

1999

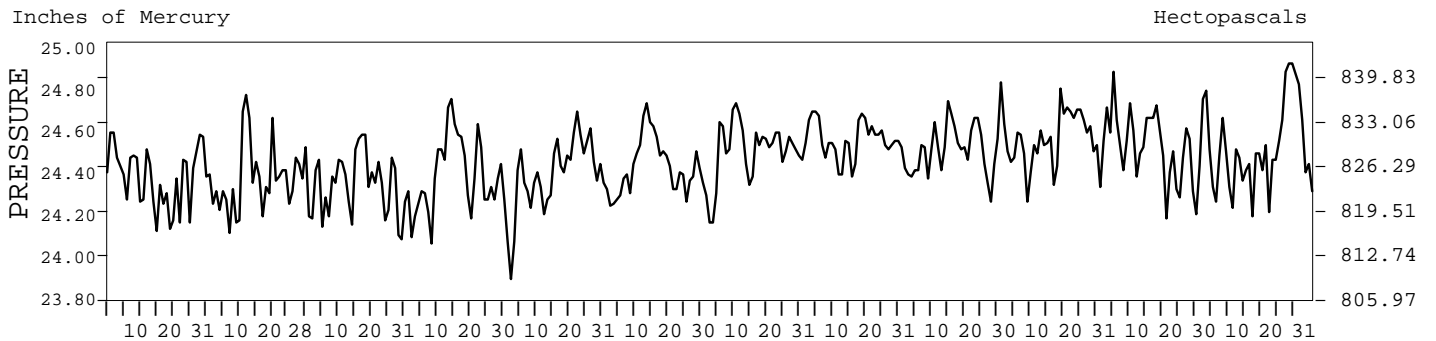
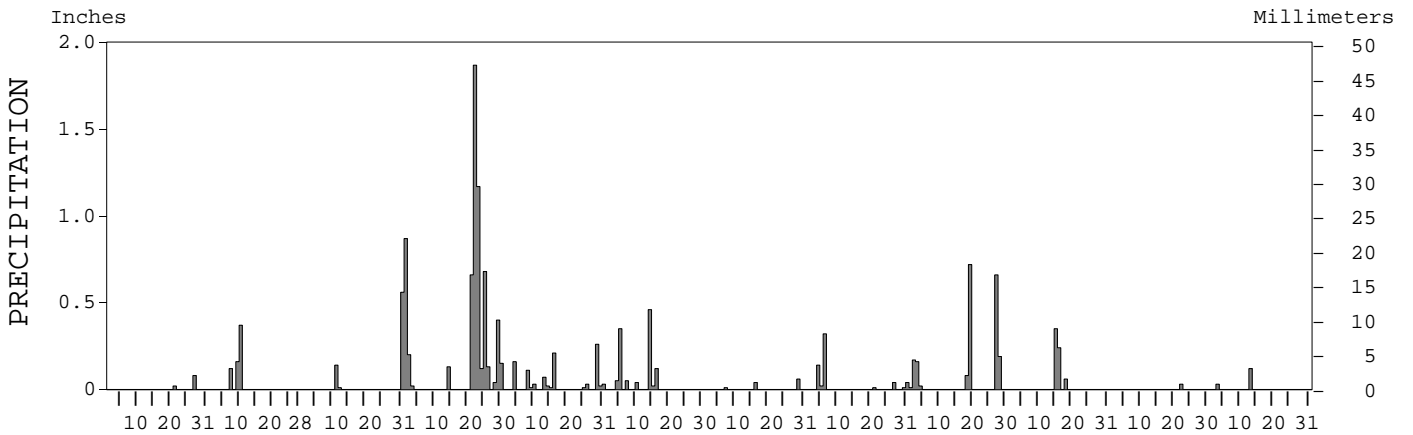
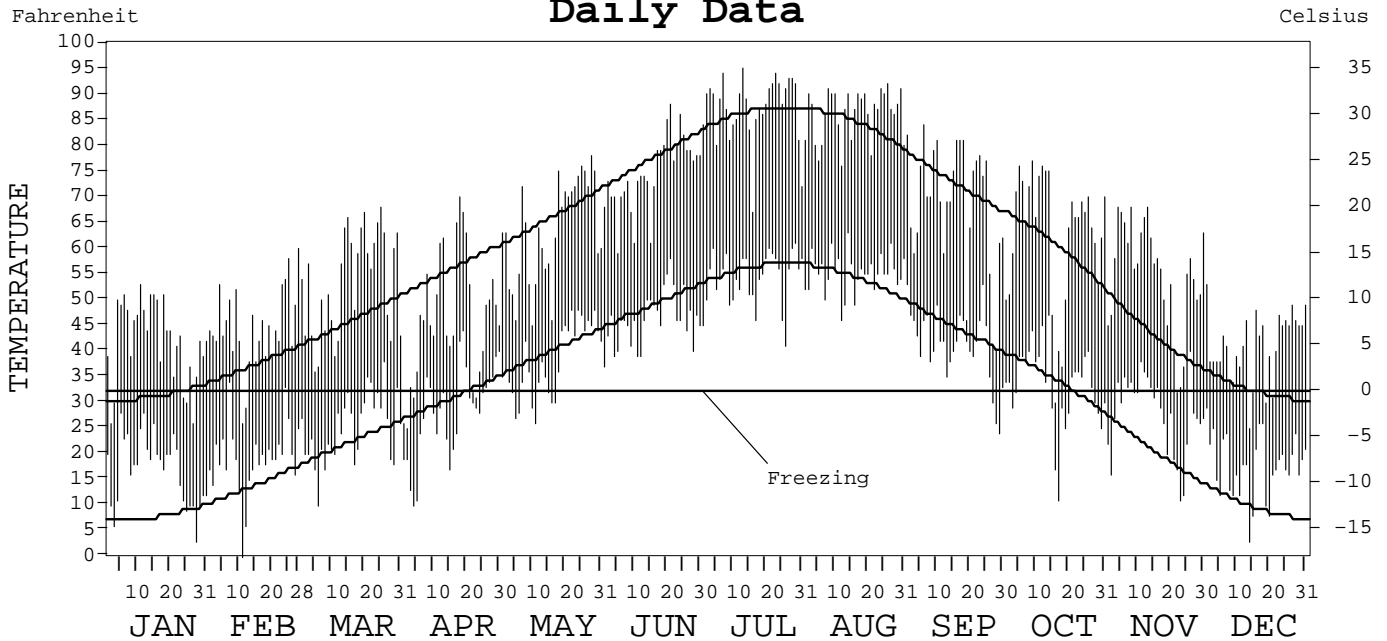
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-5809

LANDER,
WYOMING (LND)

Daily Data



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Thomas R. Karl

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE
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 ASHEVILLE, NORTH CAROLINA

METEOROLOGICAL DATA FOR 1999

LANDER, WY (LND)

LATITUDE: 42° 49' 00" N LONGITUDE: 108° 44' 00" W ELEVATION (FT): GRND: 5558 BARO: 5558 TIME ZONE: MOUNTAIN (UTC + 7) WBAN: 24021

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	41.9	44.5	53.4	46.4	63.2	74.5	87.2	86.2	68.7	62.7	54.8	41.0	60.4	
	HIGHEST DAILY MAXIMUM	53	60	68	70	78	88	95	92	84	77	68	53	95	
	DATE OF OCCURRENCE	11	28	25	18	28	21	13	26	06	09	13+	01	JUL 13	
	MEAN DAILY MINIMUM	16.9	19.2	25.0	28.1	38.1	46.1	54.2	55.2	41.2	33.5	27.8	17.6	33.6	
	LOWEST DAILY MINIMUM	3	0	10	10	26	37	41	46	24	11	11	3	0	
	DATE OF OCCURRENCE	28	11	06	04	11	01	26	12	29	17	23	14	FEB 11	
	AVERAGE DRY BULB	29.4	31.9	39.2	37.3	50.7	60.3	70.7	70.7	55.0	48.1	41.3	29.3	47.0	
	MEAN WET BULB	23.8	25.7	30.3		42.0	49.8		54.8	43.9	38.0	32.3	23.8		
	MEAN DEW POINT	14.4	14.4	15.2		32.6	40.1		41.7	32.3	25.8	18.9	13.9		
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	0	14	11	0	0	0	0	0	25
	MAXIMUM ≤ 32°	5	2	0	5	0	0	0	0	0	1	1	4	18	
	MINIMUM ≤ 32°	31	26	27	20	8	0	0	0	3	12	20	31	178	
MINIMUM ≤ 0°	0	1	0	0	0	0	0	0	0	0	0	0	1		
H/C	HEATING DEGREE DAYS	1096	920	790	827	436	150	6	4	296	516	703	1098	6842	
	COOLING DEGREE DAYS	0	0	0	0	0	19	190	187	3	0	0	0	399	
RH	MEAN (PERCENT)	58	52	42	66	55	50	37	39	49	48	44	55	50	
	HOUR 05 LST	69	64	54	76	70	66	54	55	63	62	54	64	63	
	HOUR 11 LST	52	46	36	60	45	41	30	31	43	42	40	50	43	
	HOUR 17 LST	47	40	30	56	40	35	23	28	34	34	35	47	37	
	HOUR 23 LST	63	56	46	70	62	55	40	42	54	52	47	59	54	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	0	1	1	8	0	0	0	0	2	2	0	0	14	
	THUNDERSTORMS	0	2	0	4	12	15	11	13	5	1	0	0	63	
CLOUDINESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (≤ 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	24.39	24.38	24.36	24.39	24.39	24.43	24.51	24.56	24.54	24.57	24.54	24.51	24.46	
	MEAN SEA-LEVEL PRESS. (IN.)	30.01	29.98	29.89		29.85	29.83		29.93	30.00	30.09	30.10	30.16		
WINDS	RESULTANT SPEED (MPH)	1.6	3.4	3.1	2.4	2.3	3.1	3.5	3.0	1.6	1.4	1.8	1.3	2.3	
	RES. DIR. (TENS OF DEGS.)	26	25	26	29	26	24	25	24	27	26	26	25	26	
	MEAN SPEED (MPH)	6.2	8.2	7.6	6.7	7.1	7.7	7.8	7.4	6.1	5.5	5.3	5.3	6.7	
	PREVAIL. DIR. (TENS OF DEGS.)	24	25	23	24	25	25	23	24	24	23	30	25	24	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	44	44	68	43	41	53	45	39	43	31	44	33	68	
	DIR. (TENS OF DEGS.)	26	24	23	19	19	19	22	22	26	30	27	28	23	
	DATE OF OCCURRENCE	15	26+	16	09	13	05	24	27	25	31	25	18	MAR 16	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	51	53	84	47	48	60	56	47	53	37	53	43	84	
DIR. (TENS OF DEGS.)	26	26	24	19	19	19	22	21	27	28	28	32	24		
DATE OF OCCURRENCE	15	17	16	09	13	05	24	27	10	31+	20	18	MAR 16		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.10	0.65	0.71	6.44	0.97	1.09	0.11	0.58	2.01	0.65	0.03	0.15	13.49	
	GREATEST 24-HOUR (IN.)	0.08	0.52	0.56	2.22	0.27	0.48	0.06	0.32	0.85	0.59	0.03	0.12	2.22	
	DATE OF OCCURRENCE	27	09-10	31	21-22	29-30	14-15	29	06	27-28	15-16	22	13	APR 21-22	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	2	3	3	13	13	7	3	7	8	3	1	2	65	
PRECIPITATION ≥ 0.10	0	3	2	11	4	3	0	2	5	2	0	1	33		
PRECIPITATION ≥ 1.00	0	0	0	2	0	0	0	0	0	0	0	0	2		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	1.8	3.2	14.7	70.4	1.5	0.0	0.0	0.0	7.9	11.6	0.5	3.7	115.3	
	GREATEST 24-HOUR (IN.)	1.5	3.2	12.0	28.6	1.0	0.0	0.0	0.0	7.9	11.0	0.5	2.7	28.6	
	DATE OF OCCURRENCE	27	10	31	22	04				27-28	15-16	22	13	APR 22	
	MAXIMUM SNOW DEPTH (IN.)														
	DATE OF OCCURRENCE														
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	1	1	2	7	1	0	0	0	2	2	0	2	18		

NORMALS, MEANS, AND EXTREMES

LANDER, WY (LND)

LATITUDE: 42° 49' 00" N LONGITUDE: 108° 44' 00" W ELEVATION (FT): GRND: 5558 BARO: 5558 TIME ZONE: MOUNTAIN (UTC + 7) WBAN: 24021

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	31.2	37.1	45.7	55.8	66.0	77.4	86.1	83.9	72.3	59.8	42.5	32.1	57.5
	MEAN DAILY MAXIMUM	51	31.9	37.5	45.5	55.5	65.8	77.0	85.9	84.3	73.0	59.9	42.9	33.5	57.7
	HIGHEST DAILY MAXIMUM	53	63	68	76	82	91	100	101	101	94	85	70	64	101
	YEAR OF OCCURRENCE		1971	1951	1966	1992	1954	1954	1954	1979	1995	1963	1988	1980	AUG 1979
	MEAN OF EXTREME MAXS.	51	51.8	55.0	64.0	73.7	82.5	91.4	95.3	94.1	88.5	77.5	62.2	53.6	74.1
	NORMAL DAILY MINIMUM	30	7.8	13.6	22.1	30.7	39.9	48.8	55.9	53.8	44.2	33.7	19.9	9.4	31.6
	MEAN DAILY MINIMUM	51	8.8	13.9	21.5	30.6	40.1	48.4	55.3	53.8	44.2	33.2	19.6	10.7	31.7
	LOWEST DAILY MINIMUM	53	-37	-28	-16	-2	18	25	39	35	10	-3	-18	-37	-37
	YEAR OF OCCURRENCE		1963	1949	1960	1973	1954	1951	1993	1962	1965	1991	1985	1983	DEC 1983
	MEAN OF EXTREME MINS.	51	-13.5	-7.0	2.0	15.8	27.8	36.5	45.7	43.9	29.8	16.7	-1.5	-10.4	15.5
	NORMAL DRY BULB	30	19.5	25.4	33.9	43.3	53.0	63.1	71.0	68.9	58.3	46.8	31.2	20.8	44.6
	MEAN DRY BULB	51	20.4	25.6	33.5	43.0	53.0	62.7	70.6	69.1	58.5	46.6	31.3	22.1	44.7
	MEAN WET BULB	16	17.5	21.1	29.3	36.2	44.1	50.5	54.7	53.4	46.2	37.3	26.1	16.3	36.1
	MEAN DEW POINT	16	10.2	12.9	19.0	24.7	32.9	38.6	42.0	39.8	33.8	26.3	17.5	9.5	25.6
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.0	0.1	3.0	10.2	6.3	0.6	0.0	0.0	0.0	20.2	
MAXIMUM ≤ 32°	30	15.3	8.5	3.7	0.7	*	0.0	0.0	0.0	0.2	0.6	6.6	15.0	50.6	
MINIMUM ≤ 32°	30	30.5	27.5	28.1	17.8	4.9	0.2	0.0	0.0	3.2	13.8	27.4	30.6	184.0	
MINIMUM ≤ 0°	30	8.2	3.9	0.8	*	0.0	0.0	0.0	0.0	0.0	0.1	1.8	6.3	21.1	
H/C	NORMAL HEATING DEG. DAYS	30	1411	1109	964	651	376	137	9	38	246	564	1014	1370	7889
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	0	80	195	159	45	0	0	0	479
RH	NORMAL (PERCENT)	30	64	62	56	52	50	45	40	40	46	52	62	65	53
	HOUR 05 LST	30	68	68	66	65	65	61	54	54	59	63	69	68	63
	HOUR 11 LST	30	61	58	50	45	43	40	34	34	40	46	57	61	47
	HOUR 17 LST	30	60	54	45	39	36	31	27	26	32	40	56	62	42
	HOUR 23 LST	30	67	65	59	57	55	48	43	42	49	56	66	68	56
S	PERCENT POSSIBLE SUNSHINE	50	65	68	70	66	64	72	75	75	72	67	58	61	68
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG(VISBY≤1/4 MI)	53	1.0	0.8	0.4	0.6	0.1	0.1	0.0	0.0	0.2	0.2	0.7	0.9	5.0
	THUNDERSTORMS	53	0.0	0.0	0.2	1.2	4.8	7.6	9.4	7.6	3.0	0.4	0.0	0.0	34.2
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	50	4.9	4.9	5.0	5.0	5.1	4.1	3.4	3.4	3.5	4.0	4.8	4.4	4.4
	MIDNIGHT-MIDNIGHT (OKTAS)	32	4.3	4.3	4.7	5.0	4.8	3.9	3.3	3.2	3.3	3.8	4.4	4.0	4.1
	MEAN NO. DAYS WITH:														
	CLEAR	50	7.9	7.0	7.0	5.9	6.3	10.4	13.5	13.0	13.4	11.4	7.6	9.6	113.0
PARTLY CLOUDY	50	9.9	9.6	9.9	10.1	10.7	10.8	11.3	11.6	8.6	9.1	9.7	9.6	120.9	
CLOUDY	50	13.2	11.7	14.1	14.0	13.8	8.8	5.7	5.9	7.6	9.9	12.3	11.8	128.8	
PR	MEAN STATION PRESSURE(IN)	27	24.40	24.39	24.40	24.40	24.40	24.50	24.60	24.60	24.50	24.50	24.50	24.42	24.47
	MEAN SEA-LEVEL PRES. (IN)	16	30.13	30.08	29.97	29.91	29.87	30.00	29.92	29.93	29.96	30.02	30.05	30.17	30.00
WINDS	MEAN SPEED (MPH)	25	5.2	5.4	6.5	7.5	7.7	7.6	7.4	7.1	6.7	6.0	5.6	5.4	6.5
	PREVAIL.DIR(TENS OF DEGS)	24	24	24	24	24	24	24	24	24	24	24	24	24	24
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	3	44	44	68	43	46	53	45	39	44	55	44	55	68
	DIR. (TENS OF DEGS)		26	24	23	19	17	19	22	22	18	26	27	24	23
	YEAR OF OCCURRENCE		1999	1999	1999	1999	1998	1999	1999	1999	1998	1997	1999	1998	MAR 1999
	MAXIMUM 5-SECOND:														
SPEED (MPH)	3	51	53	84	51	60	60	57	49	53	69	53	67	84	
DIR. (TENS OF DEGS)		26	26	24	17	17	19	23	16	27	25	28	24	24	
YEAR OF OCCURRENCE		1999	1999	1999	1998	1998	1999	1998	1997	1999	1997	1999	1998	MAR 1999	
PRECIPITATION	NORMAL (IN)	30	0.48	0.57	1.15	2.08	2.32	1.46	0.81	0.53	1.10	1.13	0.80	0.58	13.01
	MAXIMUM MONTHLY (IN)	53	1.65	2.18	3.44	6.44	6.03	6.88	2.50	2.30	4.68	4.90	3.37	2.02	6.88
	YEAR OF OCCURRENCE		1949	1955	1998	1999	1957	1947	1977	1979	1973	1994	1983	1997	JUN 1947
	MINIMUM MONTHLY (IN)	53	T	T	0.35	0.21	0.07	T	0.05	T	0.01	T	0.01	0.03	T
	YEAR OF OCCURRENCE		1952	1970	1960	1992	1994	1971	1963	1970	1992	1988	1949	1954	OCT 1988
	MAXIMUM IN 24 HOURS (IN)	53	0.81	0.89	1.28	2.22	2.75	3.56	2.13	1.08	2.21	1.87	1.38	1.25	3.56
	YEAR OF OCCURRENCE		1963	1987	1977	1999	1964	1947	1977	1979	1973	1994	1983	1985	JUN 1947
NORMAL NO. DAYS WITH:															
PRECIPITATION ≥ 0.01	30	4.4	5.3	7.3	8.7	8.9	6.4	6.3	4.8	5.5	5.4	4.9	5.0	72.9	
PRECIPITATION ≥ 1.00	30	0.0	0.0	0.1	0.2	0.4	0.3	*	*	0.2	0.1	0.0	0.0	1.3	
SNOWFALL	NORMAL (IN)	30	9.6	10.6	18.8	22.3	7.6	0.2	0.0	0.0	3.4	10.3	13.2	11.7	107.7
	MAXIMUM MONTHLY (IN)	52	26.5	43.8	52.0	70.4	33.9	18.4	T	T	32.9	39.9	48.7	28.0	70.4
	YEAR OF OCCURRENCE		1962	1955	1977	1999	1975	1947	1995	1992	1982	1971	1983	1985	APR 1999
	MAXIMUM IN 24 HOURS (IN)	52	13.8	21.0	20.3	28.6	20.8	18.4	T	T	16.9	19.4	23.1	20.5	28.6
	YEAR OF OCCURRENCE		1980	1987	1973	1999	1975	1947	1995	1992	1982	1966	1958	1985	APR 1999
	MAXIMUM SNOW DEPTH (IN)	47	23	23	27	26	18	9	0	0	13	17	21	28	28
	YEAR OF OCCURRENCE		1984	1984	1973	1973	1975	1951			1965	1971	1983	1985	DEC 1985
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	2.4	2.8	4.4	4.5	1.4	0.1	0.0	0.0	0.9	2.1	3.0	2.9	24.5	

PRECIPITATION (inches) 1999 LANDER, WY (LND)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0.06	T	2.20	2.56	0.49	2.28	0.40	T	0.66	1.49	0.75	0.38	11.27
1971	0.36	0.45	0.85	5.22	4.95	T	0.27	0.27	2.27	3.58	0.41	0.36	18.99
1972	1.08	0.55	0.38	2.16	2.06	0.70	0.44	1.01	0.09	2.36	0.89	1.46	13.18
1973	0.89	0.28	3.02	4.02	0.91	0.22	2.10	0.33	4.68	1.47	0.74	0.64	19.30
1974	0.43	0.99	0.56	2.35	0.31	0.37	0.47	0.66	1.07	2.02	0.19	0.66	10.08
1975	0.74	0.43	1.18	1.68	4.44	1.88	0.29	0.10	0.38	1.37	0.73	0.79	14.01
1976	0.27	0.82	0.43	1.17	2.09	1.97	1.05	0.40	0.54	1.67	0.40	0.20	11.01
1977	0.53	0.11	3.30	1.47	1.11	0.66	2.50	0.47	0.18	0.91	0.65	0.33	12.22
1978	0.59	0.50	0.42	1.28	5.16	0.16	0.82	0.25	1.17	0.65	2.15	1.22	14.37
1979	0.75	0.05	0.56	1.69	3.00	0.83	0.18	2.30	0.01	0.48	0.57	1.09	11.51
1980	0.95	0.54	1.50	1.68	3.32	0.05	0.31	0.27	0.07	1.41	0.70	0.22	11.02
1981	0.67	0.27	1.98	1.11	3.20	0.04	0.88	0.92	0.61	0.61	0.05	0.05	10.39
1982	0.44	0.16	0.44	0.76	1.65	1.35	1.46	0.32	3.83	0.82	0.59	1.44	13.26
1983	0.08	0.49	2.11	3.34	3.02	1.21	0.20	0.32	0.50	0.57	3.37	0.60	15.81
1984	0.95	1.16	0.80	3.61	0.27	1.48	1.54	1.21	1.04	0.58	0.48	0.07	13.19
1985	0.45	0.26	0.48	0.83	0.83	1.70	1.00	0.07	1.74	0.16	1.55	1.62	10.69
1986	0.30	1.04	0.49	2.15	1.79	0.27	0.89	0.64	0.44	2.83	1.10	0.22	12.16
1987	0.79	1.73	2.24	1.36	2.37	1.39	0.49	1.50	0.30	0.94	1.20	0.72	15.03
1988	0.05	0.37	1.38	0.93	1.95	0.20	0.33	0.66	0.91	T	0.13	0.72	7.63
1989	0.04	0.76	0.37	1.13	5.30	2.72	0.27	0.80	2.19	1.21	0.32	0.39	15.50
1990	0.02	0.12	1.55	1.90	0.42	0.36	1.88	0.39	1.50	0.75	2.27	0.41	11.57
1991	0.41	0.75	0.39	2.83	4.50	0.73	0.91	0.14	0.43	1.35	1.98	0.28	14.70
1992	0.51	0.17	1.95	0.21	3.27	1.39	2.22	0.57	0.01	0.49	1.61	0.82	13.22
1993	1.00	0.34	1.47	1.90	1.79	4.96	0.83	0.46	0.42	1.34	1.62	0.41	16.54
1994	1.10	0.24	1.22	1.76	0.07	0.31	0.12	0.47	0.47	4.90	1.00	0.26	11.92
1995	0.66	0.87	0.60	3.33	5.47	2.59	1.29	0.24	1.45	1.38	1.43	0.37	19.68
1996	0.67	0.55	1.62	0.65	2.51	0.39	0.10	0.08	2.23	1.28	1.15	0.27	11.50
1997	0.67	0.69	0.92	2.39	2.22	1.00	1.16	0.82	1.21	0.94	0.61	2.02	14.65
1998	0.13	0.60	3.44	1.17	0.81	3.71	0.91	0.54	1.37	3.28	1.33	0.24	17.53
1999	0.10	0.65	0.71	6.44	0.97	1.09	0.11	0.58	2.01	0.65	0.03	0.15	13.49
POR= 108 YRS	0.50	0.66	1.23	2.23	2.46	1.33	0.78	0.50	1.02	1.31	0.79	0.61	13.42

WBAN : 24021

AVERAGE TEMPERATURE (°F) 1999 LANDER, WY (LND)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	24.4	33.6	29.7	36.8	54.3	62.9	71.1	72.8	53.4	41.2	32.4	21.4	44.5
1971	26.5	26.1	32.6	41.0	50.9	63.9	68.3	72.6	53.4	41.0	27.0	21.5	43.7
1972	19.6	27.5	40.9	43.3	51.9	64.1	67.0	67.3	56.8	43.9	27.9	12.5	43.6
1973	9.4	13.6	26.4	34.1	52.5	63.7	68.5	69.9	53.8	48.0	31.9	25.6	41.5
1974	18.2	27.1	36.0	43.7	51.4	66.3	72.5	65.2	56.1	48.1	33.9	19.5	44.8
1975	20.9	22.9	31.9	36.9	48.1	58.1	71.5	66.8	58.0	46.7	28.8	23.6	42.9
1976	19.2	27.1	32.4	44.0	54.6	60.4	72.5	67.0	59.7	43.6	33.7	25.4	45.0
1977	15.9	31.3	30.6	46.7	53.2	68.3	70.7	65.3	59.7	48.0	32.0	26.3	45.7
1978	17.5	22.0	38.3	45.3	49.0	62.5	69.8	66.5	59.3	48.1	20.7	9.1	42.3
1979	1.3	20.3	33.8	44.1	51.4	62.9	70.7	66.5	63.8	49.8	26.0	24.9	43.0
1980	14.0	25.3	32.5	45.0	52.2	64.1	72.2	66.5	59.9	47.1	31.2	34.3	45.4
1981	28.5	27.2	39.3	48.4	52.4	64.8	71.2	69.7	62.3	43.7	37.7	27.1	47.7
1982	22.1	25.4	35.8	41.3	51.9	61.0	70.6	73.3	55.2	44.3	29.5	18.3	44.1
1983	26.3	28.1	36.2	37.9	48.6	61.5	70.0	74.0	60.9	49.0	28.2	6.1	43.9
1984	16.1	20.4	31.1	40.3	55.9	63.2	73.3	72.4	55.1	41.5	32.2	20.5	43.5
1985	16.2	24.5	36.0	48.3	59.1	65.4	73.7	67.1	53.2	45.4	17.8	16.1	43.6
1986	22.0	24.6	44.1	44.9	52.5	68.2	68.7	69.8	55.2	45.9	31.2	18.8	45.5
1987	16.9	28.1	32.2	50.7	57.5	65.9	70.3	66.7	60.7	48.5	30.2	20.6	45.7
1988	19.1	29.7	33.2	48.8	55.6	72.5	75.3	70.9	58.7	53.6	34.7	20.6	47.7
1989	24.8	10.5	38.5	47.5	53.8	61.4	74.0	68.0	58.5	46.0	35.3	22.0	45.0
1990	29.1	28.7	37.0	46.4	52.5	65.1	70.7	70.9	64.8	47.2	33.4	13.3	46.6
1991	18.9	33.9	37.6	41.5	52.2	64.3	72.2	71.5	60.0	46.4	26.7	20.8	45.5
1992	20.6	33.1	41.6	50.7	57.3	63.3	65.7	68.1	60.2	50.1	28.9	15.9	46.3
1993	11.4	11.0	33.3	43.6	55.8	58.7	64.7	66.1	57.2	45.7	24.6	24.3	41.4
1994	28.7	21.7	38.7	46.2	60.5	67.0	71.2	71.7	62.8	43.6	29.2	29.0	47.5
1995	20.3	31.3	37.2	41.7	48.7	59.5	69.0	71.8	59.3	43.7	38.0	27.6	45.7
1996	19.9	27.7	31.2	44.6	51.7	65.9	72.7	71.5	57.6	45.4	34.8	26.1	45.8
1997	22.0	26.5	37.2	37.3	54.1	63.9	68.6	68.8	60.4	45.3	31.2	15.4	44.2
1998	23.6	25.5	29.2	42.9	53.7	54.8	72.0	70.0	63.4	45.7	34.5	23.6	44.9
1999	29.4	31.9	39.2	37.3	50.7	60.3	70.7	70.7	55.0	48.1	41.3	29.3	47.0
POR= 108 YRS	19.4	24.0	32.8	42.9	52.3	61.7	69.4	67.6	57.5	45.7	30.9	21.1	43.8

HEATING DEGREE DAYS (base 65°F) 1999 LANDER, WY (LND)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	3	0	357	733	970	1344	1187	1083	997	716	428	91	7909
1971-72	12	0	366	738	1133	1343	1404	1083	739	643	402	63	7926
1972-73	56	46	245	645	1105	1625	1720	1432	1186	918	386	122	9486
1973-74	35	3	332	521	988	1211	1451	1055	893	633	415	91	7628
1974-75	4	61	274	513	930	1401	1360	1172	1019	836	518	210	8298
1975-76	0	38	219	561	1079	1277	1411	1095	1006	624	316	170	7796
1976-77	1	16	182	657	933	1220	1514	940	1063	543	361	22	7452
1977-78	2	50	183	520	986	1193	1466	1192	823	586	490	127	7618
1978-79	26	54	226	519	1321	1730	1974	1248	962	620	415	137	9232
1979-80	0	61	84	463	1164	1234	1578	1145	1000	595	390	94	7808
1980-81	0	43	166	550	1005	943	1124	1051	789	487	383	83	6624
1981-82	18	15	104	655	812	1170	1324	1100	898	702	400	164	7362
1982-83	12	0	329	632	1058	1440	1194	1027	884	804	508	125	8013
1983-84	26	0	159	490	1096	1826	1510	1287	1046	736	290	135	8601
1984-85	0	0	316	721	977	1372	1507	1132	890	493	181	84	7673
1985-86	4	41	363	602	1413	1507	1329	1126	641	596	385	26	8033
1986-87	10	5	288	584	1006	1424	1486	1026	1008	425	239	46	7547
1987-88	14	50	146	501	1038	1372	1417	1018	981	481	296	15	7329
1988-89	1	7	217	347	905	1371	1239	1525	816	522	342	154	7446
1989-90	0	20	204	581	886	1329	1105	1011	860	552	382	123	7053
1990-91	22	0	95	545	939	1599	1422	865	844	696	391	62	7480
1991-92	7	1	179	572	1143	1361	1369	919	716	425	240	93	7025
1992-93	50	53	150	457	1075	1514	1658	1509	976	635	278	206	8561
1993-94	76	33	233	590	1205	1256	1117	1206	806	560	144	53	7279
1994-95	11	9	98	655	1066	1108	1380	938	853	692	496	189	7495
1995-96	14	0	219	653	801	1154	1389	1073	1038	605	407	37	7390
1996-97	0	1	255	602	900	1200	1326	1074	854	823	331	73	7439
1997-98	30	32	165	603	1007	1533	1279	1099	1103	658	339	303	8151
1998-99	1	2	126	592	905	1276	1096	920	790	827	436	150	7121
1999-	6	4	296	516	703	1098							

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COOLING DEGREE DAYS (base 65°F) 1999 LANDER, WY (LND)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	0	1	81	196	247	14	0	0	0	539
1971	0	0	0	0	0	66	123	246	25	0	0	0	460
1972	0	0	0	0	1	43	123	127	3	0	0	0	297
1973	0	0	0	0	4	92	152	163	1	0	0	0	412
1974	0	0	0	0	1	138	243	73	12	0	0	0	467
1975	0	0	0	0	0	8	210	100	14	1	0	0	333
1976	0	0	0	0	1	41	238	84	30	0	0	0	394
1977	0	0	0	0	0	124	185	67	34	0	0	0	410
1978	0	0	0	0	0	56	179	109	64	0	0	0	408
1979	0	0	0	0	2	81	185	113	55	0	0	0	436
1980	0	0	0	0	3	74	231	97	19	0	0	0	424
1981	0	0	0	0	0	83	219	166	29	0	0	0	497
1982	0	0	0	0	1	51	188	266	41	0	0	0	547
1983	0	0	0	0	5	27	188	286	42	0	0	0	548
1984	0	0	0	0	13	87	264	237	26	0	0	0	627
1985	0	0	0	0	8	102	284	113	16	0	0	0	523
1986	0	0	0	0	6	131	131	159	1	0	0	0	428
1987	0	0	0	4	15	81	188	105	22	0	0	0	415
1988	0	0	0	0	9	248	329	196	33	0	0	0	815
1989	0	0	0	0	3	51	284	120	16	0	0	0	474
1990	0	0	0	0	0	133	204	189	97	0	0	0	623
1991	0	0	0	0	0	50	238	209	34	0	0	0	531
1992	0	0	0	2	10	49	79	154	13	0	0	0	307
1993	0	0	0	0	1	24	74	74	7	0	0	0	180
1994	0	0	0	0	10	121	211	223	37	0	0	0	602
1995	0	0	0	0	0	29	148	218	55	0	0	0	450
1996	0	0	0	0	1	74	248	210	40	1	0	0	574
1997	0	0	0	0	1	49	150	158	34	0	0	0	392
1998	0	0	0	0	0	3	226	164	86	0	0	0	479
1999	0	0	0	0	0	19	190	187	3	0	0	0	399

SNOWFALL (inches) 1999 LANDER, WY (LND)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	6.7	20.6	7.5	9.0	6.9	12.6	16.2	45.2	1.5	0.0	126.2
1971-72	0.0	0.0	10.1	39.9	9.3	6.6	18.7	10.7	4.6	28.5	0.0	0.0	128.4
1972-73	0.0	0.0	0.0	19.1	15.1	27.2	25.7	9.1	49.5	66.0	7.6	0.0	219.3
1973-74	0.0	0.0	T	16.1	13.5	12.4	7.2	18.3	12.8	21.8	0.2	0.0	102.3
1974-75	0.0	0.0	6.6	3.4	4.0	9.6	10.6	8.1	22.9	34.7	33.9	0.0	133.8
1975-76	0.0	0.0	0.0	15.9	14.9	19.7	4.9	16.7	7.6	1.3	2.4	2.9	86.3
1976-77	0.0	0.0	0.0	13.3	9.8	6.1	9.1	2.6	52.0	16.6	1.1	0.0	110.6
1977-78	0.0	0.0	0.0	3.7	12.8	7.7	9.3	9.1	4.1	T	33.7	0.0	80.4
1978-79	0.0	0.0	3.0	4.7	38.8	25.4	15.9	1.1	9.3	28.6	30.3	2.6	159.7
1979-80	0.0	0.0	0.0	5.3	10.0	20.4	26.2	10.6	25.4	12.6	13.9	0.0	124.4
1980-81	0.0	0.0	0.0	8.9	11.1	4.1	15.0	6.1	15.6	6.8	T	0.0	67.6
1981-82	0.0	0.0	0.0	0.2	1.8	1.7	8.1	2.8	7.4	7.7	12.1	0.0	41.8
1982-83	0.0	0.0	32.9	3.1	11.2	22.6	1.3	4.8	24.1	43.3	22.4	0.0	165.7
1983-84	0.0	0.0	1.9	1.2	48.7	11.9	18.0	17.4	16.3	45.4	1.1	0.0	161.9
1984-85	0.0	0.0	3.5	10.4	8.7	2.3	9.1	4.7	8.6	8.4	0.0	0.0	55.7
1985-86	0.0	0.0	7.6	2.2	32.3	28.0	4.9	13.8	5.7	14.4	11.3	0.0	120.2
1986-87	0.0	0.0	0.0	11.9	17.5	5.3	14.1	32.7	26.7	17.5	T	0.0	125.7
1987-88	0.0	0.0	0.0	1.0	13.7	14.4	1.1	6.2	30.7	5.0	3.9	0.0	76.0
1988-89	0.0	0.0	0.4	0.0	3.2	13.3	0.6	14.3	6.7	11.1	T	0.0	49.6
1989-90	0.0	0.0	0.0	16.9	4.3	8.6	0.6	2.9	20.9	2.8	2.5	0.0	59.5
1990-91	T	T	0.0	6.9	28.5	6.5	6.6	10.3	2.2	36.9	4.8	T	102.7
1991-92	0.0	0.0	T	16.4	26.4	3.0	10.7	2.7	16.0	0.0	T	T	75.2
1992-93	0.0	T	0.0	3.4	27.5	16.1	17.1	5.5	13.1	16.8	0.0	0.5	100.0
1993-94	T	0.0	0.3	6.9	23.1	7.6	19.5	5.8	12.9	12.8	0.0	0.0	88.9
1994-95	0.0	0.0	T	20.2	11.9	6.5	8.7	13.8	4.8	28.1	9.7	2.6	106.3
1995-96	T	0.0	2.0	13.7	16.1	6.0	9.8	11.0	22.5	7.0	T	T	88.1
1996-97	0.0	0.0	4.2	12.6	16.9								
1997-98							2.2	9.1	40.0	7.7	T	2.7	
1998-99	0.0	0.0	0.0	10.6	11.8	7.1	1.8	3.2	14.7	70.4	1.5	0.0	121.1
1999-	0.0	0.0	7.9	11.6	0.5	3.7							
POR= 51 YRS	T	T	2.5	9.3	13.9	10.1	8.9	10.6	17.5	20.8	6.8	1.1	101.5

WBAN : 24021

REFERENCE NOTES:

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1961 - 1990). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD.</p>	<p>GENERAL CONTINUED: CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED. WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65° F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY.</p> <p>ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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1999
LANDER,
WYOMING (LND)

Lander, located in the central Wyoming valley of the Popo Agie River, lies at the foot and east of the Wind River Range. Situated on a flat-topped mesa, the airport station is 1 1/2 miles south-southeast and approximately 200 feet above the town.

The terrain to the north, east and south varies from rolling to broken with some grass covered hills 2 to 5 miles distant, rising approximately 400 feet above the station elevation. To the west and southwest the foothills of the Wind River Range begin about 3 miles from the station, sloping upward to over 12,000 feet above sea level along the Continental Divide, 20 miles distant.

Because Lander is in a pocket, winds from all directions except northeast are downslope and produce a Chinook effect, most noticeable in winds from westerly quadrants. The airport, on its mesa, receives more wind than the town of Lander, the wind speed averaging 4.7 mph for the 56 years of record kept in the town. Because of light winds, steep temperature inversions are the rule during winter nights and early mornings. Temperatures in the valley will be as much as 15 degrees lower than at the airport on calm, clear nights when there is a snow cover. However, when the wind is calm and the humidities low, the chilling effect is much less than is usual in extreme cold. Winds are often so light that little or no mixing occurs between the cold surface air and the warmer layer 2,000 to 3,000 feet above the valley. For several days each winter, temperatures are 20 to 30 degrees lower than in the surrounding areas where higher wind speeds occur. The sheltered location, however, offers protection from most severe storms that sweep down from Canada.

Lander does not have a true spring season, and snow has been recorded in June.

Usually on 15 to 20 days a year the temperature reaches or exceeds 90 degrees. Even the warmest days are not oppressive, the humidity being low, and the nights being cool. The normal daily range of summer temperature is near 30 degrees.

Mountains block moisture from the Pacific, creating a semi-arid climate. The heaviest and most persistent precipitation comes when the wind in the lower levels is from easterly quadrants, through a combination of low pressure to the south, usually over Colorado, and high pressure to the north over Montana or the western Dakotas. Lander receives 45 percent more precipitation than the area 24 miles to the northeast and 83 percent more than areas 50 miles northeast. More than a third of the annual precipitation occurs in April and May, with another but lesser peak in September and October. Summer moisture comes from occasional showers but is very erratic and spotty. Since about one-third of the annual snowfall comes in March and April, when the temperature is comparatively high, the snow soon melts.

Hardier plants and vegetables do well in this area. Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is September 24 and the average last occurrence in the spring is May 22.

STATION LOCATION

LANDER, WYOMING

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE											AUGUST 1940	* Type M = AMOS T = AUTOB S = ASOS W = AWOS	REMARKS
						SEA LEVEL	GROUND												
							WIND	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY			
<u>COOPERATIVE</u>																			
Unknown	Dec '89	Apr '90																From Signal Service list 1891.	
J. S. Meyer (Address unknown)	July '91	Oct '95		42° 50'	108°45'													From National Archives list 1942.	
<u>CITY</u>																			
Borland Building Corner of 2nd & Alley Between Main & Garfield	8/01/91	12/31/95		42° 50'	108°44'	5354	34	a12	a12									a - 16 feet to 12/1/94.	
Brenger - Iiams Bldg. 36 Main Street	1/01/96	3/31/12	300 ft. NE	42° 50'	108°44'	5347	36	b26	b26		d18			c18				b - 29 feet to 4/3/01. c - 17 feet to 5/26/04. d - Added 5/26/04.	
U. S. Federal Building 3rd and Lincoln	4/01/12	5/28/46	800 ft. W	42° 50'	108°44'	5351	68	60	60		52	e52		54				e - Added February 1940.	
<u>AIRPORT</u>																			
Weather Bureau Building Hunt Field	5/28/46	9/20/73	1 mile SSE	42° 49'	108°44'	5563	32	6	6		3	g5		3				g - 3 feet to 8/6/51.	
Weather Service Bldg. Hunt Field	9/20/73	12/01/96	690 ft. ESE	42° 49'	108°44'	5557	32	5	5	%20	3	5		4	NA h5 15	NA	% - Commissioned 10/15/74. h - Commissioned 4/13/81. i - Type change 7/24/85.		
Hunt Field	12/01/96	Present	NA	42°49'	108°44'	5558										S		ASOS Commissioned 12/01/96	

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801.
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