OKLAHOMA
MONTHLY SUMMARY
APRIL 1991

TABLE OF CONTENTS

APRIL 1991 OKLAHOMA SUMMARY

April showers brought more than May flowers in 1991. Moisture, surging northward from the Gulf of Mexico, aided in developing storms across central and eastern portions of Oklahoma on numerous occasions. The moist air also helped to keep nighttime temperatures above normal, a contribution which left April 1991 the 27th warmest of the past 100 years. Preliminary data indicate the average temperature of 62.3 degrees was 1.4 degree above normal. Combined with a warm winter and early spring, the year to date stands 2.3 degrees above normal, the 20th warmest on record. Rainfall produced by the storms boosted the statewide-averaged rainfall to 3.41 inches, which was 0.20 inch above normal. Precipitation in excess of one inch was recorded somewhere in Oklahoma on 18 of the 30 days in April. April's rainfall nearly doubled the year-to-date total, bringing the 1991 total to 7.11 inches. Unfortunately, most of the rainfall was concentrated in eastern sections of the state: western Oklahoma continued to receive far below normal precipitation.

The passage of a cold front on the 2nd-3rd brought heavy rainfall to central sections of the state. Piedmont recorded 3.08 inches on the 3rd, and El Reno and Stillwater both received in excess of two inches. A tornado was also reported in the vicinity of Pumpkin Center on the 2nd in advance of the cold front. Additional rains in excess of one inch fell in southeastern Oklahoma on the 8th with the passage of a cold front. Behind the front, temperatures fell below freezing in several locations. Six CD's recorded their coldest temperatures of the month on the 10th.

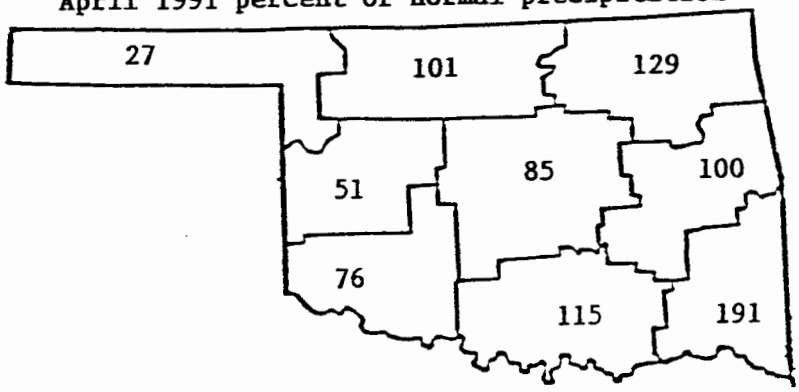
Moisture and rains quickly returned in advance of a strong upper-air trough of low pressure, which passed through the state on the 12th. Severe thunderstorms were reported in the state on the 11th as the trough neared Oklahoma. A dryline, the boundary between dry air from western Texas and moist air from the Gulf of Mexico, moved into western Oklahoma on the 12th. This dryline provided the focus for thunderstorm development that afternoon. Nine tornadoes were produced by three different thunderstorms. Five tornadoes were reported near Drummond, Carrier, Pond Creek, and Jefferson from the first storm cell as it moved slowly northeastward. The second storm cell developed further south near Kingfisher, and produced three tornadoes near Kingfisher and Hennessey. The final tornado of the day was spawned from a thunderstorm west of Ardmore.

Cool air returned briefly to the state on the 13th, as daily highs remained in the 60's in many locations. Temperatures dipped to as low as 29 degrees at Goodwell and 30 at Buffalo on the 15th, which were the last freezing temperatures recorded in Oklahoma for the spring. The passage of a warm front on the 17th sent temperatures soaring at many places, with Buffalo reporting 97 degrees. Moisture also surged northward behind the front, setting the stage for a heavy rain event. A cold front, moving southward from Kansas, interacted with the moist air on the 18th, producing a rainfall of 3.47 inches at Caney. Numerous other stations in southeastern Oklahoma also reported rainfall in excess of two inches on the 18th. As the front passed through the state, cool air regained dominance for the next several days. Maximum temperatures in the upper 50's and low 60's were reported at many stations, while minimum temperatures fell into the upper 30's and 40's.

A second episode of severe weather, the largest in seven years, hit on the 26th. Once again, Gulf moisture streamed northward in advance of a trough, providing abundant moisture for storm development. That afternoon, thunderstorms developed across north central Oklahoma and southern Kansas. Nine tornadoes were produced by the storms in Oklahoma, including several devastating tornadoes which remained on the ground for over half an hour (see accompanying story). Heavy rains accompanied the storms, with Blackwell reporting 4.69 inches on the 26th and 27th. High pressure soon afterward spread across the region, bringing sunny skies to much of the state on the 30th.

-Mark A. Shafer

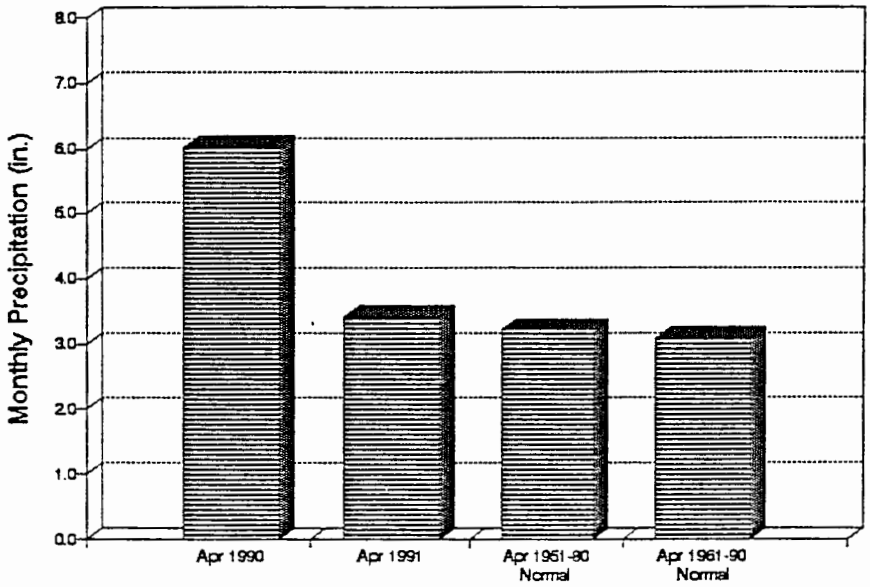
April 1991 percent of normal precipitation



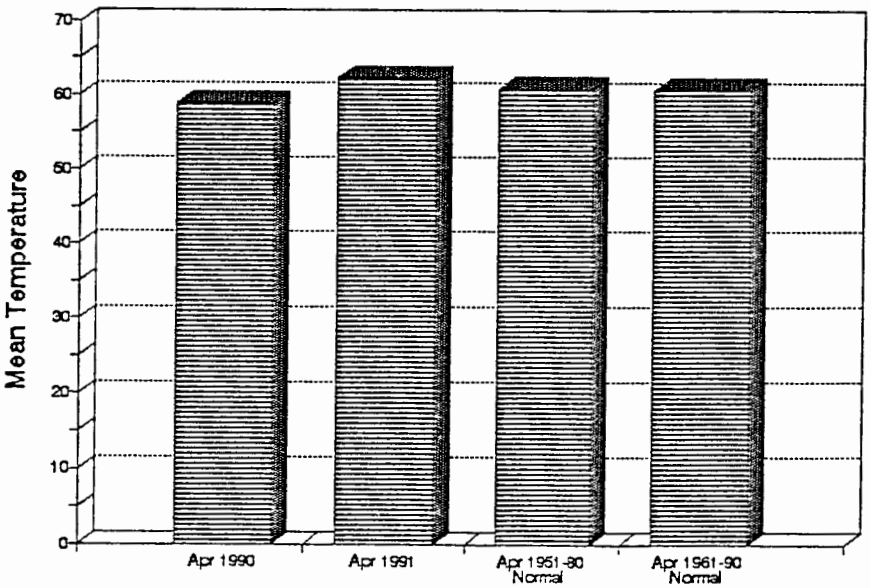
EXTREME VALUES OF TEMPERATURE AND PRECIPITATION IN EACH CLIMATE DIVISION
APRIL, 1991

CD	MAX TEMP	DATE	LOCATION	MIN TEMP	DATE	LOCATION	MONTHLY PRECIP	LOCATION	24-HOUR PRECIP	DATE	LOCATION
1	97	17	BUFFALO	29	15	GOODWELL	1.02	BUFFALO	.37	21	BUFFALO
2	89	26	FREEDOM	30	10	WAYNOKA	8.59	BLACKWELL	2.79	27	BLACKWELL
	89	27	MUTUAL								
3	86	16	MANNFORD	35	15	BARTLESVILLE	7.52	FORAKER	2.93	14	SPAVINAW
				35	10	PAWHUSKA					
				35	10	PRYOR					
				35	10	RALSTON					
				35	1	SPAVINAW					
4	89	12	CLINTON	29	10	TALOGA	1.94	HAMMON	1.94	24	HAMMON
	89	26	REYDON								
5	88	30	NORMAN	31	10	HENNESSEY	4.16	PIEDMONT	3.08	3	PIEDMONT
	88	8	OKEMAH								
6	87	8	MCALESTER	34	1	WEBBERS FALL	7.13	LYONS	1.95	12	CLAYTON
7	91	27	CHATTANOOGA	27	1	HOLLIS	3.35	WICHITA MT W	2.68	25	ALTUS AFB
	91	27	HOLLIS								
8	91	9	ATOKA	33	10	PAULS VALLEY	8.53	MCGEE CREEK	3.47	18	CANEY
	91	8	MADILL								
	91	8	MARIETTA								
9	87	8	BOSWELL	33	10	SMITHVILLE	14.23	BATTIEST	4.65	14	BATTIEST

Comparison of Monthly Precipitation
Statewide Average for Oklahoma



Comparison of Monthly Temperature
Statewide Average for Oklahoma



THE APRIL 26 TORNADO OUTBREAK

The tornado outbreak of April 26, 1991 occurred seven years to the day after tornadoes ravaged large parts of northeastern Oklahoma. On April 26, 1984, numerous tornadoes were spawned by a squall line which swept across central and northeastern portions of the state, including nine "significant" tornadoes (those which reached F-2 intensity or greater, based on a scale from 0-5 where 0 is a very weak tornado and 5 is extremely destructive). Three tornadoes that day reached F-4 intensity and one, an F-5, devastated Morris. Other tornadoes hit Terlton and Skiatook that evening.

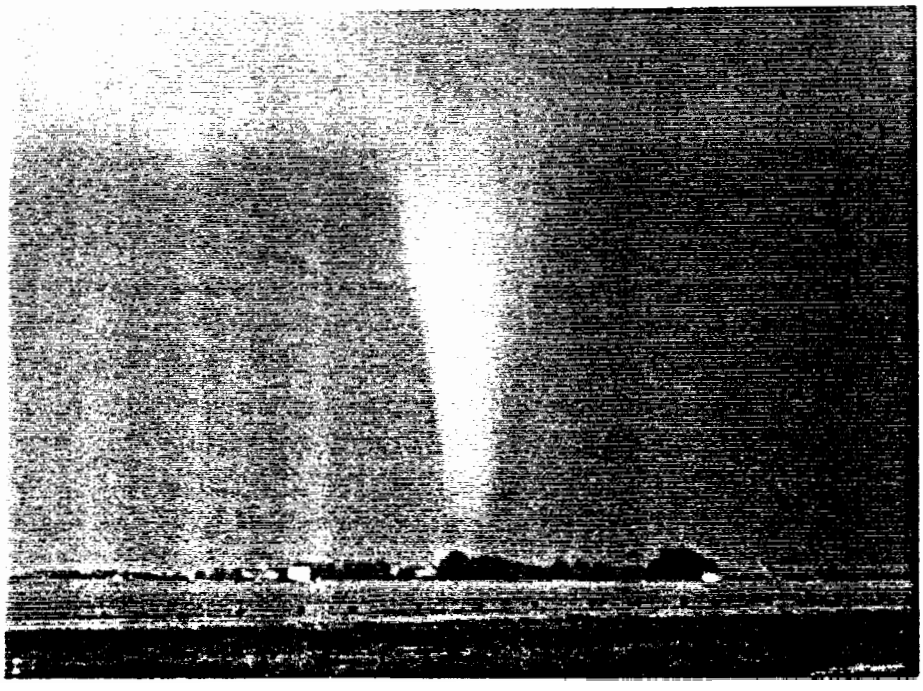
The tornadoes of April 26, 1991 were the strongest since the April 1984 outbreak. Six "significant" tornadoes were produced as thunderstorms tracked across north central and northeastern Oklahoma. Two of the tornadoes reached F-4 intensity, and one, which remained on the ground for nearly an hour, produced F-5 damage. Overall, 9 tornadoes were recorded from four storms.

Thunderstorms developed in the moist air flowing northward from the Gulf of Mexico during the morning of the 26th. This early-morning convection spawned a tornado which hit Tonkawa at 6:45 a.m., damaging 18 homes and businesses. One man died as a result of the tornado, when a tree branch, broken by the tornado, fell on him as he cleared away debris that afternoon.

Thunderstorms re-developed on the afternoon of the 26th, producing the second tornado of the day east of Deer Creek at 5:49 p.m. The storm moved northeastward, eventually producing a large tornado in southern Kansas. Meanwhile, a new thunderstorm developed near Okeene and moved northeastward toward Enid. A tornado touched down on the east side of Woodring Airport in Enid at 5:57 p.m. (see photo below). The tornado, which destroyed two homes 1.5 miles south of Breckenridge, remained on the ground for ten minutes before dissipating. A second, short-lived, tornado was sighted near Garber at 6:15 p.m.

The same storm later produced the largest and strongest tornado of the day. At 6:25 p.m., a warning was issued by the National Weather Service, five minutes before the tornado touched ground 2.5 miles west of Garber. The tornado grew rapidly in size while moving east/northeastward at nearly 40 miles per hour. The damage path exceeded 1/2 mile as it crossed I-35 southeast of Billings. The tornado reached F-5 intensity as it crossed U.S. Highway 77, one mile north of Ceres (see photo next page). Dr. Howard Bluestein from the University of Oklahoma School of Meteorology, recorded incredible wind speeds of 287 miles per hour using a portable Doppler radar from his position at the north edge of Ceres. As the storm moved eastward, passing between Red Rock and Marland, the damage path expanded to nearly a mile wide. The tornado continued into Osage county, passing just north of Fairfax, and dissipating west of Pawhuska. The storm remained on the ground for over an hour, leaving a path of destruction 60 miles long.

The thunderstorm produced one more tornado that evening near Copan at 9:05 p.m. One person was killed and another critically injured when the tornado tossed a car 250 yards into a field. This tornado covered an intermittent track of 10 miles.

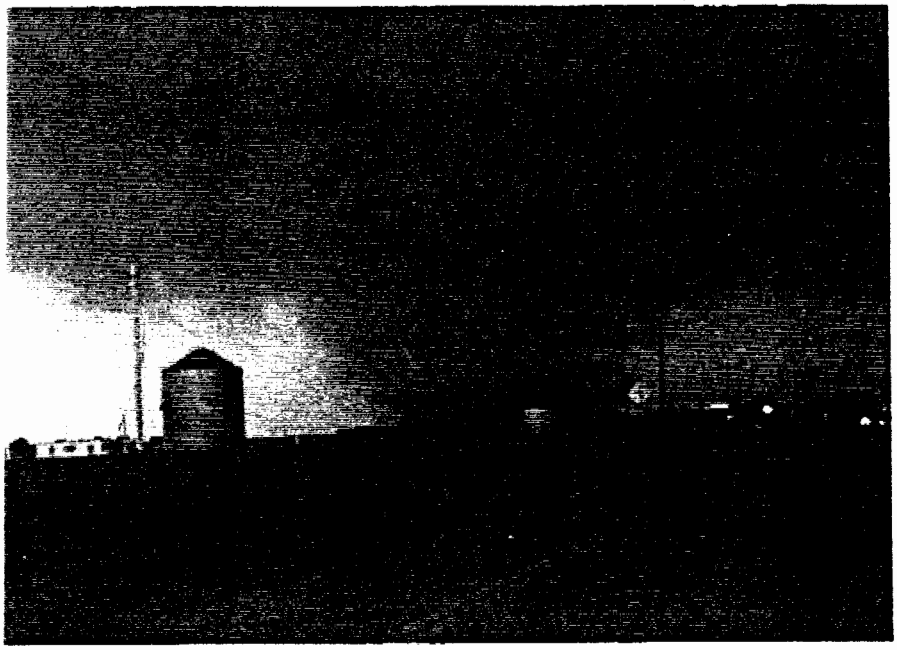


Tornado south of Breckenridge at 6:00 p.m. Photo courtesy Mark Shafer, Oklahoma Climatological Survey

The fourth storm developed near Stillwater later in the day, and produced its first tornado near Terlton at 8:15 p.m. The tornado moved northeastward, killing one person on the Cimarron Turnpike. Seven aircraft were destroyed at the Keystone Air Park, including two which were tossed into trees. Fifty-four homes were destroyed, and another 40 damaged as the tornado reached F-4 intensity in the Ridgemont Estates Subdivision east of Westport. The tornado lifted near New Prue, but set down again west of Skiatook at 9:15 p.m., destroying 32 homes and damaging another 56 as it passed through Skiatook. Both Terlton and Skiatook had been hit seven years before.

A second tornado, produced by the thunderstorm near Oologah at 9:45 p.m., caused F-4 damage as it crossed through the north side of town. Sixty homes, 16 apartments, and 30 barns were destroyed in Oologah. Oologah High School sustained heavy damage, and has been forced to close for the remainder of the school year. The storm cell continued northeastward, producing a third tornado near Chelsea at 9:50 p.m.

Most of the tornadoes which occurred during this outbreak missed heavily populated areas. The lives lost directly to the tornadoes involved people in automobiles. Those who sought proper shelter survived. Given the intensity of the tornadoes, injuries and damage were remarkably light.



Tornado north of Ceres at 6:50 p.m. Photo courtesy Mark Shafer, Oklahoma Climatological Survey

TABLE OF 1990/1991 COMPARISONS

Station	April Temperatures (F) 1990	1991	April Precipitation (in.) 1990	1991
Arnett	55.9	57.9	2.96	.28
Enid	58.5	61.3	2.45	2.06
Mutual	54.8	59.5	3.60	.57
Tulsa	60.3	64.2	5.31	2.55
Elk City	58.7	62.4	1.62	.98
Oklahoma City	59.9	63.1	5.13	2.10
McAlester	61.0	64.2	10.75	4.71
Altus Irr Sta	61.0	*	3.40	*
Durant	60.5	*	12.71	*
Ada	59.6	61.5	11.37	1.64
Antlers	62.8	64.6	7.74	11.08

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (F)	Hollis	7	27	1
Maximum temperature (F)	Buffalo	1	97	17
Maximum 24-hour precipitation	Battiest	9	4.65"	14

APRIL 1991 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
ARNETT	332	1	57.9	30	.5	85.	27	34.	1	227.0	-21.0	13.5	-6.5	.281	30	-1.50	.14	14
BEAVER	593	1	58.0	30	.9	91.	12	32.	27	230.0	-24.0	19.5	2.5	.193	30	-1.06	.06	22
BOISE CITY 2 E	908	1	54.7	30	.3	86.	7	27.	14	311.5	-14.5	1.0	-7.0	.573	30	-.78	.42	23
BUFFALO	1243	1	61.8	30	2.1	91.	16	30.	15	155.0	-39.0	59.5	24.5	1.020	30	-1.05	.37	21
FARGO	3070	1	*****	0	*****	****	0	****	0	******	******	******	******	.521	30	-1.31	.35	25
GAGE FAA APT	3407	1	60.6	30	3.1	87.	26	33.	15	175.5	-67.5	43.5	25.5	.416	30	-1.43	.22	25
GATE	3489	1	59.6	30	*****	90.	12	37.	10	189.0	******	28.0	******	.164	30	*****	.06	21
GOODWELL RES ST	3628	1	55.7	30	-.3	86.	8	29.	15	283.5	-6.5	3.0	-14.0	.095	30	-1.01	.03	29
GUYMON	3835	1	58.1	28	*****	87.	25	33.	15	211.0	******	17.0	******	.084	28	*****	.06	19
HOOKER	4298	1	56.0	30	-.3	87.	8	33.	30	278.0	4.0	7.5	-5.5	.201	30	-.99	.06	21
KENTON	4766	1	53.8	30	-.6	86.	8	25.	28	338.5	10.5	1.5	-8.5	.100	30	-1.19	.03	24
LAVERNE	5045	1	*****	0	*****	****	0	****	0	******	******	******	******	.452	30	-1.08	.32	22
OPTIMA LAKE	6740	1	57.6	30	*****	90.	8	33.	1	235.0	******	12.0	******	.143	30	*****	.08	9
RANGE	7412	1	*****	0	*****	****	0	****	0	******	******	******	******	.112	30	*****	.08	19
REGNIER	7534	1	*****	0	*****	****	0	****	0	******	******	******	******	.062	30	-1.05	.04	9
TURPIN 4 SSE	9017	1	56.8	26	*****	87.	12	29.	1	216.0	******	3.0	******	.130	26	*****	.06	9

APRIL 1991 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
ALVA	193	2	62.1	30	*****	89.	16	36.	10	138.0	******	51.0	******	1.790	30	*****	.56	22
VANCE AFB	302	2	*****	0	*****	****	0	****	0	******	******	******	******	1.864	30	*****	.56	13
BILLINGS	755	2	60.8	30	*****	83.	17	35.	10	143.5	******	17.5	******	4.051	30	1.13	1.80	18
BLACKWELL 2E	818	2	60.1	30	*****	84.	16	37.	15	165.0	******	18.5	******	8.592	30	*****	2.79	27
BRAMAN	1075	2	*****	0	*****	****	0	****	0	******	******	******	******	4.270	30	*****	2.04	18
CHEROKEE	1724	2	62.5	30	2.7	87.	17	36.	10	134.5	-61.5	59.0	19.0	1.410	30	-1.14	.40	21
ENID	2912	2	61.3	30	.8	84.	16	41.	15	147.5	-30.5	35.0	-5.0	2.060	30	-.72	.64	13
FT SUPPLY DAM	3304	2	58.9	30	-.1	86.	27	37.	15	200.5	-15.5	18.5	-17.5	.951	30	-.64	.35	22
FREEDOM	3358	2	61.6	30	*****	89.	26	32.	10	161.5	******	60.5	******	.541	30	*****	.21	22
GREAT SALT PLNS	3740	2	61.9	30	*****	88.	27	35.	11	139.5	******	47.0	******	2.860	25	*****	1.01	25
HARDY	3909	2	*****	0	*****	****	0	****	0	******	******	******	******	6.894	30	*****	2.67	26
HELENA 1 SSE	4019	2	59.5	30	*****	86.	17	35.	10	197.5	******	31.0	******	2.263	30	-.31	1.04	25
JEFFERSON	4573	2	61.6	30	2.0	86.	5	34.	10	143.5	-54.5	40.5	4.5	3.062	30	.29	1.05	12
MEDFORD	5768	2	*****	0	*****	****	0	****	0	******	******	******	******	4.764	30	*****	1.60	17
MUTUAL	6139	2	59.5	30	1.3	89.	27	34.	10	194.5	-35.5	30.0	4.0	.570	30	-1.88	.30	25
NEWKIRK	6278	2	60.9	30	1.4	83.	16	42.	23	145.5	-58.5	22.0	-17.0	7.672	30	4.72	2.90	26
ORIENTA	6751	2	*****	0	*****	****	0	****	0	******	******	******	******	2.120	30	*****	.95	25
PERRY	7012	2	63.7	30	2.2	85.	17	40.	10	91.0	-66.0	52.0	.0	2.510	30	-.19	1.11	3
PONCA CITY FAA	7201	2	61.9	28	*****	86.	16	39.	15	128.5	******	42.0	******	5.371	29	*****	2.17	27
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	******	******	******	******	3.070	30	.28	1.34	3
WAYNOKA	9404	2	61.9	30	1.6	87.	26	30.	10	150.0	-27.0	57.0	21.0	.590	30	-1.59	.32	21

APRIL 1991 SUMMARY FOR NORTHEAST DIVISION (CD3)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
BARNSDALL	535	3	61.7	30	*****	83.	16	36.	10	130.5	******	31.0	******	6.412	30	3.12	2.32	18
BARTLESVILLE 2W	548	3	62.0	30	1.2	85.	16	35.	15	124.5	-46.5	35.5	-9.5	4.851	30	1.53	1.60	18
BIXBY	782	3	60.5	30	-.1	85.	17	36.	23	159.5	-8.5	24.5	-11.5	2.590	30	-1.32	1.00	14
BURBANK	1256	3	*****	0	*****	****	0	****	0	******	******	******	******	5.480	30	*****	1.69	17
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	******	******	******	******	4.600	30	*****	1.71	18
CLAREMORE	1828	3	60.4	30	.5	82.	17	37.	10	160.0	-27.0	21.5	-12.5	3.880	30	.12	1.38	3
CLEVELAND 5 WSW	1902	3	63.7	24	*****	84.	16	40.	15	73.0	******	41.5	******	4.530	26	*****	1.53	3
FORAKER	3250	3	*****	0	*****	****	0	****	0	******	******	******	******	7.520	30	4.39	2.00	27
HOMINY	4289	3	*****	0	*****	****	0	****	0	******	******	******	******	4.040	30	.92	1.32	3
HULAH DAM	4393	3	59.3	21	*****	86.	17	29.	1	130.0	******	10.5	******	3.930	25	*****	2.00	28
JAY TOWER	4567	3	61.7	24	*****	80.	18	40.	15	100.5	******	21.0	******	4.670	25	*****	1.50	13
KANSAS 1 ESE	4672	3	60.8	30	*****	82.	26	40.	23	143.0	******	17.0	******	4.651	30	*****	1.20	14
LENAPAH	5118	3	*****	0	*****	****	0	****	0	******	******	******	******	5.190	30	*****	1.47	18
MANNFORD 6 NW	5522	3	63.5	30	*****	86.	16	37.	10	96.0	******	51.0	******	3.540	30	.25	1.23	3
MARAMEC	5540	3	*****	0	*****	****	0	****	0	******	******	******	******	3.160	30	.17	1.58	3
MIAMI	5855	3	59.9	30	-.2	82.	27	34.	15	173.0	-13.0	19.0	-20.0	5.670	30	1.95	1.97	18
NOWATA	6485	3	61.5	30	1.6	82.	16	38.	10	130.0	-64.0	26.0	-15.0	4.320	30	.82	1.60	3
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	******	******	******	******	1.953	30	*****	1.06	3
PAWHUSKA	6935	3	61.7	30	1.2	83.	16	35.	10	129.5	-48.5	29.5	-13.5	7.290	30	4.22	2.45	18
PAWNEE	6940	3	*****	0	*****	****	0	****	0	******	******	******	******	3.120	30	.15	1.40	3
PRYOR 6 N	7309	3	59.4	30	-.6	81.	27	35.	10	185.0	-11.0	17.0	-29.0	5.466	30	1.57	1.80	18
RALSTON	7390	3	62.5	30	*****	85.	16	35.	10	115.0	******	40.5	******	4.631	30	1.66	1.40	3
RAMONA 4 N	7394	3	*****	0	*****	****	0	****	0	******	******	******	******	5.060	30	*****	1.43	3
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	******	******	******	******	3.170	30	-.30	1.58	3
SPAVINAW	8380	3	62.9	30	*****	83.	26	35.	1	109.0	******	46.0	******	6.160	30	2.08	2.93	14
TULSA WSO APT	8992	3	64.2	30	3.3	84.	16	43.	15	81.5	-86.5	57.5	12.5	2.556	30	-1.59	1.33	3
VINITA 2 N	9203	3	60.5	30	.8	82.	26	36.	10	158.5	-30.5	24.5	-5.5	4.346	30	.28	1.46	17
WAGONER	9247	3	63.1	30	1.5	82.	16	41.	10	97.0	-53.0	39.5	-8.5	3.971	30	-.70	.85	14
WANN	9298	3	*****	0	*****	****	0	****	0	******	******	******	******	5.061	30	*****	1.32	18

APRIL 1991 SUMMARY FOR WEST CENTRAL DIVISION (CD4)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
CANTON DAM	1445	4	59.8	30	-.3	85.	17	32.	10	184.0	-8.0	28.0	-17.0	2.112	30	-.18	.99	25
CHEYENNE	1738	4	*****	0	*****	****	0	****	0	******	******	******	******	.220	30	*****	.13	25
CLINTON	1909	4	64.0	30	3.4	89.	12	39.	20	89.5	-89.5	60.0	13.0	1.302	30	-1.09	1.16	25
COLONY	2039	4	*****	0	*****	****	0	****	0	******	******	******	******	1.720	30	*****	1.25	25
CORDELL	2125	4	*****	0	*****	****	0	****	0	******	******	******	******	1.191	30	-1.00	1.04	25
ELK CITY 1 E	2849	4	63.0	30	*****	87.	26	39.	1	113.0	******	52.0	******	.982	30	-1.23	.85	25
ERICK 4 E	2944	4	61.8	30	1.4	90.	26	33.	1	137.5	-40.5	43.0	3.0	.341	30	-1.86	.27	25
HAMMON 1 NNE	3871	4	59.0	30	-1.3	86.	27	34.	10	199.5	16.5	18.5	-23.5	1.943	30	-.28	1.94	24
LEEDEY	5090	4	*****	0	*****	****	0	****	0	******	******	******	******	.090	30	-2.41	.04	27
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	******	******	******	******	.430	30	-1.66	.29	25
OKEENE	6629	4	61.7	30	.7	86.	16	35.	10	152.0	-16.0	51.5	3.5	1.540	30	-.79	.85	25
REYDON	7579	4	61.5	30	*****	89.	26	35.	27	146.0	******	42.5	******	.261	30	-2.01	.11	14
SAYRE	7952	4	*****	0	*****	****	0	****	0	******	******	******	******	.881	30	-1.17	.82	25
SWEETWATER 2 E	8652	4	*****	0	*****	****	0	****	0	******	******	******	******	.130	30	*****	.09	24
TALOGA	8708	4	61.6	30	2.3	87.	26	29.	10	155.0	-46.0	53.5	23.5	1.321	30	-1.12	.77	25
THOMAS	8815	4	*****	0	*****	****	0	****	0	******	******	******	******	1.830	30	*****	1.42	25
VICI	9172	4	*****	0	*****	****	0	****	0	******	******	******	******	.470	30	*****	.24	24
WATONGA	9364	4	62.3	30	*****	87.	16	34.	15	140.5	******	58.0	******	.963	30	-1.46	.76	25
WEATHERFORD	9422	4	61.8	28	*****	86.	18	40.	20	123.0	******	34.5	******	.963	30	-1.27	.91	25

APRIL 1991 SUMMARY FOR CENTRAL DIVISION (CD5)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
AMBER	200	5	*****	0	*****	****	0	****	0	******	******	******	******	1.930	30	*****	1.48	25
TINKER AFB	325	5	*****	0	*****	****	0	****	0	******	******	******	******	1.094	30	*****	.65	25
BLANCHARD 2 SSW	830	5	63.1	30	*****	86.	30	36.	10	107.5	******	49.5	******	2.024	30	*****	1.16	25
BRISTOW	1144	5	62.4	30	.5	86.	8	35.	10	121.0	-35.0	43.5	-19.5	2.713	30	-.84	1.21	3
CHANDLER	1684	5	63.5	30	1.5	88.	9	41.	23	96.5	-44.5	53.0	2.0	3.160	30	-.06	1.55	2
CHICKASHA EX ST	1750	5	62.6	30	.3	87.	30	33.	10	129.0	-13.0	58.0	-3.0	3.280	30	.44	1.88	25
COX CITY 1 E	2196	5	*****	0	*****	****	0	****	0	******	******	******	******	3.710	30	*****	1.20	22
CRESCENT	2242	5	*****	0	*****	****	0	****	0	******	******	******	******	2.430	30	*****	1.23	3
CUSHING	2318	5	61.0	29	.6	83.	17	41.	10	137.0	-32.0	21.0	-10.0	3.100	29	*****	1.70	3
EL RENO 1 N	2818	5	62.3	30	1.8	86.	30	34.	10	129.0	-49.0	47.0	4.0	3.990	30	1.41	2.75	3
GUTHRIE	3821	5	64.4	30	3.2	87.	30	40.	23	88.0	-76.0	69.0	19.0	3.051	30	.45	1.55	3
HENNESSEY 2 SE	4055	5	61.9	30	1.7	85.	16	31.	10	143.5	-40.5	50.5	10.5	1.070	30	-1.31	.69	25
INGALLS	4489	5	*****	0	*****	****	0	****	0	******	******	******	******	3.002	30	*****	1.74	3
KINGFISHER 2 SE	4861	5	62.6	30	1.8	87.	30	37.	10	122.5	-51.5	50.5	2.5	1.761	30	-.66	.93	25
KONAWA	4915	5	*****	0	*****	****	0	****	0	******	******	******	******	2.520	30	-1.60	.89	25
MARSHALL	5589	5	*****	0	*****	****	0	****	0	******	******	******	******	1.030	30	-1.35	.61	25
MEEKER 4 W	5779	5	61.9	30	.6	85.	8	35.	10	128.5	-29.5	35.5	-11.5	2.170	30	-1.39	.89	2
MULHALL	6110	5	*****	0	*****	****	0	****	0	******	******	******	******	3.160	30	*****	1.64	3
NORMAN 3 S	6386	5	63.6	30	*****	88.	30	36.	10	94.0	******	53.0	******	2.623	30	-.68	1.00	3
OILTON 2 SE	6616	5	*****	0	*****	****	0	****	0	******	******	******	******	3.200	30	*****	.94	24
OKEMAH	6638	5	63.5	30	1.7	88.	8	42.	23	91.5	-44.5	46.0	6.0	3.051	30	-1.13	.82	25
OKLAHOMA CTY WS	6661	5	63.1	30	2.9	87.	30	41.	23	106.5	-77.5	50.5	10.5	2.104	30	-.81	1.32	25
PERKINS	7003	5	*****	0	*****	****	0	****	0	******	******	******	******	2.910	30	.27	1.72	3
PIEDMONT	7068	5	*****	0	*****	****	0	****	0	******	******	******	******	4.160	30	*****	3.08	3
PRAGUE	7264	5	*****	0	*****	****	0	****	0	******	******	******	******	2.670	30	-1.20	1.40	3
PURCELL 5 SW	7327	5	62.4	30	.7	85.	30	34.	1	120.5	-33.5	42.0	-13.0	2.582	30	-.79	1.20	25
SEMINOLE	8042	5	64.0	30	.8	89.	8	36.	23	86.5	-45.5	57.5	-20.5	3.530	30	-.56	1.20	3
SHAWNEE	8110	5	*****	0	*****	****	0	****	0	******	******	******	******	2.530	30	-1.34	1.25	3
STELLA	8479	5	*****	0	*****	****	0	****	0	******	******	******	******	2.120	30	*****	.92	25
STILLWATER 2 W	8501	5	61.5	30	1.1	84.	17	33.	10	143.0	-40.0	39.5	-5.5	3.130	30	.55	2.20	3
STROUD 1 N	8563	5	*****	0	*****	****	0	****	0	******	******	******	******	3.230	30	*****	1.80	3
TECUMSEH	8751	5	*****	0	*****	****	0	****	0	******	******	******	******	2.881	30	*****	1.05	3
TROUSDALE	8960	5	*****	0	*****	****	0	****	0	******	******	******	******	2.680	30	*****	.91	25
UNION CITY 1 SE	9086	5	*****	0	*****	****	0	****	0	******	******	******	******	1.532	30	-1.80	1.39	25
WELTY 1 SSE	9479	5	*****	0	*****	****	0	****	0	******	******	******	******	3.370	30	*****	1.20	3
WEWOKA	9575	5	*****	0	*****	****	0	****	0	******	******	******	******	2.310	30	-1.46	.95	25

APRIL 1991 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ASHLAND	364	6	*****	0	*****	****	0	****	0	******	******	******	******	5.050	30	*****	1.85	3
BEGGS	631	6	*****	0	*****	****	0	****	0	******	******	******	******	2.300	30	*****	1.02	3
BOYNTON	1027	6	*****	0	*****	****	0	****	0	******	******	******	******	3.470	30	*****	.90	25
CALVIN	1391	6	*****	0	*****	****	0	****	0	******	******	******	******	2.664	30	-1.77	.74	3
CHECOTAH	1711	6	*****	0	*****	****	0	****	0	******	******	******	******	4.391	30	-.20	1.50	3
CLAYTON 11 WNW	1858	6	*****	0	*****	****	0	****	0	******	******	******	******	6.710	30	*****	1.95	12
DEWAR 2 NE	2485	6	*****	0	*****	****	0	****	0	******	******	******	******	1.610	30	-2.67	.65	25
DUSTIN	2690	6	*****	0	*****	****	0	****	0	******	******	******	******	2.460	30	*****	.95	3
EUFAULA	2993	6	64.4	30	*****	84.	8	43.	23	74.5	******	56.0	******	6.160	30	1.48	1.92	3
HANNA	3884	6	62.9	30	*****	85.	9	37.	10	110.0	******	46.5	******	3.690	30	-.75	1.27	25
HARTSHORNE	3946	6	*****	0	*****	****	0	****	0	******	******	******	******	5.282	30	*****	1.35	12
HASKELL	3956	6	*****	0	*****	****	0	****	0	******	******	******	******	2.512	30	-1.60	.84	3
HOLDENVILLE	4235	6	62.9	30	.7	88.	8	37.	23	110.5	-20.5	48.5	1.5	2.570	30	-1.80	.65	25
LAKE EUFAULA	4975	6	63.4	29	*****	84.	17	44.	23	92.0	******	46.0	******	4.971	29	*****	1.65	3
LYONS 2 N	5437	6	*****	0	*****	****	0	****	0	******	******	******	******	7.130	30	2.40	1.15	13
MARBLE CITY	5546	6	*****	0	*****	****	0	****	0	******	******	******	******	6.754	30	*****	1.50	14
MCALESTER FAA	5664	6	64.2	30	2.3	87.	8	39.	23	93.5	-50.5	68.0	17.0	4.711	29	*****	1.10	3
MCCURTAIN 1 SE	5693	6	64.8	30	*****	85.	16	40.	10	71.5	******	66.0	******	5.931	30	1.16	1.17	12
MUSKOGEE	6130	6	63.4	29	1.4	82.	30	40.	10	88.0	-50.0	41.5	-6.5	4.870	30	.29	1.14	2
OKMULGEE W W	6670	6	60.2	30	-2.1	86.	9	35.	11	166.5	35.5	22.5	-27.5	2.442	30	-2.08	.78	3
OKTAHA 2 NE	6678	6	*****	0	*****	****	0	****	0	******	******	******	******	3.910	30	*****	1.28	3
QUINTON	7372	6	*****	0	*****	****	0	****	0	******	******	******	******	4.394	30	.06	1.05	3
SALLISAW 2 NE	7862	6	63.0	30	.8	86.	6	37.	1	97.0	-33.0	38.0	-8.0	6.712	29	*****	2.40	12
SCIPIO	7979	6	*****	0	*****	****	0	****	0	******	******	******	******	4.220	30	*****	1.57	3
SCRAPER	7993	6	*****	0	*****	****	0	****	0	******	******	******	******	5.460	30	*****	1.30	3
SHORT	8170	6	*****	0	*****	****	0	****	0	******	******	******	******	6.280	30	*****	1.50	12
STILWELL 1 NE	8506	6	61.8	30	*****	81.	26	36.	10	125.5	******	28.5	******	5.271	30	.56	.96	12
TAHLEQUAH	8677	6	62.3	30	1.2	84.	16	35.	10	115.0	-48.0	34.0	-12.0	5.750	30	1.19	1.50	14
WEBBERS FALLS	9445	6	61.2	30	.6	82.	27	34.	1	137.0	-34.0	22.5	-16.5	5.882	30	1.28	1.36	3
WESTVILLE	9523	6	*****	0	*****	****	0	****	0	******	******	******	******	5.460	30	*****	1.21	14
WETUMKA 3 NE	9571	6	*****	0	*****	****	0	****	0	******	******	******	******	2.153	30	-2.22	.81	25

APRIL 1991 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
ALTUS IRR STA	179	7	65.1	30	1.8	91.	30	37.	23	69.0	-55.0	71.0	-2.0	3.310	30	1.28	3.25	25
ALTUS DAM	184	7	64.0	30	*****	89.	13	38.	23	90.5	******	61.0	******	1.540	30	-.44	1.44	25
APACHE	260	7	*****	0	*****	****	0	****	0	******	******	******	******	2.420	30	*****	1.29	25
ALTUS AFB	447	7	*****	0	*****	****	0	****	0	******	******	******	******	2.901	30	*****	2.68	25
CARNEGIE 2 ENE	1504	7	63.6	30	1.8	88.	30	33.	10	112.5	-37.5	69.5	15.5	1.900	30	-.52	1.39	25
CHATTANOOGA	1706	7	64.3	30	1.5	91.	27	32.	1	93.0	-36.0	71.5	8.5	2.320	30	-.16	1.96	25
DUNCAN 12 W	2668	7	*****	0	*****	****	0	****	0	******	******	******	******	1.670	30	*****	1.25	25
FREDERICK	3353	7	62.8	30	-1.6	89.	27	40.	23	103.0	-2.0	36.5	-50.5	1.390	30	-.93	1.27	25
GRANDFIELD 4 NW	3709	7	*****	0	*****	****	0	****	0	******	******	******	******	.890	30	-1.53	.78	25
HOBART FAA APT	4204	7	63.4	30	3.1	89.	30	37.	23	110.0	-70.0	61.0	22.0	1.192	30	-1.05	1.03	25
HOLLIS	4249	7	63.5	30	.3	91.	27	35.	10	102.5	-19.5	56.5	-11.5	.820	30	-1.38	.70	25
LAWTON	5063	7	62.7	30	.0	90.	27	39.	23	109.0	-18.0	40.5	-17.5	2.260	30	-.15	1.80	25
FORT SILL	5068	7	63.5	30	*****	89.	26	40.	23	102.0	******	57.5	******	2.447	30	.04	1.42	24
LOOKEBA 2 ENE	5329	7	*****	0	*****	****	0	****	0	******	******	******	******	1.920	30	*****	1.47	25
MANGUM RES STA	5509	7	64.0	30	1.3	90.	30	35.	23	86.0	-54.0	55.5	-15.5	.960	30	-.93	.96	25
RANDLETT 9 E	7403	7	*****	0	*****	****	0	****	0	******	******	******	******	1.792	30	*****	.92	25
ROOSEVELT	7727	7	*****	0	*****	****	0	****	0	******	******	******	******	1.030	30	-1.22	.97	25
SEDAN	8016	7	*****	0	*****	****	0	****	0	******	******	******	******	1.290	30	*****	1.09	25
VINSON 3 WNW	9212	7	*****	0	*****	****	0	****	0	******	******	******	******	.880	30	-1.19	.72	25
WALTERS	9278	7	64.8	27	*****	89.	30	36.	1	76.0	******	71.5	******	2.140	27	*****	1.66	24
WICHITA MT WLR	9629	7	59.8	21	*****	87.	27	33.	10	115.5	******	7.0	******	3.351	30	.90	2.40	25
WILLOW	9668	7	*****	0	*****	****	0	****	0	******	******	******	******	.830	30	*****	.67	25

APRIL 1991 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

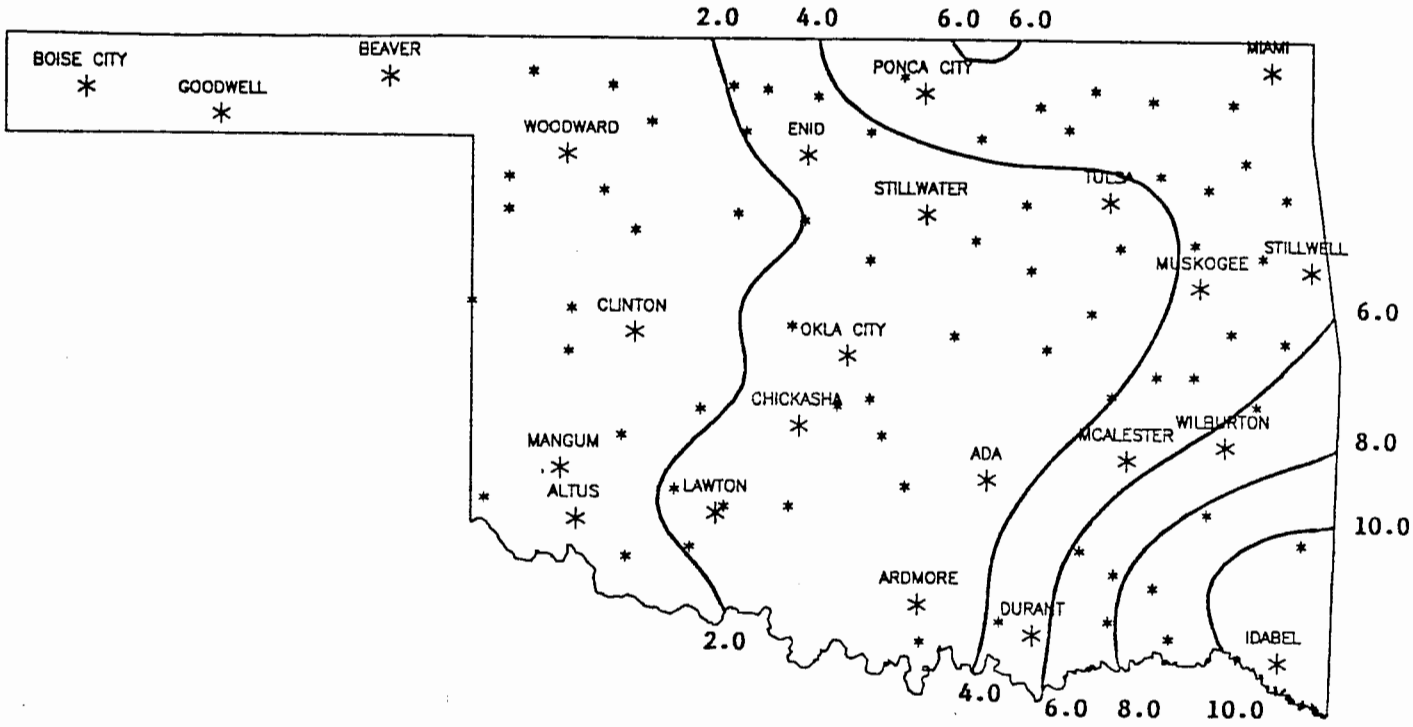
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
ADA	17	8	61.5	30	-1.0	87.	8	40.	23	124.5	-6.5	21.0	-35.0	1.640	30	-2.13	.72	25
ARDMORE	292	8	65.3	30	.1	87.	8	42.	23	62.0	-19.0	71.5	-15.5	1.411	30	-2.46	.48	3
ATOKA DAM	394	8	64.6	30	*****	91.	9	34.	1	79.0	******	67.0	******	5.382	30	*****	1.35	29
CANEY	1437	8	65.3	30	*****	90.	8	42.	10	55.5	******	65.0	******	7.970	30	*****	3.47	18
CENTRAHOMA	1648	8	*****	0	*****	****	0	****	0	******	******	******	******	3.100	30	*****	1.40	2
CHICKASAW NRA	1745	8	62.0	30	*****	88.	9	36.	1	122.5	******	32.0	******	4.681	30	*****	1.90	3
COLEMAN	2011	8	*****	0	*****	****	0	****	0	******	******	******	******	4.110	30	*****	2.00	17
COMANCHE	2054	8	*****	0	*****	****	0	****	0	******	******	******	******	2.850	30	*****	1.40	25
DAISY 4 ENE	2354	8	*****	0	*****	****	0	****	0	******	******	******	******	6.872	30	1.44	1.71	12
DUNCAN	2660	8	62.0	30	-1.7	86.	27	39.	23	117.0	5.0	26.5	-46.5	1.752	30	-.96	1.11	25
DURANT USDA	2678	8	63.5	30	*****	92.	9	37.	10	95.5	******	50.0	******	5.200	30	.66	1.19	12
ELMORE CITY	2872	8	*****	0	*****	****	0	****	0	******	******	******	******	2.670	30	*****	1.13	24
FARRIS 3 WNW	3083	8	*****	0	*****	****	0	****	0	******	******	******	******	8.490	30	*****	2.82	12
GRADY	3688	8	*****	0	*****	****	0	****	0	******	******	******	******	4.710	30	*****	2.95	18
HEALDTON	4001	8	64.2	30	*****	87.	30	35.	1	88.5	******	64.0	******	2.151	30	-1.30	1.03	3
HENNEPIN	4052	8	*****	0	*****	****	0	****	0	******	******	******	******	3.331	21	*****	1.19	22
KETCHUM RANCH	4780	8	*****	0	*****	****	0	****	0	******	******	******	******	2.870	30	*****	1.17	25
KINGSTON	4865	8	*****	0	*****	****	0	****	0	******	******	******	******	3.900	30	-.20	1.01	12
LEHIGH	5108	8	*****	0	*****	****	0	****	0	******	******	******	******	4.942	30	*****	1.10	29
LOCO 6 SE	5247	8	*****	0	*****	****	0	****	0	******	******	******	******	2.270	30	*****	1.14	3
MADILL	5468	8	65.3	30	1.8	91.	8	38.	10	64.5	-42.5	74.0	12.0	2.090	30	-2.42	.66	2
MARIETTA	5563	8	66.2	30	2.7	91.	8	40.	1	50.5	-59.5	86.5	21.5	2.040	30	-1.76	.78	25
MARLOW 1 WSW	5581	8	64.1	30	*****	86.	30	35.	23	89.0	******	61.5	******	2.070	30	-.61	1.25	25
MCGEE CREEK DAM	5713	8	63.5	30	*****	87.	9	40.	10	90.0	******	45.5	******	8.530	30	*****	2.06	12
PAULS VALLEY	6926	8	63.5	30	.2	87.	8	33.	10	100.0	-18.0	53.5	-13.5	2.585	30	-.91	1.13	25
TISHOMINGO NWLR	8884	8	65.3	28	*****	93.	8	36.	10	57.0	******	66.0	******	3.691	30	-.92	1.00	22
TUSSY	9032	8	*****	0	*****	****	0	****	0	******	******	******	******	1.960	30	*****	1.20	25
WAURIKA	9395	8	65.7	30	1.2	90.	26	38.	23	61.5	-42.5	82.5	-6.5	2.970	30	.01	1.48	25
WAURIKA DAM	9399	8	63.2	28	*****	89.	27	38.	24	90.0	******	40.5	******	2.080	29	*****	1.30	25

APRIL 1991 SUMMARY FOR SOUTHEAST DIVISION (CD9)

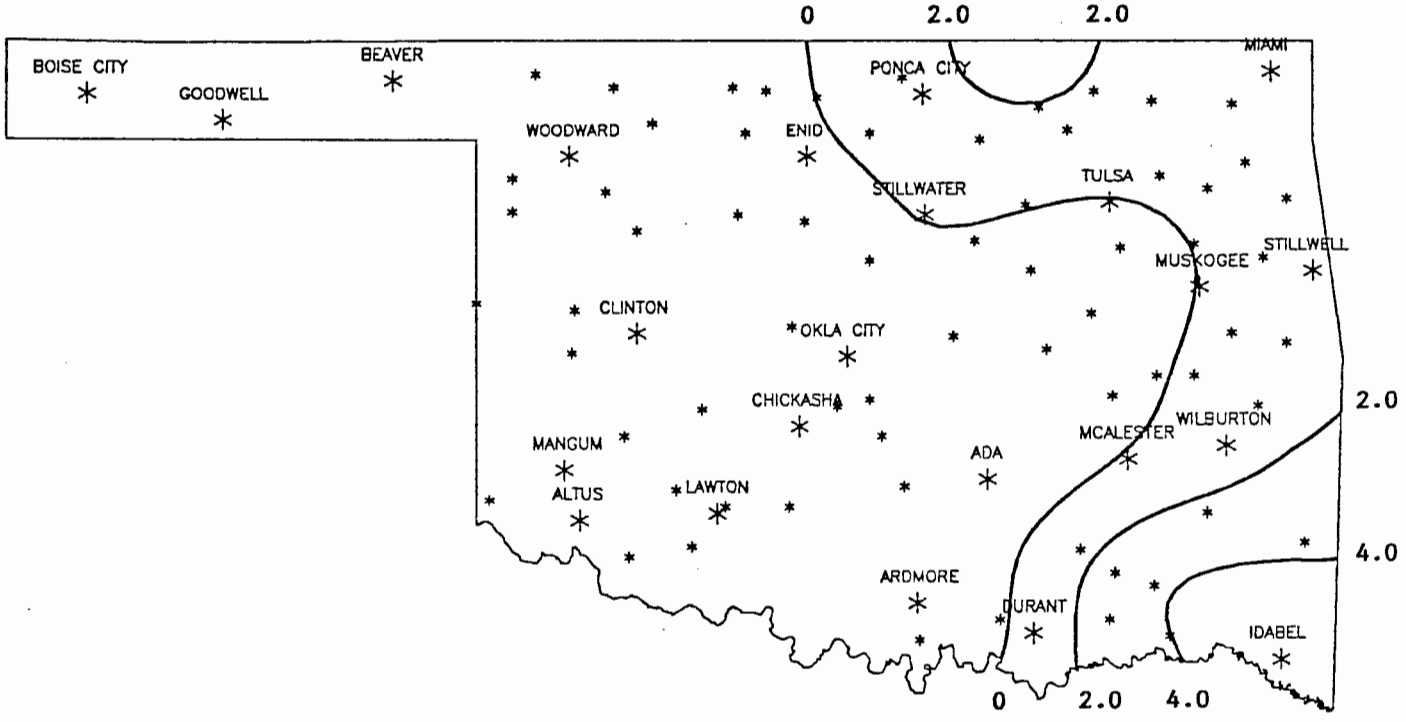
NAME	ID	CD	MEAN TEMP	NUM OBS	DEV FROM NORM	MAX TEMP	MAX DAY	MIN TEMP	MIN DAY	HEAT DEG DAY	DEV FROM NORM	COOL DEG DAY	DEV FROM NORM	TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	MAX DAY
ANTLERS	256	9	64.6	30	2.0	85.	8	37.	1	75.0	-46.0	61.5	12.5	11.080	30	5.97	3.85	13
BATTIEST 1 SSW	567	9	61.3	28	*****	79.	9	34.	2	125.5	******	20.5	******	14.230	30	*****	4.65	14
BEAR MT TWR	584	9	64.5	24	*****	82.	9	43.	1	56.5	******	45.5	******	7.100	25	*****	2.64	18
BENGAL	670	9	*****	0	*****	****	0	****	0	******	******	******	******	8.310	30	*****	2.66	18
BOSWELL 4 NNW	980	9	66.4	30	*****	87.	8	38.	10	52.0	******	93.0	******	9.354	30	4.78	2.55	12
BROKEN BOW 1 N	1162	9	*****	0	*****	****	0	****	0	******	******	******	******	11.510	30	6.18	3.36	12
BROKEN BOW DAM	1168	9	63.3	30	*****	84.	9	36.	1	93.0	******	40.5	******	11.760	30	*****	3.94	12
CARNASAW TWR	1499	9	*****	0	*****	****	0	****	0	******	******	******	******	10.480	30	5.00	3.37	12
CARTER TWR	1544	9	*****	0	*****	****	0	****	0	******	******	******	******	7.080	30	1.82	1.73	17
FANSHAWE	3065	9	*****	0	*****	****	0	****	0	******	******	******	******	6.230	30	1.23	1.77	12
FLAGPOLE TWR	3169	9	*****	0	*****	****	0	****	0	******	******	******	******	6.680	30	*****	1.78	12
HEAVENER 1 SE	4008	9	*****	0	*****	****	0	****	0	******	******	******	******	9.090	30	4.16	2.86	12
HEE MT TWR	4017	9	*****	0	*****	****	0	****	0	******	******	******	******	12.020	30	*****	3.05	12
HUGO	4384	9	65.5	30	1.4	83.	30	44.	10	55.0	-39.0	70.5	3.5	8.250	30	3.53	2.10	12
IDABEL	4451	9	64.0	30	.8	84.	9	35.	1	77.5	-30.5	47.0	-7.0	13.592	30	8.19	3.17	12
JADIE TOWER	4560	9	*****	0	*****	****	0	****	0	******	******	******	******	12.710	30	*****	2.86	27
POTEAU W W	7254	9	63.2	30	*****	88.	28	36.	10	109.5	******	54.0	******	5.800	29	*****	1.65	12
SMITHVILLE 1 W	8285	9	62.0	30	*****	81.	29	33.	10	116.0	******	26.5	******	11.974	30	*****	2.65	12
SPIRO	8416	9	*****	0	*****	****	0	****	0	******	******	******	******	6.070	30	1.45	1.98	12
TUSKAHOMA	9023	9	64.9	30	*****	84.	28	34.	1	73.5	******	72.0	******	8.411	30	*****	3.09	12
VALLIANT 3 W	9118	9	*****	0	*****	****	0	****	0	******	******	******	******	10.080	30	5.08	2.67	12
WILBURTON 9 ENE	9634	9	64.0	30	1.9	84.	28	36.	1	85.0	-55.0	55.0	2.0	5.701	30	.65	1.35	17

APRIL 1991 CLIMATE DIVISION SUMMARY

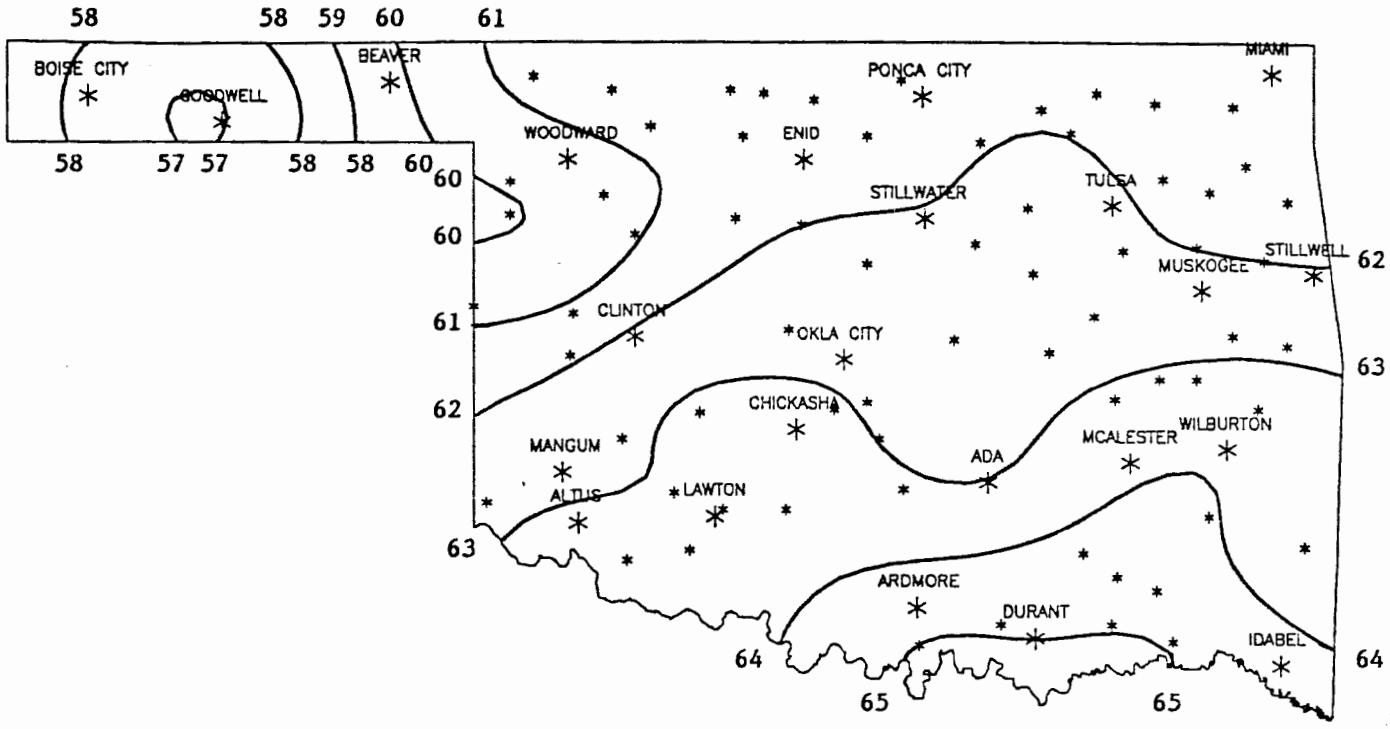
CLIMATE DIV	MEAN TEMP	NUM STA	DEV FROM NORM	MAX TEMP	DAY	MIN TEMP	DAY	HEAT DEGREE DAYS	DEV FROM NORM	COOL DEGREE DAYS	DEV FROM NORM	TOT PPT	NUM STA	DEV FROM NORM	MAX 24-HR	DAY
1	57.6	10	1.0	91.0	16	25.0	28	242.3	-27.3	18.9	1.6	.31	14	-1.18	.42	23
2	61.2	14	1.5	89.0	27	30.0	10	153.7	-44.0	38.5	1.2	3.11	19	.51	2.90	26
3	61.6	15	1.3	86.0	16	29.0	1	132.8	-48.1	32.0	-7.6	4.56	26	1.04	2.93	14
4	61.6	9	1.3	90.0	26	29.0	10	146.3	-35.0	45.2	3.2	.98	19	-1.29	1.94	24
5	62.7	16	1.5	89.0	8	31.0	10	115.3	-45.8	47.9	-1.6	2.65	35	-.57	3.08	3
6	62.9	12	1.1	88.0	8	34.0	1	106.8	-37.3	43.2	-3.5	4.46	28	-.05	2.40	12
7	63.7	10	1.0	91.0	27	32.0	1	97.8	-37.2	58.0	-6.7	1.77	21	-.53	3.25	25
8	64.0	14	.3	93.0	8	33.0	10	85.7	-23.3	57.2	-14.1	3.81	27	-.03	3.47	18
9	64.2	9	1.2	88.0	28	33.0	10	81.8	-33.9	57.8	2.0	9.73	20	4.69	4.65	14



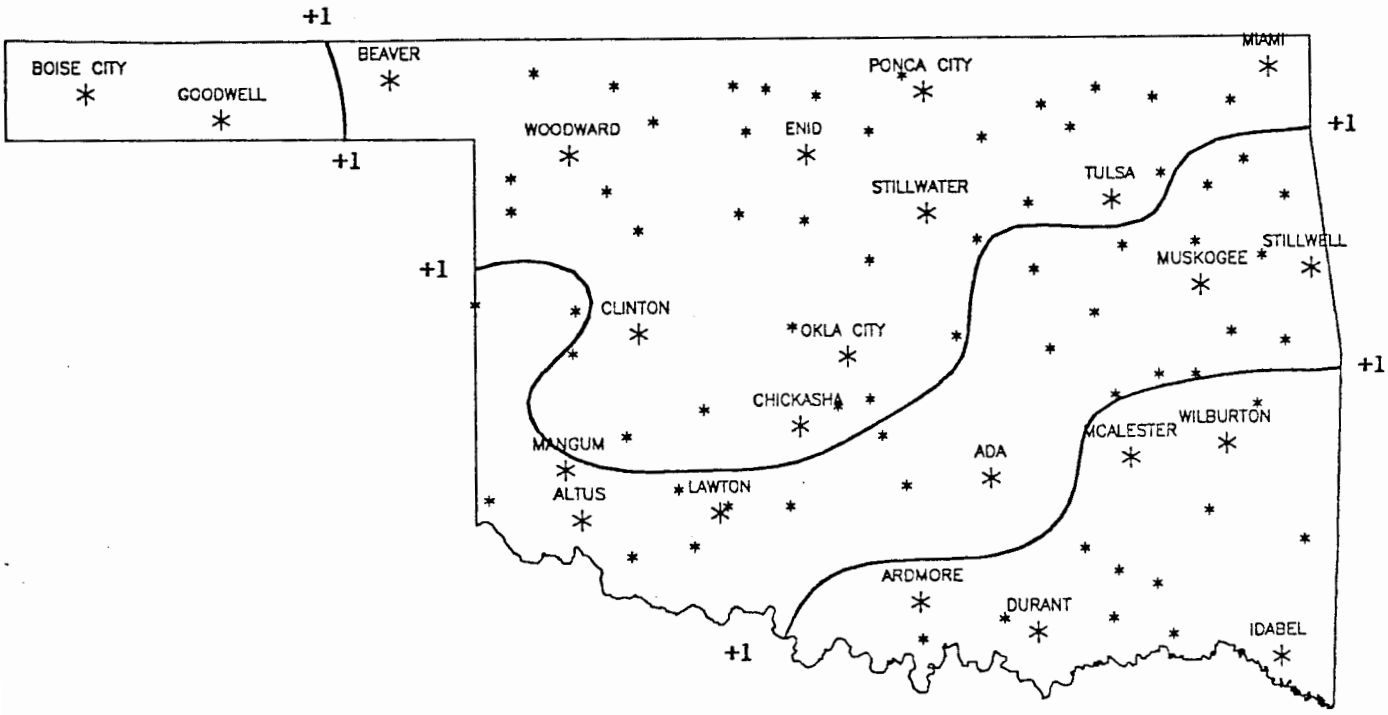
APRIL 1991 TOTAL PRECIPITATION
(Inches)



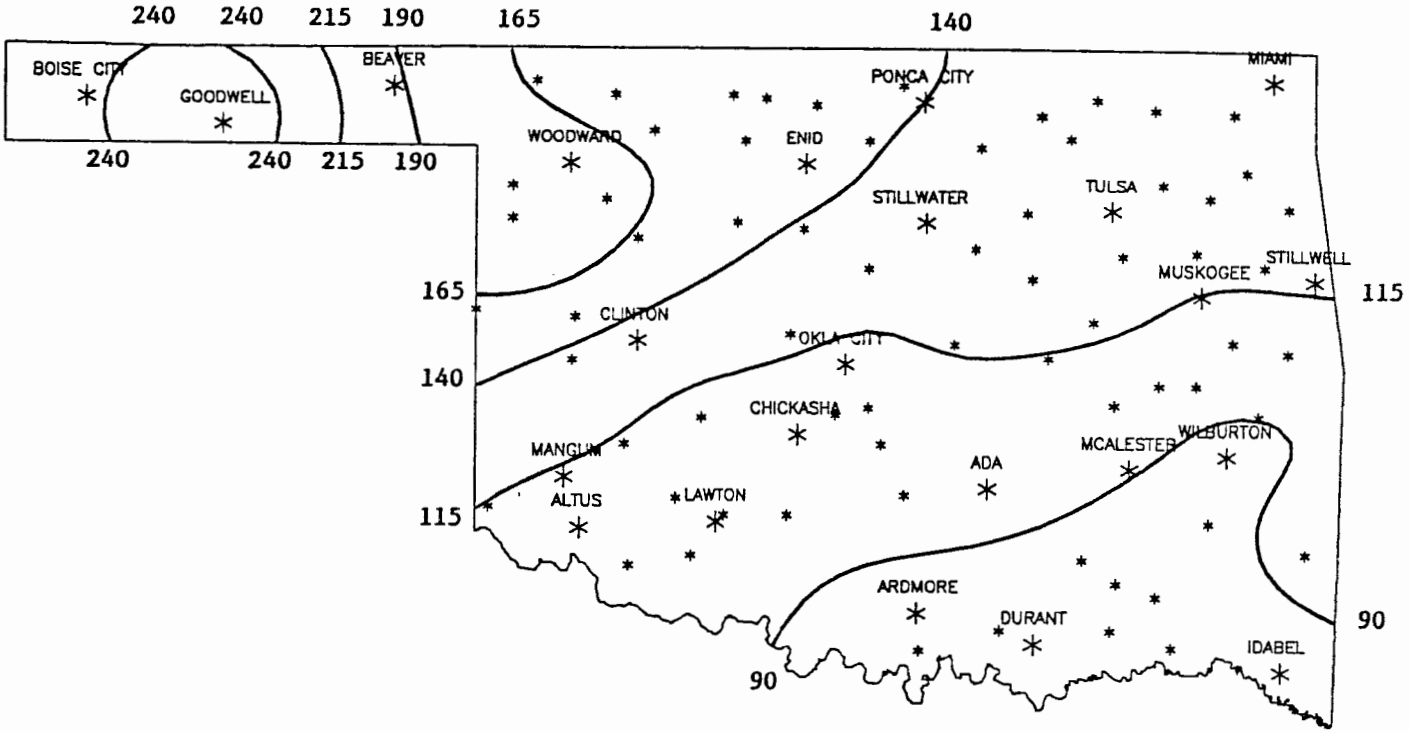
APRIL 1991 DEVIATION FROM NORMAL PRECIPITATION
(Inches)



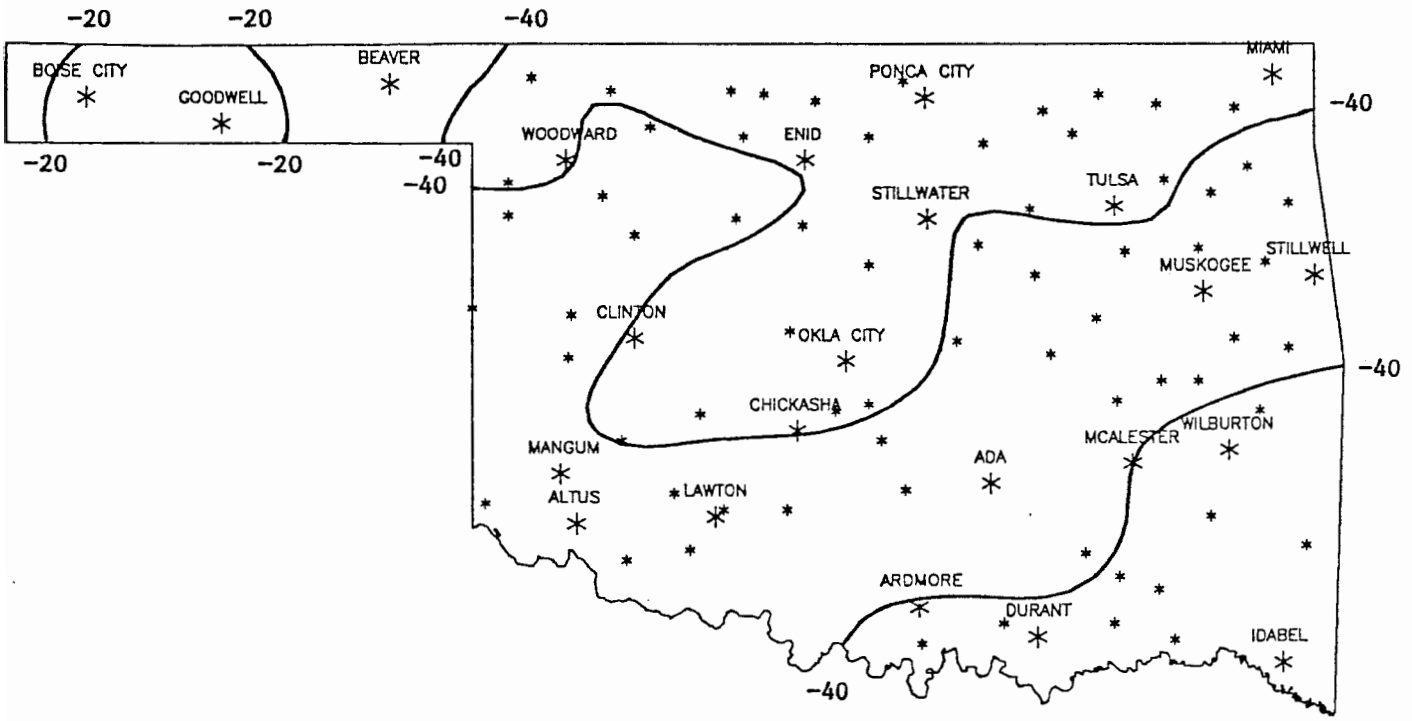
APRIL 1991 AVERAGE MONTHLY TEMPERATURES
(Degrees F)



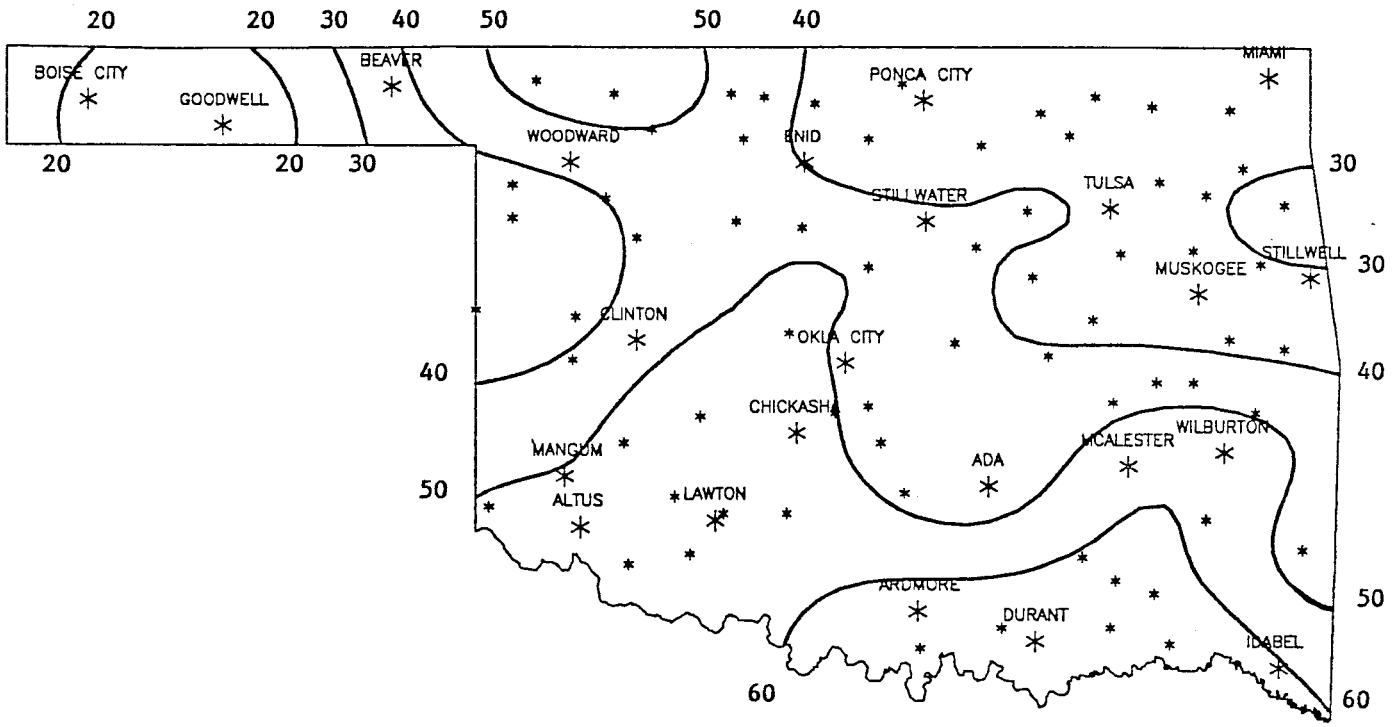
APRIL 1991 DEVIATION FROM NORMAL TEMPERATURES
(Degrees F)



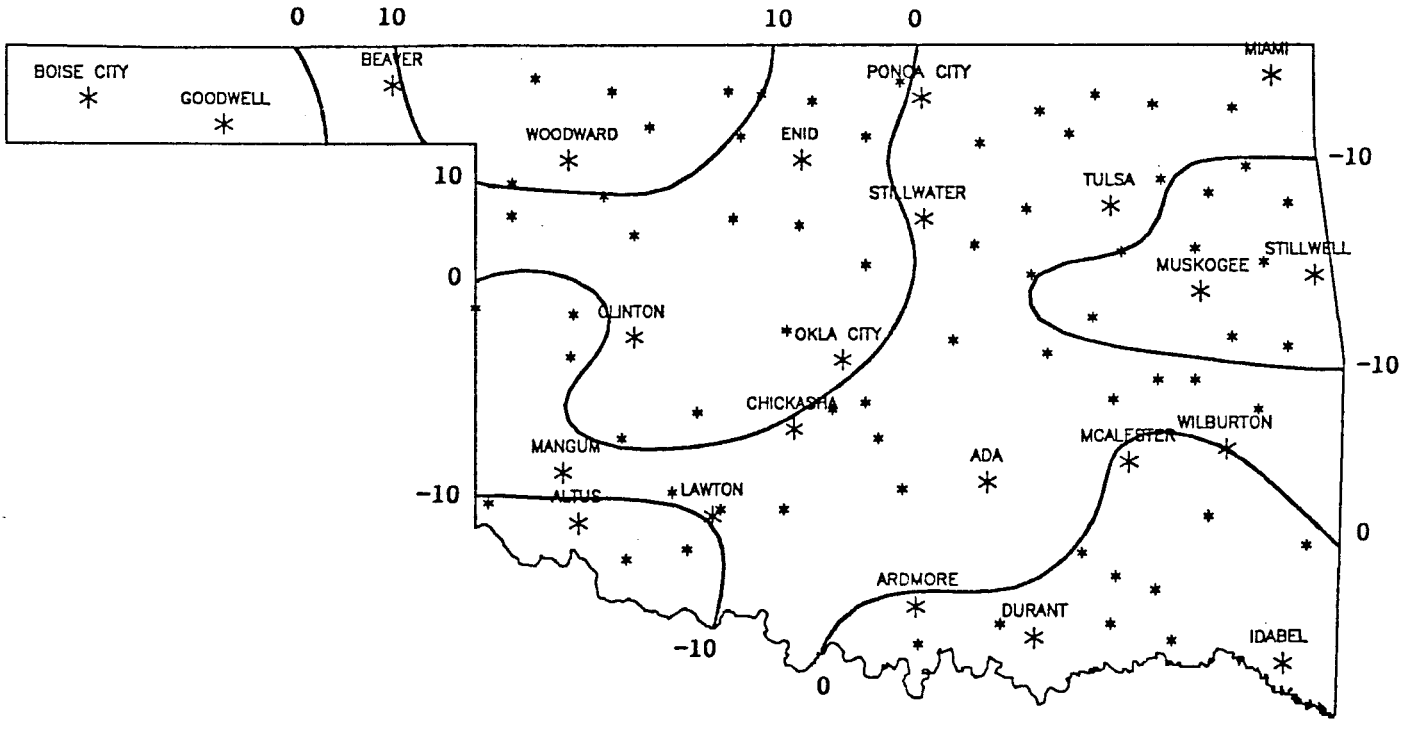
APRIL 1991 HEATING DEGREE DAYS



APRIL 1991 DEVIATION FROM NORMAL HEATING DEGREE DAYS

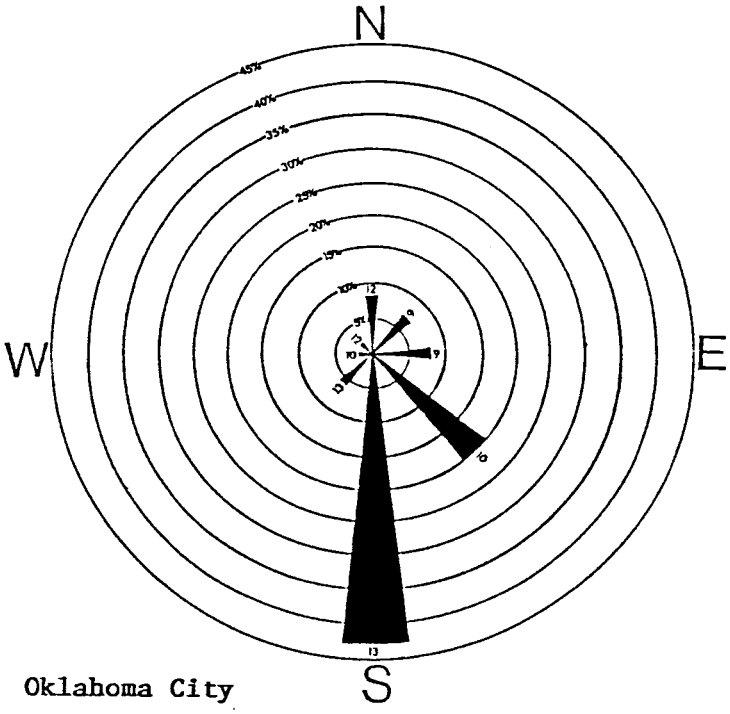


APRIL 1991 COOLING DEGREE DAYS

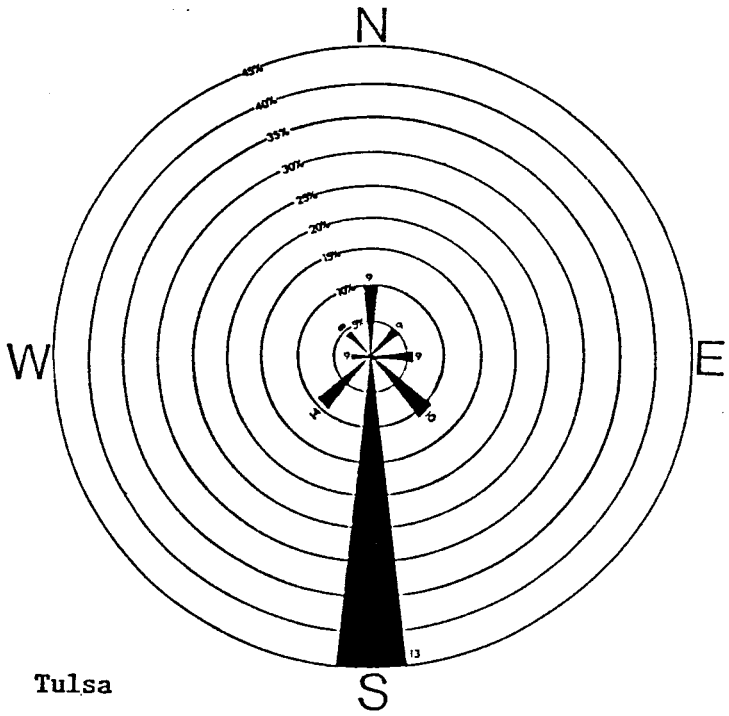


APRIL 1991 DEVIATION FROM NORMAL COOLING DEGREE DAYS

June wind roses for Oklahoma City and Tulsa for 10-year (1965-1974) mean winds (data adapted from NOAA Airport Climatology Series). Percents represent the percentages 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.



Oklahoma City



Tulsa

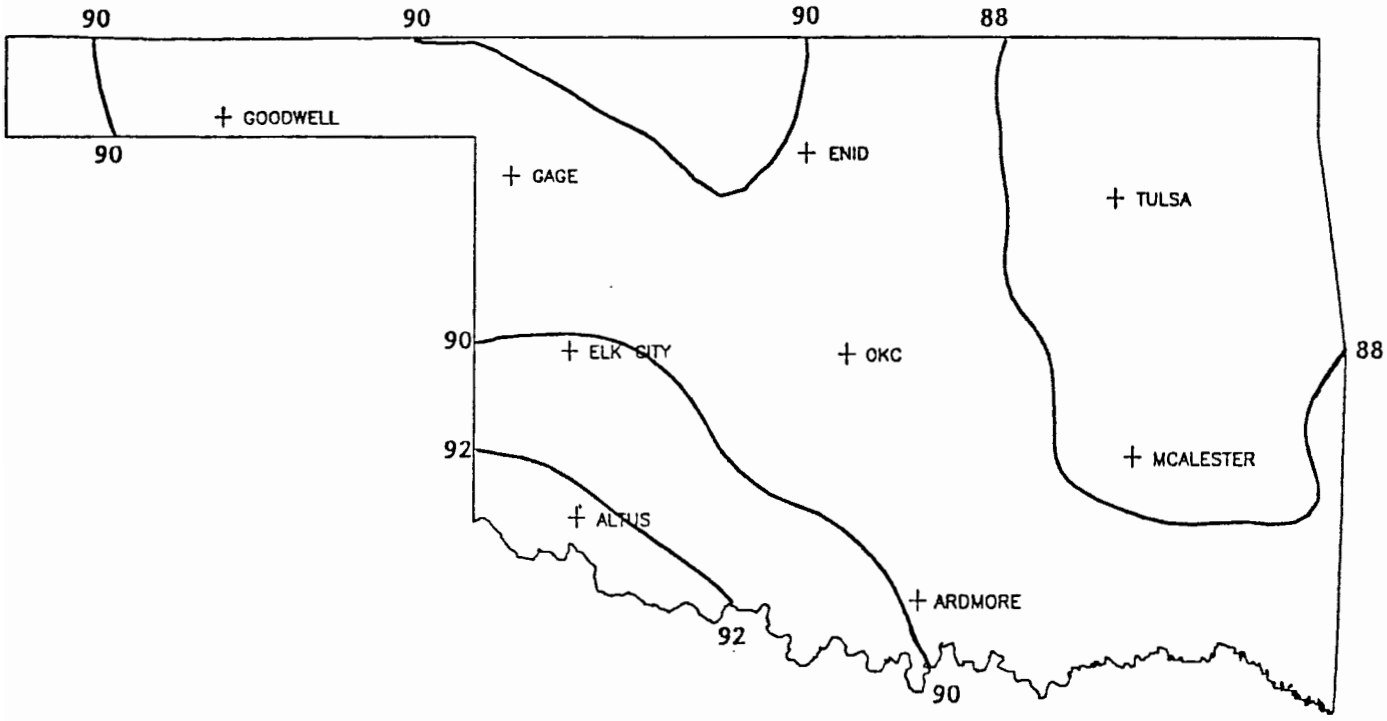
JUNE 1991 SUNRISE AND SUNSET

Oklahoma City

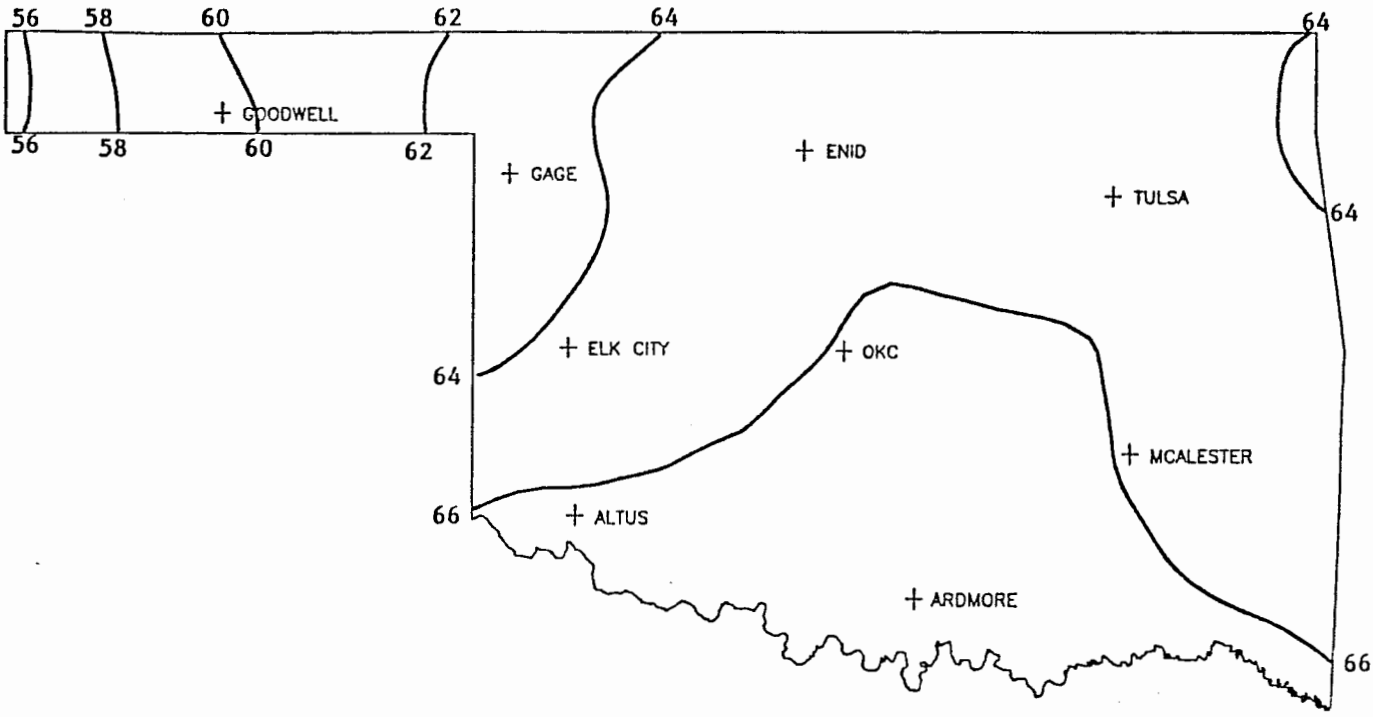
DATE	SUNRISE	SUNSET	DAYLIGHT
910601	6:19AM	8:37PM LT	14:19
910602	6:18AM	8:38PM LT	14:19
910603	6:18AM	8:38PM LT	14:20
910604	6:18AM	8:39PM LT	14:21
910605	6:18AM	8:40PM LT	14:22
910606	6:18AM	8:40PM LT	14:23
910607	6:17AM	8:41PM LT	14:23
910608	6:17AM	8:41PM LT	14:24
910609	6:17AM	8:42PM LT	14:24
910610	6:17AM	8:42PM LT	14:25
910611	6:17AM	8:43PM LT	14:26
910612	6:17AM	8:43PM LT	14:26
910613	6:17AM	8:43PM LT	14:26
910614	6:17AM	8:44PM LT	14:27
910615	6:17AM	8:44PM LT	14:27
910616	6:17AM	8:45PM LT	14:28
910617	6:17AM	8:45PM LT	14:28
910618	6:17AM	8:45PM LT	14:28
910619	6:17AM	8:46PM LT	14:28
910620	6:18AM	8:46PM LT	14:28
910621	6:18AM	8:46PM LT	14:28
910622	6:18AM	8:46PM LT	14:28
910623	6:18AM	8:46PM LT	14:28
910624	6:18AM	8:47PM LT	14:28
910625	6:19AM	8:47PM LT	14:28
910626	6:19AM	8:47PM LT	14:28
910627	6:19AM	8:47PM LT	14:28
910628	6:20AM	8:47PM LT	14:28
910629	6:20AM	8:47PM LT	14:27
910630	6:20AM	8:47PM LT	14:27

Tulsa

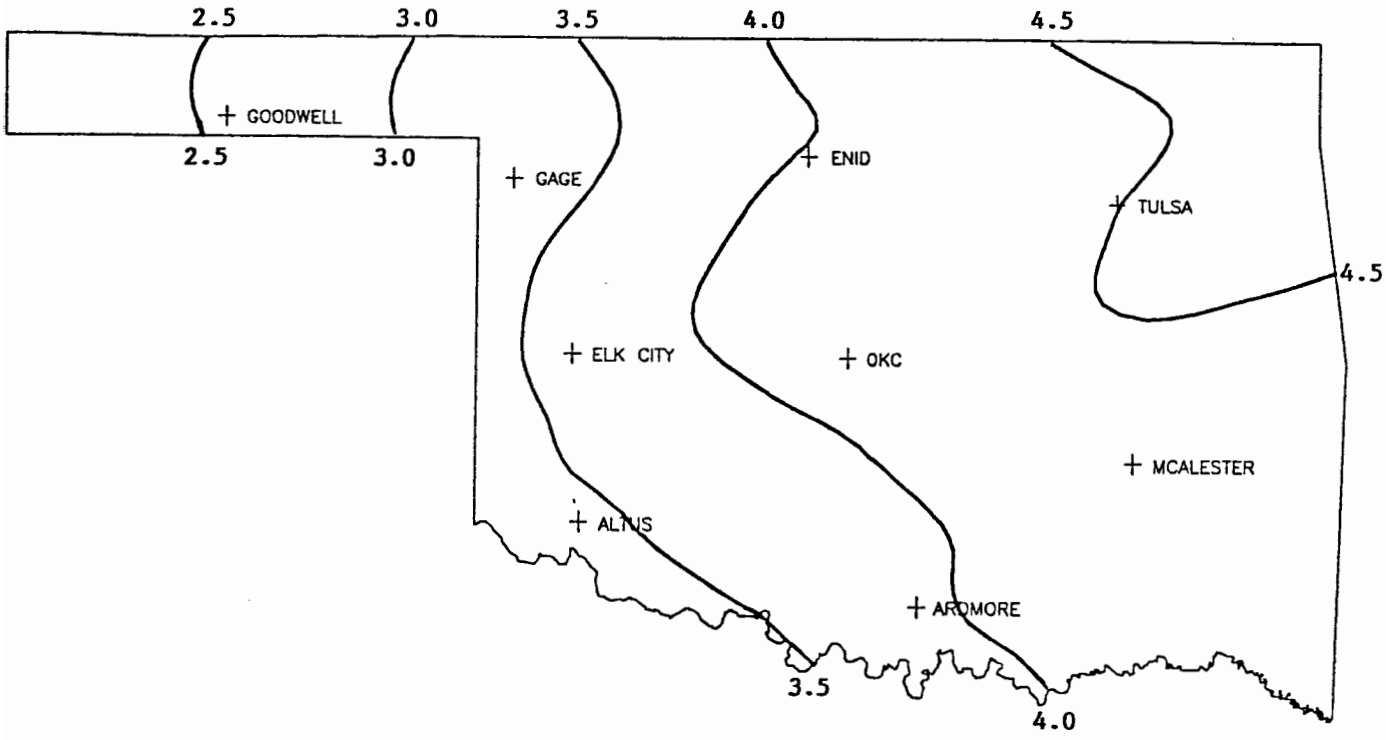
DATE	SUNRISE	SUNSET	DAYLIGHT
910601	6:10AM	8:32PM LT	14:23
910602	6:10AM	8:33PM LT	14:23
910603	6: 9AM	8:34PM LT	14:24
910604	6: 9AM	8:34PM LT	14:25
910605	6: 9AM	8:35PM LT	14:26
910606	6: 9AM	8:35PM LT	14:27
910607	6: 8AM	8:36PM LT	14:27
910608	6: 8AM	8:36PM LT	14:28
910609	6: 8AM	8:37PM LT	14:29
910610	6: 8AM	8:37PM LT	14:29
910611	6: 8AM	8:38PM LT	14:30
910612	6: 8AM	8:38PM LT	14:30
910613	6: 8AM	8:39PM LT	14:31
910614	6: 8AM	8:39PM LT	14:31
910615	6: 8AM	8:40PM LT	14:31
910616	6: 8AM	8:40PM LT	14:32
910617	6: 8AM	8:40PM LT	14:32
910618	6: 8AM	8:41PM LT	14:32
910619	6: 8AM	8:41PM LT	14:32
910620	6: 9AM	8:41PM LT	14:33
910621	6: 9AM	8:41PM LT	14:33
910622	6: 9AM	8:42PM LT	14:33
910623	6: 9AM	8:42PM LT	14:33
910624	6: 9AM	8:42PM LT	14:33
910625	6:10AM	8:42PM LT	14:32
910626	6:10AM	8:42PM LT	14:32
910627	6:10AM	8:42PM LT	14:32
910628	6:11AM	8:43PM LT	14:32
910629	6:11AM	8:43PM LT	14:32
910630	6:11AM	8:43PM LT	14:31



30-YEAR MEAN JUNE DAILY MAXIMUM TEMPERATURE



30-YEAR MEAN JUNE DAILY MINIMUM TEMPERATURE



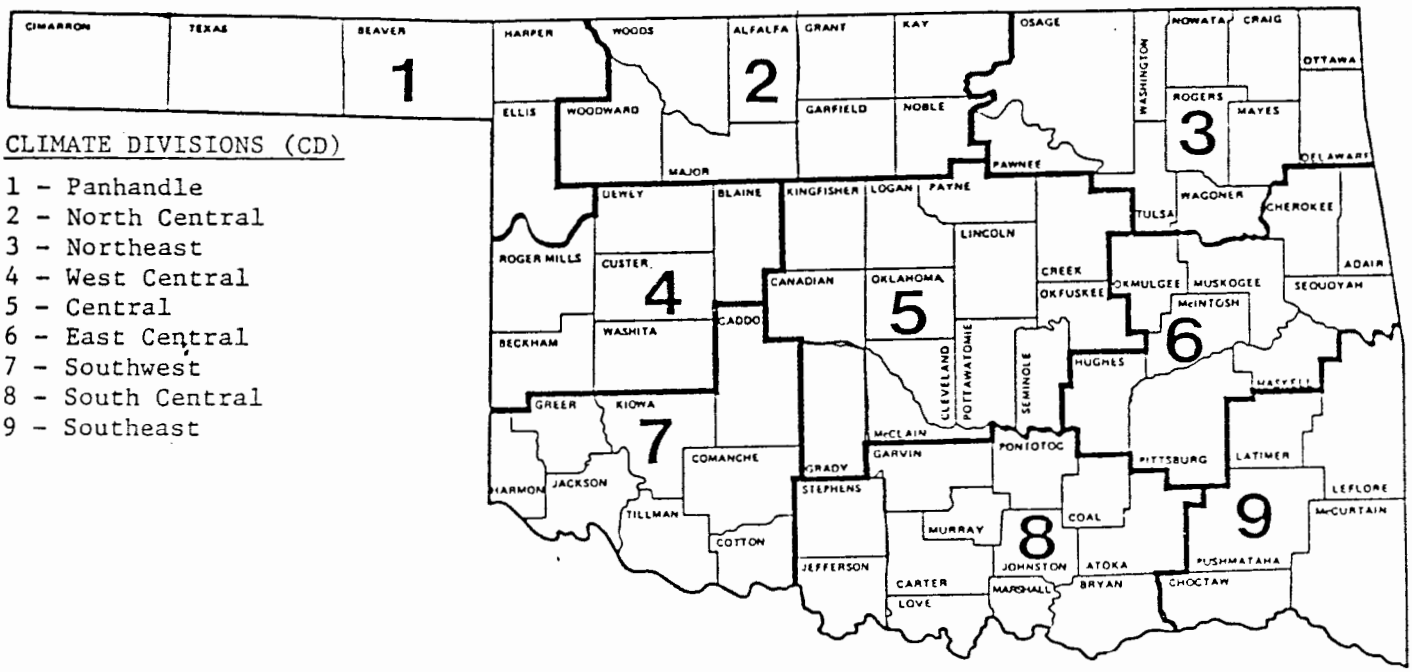
30-YEAR MEAN JUNE PRECIPITATION

90-DAY NATIONAL WEATHER SERVICE OUTLOOK

(May-July 1991)

Precipitation - Near Normal Statewide

Temperature - Above Normal West
Near Normal Elsewhere



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:

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

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

Cooling Degree Days: CDD are calculated each day of the month for which there is a temperature report and 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.

JUNE 1991

CLIMATE CALENDAR

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).

Normal 1	Actual	Normal 2	Actual	Normal 3	Actual	Normal 4	Actual	Normal 5	Actual	Normal 6	Actual	Normal 7	Actual
80.9 max		81.3 max		81.3 max		82.9 max		83.7 max		85.2 max		86.9 max	
61.6 min		62.1 min		61.9 min		62.8 min		63.6 min		63.9 min		64.7 min	
.195 ppt		.236 ppt		.201 ppt		.211 ppt		.118 ppt		.066 ppt		.082 ppt	
0 hdd		1 hdd		0 hdd		0 hdd		0 hdd		0 hdd		0 hdd	
7 cdd		7 cdd		7 cdd		8 cdd		9 cdd		10 cdd		11 cdd	
Highest Max	98-1953	Highest Max	94-1953	Highest Max	95-1953	Highest Max	94-1942	Highest Max	98-1933	Highest Max	95-1926	Highest Max	97-1926
Lowest Max	69-1970	Lowest Max	61-1946	Lowest Max	63-1982	Lowest Max	62-1928	Lowest Max	72-1950	Lowest Max	72-1950	Lowest Max	70-1935
Lowest Min	49-1964	Lowest Min	52-1969	Lowest Min	51-1946	Lowest Min	47-1954	Lowest Min	52-1928	Lowest Min	53-1973	Lowest Min	51-1935
Highest Min	75-1943	Highest Min	74-1943	Highest Min	73-1942	Highest Min	73-1943	Highest Min	75-1933	Highest Min	75-1990	Highest Min	78-1980
Greatest Ppt	3.37-1962	Greatest Ppt	1.66-1973	Greatest Ppt	6.75-1932	Greatest Ppt	3.38-1986	Greatest Ppt	3.72-1985	Greatest Ppt	3.01-1940	Greatest Ppt	1.37-1989

Normal 8	Actual	Normal 9	Actual	Normal 10	Actual	Normal 11	Actual	Normal 12	Actual	Normal 13	Actual	Normal 14	Actual
87.3 max		86.2 max		86.3 max		86.5 max		87.0 max		87.5 max		88.7 max	
66.3 min		65.9 min		64.7 min		65.9 min		66.2 min		66.5 min		67.1 min	
.189 ppt		.112 ppt		.169 ppt		.115 ppt		.084 ppt		.051 ppt		.186 ppt	
0 hdd		0 hdd		0 hdd		0 hdd		0 hdd		0 hdd		0 hdd	
12 cdd		11 cdd		11 cdd		12 cdd		12 cdd		12 cdd		13 cdd	
Highest Max	100-1988	Highest Max	100-1933	Highest Max	99-1934	Highest Max	98-1929	Highest Max	102-1953	Highest Max	98-1953	Highest Max	105-1953
Lowest Max	72-1938	Lowest Max	64-1955	Lowest Max	68-1955	Lowest Max	73-1940	Lowest Max	73-1945	Lowest Max	70-1927	Lowest Max	62-1927
Lowest Min	58-1977	Lowest Min	54-1974	Lowest Min	50-1955	Lowest Min	51-1955	Lowest Min	51-1955	Lowest Min	53-1985	Lowest Min	51-1947
Highest Min	76-1984	Highest Min	76-1941	Highest Min	75-1953	Highest Min	75-1929	Highest Min	78-1958	Highest Min	78-1958	Highest Min	77-1990
Greatest Ppt	2.60-1974	Greatest Ppt	1.43-1984	Greatest Ppt	4.48-1945	Greatest Ppt	1.61-1951	Greatest Ppt	4.74-1944	Greatest Ppt	4.56-1989	Greatest Ppt	3.95-1929

Normal 15	Actual	Normal 16	Actual	Normal 17	Actual	Normal 18	Actual	Normal 19	Actual	Normal 20	Actual	Normal 21	Actual
87.9 max		86.7 max		87.7 max		88.5 max		89.1 max		89.7 max		89.6 max	
66.5 min		66.3 min		66.3 min		67.6 min		67.8 min		67.4 min		68.4 min	
.102 ppt		.192 ppt		.078 ppt		.061 ppt		.097 ppt		.229 ppt		.257 ppt	
0 hdd		0 hdd		0 hdd		0 hdd		0 hdd		0 hdd		0 hdd	
13 cdd		12 cdd		12 cdd		13 cdd		14 cdd		14 cdd		14 cdd	
Highest Max	103-1953	Highest Max	99-1953	Highest Max	98-1990	Highest Max	101-1936	Highest Max	100-1953	Highest Max	105-1953	Highest Max	104-1936
Lowest Max	74-1969	Lowest Max	70-1961	Lowest Max	69-1963	Lowest Max	75-1961	Lowest Max	73-1926	Lowest Max	80-1961	Lowest Max	72-1958
Lowest Min	55-1969	Lowest Min	54-1978	Lowest Min	57-1945	Lowest Min	57-1945	Lowest Min	55-1926	Lowest Min	51-1976	Lowest Min	56-1961
Highest Min	78-1953	Highest Min	77-1953	Highest Min	76-1990	Highest Min	77-1931	Highest Min	79-1953	Highest Min	77-1990	Highest Min	78-1936
Greatest Ppt	3.01-1929	Greatest Ppt	3.59-1955	Greatest Ppt	1.85-1975	Greatest Ppt	.93-1957	Greatest Ppt	1.68-1987	Greatest Ppt	.96-1932	Greatest Ppt	3.28-1946

Normal 22	Actual	Normal 23	Actual	Normal 24	Actual	Normal 25	Actual	Normal 26	Actual	Normal 27	Actual	Normal 28	Actual
90.3 max		88.4 max		88.3 max		88.4 max		89.2 max		91.0 max		91.2 max	
68.4 min		68.0 min		68.2 min		68.3 min		68.1 min		68.3 min		68.7 min	
.143 ppt		.202 ppt		.143 ppt		.224 ppt		.119 ppt		.039 ppt		.146 ppt	
0 hdd		0 hdd		0 hdd		0 hdd		0 hdd		0 hdd		0 hdd	
15 cdd		13 cdd		13 cdd		14 cdd		14 cdd		15 cdd		15 cdd	
Highest Max	107-1936	Highest Max	101-1933	Highest Max	103-1933	Highest Max	105-1980	Highest Max	102-1972	Highest Max	103-1980	Highest Max	105-1980
Lowest Max	78-1927	Lowest Max	73-1957	Lowest Max	67-1929	Lowest Max	68-1967	Lowest Max	71-1928	Lowest Max	76-1985	Lowest Max	81-1940
Lowest Min	56-1935	Lowest Min	58-1958	Lowest Min	54-1957	Lowest Min	51-1974	Lowest Min	50-1958	Lowest Min	52-1974	Lowest Min	56-1974
Highest Min	79-1936	Highest Min	77-1934	Highest Min	78-1937	Highest Min	79-1953	Highest Min	81-1933	Highest Min	79-1933	Highest Min	78-1986
Greatest Ppt	2.38-1957	Greatest Ppt	1.65-1963	Greatest Ppt	2.06-1948	Greatest Ppt	2.29-1960	Greatest Ppt	1.70-1986	Greatest Ppt	1.81-1985	Greatest Ppt	3.10-1988

Normal 29	Actual	Normal 30	Actual
91.8 max		91.7 max	
69.6 min		70.4 min	
.063 ppt		.084 ppt	
0 hdd		0 hdd	
16 cdd		16 cdd	
Highest Max	100-1933	Highest Max	101-1934
Lowest Max	81-1942	Lowest Max	77-1987
Lowest Min	62-1985	Lowest Min	59-1943
Highest Min	78-1947	Highest Min	80-1980
Greatest Ppt	2.00-1987	Greatest Ppt	1.09-1942

JUNE AVERAGES

Temperature	:	76.9°F
Precipitation	:	4.19"
Heating Degree Days	:	1
Cooling Degree Days	:	365