



GREAT BASIN UNIFIED AIR POLLUTION CONTROL DISTRICT

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June 1, 2022

Nolan Bobroff
Associate Planner/Housing Coordinator
Town of Mammoth Lakes
P.O. Box 1609
Mammoth Lakes, CA 93546

RE: 2021-2022 Mammoth Lakes PM10 and Meteorological Summary

Dear Mr. Bobroff:

The Great Basin Unified Air Pollution Control District (District) has monitored air quality in the Town of Mammoth Lakes since 1984. The District recently finalized the data completing the 2021-2022 air monitoring year ending March 15, 2022. District staff is pleased to provide the Town with this summary of air quality measurements recorded by the District between March 16, 2021 and March 15, 2022. The PM10 data presented are the regulatory data of record from the District's 1-in-3-day Partisol Sequential filter-based monitor. The District had been testing a continuous Teledyne-API T640x PM monitor in Mammoth since September 2018, however, that monitor which utilizes a light-scattering method as a surrogate for mass measurements had proven to measure concentrations significantly higher than the filter-based monitor considered by EPA as the gold standard for monitoring. Based on these results, the T640X monitor was replaced by a Thermo 1405 continuous PM10 monitor in April 2022. This monitor utilizes a direct mass measurement that compares well with the filter-based monitor. Hourly PM10 concentration data from the new monitor are publicly available in real time on the District website: <https://www.gbuapcd.org/>.

During the March 16, 2021 to March 15, 2022 monitoring period, the Federal PM10 standard (150 $\mu\text{g}/\text{m}^3$ for a 24-hour average) was exceeded on zero (0) days. Since the Partisol was operated with a 1-in-3-day sampling schedule, the calculated number of Federal exceedances was also zero (0) days. The California State PM10 standard (50 $\mu\text{g}/\text{m}^3$ for a 24-hour average) was exceeded on five (5) days during the monitoring period. Considering the Partisol 1-in-3-day sampling schedule, the calculated number of State exceedances was fifteen days (15) days for the monitoring period.

Three (3) of the monitored State exceedances in 2021-2022 were due to wildfire smoke impacts, while two (2) were due to local sources. The Town of Mammoth Lakes was impacted by wildfire smoke in August 2021 with the Dixie Fire (Butte County) and Caldor Fire (El Dorado National Forest). Wildfire smoke again impacted the Town in mid-September through early October from the KNP Complex (Sequoia and Kings Canyon National Parks). While the Town of Mammoth Lakes did experience wildfire smoke impacts in summer 2021, monitored conditions were not as severe as in previous wildfire seasons, primarily due to the distance from the fires and prevailing winds blowing the smoke elsewhere. Wildfire smoke events causing PM10 exceedances may be

excluded from determining compliance with the air quality standards under the US Environmental Protection Agency Exceptional Event Rule, however this does not provide relief to residents or visitors exposed to high concentrations of particulate matter due to wildfire smoke impacts.

The two (2) non-wildfire-smoke exceedances of the State standard occurred on 12/18/2021 measuring 64.3 $\mu\text{g}/\text{m}^3$ and 1/11/2022 measuring 53.3 $\mu\text{g}/\text{m}^3$. These winter-time exceedances were analyzed and determined to be caused by local sources, primarily woodburning stoves, though road cinders may have had a minor contributing impact.

Exceedance days and PM10 levels are listed in Table 1 for the 2021-2022 air monitoring year. An exceedance summary comparing the 2021-2022 monitoring year with past monitoring years is presented in Table 2. Both tables include exceedances caused by wildfire smoke events that have been excluded from regulatory determinations.

Figure 1 shows the daily average PM10 values during the wildfire smoke season between August and October 2021. Figure 2 shows the daily average PM10 values for the entire monitoring year, superimposed on the prior three monitoring years for comparative purposes.

Figure 3 shows the daily average PM10 concentration during the wildfire smoke season since 1992. The figure shows that during eight of the past nine summers smoke from large-scale wildfires has impacted the Town of Mammoth Lakes.

Please contact Chris Howard, Senior Research Systems Analyst, at 760-872-8211 with any questions you may have regarding this report.

Thank you,



Deputy APCO for

Phillip L. Kiddoo
Air Pollution Control Officer

Table 1. Town of Mammoth Lakes Federal and State PM10 exceedances: March 16, 2021 - March 15, 2022.

| Date | PM10 Average ($\mu\text{g}/\text{m}^3$) | Federal PM10 Exceedance | State PM10 Exceedance |
|------------|---|-------------------------|-----------------------|
| 8/23/2021 | 64.7 | No | Yes |
| 9/16/2021 | 67.5 | No | Yes |
| 10/4/2021 | 84.5 | No | Yes |
| 12/18/2021 | 64.3 | No | Yes |
| 1/11/2022 | 53.3 | No | Yes |

Table 2. Comparison of Federal and State PM10 exceedances with prior monitoring years.

| Air Monitoring Year | Federal PM10 Exceedances (>150 $\mu\text{g}/\text{m}^3$) | State PM10 Exceedances (>50 $\mu\text{g}/\text{m}^3$) |
|--|---|--|
| 09-10 | 0 | 25 |
| 10-11 | 0 | 36 |
| 11-12 | 0 | 5 |
| 12-13 | 0 | 19 |
| 13-14 | 2 | 17 |
| 14-15 | 0 | 3 |
| 15-16 | 0 | 20 |
| 16-17 | 0 | 21 |
| 17-18 | 0 | 6 |
| 18-19* | 4 | 18 |
| 19-20* | 0 | 9 |
| 20-21* | 24 | 39 |
| 21-22* | 0 | 15 |
| * calculated number of exceedances due to less than 1:1 daily capture rate | | |

Summer 2021 Wildfire Smoke impacts on the Town of Mammoth Lakes

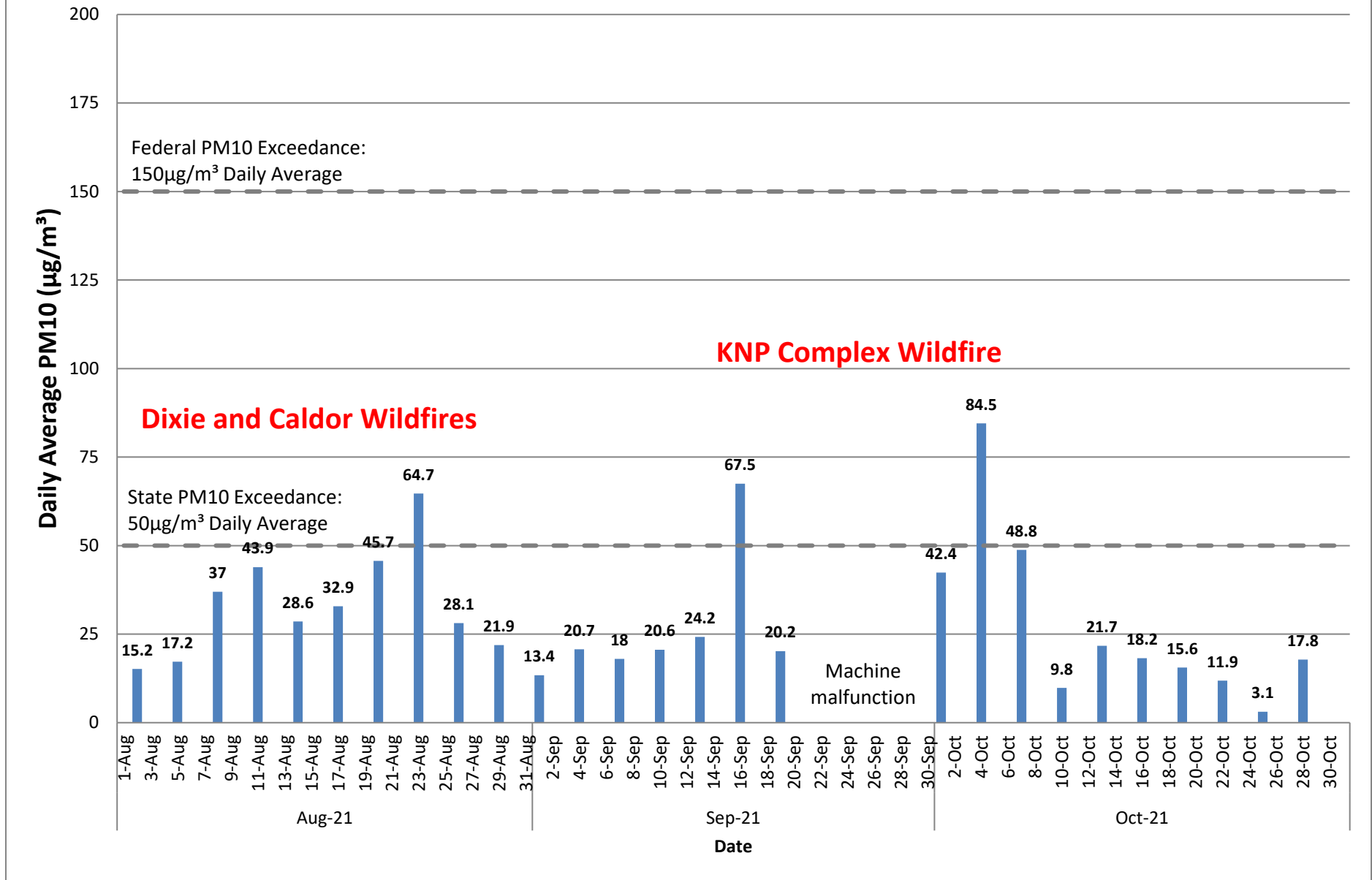


Figure 1: Summer 2021 Wildfire Smoke Impacts on the Town of Mammoth Lakes.



Town of Mammoth Lakes - PM10 March 16, 2021 - March 15, 2022

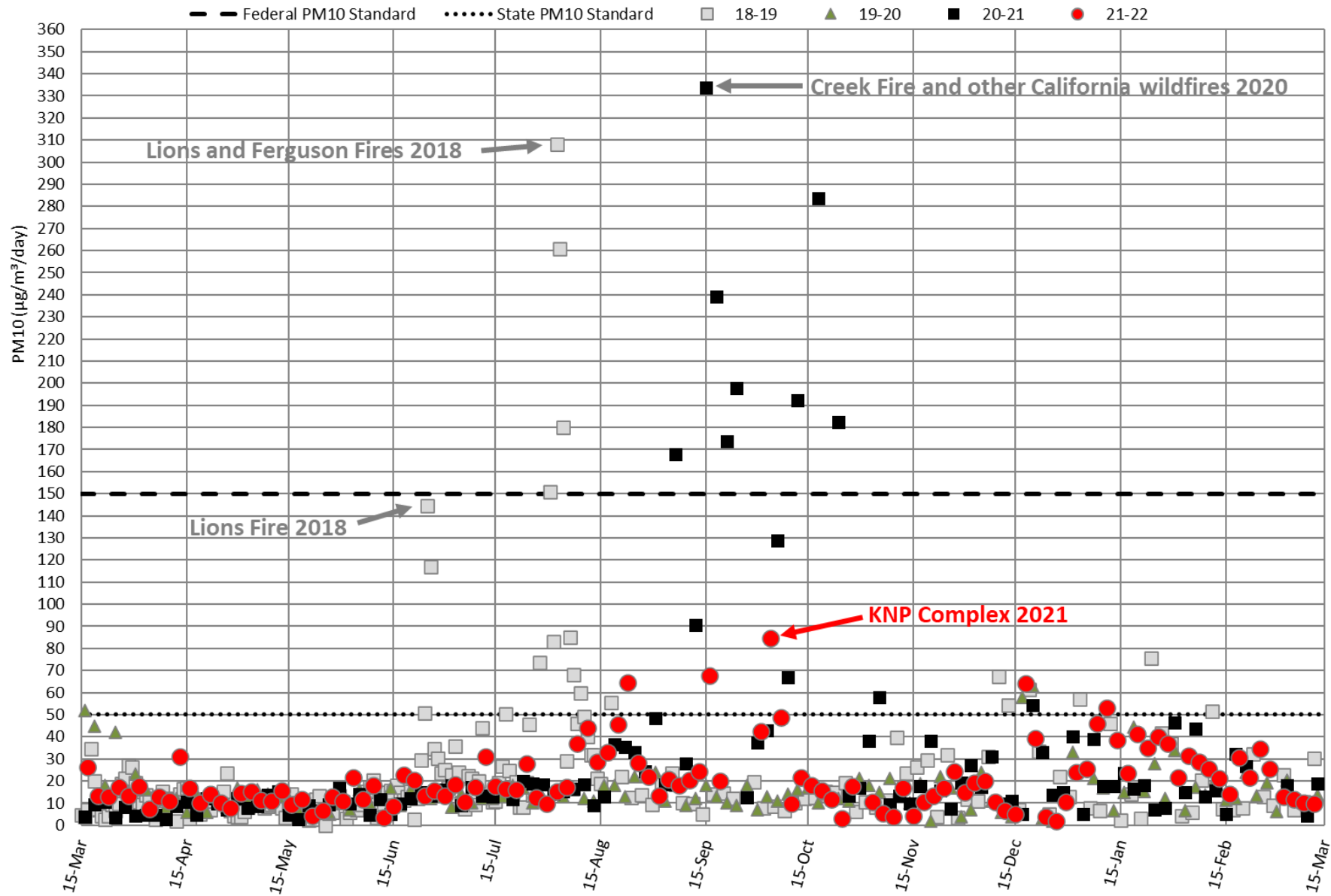


Figure 2: Town of Mammoth Lakes - PM10, March 16, 2021 - March 15, 2022. Note 1-in-3-day schedule from 8/18/2018-3/15/2022.

Town of Mammoth Lakes Wildfire Season PM10 June-September, 1992-2021

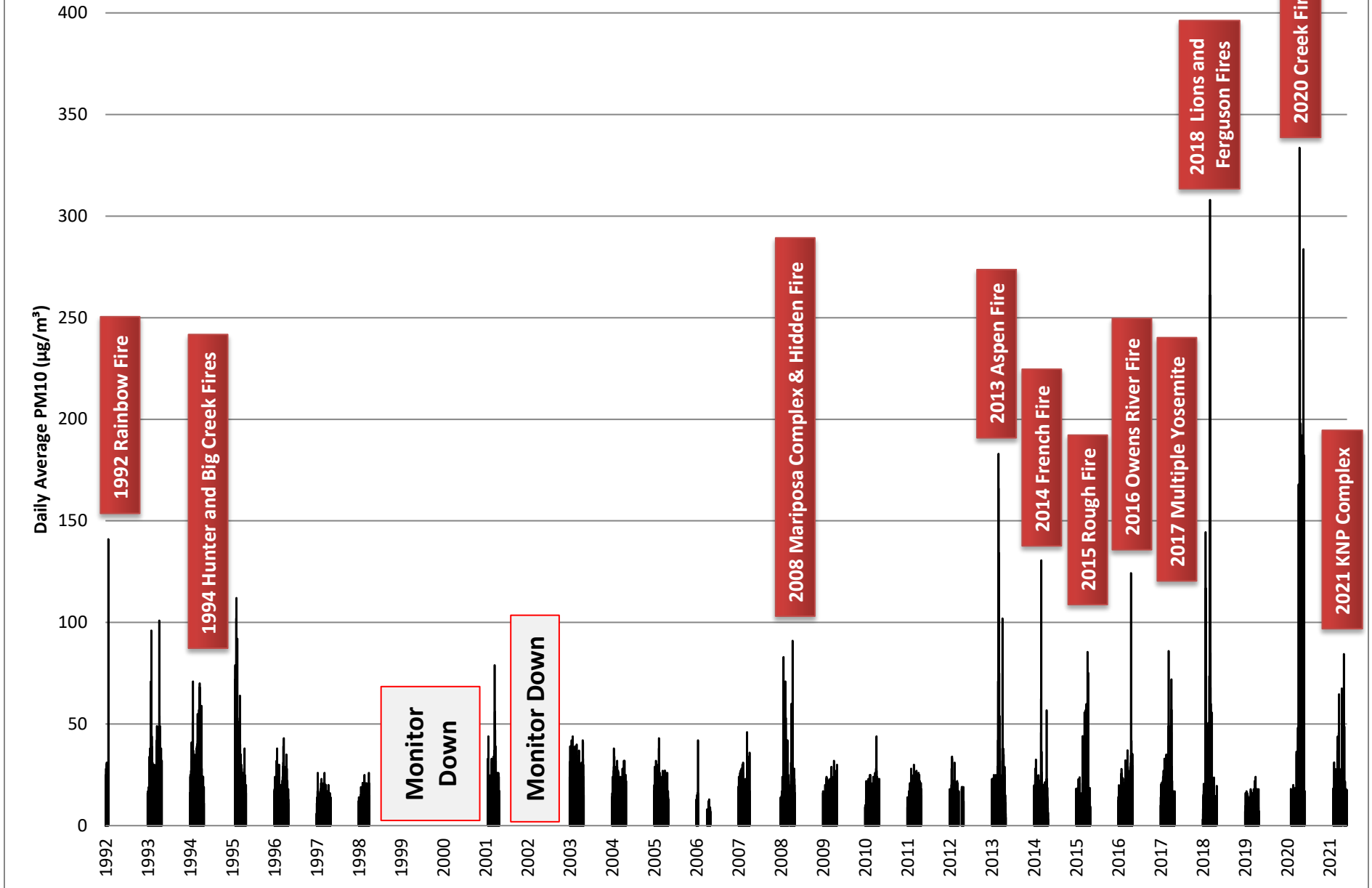


Figure 3: Town of Mammoth Lakes Wildfire Season PM10, June-September, 1992-2019, except 2020-2021, whose fire seasons were July-October.