

1999

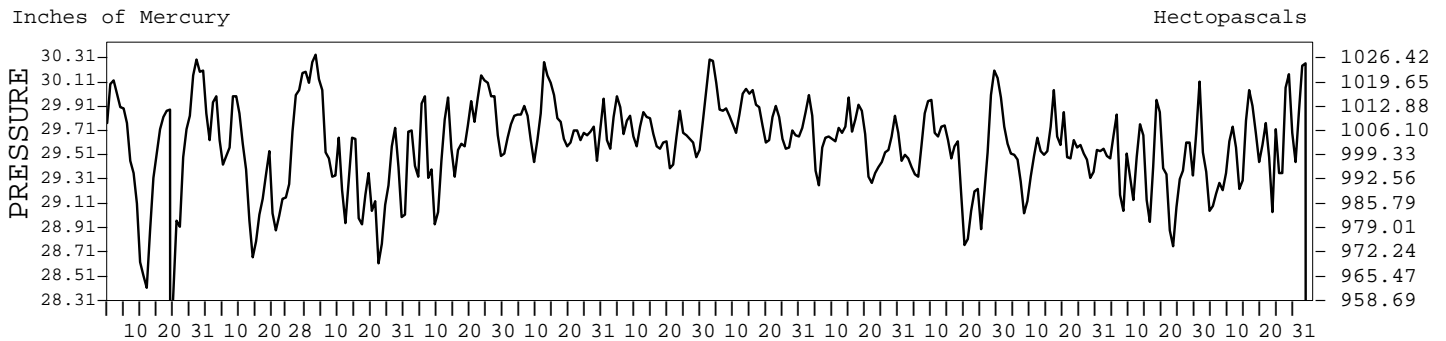
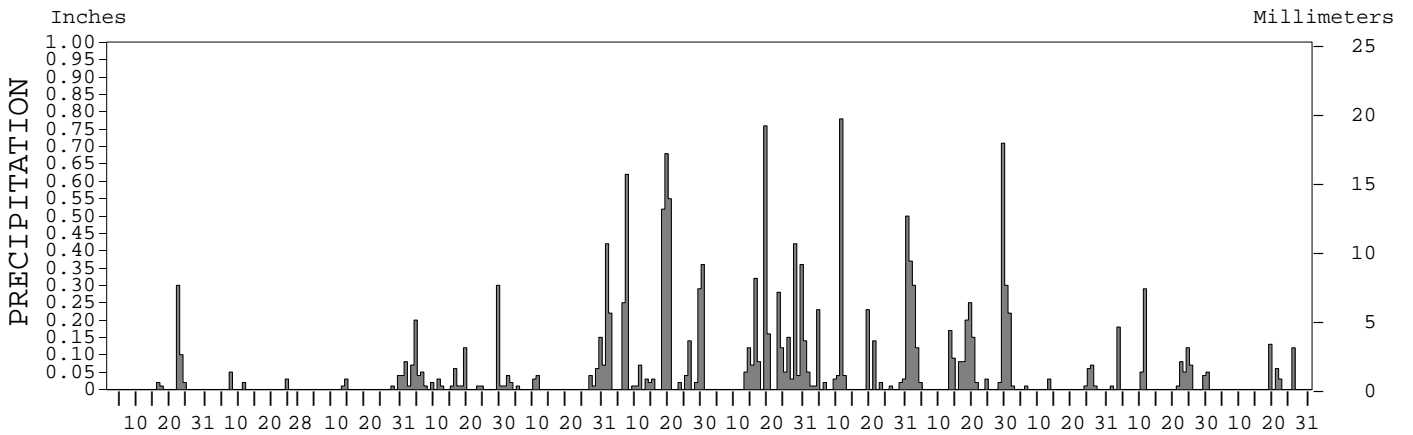
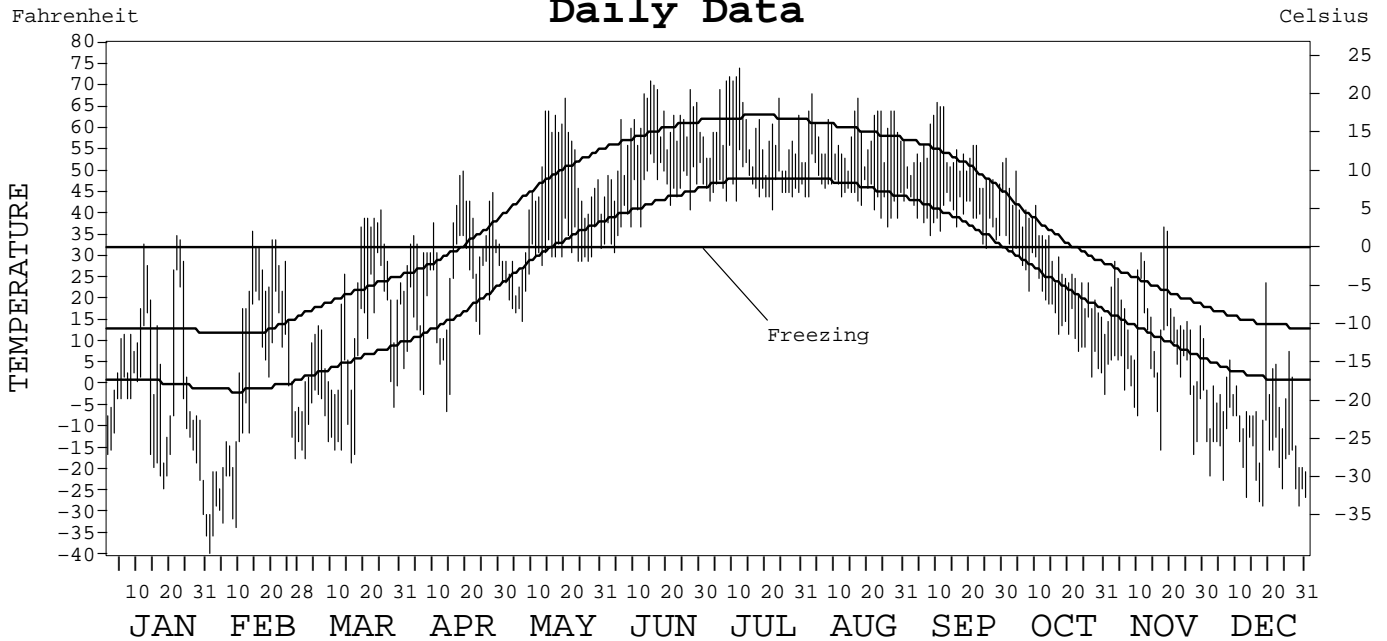
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0197-9620

BETHEL,
ALASKA (BET)

Daily Data



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Thomas R. Karl

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
 NATIONAL ENVIRONMENTAL AND INFORMATION SERVICE
 NATIONAL ENVIRONMENTAL SATELLITE, DATA, AND INFORMATION SERVICE
 NATIONAL CLIMATIC DATA CENTER
 ASHEVILLE, NORTH CAROLINA
 DIRECTOR NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 1999

BETHEL, AK (BET)

LATITUDE: 60° 47' 09" N LONGITUDE: 161° 49' 35" W ELEVATION (FT): GRND: 128 BARO: 128 TIME ZONE: ALASKA (UTC + 9) WBAN: 26615

	ELEMENT	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	5.5	7.6	17.4	32.3	44.9	59.4	59.6	58.6	53.0	30.6	16.7	-4.4	31.8	
	HIGHEST DAILY MAXIMUM	35	36	41	50	67	71	74	68	66	53	37	24	74	
	DATE OF OCCURRENCE	22	14	25	19	20	15	12	03	10	01	18	19	JUL 12	
	MEAN DAILY MINIMUM	-8.1	-7.2	1.6	18.2	28.7	44.0	46.6	44.8	39.7	18.1	3.1	-17.1	17.7	
	LOWEST DAILY MINIMUM	-35	-39	-18	-6	15	31	41	37	32	-2	-16	-28	-39	
	DATE OF OCCURRENCE	31	01	16	14	07	04	22	26	25	31	27	28+	FEB 01	
	AVERAGE DRY BULB	-1.3	0.2	9.5	25.3	36.8	51.7	53.1	51.7	46.4	24.4	9.9	-10.7	24.8	
	MEAN WET BULB			8.3	24.3	33.9	47.9	50.1	49.3	44.4	23.4	9.8			
	MEAN DEW POINT			3.6	21.2	29.4	44.2	47.8	47.0	42.4	21.0	7.0			
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 70°	0	0	0	0	0	2	5	0	0	0	0	0	0	7
	MAXIMUM ≤ 32°	28	25	23	14	8	0	0	0	0	17	28	31	31	174
	MINIMUM ≤ 32°	31	28	31	27	23	1	0	0	1	29	30	31	31	232
MINIMUM ≤ 0°	23	17	18	4	0	0	0	0	0	1	11	31	31	105	
H/C	HEATING DEGREE DAYS	2049	1807	1712	1184	865	389	361	405	551	1255	1646	2339	14563	
	COOLING DEGREE DAYS	0	0	0	0	0	0	0	0	0	0	0	0	0	
RH	MEAN (PERCENT)	80	79	77	82	77	78	85	86	88	87	86	83	82	
	HOUR 03 LST	80	81	79	87	89	92	94	94	97	93	85	82	88	
	HOUR 09 LST	80	83	80	85	82	84	91	93	96	93	86	83	86	
	HOUR 15 LST	80	77	70	76	63	65	74	73	76	75	84	84	75	
	HOUR 21 LST	80	80	78	82	73	71	78	84	89	88	87	84	81	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	1	3	0	5	3	2	5	11	7	4	3	4	48	
	THUNDERSTORMS	0	0	0	0	0	0	0	0	0	0	0	0	0	
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.)		29.43	29.46	29.64	29.75	29.67	29.84	29.61	29.53	29.51	29.41			
	MEAN SEA-LEVEL PRESS. (IN.)		29.60	29.62	29.81	29.92	29.84	30.00	29.77	29.69	29.67	29.55			
WINDS	RESULTANT SPEED (MPH)		3.6	7.1	2.1	4.6	2.8	6.0	3.3	0.5	4.7	7.6			
	RES. DIR. (TENS OF DEGS.)		02	02	22	29	27	21	20	15	01	03			
	MEAN SPEED (MPH)	14.7	9.7	12.6	12.1	10.1	8.4	10.3	8.7	10.3	9.0	11.1	11.8	10.7	
	PREVAIL. DIR. (TENS OF DEGS.)	03	07	02	32	29	21	20	19	32	03	03	02	03	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	44	26	34	39	28	23	40	28	32	31	31	34	44	
	DIR. (TENS OF DEGS.)	16	01	02	17	32	18	17	18	32	03	02	36	16	
	DATE OF OCCURRENCE	23	04	08	04	04	11	19	19+	22	15	13	26+	JAN 23	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	56	32	38	45	32	29	52	36	40	37	36	44	56	
DIR. (TENS OF DEGS.)	16	09	02	19	30	19	17	19	33	04	03	35	16		
DATE OF OCCURRENCE	23	20	08	29+	03	11	19	19	22	15	13	26	JAN 23		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	0.45	0.10	0.13	1.06	0.48	4.30	3.15	2.16	2.91	0.42	0.95	0.34	16.45	
	GREATEST 24-HOUR (IN.)	0.32	0.05	0.04	0.30	0.19	0.68	0.76	0.78	0.71	0.22	0.29	0.13	0.78	
	DATE OF OCCURRENCE	22-23	07	31	29	29-30	19	19	11	29	01	11	19	AUG 11	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	5	3	5	19	11	19	16	16	16	8	11	4	133	
PRECIPITATION ≥ 0.10	2	0	0	3	1	10	10	5	9	1	3	2	46		
PRECIPITATION ≥ 1.00	0	0	0	0	0	0	0	0	0	0	0	0	0		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	3.2	2.2	2.7	11.6	3.6	T	0.0	0.0	0.0	4.0	19.9	6.8	54.0	
	GREATEST 24-HOUR (IN.)	1.5	0.7	0.7	3.2	0.9	T	0.0	0.0	0.0	1.6	3.9	2.6	3.9	
	DATE OF OCCURRENCE	22	07	31	04	02	03+	0	0	0	26	11	19	NOV 11	
	MAXIMUM SNOW DEPTH (IN.)	3	4	5	8	1	0	0	0	0	4	19	18	19	
	DATE OF OCCURRENCE	31+	28+	19+	09+	03+					31+	30	01	NOV 30	
	NUMBER OF DAYS WITH:														
SNOWFALL ≥ 1.0	1	0	0	5	0	0	0	0	0	1	8	2	17		

NORMALS, MEANS, AND EXTREMES

BETHEL, AK (BET)

LATITUDE: 60° 47' 09" N LONGITUDE: 161° 49' 35" W ELEVATION (FT): GRND: 128 BARO: 128 TIME ZONE: ALASKA (UTC + 9) WBAN: 26615

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	12.9	12.8	21.1	31.3	48.2	58.8	62.3	59.5	52.0	35.0	22.6	14.7	35.9
	MEAN DAILY MAXIMUM	51	12.4	13.6	21.5	32.6	49.0	59.3	62.5	59.2	51.8	35.3	23.4	13.4	36.2
	HIGHEST DAILY MAXIMUM	41	48	46	46	60	80	86	83	84	72	56	48	45	86
	YEAR OF OCCURRENCE		1963	1970	1998	1996	1993	1959	1993	1977	1979	1979	1991	1963	JUN 1959
	MEAN OF EXTREME MAXS.	51	36.9	36.3	40.1	48.6	65.1	74.1	77.7	71.8	63.1	49.5	39.9	36.7	53.3
	NORMAL DAILY MINIMUM	30	.4	-.8	5.4	15.7	31.7	42.3	47.7	46.3	38.3	23.8	10.9	2.2	22.0
	MEAN DAILY MINIMUM	51	-.7	-.5	5.0	16.8	32.2	42.8	47.9	46.5	38.4	24.0	11.2	.1	22.0
	LOWEST DAILY MINIMUM	41	-48	-39	-39	-22	4	28	31	28	18	-5	-24	-37	-48
	YEAR OF OCCURRENCE		1989	1999	1964	1964	1965	1962	1959	1984	1970	1963	1990	1998	JAN 1989
	MEAN OF EXTREME MINS.	51	-27.5	-25.4	-19.3	-5.7	19.9	34.0	40.6	38.0	26.9	7.3	-10.6	-23.9	4.5
	NORMAL DRY BULB	30	6.7	6.0	13.3	23.6	39.9	50.5	55.0	52.9	45.2	29.4	16.8	8.5	29.0
	MEAN DRY BULB	51	5.9	6.5	13.2	24.6	40.6	51.1	55.2	52.9	45.1	29.7	17.3	6.7	29.1
	MEAN WET BULB	13	6.3	6.8	13.9	24.4	37.5	47.4	48.6	46.7	39.7	26.5	14.2	10.9	26.9
	MEAN DEW POINT	13	2.4	1.7	9.7	20.1	32.6	42.9	45.6	44.5	37.0	23.6	11.3	7.9	23.3
	NORMAL NO. DAYS WITH: MAXIMUM ≥ 70°	30	0.0	0.0	0.0	0.0	0.5	3.1	6.1	2.3	0.1	0.0	0.0	0.0	12.1
	MAXIMUM ≤ 32°	30	25.0	22.7	22.0	13.3	1.6	0.0	0.0	0.0	*	11.4	21.4	24.2	141.6
MINIMUM ≤ 32°	30	30.2	27.5	30.7	28.6	16.8	0.8	*	0.1	5.4	25.7	28.8	30.4	225.0	
MINIMUM ≤ 0°	30	15.5	15.0	12.3	5.2	0.0	0.0	0.0	0.0	0.0	0.6	7.1	15.0	70.7	
H/C	NORMAL HEATING DEG. DAYS	30	1807	1652	1603	1242	778	435	310	375	594	1104	1446	1752	13098
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	0	0	0	0	0	0	0	0	0
RH	NORMAL (PERCENT)	30	76	73	78	80	76	76	80	85	83	84	82	76	79
	HOUR 03 LST	30	77	73	79	84	88	90	92	94	92	87	82	77	85
	HOUR 09 LST	30	76	74	79	82	81	81	86	91	91	87	82	77	82
	HOUR 15 LST	30	76	72	74	72	63	62	68	72	70	76	80	76	72
	HOUR 21 LST	30	77	74	79	80	72	68	74	81	84	85	82	77	78
S	PERCENT POSSIBLE SUNSHINE														
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY≤1/4 MI)	30	3.2	2.8	3.9	3.9	4.6	3.0	3.8	5.8	4.4	3.8	4.2	4.3	47.7
	THUNDERSTORMS	30	0.0	0.0	0.0	0.0	0.2	0.6	0.7	0.4	0.1	0.0	0.0	0.0	2.0
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS)	34	5.3	4.7	5.0	5.5	6.1	6.6	6.6	6.8	6.4	6.2	5.7	5.3	5.9
	MIDNIGHT-MIDNIGHT (OKTAS)	20	4.6	4.1	4.6	5.3	5.7	6.3	6.4	6.6	6.0	5.7	5.0	4.9	5.4
	MEAN NO. DAYS WITH: CLEAR	35	8.0	9.9	9.3	6.4	3.6	1.7	1.7	1.5	2.2	3.5	5.5	7.6	60.9
	PARTLY CLOUDY	35	4.7	4.1	5.3	6.3	7.7	6.9	5.2	3.9	4.8	5.1	4.9	4.8	63.7
	CLOUDY	35	18.3	14.2	16.5	17.3	19.6	21.4	23.0	24.8	22.1	21.5	18.7	17.8	235.2
PR	MEAN STATION PRESSURE(IN)	23	29.50	29.58	29.59	29.60	29.61	29.70	29.80	29.70	29.60	29.51	29.50	29.40	29.59
	MEAN SEA-LEVEL PRES. (IN)	13	29.66	29.82	29.79	29.81	29.85	30.00	29.97	29.87	29.75	29.72	29.75	29.54	29.79
WINDS	MEAN SPEED (MPH)	34	13.7	14.0	13.1	11.9	11.1	10.5	10.2	10.9	11.2	11.7	12.3	12.7	11.9
	PREVAIL.DIR(TENS OF DEGS)	19	04	04	03	31	18	20	20	18	18	04	03	04	04
	MAXIMUM 2-MINUTE: SPEED (MPH)	1	44	26	34	39	28	23	40	28	32	31	31	34	44
	DIR. (TENS OF DEGS)	1	16	01	02	17	32	18	17	18	32	03	02	36	16
	YEAR OF OCCURRENCE		1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	JAN 1999
	MAXIMUM 5-SECOND: SPEED (MPH)	1	56	32	38	45	32	29	52	36	40	37	36	44	56
DIR. (TENS OF DEGS)	1	16	09	02	19	30	19	17	19	33	04	03	35	16	
YEAR OF OCCURRENCE		1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	1999	JAN 1999	
PRECIPITATION	NORMAL (IN)	30	0.58	0.43	0.59	0.70	0.78	1.44	1.98	2.91	2.04	1.45	1.07	1.02	14.99
	MAXIMUM MONTHLY (IN)	41	2.53	3.03	3.44	3.89	2.61	4.30	4.00	5.81	4.79	2.51	4.19	3.49	5.81
	YEAR OF OCCURRENCE		1993	1996	1991	1979	1998	1999	1980	1963	1993	1972	1994	1992	AUG 1963
	MINIMUM MONTHLY (IN)	41	0.06	T	T	0.02	0.10	0.25	0.56	0.99	0.42	0.11	0.04	0.11	T
	YEAR OF OCCURRENCE		1966	1984	1986	1985	1967	1974	1988	1976	1968	1965	1969	1973	MAR 1986
	MAXIMUM IN 24 HOURS (IN)	41	0.85	1.05	0.64	0.94	0.54	1.37	1.22	1.90	2.02	1.55	1.63	1.34	2.02
	YEAR OF OCCURRENCE		1982	1996	1991	1979	1998	1981	1966	1994	1971	1974	1990	1970	SEP 1971
	NORMAL NO. DAYS WITH: PRECIPITATION ≥ 0.01	30	8.5	6.4	9.2	9.1	10.4	12.7	15.2	17.6	16.0	12.8	11.0	10.9	139.8
PRECIPITATION ≥ 1.00	30	0.0	0.0	0.0	0.0	0.0	*	*	0.1	0.1	0.1	0.1	*	0.4	
SNOWFALL	NORMAL (IN)	30	5.7	4.8	7.0	5.5	2.0	0.1	0.0	0.0	0.2	4.5	8.1	8.2	46.1
	MAXIMUM MONTHLY (IN)	41	15.3	28.8	30.6	14.3	7.7	2.2	T	0.0	4.0	12.8	34.7	36.0	36.0
	YEAR OF OCCURRENCE		1993	1996	1991	1975	1998	1963	1974		1992	1978	1994	1992	DEC 1992
	MAXIMUM IN 24 HOURS (IN)	41	7.8	7.3	8.2	4.7	5.7	1.2	T	0.0	3.6	6.3	10.0	8.0	10.0
	YEAR OF OCCURRENCE		1987	1996	1974	1975	1992	1963	1974		1992	1996	1990	1992	NOV 1990
	MAXIMUM SNOW DEPTH (IN)	50	45	32	45	33	20	0	0	0	3	7	19	24	45
	YEAR OF OCCURRENCE		1952	1956	1951	1951	1977				1992	1996	1999	1994	MAR 1951
	NORMAL NO. DAYS WITH: SNOWFALL ≥ 1.0	30	1.7	1.7	2.6	1.9	0.7	0.1	0.0	0.0	0.1	1.5	2.6	2.8	15.7

PRECIPITATION (inches) 1999 BETHEL, AK (BET)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0.10	0.30	0.47	0.53	1.28	0.68	3.46	3.03	0.85	2.45	1.62	2.27	17.04
1971	0.15	0.16	0.03	0.14	0.78	0.73	2.67	3.12	3.39	2.21	0.40	2.58	16.36
1972	0.78	0.03	0.56	0.62	0.53	1.11	0.93	2.64	2.17	2.51	0.18	0.64	12.70
1973	0.77	0.65	0.49	0.12	1.00	0.45	1.03	3.42	1.69	2.07	1.20	0.11	13.00
1974	0.24	0.10	1.11	0.29	0.23	0.25	3.55	3.10	2.81	1.95	0.93	0.28	14.84
1975	0.29	0.25	0.22	0.88	0.48	1.52	1.35	2.39	3.33	2.08	0.24	0.37	13.40
1976	0.32	0.43	0.36	0.31	0.50	0.57	1.15	0.99	1.37	0.53	0.47	0.29	7.29
1977	0.20	0.32	0.96	0.50	0.75	1.98	1.90	2.01	3.11	1.47	0.60	1.55	15.35
1978	0.17	0.10	0.08	1.32	0.74	2.78	1.65	3.63	1.40	1.43	2.21	1.96	17.47
1979	0.78	0.10	0.58	3.89	0.33	2.63	2.14	2.34	1.25	0.96	3.31	1.22	19.53
1980	0.86	0.74	1.15	0.39	0.84	3.33	4.00	2.72	0.95	0.90	0.20	0.24	16.32
1981	0.61	1.00	0.41	0.59	0.16	1.79	1.51	1.84	0.95	1.62	2.12	0.40	13.00
1982	1.71	0.63	1.59	0.89	0.88	1.24	3.82	3.53	4.66	2.21	1.61	0.50	23.27
1983	0.11	0.07	0.06	2.62	0.41	0.79	2.26	1.52	1.40	2.18	0.62	1.03	13.07
1984	0.17	T	0.10	0.46	0.39	1.57	1.02	2.85	1.10	0.44	0.66	3.33	12.09
1985	0.93	0.24	1.76	0.02	1.73	1.84	1.24	4.17	4.47	2.14	1.33	0.86	20.73
1986	0.65	0.57	T	0.39	0.78	1.25	1.97	4.40	3.10	1.28	1.90	0.45	16.74
1987	0.72	0.30	0.23	0.05	1.20	1.45	1.89	2.43	1.41	1.43	0.53	1.48	13.12
1988	0.42	0.35	0.45	0.45	1.51	1.59	0.56	3.75	0.73	0.61	0.43	1.68	12.53
1989	1.14	1.76	0.38	0.65	1.46	2.57	1.71	3.61	2.85	1.75	0.92	1.04	19.84
1990	0.92	0.96	0.79	0.25	1.08	0.83	2.72	2.84	3.21	2.05	3.01	2.28	20.94
1991	0.23	0.15	3.44	0.30	0.79	1.20	1.51	1.94	1.72	1.55	0.72	0.91	14.46
1992	0.16	0.50	0.53	0.04	0.79	1.89	1.42	3.52	2.19	1.07	2.22	3.49	17.82
1993	2.53	0.50	0.75	0.31	0.80	1.28	0.67	3.44	4.79	2.11	2.60	0.78	20.56
1994	0.50	0.46	1.05	0.95	0.49	2.26	2.78	5.49	1.44	1.32	4.19	1.53	22.46
1995	0.42	0.72	0.07	0.53	1.59	1.49	1.61	3.59	1.94	0.94	0.10	0.46	13.46
1996	0.21	3.03	0.95	0.06	0.62	1.09	3.83	2.80	1.08	0.99	2.25	0.86	17.77
1997	0.33	0.40	0.18	0.30	1.14	1.60	1.11	2.50	1.47	0.15	1.53	0.87	11.58
1998	0.57	0.08	0.88	0.96	2.61	0.93	2.74	3.20	3.01	1.62	1.30	0.54	18.44
1999	0.45	0.10	0.13	1.06	0.48	4.30	3.15	2.16	2.91	0.42	0.95	0.34	16.45
POR= 76 YRS	0.80	0.72	0.82	0.62	0.87	1.36	2.13	3.55	2.49	1.46	1.13	0.98	16.93

WBAN : 26615

AVERAGE TEMPERATURE (°F) 1999 BETHEL, AK (BET)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	-11.7	16.4	18.7	22.3	43.3	51.9	51.6	50.7	41.3	25.7	27.5	5.4	28.6
1971	-6.3	-1.5	-3	17.0	35.2	50.0	52.8	51.9	44.1	30.8	14.9	12.9	25.1
1972	2.3	0.0	-2.2	14.4	37.2	48.6	57.8	55.4	43.7	34.8	18.1	9.6	26.6
1973	-4.3	8.7	6.0	25.3	39.8	49.8	53.3	51.0	45.4	30.2	20.5	9.0	27.9
1974	6.2	-7.1	15.0	28.9	45.3	51.4	54.7	56.4	49.4	26.2	10.9	-3.9	27.8
1975	-1.5	0.8	10.3	20.4	39.7	49.5	56.6	54.3	42.8	30.0	7.0	3.1	26.1
1976	0.6	-7.4	6.3	17.2	37.6	49.5	54.8	54.2	44.9	30.1	17.6	6.7	26.0
1977	21.7	18.7	4.7	13.8	35.5	52.6	56.1	58.6	47.5	28.9	10.9	11.0	30.0
1978	19.0	12.7	13.9	30.5	44.0	45.1	54.0	55.3	44.6	27.6	24.0	21.5	32.7
1979	21.3	-5.0	18.1	31.5	44.3	47.8	53.6	53.1	44.8	34.0	25.3	-1.8	30.6
1980	0.2	12.0	20.3	30.5	42.7	46.3	54.8	50.7	44.9	31.9	18.7	-8	29.4
1981	20.9	12.4	29.5	32.3	48.1	52.4	54.2	54.1	44.5	31.8	17.9	7.9	33.8
1982	12.0	12.1	19.2	17.3	38.6	51.9	53.3	55.1	46.7	28.9	20.7	13.2	30.8
1983	4.9	12.0	18.7	27.5	43.0	51.3	53.7	49.5	42.2	26.5	21.1	20.8	30.9
1984	5.7	-13.2	24.8	22.0	38.1	54.0	55.1	49.7	46.7	30.2	16.4	19.4	29.1
1985	25.7	4.9	13.8	8.3	36.5	47.7	58.8	53.6	45.5	27.0	24.4	25.4	31.0
1986	1.7	15.7	13.1	22.8	39.1	52.5	55.1	51.4	45.0	29.0	20.4	21.6	30.6
1987	9.2	11.1	19.8	23.5	39.3	50.4	55.9	56.3	42.2	34.4	12.8	1.8	29.7
1988	15.1	9.2	6.6	25.3	43.8	52.3	60.0	52.3	45.1	27.2	7.0	11.8	29.6
1989	-13.0	26.1	16.6	29.0	38.1	52.2	54.6	54.2	48.3	31.7	8.8	11.8	29.9
1990	2.7	-12.3	13.8	33.7	43.6	52.2	57.5	55.4	43.7	30.3	16.9	9.4	28.9
1991	9.2	5.9	18.1	30.1	43.9	53.5	57.4	53.7	49.6	35.8	13.5	2.0	31.1
1992	5.2	-3	10.2	26.0	36.4	52.6	57.4	53.3	37.7	26.7	16.9	9.1	27.6
1993	3.9	19.3	21.6	34.9	45.8	53.6	57.7	54.2	44.6	34.5	24.9	16.3	34.3
1994	7.2	10.8	7.7	29.3	44.2	52.4	55.6	52.3	45.6	27.4	16.8	7.6	29.7
1995	9.7	12.9	9.4	31.6	46.3	52.2	56.7	53.6	50.2	31.2	12.6	10.9	31.4
1996	6.9	8.2	26.7	28.9	44.9	51.2	56.0	51.6	42.0	25.5	23.0	5.1	30.8
1997	4.1	17.6	8.3	33.9	45.4	55.1	59.0	56.0	48.9	24.3	21.5	-3	31.2
1998	0.9	9.9	27.6	31.4	39.9	50.9	57.3	49.1	45.4	31.3	19.8	3.3	30.6
1999	-1.3	0.2	9.5	25.3	36.8	51.7	53.1	51.7	46.4	24.4	9.9	-10.7	24.8
POR= 76 YRS	6.2	7.4	12.5	25.5	40.6	51.8	55.0	52.8	45.2	30.2	17.1	7.0	29.3

HEATING DEGREE DAYS (base 65°F) 1999 BETHEL, AK (BET)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	408	437	707	1210	1118	1848	2210	1863	2022	1430	917	443	14613
1971-72	374	398	621	1050	1500	1611	1947	1883	2088	1516	856	486	14330
1972-73	228	293	632	929	1399	1721	2149	1576	1829	1182	775	447	13160
1973-74	355	425	581	1072	1329	1734	1824	2023	1549	1079	603	399	12973
1974-75	318	258	460	1197	1619	2139	2060	1796	1695	1332	778	456	14108
1975-76	255	324	658	1078	1741	1917	1996	2102	1821	1427	843	459	14621
1976-77	309	328	598	1075	1414	1808	1335	1291	1869	1533	906	363	12829
1977-78	269	199	520	1112	1619	1673	1421	1463	1577	1026	645	590	12114
1978-79	334	293	605	1151	1223	1338	1347	1962	1447	998	634	508	11840
1979-80	345	361	600	952	1186	2073	2007	1532	1382	1029	682	552	12701
1980-81	315	438	594	1017	1383	2044	1362	1472	1094	977	517	371	11584
1981-82	330	335	609	1023	1407	1768	1641	1482	1410	1427	808	387	12627
1982-83	355	302	544	1112	1324	1601	1861	1477	1430	1119	676	402	12203
1983-84	343	474	679	1187	1307	1360	1839	2275	1242	1282	830	326	13144
1984-85	300	464	544	1070	1450	1414	1211	1680	1583	1697	876	511	12800
1985-86	189	352	578	1169	1214	1223	1962	1379	1602	1261	794	368	12091
1986-87	303	417	594	1106	1333	1341	1732	1506	1397	1239	791	430	12189
1987-88	279	261	676	944	1565	1961	1544	1614	1804	1185	652	374	12859
1988-89	152	387	590	1164	1739	1645	2419	1084	1495	1075	826	379	12955
1989-90	319	327	495	1024	1682	1648	1934	2164	1586	935	658	378	13150
1990-91	228	290	631	1069	1438	1722	1729	1656	1448	1039	648	340	12238
1991-92	231	342	454	899	1539	1952	1854	1894	1696	1164	882	369	13276
1992-93	230	357	812	1182	1434	1732	1893	1277	1339	896	591	338	12081
1993-94	228	326	606	939	1197	1507	1791	1512	1776	1066	640	371	11959
1994-95	284	385	578	1157	1440	1776	1709	1456	1723	996	573	379	12456
1995-96	250	347	437	1040	1569	1675	1797	1647	1181	1075	616	408	12042
1996-97	273	408	683	1219	1252	1850	1882	1321	1752	927	600	291	12458
1997-98	186	271	478	1256	1298	2016	1980	1538	1152	1003	774	417	12369
1998-99	232	487	584	1039	1352	1905	2049	1807	1712	1184	865	389	13605
1999-	361	405	551	1255	1646	2339							

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COOLING DEGREE DAYS (base 65°F) 1999 BETHEL, AK (BET)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	17	1	0	0	0	0	18
1973	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	3	0	0	0	0	0	3
1975	0	0	0	0	0	0	1	0	0	0	0	0	1
1976	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	8	0	0	0	0	8
1978	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	6	0	0	0	0	0	6
1981	0	0	0	0	0	0	0	2	0	0	0	0	2
1982	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	1	5	0	0	0	0	6
1986	0	0	0	0	0	2	3	0	0	0	0	0	5
1987	0	0	0	0	0	0	2	0	0	0	0	0	2
1988	0	0	0	0	0	0	4	0	0	0	0	0	4
1989	0	0	0	0	0	0	3	0	0	0	0	0	3
1990	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	2	0	0	0	0	0	0	2
1992	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	2	0	7	0	0	0	0	0	9
1994	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	8	1	0	0	0	0	9
1998	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0

SNOWFALL (inches) 1999 BETHEL, AK (BET)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	T	10.2	7.5	13.1	6.3	4.8	2.4	6.2	6.2	T	56.7
1971-72	0.0	0.0	T	8.0	9.2	17.5	3.8	0.3	5.6	9.4	1.6	1.1	56.5
1972-73	0.0	0.0	0.2	2.7	6.0	2.7	11.5	9.1	7.0	1.8	5.6	T	46.6
1973-74	0.0	0.0	T	4.4	14.5	1.7	0.3	2.9	18.0	4.8	T	0.0	46.6
1974-75	T	0.0	0.0	1.2	7.1	7.2	6.7	5.7	4.4	14.3	3.5	0.0	50.1
1975-76	0.0	0.0	0.0	1.4	3.4	6.5	6.2	5.6	6.7	5.8	0.9	T	36.5
1976-77	0.0	0.0	0.0	1.8	6.1	6.5	2.1	6.6	16.4	10.1	2.5	0.0	52.1
1977-78	0.0	0.0	T	4.8	7.6	13.8	2.1	1.2	0.8	10.7	T	0.0	41.0
1978-79	0.0	0.0	0.0	12.8	2.7	19.1	6.3	1.0	1.8	5.2	T	0.0	48.9
1979-80	0.0	0.0	0.0	1.7	10.3	12.7	6.0	7.1	12.6	2.1	0.4	0.0	52.9
1980-81	0.0	0.0	0.0	4.0	2.0	2.6	3.7	8.8	2.9	2.8	1.0	0.0	27.8
1981-82	0.0	0.0	T	0.9	21.6	4.3	10.2	T	14.7	6.0	T	0.0	57.7
1982-83	0.0	0.0	0.0	9.0	5.6	4.7	1.0	1.5	0.6	9.5	T	0.0	31.9
1983-84	0.0	0.0	T	T	6.4	3.5	2.9	T	1.1	2.6	T	0.0	16.5
1984-85	0.0	0.0	T	3.4	6.8	19.6	2.5	0.7	16.3	0.4	5.1	0.8	55.6
1985-86	0.0	0.0	T	5.3	8.7	2.3	8.7	1.7	T	2.6	4.2	0.0	33.5
1986-87	0.0	0.0	T	0.3	1.8	2.1	13.5	4.0	1.7	0.6	0.2	T	24.2
1987-88	0.0	0.0	0.0	4.7	7.3	14.3	1.7	5.1	5.3	3.1	T	0.0	41.5
1988-89	0.0	0.0	T	5.2	7.9	15.1	13.1	9.2	4.7	2.7	3.4	0.0	61.3
1989-90	0.0	0.0	0.0	4.3	11.0	8.8	10.4	12.8	8.7	2.5	T	0.0	58.5
1990-91	0.0	0.0	3.1	1.7	21.7	6.6	2.6	4.6	30.6	1.5	0.3	T	72.7
1991-92	0.0	0.0	0.0	2.2	9.1	19.2	3.6	10.3	8.3	0.7	6.2	0.0	59.6
1992-93	0.0	0.0	4.0	2.0	19.3	36.0	15.3	6.2	11.6	0.9	T	T	95.3
1993-94	0.0	0.0	T	1.4	13.0	13.2	10.8	4.3	17.3	3.4	T	0.0	63.4
1994-95	0.0	0.0	0.0	1.5	34.7	17.4	8.1	2.1	1.9	0.5	0.0	0.0	66.2
1995-96	0.0	0.0	0.0	2.2	3.1	8.2	4.2	28.8	8.3	1.3	0.2	0.2	56.5
1996-97	0.0	0.0	3.9	8.7	14.4	16.3	9.5	5.1	2.4	0.7	0.3	0.2	61.5
1997-98	0.0	0.0	0.0	1.1	15.1	15.3	12.0	1.1	10.5	10.4	7.7	0.0	73.2
1998-99	0.0	0.0	0.0	9.9	10.0	5.9	3.2	2.2	2.7	11.6	3.6	T	49.1
1999-	0.0	0.0	0.0	4.0	19.9	6.8							
POR= 40 YRS	T	0.0	0.3	4.1	9.7	9.8	6.0	5.6	7.5	5.3	2.2	0.1	50.6

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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
BETHEL,
ALASKA (BET)

The two main topographical features affecting the climate of Bethel are the Bering Sea, which is about 100 miles to the west and southwest, and the Kilbuck Range of mountains located about 40 miles to the east and southeast of the station. This range, averaging about 4,000 feet in height, extends, roughly, in a north-south direction in that portion nearest to Bethel. Some 160 miles southeast of the Kilbuck Range the Aleutians, extending in a northeast-southwest direction, provide an additional natural barrier to many of the storms originating on the outward end of the Aleutian Chain and moving out through the Gulf of Alaska. Both ranges tend to direct some of the storms northeastward into the Bering Sea, and thus directly affect the Bethel area. During invasions of such storms, it is not uncommon for wind velocities to exceed 50 mph. Maximum speeds usually accompany northeast winds in the winter and southeast winds in the summer. During the winter season, strong southerly winds tend to be considerably affected by the mountains to the south, producing, at times, a pronounced foehn (chinook) effect. Temperatures have risen almost 50 degrees in less than 24 hours under these conditions.

The climate is somewhat more maritime than continental in character, which tends to modify daily temperature extremes during most of the

year. However, there are usually two periods during the year when the area becomes affected by continental climatic influences. In June and July, temperatures in the area rise noticeably under the influence of warmer continental air. Around the latter part of December and early January, cold, clear continental air becomes quite dominant, and the climate of Bethel becomes quite similar to other areas located farther inland. Average temperatures through the entire winter season, however, are considerably higher than those experienced in the Alaskan interior, and temperatures for the entire summer season average considerably cooler than in the Alaskan interior. The last date of freezing temperature in spring averages late May, and the average of the first freezing temperature in autumn falls in early September, resulting in a growing season slightly over 100 days. Cabbages, potatoes, cauliflower, beets, turnips, lettuce, and carrots are successfully grown. August is usually the wettest month of the year.

Thunderstorms are rare. The few thunderstorms that do occur are generally short in duration, but rather severe. They usually develop and move out of the northeast during the months of June and July.

STATION LOCATION

BETHEL, ALASKA

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE											* Type	REMARKS	
						SEA LEVEL	GROUND												AUTOMATED
							WIND	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY	EMERGENCY			
Alaska Communications System Office	8/21/23	10/1/40	NA														No Instrument Record.		
Bethel Community Hall	10/1/40	9/5/42	1 mi. SSW	60° 48'	161°45'	Unk	20	6	6	NA	NA	NA	4	NA	NA				
Control Building CAA Field	9/5/42	2/21/53	2 mi. E	60° 47'	161°42'	10	30	7	7	NA	NA	NA	4	NA	NA				
Control Building CAA Field	2/21/53	11/7/58	No Change	60° 47'	161°43'	10	31	6	6	NA	NA	NA	5	NA	NA		New wind equipment installed 5/5/53.		
Control building Bethel Municipal AP+	11/7/58	11/01/98	3.5 mi. W	60° 47'	161°48'	125	64 a20 b30	6 e	6 d23	NA	NA	NA	5 f25	NA c3 g3	NA		a - Effective 10/2/62. b - Raised 8/18/77. c - Commissioned 8/18/77. d - Moved to roof 5/1/80. e - Removed 5/1/80. f - Moved to roof 6/1/80. g - Type change 10/10/85.		
+NWS/FAA Building Bethel State AP++ (Effective 1971)																			
++Bethel Airport (Effective 10/75)																			
Bethel Airport	11/01/98	Present	NA	60°47'	161°50'	128									S		ASOS Commissioned 11/01/98		

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801. INQUIRIES/COMMENTS CALL: (704) 271-4800n

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