PDR 2m-33

PRINCIPLE PARAMETERS FOR RADIOLOGICAL ASSESSMENT

MAY 1980

PRINCIPLE PARAMETERS FOR RADIOLOGICAL ASSESSMENT
DAWN MINING COMPANY
MAY 1980

Ore Quality, U_3O_8 : 0.153%

From Newmont Mining Corporation annual report 1979. Grade given is average grade of remaining ore reserves. Does not include protore. The assumption is that additional ore reserves will be discovered and protore will not be milled at Ford. In 1979 the average grade milled was 0.134. During 1980 the expected average grade is 0.105% U_3O_8.

Ore Activity, U_{238}, U_{234}, Th_{230}, Ra_{226}, Pb_{210}: in pCi/g

U_{238}: 350 ± 40
U_{234}: 350 ± 40
Th_{230}: 235 ± 50
Ra_{226}: 215 ± 90
Pb_{210}: 500 ± 15

Eberline Instrument Corporation Assay

Operating Days Per Year (Plant Factor): 346 days

Bases on 1979 plant availability of 95.4% and two shutdown holidays.

Process Rate: 165,000 tons per year

Based on three year average 1977,78,79.

Mill Water Throughput: 224,000 m^3 per year

Based on 40% solids by weight (1979 average).

Total Mine Area
Active Mine Area
Average Mine Depth

} Not applicable
Mine 22 miles from mill.

Annual Average Morning Mixing Height: 282 meters

From Spokane County Air Pollution Control Authority-Personal Communication 12-4-79.

Annual Average Afternoon Mixing Height: 1521 meters

Same as above.

ORE HANDLING AND STORAGE

Estimated Capacity of Ore Per Delivery: 21.6 metric ton

Based on 1979 average scale readings.

Number of Deliveries: 44 perday or 264 per week

Ore hauled during summer only for 26 weeks, 6 days per week or 156 days. Total ore hauled is 165,000 tons requiring 6,875 trips or 264 trips per week or 44 trips per day.

Estimated Ore Dust Released in Delivery: 0.009 kg per hour

Amount calculated using NUREG-0511 Appendix G-1
Release rate of 1 metric ton per year for total ore pad
Emissions corrected to Dawn's smaller mill throughput and assuming two thirds of dust due to loader and one third due to truck delivery.

$$(1000 \text{ kg/MT}) \times (1 \text{ MT/yr}) \times \frac{430 \text{ MT Dawn}}{1800 \text{ MT Geis}} \times (1/3) \div \frac{8760 \text{ hrs}}{\text{yrs}} = 0.009 \text{ kg/hr}$$

Average Grade of Ore and Ranges: 0.153% (.06 to .30)

Based on official ore reserve data.

Capacity of Ore Pad: Present and Final Year of Operation:

115,000 metric tons - present
115,000 metric tons - final
} Based on 20 yrs experience

Maximum Area of Ore Pad and Height in Terms of Final Year of Operation: 55,000 sq. meters-area; 6 meters-height

Based on actual measurement of present pad which is not expected to change.

Approximate Amount of Ore Handled Per Day ie, unloaded, loaded, bulldozed, etc: 1060 metric tons (summer)
430 metric tons (fall, winter, & spring)

Loader: 430 MT
Dozer: 200 MT (summer only)
Trucks: 430 MT (summer only)

Operation Time of Front End Loaders, Hoppers, Feeders, and Other Ore Pad Equipment: 6 hours per day

Loader utilization 1979 average - 6 hours per day

Estimated Amount of Fugitive Dust Emission Due to Handling Ore Pad Equipment : 0.03 kg per hour

Amount calculated using NUREG-0511 Appendix G-1
Release rate of 1 metric ton per year for total ore pad.
Emissions corrected to Dawn's smaller mill throughput and assuming two thirds of dust due to loader and one third to truck delivery.

$$(1000 \text{ kg/hr}) \times (1 \text{ MT/yr}) \times \frac{430 \text{ MT Dawn}}{1080 \text{ MT Geis}} \times (2/3) \div 8760 \text{ hr/yr} = 0.03 \text{ kg/hr}$$

Dust Emission Control Reduction Factor by Wetting Chemical or Other Controls: 50%

Wetting - 50%
Water wagon used three times daily or more frequently depending on weather. Mine Safety and Health Administration measurements of respirable dust have recorded a maximum of 5% of TLV during their periodic inspections.

Ore Pad Area and Height: 55,000 square meters - area
6 meters - height

Ore Storage Time: 180 days

Bases on 6 months ore haul.

CRUSHERS, GRINDERS, RODMILLS, FINE ORE BLENDING

CRUSHER

Operation Time: 8 hours per day, 258 days

Crusher on 5 day per week schedule. One shift per day.

Ore Process Rate: 148,500 metric tons per year

165,000 tons x 9 = 148,500 metric tons

Total Ore Quantity Handled: Same as above.

Estimated Dust Lost to Atmosphere: 0.003 metric ton per year

Measured release rate 1.586 grams per hour
Hours operated in 1979: 2070 hrs.

(2070 hrs) x (1.586) ÷ (1000 kg/ton) ÷ (1000 g/kg) = 0.003 MT/YR

Efficiency of Emission Control Devices: 99.5 Effective
99.9 Design

Data from manufacture of bag house.

BALLMILL

Operation Time: 24 hours per day 346 days per year

Based on 1979 actual hours operated.

Ore Process Rate: 148,500 metric tons per year

Total Quanity Handled: 148,500 metric tons per year

Estimated Dust Lost to Atmosphere: -0-

Wet process

OTHER

Estimated Dust Lost to Atmosphere through Internal Ore Transportation Devices: 0.005 kg per hour

This is only an educated guess

Efficiency of Emission Controls of Internal Ore Transportation Devices: 80% effective
90% design

This is only an educated guess.

Average Daily Capacity of Temporary Bin Storage: 810 metric tons

Efficiency of Controls for Temporary Bin Storage: 80%

This is an estimate only.

YELLOWCAKE DRYING & PACKAGING

Note: The yellowcake drier and packaging are interlocked and one cannot operate if the other is down.

Processing Rate: 0.02 metric tons per hour

Calculated as follows: (400,000# U_3O_8) ÷ (2,200#/MT) ÷ (8712 hrs) = 0.02 metric ton per hour

Operating Time: 298 days per year 24 hours per day

Based on 1979 data. Yellowcake drying and packaging has excess capacity, hence does not operate the full 346 days the mill operates.

Efficiency of Control of U_3O_8 Dust Released to Atmosphere: 98% design
96% effective

Data from manufacturer of wet dust collector (ROTO Clone)

Estimated U_3O_8 Dust Released to Atmosphere:

Packaging: 0.02 kg/hr
Dryer: 0.02 kg/hr
} measured release (total particulate)

Stack Heights: Packaging: 11 meters
Drier: 20 meters

Recovery Rate of U_3O_8: 90.8% (1979 actual)

Extraction Efficiency: 95.0% (1979 actual)

Yellowcake Yield: 200 tons per year

Calculated as follows: (400,000# U_3O_8) ÷ (2000) = 200

Yellowcake Quality, U_3O_8: 79%

Actual 1979 data

Yellowcake Drying Stack Effluent, U_3O_8: 137 kg per year

Calculation: (.02 kg/hr) x (8712 hr/yr) x (79% U_3O_8) = 137 kg/hr

Yellowcake Drying Stack Filter Efficiency:

98% design
96% effective
Data from manufacturer of wet dust collector (ROTO Clone)

TAILINGS

Area, Volume, Capacity of Sand Tailings
Area, Volume, Capacity of Slime Tailings
} Blended in one impoundment

Present Area: 0.43 square kilometers
Present Volume: 1.8×10^6 cubic meters
Present Capacity: 2.2×10^6 metric tons
} Average grade 0.239

Future Additional Area: 0.11 square kilometers
Future Additional Volume: 1.2×10^6 cubic meters
Future Additional Capacity: 1.5×10^6 metric tons
} Average grade 0.153

Operating Time for Each Grade:

Present - 20 years at 0.239
Additional - 10 years at 0.153

Fraction of U_{238}, Ra_{226}, Th_{230}, and Pb_{210} to Tailings for each Particular Grade:

U_{238}: 7% Th_{230}: 95% Ra_{226}: 99.8% Pb_{210}: 99.8%

From NUREG-0511 Appendix G-1, page G-6

Tailings Density: 1.78 grams per cubic centimeter

From actual measurements taken from test trenches dug in tailings area.

Drying Time Prior to Reclamation: 3 years

This is an estimate based on verbal communications with NRC staff.

Efficiency of Controls for Fugitive Dusting:

Present - 97%
Future - 99%

At the present, 97% of the abandoned dry tailings are covered with wood chips to a depth of two feet. Active tails area of 46 acres is kept moist by movement of tailings discharge lines and the solution pond.

In the future the entire active tailings will be under water and all the inactive tailings will be stabilized.

Tailings Activity: (slimes)

U:	28	pCi/g
Ra_{226}:	200 ± 80	pCi/g
Th_{230}:	395 ± 125	"
Pb_{210}:	440 ± 10	"

From actual assay determinations - Eberline Instrument Corporation.

Tailings Activity: (sand)

U:	28	pCi/g
Ra_{226}:	110 ± 30	"
Th_{230}:	105 ± 30	"
Pb_{210}:	166 ± 10	"

From actual assay determinations - Eberline Instrument Corporation.

Tailings Activity:

(solution)

U:	1085	pCi/l
Ra_{226}:	250,000 ± 60,000	"
Th_{230}:	785 ± 80	"
Pb_{210}:	15,000 ± 1000	"

From actual assay determinations - Eberline Instrument Corportation.

Total Tailings Area:

Present: 530 square meters
Future: 640 square meters

From survey data.

Tailings Pond (Solution) Area:

Present: 40 square meters
Future: 110 square meters

From survey data.

Tailings Impoundment Depth (final year):

Present: 7.7 meters
Future: 21.7 meters

Tailings Density: 1.78 g/cubic meter

From actual measurement taken from test trenches dug in tailings area.

Seepage Rate from Tailings Impoundment:

Present: 159 gallons per minute
Future: -C-

Seepage calculated from inflow measurements. Tailings entrainment and evaporation estimates.

Future pond will be lined with hypalon.

Fraction U, Th_{230}, Ra_{226}, and Pb_{210} to tailings:

U: 7%
Th_{230}: 95%
Ra_{226}: 99.8%
Pb_{210}: 99.8%

From NUREG-0511 Appendix G-1, page G-6.

Locations of sources & receptors

All locations given in terms of
x kilometers east of the yellowcake dryer stack
y kilometers north of the yellowcake dryer stack
z meters elevation form the base of the yellowcake dryer stack
(NOTE: Locations to the south and/or west shall be denoted by a negative value.)

(Data from maps prepared from aerial photography)

Sources	(km) east	(km) north	(m) elevation
1. Yellowcake dryer	0	0	-20
2. Grinder(s)	0	0	-3
3. Crushers	.08	.07	-3
4. Ore Pad	.18	0	-4
5. Fine Ore Blending	.08	.06	-2
6. Tailings pond no. 1 (mid point)	-.55	-.55	-2
7. Tailings pond no. 2 (mid Point)	-.97	-.79	-10
8. Other sources	--	--	--
Extra Receptors			
1. Nearest Resident	.40	-.55	3
2. Nearest Resident in Prevailing wind direction	1.3	.3	1
3. Ranch	1.8	1.5	6
4. Farm	1.8	1.5	6
5. Orchard	1.8	1.5	6
6. Grazing location 1	-2.1	0	6
7. Grazing location 2	0	-2.1	42
8. Garden	.42	-.18	0
9. Town 1	2.3	0	12
10. Town 2	6.7	16.7	145
11. City 1	33.3	-13.3	140
12. Other nearby residents industrial (or recreational facilities)	.15	.63	-18
13. Site Boundaries N	0	.30	-3
S	0	1.0	7
E	.34	0	0
W	-1.22	0	-6
NE	.34	.24	-3
SW	-1.22	-1.0	-9
SE	.34	-1.0	9
NW	-1.22	0	-6

LAND USE & GRAZING OF CATTLE

Fraction of year spent grazing locally: 67%

Fraction of feed which is pasture graze while grazing: 100%

Fraction of stored feed which is grown locally: 60%

Acreage required to graze one animal unit (450 kg) for one month (AUM): 0.4 ha

All the above are data from local extension agent.

DEMOGRAPHY

The information required to provide the chart was obtained from:

1. State of Washington, Office of Financial Management Population, Enrollment and Economic Studies Division.
   "State of Washington" Population Trends, (1978)

2. Associated Taxpayers of Idaho

3. Spokane Tribe, Planning Department

DAWN MINING COMPANY
POPULATION DATA

KILOMETERS		N 0.0	NNE 22.5	NE 45.0	ENE 67.5	E 90.0	ESE 112.5	SE 135.0	SSE 157.5	S 180.0	SSW 202.5	SW 225.0	WSW 247.5	W 270.0	WNW 292.5	NW 315.0	NNW 337.5	Total
0.0	0.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0.1	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7
0.5	1.0	0	0	0	0	0	0	5	5	5	0	0	0	0	0	0	0	15
1.0	2.0	3	3	10	10	3	6	5	5	10	5	5	0	0	5	10	10	90
2.0	3.0	5	3	15	15	5	10	10	10	10	10	5	5	10	5	10	5	133
3.0	4.0	5	10	15	20	5	25	15	15	20	10	5	5	10	5	5	5	175
4.0	5.0	5	15	15	15	5	30	20	20	20	10	5	5	15	10	10	5	205
5.0	10.0	50	50	30	25	50	50	30	30	20	50	15	15	20	10	10	10	465
10.0	20.0	50	100	50	200	100	50	50	30	50	50	20	50	420	50	20	20	1,310
20.0	30.0	100	265	50	925	925	1,200	200	50	515	50	20	50	50	20	35	10	4,465
30.0	40.0	50	50	50	300	6,104	9,104	14,306	13,224	150	150	50	20	50	30	150	10	43,798
40.0	50.0	2,111	10	10	300	3,106	34,476	176,700	7,580	150	150	1,600	50	25	20	10	10	226,308
50.0	60.0	100	10	10	300	300	87,910	9,799	7,110	150	50	200	360	25	10	10	10	106,354
60.0	70.0	100	10	355	2,140	100	3,000	1,000	247	150	30	520	150	100	10	10	10	7,932
70.0	80.0	1,930	10	10	1,800	2,000	2,705	620	200	550	30	50	1,110	200	10	10	10	14,245
		4,509	536	620	6,050	12,703	138,566	202,760	28,526	1,800	595	2,495	1,820	925	185	297	115	405,502

RM
3/26/80

ATMOSPHERIC DATA

The only detailed data available was the NOAA, Environmental Data and Information Center information on Spokane, WA (25 miles to S.E.). Also included is U.S. Department of Commerce information on Chewelah, WA (35 miles to N.E.). Unfortunately no data is available by stability classes.

Local Climatological Data

Annual Summary With Comparative Data

1978

SPOKANE, WASHINGTON

Narrative Climatological Summary

Spokane lies on the eastern edge of the broad Columbia Basin area of Washington which is bounded by the Cascade Range on the west and the Rocky Mountains on the east. The elevations in eastern Washington vary from less than 400 feet above sea level near Pasco where the Columbia River flows out of Washington to over 5,000 feet in the mountain areas of the extreme eastern edge of the State. Spokane is located on the upper plateau area where the long gradual slope from the Columbia River meets the sharp rise of the Rocky Mountain Ranges.

Much of the urban area of Spokane lies along both sides of the Spokane River at an elevation of approximately 2,000 feet, but the residential areas have spread to the crests of the plateaus on either side of the river with elevations up to 2,500 feet above sea level. Spokane International Airport is situated on the plateau area six miles west-southwest and some 400 feet higher than the downtown business district.

Spokane's climate combines some of the characteristics of damp coastal type weather and arid interior conditions. Most of the air masses which reach Spokane are brought in by the prevailing westerly and southwesterly circulations. Frequently much of the moisture in the storms that move eastward and southeastward from the Gulf of Alaska and the eastern Pacific Ocean is precipitated out as the storms are lifted across the Coast and Cascade Ranges. Annual precipitation totals in the Spokane area are generally less than twenty inches and less than 50 percent of the amounts received west of the Cascades. However, the precipitation and total cloudiness in the Spokane vicinity is greater than that of the desert areas of south-central Washington. The lifting action of the air masses as they move up the east slope of the Columbia Basin frequently produces the cooling and condensation necessary for formation of clouds and precipitation.

Infrequently the Spokane area comes under the influence of dry continental air masses from the north or east. On occasions when these air masses penetrate into eastern Washington the result is high temperatures and very low humidity in the summer and sub-zero temperatures in the winter. In the winter most of the severe arctic outbursts of cold air move southward on the east side of the Continental Divide and do not affect Spokane.

In general, Spokane weather has the characteristics of a mild, arid climate during the summer months and a cold, coastal type in the winter. Approximately 70 percent of the total annual precipitation falls between the first of October and the end of March and about half of that falls as snow. The growing season usually extends over nearly six months from mid-April to mid-October. Irrigation is required for all crops except dry-land type grains. The summer weather is ideal for full enjoyment of the many mountain and lake recreational areas in the immediate vicinity. Winter weather includes many cloudy or foggy days and below freezing temperatures with occasional snowfall of several inches in depth. Sub-zero temperatures and traffic-stopping snowfalls are infrequent. The nearby winter sports areas have a season of four to five months with plenty of facilities for skiing and other winter outdoor activities.

noaa NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION / ENVIRONMENTAL DATA AND INFORMATION SERVICE / NATIONAL CLIMATIC CENTER ASHEVILLE, N.C.

U.S. DEPARTMENT OF COMMERCE, WEATHER BUREAU IN COOPERATION WITH
THE WASHINGTON STATE DEPARTMENT OF COMMERCE AND ECONOMIC DEVELOPMENT
CLIMATOGRAPHY OF THE UNITED STATES 20-45

LATITUDE 47° 37'N
LONGITUDE 117° 31'W
ELEV (GROUND) 2353 ft.

CLIMATOLOGICAL SUMMARY

STATION SPOKANE, WASH.
Spokane International Airport

NORMALS, MEANS, AND EXTREMES

Month	Temperature: Normal: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Year	Record lowest	Year	Normal degree days	Precipitation: Normal total	Maximum monthly	Year	Minimum monthly	Year	Maximum in 24 hrs	Year	Snow, Sleet: Mean total	Maximum monthly	Year	Maximum in 24 hrs	Year	Relative humidity: 4:00 A. PST	10:00 A. PST	4:00 P. PST	10:00 P. PST	Wind: Mean hourly speed	Prevailing direction	Fastest mile: Speed	Direction	Year	Pct of poss sunshine	Average sky cover sunrise to sunset	Mean number of days: Sunrise to sunset: Clear	Partly cloudy	Cloudy	Precipitation .01 inch or more	Snow, Sleet 1.0 in or more	Thunderstorms	Heavy fog	Max temp 90°	Min temp 32°	Min temp 32°	Min temp Zero
(a)	(b)	(b)	(b)	35		35		(b)	(b)	35		35		35		35	35		35		12	13	13	13	14	13	35	35		14	14	14	14	14	14	14	14	14	13	13	13	13
J	31.4	19.2	25.3	52	1959	-24	1950	1231	2.44	4.96	1959	.50	1949	1.48	1954	20.2	56.9	1950	13.0	1950	84	81	72	84	7.9	NE	50	SW	1951	26	8.1	4	4	23	16	6	0	9	0	15	28	5
F	37.4	22.5	30.0	61	1958	-12	1956	980	1.86	3.94	1961	1.07	1953	.96	1961	10.1	20.6	1959	8.0	1951	84	77	71	81	8.9	SSW	54	SW	1949	36	8.1	3	5	20	13	4	0	6	0	6	25	1
M	47.0	29.1	38.1	71	1960	-3	1955	834	1.50	3.75	1960	.45	1948	.91	1950	5.3	12.4	1951	5.1	1950	80	65	56	75	9.3	SSW	54	SW	1955	52	7.5	4	8	19	12	2	*	3	0	2	24	*
A	58.6	35.9	47.3	84	1952	21	1951	531	.91	3.08	1948	.08	1956	.82	1962+	.2	1.9	1957	1.4	1957	75	53	41	63	9.3	SSW	50	SW	1962	62	7.0	5	8	17	8	*	1	1	0	0	10	0
M	68.2	43.1	55.7	92	1958	24	1954	298	1.21	5.71	1948	.59	1956	1.67	1948	T	.2	1950	.2	1950	77	51	41	64	8.2	SSW	42	W	1957	66	6.6	6	10	15	10	0	1	1	*	0	1	0
J	73.5	49.3	61.4	96	1958+	35	1954	147	1.49	2.84	1950	.16	1960	1.52	1957	T	T	1954	T	1954	74	48	38	59	8.4	SSW	39	SW	1949	67	6.0	7	11	12	8	0	3	1	1	0	0	0
J	83.6	55.4	69.5	102	1960+	39	1962	19	.38	1.29	1948	T	1960+	.79	1955						64	38	26	43	7.7	SW	37	N	1958	82	3.2	19	8	4	4	0	2	*	9	0	5	0
A	81.0	53.9	67.5	98	1958+	40	1962	34	.41	1.41	1956	T	1955	1.09	1955						63	42	28	46	7.6	SW	38	SW	1950	78	4.2	16	8	7	5	0	2	*	5	0	0	0
S	72.7	47.0	59.9	96	1950	30	1958+	189	.75	2.05	1959	.04	1950	.92	1948						69	47	34	54	7.6	NE	38	SW	1961+	71	4.9	12	9	9	6	0	1	*	1	0	1	0
O	59.1	38.0	48.6	89	1958+	20	1949	508	1.57	4.95	1950	.11	1952	.98	1955	.6	6.1	1957	6.1	1957	82	67	55	74	7.5	SSW	36	SW	1950	51	6.6	7	5	16	9	*	1	5	0	0	*	0
N	41.9	28.5	35.2	61	1953	-11	1955	854	2.24	4.64	1960	.34	1956	1.41	1960	6.0	24.7	1955	6.6	1955	86	78	74	83	7.6	NE	54	SW	1949	33	7.6	4	6	20	12	2	*	8	0	3	20	*
D	34.9	24.2	29.6	54	1957	-9	1951	1097	2.43	4.35	1951	1.21	1959	1.60	1951	15.6	39.4	1951	12.1	1951	88	84	83	87	8.4	NE	51	SW	1956	22	8.6	2	4	25	16	5	0	12	0	12	2*	1
					Jul		Jan				May		Jul		May			Jan		Jan									Oct												
Yr	57.5	37.2	47.3	102	1960	-24	1950	6762	17.19	5.71	1948	T	1960+	1.67	1948	58.0	56.9	1950	13.0	1950	77	61	52	68	8.2	SSW	50	SW	1950	57	6.5	89	89	187	118	59	11	46	16	38	142	7

(a) Length of record, years.
(b) Normal values are based on the period 1931-60 and are means adjusted to represent observations taken at the present standard location. Means and extremes in the above table are from the existing location. Annual extremes have been exceeded at prior locations as follows: highest temperature 108 in July 1928; lowest temperature -30 in January 1888; maximum monthly precipitation 5.85 in November 1897; minimum monthly precipitation 0.00 in July 1883; maximum precipitation in 24 hours 2.22 in June 1882.

NARRATIVE CLIMATOLOGICAL SUMMARY

Spokane lies on the eastern edge of the broad Columbia Basin area of Washington which is bounded by the Cascade Range on the west and the Rocky Mountains on the east. The elevations in eastern Washington vary from less than 400 feet above sea level near Pasco where the Columbia River flows out of Washington to over 5000 feet in the mountain areas of the extreme eastern edge of the State. Spokane is located on the upper plateau area where the long gradual slope from the Columbia River meets the sharp rise of the Rocky Mountain Ranges.

Much of the urban area of Spokane lies along both sides of the Spokane River at an elevation of approximately 2000 feet, but the residential areas have spread to the crests of the plateaus on either side of the river with elevations up to 2500 feet above sea level. Spokane International Airport is situated on the plateau area six miles west-southwest and some 400 feet higher than the downtown business district.

Spokane's climate combines some of the characteristics of deep coastal type weather and arid interior conditions. Most of the air masses which reach Spokane are brought in by the prevailing westerly and southwester circulations. Frequently much of the moisture in the storms that move eastward and southeastward from the Gulf of Alaska and the eastern Pacific Ocean is precipitated out as the storms are lifted across the Coast and Cascade Ranges. Annual precipitation totals in the Spokane area are generally less than twenty inches and less than 50 percent of the amounts received west of the Cascades. However, the precipitation and total cloudiness in the Spokane vicinity is greater than that of the desert areas of south-central Washington. The lifting action on the air masses as they move up the east slope of the Columbia Basin frequently produces the cooling and condensation necessary for formation of clouds and precipitation.

Infrequently the Spokane area comes under the influence of dry continental air masses from the north or east. On occasions when these air masses penetrate into eastern Washington, the result is high temperatures and very low humidity in the summer and subzero temperatures in the winter. In the winter, most of the severe arctic outbursts of cold air move southward on the east side of the Continental Divide and do not affect Spokane.

In general, Spokane weather has the characteristics of a mild, arid climate during the summer months and a cold, coastal type in the winter. Approximately 70 percent of the total annual precipitation falls between the first of October and the end of March and about half of that falls as snow. The growing season usually extends over nearly six months from mid-April to mid-October. Irrigation is required for all crops except dryland type grains. The summer weather is ideal for full enjoyment of the many mountain and lake recreational areas in the immediate vicinity. Winter weather includes many cloudy or foggy days and below freezing temperatures with occasional snowfall of several inches in depth. Subzero temperatures and traffic-stopping snowfalls are infrequent. The nearby winter sports areas have a season of four to five months with plenty of facilities for skiing and other winter outdoor activities.

Earl L. Phillips
State Climatologist
U. S. Weather Bureau
Seattle, Washington
WBAN-7 (Revised)

Average Temperature (°F)

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Ann'l
1931	34.4	34.6	41.6	49.3	60.0	63.9	72.8	71.2	60.6	49.4	35.3	29.2	50.0
1932	26.1	29.7	38.2	50.0	55.7	66.4	69.1	69.6	61.2	49.2	42.0	26.9	48.7
1933	31.8	23.5	40.2	48.4	52.5	64.0	71.8	70.3	56.8	51.7	39.1	37.8	49.0
1934	37.4	39.4	47.2	56.5	61.2	65.4	71.3	71.0	57.6	51.4	43.6	32.9	52.9
1935	31.3	35.6	38.3	45.2	55.8	62.4	70.2	67.4	63.8	47.0	33.1	31.3	48.4
1936	31.8	17.4	38.7	52.2	62.0	65.5	72.8	71.0	59.1	52.2	32.3	33.0	49.0
1937	9.9	28.6	42.2	46.6	57.3	63.3	72.9	66.2	60.6	52.6	40.4	34.2	48.0
1938	31.5	33.6	41.1	49.8	56.8	66.8	75.0	67.8	61.2	55.1	32.8	30.8	50.8
1939	34.6	28.1	41.2	51.6	58.9	60.8	72.4	72.6	62.1	49.5	39.6	37.0	50.7
1940	30.0	35.9	45.3	50.6	60.5	68.3	72.8	70.6	64.6	53.0	32.2	33.9	51.5
1941	32.0	38.4	45.6	51.8	55.7	62.6	73.8	68.5	55.6	47.5	40.2	33.7	50.5
1942	22.6	31.0	39.6	49.8	55.0	59.6	71.2	70.4	61.8	50.4	35.0	32.4	48.1
1943	21.8	33.7	35.8	50.4	57.4	58.6	69.3	66.8	62.6	50.2	37.6	29.2	47.3
1944	30.2	32.5	37.0	47.9	56.8	62.6	69.7	66.8	61.6	54.2	36.8	28.4	48.7
1945	32.6	35.1	37.8	44.7	56.9	60.5	70.9	69.4	56.6	50.8	36.8	29.8	48.5
1946	30.9	35.2	41.1	48.0	57.0	60.5	69.4	68.6	58.8	44.2	34.6	32.6	48.4
1947	24.4	36.1	42.6	48.2	59.6	61.5	70.1	66.7	59.0	50.8	34.8	31.2	48.8
1948	27.5	29.0	36.2	43.5	57.8	65.4	65.1	65.2	58.1	47.3	34.8	21.5	45.5
1949	8.5	26.4	38.0	49.2	59.1	61.8	68.6	68.6	61.6	44.2	41.2	27.8	46.2
1950	9.0	29.8	35.7	43.9	52.2	61.0	69.1	70.2	62.0	46.7	36.2	33.6	45.8
1951	27.1	32.2	34.3	48.3	54.5	61.3	71.0	68.3	60.2	45.7	35.7	22.2	46.8
1952	23.5	30.2	36.7	49.8	56.5	61.0	70.1	68.4	63.8	54.5	32.7	30.3	48.1
1953	37.9	35.1	40.0	45.6	52.4	57.2	69.3	68.0	61.7	51.6	40.3	33.2	49.4
1954	26.9	33.1	36.3	43.5	55.4	57.2	67.5	64.5	57.5	46.2	41.5	30.2	46.6
1955	28.9	27.9	31.2	40.6	49.4	62.7	66.4	68.4	59.4	47.1	28.1	26.8	44.6
1956	28.9	22.6	36.1	49.9	58.1	58.9	71.6	70.6	60.7	46.3	32.7	30.7	47.0
1957	15.0	28.7	37.6	48.0	59.3	62.1	67.5	65.6	62.8	45.0	35.6	35.1	46.9
1958	32.0	39.8	38.9	44.9	62.7	65.6	75.0	73.7	58.7	50.2	35.7	32.4	50.7
1959	29.0	30.5	39.2	47.4	50.6	61.7	70.6	64.4	55.1	46.1	31.5	28.8	46.3
1960	20.5	30.6	38.2	45.9	51.2	62.2	75.1	65.1	60.3	48.6	35.2	26.6	46.6
1961	30.3	37.0	39.9	45.1	53.0	66.6	71.9	74.0	55.9	45.2	38.7	26.6	48.0
1962	22.6	32.4	34.6	49.8	50.9	61.1	68.2	65.4	60.7	47.6	37.9	33.1	47.0

Total Precipitation (Inches)

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Ann'l
1931	1.50	.76	1.52	.53	.26	.87	T	.01	1.05	.82	2.41	3.88	13.61
1932	1.99	.82	2.69	.93	2.74	.28	.21	.27	.06	1.14	2.59	2.13	15.85
1933	1.16	.60	1.19	.28	.59	1.16	.17	.64	1.25	2.72	.80	4.35	14.91
1934	2.57	.77	1.53	.34	.25	.84	T	.19	.98	3.45	2.01	1.50	13.93
1935	2.06	.59	.78	.92	.06	.27	.68	.96	.05	.96	.90	1.78	10.51
1936	2.78	1.57	.58	.18	.57	2.33	.07	.23	1.64	.28	.08	2.39	12.70
1937	1.94	1.49	1.11	2.53	.23	3.13	.56	.61	.62	.87	3.05	2.76	18.90
1938	1.44	1.98	2.09	.35	.47	.83	.26	.29	.09	.83	.89	1.63	11.07
1939	1.55	2.37	1.20	.61	.30	.71	.40	.04	.23	.95	.28	2.83	11.47
1940	1.09	5.62	2.91	1.86	.64	.36	1.46	.01	2.12	2.47	2.37	2.59	25.50
1941	1.61	.83	.69	.32	3.18	2.55	.09	1.85	1.36	.85	1.63	2.78	17.74
1942	1.24	1.30	.48	.98	3.19	.93	.34	.08	.22	1.12	2.69	1.70	14.27
1943	1.25	1.15	1.60	1.33	1.19	1.42	.35	.98	.12	3.13	.60	.54	13.66
1944	.53	1.08	.57	1.40	.94	1.11	.21	1.02	.56	.45	1.64	1.14	10.65
1945	1.27	.95	2.46	1.12	2.20	1.37	T	.55	2.24	.79	2.41	2.00	17.36
1946	1.51	1.43	1.69	.98	1.43	1.08	.03	.07	1.76	1.38	3.16	.90	15.42
1947	1.24	.76	1.60	1.17	.31	1.98	.72	.83	1.57	5.41	1.67	1.80	18.56
1948	2.72	2.75	.45	3.08	5.71	2.17	1.29	..	1.46	.66	2.38	3.13	26.07
1949	.50	3.08	2.17	.42	.90	.22	.07	.19	1.06	1.52	2.28	1.50	13.91
1950	4.13	1.93	3.75	.43	.72	2.84	.56	.41	.06	4.05	1.96	2.16	23.00
1951	3.16	1.61	1.72	.38	.66	1.04	.37	.40	.47	3.26	1.88	4.35	19.30
1952	2.41	1.35	1.14	.28	.63	2.44	.06	.18	.52	.11	.80	3.10	13.00
1953	4.56	1.07	1.72	1.48	1.59	.81	T	1.36	.50	.19	2.00	1.90	17.73
1954	4.90	1.19	.83	.53	.78	.75	.85	1.25	1.55	.77	1.42	1.44	16.26
1955	1.38	1.52	.79	1.83	.67	.80	1.28	T	1.13	2.84	3.92	3.82	19.78
1956	2.87	1.44	1.29	.08	.59	1.18	.50	1.41	.09	1.87	.34	1.22	12.88
1957	1.54	1.54	1.82	.81	3.74	2.74	.04	.30	.68	2.33	.82	1.95	18.09
1958	3.55	3.27	.84	1.72	.71	1.63	1.15	.13	.47	.79	3.72	2.93	20.91
1959	4.96	2.01	1.21	.57	2.26	.39	.05	1.24	2.05	1.32	2.30	1.21	19.57
1960	1.05	1.64	2.36	1.51	2.73	.16	T	.56	.72	.95	4.64	1.37	17.69
1961	1.61	3.94	1.75	.96	1.77	1.64	.37	.30	.17	1.05	1.83	3.91	19.30
1962	1.39	1.72	2.56	1.02	1.65	.78	.29	.65	.90	1.62	3.02	1.44	17.02

C-3

PROBABILITY OF 32°, 28°, 24°, 20° AND 16° OCCURRING AS LATE IN THE SPRING OR AS EARLY IN THE FALL AS THE DATES LISTED IN THE FOLLOWING TABLE:

	PROBABILITY - SPRING				PROBABILITY - FALL			
	75%	50%	25%	10%	10%	25%	50%	75%
32°	April 7	April 20	May 3	May 15	Sep 19	Sep 30	Oct 12	Oct 24
28°	Mar 24	Apr 6	Apr 19	May 1	Oct 3	Oct 14	Oct 26	Nov 7
24°	Feb 28	Mar 14	Mar 27	Apr 8	Oct 18	Oct 29	Nov 10	Nov 22
20°	Feb 7	Feb 21	Mar 7	Mar 19	Oct 31	Nov 11	Nov 23	Dec 6
16°	Jan 26	Feb 11	Feb 26	Mar 10	Nov 13	Nov 24	Dec 8	Dec 26

In the above table, the 50% point is the same as the average for each freeze category.

From a statistical viewpoint based on past data, the probabilities could be considered as follows when converted into the number of occurrences to expect in a 40-year period:

75% - 30 years in 40

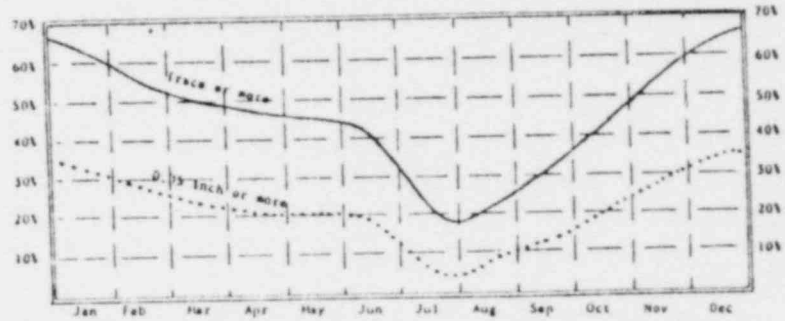
50% - 20 years in 40

25% - 10 years in 40

10% - 4 years in 40

(More detailed local monthly and annual climatological data summaries are available from the U.S. Weather Bureau Office, Spokane, Wash.)

PROBABILITY OF PRECIPITATION OCCURRING ON ANY GIVEN DAY AT SPOKANE
(Based on 77 years of data ending with 1957)



Note: The probability of a trace or more of precipitation occurring on any day is indicated by the solid line. The probability of 0.05 of an inch is indicated by the dotted line

U.S. DEPARTMENT OF COMMERCE, WEATHER BUREAU IN COOPERATION WITH
THE WASHINGTON STATE DEPARTMENT OF COMMERCE AND ECONOMIC DEVELOPMENT
CLIMATOGRAPHY OF THE UNITED STATES 20-45

LATITUDE 48° 15'
LONGITUDE 117° 43'
ELEV (GROUND) 1635 ft.

CLIMATOLOGICAL SUMMARY

STATION CHEWELAH, WASH.

MEANS AND EXTREMES FOR PERIOD 1931-1960

Month	Temperature (°F) Means: Daily maximum	Daily minimum	Monthly	Extremes: Record highest	Year	Record lowest	Year	** Mean degree days	Precipitation Totals (inches): Mean	Greatest daily	Year	Snow, Sleet: Mean	Maximum monthly	Year	Greatest daily	Year	Mean number of days: Precip .10 inch or more	Temperature Max. 90° and above	Max. 32° and below	Min. 32° and below	Min. 0° and below	Month
(a)	30	30	30	30		30		30	30	30		30	30		30		30	30	30	30	30	
JAN	31.7	15.0	23.3	55	1953	-38	1950	1203	2.52	1.40	1934	14.7	30.0	1937	9.0	1933	8	0	14	29	6	JAN
FEB	38.8	18.1	28.5	61	1958	-38	1933	1022	1.83	1.24	1958	9.4	30.5	1937	10.5	1937	6	0	5	26	3	FEB
MAR	49.4	27.1	38.2	74	1940	-12	1951	831	1.70	1.44	1945	2.3	14.0	1951	5.0	1956	5	0	*	15	*	MAR
APR	61.7	32.6	47.2	89	1934	12	1936	534	1.29	1.15	1932	.2	2.3	1945	2.3	1945	4	0	0	14	0	APR
MAY	71.3	39.2	55.2	96	1934	16	1954	313	1.67	1.29	1957						5	1	0	5	0	MAY
JUN	78.9	44.6	60.7	98	1955+	26	1952	150	1.58	1.19	1936						5	2	0	1	0	JUN
JUL	87.3	45.0	66.6	107	1941+	32	1960+	50	.84	1.70	1955						2	13	0	*	0	JUL
AUG	86.2	42.4	64.4	103	1958	28	1937	71	.59	1.11	1959						2	11	0	1	0	AUG
SEP	76.9	37.6	57.3	101	1938	16	1934	252	1.08	1.56	1940						3	3	0	8	0	SEP
OCT	61.7	31.7	46.7	88	1941+	2	1935	567	1.85	1.53	1938	.4	4.0	1939	4.0	1939	5	0	*	17	0	OCT
NOV	42.6	26.6	34.6	69	1949	-15	1955	912	2.34	1.38	1941	3.7	14.0	1956	8.0	1958	8	0	2	24	1	NOV
DEC	34.9	21.0	28.4	58	1956	-27	1951+	1135	2.73	1.23	1951	10.8	30.7	1948	10.5	1937	8	0	10	26	2	DEC
Year	59.0	31.0	45.0	107	1941+	-38	1950+	7130	19.82	1.56	1940	41.5	30.5	1937	10.5	1937+	61	30	31	178	12	Year

(a) Average length of record, years.

T Trace, an amount too small to measure.

** Base 65°F

\+ Also on earlier dates, months, or years.

* Less than one half

NARRATIVE CLIMATOLOGICAL SUMMARY

Chewelah is located in the northeastern section of the State and near the southern edge of Stevens County. The city is in the Colville River valley. Within 5 to 10 miles of the river, north-south ranges of mountains reach elevations of 4,000 to 6,000 feet. The most important agricultural activities are the raising of livestock and the growing of hay and small grain crops. The higher elevations are State and National forest lands. Deposits of copper, silver and other minerals are found in the mountains. The Huckleberry Mountains on the west flank of the valley contain one of the largest magnesite deposits in the United States. A magnesite processing plant is located near the city. Winter ski areas are being developed along some of the mountain slopes.

Summers are warm, dry and sunny and winters are rather cold with considerable cloudiness. Some of the factors influencing the climate are terrain, distance and direction from the ocean and the prevailing westerly winds above the summits of the mountains. The Rocky Mountains protect this area from the more severe winter storms moving southward across Canada, however, the north-south valleys between ranges of mountains extending into British Columbia permit some of the cold air to reach the Inland Basin of eastern Washington. In a westerly direction, the Cascade Mountains form a barrier to the easterly movement of moist air from over the ocean.

On a typical summer's day, afternoon temperature is in the 80's with nighttime reading in the 40's. In midsummer, maximum temperatures exceed 90° on one day out of three, reaching 100° on a few afternoons. Even on the warmest days, temperatures drop rather quickly after sunset. The growing season is comparatively short and frost has occurred in midsummer months. The last freezing temperature in the spring usually occurs after the first of June and the first in the fall may occur during the latter half of August.

During the winter season, afternoon temperatures are near freezing and minimum temperatures range from 10° to 20° above zero. Maximum temperatures were below freezing on 60 days in one of the colder winters and on only 13 days in one of the warmer winters. Minimum temperatures are below freezing on almost every night from the latter half of October through March. Minimum temperatures can be expected to drop to -14° or lower on at least 4 nights in 2 out of 10 winters. During one of the coldest winters in recent years, 1949-50, minimum temperatures were below zero on 24 nights, -10° on 20 nights, -20° on 12 nights and -30° on 6 nights. The coldest weather generally occurs when cold air from Canada or east of the Rocky Mountains reaches this section of the State. During these cold outbreaks, the sky is frequently clear and the ground is covered with snow, thus a large amount of heat is lost by radiation at night.

Precipitation is light in summer, increasing in the fall, reaching a peak in winter, then decreasing in the spring with a slight increase in May and June followed by a sharp drop in July. Annual precipitation has ranged from 13 to 27 inches. During August, the driest month, the total precipitation is less than .01 inch in 1 summer out of 10; also, the total precipitation is more than 2 inches in 1 summer out of 10. Several thunderstorms and a few hail storms occur each summer.

Most of the precipitation between the latter half of November and the first of March falls as snow. In the higher elevations, snow can be expected after the middle of October and in the lower valleys before the first of December. A snow cover remains on the ground most of the time between the middle of December and the first of March. Snow reaches a depth of 15 to 20 inches almost every winter and 20 to 30 inches in the heavier snowfall seasons. In the higher elevations, snow can be expected to remain on the ground from the last of October until May or June. The few snow survey reports available for elevations above 4,000 or 5,000 feet indicate 6 to 8 feet of snow on the ground the first of April and 4 to 5 feet the first of May.

During the winter season, the loss of heat by radiation at night and moist air crossing the Cascades results in considerable cloudiness and fog. The number of clear or only partly cloudy days each month increases from approximately 6 in winter to 14 in spring and fall and to 25 in midsummer.

In this section of the State, the relative humidity in winter ranges from 75% in the afternoon to 90% at night, and in summer from 30% in the afternoon to 60% at night.

C. L. Phillips
State Climatologist
U.S. Weather Bureau
Seattle, Washington

Total Precipitation (inches)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	2.62	1.58	3.22	.48	.37	2.52	.19	T	1.71	1.90	3.19	5.03	21.90
1932	3.25	.78	3.21	2.05	2.61	.71	.31	.18	.32	1.51	3.18	3.35	21.31
1933	2.58	1.60	2.85	.38	1.25	.40	.33	.20	2.42	2.37	.87	6.59	21.64
1934	4.05	.25	1.33	.71	.86	.56	.36	.46	.60	3.52	3.35	2.91	19.10
1935	3.78	1.25	1.18	.24	1.07	.65	1.54	.48	.55	1.58	1.50	2.23	16.05
1936	3.42	1.17	.20	.58	1.15	2.36	.23	T	1.39	.39	.07	1.76	12.72
1937	2.26	3.12	1.79	2.78	.07	4.58	.88	.17	1.06	1.16	5.43	3.38	26.68
1938	2.79	3.60	5.20	.62	.48	.59	.03	.31	.67	2.47	1.22	1.99	17.97
1939	2.91	1.53	1.07	.54	.77	2.49	.22	T	.21	1.09	.63	5.03	16.49
1940	1.50	4.65	2.71	1.97	.63	.44	.24	.10	2.83	4.02	2.02	2.53	23.48
1941	2.26	.80	1.17	.72	4.34	1.80	.06	2.59	2.89	.37	2.62	4.63	24.65
1942	1.10	1.10	.50	1.03	3.55	1.62	1.27	.06	.10	.84	3.16	2.20	16.33
1943	.92	1.21	1.74	1.16	.96	1.19	.24	.80	.08	3.98	.73	1.04	14.04
1944	1.68	1.24	.38	1.50	.58	1.48	.52	.12	.67	.39	2.67	.97	13.09
1945	1.89	1.99	4.35	.75	2.44	1.27	T	.45	1.89	1.17	3.85	2.58	22.53
1946	2.01	2.45	1.38	1.54	.63	1.58	.10	.12	1.14	1.17	3.10	1.15	17.25
1947	1.80	1.63	.59	.93	.80	2.58	.23	.57	2.01	5.08	1.23	1.69	20.00
1948	2.54	2.46	.14	2.52	4.82	3.89	1.50	.70	.91	.73	3.51	2.38	26.10
1949	.89	2.18	2.14	.64	.39	.61	.19	.19	.93	1.48	1.91	1.21	13.26
1950	3.04	2.26	3.20	.50	.53	1.50	1.24	.32	.16	4.15	2.53	3.16	22.59
1951	3.01	1.53	1.80	.52	.65	.70	.51	.71	.55	4.14	2.72	5.02	22.05
1952	2.77	1.10	.90	.33	.71	2.33	.25	.66	.45	.14	.60	5.80	16.08
1953	3.53	1.09	2.17	2.05	1.82	2.09	.20	2.02	.18	.64	2.12	2.97	20.58
1954	3.92	2.06	1.10	1.12	1.96	1.47	1.06	1.97	1.06	.28	2.03	1.62	19.70
1955	1.60	.88	.84	3.82	1.40	2.21	3.72	0	1.50	2.44	2.19	4.48	25.08
1956	3.15	2.08	1.33	.52	1.17	1.16	1.45	1.27	.14	1.64	.40	1.05	15.75
1957	1.55	4.72	2.13	1.66	5.09	1.56	.28	.54	1.33	2.50	1.27	2.60	24.57
1958	3.31	4.17	1.89	3.42	.53	1.63	1.78	.38	.80	.53	3.51	2.08	24.33
1959	4.90	1.71	.50	.62	4.35	.76	.12	1.37	2.35	1.77	2.41	2.33	22.09
1960	1.79	1.43	2.87	2.02	3.29	.38	.01	.92	.75	1.31	5.42	.77	20.96
1961	1.24	3.58	1.19	1.11	3.41	.90	.80	.25	.46	1.92	1.86	3.95	20.67
1962	1.38	1.20	2.01	.93	2.26	.58	.03	.20	1.53	2.56	2.52	2.54	18.24
1963	.31	2.01	2.05	2.15	1.76	1.18	.71	.85	1.02	.73	3.36	1.59	17.72

Average Temperature (°F)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Ann'l
1931	31.2	31.2	41.2	46.6	57.6	61.2	67.2	64.0	56.3	45.6	31.*	28.*	46.7
1932	22.5	25.2	36.2	47.4	53.8	62.6	68.2	64.0	55.8	45.4	38.3	22.4	44.7
1933	26.5	17.8	37.0	45.2	50.5	59.5	64.4	64.6	55.0	46.8	37.2	35.3	44.5
1934	32.6	36.2	43.2	52.8	58.4	68.7	65.6	65.0	53.2	47.0	41.7	29.6	48.7
1935	24.4	29.8	37.2	43.4	52.1	57.6	65.2	62.6	57.6	44.1	31.2	30.1	43.6
1936	28.6	13.3	37.4	49.4	57.8	62.0	66.0	63.9	55.6	48.2	30.0	30.8	45.2
1937	4.6	23.8	35.6	45.8	54.4	59.2	67.4	61.2	57.6	49.0	38.2	30.9	44.3
1938	28.8	31.8	38.6	-	-	64.3	66.8	62.2	63.6	46.9	-	-	-
1939	30.3	23.6	38.4	48.5	54.8	56.4	66.0	65.8	58.2	46.2	35.4	33.0	46.4
1940	26.8	32.6	43.4	49.2	57.6	64.7	70.0	65.3	62.5	50.6	30.8	29.5	48.6
41	28.6	35.6	44.2	50.6	54.8	61.8	70.6	65.5	54.2	45.5	37.8	31.0	48.8
1942	21.6	31.4	38.7	47.8	52.9	58.6	68.6	67.5	58.3	46.5	32.3	28.4	46.1
1943	18.2	20.3	34.3	49.6	52.0	58.3	66.9	63.2	58.4	46.8	36.6	27.2	45.3
1944	22.8	28.4	36.6	47.8	56.2	62.0	67.2	64.8	59.0	50.4	36.0	26.0	46.8
1945	30.0	33.4	38.3	44.3	56.6	59.8	67.6	65.9	54.8	48.2	33.5	27.6	46.7
1946	25.2	28.1	40.0	48.0	57.1	59.3	66.3	65.4	56.0	42.0	32.6	29.6	45.8
1947	21.4	34.2	42.0	47.0	53.6	60.0	66.1	63.4	57.4	49.1	34.2	30.2	46.9
1948	22.4	27.8	37.2	44.9	55.6	65.8	63.9	64.5	56.9	45.0	34.4	27.2	44.6
1949	-0.4	19.2	38.2	45.9	58.3	60.3	65.8	64.4	58.9	45.0	40.8	26.3	43.7
1950	5.8	26.1	36.0	44.3	52.6	61.1	67.2	65.7	58.0	45.2	34.2	31.7	44.0
1951	24.4	29.4	37.8	47.4	54.7	59.7	66.8	65.0	57.1	46.7	35.3	19.3	44.9
1952	21.3	28.4	37.3	49.4	56.4	60.8	66.5	65.8	59.5	49.2	31.2	29.6	46.3
1953	36.8	35.9	40.6	46.5	53.4	58.2	65.7	65.1	57.9	48.8	39.8	32.6	49.4
1954	25.0	33.7	37.2	44.6	54.6	57.7	65.9	61.9	56.4	43.7	41.6	29.1	45.9
1955	26.7	26.0	31.5	41.9	51.1	61.7	65.4	62.8	56.8	47.4	28.5	25.9	43.5
1956	26.1	20.8	34.5	49.7	57.6	59.1	67.5	64.5	57.2	45.9	32.1	29.3	45.4
1957	10.7	25.4	36.4	47.6	60.2	67.1	68.0	61.5	59.5	46.3	34.5	32.6	45.3
1958	31.8	40.0	40.6	46.6	61.4	65.6	69.4	69.7	56.5	46.4	31.7	29.5	49.1
1959	26.3	27.3	38.2	47.7	58.5	59.9	66.0	62.3	54.8	45.3	30.2	28.7	43.8
1960	18.7	30.2	37.8	46.8	52.0	60.6	69.4	62.4	57.2	47.6	35.1	27.9	45.5
1961	29.3	36.6	39.9	46.1	54.6	65.8	68.3	69.9	53.2	44.3	29.0	23.7	46.7
1962	17.2	30.1	34.3	48.7	51.3	59.1	64.1	63.3	56.9	47.3	38.6	33.5	45.4
1963	20.8	34.8	40.6	45.5	53.5	61.1	63.9	65.5	61.9	48.2	36.2	24.9	46.4

STATION HISTORY

The first climatological station in this area was established at the residence of C.A. LaVigne located .2 of a mile northwest of the Post Office in Chesetah. Mr. LaVigne served as cooperative weather observer from 9/1/1925 to 6/1/1936. The elevation at this location was 1668 feet. The station was moved to the residence of Walter T. Goodman who served as cooperative weather observer from 6/1/1936 to 7/25/1940. During this period, the station was located .8 of a mile northwest of the Post Office and at an elevation of 1668 feet. The climatological station was moved to the present site at the Northwest Magnesite Company located 2 miles south of the Post Office on 7/26/1940. The present elevation of the station is 1635 feet.

PROBABILITY OF 32°, 28°, 24°, 20° AND 16° OCCURRING AS LATE IN THE SPRING OR AS EARLY IN THE FALL AS THE DATES LISTED IN THE FOLLOWING TABLE:

	PROBABILITY - SPRING				PROBABILITY - FALL			
	75%	50%	25%	10%	10%	25%	50%	75%
32°	May 21	Jun 4	Jun 18	Jun 30	Aug 2	Aug 12	Aug 25	Sep 6
28°	Apr 23	May 7	May 21	Jun 1	Aug 28	Sep 7	Sep 20	Oct 2
24°	Mar 26	Apr 9	Apr 22	May 5	Sep 7	Sep 18	Oct 4	Oct 12
20°	Mar 10	Mar 24	Apr 7	Apr 18	Oct 4	Oct 15	Oct 27	Nov 8
16°	Feb 18	Mar 3	Mar 17	Mar 28	Oct 19	Oct 30	Nov 11	Nov 23

In the above table, the 50% point is the same as the average for each freeze category.

From a statistical viewpoint based on past data, the probabilities could be considered as follows when converted into the number of occurrences to expect in a 10-year period:

Meteorological Data For The Current Year

Station: SPOKANE, WASHINGTON (KGEG) INTERNATIONAL AIRPORT Standard time used: PACIFIC Latitude: 47° 38' N Longitude: 117° 32' W Elevation (ground): 2356 feet Year: 1978

Month	Temperature °F: Averages: Daily max.	Daily min.	Monthly	Extremes: Highest	Date	Lowest	Date	Degree days Base 65 °F: Heating	Cooling	Precipitation in inches: Water equivalent: Total	Greatest in 24 hrs.	Date	Snow, ice pellets: Total	Greatest in 24 hrs.	Date	Relative humidity, pct.: Hour 04 (Local time)	Hour 10 (Local time)	Hour 16 (Local time)	Hour 22 (Local time)	Wind: Resultant: Direction	Speed, m.p.h.	Average speed, m.p.h.	Fastest mile: Speed, m.p.h.	Direction	Date	Percent of possible sunshine	Average sky cover (tenths from 0 to 10)	Number of days: Sunrise to sunset	Precipitation .01 inch or more	Snow, ice pellets 1.0 inch or more	Thunderstorms	Heavy fog visibility ¼ mile or less	Temperature °F: Maximum (b): 90° and above	32° and below	Minimum: 32° and below	0° and below	Average station pressure mb: Elev. 2765 feet msl
JAN	32.3	22.4	27.4	42	5	-11	1	1154	0	2.53	0.51	2-3	19.1	6.7	2-3	87	84	83	87	07	2.7	8.0	40	SW	9	16	8.7	3	3	25	19	7	0	11	0	12	27	2	933.6
FEB	38.1	29.4	34.0	61	8	21	17	862	0	1.69	0.46	1-2	6.6	4.2	1-2	83	82	76	82	10	2.1	7.9	29	SW	6	21	9.3	1	4	23	11	1	0	11	0	3	14	0	930.5
MAR	51.0	35.3	43.2	65	29	16	8	701	0	0.77	0.19	28	2.2	1.6	4-5	83	71	58	76	17	2.0	8.4	33	SW	23	50	8.1	3	4	24	10	1	0	5	0	1	14	0	930.6
APR	59.2	36.1	49.7	72	26	28	12	576	0	2.62	0.91	27-28	T	T	23	69	64	52	73	19	4.2	10.6	35	W	11	55	8.5	1	5	24	17	0	1	1	0	0	10	0	928.2
MAY	61.8	41.0	51.4	78	20	30	5	412	0	2.81	0.82	9	T	T	4	83	59	45	67	21	5.1	10.2	30	W	15	57	7.2	1	15	15	10	0	2	2	0	0	3	0	931.9
JUN	75.7	49.3	62.7	91	28	42	19	101	42	1.22	0.71	13	0.0	0.0		77	49	35	60	20	5.1	9.8	38	S	28	76	4.9	13	8	9	4	0	2	0	1	0	0	0	0	931.9
JUL	81.2	54.5	68.3	95	23	47	11	37	144	1.76	0.77	1	0.0	0.0		74	50	35	56	18	3.1	7.8	33	W	1	74	4.8	16	4	11	8	0	3	2	9	0	0	0	931.7
AUG	79.3	51.6	65.5	98	9	44	27	97	131	1.31	0.74	15	0.0	0.0		71	55	41	59	19	4.3	8.4	25	SW	20	56	6.5	7	8	16	9	0	1	0	8	0	0	0	931.9
SEP	67.4	45.8	56.6	85	3	32	18	252	9	0.93	0.49	7-8	0.0	0.0		83	68	47	71	20	3.3	9.1	31	W	15	69	7.6		8	20	7	0	1	1	0	0	1	0	931.8
OCT	60.3	32.8	46.6	74	9	19	26	567	0	0.13	0.13	28-29	0.0	0.0		79	59	38	66	20	1.4	7.0	26	SW	10	71	5.4	12	6	13	2	0	0	3	0	0	0	15	0	930.7
NOV	39.1	22.2	28.7	55	7	8	15	1083	0	2.02	0.58	30	15.4	4.2	30	83	76	69	81	14	0.8	7.9	40	SW	4	21	8.6	2	3	25	11	3	0	6	0	17	28	0	935.3
DEC	26.9	11.6	19.0	38	4	-22	31	1424	0	1.05	0.71	30-1	14.8	4.2	27	88	86	82	86	21	4.5	9.0	35	SW	22	45	7.0	5	9	17	11	5	0	8	0	21	31	7	934.3
				AUG			DEC					APR			JAN										NOV												
YEAR	55.1	36.8	45.7	98	9	-22	31	7261	326	19.19	0.91	27-28	38.1	6.7	2-3	81	67	55	72	19	2.8	8.8	40	SW	4	53	7.2	66	77	222	112	39	10	52	18	54	145	9	932.2

Normals, Means, And Extremes

Month	Temperatures °F: Normal: Daily max.	Daily min.	Monthly	Extremes: Record highest	Year	Record lowest	Year	Normal degree days Base 65 °F: Heating	Cooling	Precipitation in inches: Water equivalent: Normal	Maximum monthly	Year	Minimum monthly	Year	Maximum in 24 hrs.	Year	Snow, ice pellets: Maximum monthly	Year	Maximum in 24 hrs.	Year	Relative humidity pct.: Hour 04 (Local time)	Hour 10 (Local time)	Hour 16 (Local time)	Hour 22 (Local time)	Wind: Mean speed m.p.h.	Prevailing direction	Fastest mile: Speed, m.p.h.	Direction	Year	Percent of possible sunshine	Mean sky cover (tenths)	Mean number of days: Sunrise to sunset	Precipitation .01 inch or more	Snow, ice pellets 1.0 inch or more	Thunderstorms	Heavy fog visibility ¼ mile or less	Temperatures °F: Max. (b): 90° and above	32° and below	Min.: 32° and below	0° and below	Average station pressure mb: Elev. 1859 feet msl
(a)				31		31					31		31		31		31		31		19	19	19	19	31	15	31	31		30	31	31	31	31	31	31	31	19	19	19	19	6
J	31.1	19.0	25.4	59	1971	-19	1969	1228	0	2.47	4.96	1939	0.80	1969	1.44	1956	36.9	1950	18.0	1950	83	82	77	82	8.8	NE	59	SW	1972	25	8.0	3	5	23	19	6	*	9	0	15	27	3	933.5
F	37.0	23.3	32.2	61	1938	-12	1972	918	0	1.68	3.94	1961	0.40	1967	1.11	1963	28.5	1975	8.9	1979	82	78	68	79	9.1	SW	54	SW	1949	40	7.9	4	4	20	11	3	*	7	0	4	23	*	932.8
M	46.4	28.8	37.5	71	1960	-3	1955	672	0	1.35	3.73	1950	0.31	1955	0.91	1950	15.3	1962	5.3	1970	78	67	55	72	9.6	SW	54	SW	1971	53	7.4	4	8	19	11	2	*	8	0	1	21	0	928.7
A	57.0	33.2	45.1	90	1977	17	1966	367	0	1.12	3.09	1969	0.08	1939	0.91	1974	6.6	1969	4.9	1964	75	56	43	64	9.8	S	50	SW	1962	59	7.1	4	9	17	9	*	1	1	*	0	12	0	930.9
M	66.3	42.8	54.7	92	1966	24	1936	127	6	1.46	5.71	1969	0.45	1964	1.67	1948	3.5	1967	3.3	1967	75	52	40	62	9.0	SSW	49	W	1937	62	6.8	6	10	15	9	*	1	1	*	0	2	0	930.8
J	73.6	49.9	61.8	100	1978	34	1962	144	39	1.36	3.08	1969	0.18	1960	2.07	1964	T	1954	T	1954	72	48	35	56	8.9	SSW	39	SW	1949	65	6.0	7	11	12	8	0	3	*	2	0	0	0	930.7
J	84.4	55.1	69.7	103	1967	38	1971	21	187	0.40	1.76	1978	T	1973	0.84	1975	0.0		0.0		61	39	25	42	8.3	SW	43	SW	1970	80	3.6	17	8	6	4	0	2	*	10	0	3	0	931.6
A	81.9	54.0	68.0	108	1961	35	1965	47	140	0.74	1.83	1970	T	1969	1.09	1959	0.0		0.0		61	43	28	44	8.1	SW	42	SW	1976	76	4.1	16	8	7	3	0	0	*	5	0	0	0	931.0
S	72.3	46.7	59.6	96	1970	25	1965	196	84	0.93	2.05	1959	0.03	1977	1.12	1973	0.0		0.0		69	55	34	55	8.1	NE	38	SW	1961	70	4.9	12	8	4	1	0	1	*	1	0	0	0	932.8
O	58.1	37.7	47.8	83	1963	13	1971	533	0	1.42	4.05	1950	0.03	1965	0.98	1955	8.1	1957	6.1	1957	79	66	49	70	8.1	SSW	36	SW	1950	52	5.4	8	7	10	8	*	*	4	0	*	9	0	933.9
N	41.8	29.1	35.5	67	1975	-11	1955	885	0	2.20	3.10	1974	0.22	1976	1.41	1960	24.7	1955	9.0	1975	86	81	74	85	8.3	NE	34	SW	1949	28	8.0	3	8	21	12	2	*	9	0	4	21	0	933.0
D	33.9	24.0	29.0	56	1957	-25	1968	1116	0	2.37	3.13	1969	0.60	1976	1.60	1951	42.0	1964	14.1	1951	86	84	81	85	8.8	NE	31	SW	1956	21	8.4	2	4	24	16	3	0	12	0	1	26	2	930.2
				AUG			DEC					MAY			JUL			JAN		JAN									JAN											
YR	57.4	37.3	47.3	108	1961	-25	1968	6835	388	17.42	3.71	1948	T	1973	2.07	1964	36.9	1950	18.0	1950	76	62	51	66	8.7	SSW	49	SW	1978	56	6.6	87	80	190	114	18	10	48	21	37	141	5	931.9

Means and extremes above are from existing and comparable exposures. Annual extremes have been exceeded at other sites in the locality as follows: Lowest temperature -30 in January 1888; maximum monthly precipitation 5.85 in November 1897; minimum monthly precipitation 0.00 in July 1883; maximum precipitation in 24 hours 2.22 in June 1888.

(a) Length of record, years, through the current year unless otherwise noted, based on January data.
(b) 90° and above at Alaskan stations.
* Less than one half.
T Trace.

NORMALS - Based on record for the 1941-1970 period.
DATE OF AN EXTREME - The most recent in cases of multiple occurrence.
PREVAILING WIND DIRECTION - Record through 1963.
WIND DIRECTION - Numerals indicate tens of degrees clockwise from true north. 00 indicates calm.
FASTEST MILE WIND - Speed is fastest observed 1-minute value when the direction is in tens of degrees.

Average Temperature

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
1939	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
*1940	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1941	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1942	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1943	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1944	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1945	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1946	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
*1947	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1948	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1949	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1950	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1951	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1952	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1953	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1954	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1955	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1956	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1957	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1958	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
*1959	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1960	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1961	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1962	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1963	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1964	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1965	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1966	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1967	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1968	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1969	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1970	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1971	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1972	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1973	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1974	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1978	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RECORD MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MAX	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
MIN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Heating Degree Days

Season	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
1958-59	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
*1959-60	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1960-61	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1961-62	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1962-63	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1963-64	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1964-65	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1965-66	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1966-67	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1967-68	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1968-69	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1969-70	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1970-71	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1971-72	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1972-73	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1973-74	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1974-75	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1975-76	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-77	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1977-78	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1978-79	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Cooling Degree Days

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Total
1969	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]
1970	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]
1971	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]
1972	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]
1973	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]
1974	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]
1975	0	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]
1976	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]
1977	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]
1978	0	0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0	0	0	[illegible]

Precipitation

Year	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Annual
1939	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
*1940	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1941	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1942	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1943	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1944	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1945	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1946	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
*1947	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1948	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1949	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1950	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1951	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1952	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1953	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1954	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1955	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1956	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1957	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1958	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1959	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1960	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1961	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1962	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1963	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1964	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1965	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1966	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1967	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1968	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1969	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1970	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1971	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1972	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1973	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1974	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1975	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1977	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1978	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RECORD MEAN	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Snowfall

Season	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	Total
1939-40	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
*1940-41	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1941-42	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1942-43	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1943-44	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1944-45	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1945-46	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1946-47	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
*1947-48	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1948-49	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1949-50	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1950-51	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1951-52	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1952-53	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1953-54	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1954-55	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1955-56	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1956-57	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1957-58	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1958-59	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1959-60	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1960-61	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1961-62	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1962-63	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1963-64	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1964-65	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1965-66	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1966-67	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1967-68	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1968-69	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1969-70	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1970-71	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1971-72	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1972-73	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1973-74	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1974-75	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1975-76	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1976-77	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1977-78	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1978-79	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
RECORD MEAN	0.0	0.0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

* Indicates a station move or relocation of instruments. See Station Location table.

Record mean values [illegible] are means through the current year for the period beginning in 1892 for temperature and precipitation, 1948 for snowfall.

STATION LOCATION

Location	Occupied from	Occupied to	Airline distance and direction from previous location	Latitude North	Longitude West	Elevation above Sea level: Ground at thermometer site	Elevation above Ground: Wind instruments	Thermometer	Psychrometer	Telepsychrometer	Tipping bucket rain gage	Weighing rain gage	8" rain gage	Hygrothermometer	Remarks
CITY															
Citizens Fidelity Building Howard Street near Riverside Avenue	8/4/80	1/1/82		47° 40'	117° 25'	1896	-	18	18				2		Observations began 2/1/81.
Riverside Avenue and Mill (Wall) Street	1/1/82	11/29/84	Near City Center	47° 40'	117° 25'	1895	-	22	22				32		Office destroyed by fire 11/29/84.
Symons Block, Riverside Avenue & Post Street	11/30/84	1/1/87	Near City Center	47° 40'	117° 25'	1894	-	24	24				40		
Wells Block, Riverside Avenue near Howard St.	1/1/87	9/4/89	Near City Center	47° 40'	117° 25'	1894	-	57	57				8		Fire destroyed building and all records.
Chamberlin Block Sprague Avenue and Lincoln Street	8/15/89	9/6/89	Near City Center	47° 40'	117° 25'	1896	-	46	46				35		
Riverside Avenue and Division Street	9/6/89	11/15/89	Near City Center	47° 40'	117° 25'	1925	-	36	36				35		
512-512 Riverside Avenue	11/15/89	11/7/90	Near City Center	47° 40'	117° 25'	12 5	-	41	41				15		
Blaiock Building Sprague Avenue and Stevens Street	11/7/90	6/1/92	Near City Center	47° 40'	117° 25'	1902	109	101	100		a92		92		a - Added 7/14/91.
Jamieson Building 705 Riverside Avenue	6/1/92	7/1/02	Near City Center	47° 40'	117° 25'	1894	107	100	99		90		90		
Empire State Building 901 Riverside Avenue	7/1/02	1/1/41	Near City Center	47° 40'	117° 25'	1895	110	101	101		94		94		
AIRPORT															
Felts Field 4-1/2 miles NE of City Center	5/14/32	1/1/41		47° 40'	117° 20'	1955	42	28	27		25	26	25		
Felts Field	1/1/41	12/8/47	No Change	47° 40'	117° 20'	1955	a53	97	c6		d3	e4	f3		City and Airport Offices consolidated at Felts Field 1/1/41. a - 2 feet to 2/20/42. b - 28 feet to 1/1/42. c - 27 feet to 1/1/42. d - 25 feet to 2/3/42. e - 26 feet to 2/3/42. f - 25 feet to 2/3/42.
Geiger Field, 6 miles SW of City Center	12/8/47	8/1/59	10.5 miles SW	47° 37'	117° 11'	2357	34	7	5		3	5	3		Wind instruments at 29 feet until 7/18/57. Anemometer installed at 20 feet, center of runway complex, 11/25/57.
Geiger Field	8/1/59	5/17/65	No Change	47° 37'	117° 11'	2356	20	7	5		3	4	3	4	Hygrothermometer roof; sited near center of runway complex.
International Airport (formerly Geiger Field)	5/17/65	Present	0.7 mi. SW	47° 38'	117° 12'	2356	20	6	5		5	5	5	4	Hygrothermometer and wind instruments not moved 5/17/65.

Requests for information concerning solar radiation data or instrumentation should be made to the Director, National Climatic Center, Federal Building, Asheville, NC 28801

Subscription Price: $2.55 per year for monthly data and annual summary. Foreign mailing $1.85 extra. Single copy: 20 cents for monthly or annual issue. There is a minimum charge of $2.00 for each order of shelf-stocked issues of publications. Make checks payable to Department of Commerce, NOAA. Send payments, orders, and inquiries to Publications, National Climatic Center, Federal Building, Asheville, NC 28801.

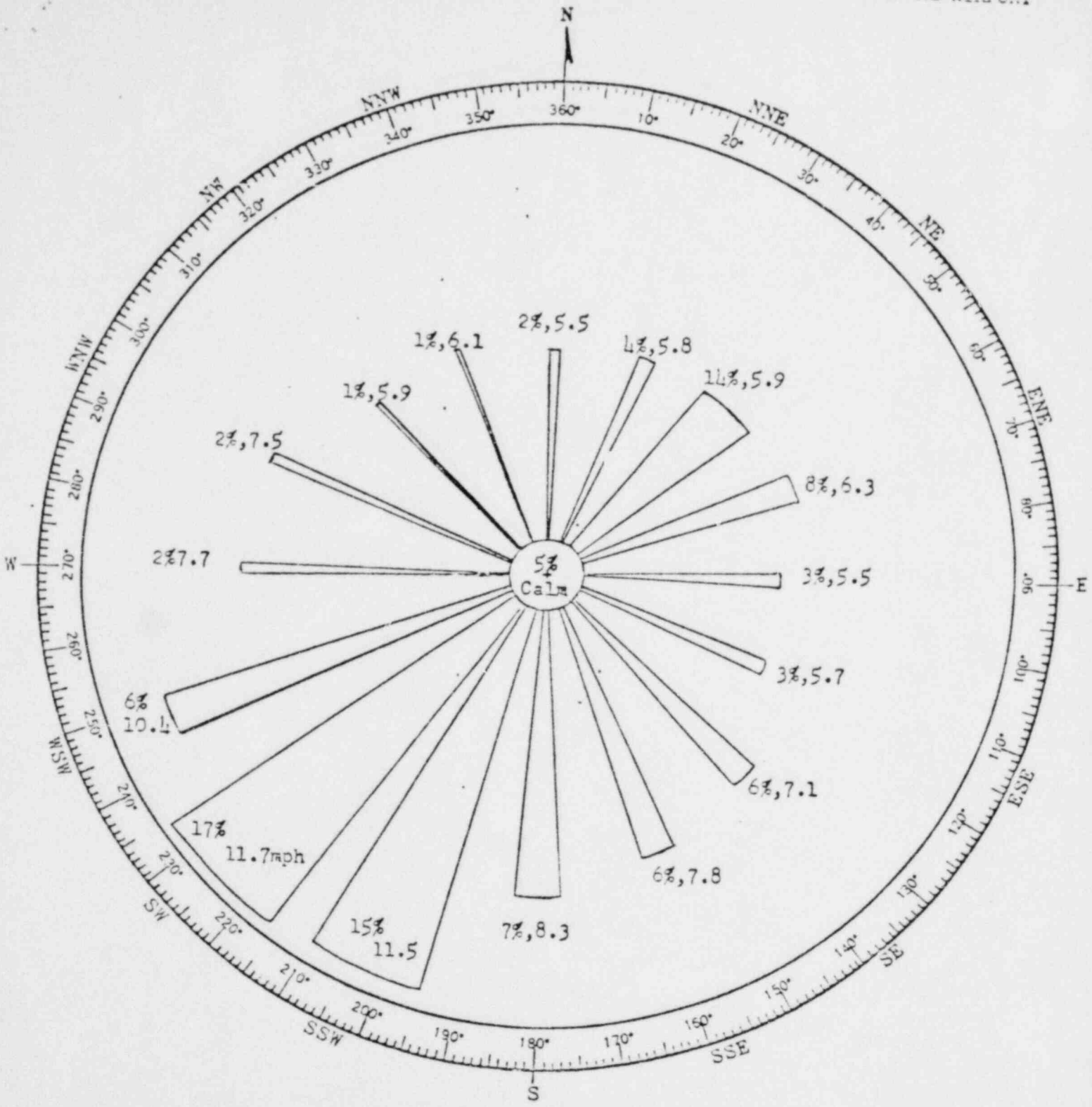
I certify that this is an official publication of the National Oceanic and Atmospheric Administration, and is compiled from records on file at the National Climatic Center, Asheville, North Carolina 28801.

Director, National Climatic Center

PCCOMM-NOAA-ASHEVILLE - 1050

WIND ROSE, ANNUAL

SPOKANE INTERNATIONAL AIRPORT



Percentage frequencies of wind direction (true) and speed (mph) averages. 87,672 hourly observations, 1951-1960. Length of spoke is proportional to speed and width is proportional to frequency.

18708