

Shafter AB 617 Community: PM2.5 Monitoring at La Colonia

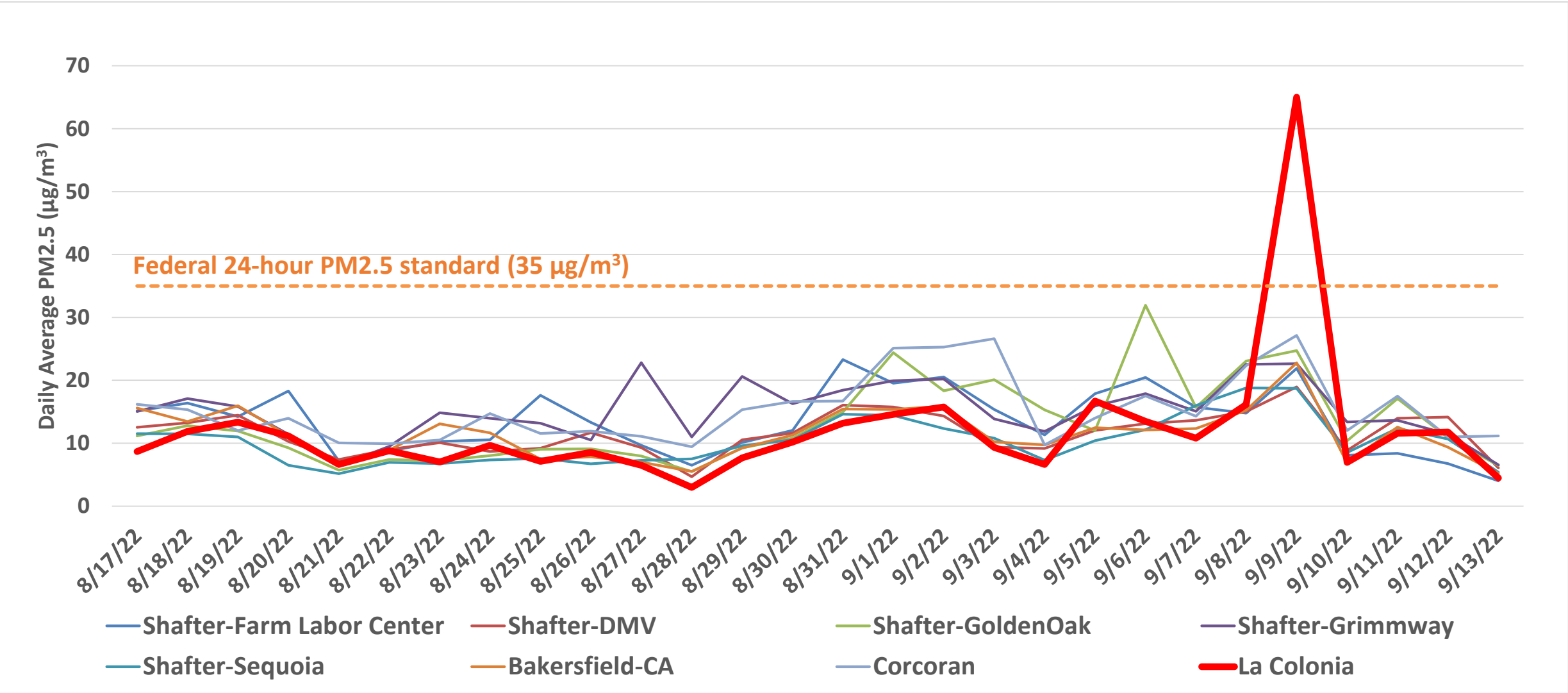
February 13, 2023

PM2.5 Monitoring at La Colonia

- A special purpose PM2.5 monitor was placed in La Colonia on August 17, 2022
- PM2.5 measured from August 17th to September 15th

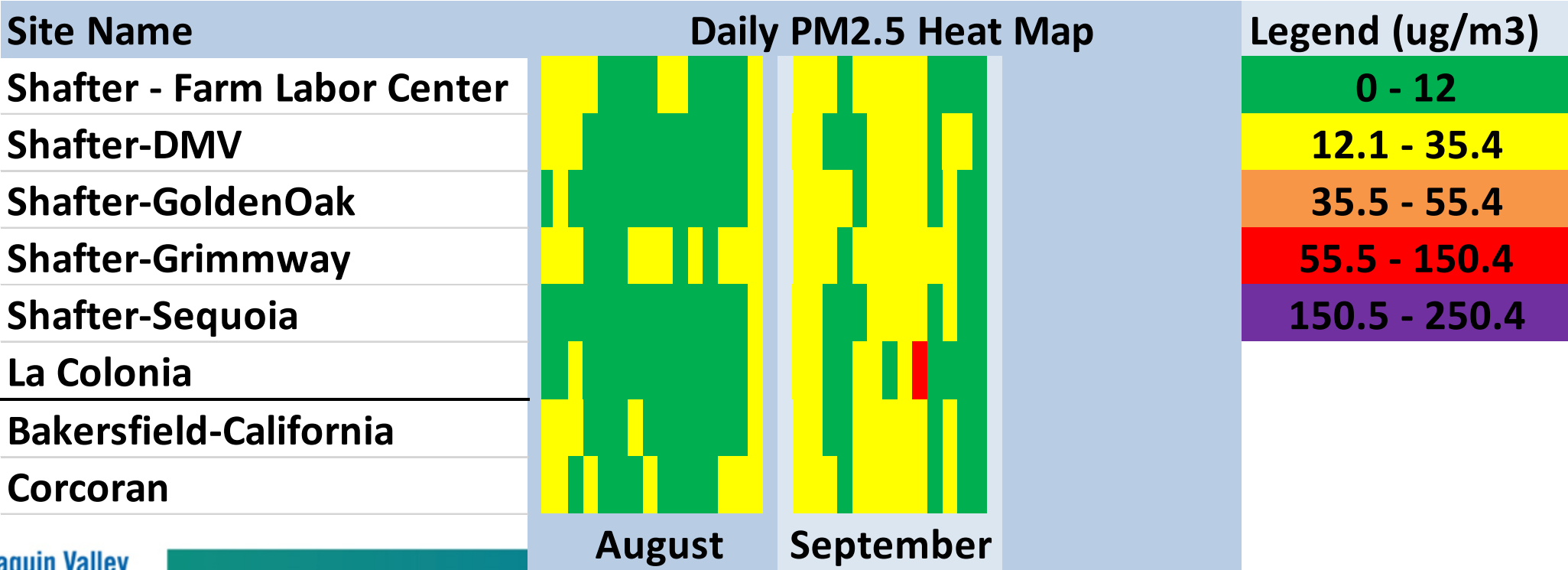


Comparison of La Colonia PM2.5 to Nearby Sites



Comparison of La Colonia PM2.5 to Federal Standards

- Air Quality Index (AQI) is based on daily average PM2.5
- 28 total monitoring dates from 8/17/22 through 9/13/22
- Highest PM2.5 daily average was La Colonia, 9/9/22 – Unhealthy AQI (red) category



Visible Emissions on September 9, 2022



- Highest PM_{2.5} value was during the early morning
- Video surveillance shows dust and tractor activity during the same hour

Visible Emissions on September 9, 2022



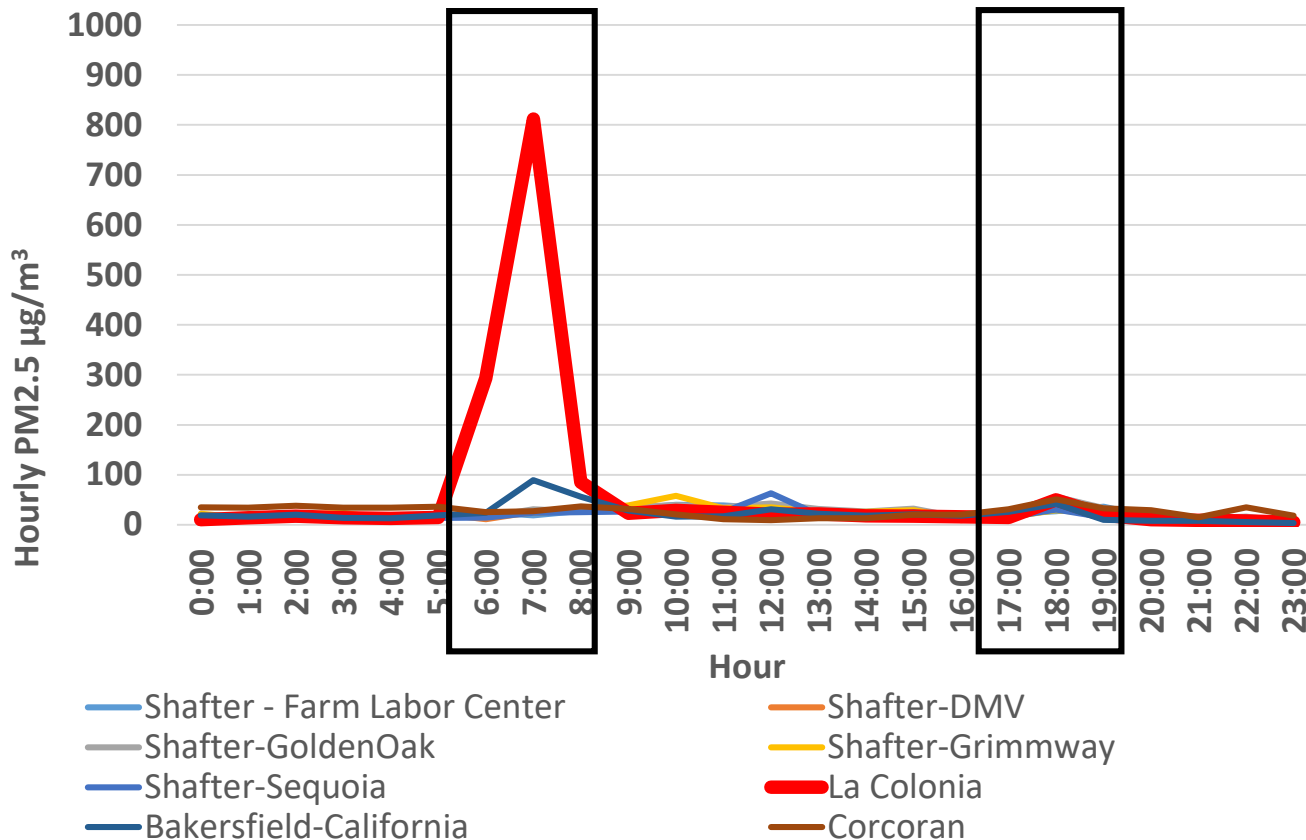
0:00	10
1:00	14
2:00	17
3:00	14
4:00	13
5:00	15
6:00	293
7:00	812
8:00	85
9:00	23
10:00	29
11:00	25
12:00	21
13:00	22
14:00	18
15:00	17
16:00	16
17:00	15
18:00	50
19:00	19
20:00	10
21:00	9
22:00	8
23:00	5

- There was a dramatic increase in PM2.5 levels when on-field ag activity occurred
- The PM2.5 levels return to normal in the later morning hours

Comparison of La Colonia PM2.5 to Nearby Sites

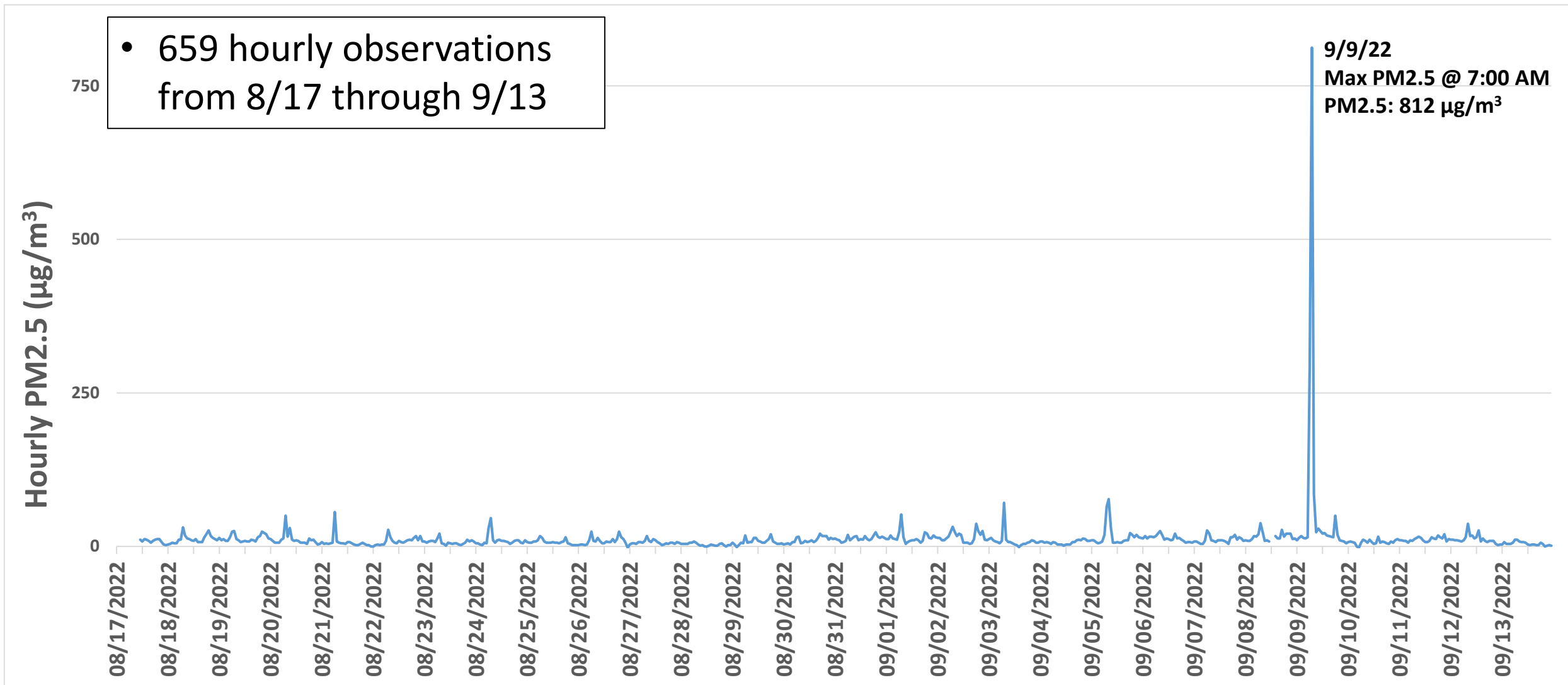
September 9, 2022

- Black boxes below show peak PM2.5 concentrations at La Colonia compared to other sites on this date.

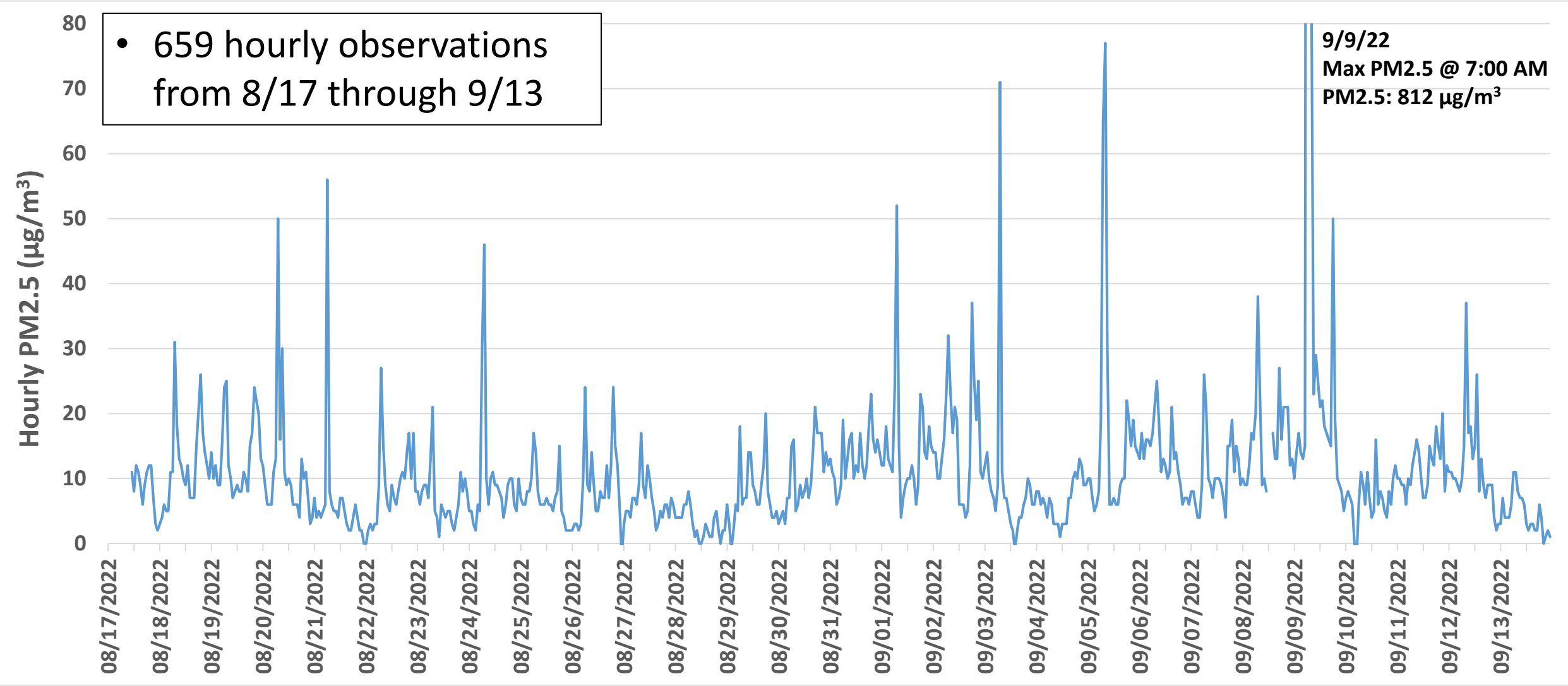


Max Site	Hour 7 PM2.5	Hour 8 PM2.5	Hour 17 PM2.5	Hour 18 PM2.5	Hour 19 PM2.5	24-hour Average
La Colonia	812	85	15	50	19	65
Shafter - Farm Labor Center	19	28	22	27	36	21.8
Shafter-DMV	26	28	19	34	16	18.9
Shafter-GoldenOak	31.1	26.8	20.7	56	33.5	24.7
Shafter-Grimmway	24	29	16	29	22	22.6
Shafter-Sequoia	24.1	25.6	15.2	30.1	15.3	18.7
Bakersfield -California	89.4	56.3	26.2	42.1	9.7	22.7

Hourly PM2.5 – La Colonia

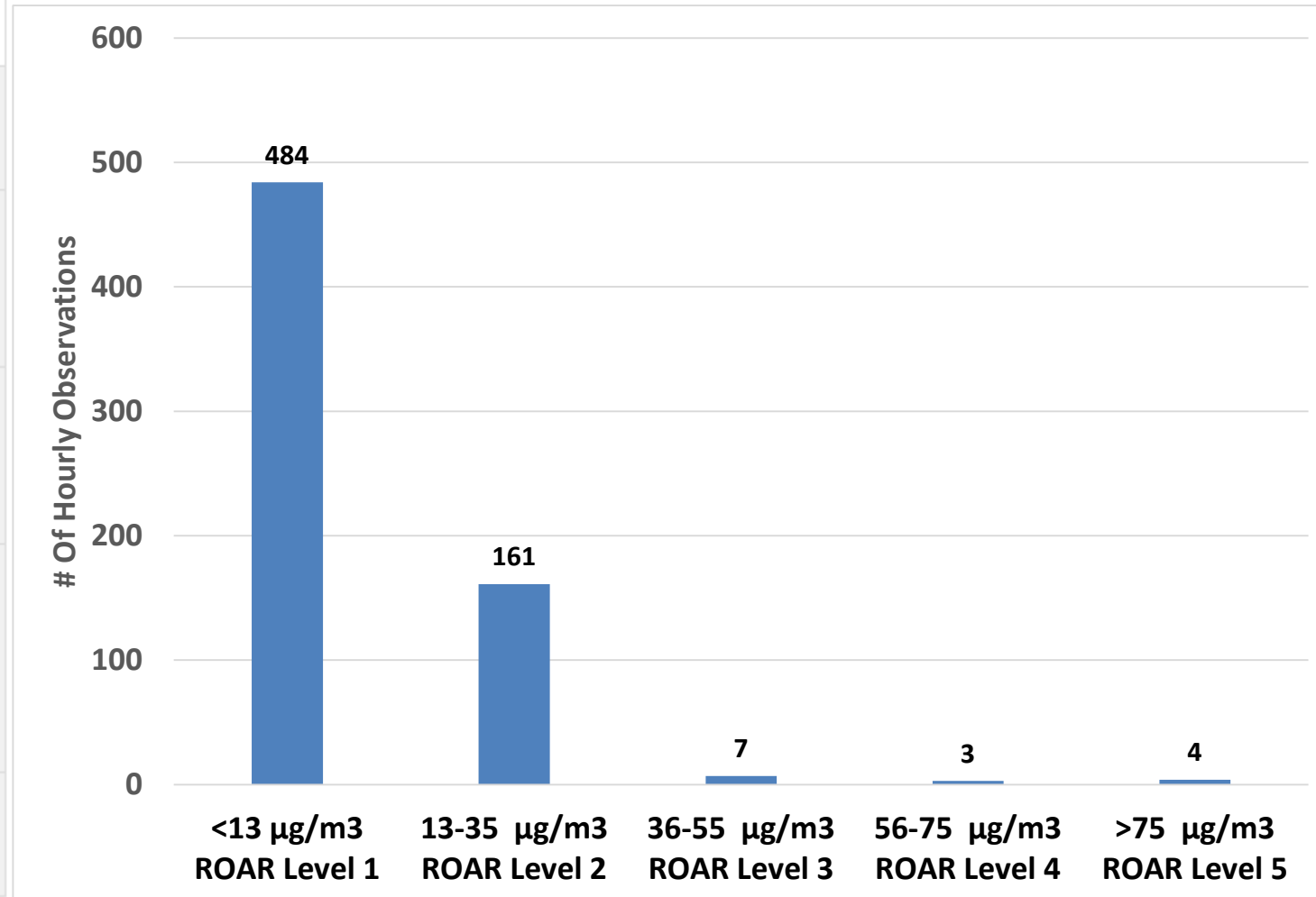


A Closer Look: Hourly PM2.5 – La Colonia



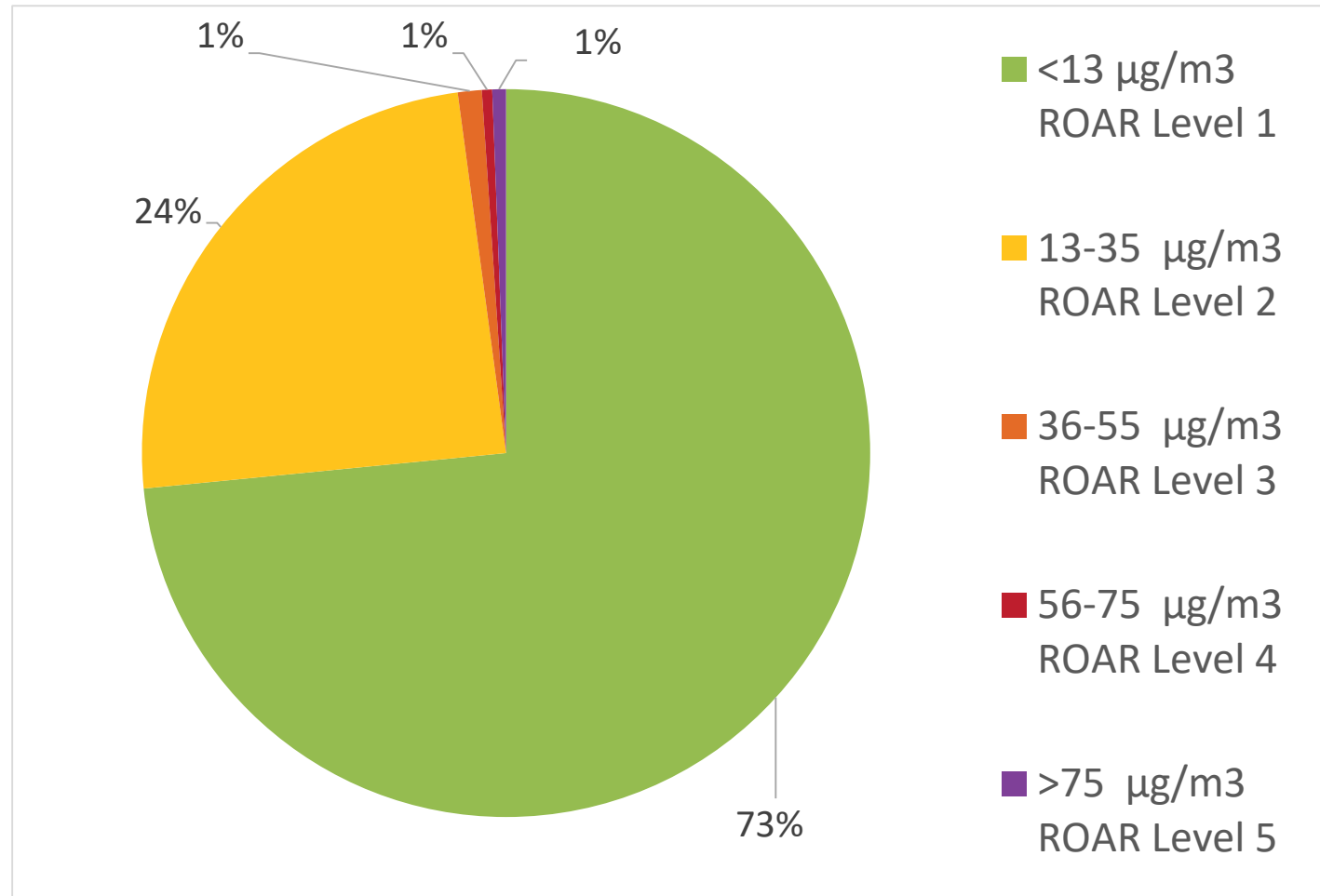
Comparison of Hourly PM2.5 to Real-time Outdoor Activity Risk (ROAR) Guidelines

ROAR Level	Guidelines
LEVEL 1	Outdoor activity OK for all
LEVEL 2	Sensitive individuals should consider reducing prolonged and/or vigorous outdoor activities.
LEVEL 3	Sensitive individuals should exercise indoors or avoid vigorous activities.
LEVEL 4	Sensitive individuals should exercise indoors. Everyone should avoid prolonged or vigorous outdoor activities.
LEVEL 5	Everyone should avoid outdoor activity.



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Summary

- Hourly PM_{2.5} above ROAR Level 3 was 2% of the readings during the van monitoring period in August & September 2022
 - 14 hours of 659 hours had PM_{2.5} > 35 µg/m³
- Max hourly PM_{2.5} readings occurred on 9/9/22 when dust from nearby fields was blown toward the van in the La Colonia community
- Except on 9/9/22, average PM_{2.5} concentrations in La Colonia similar to other nearby monitors

Next Steps

- Community feedback on severity and frequency of the dust-generating activity in the area
- District to investigate available incentive funding to replace dirtier equipment with low-dust equipment
- District action to review for compliance with applicable dust mitigation rules and regulations