4.2	94.	4	40.	28	66.5	34.5	58.5	-90.5	1.500	30	-.01	1.10	9
LAVERNE	5045	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.381	30	-1.63	.13	7
OPTIMA LAKE	6740	1	68.8	30	*****	98.	9	37.	25	68.5	*****	183.5	*****	.240	29	*****	.09	1
REGNIER	7534	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.600	30	.19	.64	10
TURPIN 4 SSE	9017	1	69.0	30	*****	97.	9	38.	19	67.0	*****	186.5	*****	.690	30	*****	.63	1

SEPTEMBER 1991 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	DEV						HEAT DEG	DEV FROM	COOL DEG	DEV FROM	TOT PPT	NUM OBS	DEV			
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	DAY							FROM NORM	MAX	24-HR	DAY
ALVA	193	2	72.0	30	*****	94.	10	37.	19	30.0	*****	240.5	*****	1.730	30	*****	.57	2
VANCE AFB	302	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.101	29	*****	.28	2
BILLINGS	755	2	70.9	30	*****	94.	12	37.	19	65.0	*****	241.5	*****	2.021	30	-2.20	.65	2
BLACKWELL 2E	818	2	71.5	30	*****	96.	10	37.	19	49.0	*****	243.5	*****	1.213	30	*****	.40	15
CEDARDALE	1620	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.545	30	*****	.99	1
CHEROKEE	1724	2	72.3	30	-1.2	94.	10	38.	19	34.0	19.0	253.5	-16.5	1.660	30	-1.01	1.11	1
ENID	2912	2	70.4	30	-3.4	92.	10	40.	19	49.0	34.0	210.5	-68.5	2.770	30	-.44	.78	1
FT SUPPLY DAM	3304	2	69.4	30	-2.8	92.	10	38.	24	67.5	42.5	201.0	-40.0	1.670	30	-.30	.61	1
FREEDOM	3358	2	70.1	30	*****	93.	12	33.	19	49.5	*****	202.5	*****	1.790	30	*****	1.21	1
GREAT SALT PLNS	3740	2	70.8	30	*****	95.	11	38.	19	60.5	*****	236.0	*****	2.051	25	*****	1.41	1
HARDY	3909	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.752	30	*****	.44	14
HELENA 1 SSE	4019	2	70.2	30	*****	92.	13	37.	19	62.0	*****	218.5	*****	1.463	30	-1.41	.81	1
JEFFERSON	4573	2	71.5	30	-2.1	96.	11	30.	19	39.5	24.5	235.5	-37.5	1.272	30	-1.86	.55	2
LAMONT	5013	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.910	30	*****	.80	4
MEDFORD	5768	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.770	30	*****	.26	6
MUTUAL	6139	2	68.3	30	-4.0	91.	12	39.	19	75.0	57.0	175.0	-62.0	4.731	30	2.25	1.97	1
NEWKIRK	6278	2	71.2	30	-1.6	94.	10	37.	19	44.0	22.0	230.5	-25.5	.897	30	-2.64	.64	15
ORIENTA	6751	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.040	31	*****	1.41	1
PERRY	7012	2	72.0	29	-2.2	93.	11	42.	19	39.5	24.5	241.5	-49.5	5.200	29	*****	1.80	18
PONCA CITY FAA	7201	2	73.1	30	.8	95.	10	39.	19	31.0	3.0	274.0	27.0	2.124	30	-1.72	1.49	15
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.080	30	-1.64	.65	1
WAYNOKA	9404	2	70.7	30	-2.7	94.	9	36.	19	45.5	29.5	216.0	-52.0	1.790	30	-.71	.36	1
WOODWARD	9760	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	.821	31	*****	.22	3

SEPTEMBER 1991 SUMMARY FOR CENTRAL DIVISION (CD5)

NAME	ID	CD	DEV							HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM											
AMBER	200	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.730	30	*****	2.06	2				
TINKER AFB	325	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.525	29	*****	1.76	16				
BLANCHARD 2 SSW	830	5	70.7	30	*****	90.	9	44.	25	41.5	*****	213.0	*****	10.543	30	*****	1.61	3				
BRISTOW	1144	5	70.6	30	-3.1	92.	10	41.	26	52.0	30.0	220.5	-62.5	6.042	30	2.04	1.20	16				
CHANDLER	1684	5	70.7	30	-3.4	92.	9	43.	25	47.0	29.0	218.5	-72.5	4.740	31	.95	1.05	4				
CHICKASHA EX ST	1750	5	70.9	30	-3.0	91.	10	45.	25	36.5	23.5	214.0	-66.0	9.880	30	6.40	1.74	2				
COX CITY 1 E	2196	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.670	30	*****	1.41	14				
CRESCENT	2242	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.020	31	*****	2.13	18				
CUSHING	2318	5	70.8	29	-2.8	93.	10	42.	21	59.0	39.0	227.5	-50.5	5.710	29	*****	.93	1				
EL RENO 1 N	2818	5	70.6	30	-2.8	91.	9	44.	25	43.0	28.0	209.5	-57.5	4.530	30	.92	1.22	19				
GUTHRIE	3821	5	72.7	29	-1.4	94.	11	43.	19	29.0	14.0	251.5	-36.5	6.571	29	*****	2.16	18				
HENNESSEY 2 SE	4055	5	71.0	30	-2.9	94.	11	41.	19	40.0	26.0	220.0	-61.0	3.630	30	.24	1.12	18				
INGALLS	4489	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.162	28	*****	1.59	1				
KINGFISHER 2 SE	4861	5	70.7	30	-3.5	92.	9	43.	25	43.0	29.0	215.0	-75.0	5.711	30	2.11	1.66	18				
KONAWA	4915	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.100	30	5.98	3.54	5				
MARSHALL	5589	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.800	31	3.29	1.36	3				
MEEKER 4 W	5779	5	71.1	29	-2.6	90.	9	42.	25	34.5	17.5	211.0	-67.0	6.570	29	*****	1.39	1				
NORMAN 3 S	6386	5	71.7	29	*****	95.	9	44.	25	28.5	*****	223.0	*****	10.120	30	6.39	3.73	16				
OILTON 2 SE	6616	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.500	30	*****	1.60	15				
OKEMAH	6638	5	72.3	30	-1.8	94.	9	45.	25	31.0	14.0	251.5	-38.5	9.360	30	5.56	3.22	4				
OKLAHOMA CTY WS	6661	5	70.8	30	-2.5	91.	9	46.	25	39.5	24.5	214.5	-49.5	11.852	30	8.44	4.08	2				
PERKINS	7003	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.240	31	2.02	1.38	18				
PIEDMONT	7068	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.870	30	*****	1.32	4				
PRAGUE	7264	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.881	29	*****	2.35	4				
PURCELL 5 SW	7327	5	71.1	30	-3.1	91.	10	42.	25	42.0	30.0	226.0	-62.0	10.871	30	6.90	2.25	16				
SEMINOLE	8042	5	72.5	30	-2.7	92.	11	44.	25	32.5	22.5	257.5	-58.5	8.310	30	4.29	3.95	16				
SHAWNEE	8110	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.870	30	4.13	2.91	16				
STELLA	8479	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.320	30	*****	3.54	16				
STILLWATER 2 W	8501	5	70.5	30	-2.6	92.	11	41.	25	61.5	43.5	227.5	-33.5	5.702	30	1.77	1.62	1				
STROUD 1 N	8563	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.242	30	*****	1.80	1				
TECUMSEH	8751	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.842	31	*****	3.00	16				
TROUSDALE	8960	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.530	30	*****	2.18	16				
UNION CITY 1 SE	9086	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.664	30	2.90	1.22	2				
WELTY 1 SSE	9479	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.982	30	*****	1.31	23				
WEWOKA	9575	5	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.080	30	4.96	2.52	4				

SEPTEMBER 1991 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 DAY	MIN TEMP										
BARNSDALL	535	3	70.3	30	*****	94.	10	40.	25	63.5	*****	222.0	*****	4.512	30	-.21	2.15	16
BARTLESVILLE 2W	548	3	71.1	30	-1.7	95.	10	39.	19	54.0	36.0	237.0	-15.0	5.811	30	1.68	2.54	16
BIXBY	782	3	69.9	30	-2.8	90.	13	42.	25	72.0	51.0	218.5	-33.5	6.680	30	2.33	1.45	4
BURBANK	1256	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.322	30	*****	.71	1
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.180	30	*****	2.57	16
CLEVELAND	1828	3	70.6	30	-2.1	92.	13	41.	20	73.5	47.5	241.0	-16.0	7.140	30	3.26	2.55	16
CLEVELAND 5 WSW	1902	3	71.7	27	*****	95.	10	40.	19	38.5	*****	220.0	*****	5.770	29	*****	2.60	16
FORAKER	3250	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.510	30	-1.57	1.09	1
HOLLOW	4258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.511	30	-2.33	.90	16
HOMINY	4289	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.331	30	1.85	3.30	16
HULAH DAM	4393	3	69.1	20	*****	96.	12	35.	23	65.0	*****	146.5	*****	.970	29	*****	.50	16
JAY TOWER	4567	3	68.9	30	*****	92.	11	40.	20	93.0	*****	211.0	*****	8.070	30	*****	3.00	4
KANSAS 1 ESE	4672	3	69.1	30	*****	89.	15	41.	25	75.0	*****	198.5	*****	5.561	30	*****	2.30	4
KEYSTONE DAM	4812	3	69.5	30	*****	93.	10	41.	25	79.5	*****	213.5	*****	4.863	27	*****	1.30	4
LENAPAH	5118	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.110	30	*****	1.03	4
MANNFORD 6 NW	5522	3	70.7	29	*****	97.	9	38.	25	54.5	*****	220.0	*****	5.020	29	*****	1.84	16
MARAMEC	5540	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.973	30	3.05	2.80	16
MIAMI	5855	3	69.6	30	-3.0	92.	1	39.	20	97.5	70.5	236.5	-18.5	3.171	30	-1.43	1.04	5
NOWATA	6485	3	72.1	27	*****	100.	12	44.	17	31.5	*****	222.5	*****	4.640	27	*****	1.95	17
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.060	30	*****	3.18	4
PAWUSKA	6935	3	70.2	30	-2.4	93.	10	40.	25	61.0	37.0	216.5	-35.5	4.540	30	.43	1.73	16
PAWNEE	6940	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.470	30	.10	1.04	18
PRYOR 6 N	7309	3	69.1	30	-3.5	91.	12	39.	20	93.5	69.5	215.0	-37.0	6.201	30	2.04	1.62	4
RALSTON	7390	3	72.1	30	*****	96.	9	38.	19	41.5	*****	255.5	*****	2.342	30	-1.52	.70	18
RAMONA 4 N	7394	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.940	30	*****	1.61	16
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.170	30	.84	2.31	16
SPAVINAW	8380	3	71.7	30	*****	91.	13	41.	25	49.0	*****	249.5	*****	5.944	30	1.56	2.75	4
TULSA WSO APT	8992	3	73.3	30	-.5	94.	10	45.	25	29.0	11.0	277.0	-5.0	6.152	30	1.78	2.16	16
UPPER SPAVINAW	9101	3	69.9	29	*****	96.	10	40.	20	79.5	*****	222.5	*****	5.604	30	*****	1.50	18
VINITA 2 N	9203	3	70.9	28	*****	93.	1	40.	27	65.5	*****	231.5	*****	5.850	28	*****	1.90	18
WAGONER	9247	3	71.3	30	-2.6	90.	13	43.	25	47.0	30.0	236.0	-48.0	7.221	30	3.13	3.10	4
WANN	9298	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.290	28	*****	1.47	16

SEPTEMBER 1991 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 DAY	MIN TEMP										
CANTON DAM	1445	4	69.0	30	-4.4	90.	12	43.	25	67.5	52.5	188.0	-79.0	3.471	30	.34	.91	16
CHEYENNE	1738	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.580	31	*****	1.18	7
CLINTON	1909	4	71.3	30	-2.3	95.	11	42.	25	38.0	22.0	228.0	-46.0	7.922	30	4.92	3.70	16
COLONY	2039	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.060	30	*****	1.15	19
CORDELL	2125	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.001	30	2.20	1.19	19
ELK CITY 1 E	2849	4	69.5	30	*****	89.	12	41.	23	48.0	*****	183.0	*****	4.193	30	1.61	1.16	7
ERICK 4 E	2944	4	69.7	30	-3.4	89.	10	42.	25	33.0	20.0	175.0	-81.0	4.742	30	1.93	1.24	7
GEARY	3497	4	69.8	27	*****	90.	9	44.	19	40.0	*****	170.5	*****	5.160	30	1.94	.95	19
HAMMON 1 NNE	3871	4	67.9	30	-4.6	90.	10	39.	26	82.0	60.0	170.0	-77.0	5.803	30	3.09	1.20	7
LEEDEY	5090	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.720	30	1.49	.84	2
MACKIE 4 NNW	5463	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.110	30	*****	1.48	7
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.893	30	2.12	1.18	19
OKEENE	6629	4	70.6	30	-3.7	92.	9	41.	19	40.0	23.0	209.0	-87.0	2.810	30	-.12	1.25	2
RETROP	7565	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.050	30	*****	1.35	18
REYDON	7579	4	70.2	30	*****	90.	10	41.	25	44.5	*****	200.0	*****	4.291	30	1.95	2.00	7
SAYRE	7952	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.370	30	.93	.77	19
SWEETWATER 2 E	8652	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.076	31	*****	1.23	19
TALOGA	8708	4	67.0	23	*****	89.	11	39.	19	55.0	*****	100.5	*****	3.310	30	.68	.60	7
THOMAS	8815	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.570	30	*****	1.46	18
VICI	9172	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.090	30	*****	1.48	1
WATONGA	9364	4	72.3	30	*****	92.	9	46.	25	25.0	*****	243.0	*****	4.804	30	1.85	1.21	1
WEATHERFORD	9422	4	69.5	30	-4.2	92.	12	44.	20	64.0	49.0	199.0	-77.0	4.302	30	1.02	1.05	19



SEPTEMBER 1991 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

NAME	ID	CD	DEV							HEAT		DEV		COOL		DEV		TOT	NUM	FROM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	PPT	OBS	NORM							
BEGGS	631	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.090	28	*****	1.22	3					
BOYNTON	1027	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.590	30	*****	2.05	4					
CALVIN	1391	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.590	30	1.27	1.32	8					
CHECOTAH	1711	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.070	30	1.61	1.37	5					
DEWAR 2 NE	2485	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.520	30	1.21	1.68	16					
EUFULA	2993	6	72.6	30	*****	92.	13	46.	25	25.5	*****	254.5	*****	11.621	30	7.42	4.25	5					
HANNA	3884	6	71.5	30	*****	92.	11	43.	25	41.0	*****	236.5	*****	6.050	30	1.89	2.49	4					
HARTSHORNE	3946	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.510	30	*****	1.42	19					
HASKELL	3956	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.671	30	2.70	1.39	16					
HOLDENVILLE	4235	6	71.4	30	-3.2	91.	11	43.	25	37.5	26.5	228.5	-70.5	7.500	30	3.50	2.13	16					
LAKE EUFAULA	4975	6	71.6	29	*****	95.	14	46.	26	49.0	*****	241.0	*****	5.330	29	*****	1.08	19					
LYONS 2 N	5437	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.531	30	1.27	1.36	16					
MARBLE CITY	5546	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.522	30	*****	2.35	4					
MCALESTER FAA	5664	6	72.6	30	-1.6	92.	13	42.	25	30.0	14.0	258.0	-34.0	5.452	30	.49	1.75	17					
MCCURTAIN 1 SE	5693	6	71.6	30	*****	95.	15	41.	27	49.0	*****	247.0	*****	3.676	30	-.78	1.25	19					
MUSKOGEE	6130	6	71.4	30	-2.8	92.	10	42.	25	48.5	31.5	240.5	-52.5	5.510	30	1.39	1.34	4					
OKMULGEE W W	6670	6	69.4	30	-4.1	92.	12	41.	25	78.0	62.0	209.0	-62.0	7.322	30	3.52	1.75	19					
OKTAHA 2 NE	6678	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.250	30	*****	1.96	16					
QUINTON	7372	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.806	30	.40	1.18	19					
SALLISAW 2 NE	7862	6	71.4	30	-2.8	93.	11	42.	25	45.5	35.5	238.0	-48.0	6.462	30	2.05	2.01	19					
SCIPIO	7979	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.720	30	*****	.82	19					
SCRAPER	7993	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.470	30	*****	.92	23					
SHORT	8170	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.600	30	*****	1.23	19					
STILWELL 1 NE	8506	6	69.4	30	*****	91.	11	38.	20	74.0	*****	205.5	*****	4.322	30	.01	1.30	16					
TAHLEQUAH	8677	6	70.3	30	-2.6	91.	12	40.	20	55.5	31.5	215.0	-46.0	6.650	30	2.31	2.01	4					
WEBBERS FALLS	9445	6	71.2	30	-2.3	95.	11	42.	26	58.5	43.5	245.0	-25.0	5.450	30	1.11	1.40	16					
WESTVILLE	9523	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.970	30	*****	2.43	16					
WETUMKA 3 NE	9571	6	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.604	30	2.58	1.73	16					

SEPTEMBER 1991 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	DEV							HEAT		DEV		COOL		DEV		TOT	NUM	FROM	MAX	24-HR	DAY
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	PPT	OBS	NORM							
ALTUS IRR STA	179	7	70.7	30	-4.7	92.	11	43.	25	39.0	32.0	209.5	-109.5	4.590	30	1.74	1.70	19					
ALTUS DAM	184	7	71.1	30	*****	94.	12	41.	26	46.5	*****	230.5	*****	3.870	30	1.13	1.47	19					
ANADARKO	224	7	70.1	30	-4.4	89.	9	43.	25	45.0	32.0	198.5	-99.5	9.120	30	5.78	2.90	2					
APACHE	260	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.010	30	*****	2.27	24					
ALTUS AFB	447	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.504	27	*****	1.92	19					
CARNEGIE 2 ENE	1504	7	70.7	30	-3.8	92.	9	42.	26	39.0	25.0	208.5	-87.5	4.191	30	.83	1.05	18					
CHATTANOOGA	1706	7	71.4	30	-4.3	91.	11	46.	25	35.0	27.0	228.5	-100.5	9.750	30	6.68	2.40	14					
DUNCAN 12 W	2668	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.120	30	*****	3.06	14					
FREDERICK	3353	7	69.7	30	-6.9	90.	10	45.	25	49.0	42.0	190.5	-164.5	5.460	30	2.46	1.78	19					
GRANDFIELD 4 NW	3709	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.780	30	5.33	2.40	4					
HOBART FAA APT	4204	7	70.3	30	-3.5	91.	11	42.	25	44.0	28.0	202.5	-77.5	5.070	30	2.20	1.05	19					
HOLLIS	4249	7	70.6	28	*****	91.	10	43.	26	34.5	*****	192.5	*****	6.160	29	*****	2.22	18					
LAWTON	5063	7	70.0	30	-5.1	91.	12	44.	25	60.0	54.0	209.5	-99.5	9.664	30	6.68	3.08	14					
FORT SILL	5068	7	70.4	30	*****	89.	11	45.	25	37.5	*****	199.0	*****	9.273	30	6.29	2.16	13					
LOOKEBA 2 ENE	5329	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.360	30	*****	1.63	19					
MANGUM RES STA	5509	7	70.7	30	-4.3	91.	11	42.	25	32.0	26.0	201.5	-101.5	2.890	30	.11	1.20	19					
RANDLETT 9 E	7403	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.340	30	*****	2.45	14					
ROOSEVELT	7727	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.750	30	.97	1.02	19					
SEDAN	8016	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.036	30	*****	.62	14					
SNYDER	8299	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.481	30	1.67	1.34	19					
VINSON 3 WNW	9212	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.331	30	5.46	2.24	2					
WALTERS	9278	7	71.4	30	-4.8	91.	10	46.	25	35.5	22.5	229.0	-120.0	9.010	30	5.75	1.83	14					
WICHITA MT WLR	9629	7	66.8	26	*****	88.	10	41.	21	84.0	*****	130.0	*****	6.800	30	3.69	1.60	2					
WILLOW	9668	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.831	31	*****	1.21	18					

SEPTEMBER 1991 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

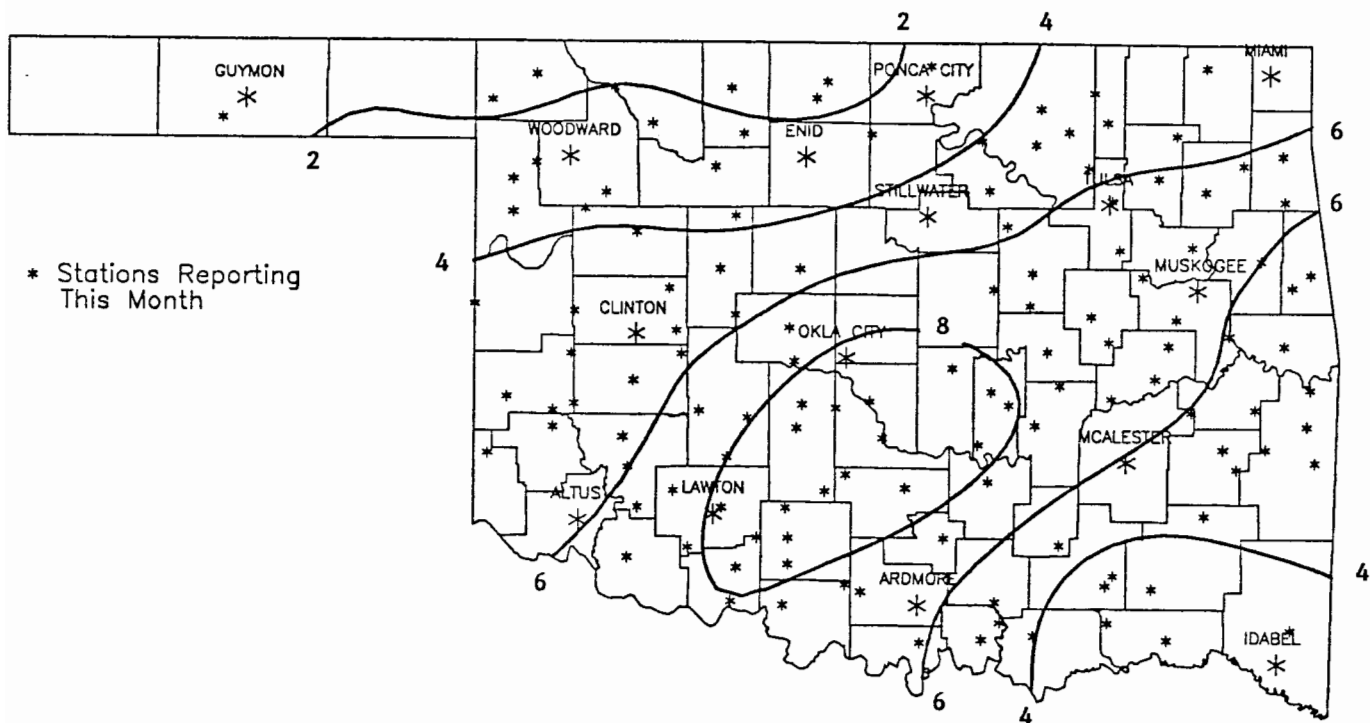
NAME	ID	CD	DEV					MIN	DAY	TEMP	DAY	HEAT DEG	DEV FROM	COOL DEG	DEV FROM	TOT PPT	NUM OBS	DEV FROM	MAX	24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	DAY														
ADA	17	8	70.9	30	-3.7	94.	16	42.	26	48.0	36.0	225.0	-75.0	7.670	30	3.66	2.96	8			
ALLEN	147	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.100	30	*****	2.20	8			
ARDMORE	292	8	72.3	29	-4.9	89.	11	45.	25	30.5	30.5	242.0	-129.0	10.270	29	*****	3.29	16			
ATOKA DAM	394	8	73.9	30	*****	94.	14	47.	27	22.5	*****	289.5	*****	3.120	27	*****	.81	8			
BOKCHITO	917	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.490	30	*****	.83	2			
CANEY	1437	8	73.0	30	*****	94.	12	48.	25	19.5	*****	260.5	*****	2.100	30	*****	.65	1			
CENTRAHOMA	1648	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.850	31	*****	2.00	17			
CHICKASAW NRA	1745	8	70.5	30	*****	90.	14	41.	25	57.5	*****	222.5	*****	8.121	30	*****	2.82	16			
COLEMAN	2011	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.750	30	*****	1.30	16			
COMANCHE	2054	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.160	30	*****	1.98	3			
DAISY 4 ENE	2354	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.696	31	-2.00	.80	15			
DUNCAN	2660	8	70.2	30	-5.5	90.	10	45.	25	50.0	42.0	206.0	-123.0	11.070	30	7.42	3.40	4			
DURANT USDA	2678	8	72.4	30	*****	93.	12	45.	27	29.0	*****	250.5	*****	3.670	30	-1.94	.90	25			
ELMORE CITY	2872	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	10.970	22	*****	2.60	3			
FARRIS 3 WNW	3083	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.600	30	*****	.76	3			
GRADY	3688	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.670	30	*****	2.60	16			
HEALDTON	4001	8	70.8	30	*****	90.	11	42.	25	43.5	*****	217.5	*****	5.861	30	1.77	1.71	16			
HENNEPIN	4052	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	12.061	30	*****	1.62	5			
KETCHUM RANCH	4780	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	9.630	30	*****	3.00	4			
KINGSTON	4865	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.370	30	-1.30	.97	17			
LEHIGH	5108	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.922	30	*****	1.10	17			
LINDSAY 2 W	5216	8	70.8	30	*****	90.	9	43.	25	39.0	*****	214.5	*****	9.488	30	5.69	1.72	5			
LOCO 6 SE	5247	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.322	30	*****	.90	16			
MADILL	5468	8	72.6	30	-3.3	91.	11	44.	30	24.0	17.0	252.5	-81.5	4.341	30	-.26	1.34	24			
MARIETTA	5563	8	73.1	30	-2.8	91.	11	46.	25	19.5	9.5	261.5	-75.5	8.470	30	4.48	3.45	8			
MARLOW 1 WSW	5581	8	71.5	30	*****	92.	10	40.	25	38.0	*****	232.0	*****	9.390	30	5.73	2.72	14			
MCGEE CREEK DAM	5713	8	72.9	30	*****	93.	13	44.	25	31.5	*****	268.5	*****	3.060	30	*****	.80	16			
PAULS VALLEY	6926	8	72.0	30	-3.6	92.	9	42.	25	30.5	21.5	240.0	-87.0	8.945	30	5.27	2.60	5			
PONTOTOC	7214	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.540	25	*****	1.94	7			
TISHOMINGO NWLR	8884	8	72.1	30	*****	94.	11	43.	25	31.0	*****	243.0	*****	5.260	30	.39	1.18	8			
TUSSY	9032	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	8.800	30	*****	1.62	25			
WAURIKA	9395	8	72.3	30	-4.2	94.	10	44.	25	27.0	21.0	245.0	-106.0	6.470	30	3.07	1.30	1			
WAURIKA DAM	9399	8	71.4	27	*****	91.	14	47.	25	30.0	*****	201.5	*****	5.912	27	*****	1.48	18			

SEPTEMBER 1991 SUMMARY FOR SOUTHEAST DIVISION (CD9)

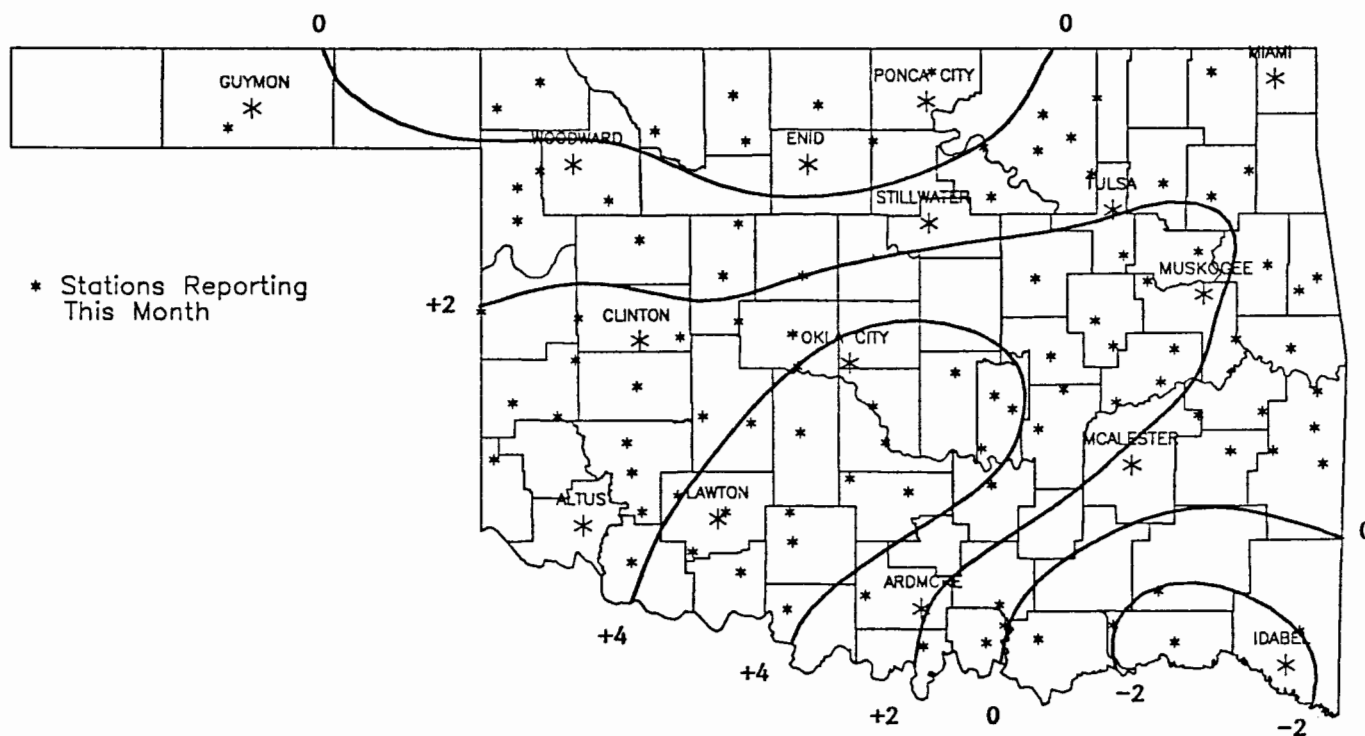
NAME	ID	CD	DEV					MIN	DAY	TEMP	DAY	HEAT DEG	DEV FROM	COOL DEG	DEV FROM	TOT PPT	NUM OBS	DEV FROM	MAX	24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	DAY														
ANTLERS	256	9	73.0	30	-1.4	92.	13	43.	27	25.0	16.0	264.0	-27.0	1.320	30	-3.95	.44	23			
BATTIEST 1 SSW	567	9	70.3	30	*****	89.	9	41.	27	45.0	*****	204.0	*****	5.640	30	*****	1.98	8			
BEAR MT TWR	584	9	74.3	19	*****	100.	2	46.	25	13.0	*****	189.5	*****	3.331	25	*****	1.09	8			
BENGAL	670	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.751	30	*****	1.20	19			
BOSWELL 4 NNW	980	9	73.2	30	*****	93.	11	41.	27	24.0	*****	269.0	*****	2.983	30	-1.93	1.60	8			
BROKEN BOW 1 N	1162	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.230	30	-2.49	1.00	3			
BROKEN BOW DAM	1168	9	73.0	30	*****	93.	12	45.	28	17.5	*****	257.5	*****	3.060	30	*****	.93	18			
CARNASAW TWR	1499	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.730	30	-2.26	.57	19			
CARTER TWR	1544	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.580	30	-2.38	.85	19			
FANSHAW	3065	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.901	30	.22	1.32	19			
FLAGPOLE TWR	3169	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.070	30	*****	.60	16			
HEAVENER 1 SE	4008	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.170	30	1.65	2.15	17			
HUE MT TWR	4017	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.751	30	*****	1.17	19			
HUGO	4384	9	73.6	30	-2.2	91.	15	45.	25	21.5	21.5	279.5	-48.5	1.232	30	-3.92	.40	1			
IDABEL	4451	9	73.6	30	-1.3	92.	16	45.	30	19.0	13.0	275.5	-27.5	1.935	30	-2.60	.80	2			
JADIE TOWER	4560	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.970	30	*****	.76	3			
POTEAU	7246	9	72.1	30	-2.4	93.	11	41.	26	36.5	23.5	249.5	-48.5	7.464	30	3.21	1.40	7			
SMITHVILLE 1 W	8285	9	73.7	19	*****	90.	11	38.	27	21.0	*****	185.5	*****	3.594	28	*****	1.40	17			
SPIRO	8416	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.980	30	-.05	.91	19			
TUSKAHOMA	9023	9	71.6	30	*****	91.	11	40.	27	41.5	*****	240.0	*****	4.910	30	*****	1.35	5			
VALLIANT 3 W	9118	9	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.674	30	-2.31	1.10	8			
WILBURTON 9 ENE	9634	9	71.6	30	-2.1	94.	11	40.	25	45.5	29.5	242.0	-35.0	5.052	30	.11	1.40	18			

## SEPTEMBER 1991 CLIMATE DIVISION SUMMARY

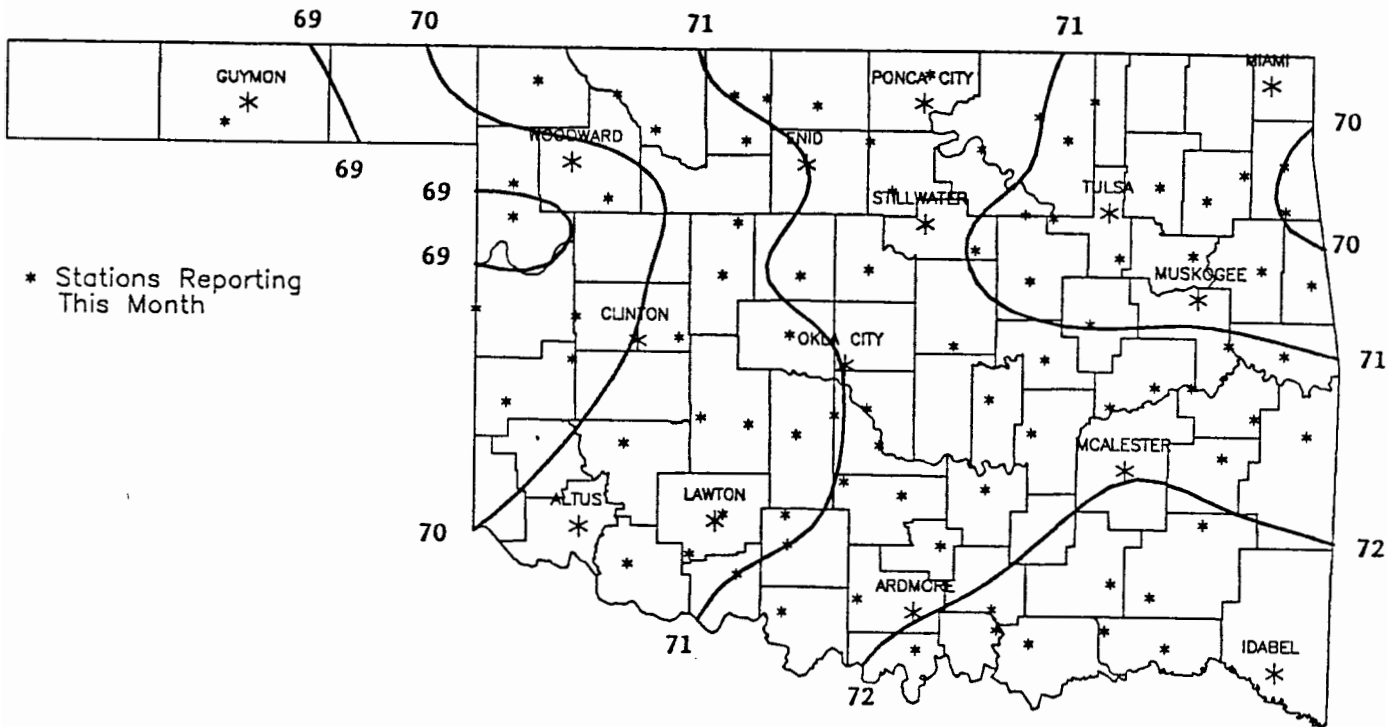
CLIMATE DIV	MEAN TEMP	NUM STA	DEV			HEAT			COOL			TOT PPT	DEV		
			FROM NORM	MAX TEMP	MIN TEMP	DEGREE FROM	DEGREE FROM	DEGREE FROM	FROM NORM	FROM NORM	FROM NORM		NUM STA	FROM NORM	MAX 24-HR
1	68.6	11	-1.8	98.0	9 35.0	21	61.3	30.8	167.6	-23.0	1.48	13	-.25	1.97	4
2	71.0	15	-2.2	96.0	11 30.0	19	49.4	30.6	228.0	-34.4	1.95	20	-1.19	1.97	1
3	70.5	16	-2.4	100.0	12 35.0	23	66.4	43.5	229.4	-27.8	5.22	25	.95	3.30	16
4	70.0	9	-3.4	95.0	11 39.0	19	49.1	32.1	199.4	-68.8	4.51	22	1.73	3.70	16
5	71.2	16	-2.7	95.0	9 41.0	25	41.3	25.6	225.0	-57.5	7.75	29	3.94	4.08	2
6	71.2	12	-2.7	95.0	11 38.0	20	49.3	33.8	234.9	-46.8	5.98	26	1.71	4.25	5
7	70.6	11	-4.5	94.0	12 41.0	21	42.0	32.1	209.8	-101.8	6.58	22	3.58	3.08	14
8	72.0	16	-4.0	94.0	10 40.0	25	33.8	26.4	241.9	-93.7	6.37	28	2.12	3.45	8
9	72.4	9	-2.2	100.0	2 38.0	27	30.6	21.8	253.4	-46.0	3.62	20	-1.18	2.15	17



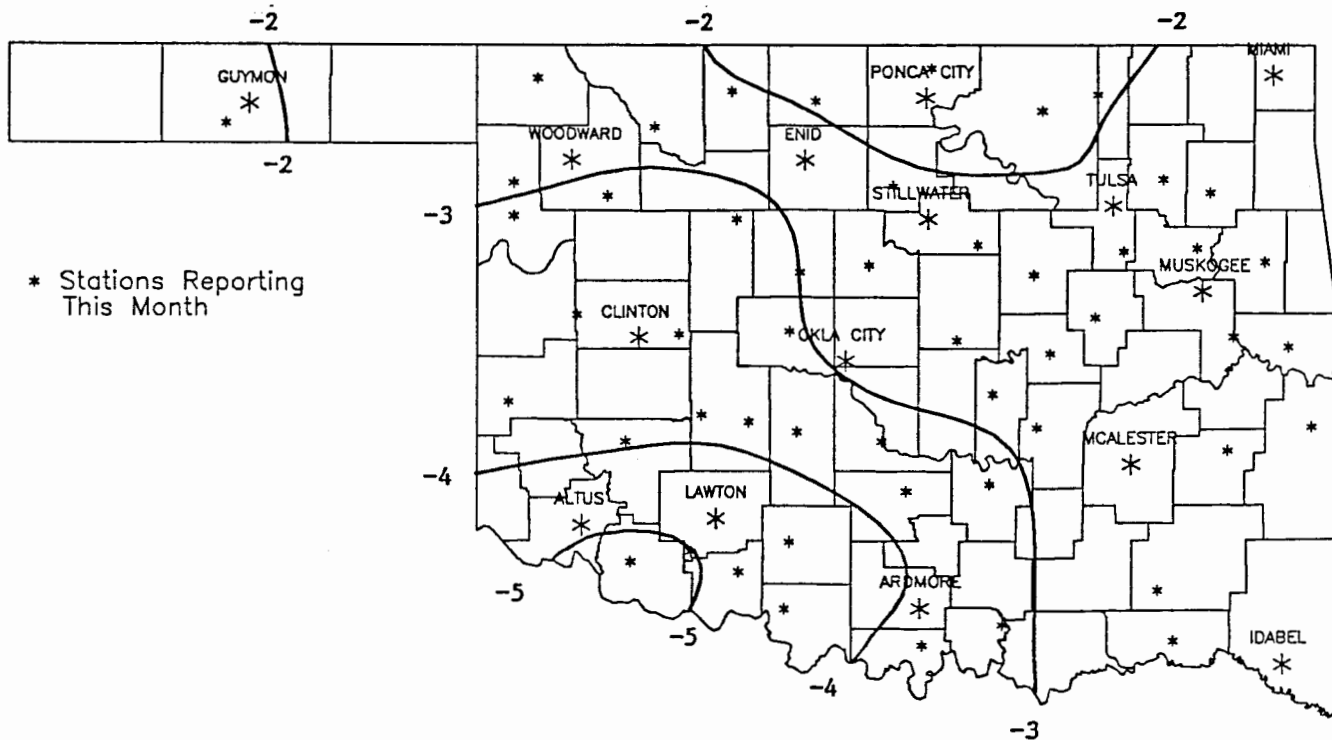
SEPTEMBER 1991 TOTAL PRECIPITATION  
(Inches)



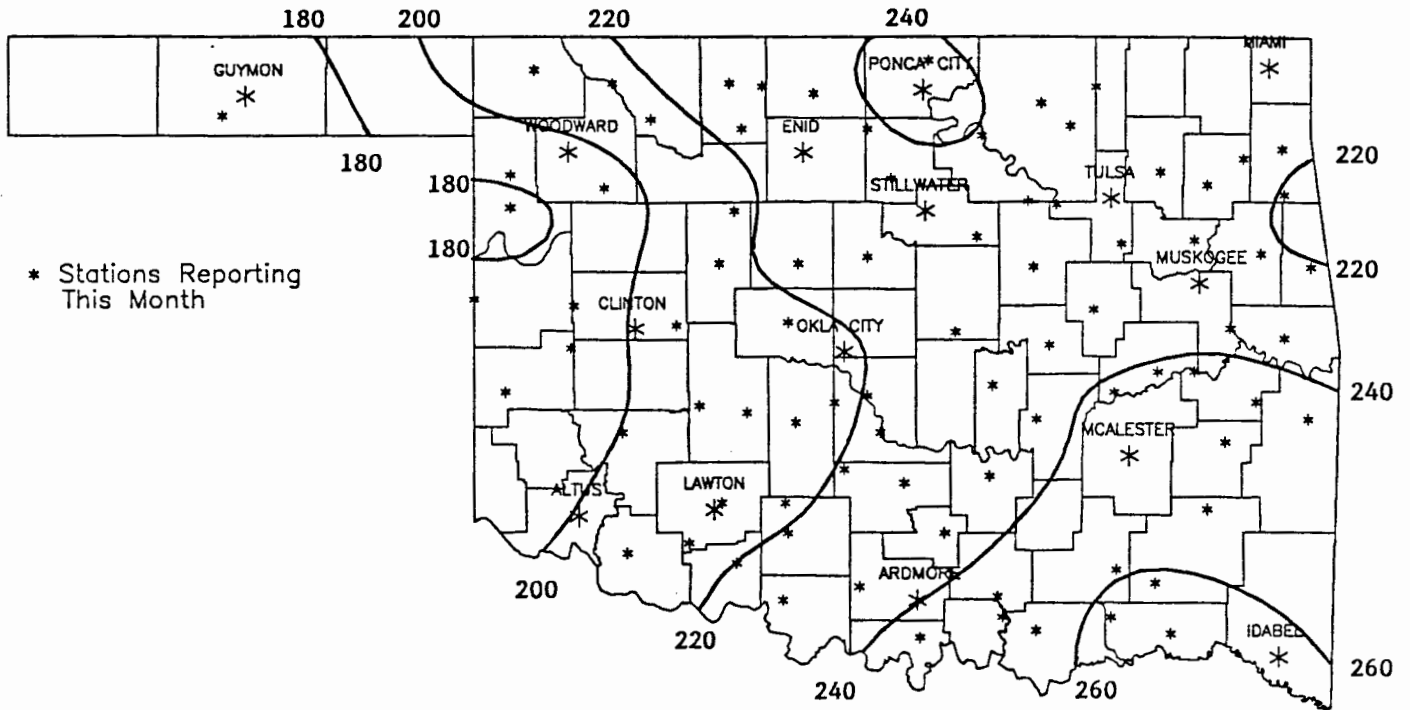
SEPTEMBER 1991 DEVIATION FROM NORMAL PRECIPITATION  
(Inches)



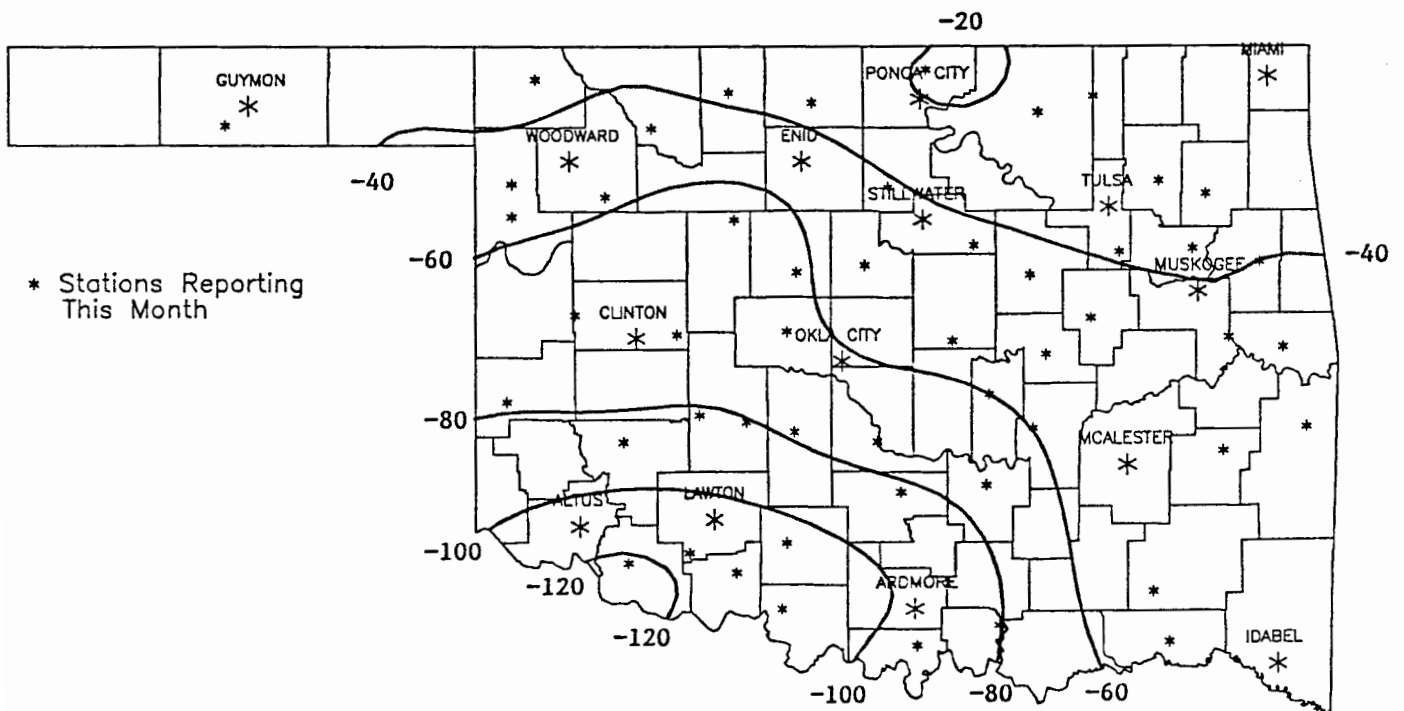
SEPTEMBER 1991 AVERAGE MONTHLY TEMPERATURES  
(Degrees F)



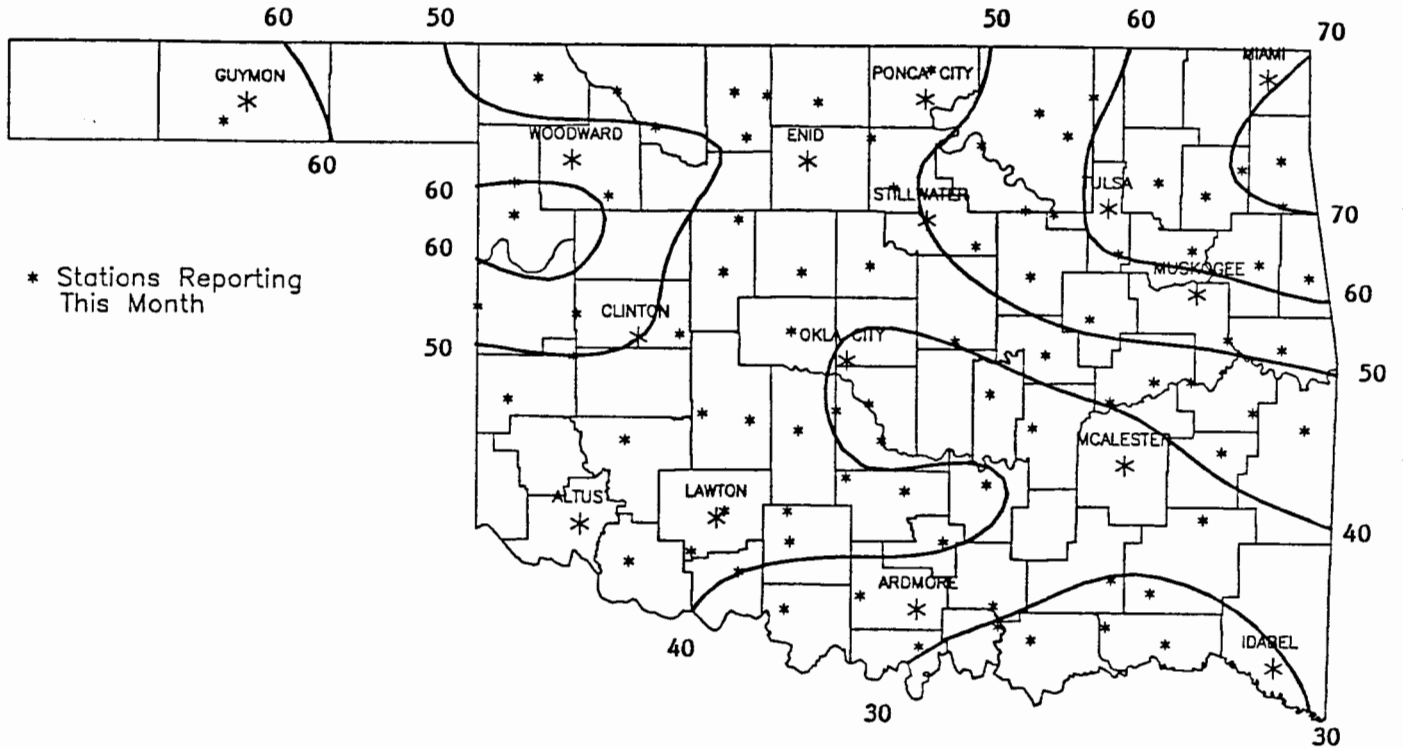
SEPTEMBER 1991 DEVIATION FROM NORMAL TEMPERATURES  
(Degrees F)



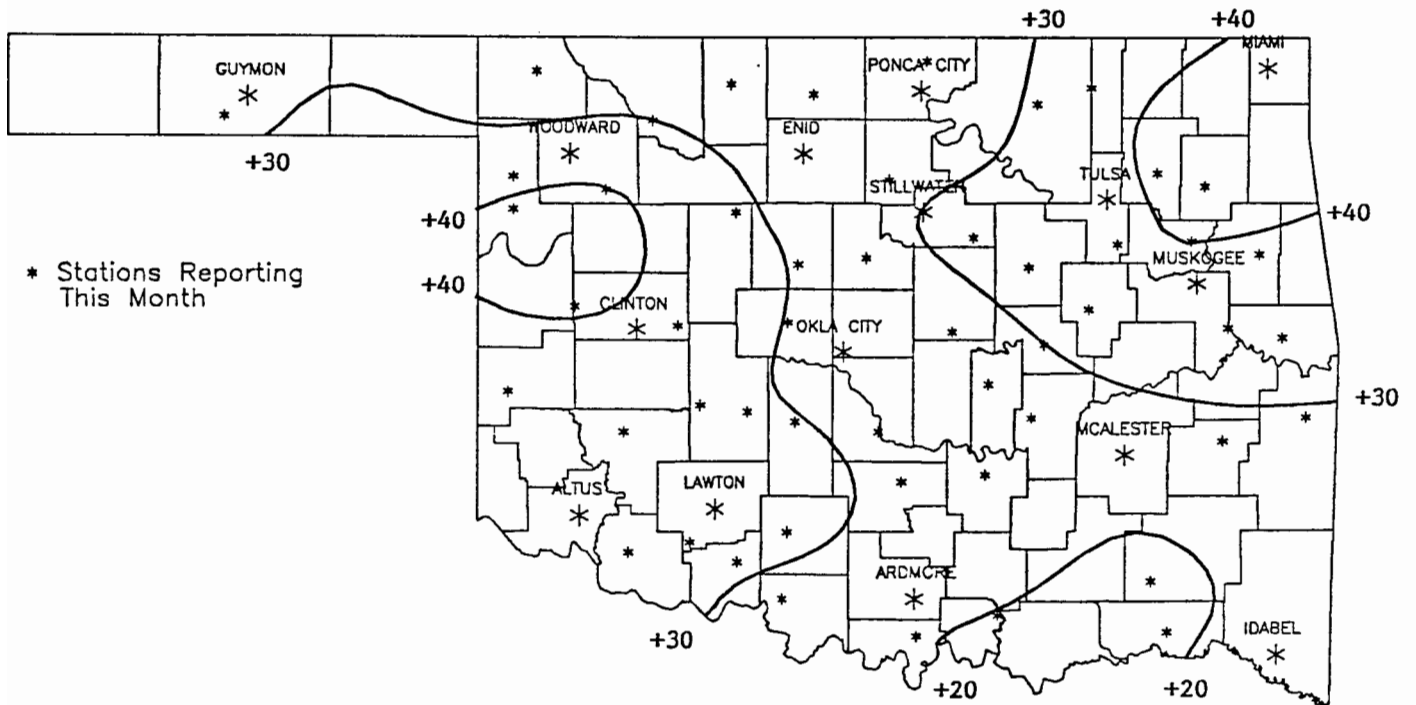
SEPTEMBER 1991 COOLING DEGREE DAYS



SEPTEMBER 1991 DEVIATION FROM NORMAL COOLING DEGREE DAYS

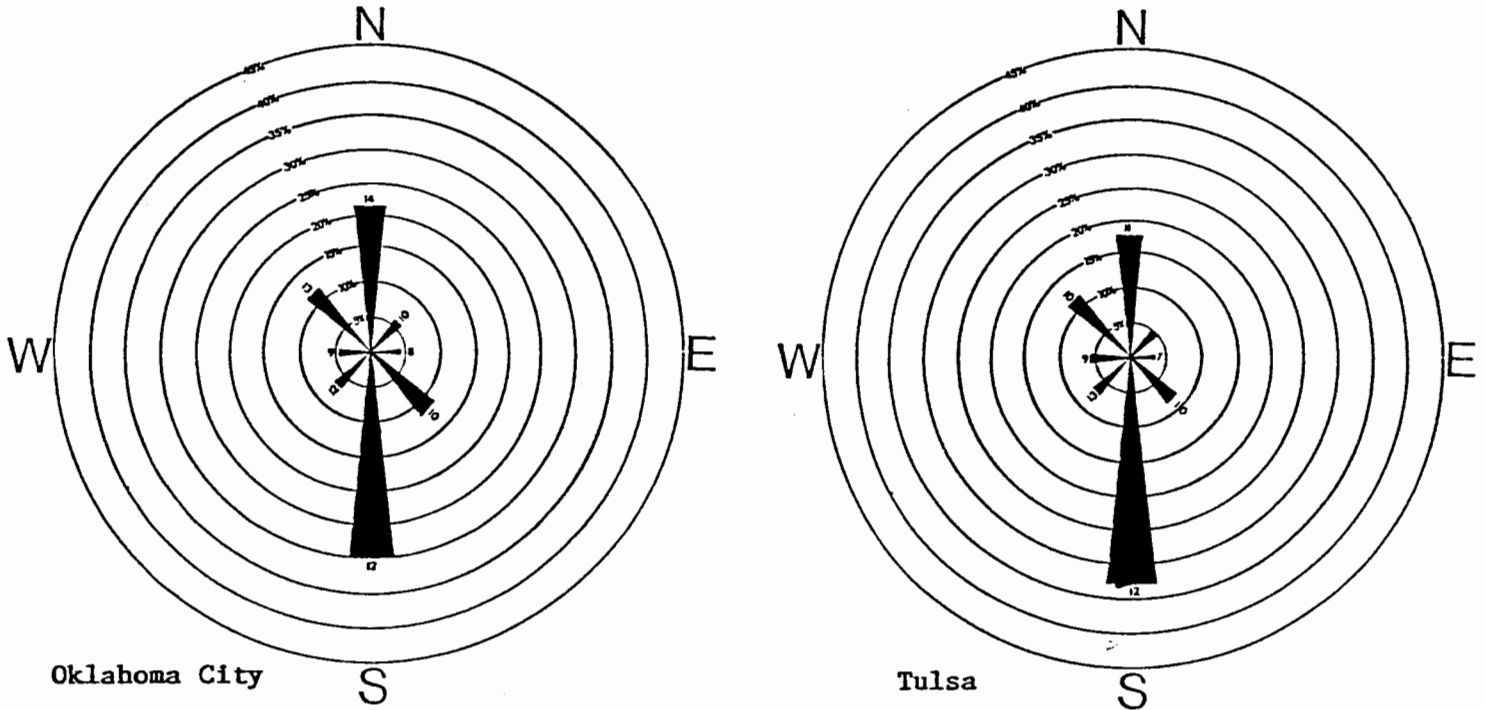


SEPTEMBER 1991 HEATING DEGREE DAYS



SEPTEMBER 1991 DEVIATION FROM NORMAL HEATING DEGREE DAYS

November 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.



NOVEMBER 1991 SUNRISE AND SUNSET

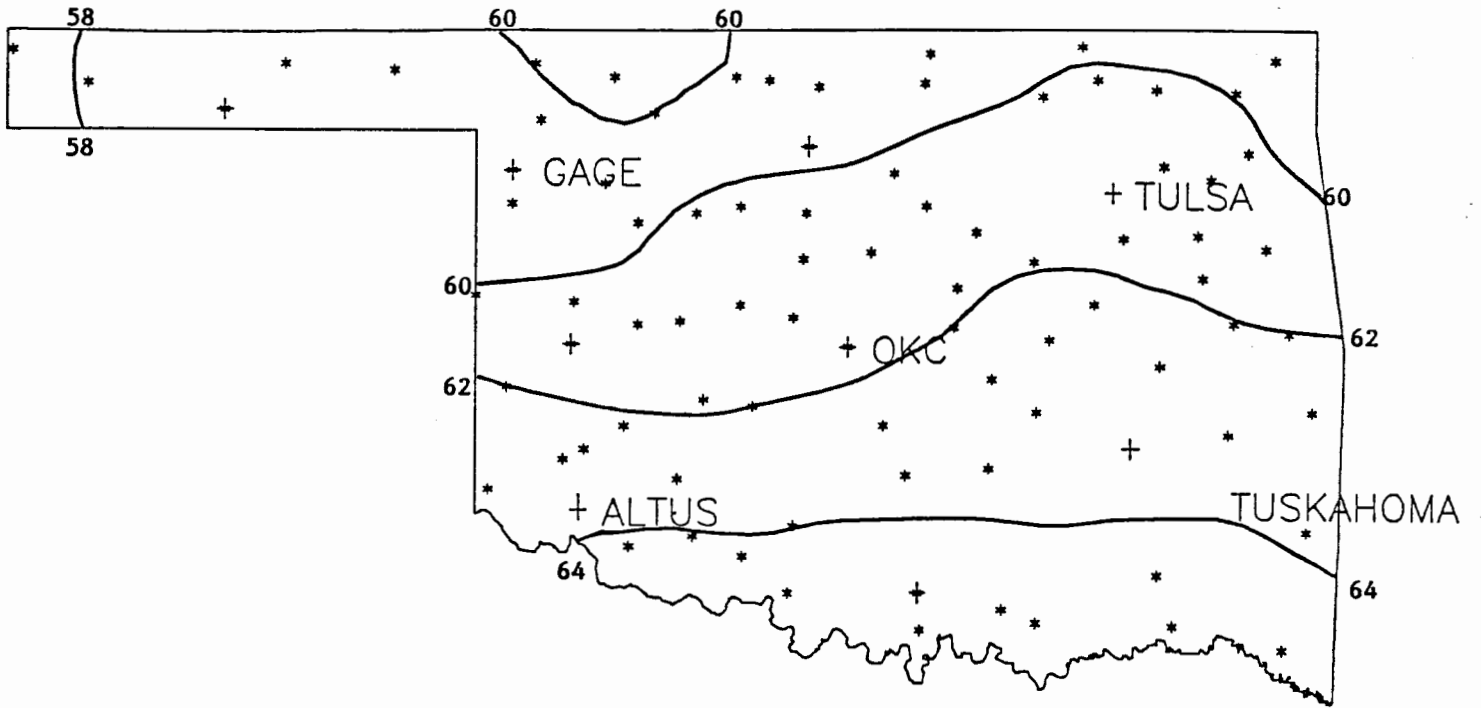
Oklahoma City

DATE	SUNRISE	SUNSET	DAYLIGHT
911101	6:51AM	5:38PM LT	10:47
911102	6:52AM	5:37PM LT	10:45
911103	6:52AM	5:36PM LT	10:43
911104	6:53AM	5:35PM LT	10:41
911105	6:54AM	5:34PM LT	10:39
911106	6:55AM	5:33PM LT	10:38
911107	6:56AM	5:32PM LT	10:36
911108	6:57AM	5:31PM LT	10:34
911109	6:58AM	5:31PM LT	10:32
911110	6:59AM	5:30PM LT	10:31
911111	7: 0AM	5:29PM LT	10:29
911112	7: 1AM	5:29PM LT	10:27
911113	7: 2AM	5:28PM LT	10:26
911114	7: 3AM	5:27PM LT	10:24
911115	7: 4AM	5:27PM LT	10:22
911116	7: 5AM	5:26PM LT	10:21
911117	7: 6AM	5:25PM LT	10:19
911118	7: 7AM	5:25PM LT	10:18
911119	7: 8AM	5:24PM LT	10:16
911120	7: 9AM	5:24PM LT	10:15
911121	7:10AM	5:24PM LT	10:13
911122	7:11AM	5:23PM LT	10:12
911123	7:12AM	5:23PM LT	10:11
911124	7:13AM	5:22PM LT	10: 9
911125	7:14AM	5:22PM LT	10: 8
911126	7:15AM	5:22PM LT	10: 7
911127	7:16AM	5:22PM LT	10: 6
911128	7:17AM	5:21PM LT	10: 5
911129	7:18AM	5:21PM LT	10: 4
911130	7:18AM	5:21PM LT	10: 2

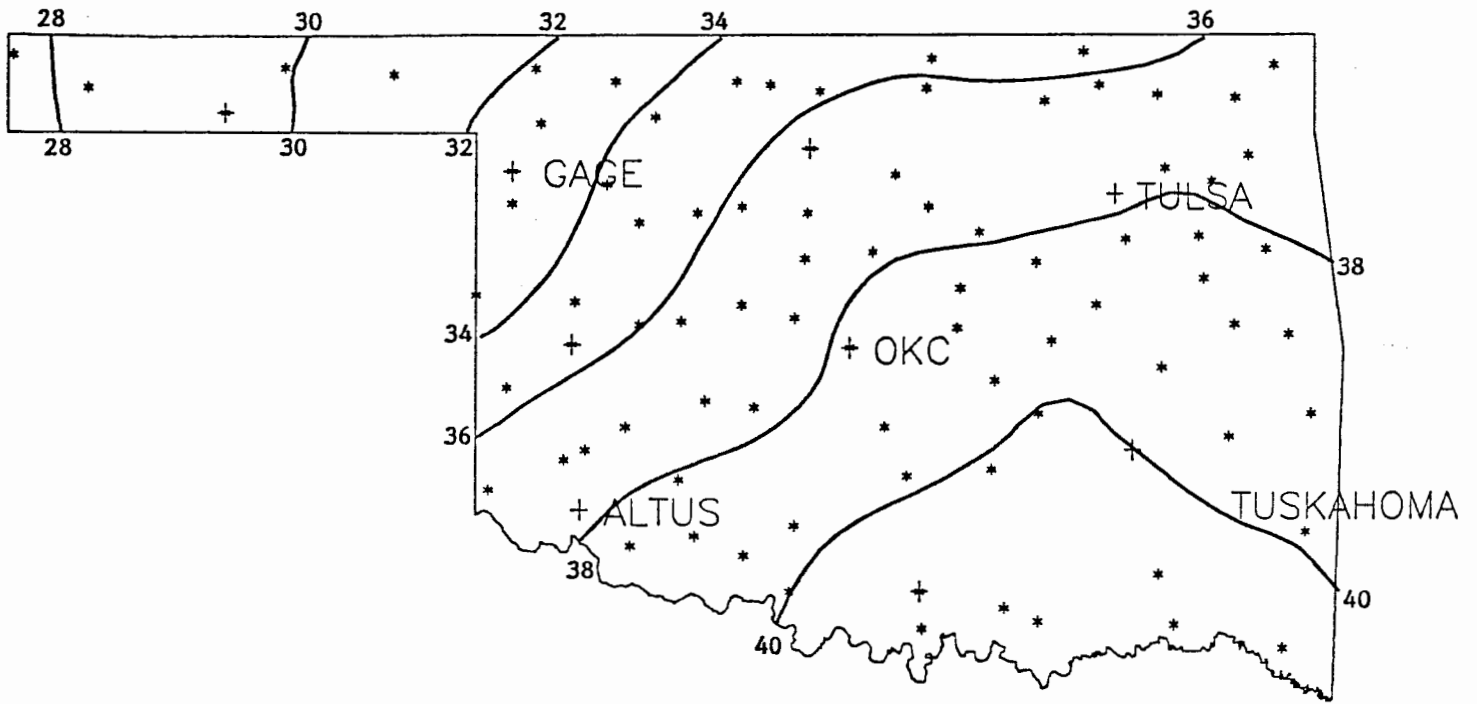
Tulsa

DATE	SUNRISE	SUNSET	DAYLIGHT
911101	6:45AM	5:30PM LT	10:45
911102	6:46AM	5:29PM LT	10:43
911103	6:47AM	5:28PM LT	10:41
911104	6:48AM	5:27PM LT	10:39
911105	6:49AM	5:26PM LT	10:37
911106	6:50AM	5:25PM LT	10:35
911107	6:51AM	5:24PM LT	10:33
911108	6:52AM	5:23PM LT	10:31
911109	6:53AM	5:23PM LT	10:30
911110	6:54AM	5:22PM LT	10:28
911111	6:55AM	5:21PM LT	10:26
911112	6:56AM	5:20PM LT	10:24
911113	6:57AM	5:20PM LT	10:23
911114	6:58AM	5:19PM LT	10:21
911115	6:59AM	5:18PM LT	10:19
911116	7: 0AM	5:18PM LT	10:18
911117	7: 1AM	5:17PM LT	10:16
911118	7: 2AM	5:17PM LT	10:15
911119	7: 3AM	5:16PM LT	10:13
911120	7: 4AM	5:16PM LT	10:12
911121	7: 5AM	5:15PM LT	10:10
911122	7: 6AM	5:15PM LT	10: 9
911123	7: 7AM	5:14PM LT	10: 7
911124	7: 8AM	5:14PM LT	10: 6
911125	7: 9AM	5:14PM LT	10: 5
911126	7:10AM	5:13PM LT	10: 3
911127	7:11AM	5:13PM LT	10: 2
911128	7:12AM	5:13PM LT	10: 1
911129	7:13AM	5:12PM LT	9:60
911130	7:13AM	5:12PM LT	9:59

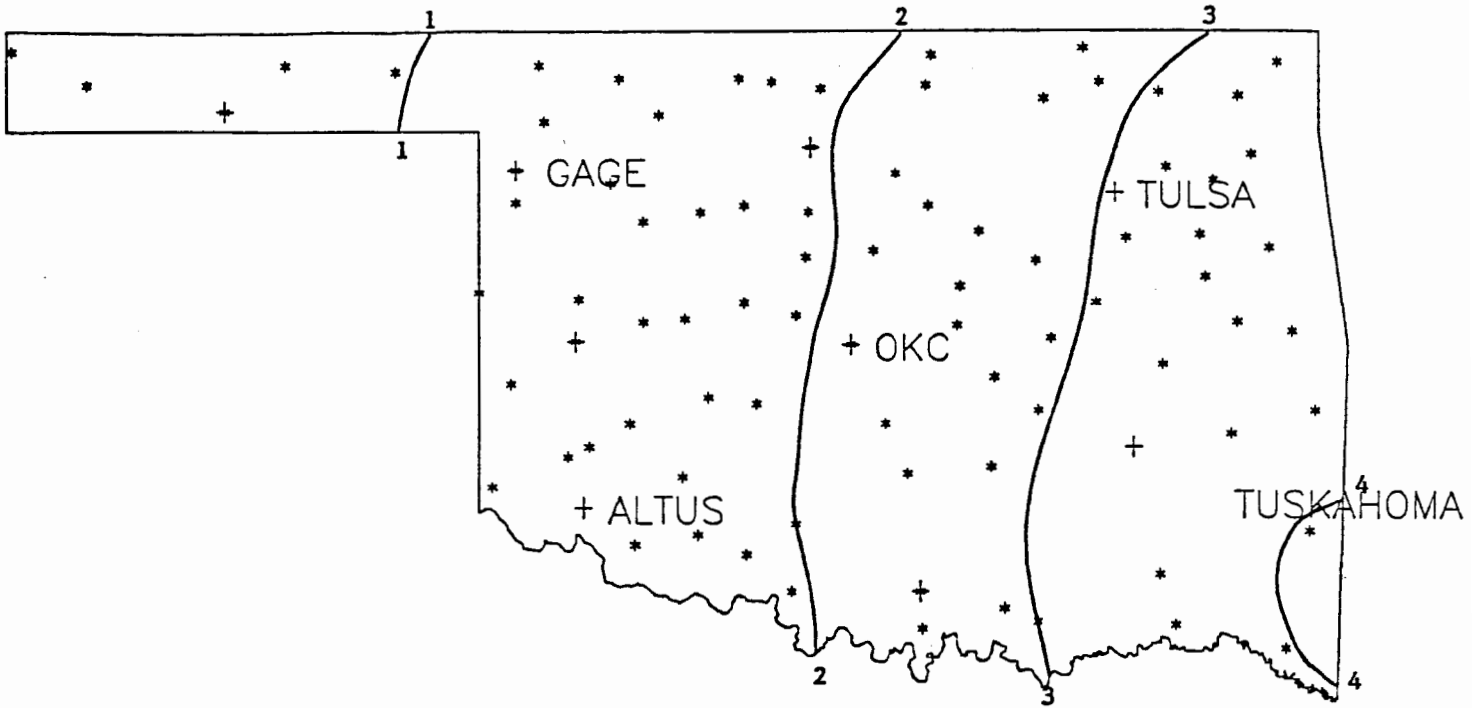




30-YEAR MEAN NOVEMBER MAXIMUM TEMPERATURE



30-YEAR MEAN NOVEMBER DAILY MINIMUM TEMPERATURE



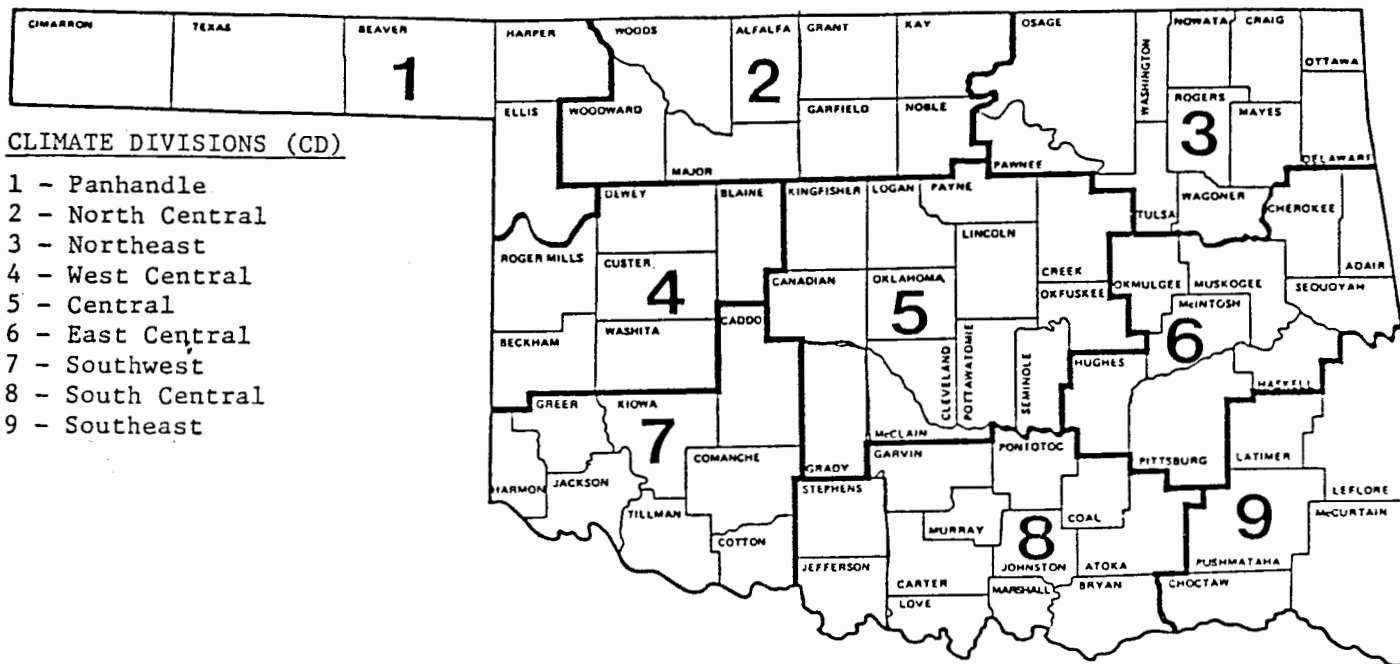
30-YEAR MEAN NOVEMBER PRECIPITATION

90-DAY NATIONAL WEATHER SERVICE OUTLOOK

(October-December 1991)

Precipitation - Above Normal Southeast  
Near Normal Elsewhere

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.

**OKLAHOMA CITY CLIMATE CALENDAR**

**November 1991**

The data on this calendar are for Oklahoma City.  
 Normal values are calculated for the period  
 1948-1988. Extremes are found for the period  
 of record (1924-present).

<p><b>Normal 1</b> Actual</p> <p>67.0 max 45.0 min .053 ppt 9 hdd 1 cdd</p> <p>Highest Max 84-1982 Lowest Max 35-1951 Lowest Min 29-1966 Highest Min 68-1982 Greatest Ppt 1.05-1981</p>	<p><b>Normal 2</b> Actual</p> <p>63.0 max 43.0 min .091 ppt 12 hdd 0 cdd</p> <p>Highest Max 81-1978 Lowest Max 31-1951 Lowest Min 22-1966 Highest Min 62-1983 Greatest Ppt 1.51-1951</p>	<p><b>Normal 3</b> Actual</p> <p>62.0 max 41.0 min .089 ppt 14 hdd 0 cdd</p> <p>Highest Max 82-1931 Lowest Max 40-1954 Lowest Min 21-1939 Highest Min 61-1959 Greatest Ppt 1.51-1954</p>	<p><b>Normal 4</b> Actual</p> <p>64.0 max 41.0 min .095 ppt 12 hdd 0 cdd</p> <p>Highest Max 81-1978 Lowest Max 40-1950 Lowest Min 23-1936 Highest Min 56-1964 Greatest Ppt 2.17-1986</p>	<p><b>Normal 5</b> Actual</p> <p>62.0 max 41.0 min .048 ppt 13 hdd 0 cdd</p> <p>Highest Max 81-1945 Lowest Max 35-1951 Lowest Min 23-1951 Highest Min 59-1965 Greatest Ppt .99-1946</p>	<p><b>Normal 6</b> Actual</p> <p>63.0 max 41.0 min .040 ppt 13 hdd 0 cdd</p> <p>Highest Max 85-1945 Lowest Max 39-1959 Lowest Min 20-1959 Highest Min 59-1965 Greatest Ppt .68-1978</p>	<p><b>Normal 7</b> Actual</p> <p>64.0 max 41.0 min .025 ppt 12 hdd 0 cdd</p> <p>Highest Max 86-1980 Lowest Max 44-1968 Lowest Min 26-1959 Highest Min 61-1966 Greatest Ppt 1.03-1944</p>
<p><b>Normal 8</b> Actual</p> <p>64.0 max 41.0 min .064 ppt 12 hdd 0 cdd</p> <p>Highest Max 87-1980 Lowest Max 40-1953 Lowest Min 23-1955 Highest Min 65-1965 Greatest Ppt .71-1990</p>	<p><b>Normal 9</b> Actual</p> <p>63.0 max 40.0 min .017 ppt 14 hdd 0 cdd</p> <p>Highest Max 82-1988 Lowest Max 37-1959 Lowest Min 25-1955 Highest Min 60-1984 Greatest Ppt 1.15-1977</p>	<p><b>Normal 10</b> Actual</p> <p>62.0 max 38.0 min .022 ppt 15 hdd 0 cdd</p> <p>Highest Max 81-1980 Lowest Max 33-1950 Lowest Min 20-1950 Highest Min 58-1964 Greatest Ppt 1.17-1937</p>	<p><b>Normal 11</b> Actual</p> <p>63.0 max 39.0 min .035 ppt 14 hdd 0 cdd</p> <p>Highest Max 81-1989 Lowest Max 43-1968 Lowest Min 19-1950 Highest Min 63-1982 Greatest Ppt 1.10-1988</p>	<p><b>Normal 12</b> Actual</p> <p>63.0 max 39.0 min .059 ppt 14 hdd 0 cdd</p> <p>Highest Max 78-1990 Lowest Max 33-1976 Lowest Min 19-1966 Highest Min 61-1989 Greatest Ppt .99-1957</p>	<p><b>Normal 13</b> Actual</p> <p>64.0 max 40.0 min .065 ppt 13 hdd 0 cdd</p> <p>Highest Max 80-1967 Lowest Max 28-1986 Lowest Min 12-1940 Highest Min 61-1989 Greatest Ppt 1.51-1985</p>	<p><b>Normal 14</b> Actual</p> <p>61.0 max 41.0 min .047 ppt 14 hdd 0 cdd</p> <p>Highest Max 79-1973 Lowest Max 30-1959 Lowest Min 15-1959 Highest Min 63-1973 Greatest Ppt 1.13-1985</p>
<p><b>Normal 15</b> Actual</p> <p>62.0 max 40.0 min .115 ppt 14 hdd 0 cdd</p> <p>Highest Max 80-1965 Lowest Max 37-1978 Lowest Min 15-1940 Highest Min 61-1971 Greatest Ppt 1.70-1968</p>	<p><b>Normal 16</b> Actual</p> <p>59.0 max 39.0 min .028 ppt 16 hdd 0 cdd</p> <p>Highest Max 82-1941 Lowest Max 33-1955 Lowest Min 14-1932 Highest Min 64-1968 Greatest Ppt 3.94-1931</p>	<p><b>Normal 17</b> Actual</p> <p>59.0 max 37.0 min .081 ppt 17 hdd 0 cdd</p> <p>Highest Max 77-1966 Lowest Max 32-1959 Lowest Min 11-1959 Highest Min 64-1975 Greatest Ppt 1.70-1984</p>	<p><b>Normal 18</b> Actual</p> <p>58.0 max 38.0 min .066 ppt 17 hdd 0 cdd</p> <p>Highest Max 80-1930 Lowest Max 37-1972 Lowest Min 17-1951 Highest Min 57-1979 Greatest Ppt 1.37-1964</p>	<p><b>Normal 19</b> Actual</p> <p>59.0 max 37.0 min .116 ppt 17 hdd 0 cdd</p> <p>Highest Max 78-1979 Lowest Max 34-1972 Lowest Min 18-1937 Highest Min 60-1977 Greatest Ppt 1.70-1934</p>	<p><b>Normal 20</b> Actual</p> <p>58.0 max 35.0 min .048 ppt 18 hdd 0 cdd</p> <p>Highest Max 79-1982 Lowest Max 35-1972 Lowest Min 19-1937 Highest Min 60-1990 Greatest Ppt 1.74-1979</p>	<p><b>Normal 21</b> Actual</p> <p>58.0 max 35.0 min .023 ppt 18 hdd 0 cdd</p> <p>Highest Max 80-1927 Lowest Max 31-1964 Lowest Min 20-1964 Highest Min 53-1966 Greatest Ppt 1.17-1931</p>
<p><b>Normal 22</b> Actual</p> <p>59.0 max 36.0 min .039 ppt 17 hdd 0 cdd</p> <p>Highest Max 78-1966 Lowest Max 38-1957 Lowest Min 18-1926 Highest Min 60-1966 Greatest Ppt 1.54-1931</p>	<p><b>Normal 23</b> Actual</p> <p>58.0 max 35.0 min .028 ppt 19 hdd 0 cdd</p> <p>Highest Max 79-1973 Lowest Max 35-1970 Lowest Min 19-1950 Highest Min 60-1965 Greatest Ppt 1.62-1931</p>	<p><b>Normal 24</b> Actual</p> <p>56.0 max 36.0 min .081 ppt 20 hdd 0 cdd</p> <p>Highest Max 76-1990 Lowest Max 36-1950 Lowest Min 15-1950 Highest Min 60-1966 Greatest Ppt .77-1944</p>	<p><b>Normal 25</b> Actual</p> <p>60.0 max 37.0 min .070 ppt 16 hdd 0 cdd</p> <p>Highest Max 84-1965 Lowest Max 39-1982 Lowest Min 20-1950 Highest Min 62-1966 Greatest Ppt 2.01-1940</p>	<p><b>Normal 26</b> Actual</p> <p>57.0 max 35.0 min .138 ppt 18 hdd 0 cdd</p> <p>Highest Max 78-1970 Lowest Max 32-1952 Lowest Min 13-1975 Highest Min 62-1990 Greatest Ppt .97-1935</p>	<p><b>Normal 27</b> Actual</p> <p>51.0 max 32.0 min .063 ppt 23 hdd 0 cdd</p> <p>Highest Max 76-1927 Lowest Max 33-1959 Lowest Min 16-1976 Highest Min 56-1960 Greatest Ppt 1.28-1982</p>	<p><b>Normal 28</b> Actual</p> <p>50.0 max 30.0 min .014 ppt 25 hdd 0 cdd</p> <p>Highest Max 81-1949 Lowest Max 30-1952 Lowest Min 15-1976 Highest Min 48-1962 Greatest Ppt .54-1948</p>
<p><b>Normal 29</b> Actual</p> <p>63.0 max 30.0 min .008 ppt 23 hdd 0 cdd</p> <p>Highest Max 80-1927 Lowest Max 34-1974 Lowest Min 13-1976 Highest Min 51-1975 Greatest Ppt .61-1930</p>	<p><b>Normal 30</b> Actual</p> <p>54.0 max 32.0 min .025 ppt 22 hdd 0 cdd</p> <p>Highest Max 74-1933 Lowest Max 38-1983 Lowest Min 13-1976 Highest Min 56-1970 Greatest Ppt .47-1985</p>	<b>NOVEMBER AVERAGES</b>				<p>Temperature : 48.8°F</p> <p>Precipitation : 1.69"</p> <p>Heating Degree Days : 481</p> <p>Cooling Degree Days : 1</p>

The data on this calendar are for Tulsa. Normal values are calculated for the period 1948-1987. Temperature extremes are for the period 1905-1990; precipitation extremes are for the period 1948-1990.

**TULSA CLIMATE CALENDAR**

**November 1991**

Normal 1	Actual	Normal 2	Actual	Normal 3	Actual	Normal 4	Actual	Normal 5	Actual	Normal 6	Actual	Normal 7	Actual
69.0 46.0 .092 8 1 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	85-1916 37-1951 25-1925 64-1987 1.27-1984	65.0 44.0 .168 11 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	89-1909 35-1951 20-1966 65-1983 2.82-1974	69.0 41.0 .166 13 1 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	98-1909 42-1954 21-1965 67-1983 3.20-1974	64.0 42.0 .077 12 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	86-1914 39-1951 24-1951 60-1987 1.25-1988	62.0 41.0 .024 14 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	87-1914 34-1951 25-1976 60-1965 .32-1957	62.0 39.0 .065 1 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	87-1945 39-1959 20-1959 60-1965 .90-1964	63.0 41.0 .029 13 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	85-1980 45-1953 23-1959 60-1966 .63-1957
Normal 8	Actual	Normal 9	Actual	Normal 10	Actual	Normal 11	Actual	Normal 12	Actual	Normal 13	Actual	Normal 14	Actual
64.0 43.0 .093 12 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	84-1980 44-1971 23-1925 87-1966 1.45-1977	63.0 40.0 .037 13 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	82-1934 42-1950 23-1955 58-1984 .55-1974	63.0 39.0 .058 14 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	83-1949 37-1950 21-1950 62-1949 .63-1966	62.0 39.0 .034 14 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	85-1989 31-1986 17-1950 60-1949 1.11-1988	63.0 40.0 .086 13 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	80-1989 34-1986 15-1911 62-1951 2.64-1972	65.0 39.0 .070 13 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	84-1910 30-1986 12-1940 62-1989 1.80-1985	62.0 41.0 .060 14 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	79-1989 33-1959 13-1916 62-1958 1.08-1978
Normal 15	Actual	Normal 16	Actual	Normal 17	Actual	Normal 18	Actual	Normal 19	Actual	Normal 20	Actual	Normal 21	Actual
63.0 42.0 .250 13 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	82-1950 38-1978 11-1940 69-1964 2.50-1984	61.0 40.0 .063 15 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	83-1963 37-1955 14-1932 65-1958 1.49-1978	60.0 39.0 .138 16 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	80-1969 32-1959 11-1959 55-1975 1.24-1982	58.0 36.0 .090 16 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	82-1930 37-1972 19-1951 60-1985 1.26-1964	60.0 36.0 .197 16 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	81-1908 35-1972 14-1937 61-1979 1.65-1963	58.0 36.0 .197 18 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	81-1989 38-1972 16-1937 62-1979 4.59-1979	58.0 35.0 .032 18 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	79-1927 34-1964 18-1964 53-1966 .70-1961
Normal 22	Actual	Normal 23	Actual	Normal 24	Actual	Normal 25	Actual	Normal 26	Actual	Normal 27	Actual	Normal 28	Actual
59.0 37.0 .067 17 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	79-1966 38-1971 16-1929 62-1966 .90-1982	58.0 35.0 .022 18 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	78-1974 33-1970 17-1970 63-1966 .35-1952	60.0 37.0 .072 16 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	80-1965 35-1950 14-1950 61-1965 2.54-1973	60.0 37.0 .072 16 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	84-1985 38-1975 17-1950 61-1966 1.03-1986	57.0 36.0 .110 18 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	83-1965 30-1975 18-1975 65-1990 1.56-1982	52.0 33.0 .077 23 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	77-1927 35-1985 16-1938 56-1960 1.13-1982	50.0 31.0 .031 25 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	81-1949 28-1976 13-1976 44-1981 .53-1968
Normal 29	Actual	Normal 30	Actual	<b>NOVEMBER AVERAGES</b>									
53.0 30.0 .045 23 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	82-1927 36-1979 10-1976 54-1975 1.08-1975	54.0 31.0 .032 23 0 Highest Max Lowest Max Lowest Min Highest Min Greatest Ppt	76-1933 33-1974 13-1964 55-1970 .73-1981	Temperature : 49.3°F Precipitation : 2.61" Heating Degree Days : 472 Cooling Degree Days : 2									