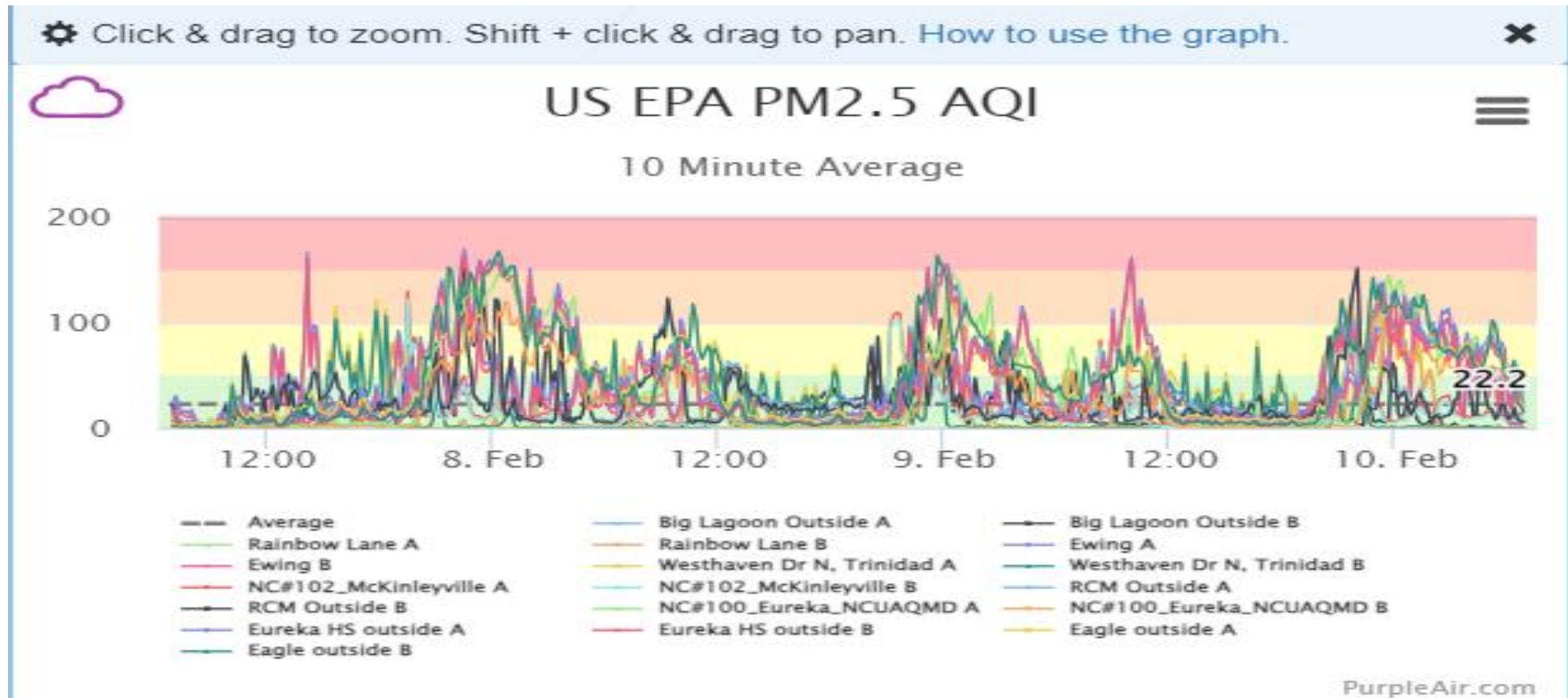


Episode 56QQ February 10, 2024. Auto-calculation of PM2.5 level using RAWSEP Excel template.

Slide 1. Click on 9 Humboldt County California PurpleAir PM2.5 monitors in a row.

The data from each monitor for the last 3 days will appear on a chart. Click on the 3 horizontal lines in the Upper right-hand side of the chart to download the CSV file. Save the file to your hard drive.



Slide 2: This is what the unedited PurpleAir CSV file for 9 monitors in Humboldt County looks like for 2/10/2024 (top, row1 of file down)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	DateTime	Average	Big Lagoon	Big Lagoon	Rainbow L	Rainbow L	Ewing A	Ewing B	Westhaver	Westhaver	NC#102_M	NC#102_M	RCM Outsi	RCM Outsi	NC#100_E	NC#100_E	Eureka HS	Eureka HS	Eagle outsi	Eagle outside B	
2	2/7/2024 7:00	22.2	0	1	0	0	24	19	9	6	0	0	23	22	1	0	18	14	5	2	
3	2/7/2024 7:10		1	0	3	3	30	21	4	2	1	0	9	9	2	0	7	4	1	1	
4	2/7/2024 7:20		1	2	12	11	21	13	1	1	0	0	5	4	1	1	7	4	2	1	
5	2/7/2024 7:30		1	2	0	0	14	13	0	0	0	0	3	3	1	0	6	4	2	0	
6	2/7/2024 7:40		1	0	0	0	16	11	0	0	0	0	3	2	5	1	5	2	4	1	
7	2/7/2024 7:50		1	1	0	0	13	9	0	0	2	1	1	2	3	1	6	3	2	1	
8	2/7/2024 8:00		0	0	0	0	17	12	0	0	3	2	2	1	1	0	6	3	2	0	
9	2/7/2024 8:10		0	0	0	0	10	7	0	0	3	1	1	1	1	0	7	4	4	0	
10	2/7/2024 8:20		0	0	0	0	4	4	0	0	4	3	1	1	2	0	5	4	5	2	
11	2/7/2024 8:30		0	0	0	0	3	2	0	0	2	1	1	0	2	0	5	2	3	1	
12	2/7/2024 8:40		0	0	0	0	2	2	1	1	4	3	1	1	1	0	2	1	3	0	
13	2/7/2024 8:50		0	0	0	0	3	2	1	1	1	0	0	1	4	1	1	0	4	1	
14	2/7/2024 9:00		0	0	0	0	2	2	1	0	0	0	1	1	9	5	1	0	4	0	
15	2/7/2024 9:10		0	0	0	0	1	1	1	0	1	0	1	0	8	6	2	0	2	0	
16	2/7/2024 9:20		0	0	0	0	1	1	1	0	2	1	0	0	6	5	0	0	4	1	
17	2/7/2024 9:30		0	0	0	0	0	1	0	0	1	0	0	0	3	1	13	9	6	2	
18	2/7/2024 9:40		1	1	0	0	0	0	0	0	3	2	13	13	4	2	14	10	6	1	
19	2/7/2024 9:50		1	0	0	0	1	1	0	0	2	1	23	21	1	1	6	2	2	1	
20	2/7/2024 10:00		1	0	0	0	1	1	0	0	8	7	7	6	1	0	5	2	7	5	
21	2/7/2024 10:10		3	2	0	0	2	2	0	0	13	11	16	14	0	0	19	13	44	40	
22	2/7/2024 10:20		1	1	0	0	4	3	23	21	6	4	7	7	0	0	18	14	28	23	
23	2/7/2024 10:30		3	1	0	0	7	3	30	29	3	2	7	6	10	5	14	11	21	13	
24	2/7/2024 10:40		1	0	7	6	23	18	24	22	4	3	7	6	7	6	30	21	14	10	

Slide 3: This is what the unedited PurpleAir CSV file for Humboldt County looks like for 2/10/2024 (bottom, down to row 434 of file)

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
410	2/10/2024 3:00		3	2	0	0	94	86	0	0	21	18	17	14	73	56	77	68	76	73	
411	2/10/2024 3:10		4	4	0	0	96	88	1	0	17	13	25	26	73	57	98	90	71	69	
412	2/10/2024 3:20		1	1	0	0	85	77	1	0	13	11	30	27	76	55	60	55	66	65	
413	2/10/2024 3:30		2	1	0	0	18	13	1	0	12	10	52	51	70	56	70	64	72	71	
414	2/10/2024 3:40		1	0	0	0	10	7	1	0	10	7	47	45	72	58	76	67	78	74	
415	2/10/2024 3:50		1	0	0	0	65	61	0	0	11	7	43	37	66	49	90	82	81	78	
416	2/10/2024 4:00		1	2	0	0	61	56	0	0	9	8	32	35	66	49	71	63	76	74	
417	2/10/2024 4:10		2	1	0	0	56	44	0	0	12	9	13	12	84	60	53	45	62	61	
418	2/10/2024 4:20		1	0	0	0	42	30	0	0	12	9	15	12	86	64	80	72	61	58	
419	2/10/2024 4:30		1	0	0	0	66	59	0	0	12	9	55	55	74	55	68	60	56	56	
420	2/10/2024 4:40		1	0	0	0	54	42	0	0	11	9	50	52	73	57	77	70	60	58	
421	2/10/2024 4:50		1	1	0	0	37	28	0	0	15	12	31	28	72	56	80	72	68	68	
422	2/10/2024 5:00		0	0	0	0	44	30	0	1	14	13	18	17	77	57	87	80	81	78	
423	2/10/2024 5:10		1	0	0	0	58	53	0	0	15	11	16	17	76	53	87	81	100	102	
424	2/10/2024 5:20		0	0	0	0	53	43	0	0	12	10	7	8	74	57	77	70	97	97	
425	2/10/2024 5:30		0	0	3	2	22	17	0	0	11	9	13	12	74	56	72	67	84	80	
426	2/10/2024 5:40		0	0	0	0	49	40	0	0	12	8	24	23	67	53	81	75	71	66	
427	2/10/2024 5:50		0	0	0	0	13	10	0	0	11	8	23	20	56	37	74	65	53	50	
428	2/10/2024 6:00		0	0	0	0	8	6	0	0	10	8	8	8	53	32	34	28	54	52	
429	2/10/2024 6:10		0	0	0	0	5	2	0	0	11	8	11	9	44	25	25	18	56	55	
430	2/10/2024 6:20		0	0	0	0	5	4	0	0	10	7	21	19	42	22	38	32	65	63	
431	2/10/2024 6:30		1	0	0	0	4	3	0	0	11	9	11	8	60	39	39	34	29	24	
432	2/10/2024 6:40		1	0	0	0	5	3	0	0	13	9	7	6	48	26	35	26	24	21	
433	2/10/2024 6:50	22.2	1	0	0	0	7	6	0	0	15	12	6	5	31	17	23	20	20	15	

Slide 4: This is what the edited PurpleAir CSV file for Humboldt County looks like for 2/10/2024. The average column and the B monitors columns have been deleted.

	A	C	E	G	I	K	M	O	Q	S	U
1	DateTime	Big Lagoon	Rainbow L	Ewing A	Westhaver	NC#102_M	RCM Outsi	NC#100_E	Eureka HS	Eagle outside A	
2	2/7/2024 7:00	0	0	24	9	0	23	1	18	5	
3	2/7/2024 7:10	1	3	30	4	1	9	2	7	1	
4	2/7/2024 7:20	1	12	21	1	0	5	1	7	2	
5	2/7/2024 7:30	1	0	14	0	0	3	1	6	2	
6	2/7/2024 7:40	1	0	16	0	0	3	5	5	4	
7	2/7/2024 7:50	1	0	13	0	2	1	3	6	2	
8	2/7/2024 8:00	0	0	17	0	3	2	1	6	2	
9	2/7/2024 8:10	0	0	10	0	3	1	1	7	4	
10	2/7/2024 8:20	0	0	4	0	4	1	2	5	5	
11	2/7/2024 8:30	0	0	3	0	2	1	2	5	3	
12	2/7/2024 8:40	0	0	2	1	4	1	1	2	3	
13	2/7/2024 8:50	0	0	3	1	1	0	4	1	4	
14	2/7/2024 9:00	0	0	2	1	0	1	9	1	4	
15	2/7/2024 9:10	0	0	1	1	1	1	8	2	2	
16	2/7/2024 9:20	0	0	1	1	2	0	6	0	4	
17	2/7/2024 9:30	0	0	0	0	1	0	3	13	6	
18	2/7/2024 9:40	1	0	0	0	3	13	4	14	6	
19	2/7/2024 9:50	1	0	1	0	2	23	1	6	2	
20	2/7/2024 10:00	1	0	1	0	8	7	1	5	7	
21	2/7/2024 10:10	3	0	2	0	13	16	0	19	44	
22	2/7/2024 10:20	1	0	4	23	6	7	0	18	28	
23	2/7/2024 10:30	3	0	7	30	3	7	10	14	21	
24	2/7/2024 10:40	1	7	23	24	4	7	7	30	14	

Slide 5) This is what the Top of the empty Excel RAWSEP template for multiple monitor auto-calculation looks like for under 10 monitors. There are 9 monitors for Humboldt County in the CSV download. Notice that N2 is the auto-calculation referring to B2, =IF(D18<>"", (D18*0.514)+1.8304,"") This calculation changes the Downloaded PurpleAir data for the first 10 minutes of a 3-day period to data correlated to EPA AirNow Maps of Smoke & Fire. This calculation continues down all 434 rows on the sheet for column N, and continues across all columns to Column V. This auto-calculation is for N2:V434

Slide 6. Copy and paste the CSV file into the yellow area of the demonstration picture. This is how the top of the Excel RAWSPE auto-calculates (Pa *0.514)+1.8304 to correlate to the EPA standard in cells N2:V434

	N2	DateTime	Big Lagoon	Rainbow L	Ewing A	Westhaver	NC#102_N	RCM	Outsi	NC#100_E	Eureka HS	Eagle outside A	L	M	Date	Time	Big Lagoon	Rainbow L	Ewing A	Westhaver	NC#102_N	RCM	Outsi	NC#100_E	Eureka HS	Eagle outs
1		2/7/2024 7:00	0	0	24	9	0	23	1	18	5			2/7/24	7:00	2	2	14	6	2	14	2	11	4		
2		2/7/2024 7:10	1	3	30	4	1	9	2	7	1			2/7/24	7:10	2	3	17	4	2	6	3	5	2		
3		2/7/2024 7:20	1	12	21	1	0	5	1	7	2			2/7/24	7:20	2	8	13	2	2	4	2	5	3		
4		2/7/2024 7:30	1	0	14	0	0	3	1	6	2			2/7/24	7:30	2	2	9	2	2	3	2	5	3		
5		2/7/2024 7:40	1	0	16	0	0	3	5	5	4			2/7/24	7:40	2	2	10	2	2	3	4	4	4		
6		2/7/2024 7:50	1	0	13	0	2	1	3	6	2			2/7/24	7:50	2	2	9	2	3	2	3	5	3		
7		2/7/2024 8:00	0	0	17	0	3	2	1	6	2			2/7/24	8:00	2	2	11	2	3	3	2	5	3		
8		2/7/2024 8:10	0	0	10	0	3	1	1	7	4			2/7/24	8:10	2	2	7	2	3	2	2	5	4		
9		2/7/2024 8:20	0	0	4	0	4	1	2	5	5			2/7/24	8:20	2	2	4	2	2	3	4	4	4		
10		2/7/2024 8:30	0	0	3	0	2	1	2	5	3			2/7/24	8:30	2	2	3	2	3	2	3	4	3		
11		2/7/2024 8:40	0	0	2	1	4	1	1	2	3			2/7/24	8:40	2	2	3	2	4	2	2	3	3		
12		2/7/2024 8:50	0	0	3	1	1	0	4	1	4			2/7/24	8:50	2	2	3	2	2	2	4	2	4		
13		2/7/2024 9:00	0	0	2	1	0	1	9	1	4			2/7/24	9:00	2	2	3	2	2	2	6	2	4		
14		2/7/2024 9:10	0	0	1	1	1	1	8	2	2			2/7/24	9:10	2	2	2	2	2	2	6	3	3		
15		2/7/2024 9:20	0	0	1	1	2	0	6	0	4			2/7/24	9:20	2	2	2	2	3	2	5	2	4		
16		2/7/2024 9:30	0	0	0	0	1	0	3	13	6			2/7/24	9:30	2	2	2	2	2	2	3	9	5		
17		2/7/2024 9:40	1	0	0	0	3	13	4	14	6			2/7/24	9:40	2	2	2	2	3	9	4	9	5		
18		2/7/2024 9:50	1	0	1	0	2	23	1	6	2			2/7/24	9:50	2	2	2	2	3	14	2	5	3		
19		2/7/2024 10:00	1	0	1	0	8	7	1	5	7			2/7/24	10:00	2	2	2	2	6	5	2	4	5		
20		2/7/2024 10:10	3	0	2	0	13	16	0	19	44			2/7/24	10:10	3	2	3	2	9	10	2	12	24		
21		2/7/2024 10:20	1	0	4	23	6	7	0	18	28			2/7/24	10:20	2	2	4	14	5	5	2	11	15		
22		2/7/2024 10:30	3	0	7	30	3	7	10	14	21			2/7/24	10:30	3	2	5	17	3	5	7	9	13		
23		2/7/2024 10:40	1	7	23	24	4	7	7	30	14			2/7/24	10:40	2	5	14	14	4	5	5	17	9		

Slide 7: This is how the Excel RAWSEP Template auto-calculates average for each of the 9 monitors in this partial snapshot of Humboldt County, California PurpleAir PM2.5 monitors, and % of time at or above 9, 15, 25, 35, 45, 55, 65, and 75 micrograms per cubic meter in a 3-day period in cells M447:V458 .

B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
446											count >75	2	0	1	0	0	1	8	25	15	
447											Average PM2.5	13	8	19	9	9	16	23	28	28	
448											%>= 9 ug/m3	50%	21%	74%	27%	26%	70%	54%	70%	71%	
449											%>= 15 ug/m3	29%	17%	47%	19%	15%	36%	52%	55%	58%	
450											%>= 25 ug/m3	16%	13%	26%	10%	7%	17%	40%	45%	47%	
451											%>= 35 ug/m3	7%	9%	14%	5%	4%	7%	32%	36%	35%	
452											%>= 45 ug/m3	3%	3%	8%	2%	1%	4%	20%	24%	23%	
453											%>= 55 ug/m3	1%	1%	2%	1%	1%	2%	14%	15%	14%	
454											%>= 65 ug/m3	1%	0%	0%	0%	0%	1%	7%	9%	7%	
455											%>= 75 ug/m3	0%	0%	0%	0%	0%	0%	2%	6%	3%	
456											Big Lagoon	Rainbow	L Ewing A	Westhaver NC#102_N RCM Outsi	NC#100_E Eureka HS	Eagle outside A					
457											CA, Humboldt	CA, Humboldt	CA, Humboldt	CA, Humboldt	CA, Humboldt	CA, Humboldt	CA, Humboldt	CA, Humboldt	CA, Humboldt	CA, Humboldt County	
458											# of monitor	1	2	3	4	5	6	7	8	9	
459											Episode 56QP2 February 10, 2024. County Snapshot (Humboldt County, CA, partial). PM2.5 % and level in micrograms per cubic meter										
460																					
461																					
462																					
463																					
464																					
465																					
466																					
467																					
468																					
469																					

Slide 8: Here is a larger view of the data correlated to EPA AirNow Maps of Smoke and Fire standards and with auto-calculation of average for each monitor over 3 days and % at or over 9, 15, 25, 35, 45, 55, 65, 75 micrograms per cubic meter in a 3-day period.