

Update on Shafter Community Air Monitoring

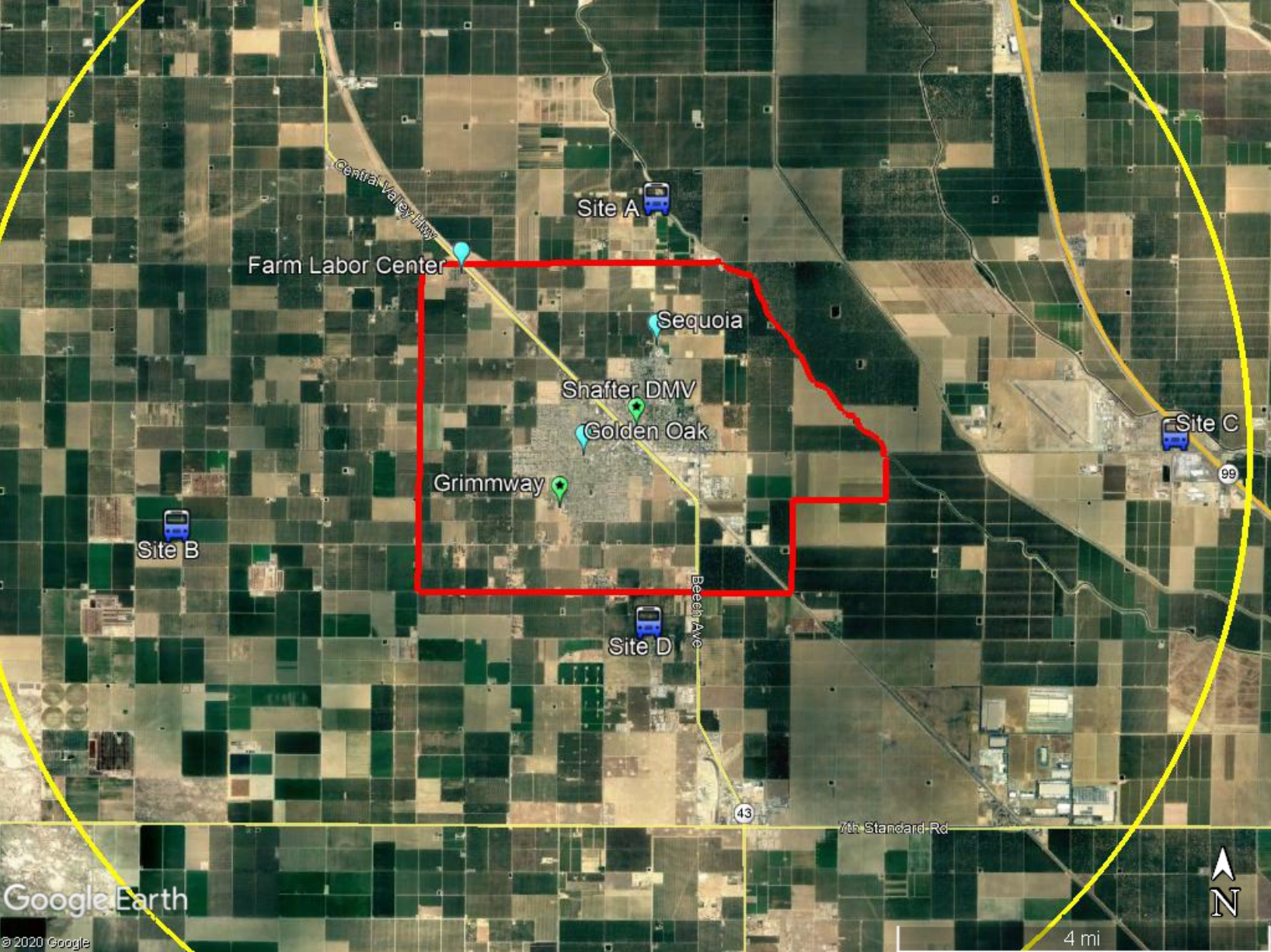
Shafter CSC
Air Monitoring Subcommittee Meeting

September 22, 2020

Purpose of Subcommittee Meeting

- Committee members recently submitted list of specific questions regarding air monitoring
 - Will walk through questions, provide information, and have open discussion
- Request for feedback from committee on best format to present community air monitoring data
 - Will help District when compiling data for ongoing quarterly air monitoring reports

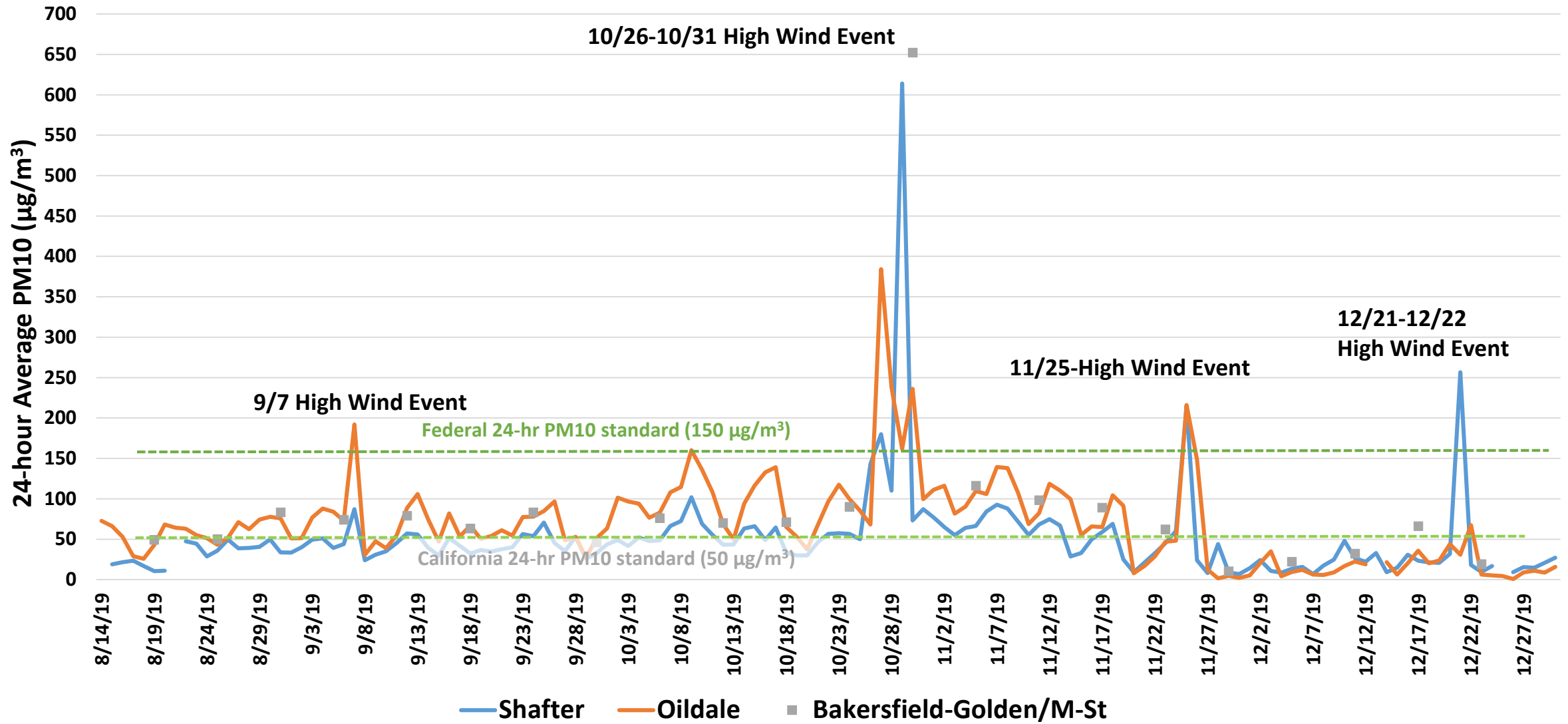
Shafter Community Air Monitoring Network Design



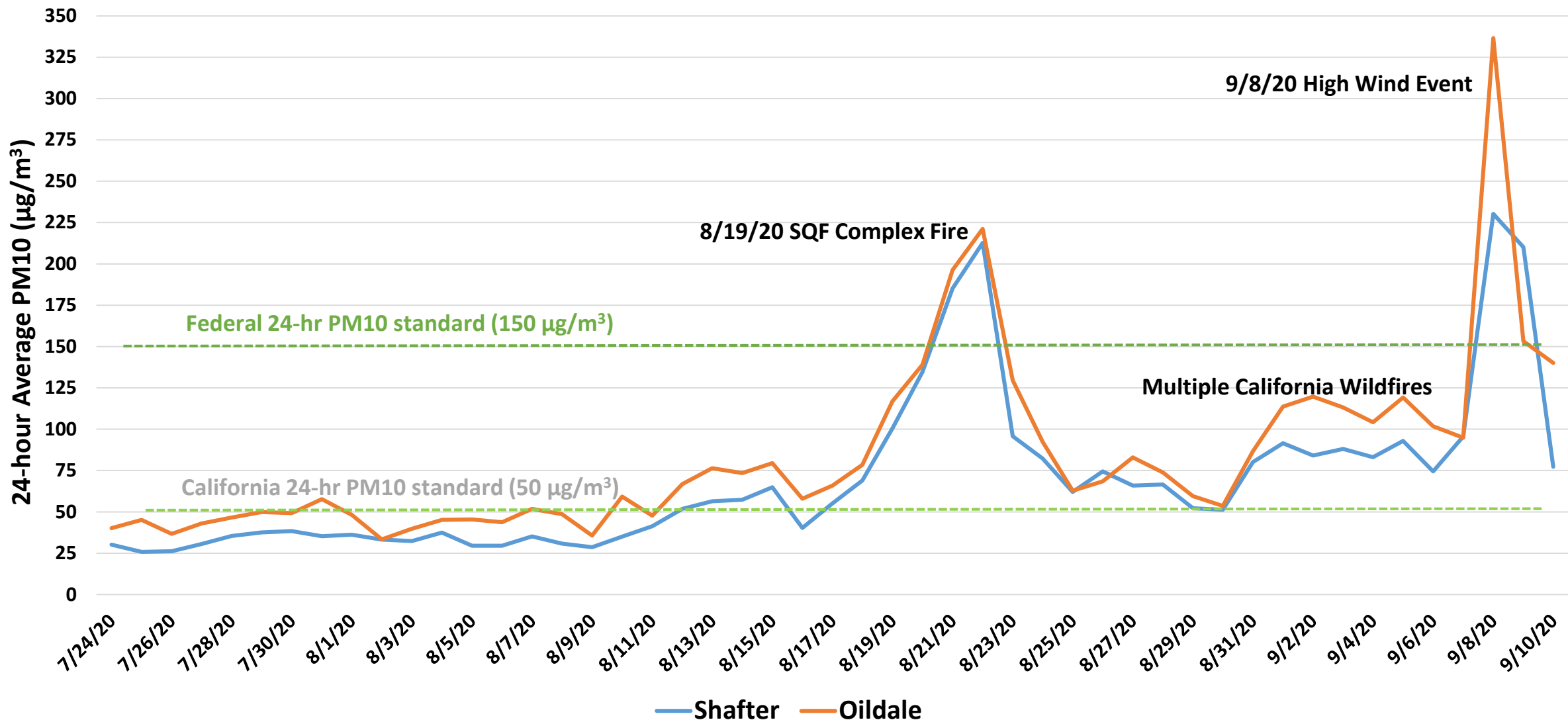
Availability and Comparison of PM10 Data

- Request: Make available all PM10 data measured in Shafter so that a comparison with other Kern County locations can be made
 - *At request of Shafter CSC, District worked with CARB to install PM10 monitor at Shafter-DMV site*
 - *District has uploaded to CARB AQview website all PM10 data collected in 2019*
 - *Data can be accessed at <https://aqview.arb.ca.gov/data.html>*
- Request: Provide a comparison of Shafter PM10 to other PM10 monitors in Kern County, days when state and federal standards were exceeded, and contributions from wildfire smoke

2019 PM10 Daily Average Comparison



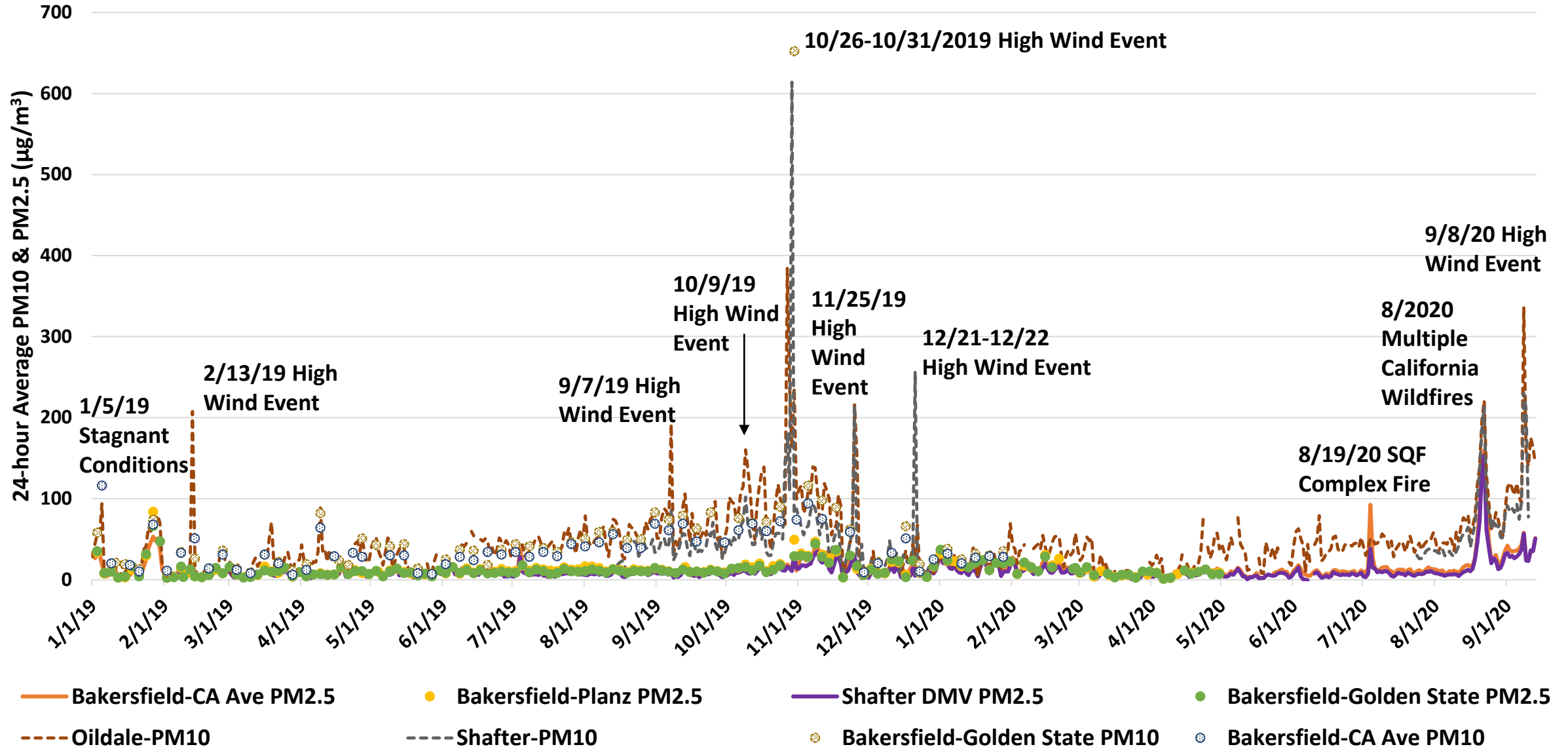
2020 PM10 Daily Average Comparison



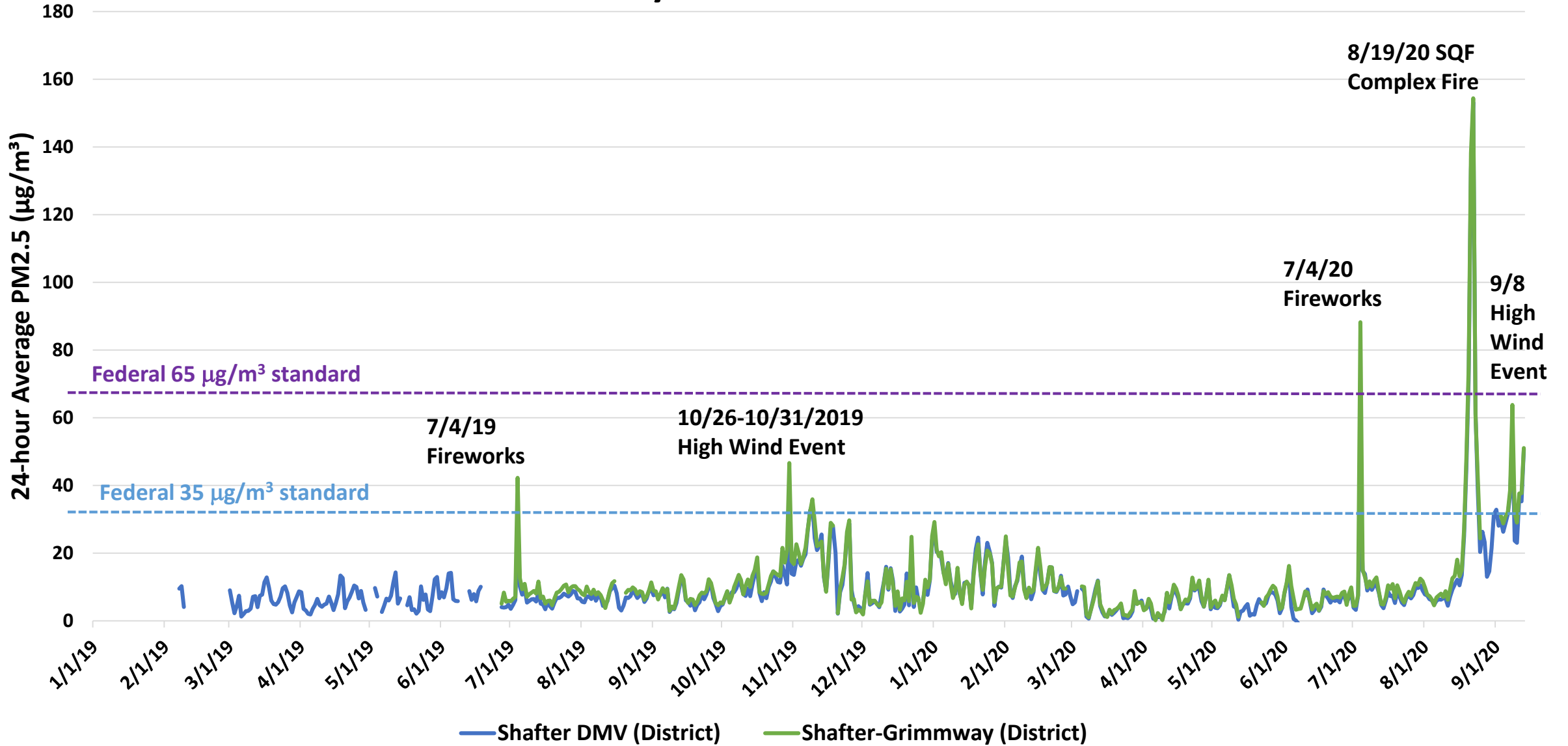
PM2.5 Data Comparison

- Request: Comparison between PM10 and PM2.5
- Request: Comparison of PM2.5 data between Grimmway and DMV air monitoring sites
- Request: Comparison of PM2.5 between Shafter PM2.5 sites and other PM2.5 monitors in Kern County
- Request: Comparison between PurpleAir PM2.5 readings between DMV, Bakersfield-California, and Bakersfield Airport sites
- Request: Note differences and potential causes

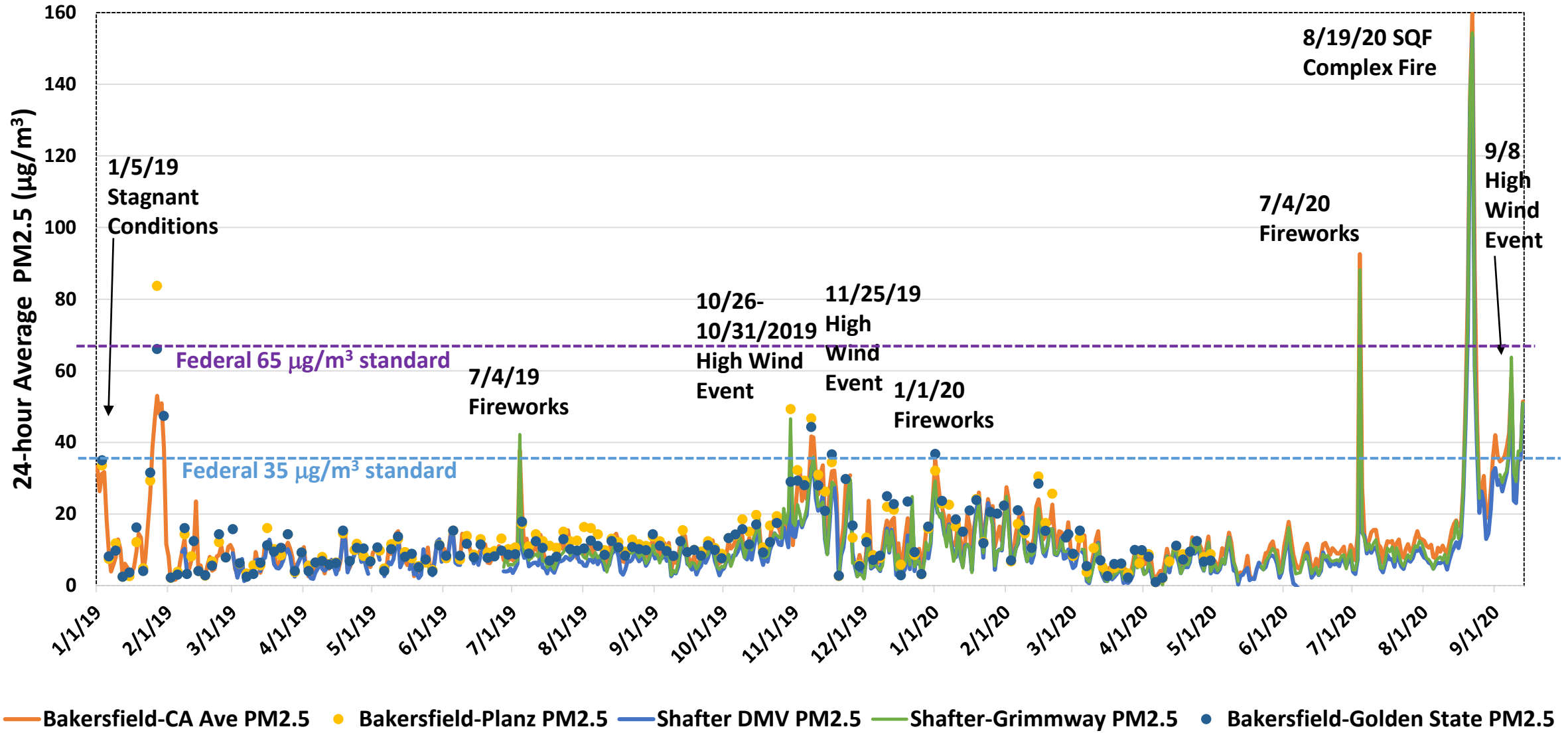
Kern County PM2.5 and PM10



Grimmway and Shafter-DMV PM2.5

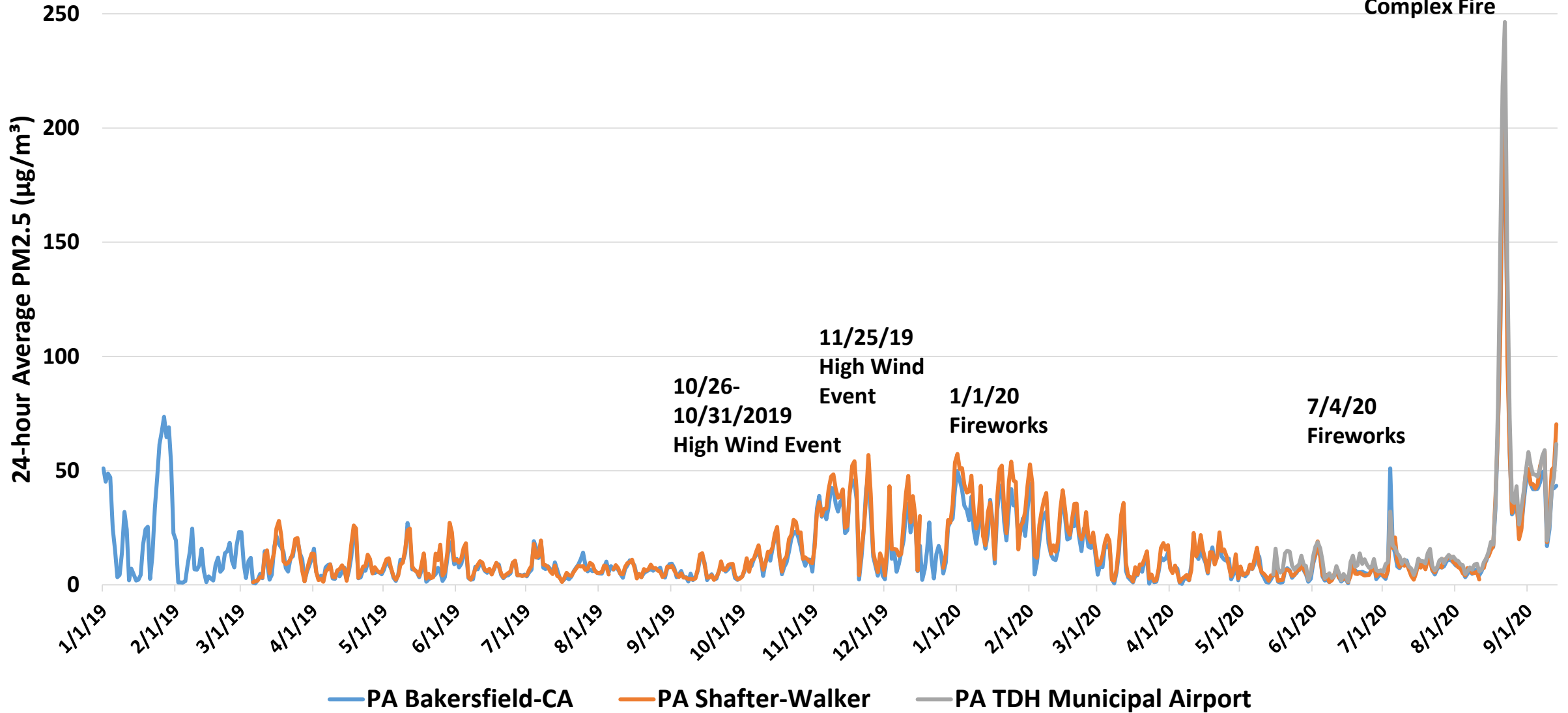


PM2.5 in Shafter and Kern County



Shafter and Bakersfield PurpleAir PM2.5 Comparison

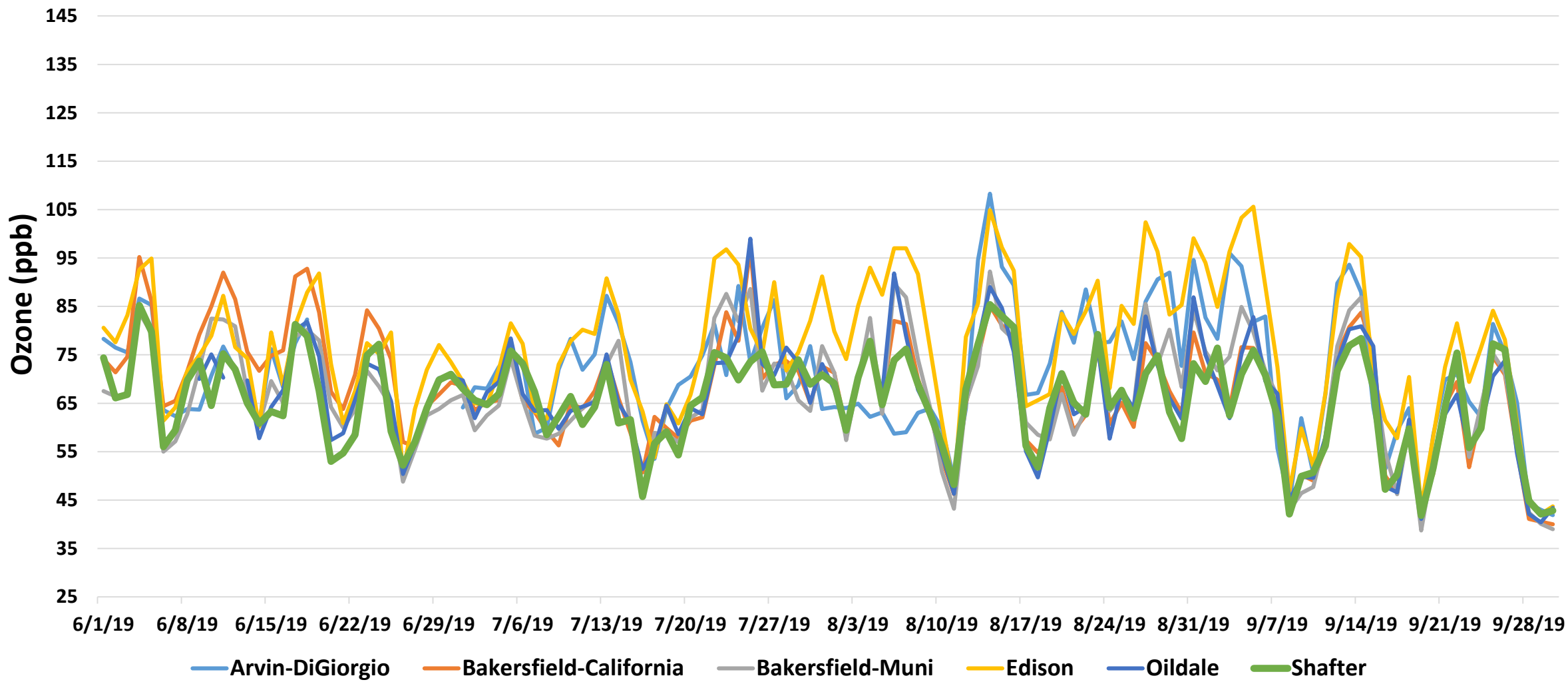
8/19/20 SQF
Complex Fire



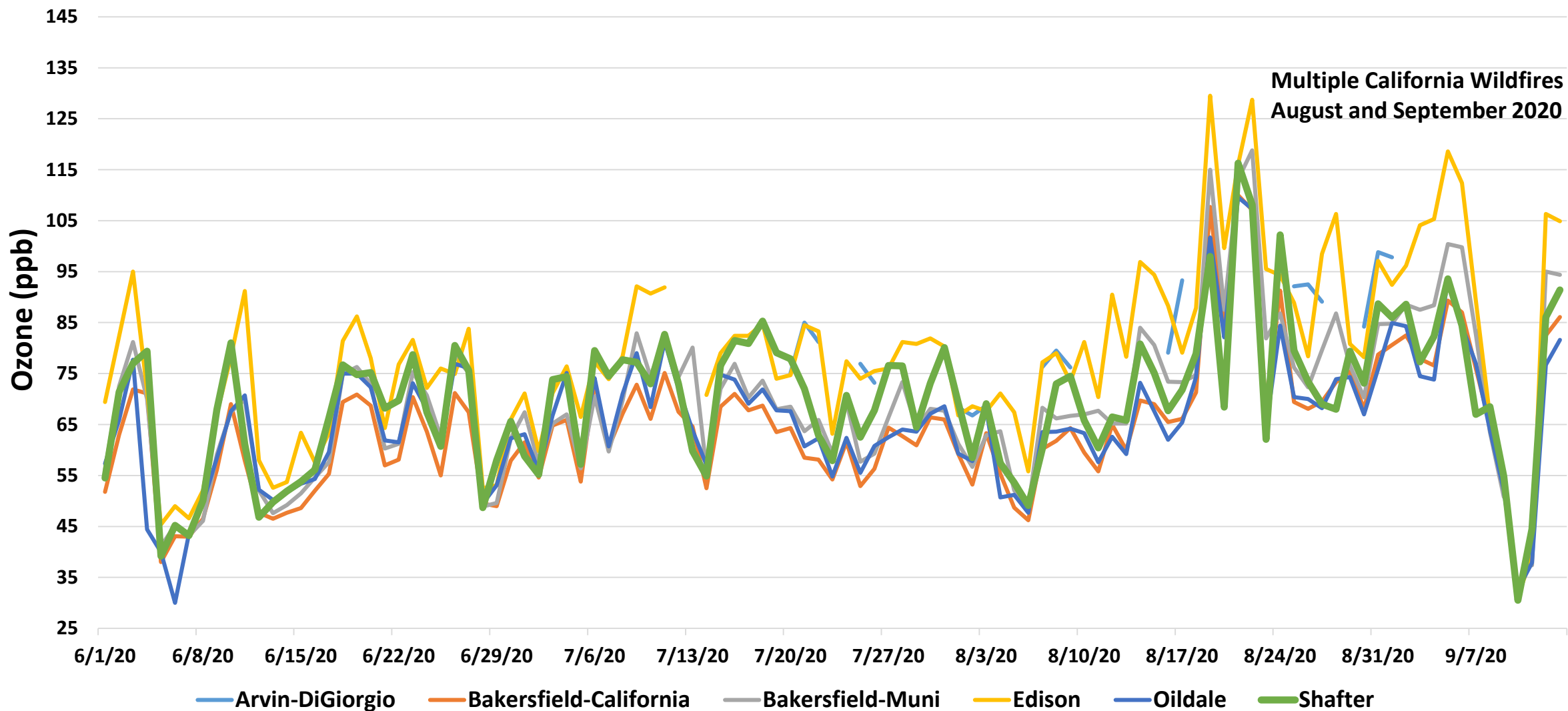
Ozone Data Comparison

- Request: Compare ozone data from Shafter to other Kern County ozone monitors
- Request: Show what time of day each ozone site commonly reaches peak concentration

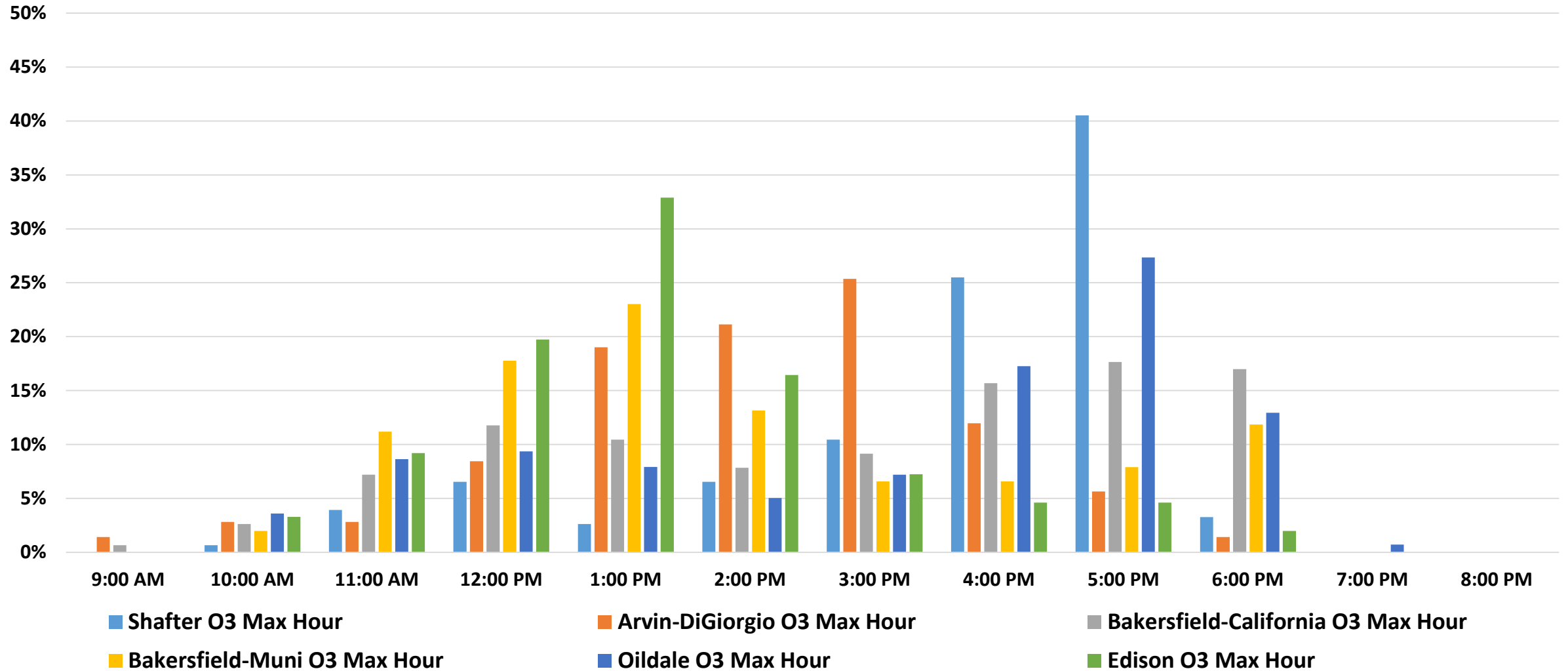
2019 Comparison of Max Hourly Ozone Value per Day



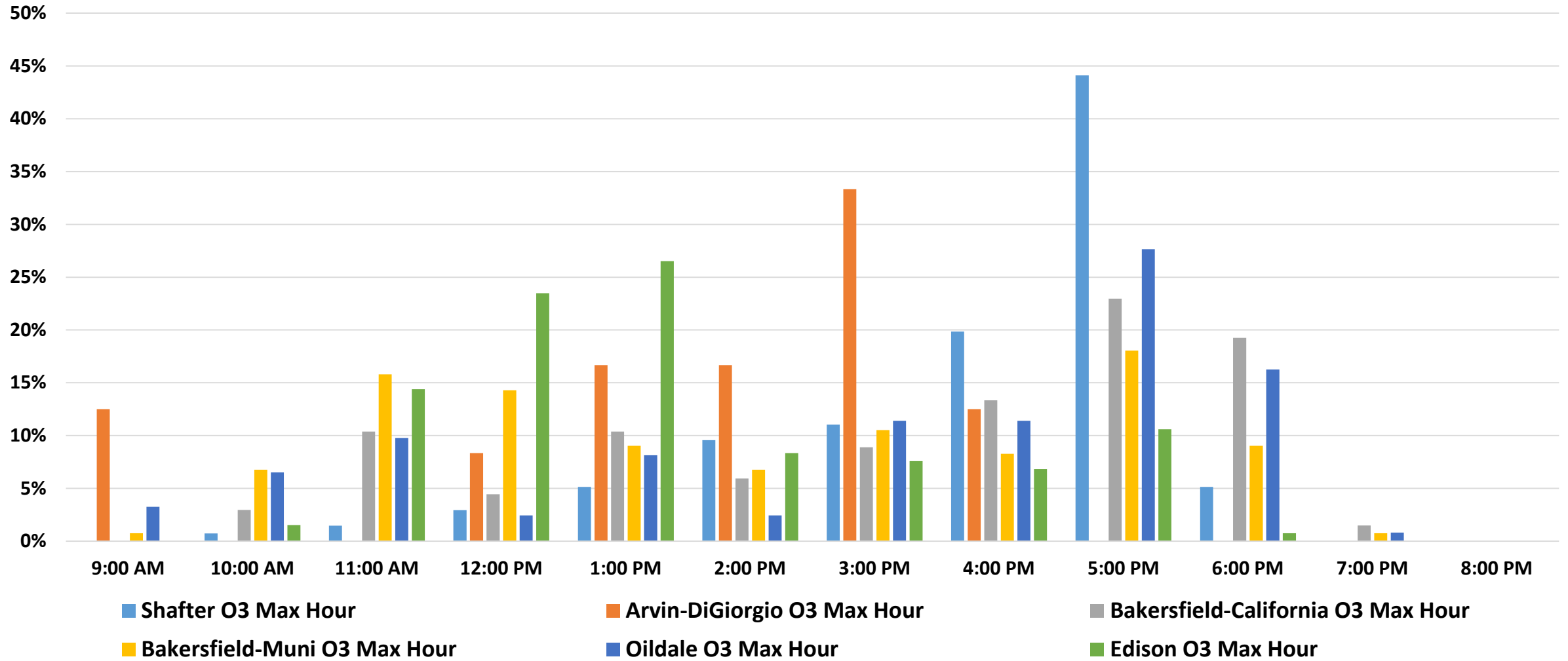
2020 Comparison of Max Hourly Ozone Value per Day



2019 Frequency of Peak 1-hr Ozone Hour (May through September)



2020 Frequency of Peak 1-hr Ozone Hour (May through September 13)



Availability of Mobile Air Monitoring Data

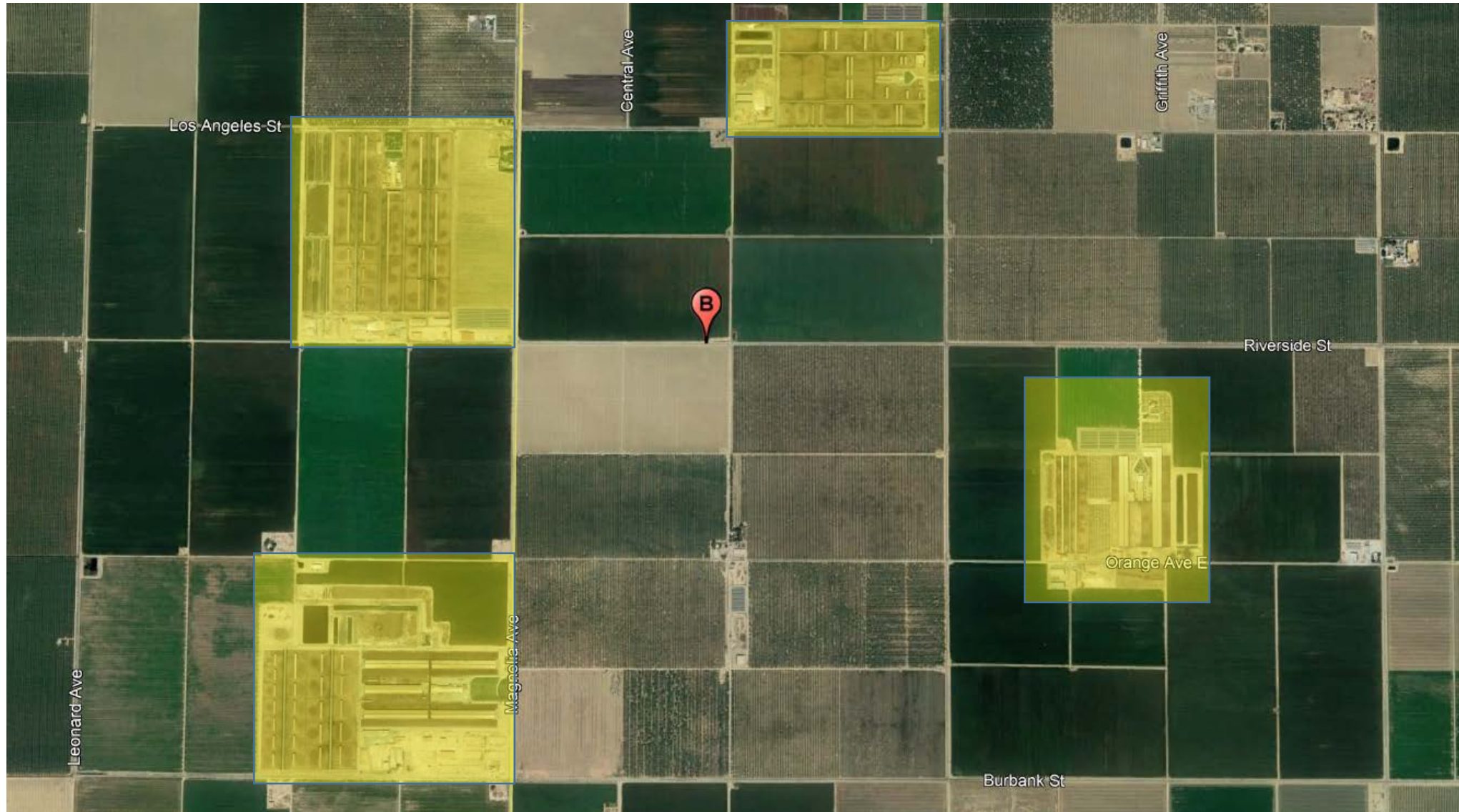
- Request: Data from mobile air monitoring van should be made available to the public
 - *District working on placing data on Shafter community air monitoring website for community member review*
 - *Posted data will include locations, frequency, time of day, and results*
- Request: Significant BTEX and other VOC detections near oil field operations within 1 mile of Sequoia Elementary and within 1 mile of Mexican Colony should be examined
 - *Data collected at Sequoia Elementary and Mexican Colony will be included in posted dataset*
 - *District continues to seek community feedback on where else van could be used in these areas*

Summary of Air Monitoring Van Data

January 2020 - Present

Pollutant	Maximum Hourly Concentration	Location Detected
Carbon Monoxide (CO)	1 ppm	Site D (Mexican Colony)
Nitrogen Dioxide (NO ₂)	35 ppb	Site D (Mexican Colony)
Ozone (O ₃)	86 ppb	Golden Oak Elementary
Sulfur Dioxide (SO ₂)	16 ppb	Sequoia Elementary
Hydrogen Sulfide (H ₂ S)	5 ppb	Golden Oak Elementary
PM _{2.5}	38 µg/m ³ (wildfire smoke)	Golden Oak Elementary
PM ₁₀	302 µg/m ³ (blowing dust)	Shafter-DMV
BTEX	No measurable values	--

Measurements near Dairies West of Shafter



Measurements near Dairies West of Shafter (cont'd)

- Request: VOC and ammonia emissions near dairies west of Shafter should continue to be measured and noted
 - *Site B west of Shafter is located in the center of 4 different dairies all within one mile of each other*
 - *Mobile van measurements of BTEX (subset of VOCs) did not detect any measurable values in this area (8 different days of monitoring)*
 - *H₂S averaged around 1 ppb; SO₂ averaged around 2 ppb*
 - *Site B readings inline with measurements at other locations where van has been used*
 - *District will continue to take measurements in this area as part of CAMP*

Availability of Shafter Pesticide Monitoring Data

- Request: Make available most recent Shafter pesticide monitoring results from Department of Pesticide Regulation
 - *District recently included links to DPR pesticide data on Shafter community air monitoring website located at:*
<http://community.valleyair.org/selected-communities/shafter/community-air-monitoring/>

The screenshot shows a website titled "Pesticide Air Monitoring" with a dark header. Below the header, there are three main columns of content, each with a blue button at the top and a dark grey box containing text below it.

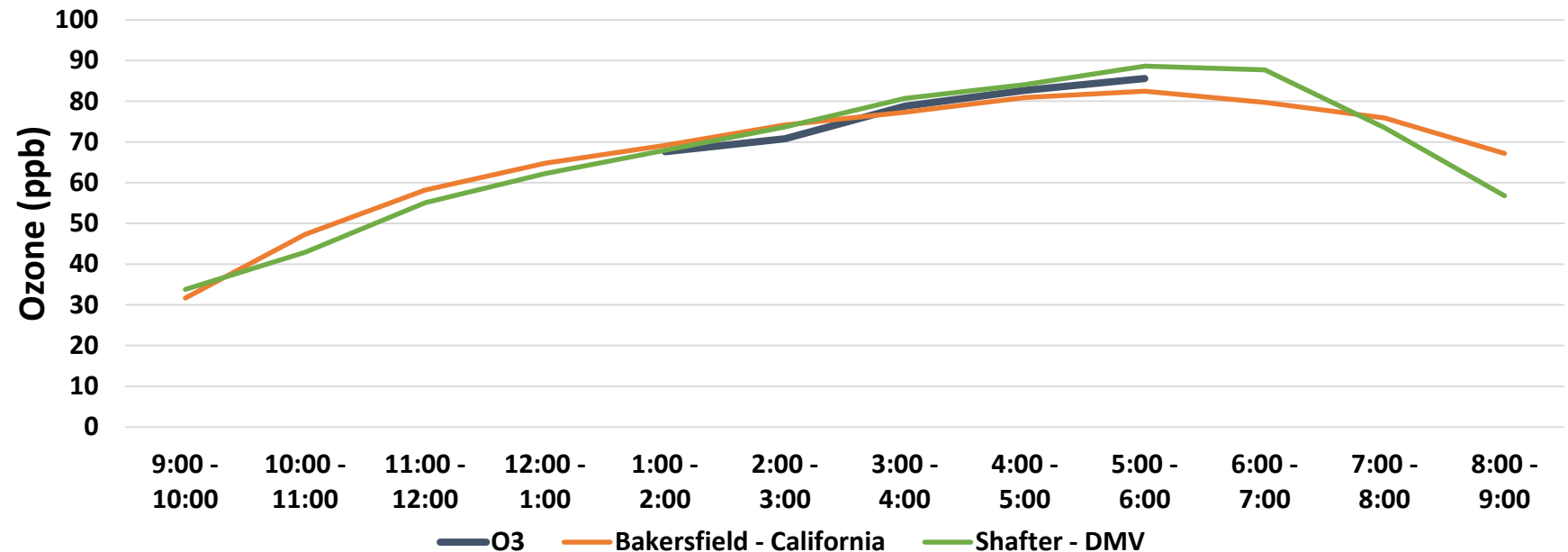
- Air Monitoring Network**
 - Information about Network (DPR site selection and equipment requirements)
 - 2019 Air Monitoring Network Report (see appendix G, page 84, for Shafter)
- Air Monitoring Results**
 - Results for Shafter
- Air Monitoring Reports**
 - Final Results for Spring 2018 Seasonal Ambient Monitoring for Organophosphate Pesticides In Kern County
 - 2017 Seasonal Ambient Air Monitoring of Methyl Isothiocyanate (MITC) in Kern County

In the bottom left corner, there is a small logo with a green mountain and a blue sky, next to the letters "S" and "AI".

Golden Oak Elementary Air Monitoring

- Request: Use mobile air monitoring van to measure values during afternoon rush hour traffic near Golden Oak Elementary
 - District conducted late afternoon measurements at this site from 12 PM to 6 PM on September 2, 2020
 - CO averaged 0.44 ppm, H2S averaged 1.2 ppb, SO2 averaged 2.7 ppb

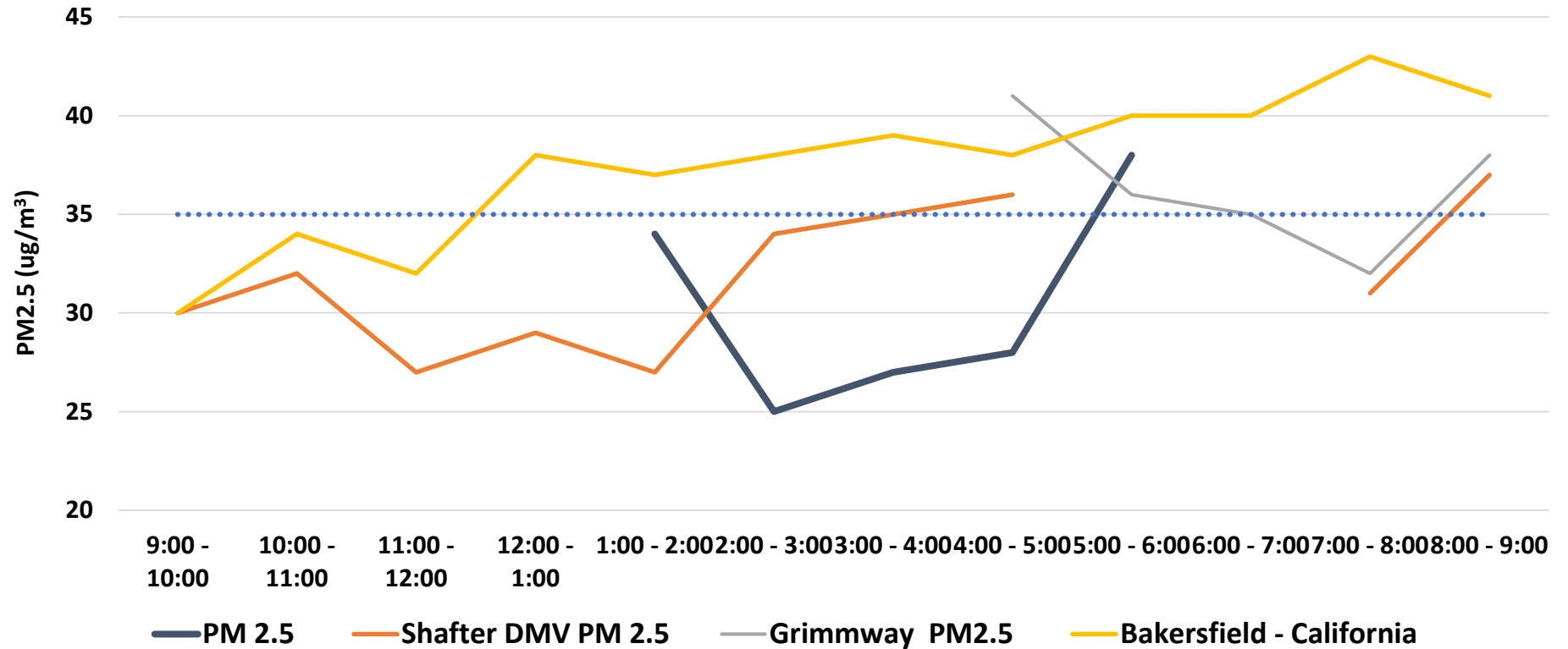
Ozone:
Values comparable to Shafter-DMV and Bakersfield-California sites



Golden Oak Elementary Air Monitoring (cont'd)

PM2.5:

Values increased from 2 pm to 6 pm, comparable to Shafter DMV and Bakersfield - California sites

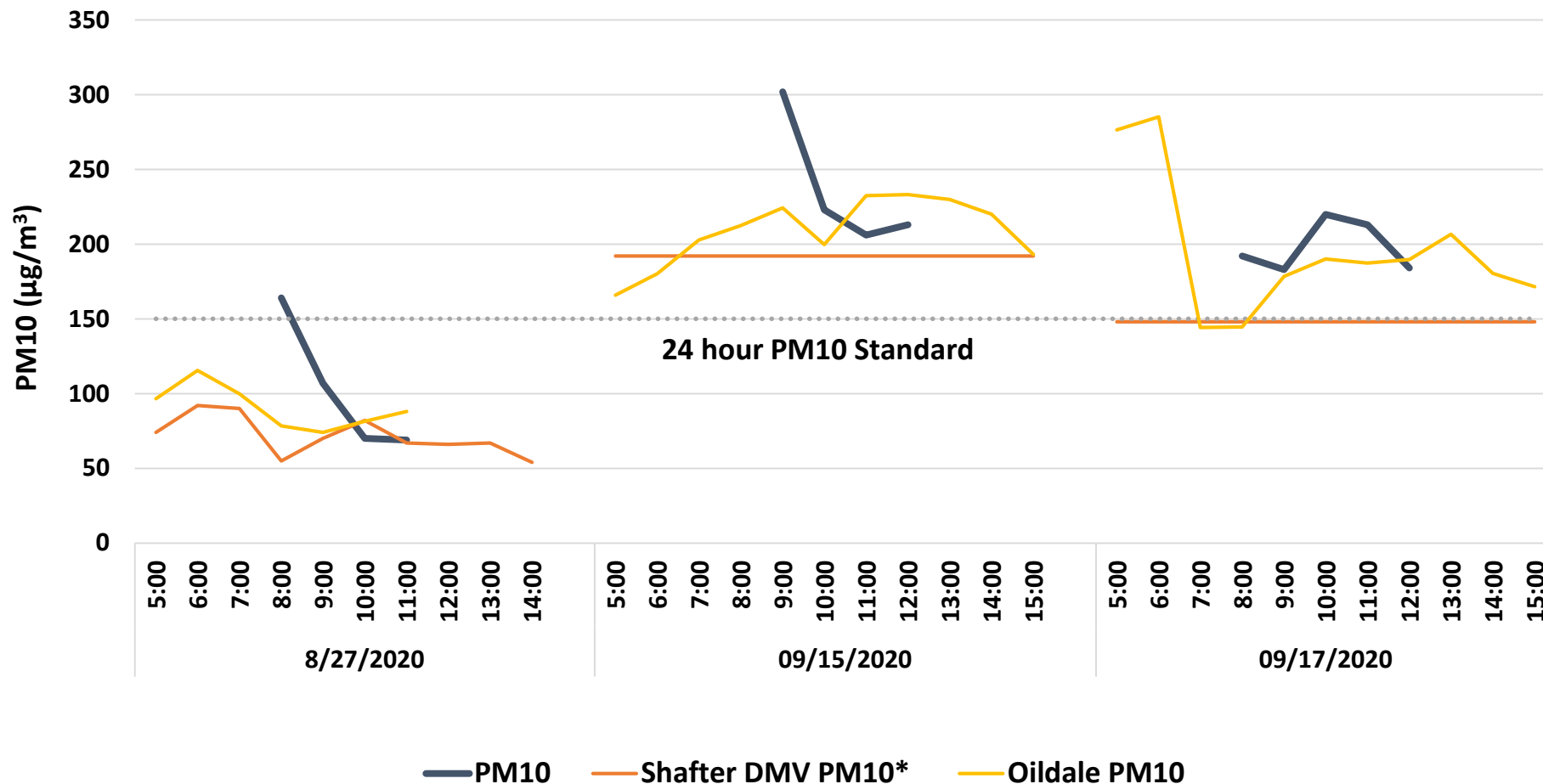


Almond Harvesting Near Mexican Colony

- Request: Committee member requested that mobile air monitoring van be used to measure dust near Mexican Colony being impacted by nearby almond harvesting
 - *District deployed the mobile van to Mexican Colony on August 27, September 15, and September 17 to take measurements*
 - *Note that the entire valley was experiencing poor air quality on these days due to multiple wildfires in the area, already elevating PM*

Almond Harvesting Near Mexican Colony (cont'd)

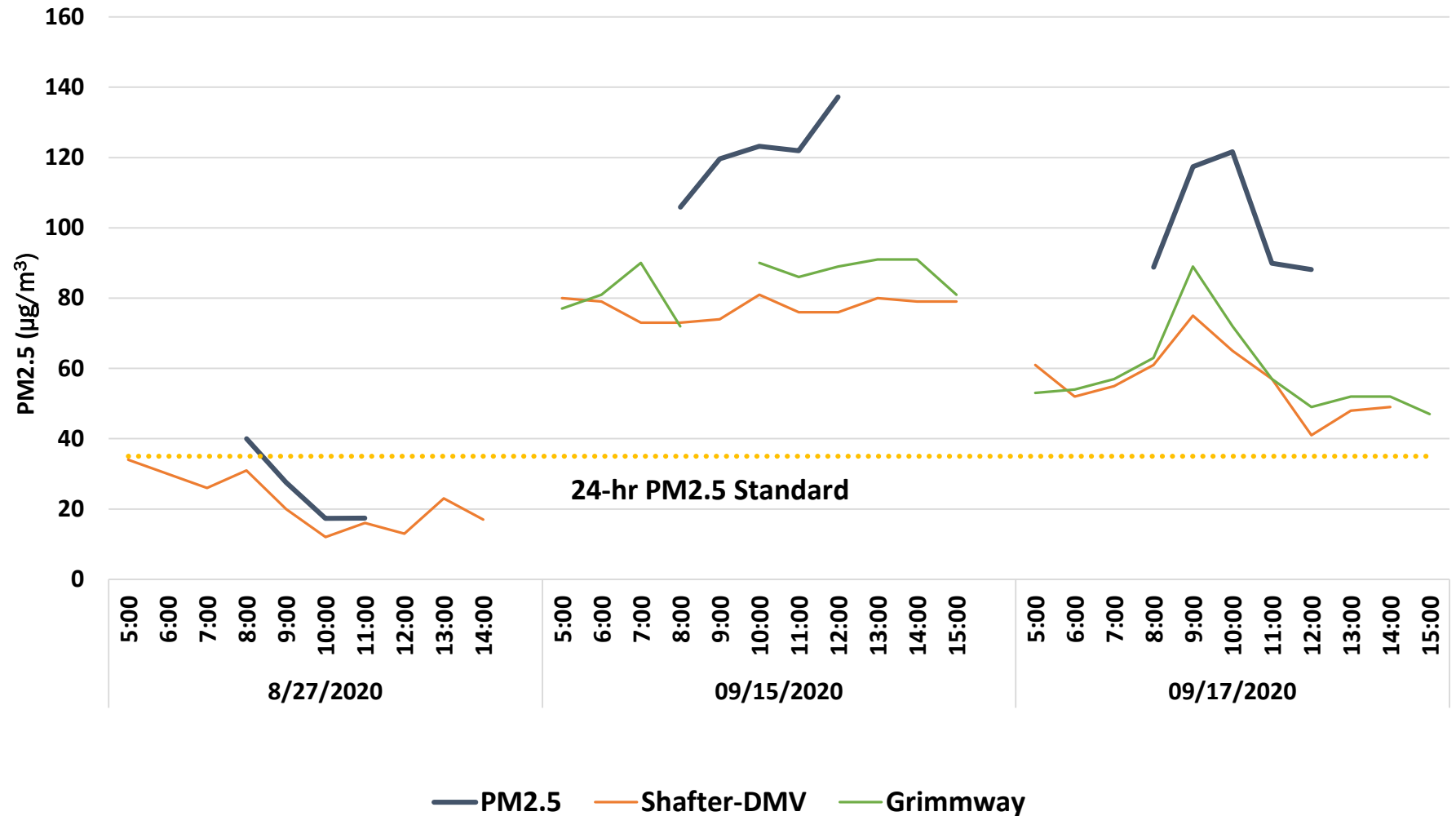
*PM10:
Values initially
higher compared
to Shafter DMV
and Oildale sites*



**9/15 and 9/17 PM10 represents daily average due to missing data*

Almond Harvesting Near Mexican Colony (cont'd)

*PM2.5:
Values higher
compared to
Shafter DMV and
Oildale sites*



Feedback from Air Monitoring Subcommittee

- Key Questions for Subcommittee:
 - What format of presenting air monitoring results is most meaningful and helpful for you to understand?
 - Any recommendations on where else mobile air monitoring van could focus its time in the designated areas of interest?
 - Note that the more time spent with the van in new areas will take time away from time being spent in current areas