

OKLAHOMA MONTHLY SUMMARY JUNE 1993

TABLE OF CONTENTS

June 1993 Oklahoma Summary.....	2
Table of June 1992/1993 Comparisons.....	5
June 1993 Data Summary Tables.....	6
June 1993 State Map Summary.....	11
August Climatological Normals.....	14
90-Day National Weather Service Outlook.....	16
Explanation of Tables and Maps.....	17
August 1993 Oklahoma City Climate Calendar.....	19
August 1993 Tulsa Climate Calendar.....	20

JUNE 1993 OKLAHOMA SUMMARY

A late-season storm pattern continued to bring cold fronts into Oklahoma throughout June. Precipitation was spread uniformly across the state, with every region receiving near-normal rainfall, but amounts at individual stations varied considerably. Flash flooding was a common occurrence, as rain fell on ground already saturated from the previous month's near-record precipitation in many areas. Rainfall was reported on all but one day, and 22 days featured rainfall amounts of one inch or greater. The state averaged 3.55 inches of precipitation in June, 0.40 inch below normal. The year-to-date stands as the 12th wettest on record with 23.09 inches, more than 5 inches above normal.

Frequent frontal passages prevented extended warm spells, keeping the temperature to near-normal values. Preliminary data indicate an average temperature of 76.9 degrees, only 0.1 degree below the 1961-1990 normal. The year-to-date ranks as the 13th coolest so far, with an average temperature of 54.1 degrees.

The month began warm in southern Oklahoma, where daily maximum temperatures reached into the upper 90's. Northern Oklahoma, stuck behind a slow-moving cold front, reported maximum temperatures only in the 70's and low 80's and minimum temperatures in the 50's. Severe thunderstorms developed along the front on the 3rd, with numerous reports of baseball-sized hail and wind damage across northwest, north central and northeast Oklahoma. Grant County was especially hard-hit by the hailstorms, as 130,000 acres of wheat were destroyed resulting in nearly \$20 million in losses. The storms damaged houses and cars, stripped bark from trees and flattened crops near Wakita, making many fields look like they had already been harvested. Scattered instances of rainfall in excess of an inch were also reported.

High pressure settled across the state on the 5th and 6th. Minimum temperatures dipped as low as 45 degrees at Freedom and Gage on the 5th. The last remnants of the front cleared the state on the 6th, the only day during June where precipitation was not reported in the state.

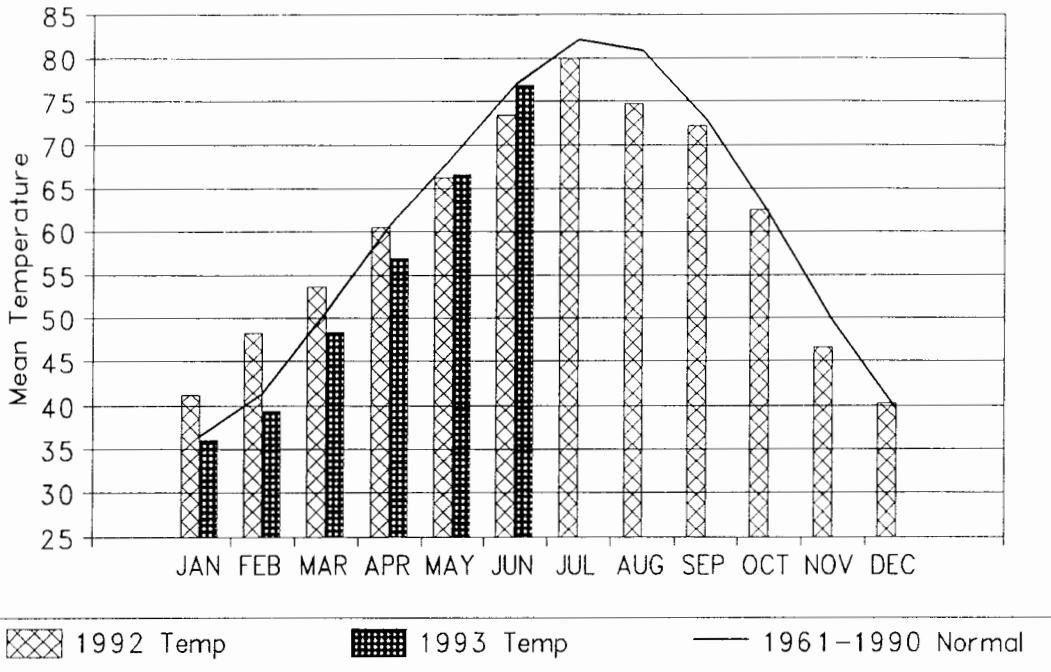
A spring-like storm system moved into Oklahoma on the 7th, with 54 counties falling under a tornado watch. Tornadoes were reported on the 8th near Newkirk and the 9th near Sapulpa and Broken Arrow. The strongest tornado, near Newkirk, remained on the ground over a 9-mile path. Strong straight-line winds also produced damage in Claremore, where the roof of a retirement home was destroyed, forcing the evacuation of 88 people. Precipitation in excess of two inches fell on many parts of eastern Oklahoma on the 10th as the storm system cleared the state.

A weather pattern characterized by weak upper-air winds and weak fronts dominated Oklahoma during mid-June. Maximum temperatures from the 11th through 18th were generally in the 80's and 90's and minimum temperatures in the 60's and low 70's. Except for the 11th and 13th, precipitation of one inch or greater was a daily occurrence. A stronger front moved across the state on the 19th and 20th, bringing rainfall to nearly every part of the state and producing 24-hour totals in excess of two inches at many locations. The highest totals were reported on the 20th with 4.24 inches at Norman and 4.00 inches at Apache.

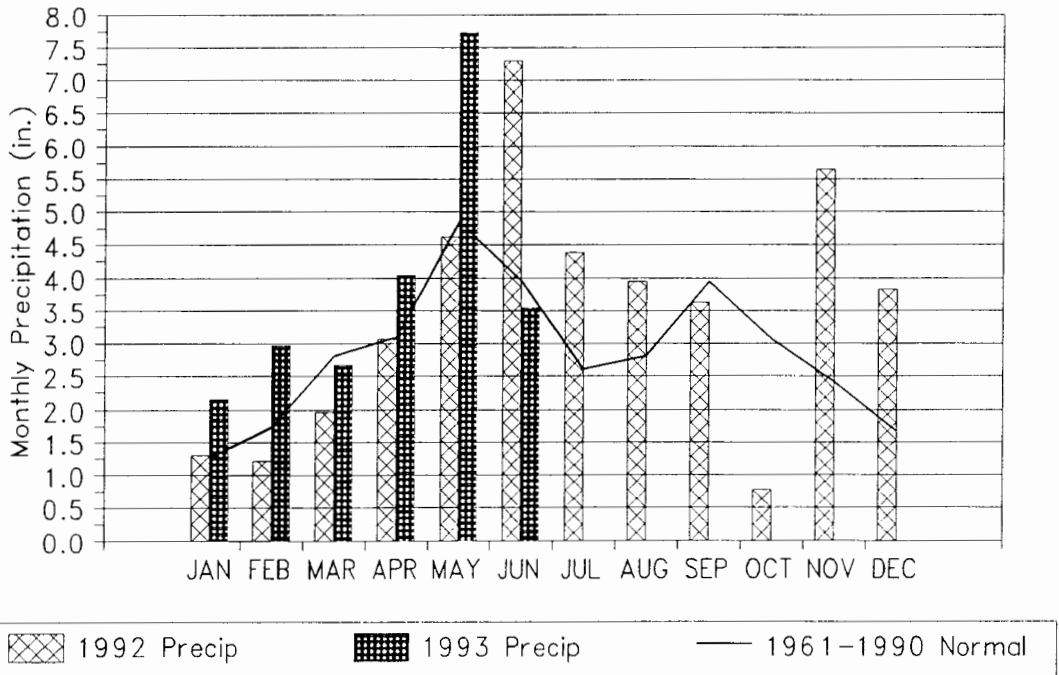
An extended period of heavy precipitation occurred from the 24th through the 27th. Daily rainfall totals again exceeded two inches at many locations, producing flash floods which swept a car from a road in Kay County. Damaging winds were also reported with storms during the period, with an 83 mph wind reported at Guthrie on the 24th and a 94 mph wind at Woodward the morning of the 27th.

As the last of the storm systems cleared the state, hot weather settled in. Maximum temperatures rose above the century mark at Guymon, which reported temperatures of 101 degrees on the 28th and 102 degrees on the 29th. Upper 90's were commonplace elsewhere in the state. Several reports of minimum temperatures in the upper 70's were received for the 29th and 30th, and minimum temperatures in the 70's were reported everywhere except Blanchard (69 degrees) on the 30th.

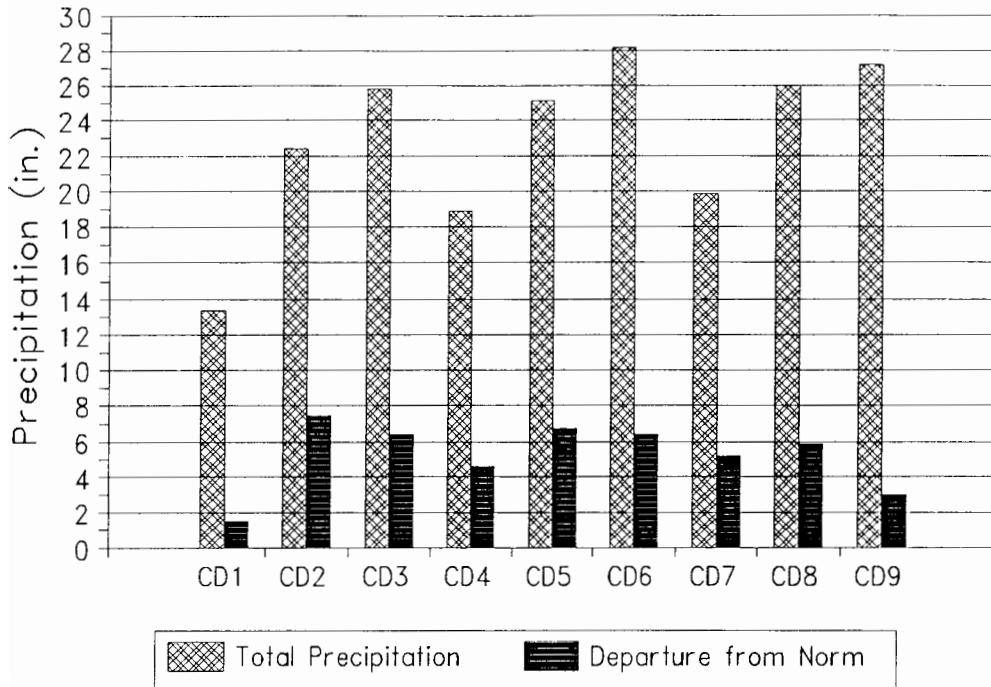
1992 and 1993 STATEWIDE TEMPERATURES Monthly Averages



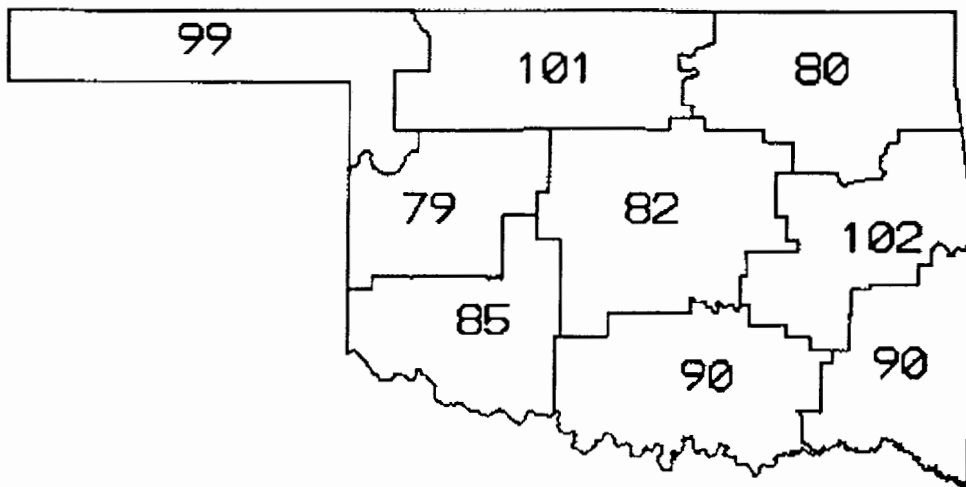
1992 and 1993 STATEWIDE PRECIPITATION Monthly Totals



CD Averaged Precipitation 1993 January through June Totals



CD PERCENT OF NORMAL PRECIPITATION



JUNE 1993

-5-
 EXTREME VALUES OF TEMPERATURE AND PRECIPITATION IN EACH CLIMATE DIVISION
 JUNE, 1993

CD	MAX			MIN			24-HOUR			MONTHLY	
	TEMP	DATE	LOCATION	TEMP	DATE	LOCATION	PRECIP	DATE	LOCATION	PRECIP	LOCATION
1	102	29	GUYMON	45	5	GAGE	1.47	19	BEAVER	5.63	BEAVER
	102	29	OPTIMA LAKE								
	102	30	OPTIMA LAKE								
2	99	8	WAYNOKA	45	5	FREEDOM	2.54	25	RED ROCK	6.26	NEWKIRK
3	96	1	UPPER SPAVIN	48	5	JAY TOWER	2.13	10	SKIATOOK	6.87	VINITA
4	99	28	REYDON	47	5	HAMMON	2.60	19	REYDON	7.86	REYDON
	99	29	REYDON								
5	97	23	HENNESSEY	49	5	HENNESSEY	4.24	20	NORMAN	6.38	EL RENO
6	97	27	LAKE EUFAULA	49	1	STILWELL	2.68	20	HASKELL	6.72	SHORT
7	99	3	CHATTANOOGA	52	5	HOLLIS	4.00	20	APACHE	7.54	APACHE
	99	4	CHATTANOOGA								
	99	29	CHATTANOOGA								
	99	30	CHATTANOOGA								
	99	29	HOLLIS								
8	100	2	WAURIKA	52	5	MARLOW	2.50	9	DURANT	7.06	ATOKA DAM
9	94	15	IDABEL	47	1	SMITHVILLE	1.93	25	HEAVENER	5.22	WILBURTON

TABLE OF 1992/1993 COMPARISONS

Station	June Temperature (°F)		June Precipitation (in.)	
	1992	1993	1992	1993
Arnett	69.2	72.7	6.00	3.88
Enid	73.0	77.4	9.39	5.58
Mutual	71.7	74.3	4.31	5.30
Tulsa	75.1	76.9	8.66	3.64
Elk City	73.3	76.7	4.61	3.81
Oklahoma City	74.1	76.8	6.35	2.60
McAlester	75.3	79.8	7.21	5.94
Altus Irr Sta	76.2	79.5	6.07	2.19
Durant	75.3	77.8	10.12	7.00
Ada	73.7	77.0	7.54	2.73
Antlers	75.0	77.7	8.82	4.20

EXTREMES

Variable	Station	Division	Observation	Date
Minimum temperature (°F)	Gage	1	45	5
	Freedom	2	45	5
Maximum temperature (°F)	Guymon	1	102	29
	Optima Lake	1	102	30
Maximum 24-hour precipitation	Norman	5	4.24"	20

JUNE 1993 SUMMARY FOR NORTHWEST DIVISION (CD1)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	DEG DAY	FROM NORM	DEG DAY	DEG DAY	FROM NORM	DEG DAY	FROM NORM						
ARNETT	332	1	72.7	30	-2.0	98.	29	47.	5	11.0	11.0	241.0	-54.0	3.882	30	.18	1.37	26		
BEAVER	593	1	72.6	30	-2.3	100.	30	49.	4	10.5	2.5	239.5	-65.5	5.630	30	2.14	1.47	19		
BOISE CITY 2 E	908	1	72.1	30	-1.0	101.	29	47.	11	5.0	-3.0	219.0	-32.0	2.843	30	.05	1.28	17		
BUFFALO	1243	1	77.3	30	-.2	99.	29	51.	5	3.0	3.0	371.0	-4.0	3.000	30	-.99	.90	19		
FARGO	3070	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.970	30	-.34	1.08	19		
GAGE FAA APT	3407	1	74.4	30	-1.9	94.	29	45.	5	7.0	7.0	289.0	-50.0	3.840	30	.93	1.15	26		
GATE	3489	1	73.8	30	-2.6	97.	30	49.	5	12.0	7.0	274.5	-69.5	3.862	29	*****	.73	19		
GOODWELL RES ST	3628	1	71.2	30	-1.9	101.	30	47.	26	7.5	-.5	194.0	-57.0	3.241	30	.56	1.30	18		
GUYMON	3835	1	74.8	25	*****	102.	29	48.	4	11.5	*****	256.0	*****	1.491	25	*****	.58	18		
HOOVER	4298	1	72.8	30	-2.0	101.	30	50.	6	9.0	3.0	242.0	-58.0	2.362	30	-.58	1.22	19		
KENTON	4766	1	73.0	29	1.1	99.	29	47.	10	8.0	-4.0	241.0	22.0	2.990	29	*****	1.00	17		
LAVERNE	5045	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.100	30	.03	.72	27		
OPTIMA LAKE	6740	1	74.1	30	*****	102.	30	47.	4	6.5	*****	279.5	*****	2.712	30	*****	1.00	19		
REGNIER	7534	1	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.151	30	1.91	1.24	18		
TURPIN 4 SSE	9017	1	72.4	30	*****	101.	30	49.	5	16.5	*****	238.5	*****	3.671	29	*****	1.11	19		

JUNE 1993 SUMMARY FOR NORTH CENTRAL DIVISION (CD2)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	DEG DAY	FROM NORM	DEG DAY	DEG DAY	FROM NORM	DEG DAY	FROM NORM						
ALVA	193	2	77.3	30	*****	96.	29	48.	5	3.0	*****	373.5	*****	4.010	30	*****	1.17	19		
VANCE AFB	302	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.496	28	*****	.75	3		
BILLINGS	755	2	75.2	29	-1.9	92.	29	48.	5	6.0	6.0	302.0	-61.0	2.683	30	-1.47	.88	27		
BLACKWELL 2E	818	2	76.0	29	-1.2	93.	16	49.	5	2.5	2.5	321.0	-45.0	4.860	30	.95	1.30	3		
BRAMAN	1075	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.251	30	*****	.98	9		
CEDARDALE	1620	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.543	30	*****	.95	26		
CHEROKEE	1724	2	78.2	30	-.5	97.	30	49.	5	3.5	3.5	399.5	-11.5	2.960	30	-.86	.85	27		
ENID	2912	2	77.4	30	-.7	94.	30	50.	5	.5	.5	374.0	-19.0	5.580	30	1.44	1.47	28		
FT SUPPLY DAM	3304	2	72.8	30	-2.5	92.	14	48.	5	13.5	7.5	249.0	-66.0	5.590	30	2.60	1.92	26		
FREEDOM	3358	2	73.9	30	-3.7	95.	30	45.	5	15.0	15.0	283.0	-95.0	3.061	30	-.08	.81	27		
GREAT SALT PLNS	3740	2	75.7	30	-1.6	95.	24	49.	5	5.5	5.5	327.5	-41.5	4.480	30	.98	1.17	27		
HARDY	3909	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.822	28	*****	1.70	8		
HELENA 1 SSE	4019	2	75.7	30	-.6	96.	24	48.	5	6.0	6.0	327.5	-11.5	3.173	30	-.65	.83	10		
JEFFERSON	4573	2	77.7	30	-.7	94.	30	49.	5	1.0	1.0	382.0	-20.0	4.140	30	.10	1.07	26		
LAMONT	5013	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.071	30	*****	1.25	27		
MEDFORD	5768	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.570	30	*****	1.25	18		
MORRISON	6065	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.310	30	*****	.37	9		
MUTUAL	6139	2	74.3	30	-1.7	94.	30	46.	5	9.5	9.5	287.0	-44.0	5.300	30	1.99	1.78	26		
NEWKIRK	6278	2	75.7	30	-1.3	92.	17	48.	5	5.5	5.5	325.5	-34.5	6.260	30	1.81	1.20	25		
ORIENTA	6751	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.790	30	-1.92	.97	20		
PERRY	7012	2	77.8	30	.1	93.	30	59.	1	.0	.0	383.5	2.5	3.840	30	-.05	1.83	25		
PONCA CITY FAA	7201	2	77.5	30	.5	93.	30	50.	5	1.0	1.0	376.0	16.0	4.724	30	.80	2.15	24		
RED ROCK 1 NNE	7505	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.550	30	.46	2.54	25		
WAYNOKA	9404	2	76.4	30	-1.4	99.	8	48.	5	5.5	5.5	348.5	-35.5	3.170	30	-.32	1.30	19		
WOODWARD	9760	2	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.250	30	.07	1.32	26		

JUNE 1993 SUMMARY FOR NORTHEAST DIVISION (CD3)

NAME	ID	CD	DEV					MIN	DAY	HEAT	DEV	COOL	DEV	TOT	NUM	DEV	MAX	DAY
			MEAN	NUM	FROM	MAX	TEMP											
BARNSDALL	535	3	75.5	30	-1.3	91.	30	51.	5	1.5	1.5	317.5	-36.5	1.893	30	-2.85	.49	19
BARTLESVILLE 2W	548	3	76.1	30	-.8	93.	30	50.	6	2.0	2.0	333.5	-20.5	2.822	30	-1.23	1.23	24
BIXBY	782	3	76.1	30	.2	92.	30	52.	6	2.5	2.5	334.0	7.0	1.342	30	-3.28	.68	8
BURBANK	1256	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.070	30	-.23	1.07	19
CHELSEA 4 S	1717	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.990	30	*****	1.73	10
CLAREMORE	1828	3	75.5	30	-.1	90.	30	51.	5	2.0	2.0	316.5	-1.5	4.130	30	-.47	1.03	8
FORAKER	3250	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.361	30	1.46	1.30	9
HOLLOW	4258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.793	30	.12	1.57	4
HOMINY	4289	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.903	30	-1.99	.97	10
JAY TOWER	4567	3	74.1	30	*****	90.	29	48.	5	7.0	*****	281.0	*****	3.860	30	*****	1.06	10
KANSAS 1 ESE	4672	3	73.6	29	-1.1	87.	29	49.	5	5.0	5.0	255.0	-36.0	5.676	29	*****	1.75	25
KEYSTONE DAM	4812	3	74.2	22	*****	91.	30	49.	5	5.0	*****	206.5	*****	4.263	23	*****	1.60	10
LENAPAH	5118	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.100	30	*****	1.07	10
MANNFORD 6 NW	5522	3	76.0	30	-.6	90.	30	53.	6	.0	.0	329.5	-18.5	2.720	30	-1.16	1.28	20
MARAMEC	5540	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.351	30	-.45	1.50	10
MIAMI	5855	3	73.9	30	-1.0	92.	28	50.	1	3.0	3.0	271.5	-25.5	5.131	30	.51	1.82	5
NOWATA	6485	3	75.5	30	-.9	91.	30	55.	1	.0	.0	315.5	-26.5	4.670	30	.11	1.15	19
ONETA 1 WNW	6713	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.861	30	*****	.56	11
PAWHUSKA	6935	3	75.5	30	-.7	90.	30	50.	5	2.5	2.5	318.5	-17.5	1.801	30	-2.74	.70	10
PAWNEE	6940	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.921	30	-.92	1.00	19
PRYOR 6 N	7309	3	73.8	28	*****	89.	30	49.	5	6.0	*****	251.5	*****	3.983	30	-1.01	1.14	10
RALSTON	7390	3	76.3	30	-.7	90.	30	51.	6	1.0	1.0	338.5	-18.5	1.967	30	-2.18	.75	19
SKIATOOK	8258	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.000	30	-.20	2.13	10
SPAVINAW	8380	3	76.7	30	.1	89.	23	53.	5	.0	.0	352.0	4.0	4.231	30	-.67	.96	20
TULSA WSO APT	8992	3	76.9	30	-.8	92.	30	53.	5	.0	.0	357.0	-24.0	3.641	30	-.80	1.13	10
UPPER SPAVINAW	9101	3	80.2	29	*****	96.	1	63.	11	.0	*****	439.5	*****	4.916	30	*****	1.50	25
VINITA 2 N	9203	3	75.1	24	*****	90.	30	52.	1	1.0	*****	242.5	*****	6.870	30	2.18	1.60	4
WAGONER	9247	3	76.4	30	-.3	90.	30	54.	5	.0	.0	343.5	-7.5	2.622	30	-2.80	.73	20
WANN	9298	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.960	17	*****	1.81	18
WYONOA	9792	3	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.592	30	*****	.63	19

JUNE 1993 SUMMARY FOR WEST CENTRAL DIVISION (CD4)

NAME	ID	CD	DEV					MIN	DAY	HEAT	DEV	COOL	DEV	TOT	NUM	DEV	MAX	DAY
			MEAN	NUM	FROM	MAX	TEMP											
CANTON DAM	1445	4	74.4	30	-2.0	93.	30	48.	5	6.5	6.5	287.5	-54.5	1.942	30	-1.88	.52	27
CHEYENNE	1738	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.430	30	.84	2.20	19
CLINTON	1909	4	78.2	30	-.1	96.	15	49.	5	.0	.0	396.5	-2.5	3.061	30	-1.09	1.33	27
COLONY	2039	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.043	28	*****	1.58	25
CORDELL	2125	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.370	30	-1.48	1.12	27
ELK CITY 1 E	2849	4	76.7	24	*****	94.	28	58.	1	.0	*****	280.5	*****	3.810	25	*****	1.68	27
ERICK 4 E	2944	4	76.6	30	-.1	96.	28	49.	5	1.0	1.0	350.0	-1.0	2.640	30	-1.06	.97	27
GEARY	3497	4	79.4	30	2.6	94.	30	53.	5	.0	.0	432.5	78.5	2.760	30	-1.49	1.19	25
HAMMON 1 NNE	3871	4	74.9	26	*****	94.	30	47.	5	5.0	*****	261.5	*****	2.542	26	*****	1.16	18
LEEDEY	5090	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.830	30	.31	2.02	19
MACKIE 4 NNW	5463	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.420	30	*****	2.08	19
MORAVIA 2 NNE	6035	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.430	30	-1.37	1.12	20
OKEENE	6629	4	77.3	30	-1.0	95.	30	48.	5	.0	.0	370.0	-29.0	2.530	30	-1.62	.60	20
RETROP	7565	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.010	31	*****	.98	27
REYDON	7579	4	79.0	28	*****	99.	29	49.	5	2.5	*****	393.5	*****	7.861	28	*****	2.60	19
SAYRE	7952	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.390	30	-.27	1.45	19
SWEETWATER 2 E	8652	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.731	30	*****	1.80	30
TALOGA	8708	4	76.1	30	-.7	95.	30	48.	5	2.0	2.0	334.0	-20.0	5.176	30	1.47	2.10	26
THOMAS	8815	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.010	31	*****	.96	27
VICI	9172	4	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.510	30	.97	1.72	20
WATONGA	9364	4	76.7	30	-.5	94.	30	50.	5	.0	.0	350.5	-15.5	2.271	30	-1.78	.79	11
WEATHERFORD	9422	4	77.0	30	-.1	98.	13	51.	5	2.5	2.5	362.0	-1.0	2.312	30	-1.70	.70	19

JUNE 1993 SUMMARY FOR CENTRAL DIVISION (CD5)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT	NUM	DEV	MAX	DAY
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	DEG	FROM					
			TEMP	OBS	NORM	TEMP	DAY	TEMP	DAY	DAY	NORM	DAY	NORM	DAY	NORM	PPT	OBS	NORM	24-HR	DAY
AMBER	200	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	2.410	30	*****	1.04	20	
ARCADIA	288	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	4.020	30	*****	1.75	20	
TINKER AFB	325	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	4.576	30	*****	2.82	20	
BLANCHARD 2 SSW	830	5	77.2	30	.1	92.	30	53.	5	.0	.0	365.5	2.5	3.015	30	-1.00	1.40	20		
BRISTOW	1144	5	76.4	30	-.5	91.	30	51.	5	.0	.0	343.0	-14.0	3.291	30	-.58	1.26	8		
CHANDLER	1684	5	77.4	27	*****	91.	30	52.	5	.0	*****	334.5	*****	2.241	29	*****	1.15	8		
CHICKASHA EX ST	1750	5	78.7	30	.3	95.	30	54.	5	.0	.0	410.0	8.0	3.230	30	-.48	2.00	20		
COX CITY 1 E	2196	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.950	20	*****	.69	8		
CRESCENT	2242	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.310	29	*****	2.40	25		
CUSHING	2318	5	75.0	29	-1.3	91.	30	53.	5	2.0	2.0	291.5	-47.5	3.820	29	*****	1.08	20		
EL RENO 1 N	2818	5	76.8	26	*****	91.	24	51.	5	.0	*****	308.0	*****	6.380	27	*****	2.16	27		
GUTHRIE	3821	5	78.9	30	1.0	95.	28	52.	5	.0	.0	417.5	30.5	4.591	29	*****	1.72	25		
HENNESSEY 4 ESE	4055	5	77.6	30	-.2	97.	23	49.	5	.0	.0	377.0	-7.0	2.223	30	-1.96	.73	25		
INGALLS	4489	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.278	30	*****	1.00	10		
KINGFISHER 2 SE	4861	5	77.1	30	-1.0	93.	30	50.	5	.0	.0	364.0	-29.0	4.720	30	.45	1.88	27		
KONAWA	4915	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.692	30	-2.39	.60	9		
MARSHALL	5589	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.570	30	-.41	1.25	25		
MEEKER 4 W	5779	5	75.6	28	*****	89.	30	52.	5	1.0	*****	296.5	*****	3.240	28	*****	1.96	9		
MULHALL	6110	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.110	30	*****	2.88	26		
NORMAN 3 S	6386	5	77.3	30	.1	95.	15	51.	5	.0	.0	369.5	3.5	5.541	30	1.45	4.24	20		
OILTON 2 SE	6616	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.121	30	*****	2.00	14		
OKEMAH	6638	5	77.3	30	.6	92.	14	53.	5	.0	.0	367.5	16.5	4.180	30	-.01	2.14	20		
OKLAHOMA CTY WS	6661	5	76.8	30	.1	92.	15	53.	5	.0	.0	354.0	3.0	2.604	30	-1.71	.92	9		
PERKINS	7003	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.110	30	-1.32	.92	10		
PIEDMONT	7068	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.470	30	*****	1.13	27		
PRAGUE	7264	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.890	29	*****	1.70	20		
PURCELL 5 SW	7327	5	77.6	30	-.1	93.	30	54.	5	.0	.0	378.5	-2.5	1.002	30	-3.23	.45	10		
SEMINOLE	8042	5	77.8	30	-.6	92.	30	53.	5	.0	.0	382.5	-16.5	2.160	30	-2.05	.61	10		
SHAWNEE	8110	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.730	31	-.59	1.24	19		
STELLA	8479	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.530	31	*****	2.92	20		
STILLWATER 2 W	8501	5	76.4	30	.2	91.	30	53.	5	.5	.5	343.5	7.5	3.432	30	-.57	1.20	26		
STROUD 1 N	8563	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.840	30	*****	1.08	10		
TECUMSEH	8751	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.550	30	*****	1.35	10		
UNION CITY 1 SE	9086	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.221	30	-.47	1.60	20		
WELTY 1 SSE	9479	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	1.281	30	*****	.74	20		
WEWOKA	9575	5	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.660	30	.60	1.33	20		

JUNE 1993 SUMMARY FOR EAST CENTRAL DIVISION (CD6)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT	NUM	DEV	MAX	DAY
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	DEG	FROM					
			TEMP	OBS	NORM	TEMP	DAY	TEMP	DAY	DAY	NORM	DAY	NORM	DAY	NORM	PPT	OBS	NORM	24-HR	DAY
ASHLAND	364	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	5.902	30	*****	2.40	26	
BEGGS	631	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	1.180	30	*****	.48	9	
CALVIN	1391	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	2.091	30	-2.44	1.48	9	
CHECOTAH	1711	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	2.821	30	-1.07	.95	15	
CLAYTON 14 WNW	1858	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	6.522	30	*****	2.36	10	
DEWAR 2 NE	2485	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	1.670	30	-2.28	.52	9	
DUSTIN	2690	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	*****	1.760	30	*****	.76	10	
EUFULA	2993	6	77.7	29	-.3	92.	16	57.	5	.0	.0	368.0	-22.0	2.530	30	-1.50	1.15	26		
HANNA	3884	6	77.3	30	.1	91.	30	54.	1	.0	.0	368.5	2.5	2.754	30	-.96	.95	10		
HARTSHORNE	3946	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.290	30	*****	1.60	10		
HASKELL	3956	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.730	30	-.97	2.68	20		
HOLDENVILLE	4235	6	77.0	30	.2	92.	3	54.	5	.0	.0	361.0	7.0	3.920	30	.23	1.89	20		
LAKE EUFAULA	4975	6	77.2	30	*****	97.	27	54.	1	1.0	*****	366.0	*****	4.343	30	*****	2.00	10		
LYONS 2 N	5437	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.721	30	1.26	1.24	10		
MARBLE CITY	5546	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.813	30	*****	1.60	10		
MCALESTER FAA	5664	6	79.8	30	2.6	94.	14	55.	1	.0	.0	442.5	76.5	5.944	30	1.96	1.70	10		
MCCURTAIN 1 SE	5693	6	77.9	30	.5	93.	14	52.	1	.0	.0	388.0	16.0	6.123	30	1.95	2.27	26		
MUSKOGEE	6130	6	76.7	30	-.3	91.	30	53.	1	.0	.0	350.0	-10.0	4.110	30	-.18	1.23	21		
OKMULGEE W W	6670	6	75.7	30	-.4	92.	30	53.	6	1.5	1.5	323.5	-9.5	1.400	30	-2.83	.59	26		
OKTAHA 2 NE	6678	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.600	30	*****	1.29	26		
QUINTON	7372	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.123	30	.89	1.66	10		
SALLISAW 2 NE	7862	6	76.6	30	-.5	91.	14	51.	1	1.0	1.0	349.5	-13.5	4.420	30	.86	1.55	9		
SCIPIO	7979	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.280	30	*****	1.05	9		
SCRAPER	7993	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	5.290	30	*****	.90	24		
SHORT	8170	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	6.720	30	*****	1.95	26		
STILWELL 1 NE	8506	6	75.0	30	.0	89.	30	49.	1	3.5	3.5	304.0	4.0	6.454	30	2.23	1.25	10		
TAHLEQUAH	8677	6	74.8	30	-.8	89.	28	50.	1	2.5	2.5	297.0	-21.0	4.220	30	-.31	1.40	24		
WEBBERS FALLS	9445	6	75.9	30	-.8	91.	30	51.	1	2.0	2.0	328.0	-23.0	4.401	30	.73	1.04	10		
WESTVILLE	9523	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	6.002	30	*****	1.17	28		
WETUMKA 3 NE	9571	6	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.800	30	-1.30	1.30	20		

JUNE 1993 SUMMARY FOR SOUTHWEST DIVISION (CD7)

NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT	NUM	DEV	MAX	DAY
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	FROM	FROM					
ALTUS IRR STA	179	7	79.5	30	-.4	98.	30	54.	5	.0	.0	434.0	-13.0	2.190	30	-1.32	.96	25		
ALTUS DAM	184	7	78.9	30	.0	98.	30	56.	5	.0	.0	416.0	-1.0	2.180	30	-1.53	1.38	20		
ANADARKO	224	7	77.0	30	-.5	93.	30	53.	5	.0	.0	360.5	-14.5	3.240	30	-.62	1.25	24		
APACHE	260	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	7.540	30	3.61	4.00	20		
ALTUS AFB	447	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.105	30	*****	1.13	26		
CARNEGIE 2 ENE	1504	7	78.7	30	.6	96.	3	54.	5	.0	.0	410.0	11.0	3.890	30	-.11	1.14	8		
CHATTANOOGA	1706	7	80.0	30	.6	99.	30	56.	5	.0	.0	449.0	17.0	5.930	30	2.54	3.77	20		
DUNCAN 11 W	2668	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.381	30	*****	.74	9		
FREDERICK	3353	7	77.1	30	-2.1	96.	4	55.	5	.0	.0	363.5	-62.5	5.550	30	2.10	2.35	20		
GRANDFIELD 4 NW	3709	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.920	30	-1.88	1.35	20		
HEADRICK	3998	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.100	31	*****	1.42	25		
HOBART FAA APT	4204	7	78.7	29	.1	97.	29	53.	5	.0	.0	396.5	-11.5	.792	30	-2.28	.35	19		
HOLLIS	4249	7	79.1	30	-.5	99.	29	52.	5	.0	.0	422.5	-15.5	1.792	30	-1.90	1.20	26		
LAWTON	5063	7	78.3	30	-.1	96.	29	56.	5	.0	.0	397.5	-1.5	5.230	30	1.61	2.60	20		
FORT SILL	5068	7	78.6	30	*****	96.	28	56.	5	.0	*****	408.0	*****	2.716	30	*****	.89	7		
LOOKEBA 2 ENE	5329	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.791	30	.63	2.00	25		
MANGUM RES STA	5509	7	78.2	30	-1.3	98.	30	53.	5	.0	.0	396.5	-38.5	1.860	30	-1.91	.86	18		
RANDLETT 9 E	7403	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.991	30	*****	2.13	26		
ROOSEVELT	7727	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.990	30	-1.67	.65	20		
SEDAN	8016	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.074	30	*****	1.50	25		
SNYDER	8299	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.893	29	*****	1.44	20		
VINSON 3 WNW	9212	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.040	30	-1.42	1.09	27		
WALTERS	9278	7	79.0	30	-.3	98.	4	55.	12	.0	.0	420.0	-9.0	1.580	30	-2.56	.90	25		
WICHITA MT WLR	9629	7	75.5	28	*****	93.	3	53.	5	.0	*****	294.0	*****	3.561	28	*****	.92	20		
WILLOW	9668	7	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.911	30	*****	.89	20		

JUNE 1993 SUMMARY FOR SOUTH CENTRAL DIVISION (CD8)

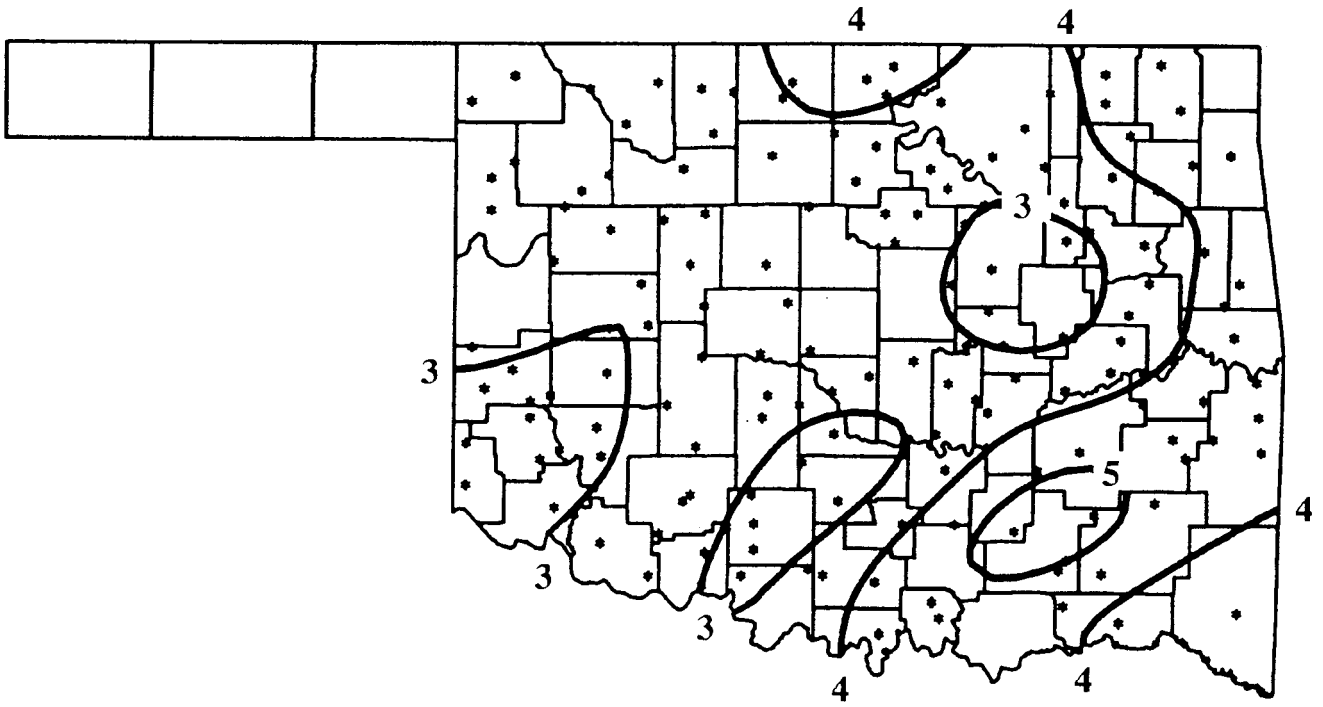
NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT	NUM	DEV	MAX	DAY
			MEAN	NUM	FROM	MAX	MIN	DEG	FROM	DEG	FROM	DEG	FROM	FROM	FROM					
ADA	17	8	77.0	30	.1	92.	3	55.	5	.0	.0	359.5	2.5	2.731	30	-1.37	1.16	9		
ALLEN	147	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.900	30	*****	1.30	9		
ARDMORE	292	8	78.3	30	-1.0	93.	3	58.	1	.0	.0	398.5	-30.5	6.630	30	2.77	1.58	25		
ATOKA DAM	394	8	79.2	22	*****	95.	15	55.	1	.0	*****	311.5	*****	7.060	22	*****	2.47	10		
BOKCHITO	917	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.690	30	*****	2.02	10		
CANEY	1437	8	78.9	30	*****	93.	15	61.	5	.0	*****	417.0	*****	6.500	30	****	1.90	10		
CENTRAHOMA	1648	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	3.350	30	*****	1.50	10		
CHICKASAW NRA	1745	8	76.7	30	-.2	92.	15	55.	1	.0	.0	350.0	-7.0	3.190	30	-.77	1.03	9		
COLEMAN	2011	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.150	30	*****	2.25	10		
COMANCHE	2054	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.900	30	-1.92	.68	26		
DAISY 4 ENE	2354	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.330	30	2.07	1.97	10		
DUNCAN	2660	8	77.4	30	-.5	94.	3	57.	5	.0	.0	371.0	-16.0	2.441	30	-1.54	.97	10		
DURANT USDA	2678	8	77.8	30	.3	95.	4	54.	1	.0	.0	383.0	8.0	7.000	30	2.41	2.50	9		
ELMORE CITY	2872	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.750	30	*****	.61	9		
FARRIS 3 WNW	3083	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	5.340	30	1.16	1.92	10		
GRADY	3688	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.750	30	*****	.83	9		
HEALDTON	4001	8	78.2	30	.2	96.	2	57.	1	.0	.0	395.0	5.0	3.182	30	-.99	1.46	26		
KETCHUM RANCH	4780	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.510	31	*****	1.52	9		
KINGSTON	4865	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	4.560	30	.48	1.82	9		
LEHIGH	5108	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.570	30	*****	2.30	10		
LINDSAY 2 W	5216	8	77.8	30	.3	93.	14	55.	5	.0	.0	382.5	7.5	1.201	30	-2.82	.44	8		
LOCO 6 SE	5247	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	2.410	30	*****	.93	10		
MADILL	5468	8	78.5	30	.1	96.	3	56.	9	.0	.0	406.0	4.0	4.291	30	-.22	1.58	9		
MARIETTA	5563	8	79.2	30	1.1	96.	3	58.	1	.0	.0	424.5	31.5	5.060	30	1.06	1.59	10		
MARLOW 1 WSW	5581	8	77.0	30	-.1	94.	30	52.	5	.0	.0	360.5	-2.5	2.060	30	-2.12	.86	10		
MCGEE CREEK DAM	5713	8	78.0	30	*****	95.	4	55.	1	.0	*****	389.0	*****	6.260	30	*****	2.46	10		
PAULS VALLEY	6928	8	78.5	30	.2	95.	3	55.	5	.0	.0	404.5	5.5	2.352	30	-1.55	.65	10		
PONTOTOC	7214	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	6.461	30	2.35	2.38	25		
TISHOMINGO NWLR	8884	8	79.6	24	*****	98.	3	58.	1	.0	*****	351.5	*****	5.860	27	****	2.45	10		
TUSSY	9032	8	*****	0	*****	****	0	****	0	*****	*****	*****	*****	1.880	30	*****	.67	9		
WAURIKA	9395	8	79.2	30	-.1	100.	2	58.	5	.0	.0	425.0	-4.0	1.033	30	-2.70	.73	8		
WAURIKA DAM	9399	8	78.6	30	*****	98.	3	58.	1	.0	*****	407.5	*****	1.832	30	*****	.66	9		

JUNE 1993 SUMMARY FOR SOUTHEAST DIVISION (CD9)

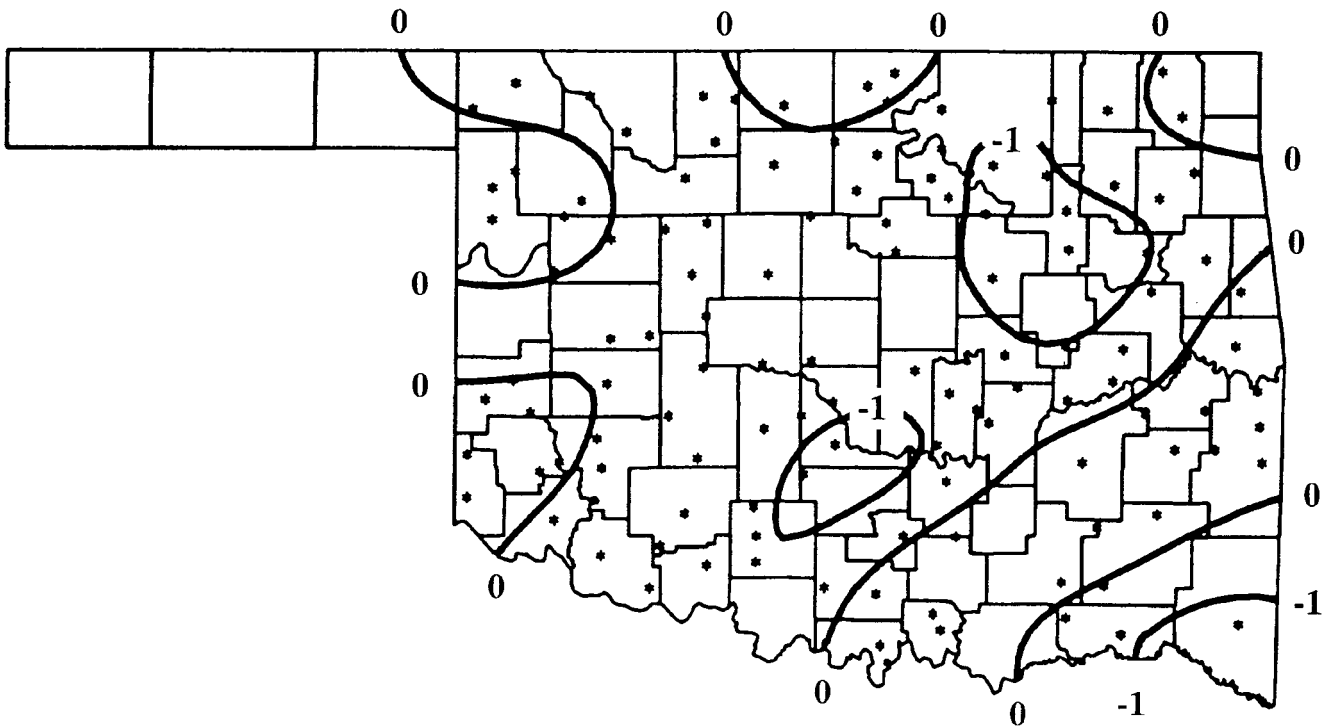
NAME	ID	CD	DEV					HEAT		DEV		COOL		DEV		TOT PPT	NUM OBS	DEV FROM NORM	MAX 24-HR	DAY
			MEAN TEMP	NUM OBS	FROM NORM	MAX TEMP	MIN DAY	DEG DAY	DEG FROM NORM	DEG FROM NORM	DEG FROM NORM	DEG FROM NORM								
ANTLERS	256	9	77.7	30	.5	93.	15	52.	1	.0	.0	380.0	14.0	4.200	30	-.28	1.10	25		
BATTIEST 1 SSW	567	9	74.2	30	*****	89.	15	48.	2	4.0	*****	279.0	*****	3.250	30	*****	.80	26		
BEAR MT TWR	584	9	77.6	15	*****	93.	16	53.	6	.0	*****	189.5	*****	2.971	22	*****	1.45	20		
BENGAL	670	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.210	30	*****	1.32	10		
BOSWELL 4 NNW	980	9	77.8	30	.4	93.	15	53.	1	.0	.0	385.5	13.5	3.652	30	-.46	1.52	26		
BROKEN BOW 1 N	1162	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.050	30	-2.29	.66	19		
BROKEN BOW DAM	1168	9	78.1	30	1.7	92.	30	54.	1	.0	.0	391.5	49.5	2.961	30	-1.35	1.14	17		
CARNASAW TWR	1499	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.670	31	-1.88	1.04	10		
CARTER TWR	1544	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	.170	17	*****	.09	21		
FANSHAWE	3065	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	4.690	30	.46	1.62	26		
HEAVENER 1 SE	4008	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.720	30	-.35	1.93	25		
HEE MT TWR	4017	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.790	30	-1.47	1.04	10		
HUGO	4384	9	78.6	30	.5	92.	30	56.	2	.0	.0	406.5	13.5	2.241	30	-2.51	.81	10		
IDABEL	4451	9	77.9	30	.9	94.	15	54.	1	.0	.0	387.0	27.0	1.250	30	-3.04	.53	10		
POTEAU	7246	9	76.3	30	-1.1	93.	17	51.	2	.0	.0	337.5	-31.5	2.983	30	-.64	1.15	8		
SMITHVILLE 1 W	8285	9	74.9	30	-.2	88.	15	47.	1	3.5	3.5	299.5	-3.5	2.307	30	-1.90	1.00	26		
SPIRO	8416	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	3.950	30	.42	1.28	26		
TUSKAHOMA	9023	9	77.4	30	.3	90.	15	50.	1	1.0	1.0	373.5	10.5	4.422	30	-.36	1.78	26		
VALLIANT 3 W	9118	9	*****	0	*****	*****	0	****	0	*****	*****	*****	*****	2.050	31	-1.94	.68	12		
WILBURTON 9 ENE	9634	9	77.2	30	.9	92.	29	51.	1	.0	.0	365.5	26.5	5.221	30	1.10	1.90	9		

JUNE 1993 CLIMATE DIVISION SUMMARY

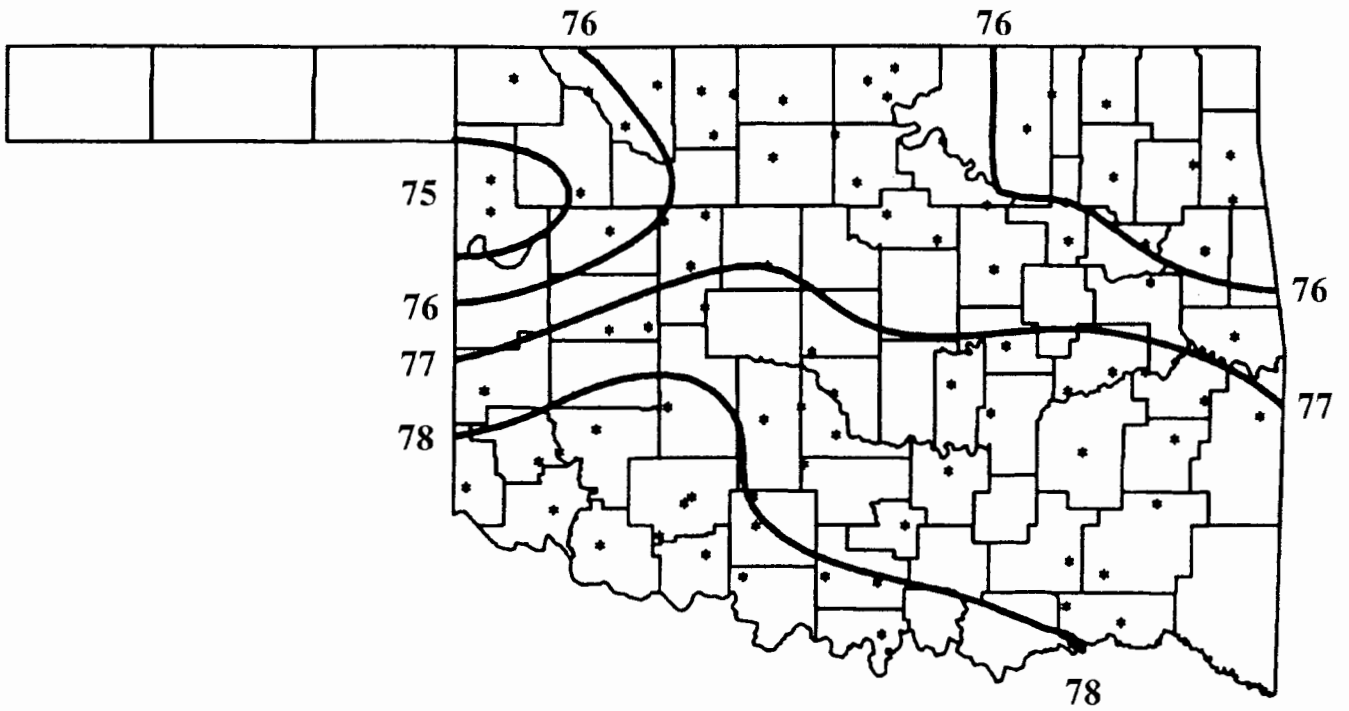
CLIMATE DIV	MEAN TEMP	NUM STA	DEV					HEAT DEGREE		DEV		COOL		DEV		TOT PPT	NUM STA	DEV FROM NORM	MAX 24-HR	DAY
			FROM NORM	MAX TEMP	MIN DAY	DEGREE DAYS	DEGREE FROM NORM	DEGREE FROM NORM	DEGREE FROM NORM	DEGREE FROM NORM										
1	73.3	11	-1.4	102.0	30	45.0	5	8.7	3.5	257.2	-40.5	3.43	11	.41	1.47	19				
2	76.1	15	-1.1	99.0	8	45.0	5	5.2	4.8	337.3	-30.8	3.92	23	.18	2.54	25				
3	75.9	15	-.2	96.0	1	48.0	5	1.8	1.8	326.9	-6.7	3.61	27	-.82	2.13	10				
4	77.0	8	-.1	99.0	29	47.0	5	1.5	1.5	360.4	-2.1	3.10	18	-.72	2.60	19				
5	77.2	13	.1	97.0	23	49.0	5	.2	.2	366.5	1.8	3.34	28	-.81	4.24	20				
6	76.8	12	.1	97.0	27	49.0	1	1.0	1.0	353.8	1.7	4.10	30	-.01	2.68	20				
7	78.6	12	-.1	99.0	29	52.0	5	.0	.0	406.2	-4.8	3.12	23	-.57	4.00	20				
8	78.1	15	.1	100.0	2	52.0	5	.0	.0	391.6	4.1	3.74	30	-.38	2.50	9				
9	77.0	10	.1	94.0	15	47.0	1	.9	.9	360.5	3.5	3.26	18	-.97	1.93	25				



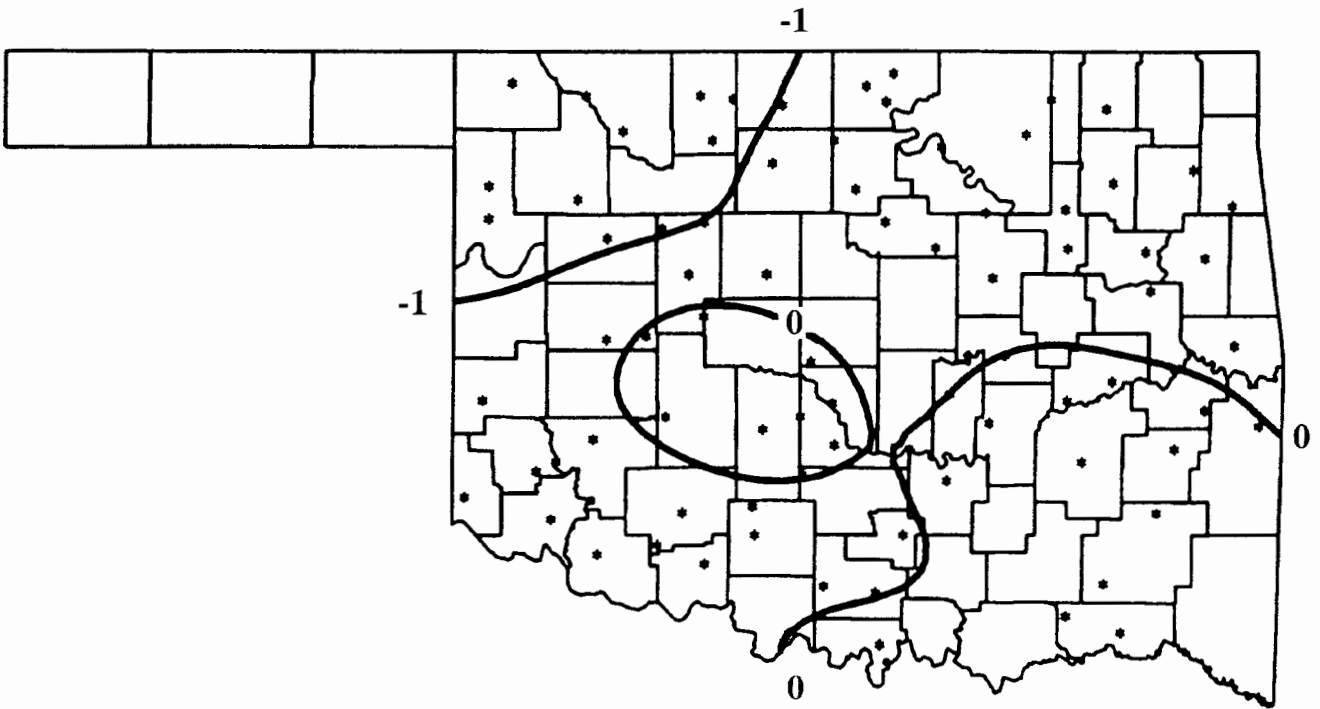
JUNE 1993 TOTAL PRECIPITATION
(Inches)



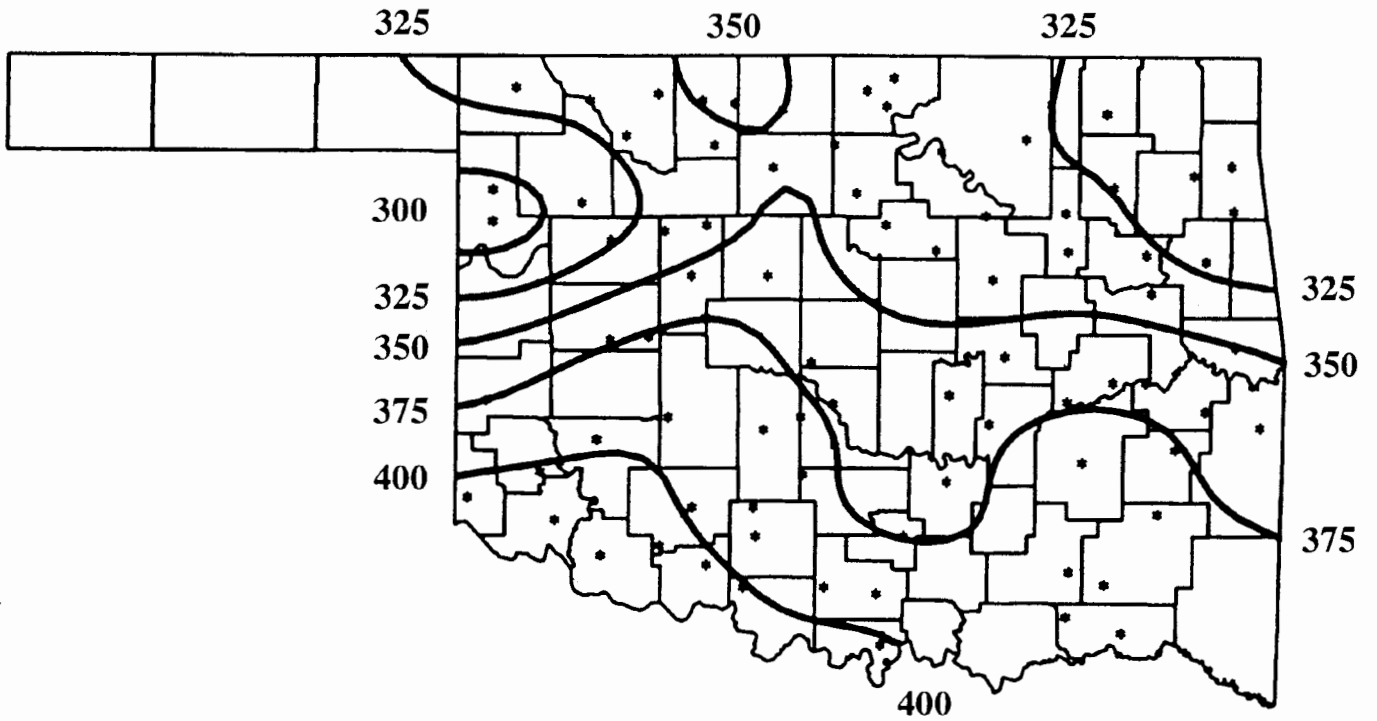
JUNE 1993 DEVIATION FROM NORMAL PRECIPITATION
(Inches)



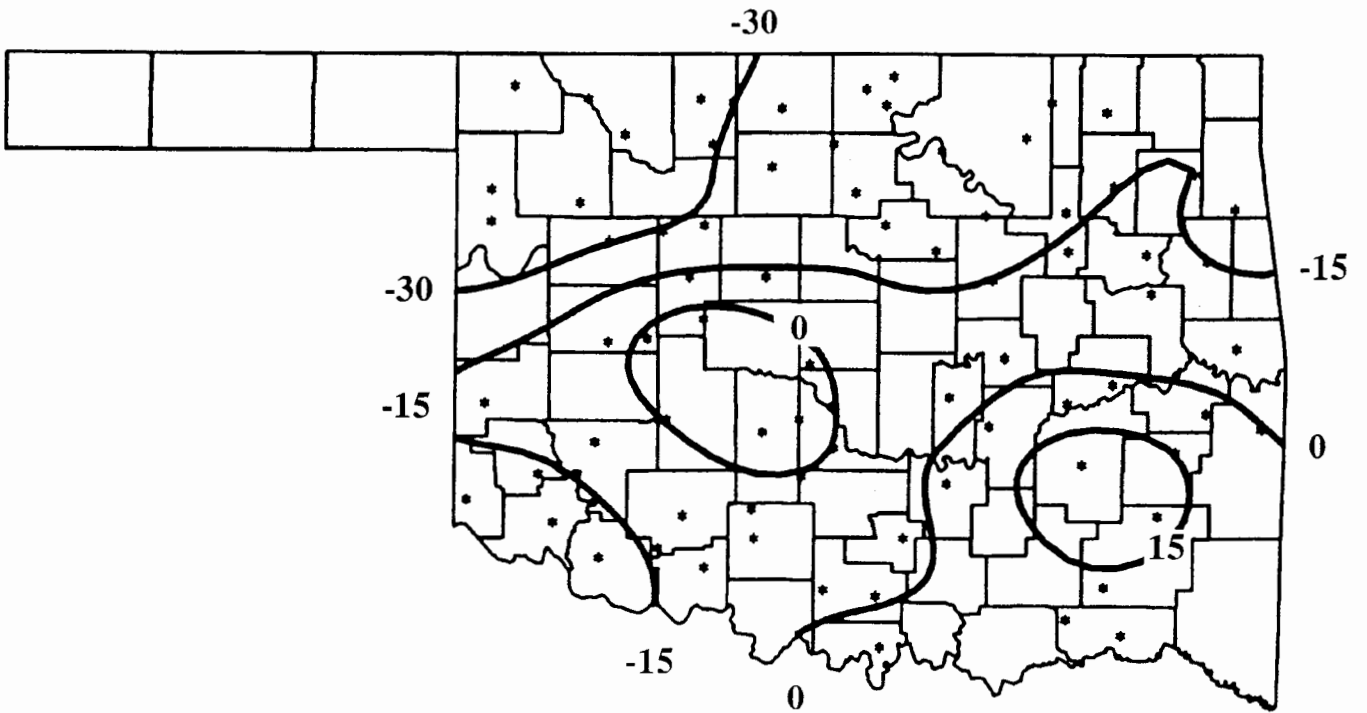
JUNE 1993 AVERAGE MONTHLY TEMPERATURES
(Degrees F)



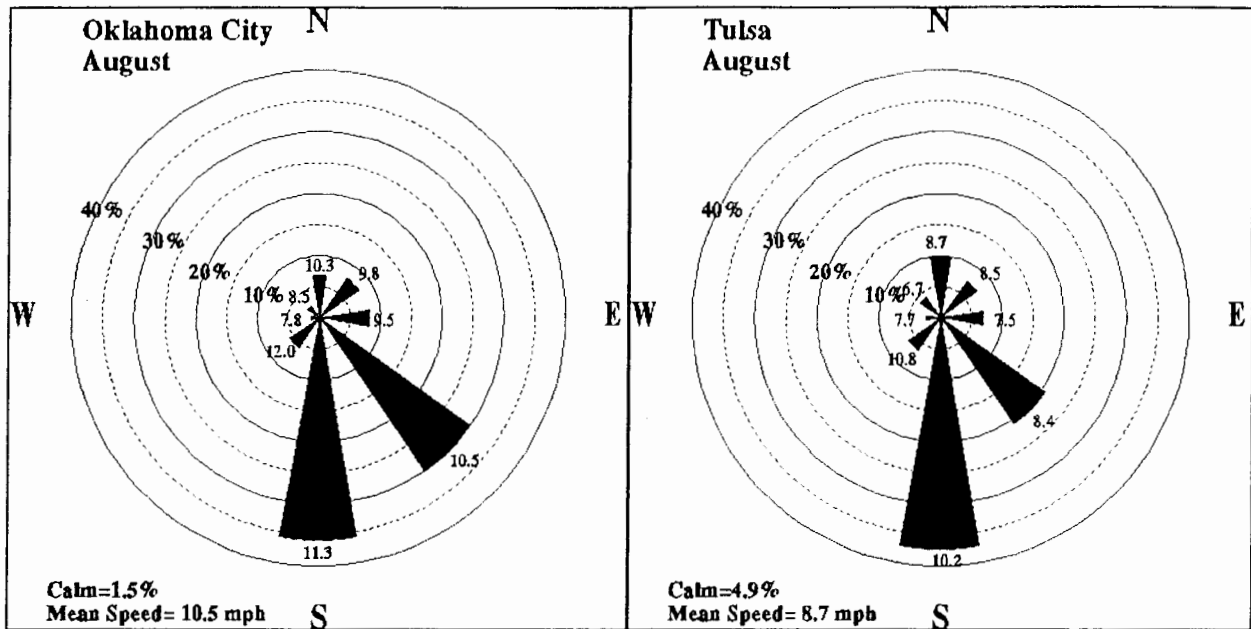
JUNE 1993 DEVIATION FROM NORMAL TEMPERATURES
(Degrees F)



JUNE 1993 COOLING DEGREE DAYS



JUNE 1993 DEVIATION FROM NORMAL COOLING DEGREE DAYS



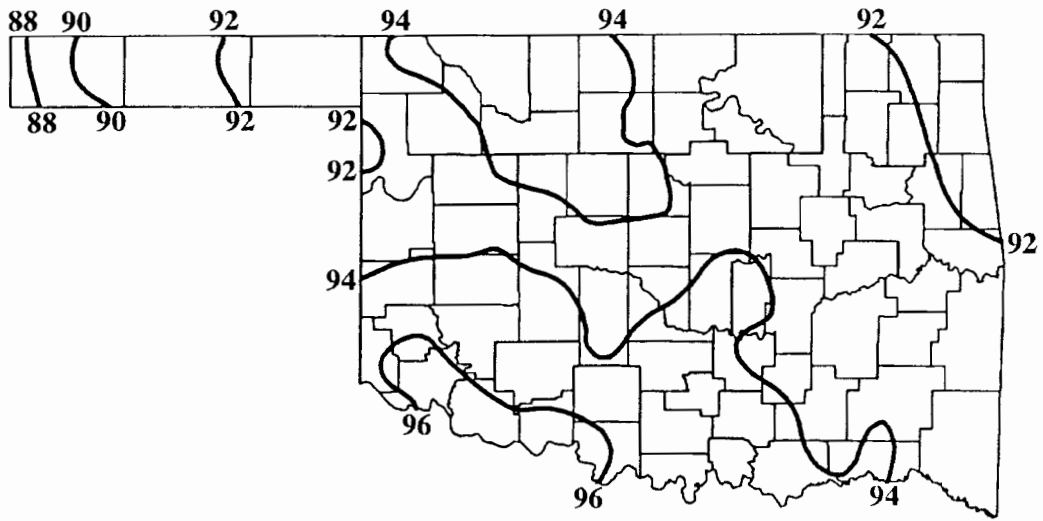
August Wind Roses for Oklahoma City and Tulsa. Percents represent the frequency of winds from each direction. The numbers at the ends of the bars indicate the average wind speed (miles per hour) from that direction.

AUGUST 1993 SUNRISE AND SUNSET

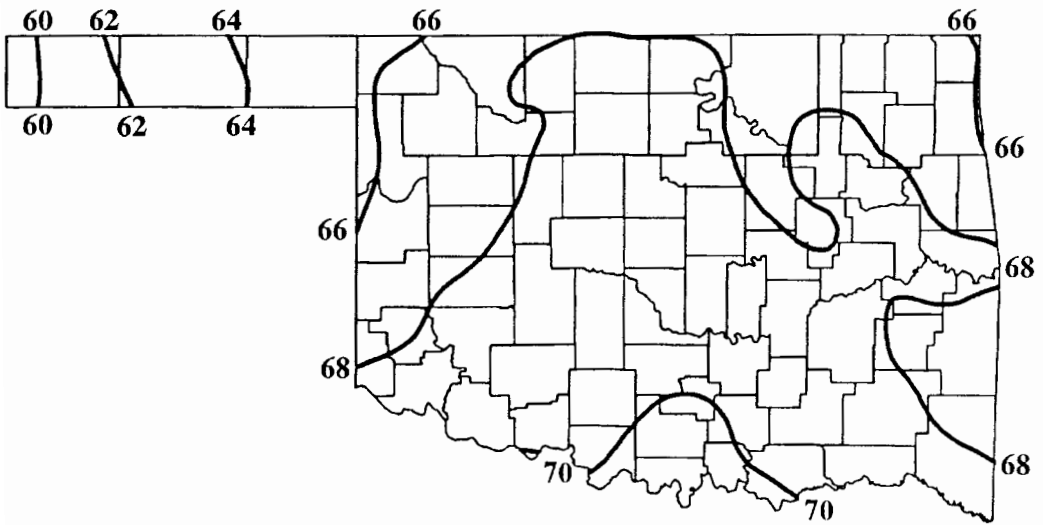
OKLAHOMA CITY

TULSA

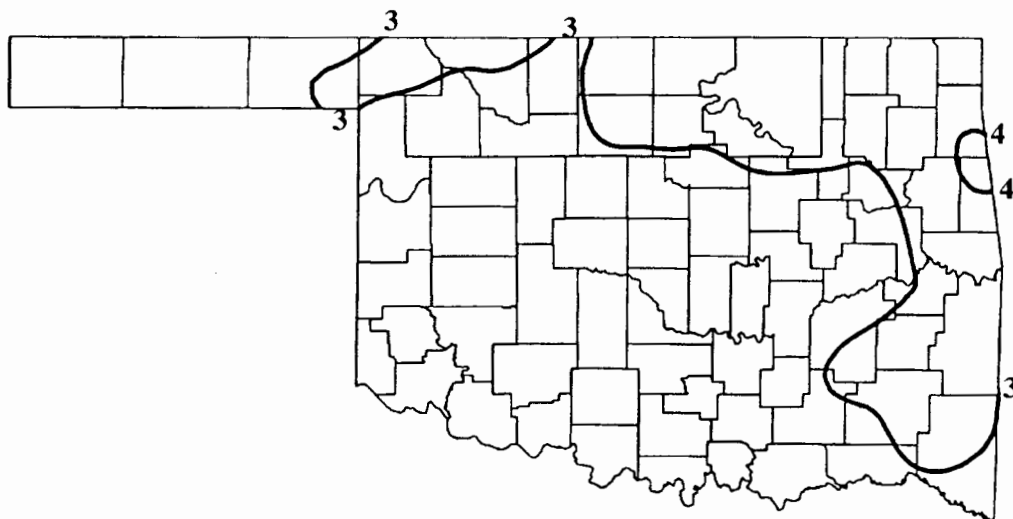
DATE	SUNRISE	SUNSET	DAYLIGHT	DATE	SUNRISE	SUNSET	DAYLIGHT
93 8 1	6:39AM	8:34PM CDT	13 hrs 55 mins	93 8 1	6:31AM	8:29PM CDT	13 hrs 59 mins
93 8 2	6:40AM	8:34PM CDT	13 hrs 54 mins	93 8 2	6:31AM	8:28PM CDT	13 hrs 57 mins
93 8 3	6:41AM	8:33PM CDT	13 hrs 52 mins	93 8 3	6:32AM	8:28PM CDT	13 hrs 55 mins
93 8 4	6:41AM	8:32PM CDT	13 hrs 51 mins	93 8 4	6:33AM	8:27PM CDT	13 hrs 54 mins
93 8 5	6:42AM	8:31PM CDT	13 hrs 49 mins	93 8 5	6:34AM	8:26PM CDT	13 hrs 52 mins
93 8 6	6:43AM	8:30PM CDT	13 hrs 47 mins	93 8 6	6:34AM	8:25PM CDT	13 hrs 50 mins
93 8 7	6:43AM	8:29PM CDT	13 hrs 46 mins	93 8 7	6:35AM	8:24PM CDT	13 hrs 49 mins
93 8 8	6:44AM	8:28PM CDT	13 hrs 44 mins	93 8 8	6:36AM	8:23PM CDT	13 hrs 47 mins
93 8 9	6:45AM	8:27PM CDT	13 hrs 42 mins	93 8 9	6:37AM	8:22PM CDT	13 hrs 45 mins
93 8 10	6:46AM	8:26PM CDT	13 hrs 41 mins	93 8 10	6:37AM	8:21PM CDT	13 hrs 43 mins
93 8 11	6:46AM	8:25PM CDT	13 hrs 39 mins	93 8 11	6:38AM	8:20PM CDT	13 hrs 42 mins
93 8 12	6:47AM	8:24PM CDT	13 hrs 37 mins	93 8 12	6:39AM	8:19PM CDT	13 hrs 40 mins
93 8 13	6:48AM	8:23PM CDT	13 hrs 35 mins	93 8 13	6:40AM	8:18PM CDT	13 hrs 38 mins
93 8 14	6:49AM	8:22PM CDT	13 hrs 33 mins	93 8 14	6:40AM	8:16PM CDT	13 hrs 36 mins
93 8 15	6:49AM	8:21PM CDT	13 hrs 31 mins	93 8 15	6:41AM	8:15PM CDT	13 hrs 34 mins
93 8 16	6:50AM	8:20PM CDT	13 hrs 30 mins	93 8 16	6:42AM	8:14PM CDT	13 hrs 32 mins
93 8 17	6:51AM	8:18PM CDT	13 hrs 28 mins	93 8 17	6:43AM	8:13PM CDT	13 hrs 30 mins
93 8 18	6:51AM	8:17PM CDT	13 hrs 26 mins	93 8 18	6:44AM	8:12PM CDT	13 hrs 28 mins
93 8 19	6:52AM	8:16PM CDT	13 hrs 24 mins	93 8 19	6:44AM	8:10PM CDT	13 hrs 26 mins
93 8 20	6:53AM	8:15PM CDT	13 hrs 22 mins	93 8 20	6:45AM	8: 9PM CDT	13 hrs 24 mins
93 8 21	6:54AM	8:14PM CDT	13 hrs 20 mins	93 8 21	6:46AM	8: 8PM CDT	13 hrs 22 mins
93 8 22	6:54AM	8:12PM CDT	13 hrs 18 mins	93 8 22	6:47AM	8: 7PM CDT	13 hrs 20 mins
93 8 23	6:55AM	8:11PM CDT	13 hrs 16 mins	93 8 23	6:47AM	8: 5PM CDT	13 hrs 18 mins
93 8 24	6:56AM	8:10PM CDT	13 hrs 14 mins	93 8 24	6:48AM	8: 4PM CDT	13 hrs 16 mins
93 8 25	6:57AM	8: 9PM CDT	13 hrs 12 mins	93 8 25	6:49AM	8: 3PM CDT	13 hrs 14 mins
93 8 26	6:57AM	8: 7PM CDT	13 hrs 10 mins	93 8 26	6:50AM	8: 1PM CDT	13 hrs 12 mins
93 8 27	6:58AM	8: 6PM CDT	13 hrs 8 mins	93 8 27	6:50AM	8: 0PM CDT	13 hrs 10 mins
93 8 28	6:59AM	8: 5PM CDT	13 hrs 6 mins	93 8 28	6:51AM	7:59PM CDT	13 hrs 8 mins
93 8 29	6:59AM	8: 3PM CDT	13 hrs 4 mins	93 8 29	6:52AM	7:57PM CDT	13 hrs 6 mins
93 8 30	7: 0AM	8: 2PM CDT	13 hrs 2 mins	93 8 30	6:53AM	7:56PM CDT	13 hrs 3 mins
93 8 31	7: 1AM	8: 1PM CDT	13 hrs 0 mins	93 8 31	6:53AM	7:55PM CDT	13 hrs 1 mins



August Normal Daily Maximum Temperatures (°F)



August Normal Daily Minimum Temperatures (°F)



August Normal Monthly Precipitation (inches)

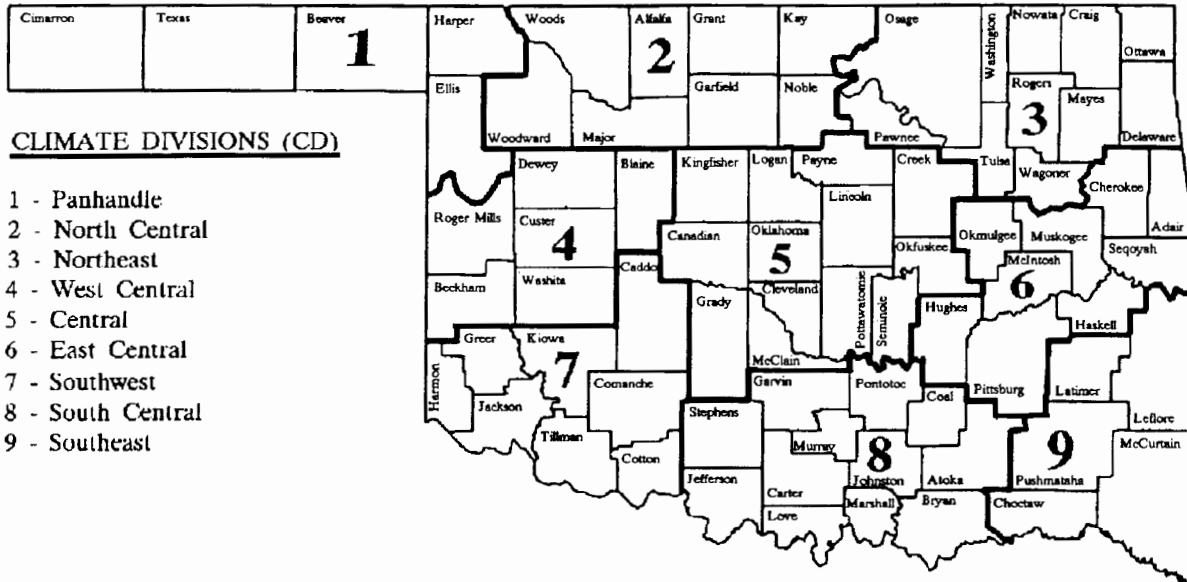
90-DAY NATIONAL WEATHER SERVICE OUTLOOK

(JULY 1993 - SEPTEMBER 1993)

Precipitation - Above Normal Northwest
Near Normal Elsewhere

Temperature - Much Below Normal Northwest
Near Normal Southeast
Below Normal Elsewhere

OKLAHOMA



CLIMATE DIVISIONS (CD)

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

EXPLANATION OF TABLES

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

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

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

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

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

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

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

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

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

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

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

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

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

OKLAHOMA CITY CLIMATE CALENDAR

August 1993

Normal 1	Actual	Normal 2	Actual	Normal 3	Actual	Normal 4	Actual	Normal 5	Actual	Normal 6	Actual	Normal 7	Actual
93.0 max 70.5 min .07 ppt 0 hdd 17 cdd	106-1980 72-1950 58-1971 83-1934 1.82-1904	93.0 max 70.3 min .03 ppt 0 hdd 17 cdd	110-1980 80-1899 57-1971 81-1932 1.41-1894	93.7 max 70.6 min .06 ppt 0 hdd 17 cdd	106-1930 72-1907 59-1973 80-1944 1.82-1990	92.5 max 70.6 min .09 ppt 0 hdd 17 cdd	105-1918 75-1978 59-1973 82-1980 1.32-1985	94.0 max 71.5 min .11 ppt 0 hdd 18 cdd	106-1964 76-1920 55-1994 80-1923 1.00-1976	94.6 max 71.5 min .11 ppt 0 hdd 18 cdd	107-1951 76-1971 56-1894 80-1980 1.08-1965	93.8 max 70.7 min .13 ppt 0 hdd 17 cdd	107-1946 76-1989 59-1894 82-1951 2.15-1939
93.1 max 70.1 min .10 ppt 0 hdd 17 cdd	106-1970 75-1912 54-1989 82-1951 2.00-1912	93.0 max 69.5 min .15 ppt 0 hdd 16 cdd	109-1936 75-1927 58-1908 80-1970 1.83-1915	92.6 max 70.1 min .09 ppt 0 hdd 16 cdd	112-1936 71-1989 62-1917 81-1937 1.18-1977	92.5 max 69.2 min .04 ppt 0 hdd 16 cdd	113-1936 73-1969 58-1931 82-1936 2.80-1992	92.8 max 69.2 min .04 ppt 0 hdd 16 cdd	110-1936 72-1920 56-1957 83-1936 1.85-1901	93.0 max 70.2 min .11 ppt 0 hdd 17 cdd	107-1936 73-1989 54-1957 83-1936 1.87-1989	92.4 max 70.8 min .14 ppt 0 hdd 17 cdd	106-1956 68-1989 60-1967 78-1943 1.93-1989
92.6 max 70.7 min .20 ppt 0 hdd 17 cdd	107-1956 77-1942 59-1992 81-1954 2.69-1945	93.6 max 71.2 min .05 ppt 0 hdd 17 cdd	107-1956 78-1964 60-1992 81-1934 1.32-1981	93.1 max 70.8 min .03 ppt 0 hdd 17 cdd	108-1909 76-1932 61-1992 82-1934 .93-1932	92.3 max 69.9 min .13 ppt 0 hdd 16 cdd	104-1918 68-1992 57-1943 81-1934 2.87-1966	90.9 max 69.2 min .10 ppt 0 hdd 15 cdd	108-1934 72-1915 56-1932 80-1954 .87-1977	91.7 max 69.0 min .08 ppt 0 hdd 15 cdd	105-1911 65-1950 56-1950 81-1934 1.83-1983	92.6 max 69.0 min .10 ppt 0 hdd 16 cdd	105-1911 74-1920 51-1956 81-1934 1.20-1979
91.7 max 69.1 min .03 ppt 0 hdd 15 cdd	104-1922 72-1920 56-1956 80-1922 3.17-1934	91.4 max 68.4 min .06 ppt 0 hdd 15 cdd	105-1980 70-1956 49-1891 80-1988 2.27-1924	92.1 max 68.5 min .06 ppt 0 hdd 15 cdd	107-1922 73-1966 50-1891 78-1936 1.11-1918	91.9 max 68.6 min .02 ppt 0 hdd 15 cdd	102-1988 72-1934 58-1966 78-1936 1.81-1934	92.3 max 68.2 min .06 ppt 0 hdd 15 cdd	104-1901 76-1944 59-1910 78-1936 1.16-1986	91.7 max 68.9 min .07 ppt 0 hdd 15 cdd	104-1982 69-1987 52-1906 78-1963 1.53-1941	90.4 max 68.1 min .07 ppt 0 hdd 14 cdd	103-1984 68-1988 56-1906 80-1951 1.44-1900
90.8 max 68.0 min .07 ppt 0 hdd 14 cdd	106-1984 70-1968 50-1993 79-1951 2.33-1935	91.5 max 68.3 min .04 ppt 0 hdd 15 cdd	105-1947 70-1915 49-1915 78-1947 1.32-1928	89.6 max 67.7 min .16 ppt 0 hdd 14 cdd	104-1890 72-1966 51-1915 79-1980 2.35-1965	89.6 max 67.7 min .16 ppt 0 hdd 14 cdd	104-1890 72-1966 51-1915 79-1980 2.35-1965	91.5 max 68.3 min .04 ppt 0 hdd 15 cdd	104-1982 69-1987 52-1906 78-1963 1.53-1941	91.7 max 68.9 min .07 ppt 0 hdd 15 cdd	104-1982 69-1987 52-1906 78-1963 1.53-1941	90.4 max 68.1 min .07 ppt 0 hdd 14 cdd	103-1984 68-1988 56-1906 80-1951 1.44-1900
AUGUST AVERAGES													
TEMPERATURE : 81.0°F													
PRECIPITATION : 2.51"													
HEATING DEGREE DAYS : 0													
COOLING DEGREE DAYS : 495													

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

TULSA CLIMATE CALENDAR

August 1993

Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual	Normal	Actual																																								
93.0 72.0 .07 0 18 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	110-1923 76-1950 59-1925 86-1980 82-1958	94.0 72.0 .03 0 18 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	108-1980 82-1976 57-1971 84-1980 62-1978	93.0 71.0 .08 0 17 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	111-1923 72-1978 52-1976 84-1980 2.03-1957	95.0 72.0 .06 0 19 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	109-1956 70-1948 60-1920 82-1980 .97-1981	95.0 72.0 .03 0 18 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	110-1964 82-1948 57-1920 82-1980 .89-1992	93.0 71.0 .05 0 17 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	114-1936 74-1968 58-1931 80-1983 1.00-1992	94.0 71.0 .15 0 18 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	114-1936 74-1961 54-1967 84-1980 1.37-1949	92.0 69.0 .10 0 16 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	106-1936 80-1950 54-1967 80-1987 5.37-1969	92.0 69.0 .08 0 16 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	106-1936 80-1950 54-1967 80-1987 1.31-1966	92.0 69.0 .07 0 16 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	104-1978 76-1964 52-1910 81-1978 1.91-1987	92.0 69.0 .07 0 16 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	105-1913 70-1987 50-1910 80-1983 1.00-1974	92.0 69.0 .02 0 16 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	105-1978 83-1985 57-1966 80-1983 .63-1975	92.0 69.0 .07 0 16 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	107-1936 79-1965 59-1920 80-1983 2.18-1972	92.0 69.0 .07 0 16 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	107-1936 79-1965 59-1920 80-1983 2.18-1972	91.0 69.0 .05 0 15 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	106-1936 72-1961 50-1920 77-1987 1.14-1971	91.0 69.0 .03 0 15 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	107-1984 70-1974 51-1931 79-1984 2.36-1955	90.0 69.0 .15 0 14 Highest Max Lowest Max Lowest Min Highest Min Greatest ppt	106-1951 74-1986 48-1915 84-1980 1.86-1962																												
Normal 1	Actual	Normal 2	Actual	Normal 3	Actual	Normal 4	Actual	Normal 5	Actual	Normal 6	Actual	Normal 7	Actual	Normal 8	Actual	Normal 9	Actual	Normal 10	Actual	Normal 11	Actual	Normal 12	Actual	Normal 13	Actual	Normal 14	Actual	Normal 15	Actual	Normal 16	Actual	Normal 17	Actual	Normal 18	Actual	Normal 19	Actual	Normal 20	Actual	Normal 21	Actual	Normal 22	Actual	Normal 23	Actual	Normal 24	Actual	Normal 25	Actual	Normal 26	Actual	Normal 27	Actual	Normal 28	Actual	Normal 29	Actual	Normal 30	Actual	Normal 31	Actual

AUGUST AVERAGES

TEMPERATURE : 81.5°F
 PRECIPITATION : 2.94"
 HEATING DEGREE DAYS : 0
 COOLING DEGREE DAYS : 518