STATION:	HAPPY VALLEY - BELLA CASA		
COUNTY:	CLACKAMAS	STATE:	OREGON
ELEVATION:	600 FT	OBS TIME:	2400 HRS PDT/PST
OBSERVER:	JEFFREY TAYLOR	ZIP CODE:	97086-4246

MONTH **DECEMBER** YEAR **2017**

WEATHER OBSERVATION DATA FORM

FOR RECORDING DETAILED SURFACE OBSERVATIONS

CALENDAR DATE	TEMPERATURE (°F) 24 HRS ENDING AT OBS: MAX TEMP	MIN TEMP	MEAN TEMP	TEMP AT OBS	MAX TEMP TIME	MIN TEMP TIME	HEATING DEGREE DAYS	COOLING DEGREE DAYS	PRECIPITATION (INCHES) 24-HR AMOUNT: RAIN OR MELTED SNOW (2400 HRS)	RAIN OR MELTED SNOW (0600 HRS)	SNOW, HAIL, ICE PELLETS	AT OBS: SNOW DEPTH (nearest 1 inch)	WEATHER CONDITIONS/EVENTS (24 HRS ENDING AT OBS) MARK "X" FOR EACH: THUNDER	FOG	HEAVY FOG (Visib ≤1/4 mi)	HAIL	GLAZE	ICE PELLETS	DAMAGING WINDS	SKY COVER AVERAGE (24 HRS ENDING AT OBS): CLEAR	PARTLY CLOUDY	CLOUDY	WIND (MPH) 24 HRS ENDING AT OBS: DAILY AVERAGE	DOMINANT DIRECTION	PEAK GUST	PEAK GUST DIRECTION	PEAK GUST TIME	BAROMETRIC PRESSURE (INCHES): MAXIMUM	MAXIMUM TIME	MINIMUM	MINIMUM TIME	RELATIVE HUMIDITY (PERCENT): MAXIMUM	MAXIMUM TIME	MINIMUM	MINIMUM TIME	DEW POINT (°F): MAXIMUM	MAXIMUM TIME	MINIMUM	MINIMUM TIME	OBSERVATIONS AND OTHER COMMENTS (based on Observation time of 2400 Hrs.)
1	47.7	43.2	45.5	45.3	1438	0104	19.6	0.0	0.05	0.13	0.0	0		X							X		0.2	SE	9	ESE	1800	30.22	0022	30.05	1848	99	0904	92	1920	47	1221	43	0001	PC day. Rain Hrs.: 2125-2400 (0.05"). Max. Rain Rate: 0.15"/Hr. (2129 Hrs.).
2	45.8	41.2	43.5	41.6	1125	2208	21.5	0.0	0.35	0.14	0.0	0		X								X	0.4	SE	10	ESE	1417	30.06	0001	29.86	1649	98	0530	96	0001	45	0930	40	2208	CDY day. Rain Hrs.: 0050-0550 (0.07"); 0815-2250 (0.28"). Max. Rain Rate: 0.72"/Hr. (1620 Hrs.). AM Min. Temp. 44.0" (0802 Hrs.).
3	45.5	38.7	42.1	39.4	1518	2336	22.9	0.0	0.07	0.33	0.0	0		X							X		0.2	SW	6	WSW	1229	30.48	2356	29.93	0003	99	1132	96	1724	45	1457	38	2311	CDY AM, Mostly CDY early PM, PC mid-PM and afterward. Rain Hrs.: 0250-0315 (0.02"); 0815-1845 (0.05"). Max. Rain Rate: 0.04"/Hr. (0311 Hrs.). AM Min. Temp. 40.2° (0641 Hrs.). VP2 rain gauge tipping bucket & contacts cleaned.
4	46.4	37.6	42.0	37.9	1313	1949	23.0	0.0	0.01	0.06	0.0	0		X							X		0.1	SW	4	SSW	0319	**30.58**	1010	30.48	0003	97	0001	86	1402	44	1040	37	0607	Variably CDY day. Shower: 0600-0615 (0.01"). AM Min. Temp. 37.9° (0628 Hrs.).
5	47.6	35.3	41.5	44.1	1400	0600	23.6	0.0	0.00	0.01	0.0	0								X			2.2	N	13	NNE	1322	30.56	0302	30.48	1459	97	0001	64	1532	40	1057	33	2111	PC day.
6	50.6	41.8	46.2	42.6	1200	0625	18.8	0.0	0.00	0.00	0.0	0								X			2.5	N	12	NW	1244	30.57	1004	**30.51**	1438	**69**	0623	**52**	1415	36	1117	30	2240	CLR day, unlimited visibility.
7	46.4	36.9	41.7	37.1	1204	2344	23.4	0.0	0.00	0.00	0.0	0								X			3.0	N	17	N	1536	30.56	2308	30.48	1350	74	2314	59	1221	33	1001	29	2101	CLR day, unlimited visibility. AM Min. Temp. 41.1° (0528 Hrs.).
8	43.9	35.1	39.5	35.9	1229	2303	25.5	0.0	0.00	0.00	0.0	0									X		1.7	N	10	NW	0015	30.56	0052	30.48	1422	78	2312	61	1304	32	1131	28	0417	CLR through sunrise, PC later AM and early PM, CLR later PM. AM Min. Temp. 35.5° (0419 Hrs.).
9	42.7	33.8	38.3	35.9	1150	0521	26.8	0.0	0.00	0.00	0.0	0								X			1.9	N	13	N	1415	30.50	2303	30.43	1403	82	0744	65	1124	32	1209	28	0252	CLR AM, PC later AM - Cirrus clouds.
10	40.6	35.0	37.8	35.8	1146	0142	27.2	0.0	0.00	0.00	0.0	0								X			**3.5**	N	**18**	NNE	1129	30.50	0117	30.33	1905	76	0138	64	1130	30	1146	27	1611	CLR day, a few Cirrus clouds.
11	41.5	33.5	37.5	33.7	1224	2333	27.5	0.0	0.00	0.00	0.0	0								X			1.9	N	13	N	1438	30.49	2315	30.37	0013	74	0251	61	1151	**29**	1004	25	2318	CLR day. AM Min. Temp. 34.7° (0242 Hrs.).
12	44.5	31.9	38.2	37.8	1155	0514	26.8	0.0	0.00	0.00	0.0	0								X			0.6	N	14	NNW	2257	30.51	1007	30.37	2036	79	0902	57	1240	33	1139	25	0120	CLR day, increasing later PM clouds. First freezing temperature of the season, and first since 29.9° on 2/3/2017.
13	41.1	35.1	38.1	37.9	1232	0731	26.9	0.0	0.00	0.00	0.0	0								X			3.1	N	17	N	1343	30.42	0122	30.34	1359	77	0735	65	1228	31	1144	27	0434	CLR day
14	40.9	33.6	37.3	34.0	1058	2351	27.8	0.0	0.00	0.00	0.0	0								X			2.7	N	16	NNE	0037	30.37	0004	30.27	2209	79	2352	65	1101	31	1057	27	2336	CLR day
15	38.8	30.8	34.8	38.0	1306	0535	30.2	0.0	0.03	0.00	0.0	0		X								X	0.1	SE	6	SSE	1331	30.36	2303	30.24	0654	96	2138	78	0003	37	2203	27	0506	Mostly CDY day. Rain Hrs.: 1030-1035 (0.01"); 1920-2130 (0.02").
16	45.1	38.0	41.6	40.1	1339	0001	23.5	0.0	0.02	0.03	0.0	0		X								X	0.1	W	5	SSW	1129	30.41	1032	30.32	1844	97	0104	92	1534	44	1335	37	0001	CDY day. Rain Hrs.: 0615-0620 (0.01"); 1100-1200 (T); 2210-2215 (0.01").
17	48.8	40.0	44.4	45.7	1403	0129	20.6	0.0	0.03	0.03	0.0	0		X								X	0.1	SE	5	ESE	1316	30.33	0003	30.15	2342	97	0924	78	1731	44	1215	39	0001	OVC AM, Mostly CDY PM. Rain Hrs: 0650-0710 (0.02"); 0830-0835 (0.01").
18	50.8	**45.6**	48.2	50.6	1420	0016	16.8	0.0	0.01	0.01	0.0	0		X	X							X	0.5	W	9	E	1013	30.19	1032	30.01	2358	97	1709	85	0039	50	1525	41	0039	CDY day. FG+ evening. Rain Hrs: 1650-1655 (0.01").
19	52.0	39.4	45.7	39.4	0458	2400	19.3	0.0	**0.90**	0.03	0.0	0											1.6	SE	**18**	SE	1052	**30.01**	0001	**29.62**	1203	97	1505	89	0453	49	0001	39	2145	CDY day. Rain Hrs: 0100-0545 (0.02"); 0546-2145 (0.88")
20	42.1	31.9	37.0	32.5	1351	2307	28.0	0.0	0.06	**0.89**	0.0	0									X		0.3	WSW	8	NW	0209	30.46	2400	29.89	0001	97	0001	86	1800	41	1213	30	2256	CDY AM, PC afternoon, CLR evening. Rain Hrs: 0110-0405 (0.02"); 1005-1550 (0.04").
21	37.8	27.5	32.7	32.9	1510	0749	32.4	0.0	0.00	0.04	0.0	0		X	X						X		0.1	WSW	4	SE	1318	30.51	0328	30.30	2341	97	1022	90	1502	36	1359	26	0745	CDY AM, FZ FG+/Heavy Frost. PC afternoon into early evening, increasing high clouds later evening.
22	39.9	32.3	36.1	39.8	2203	0258	28.9	0.0	0.57	0.00	T	0		X								X	0.1	SE	5	SSE	0230	30.32	0125	30.25	1409	98	1226	96	0001	39	1557	31	0235	CDY day. Precip: R/SN 0655-0800 (T); R 1115-1120 (0.01"); 1505-2400 (0.56"). Max. Ppt Rate: 0.17"/Hr. (1637 Hrs.).
23	39.9	31.1	35.5	31.5	0041	2258	29.5	0.0	0.27	0.85	T	0		X							X		1.9	N	11	N	1224	30.44	1048	30.29	0004	98	0001	77	2059	39	0001	25	1934	OVC into mid-AM, PC late AM & afternoon, CLR evening. R/SN Hrs.: 0001-0655 (0.27"). Max. Ppt Rate: 0.16"/Hr. (0113 Hrs.). AM Min. Temp. 33.3° (0758 Hrs.), Daytime Max. Temp. 38.2° (1154 Hrs.).
24	**31.6**	28.6	**30.1**	31.2	0051	1627	34.9	0.0	*0.58*	0.00	0.9	1		X			X	X				X	1.7	N	13	NNW	0415	30.36	0016	30.17	2023	96	2041	72	0804	30	1821	**23**	0329	OVC day. SN 0845-1000 Hrs., then mixing w/ PL, then ZR until about 1230 Hrs. (SN 0.2", SWE 0.13" with all ppt); SN 1515-1830 (brief PL mix) (SN 0.7"; SWE 0.16"), then -ZR at least through 2200 Hrs. (melted 0.29"). Ice Accretion: 0.2".
25	33.9	28.9	31.4	**28.9**	1230	2359	33.6	0.0	*T*	0.58	0.0	1		X	X		X					X	**0.0**	SE	**2**	SE	0522	30.37	1643	30.19	0025	97	0128	96	0001	33	0435	28	2351	OVC through early evening, Clearing later PM. FG+ AM and evening (Visibility <1/16 mile). FZDZ early AM (T). WHITE CHRISTMAS! AM Min. Temp. 31.0° (0051 Hrs.). Snow on Ground at 0700 Hrs.: 1 Inch.
26	32.8	**27.3**	**30.1**	32.5	1202	0754	**35.0**	0.0	*0.08*	0.00	0.0	1					X				X		0.3	NNW	8	N	1017	30.36	0001	30.24	1439	97	0001	90	1550	32	2333	26	0439	CLR AM, increasing high clouds later AM. -ZR Hrs.: 2130-2400. Snow on Ground at 0700 Hrs.: 1 Inch.
27	45.1	32.5	38.8	44.5	2141	0001	26.2	0.0	*0.00*	0.08	0.0	T		X	X							X	**0.0**	WSW	3	SSW	1910	30.34	2156	30.29	0829	99	1840	96	0001	45	2121	32	0001	CDY day. AM FG+ (Visibility <1/8 Mile). Snow on Ground at 0700 Hrs.: 1 Inch.
28	52.1	42.0	47.1	**52.1**	2356	0423	18.0	0.0	*0.64*	0.04	0.0	0		X								X	0.5	SE	12	ESE	1757	30.34	0039	30.01	2056	**100**	2246	**98**	0106	52	2329	42	0357	CDY day. VP2 gauge's melted SN/PL/ZR/R covering period 12/24-12/28 as of 1400 Hrs. on 28th = 0.41" (this is less than CoCoRaHS amount of 0.58" likely due to evaporation while frozen in VP2 gauge. Additional 0.64" of rain fell 1430-2400 Hrs.
29	**54.0**	45.2	**49.6**	45.2	0853	2356	**15.4**	0.0	0.64	0.71	0.0	0		X								X	1.7	ESE	**18**	E	1919	30.09	2357	29.84	1820	**100**	0008	96	0837	**53**	0042	**44**	2320	CDY day, PC by 2200 Hrs. Rain Hrs.: 0001-0140 (0.02"); 0950-2020 (0.62"). Max. Rain Rate: 0.46"/Hr. (1418 Hrs.). AM Min. Temp. 52.1° (0001 Hrs.).
30	48.5	37.8	43.2	39.1	1130	2252	21.9	0.0	0.00	0.63	0.0	0									X		0.3	WSW	9	W	2329	30.29	1037	30.09	0001	98	0659	83	1449	48	1130	37	2058	Mostly CDY through sunrise, PC mid-AM, CLR afternoon & evening. AM Min. Temp. 43.0° (0629 Hrs.).
31	46.0	37.1	41.6	38.1	1149	2313	23.5	0.0	0.00	0.00	0.0	0									X		2.7	N	13	N	0607	30.27	2358	30.12	1357	94	0001	67	1202	38	0001	30	2234	CLR AM, some high clouds noontime and later evening. Brilliant sunset. AM Min. Temp. 39.0° (0020 Hrs.).
SUM	**1364.4**	**1108.7**	**1236.6**	**1201.1**	**SUM**		**778.5**	**0.0**	**4.31**	**4.59**	**0.9**	**3**	**0**	**16**	**4**	**0**	**3**	**1**	**0**	**9**	**10**	**11**																			
AVERAGE	**44.01**	**35.76**	**39.89**	**38.75**	**AVERAGE**		**25.1**	**0.0**	**0.139**	**0.148**	**0.03**	**0.10**	TH	FG	FG+	H	GL	PL	DW	CLR	PC	CDY																			
Extreme Max	54.0	45.6	49.6	52.1	Extreme Max		35.0	0.0	0.90	0.89	0.9	1																												
Max Date	29th	18th	29th	28th	Max Date		26th	N/A	19th	20th	24th	26th+																												
Extreme Min	31.6	27.3	30.1	28.9	Extreme Min		15.4	0.0	0.00	0.00	0.0	0																												
Min Date	24th	26th	24th, 26th	25th	Min Date		29th	31st+	31st+	31st+	31st+	31st+																												

	WIND: DAILY AVG	DOM DIR	PEAK GUST	DIREC-TION	DATE	BAROMETRIC PRESSURE: MAX	DATE	MIN	DATE	RELATIVE HUMIDITY: MAX	DATE	MIN	DATE	DEW POINT: MAX	DATE	MIN	DATE
Extreme Max	3.5	10th	18	E+	29th+	30.58	4th	30.51	6th	100	29th+	98	28th	53	29th	44	29th
Extreme Min	0.0	27th+	2	SE	25th	30.01	19th	29.62	19th	69	6th	52	6th	29	11th	23	24th
Average	1.2	N	10.4			30.38		30.21		91		79		39		32	

NUMBER OF DAYS

*TEMPERATURE MAXIMUM		MINIMUM		PRECIPITATION AMOUNT	OBS 2400 HRS	OBS 0600 HRS	WIND PEAK GUST (MPH)		SNOW/ICE PELLETS AMOUNT	FALL	DEPTH
≥90°:	0	**≤70°:**	31	**≥T:**	17	17	**≥ 5**	27	**≥T:**	3	4
≥85°:	0	**≤65°:**	31	**≥0.01":**	16	17	**≥10**	17	**≥0.1"**	1	3
≥80°:	0	**≤60°:**	31	**≥0.05":**	11	10	**≥15**	6	**≥0.5"**	1	3
≥75°:	0	**≤55°:**	31	**≥0.10":**	7	8	**≥20**	0	**≥1.0"**	0	3
≥70°:	0	**≤50°:**	31	**≥0.15":**	7	6	**≥25**	0	**≥2.0"**	0	0
≥65°:	0	**≤45°:**	30	**≥0.25":**	7	6	**≥30**	0	**≥3.0"**	0	0
≥60°:	0	**≤40°:**	25	**≥0.50":**	5	5	**≥35**	0	**≥4.0"**	0	0
≥55°:	0	**≤35°:**	17	**≥0.75":**	1	2	**≥40**	0	**≥5.0"**	0	0
≥50°:	5	**≤32°:**	9	**≥1.00":**	0	0	**≥45**	0	**≥6.0"**	0	0
≥45°:	17	**≤30°:**	4	**≥1.50":**	0	0	**≥50**	0	**≥8.0"**	0	0
≥40°:	26	**≤28°:**	2	**≥2.00":**	0	0	**≥55**	0	**≥10.0"**	0	0
≥35°:	28	**≤24°:**	0	**≥2.50":**	0	0	**≥60**	0	**≥12.0"**	0	0
≤32°:	1	**≤20°:**	0	**≥3.00":**	0	0	**≥65**	0	**≥15.0"**	0	0

*The Temperature "NUMBER OF DAYS" uses the rounded values per National Weather Service, e.g., ≤32° covers from 31.5° to 32.4°; ≥90° from 89.5° to 90.4°.

NOTES

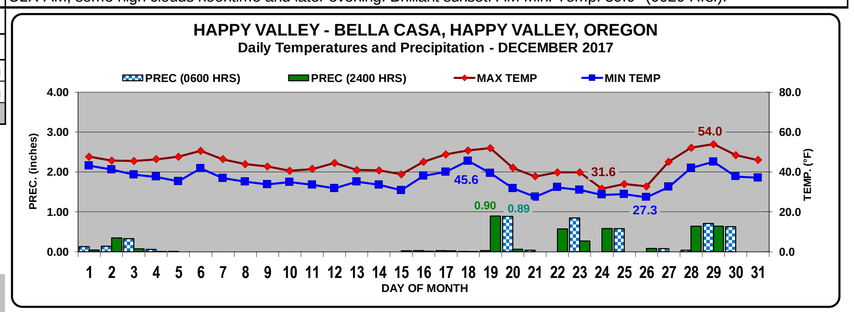
1. **Bold** calendar-date values indicate extremes for the month (**red** indicates maxima, **blue** indicates minima).
2. Precipitation totals may differ between the Observation times (2400 & 0600 Hrs.) due to daily/monthly carryover and gauge types.
3. Precipitation/Snow: T = Trace Amount (Liquid Equivalent <0.005"; Snowfall <0.1": Snow on Ground <0.5").
4. Weather Instrument Locations: Davis Vantage Pro2 (VP2) - Anemometer is 10 feet above ground, all other VP2 sensors and 4-inch Lake Region Rain Gauge (LR) are located 5 feet above ground.
5. Melted amounts of frozen/non-frozen precipitation falling beginning 0845 Hrs. on 12/24 thru 12/28 taken from the Lake Region Gauge due to delayed melting/evaporation in VP2 gauge. Impacted are daily/monthly totals & Number of Days of Precip.

WEATHER EQUIPMENT

Davis Vantage Pro2 (VP2): All Data & 2400-Hr Precipitation. Period of Record: May 29, 2014-Current
4" Lake Region Rain Gauge (LR): 0600-Hr Precipitation. Period of Record: May 10, 2014-Current

WEATHER NETWORKS

Applied Climate Information System (ACIS): HAPPY VALLEY 1.7 ESE
APRSWXNET/CWOP: Call/CW: EW5214; NWS ID: E5214
CoCoRaHS: Happy Valley 1.7 ESE; OR-CC-66 *(0600-Hr Precipitation only)*
Global Historical Climatology Network (GHCN): US1ORCC0066
MADIS (NOAA): Station ID: E5214
MesoWest (Univ. of Utah): EW5214 Happy Valley
Weather Underground: Happy Valley - Bella Casa; KORHAPPY10



MONTHLY WEATHER SUMMARY

TEMPERATURES: Average temperatures were fairly steady throughout the month with a difference between the Maximum and Minimum of only 8.3°. The Average Max/Min/Mean Temperatures Dec. 1st-15th vs. 16th-31st: 44.7°/36.6°/40.6° vs. 43.6°/35.2°/39.4°. There was no unusual warmth or cold - the month only featured 5 days reaching Maximas ≥50° during the month and most of those just barely, while Minimas reached ≤32° on 9 days, including 7 in a row from 20th-26th. The greatest diurnal temperature range was just 12.9° (12th, 19th, 27th), the least only 3.0° (24th), during the only measurable snowfall of the month.

PRECIPITATION: An extended dry period, unusual for December, occurred over much of the first half of the month, caused by persistent High Pressure off of the Pacific Northwest/Southwest British Columbia coasts. After receiving over 1/2" of rain over the first few days to start the month, no rain fell from 5th-14th as skies stayed mostly clear as a steady north wind blew throughout the period. After the High influence finally lessened, more seasonable moisture returned with more than 85% of the month's precip. falling in the second half. The season's first snowfalls occurred the days before Christmas, with nearly an inch accumulating on Christmas Eve, followed by some sleet and freezing rain, sealing the snow depth for a rare White Christmas for this area.

MISCELLANEOUS: Extended period of High Barometric Pressure beginning on the 3rd, with each day reaching at least 30.33", not falling below 30.00" until the 19th. The month saw only 9 clear days, 10 partly cloudy days, and only 11 cloudy days. A total of 16 days with fog were observed, only 4 of which were heavy (<1/4 mile visibility).