

# WASHOE COUNTY HEALTH DISTRICT

ENHANCING QUALITY OF LIFE

Exceptional Event Demonstration for  
August 6-7, 2021 PM<sub>10</sub> Exceedance  
due to Dixie/Antelope Fire

Submitted to U.S. EPA Region 9 on **Date**



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## **VISION**

A healthy community

## **MISSION**

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## Acronyms and Abbreviations

AGL	Above Ground Level
AQI	Air Quality Index
AQMD	Washoe County Health District - Air Quality Management Division
AQS	Air Quality System
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
EE	Exceptional Event
EER	Exceptional Events Rule
EPA	U.S. Environmental Protection Agency
°F	Degrees Fahrenheit
FCCS	Fuel Characteristic Classification System
HA 87	Hydrographic Area 87
HMS	Hazardous Mapping System
HYSPLIT	Hybrid Single-Particle Lagrangian Integrated Trajectory
Lbs	Pounds
µg/m <sup>3</sup>	Micrograms per cubic meter
MPH	Miles Per Hour
NAAQS	National Ambient Air Quality Standards
NAM	North American Mesoscale
NSPS	New Source Performance Standards
NOAA	National Oceanic and Atmospheric Administration
NO	Nitric Oxide
NO <sub>2</sub>	Nitrogen Dioxide
NOx	Nitrogen Oxides
NOy	Reactive Nitrogen Compounds
NWS	National Weather Service
O <sub>3</sub>	Ozone
PG&E	Pacific Gas and Electric
PM	Particulate Matter
PM <sub>2.5</sub>	Particulate Matter less than or equal to 2.5 microns in aerodynamic diameter
PM <sub>10</sub>	Particulate Matter less than or equal to 10 microns in aerodynamic diameter
ppm	Parts Per Million
PST	Pacific Standard Time
R <sup>2</sup>	Coefficient of Determination
SO <sub>2</sub>	Sulfur Dioxide
TSP	Total Suspended Particles

## 1.0 Introduction

### 1.1 Purpose

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The analysis in this report demonstrates that the exceedances of the primary and secondary 24-hour PM<sub>10</sub> National Ambient Air Quality Standard (NAAQS) recorded on August 6, 2021, at the Toll air monitoring site and on August 7, 2021, at the Sparks and Reno4 air monitoring sites were caused by the Dixie and Antelope wildfires. Pursuant to the Exceptional Event (EE) requirements under the Clean Air Act (CAA), the data may be excluded from regulatory decisions for PM<sub>10</sub> NAAQS. Washoe County Health District Air Quality Management Division (AQMD) is requesting to exclude all PM<sub>10</sub> data from the Toll (AQS ID: 32-031-0025-81102-2) PM<sub>10</sub> monitor on August 6, 2021, and all PM<sub>10</sub> data from the Reno4 (AQS ID: 32-031-0031-81102-2) and Sparks (AQS ID: 32-031-1005-81102-4) PM<sub>10</sub> primary monitors on August 7, 2021. Exclusion of the data caused by this exceptional event will have a regulatory impact on the approval of the 2<sup>nd</sup> 10-Year Maintenance Plan for PM<sub>10</sub>.

### 1.2 Exceptional Events Rule Procedure

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On October 3, 2016, the Environmental Protection Agency (EPA) finalized revisions to the “Treatment of Data Influenced by Exceptional Events”, regulations that govern the exclusion of event-influenced air quality data from certain regulatory decisions under the CAA Section 319(b). This rule is known as the Exceptional Events Rule (EER). The EER contains definitions, procedural requirements, requirements for air agency demonstrations, and criteria for EPA approval for the exclusion of air quality data from regulatory decisions. The EER states that the EPA has the authority to exclude air quality monitoring data from regulatory determinations related to exceedances or violations of the NAAQS and avoid designating an area as nonattainment, redesignating an area as nonattainment, or reclassifying an existing nonattainment area to a higher classification if a State adequately demonstrates that an exceptional event has caused an exceedance or violation of a NAAQS. The CAA includes four requirements that, collectively, define an exceptional event:

1. The event affected air quality,
2. The event was not reasonably controllable or preventable,
3. The event was caused by human activity that is unlikely to recur at a particular location or was a natural event,
4. There exists a clear causal relationship between the specific event and the monitored exceedance.

EPA regulations in the Code of Federal Regulations (CFR) - 40 CFR 50.14(c)(3)(iv) states that exceptional events demonstrations must address and include the following elements:

1. A narrative conceptual model; (See **Section 2** of this document)
2. A demonstration that the event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance; (See **Section 4** of this document)
3. Analyses comparing the claimed event influenced concentrations at the monitoring site; (See **Section 4** of this document)
4. A demonstration that the event was both not reasonably controllable and not reasonably preventable; (See **Section 3** of this document)

5. A demonstration that the event was a human activity unlikely to recur at a particular location or was a natural event. (See **Section 5** of this document)

### **1.3 Public Comment Process**

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This demonstration was available for public comment from October 26 to November 26, 2023 at the AQMD website ([OurCleanAir.com](https://www.aqmd.com/our-clean-air)). A hardcopy of the plan was also available at the AQMD office. See Appendix A for AQMD's Public Comment Plan.

### **1.4 Agency Contacts**

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For information or questions regarding this Exceptional Events Demonstration, please contact the following individuals of the AQMD.

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Draft  
October 26, 2023



## 2.0 Conceptual Model

### 2.1 Regional Description

Washoe County is located in the northwest portion of Nevada. It is bounded by California, Oregon, and the Nevada counties of Humboldt, Pershing, Storey, Churchill, Lyon, and Carson City (Figure 2-1). The Truckee Meadows is approximately 200 square miles in size and situated in the southern portion of Washoe County. It is geographically identified as Hydrographic Area 87 (HA 87) as defined by the State of Nevada, Division of Water Resources. Most of Washoe County's population lives in and around the Truckee Meadows.

The Truckee Meadows sits at an elevation of 4,400 feet above sea level and is surrounded by mountain ranges. To the west, the Sierra Nevada rises to elevations of 9,000 to 11,000 feet. Hills to the east reach 6,000 to 8,000 feet. The Truckee River, flowing from the Sierra Nevada eastward, drains into Pyramid Lake to the northeast of the Truckee Meadows.

#### Climate

Average annual wind speed measured at the Reno-Tahoe International Airport is 6.4 miles per hour (mph). January is the calmest month (4.5 mph) with April being the windiest (8.3 mph). Wintertime (November-January) averages 4.9 mph and summertime (June-August) averages 7.2 mph.

Most of Reno's precipitation falls from November through March in the form of rain and snow. Reno receives an average of 7.35 inches of precipitation per calendar year (1991-2020 climate normals). Table 2-1 lists temperature and precipitation normals as measured at the Reno-Tahoe International Airport.

Figure 2-1  
Washoe County, Nevada

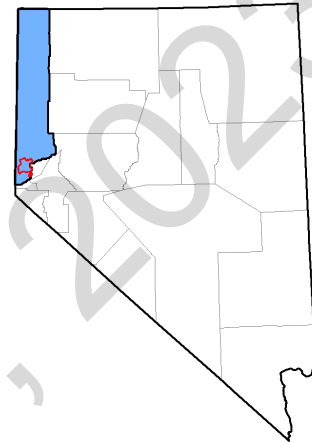


Table 2-1: Monthly Normal Temperature and Rainfall (1991-2020)

Month	Temperature (°F)			Precipitation (inches)
	Maximum	Minimum	Mean	Mean
January	47.7	26.1	36.9	1.25
February	52.1	29.0	40.6	1.03
March	59.2	34.0	46.6	0.80
April	64.7	38.5	51.6	0.44
May	74.1	46.6	60.3	0.55
June	84.6	53.8	69.2	0.41
July	93.9	60.4	77.2	0.20
August	92.1	58.1	75.1	0.24
September	83.8	50.3	67.0	0.21
October	70.4	39.7	55.1	0.50
November	56.7	31.0	43.8	0.62
December	46.7	25.7	36.2	1.1

Maximum temperatures of 90 °F or above normally occur between July 3 and August 21. Maximum temperatures typically peak at 94 °F between July 22 and July 29.

### Demographics

The 2020 population of Washoe County was 486,492. Approximately two-thirds of Washoe County’s residents live in the Truckee Meadows, which includes the cities of Reno and Sparks. Anthropogenic activities such as transportation, manufacturing, freight distribution, and residential wood use are also concentrated in the Truckee Meadows.

### Seasons

Washoe County experiences two distinct air pollution seasons - wintertime particulate matter (PM) and summertime ozone (O<sub>3</sub>). Wildfire smoke throughout the year, especially during the summer months, can dramatically increase summertime PM and O<sub>3</sub>.

Wintertime temperature inversions combined with light winds can contribute to elevated levels of Particulate Matter less than or equal to 2.5 microns in aerodynamic diameter (PM<sub>2.5</sub>), Particulate Matter less than or equal to 10 microns in aerodynamic diameter (PM<sub>10</sub>), Nitrogen Dioxide (NO<sub>2</sub>), and Carbon Monoxide (CO). Inversions are common in mountain valleys such as the Truckee Meadows. Air pollution episodes persist until stronger winds scour the cold air out of the valley and break the temperature inversion.

Northern Nevada receives an abundant amount of sunshine and solar radiation during the summer months. Mobile sources (i.e., cars and trucks) emit O<sub>3</sub> precursors and their activity increases during the summer. Ozone concentrations are typically highest between May and September, especially during the months of June, July, and August.

Strong winds can occur at any time of year. Two-minute gusts over 40 mph are not uncommon. These winds lower the gaseous pollutant (O<sub>3</sub>, CO, NO<sub>2</sub>, and SO<sub>2</sub>) concentrations but typically increase PM levels, especially PM<sub>10</sub>. Hourly PM<sub>10</sub> levels can reach more than 500 micrograms per cubic meter (µg/m<sup>3</sup>) for several hours.

Attainment Status

All areas of Washoe County currently attain or are unclassifiable for all National Ambient Air Quality Standards (NAAQS). However, portions of Washoe County had previously been designated non-attainment for the following NAAQS: 1) 1971 Total Suspended Particles (TSP) (24-hour and Annual); 2) CO (8-hour); 3) 1979 O<sub>3</sub> (1-hour); and 4) 1987 PM<sub>10</sub> (24-hour and Annual). Some pollutants and standards, such as 1-hour O<sub>3</sub> and TSP, have been revoked and no longer apply. For the other pollutants, CO and PM<sub>10</sub>, the HA 87 planning area was redesignated to maintenance after the standard was met. Since the 1970's, AQMD has implemented control strategies to target mobile sources, wood-burning devices, and dust control to achieve attainment with the NAAQS.

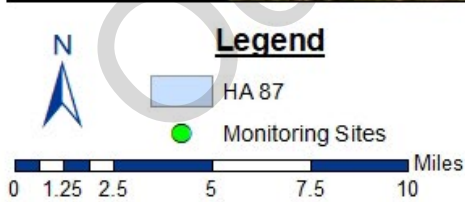
**2.2 Overview of Monitoring Network**

In 2021, the Washoe County Health District, Air Quality Management Division (AQMD) operated seven ambient air monitoring sites in Washoe County (Figure 2-2). The blue boundary delineates HA 87 as defined by the State of Nevada, Division of Water Resources. Table 2-2 lists the parameters monitored in 2021, sorted by site.

Table 2-2: List of Monitoring Sites and Pollutants Monitored in 2021

Site	O <sub>3</sub>	CO	Trace CO	Trace NO	NO <sub>2</sub>	NO <sub>x</sub>	Trace NOy	Trace SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	PM <sub>coarse</sub>	PM <sub>2.5</sub> Speciation	Meteorology
Incline	✓												
Lemmon Valley	✓												
Reno4	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
South Reno	✓												✓
Sparks	✓	✓							✓	✓	✓		✓
Spanish Springs	✓								✓	✓	✓		
Toll	✓								✓	✓	✓		✓

Figure 2-2: Washoe County Health District - AQMD Ambient Air Monitoring Sites



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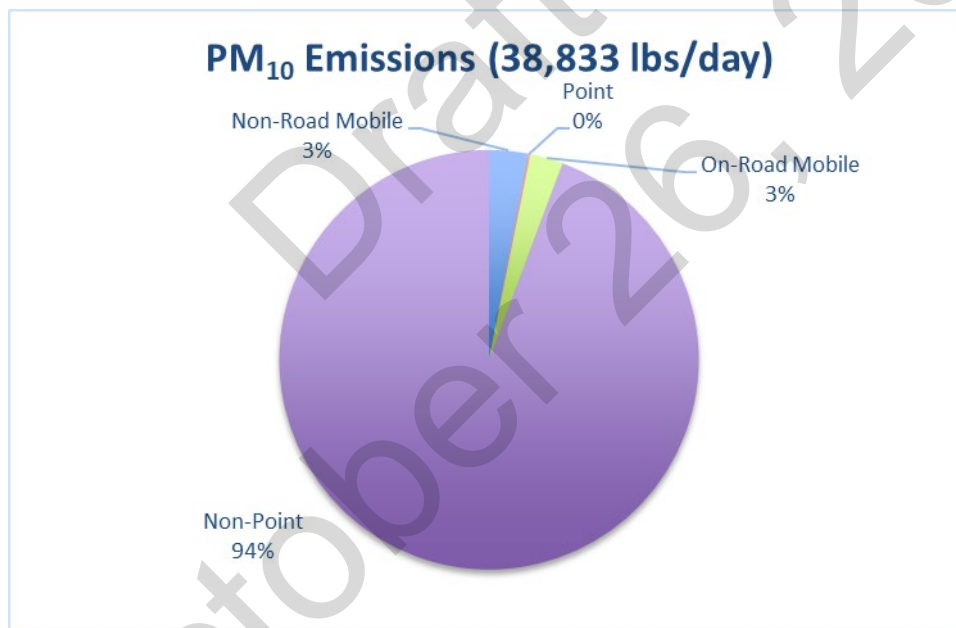


The AQMD’s ambient air monitoring network meets the minimum monitoring requirements for all criteria pollutants pursuant to Title 40, Part 58 of the Code of Federal Regulations (CFR), Appendix D. Washoe County’s monitoring network is reviewed annually pursuant to 40 CFR 58.10 to ensure the network meets the monitoring objectives defined in 40 CFR 58, Appendix D. Data was collected and quality assured in accordance with 40 CFR 58 and submitted to the Air Quality System (AQS). Additionally, 2021 data was certified on April 26, 2022. (See Appendix C).

### 2.3 Characteristics of Non-event PM<sub>10</sub> Concentrations

Without exceptional events, ambient PM<sub>10</sub> concentrations within Washoe County are under the limit of the PM<sub>10</sub> NAAQS standard. This is because the PM<sub>10</sub> emissions that Washoe County produces have been regulated through different policy instruments such as a dust control program, New Source Performance Standards (NSPS) for woodburning devices, and street sanding/sweeping regulations. Figure 2-3 shows that Washoe County produces 38,833 lbs/day of PM<sub>10</sub> emissions as per the 2020 Periodic Emissions Inventory. This includes emissions from wildfires within the Washoe County limits. Emissions from purely anthropogenic sources make up about 31,786 lbs/day.

Figure 2-3: PM<sub>10</sub> Emissions by Source Category



Based on historic, non-event PM<sub>10</sub> monitoring data for the previous six years, below are the characteristics of PM<sub>10</sub> levels throughout the year in the Truckee Meadows.

1. October through March: Ambient PM<sub>10</sub> concentrations are relatively high during the colder months because some Washoe County residents utilize wood-burning devices for heat. Additionally, PM<sub>10</sub> concentrations can increase after snowstorms due to local street sanding and sweeping. The Truckee Meadows region also struggles with inversion layers in which cold air gets trapped at ground level, causing poor atmospheric mixing. This inhibits PM emissions from leaving the air basin and can

cause higher concentrations of  $PM_{10}$ . Despite this, the region rarely experiences 24-hour  $PM_{10}$  averages over  $100 \mu g/m^3$  during these times.

2. April through June: Ambient  $PM_{10}$  concentrations during this period are usually the lowest of the year. With higher temperatures, there is less residential wood-burning. Additionally, soil generally hasn't been dried by high temperatures such as what could be seen at the end of summertime. Wind speeds are higher in the spring which helps with air mixing and vacating any  $PM_{10}$  buildup from the region.
3. July through September: Ambient  $PM_{10}$  concentrations are the highest during this time period. This coincides with the wildfire season in the western United States. Although wildfire season is sometimes described as June-August, changes in climate in the western United States has caused wildfire smoke impacts to be more commonly felt in September rather than June. The Washoe County area has been impacted by wildfire events during these months for nine out of the last ten years. The main source of anthropogenic  $PM_{10}$  emissions during this time comes from fugitive dust that has been dried after months of high temperatures.

The wildfire events that have caused exceedances have occurred in the July through September period. For the purpose of this demonstration, it is worthwhile to evaluate the diurnal pattern of  $PM_{10}$  concentrations during this time period. Figure 2-4 through Figure 2-6 below shows the 2016-2020  $PM_{10}$  diurnal pattern for non-event days at the Toll, Reno4, and Sparks monitors with the 5<sup>th</sup>, 50<sup>th</sup>, and 95<sup>th</sup> percentile included. Throughout the day,  $PM_{10}$  concentrations generally rise and peak between the hours of 5:00 PST and 11:00 PST.

Figure 2-4: 2016-2020 Wildfire Season PM<sub>10</sub> Diurnal Pattern at Toll

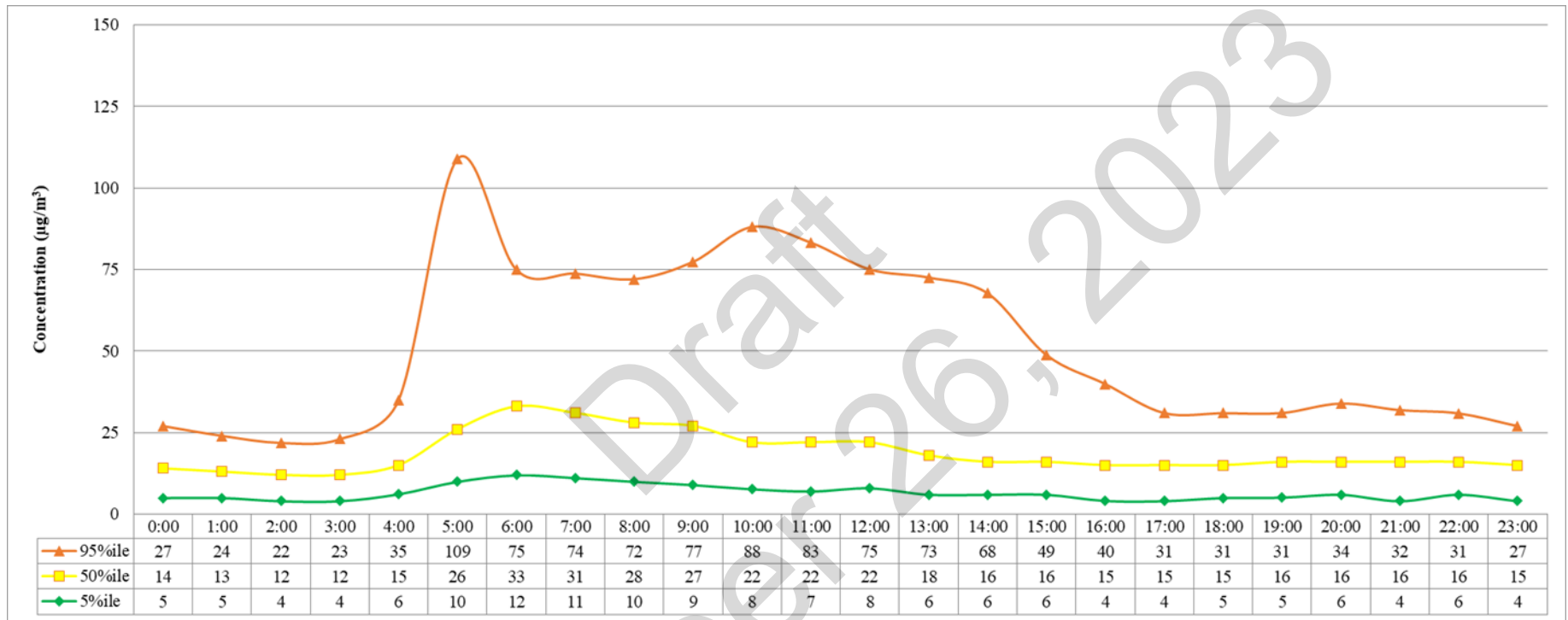


Figure 2-5: 2016-2020 Wildfire Season PM<sub>10</sub> Diurnal Pattern at Reno4

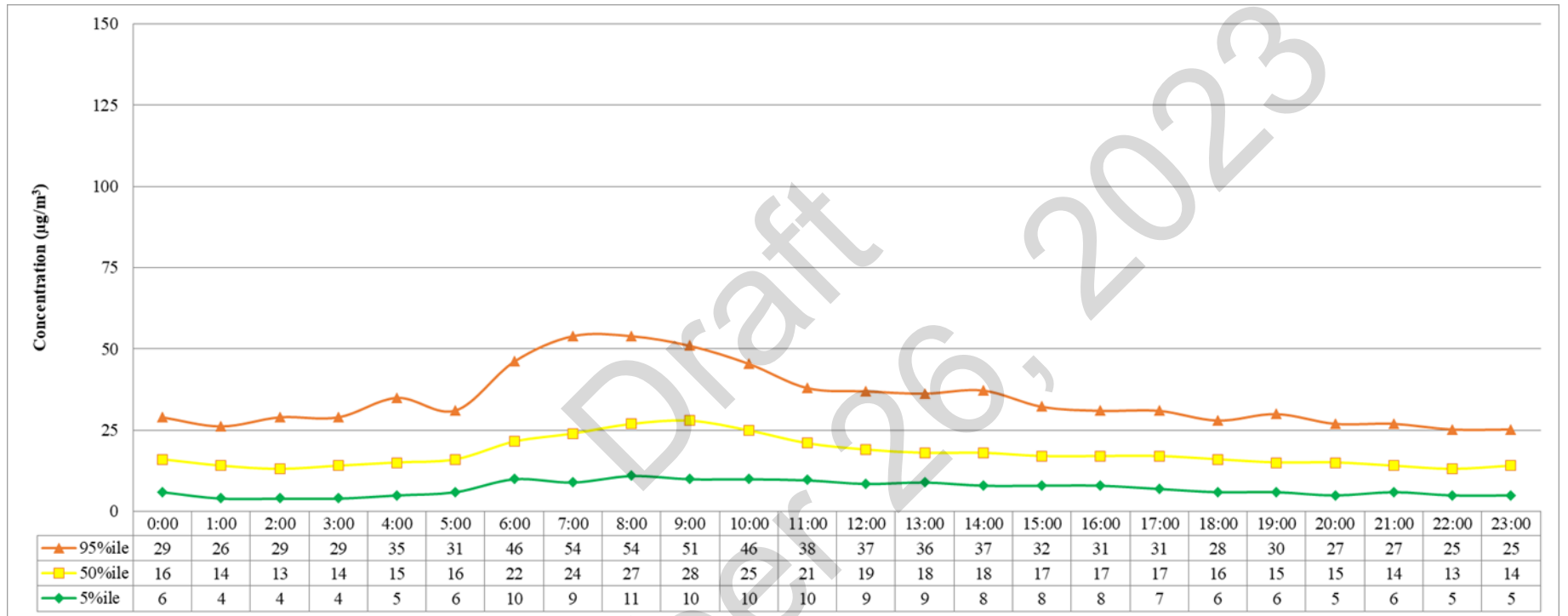
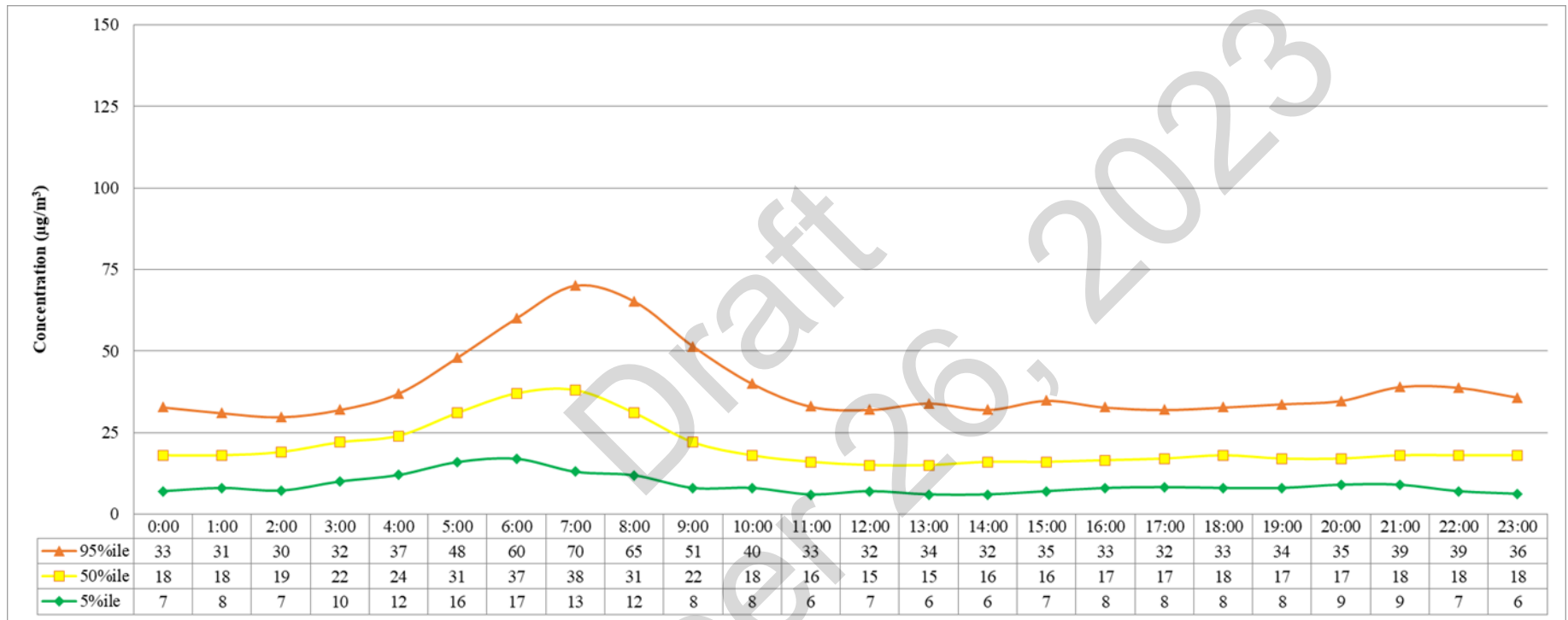




Figure 2-6: 2016-2020 Wildfire Season PM<sub>10</sub> Diurnal Pattern at Sparks



## 2.4 Description of Fires that caused PM<sub>10</sub> Exceedances

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### Dixie Fire

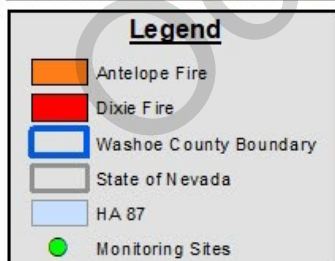
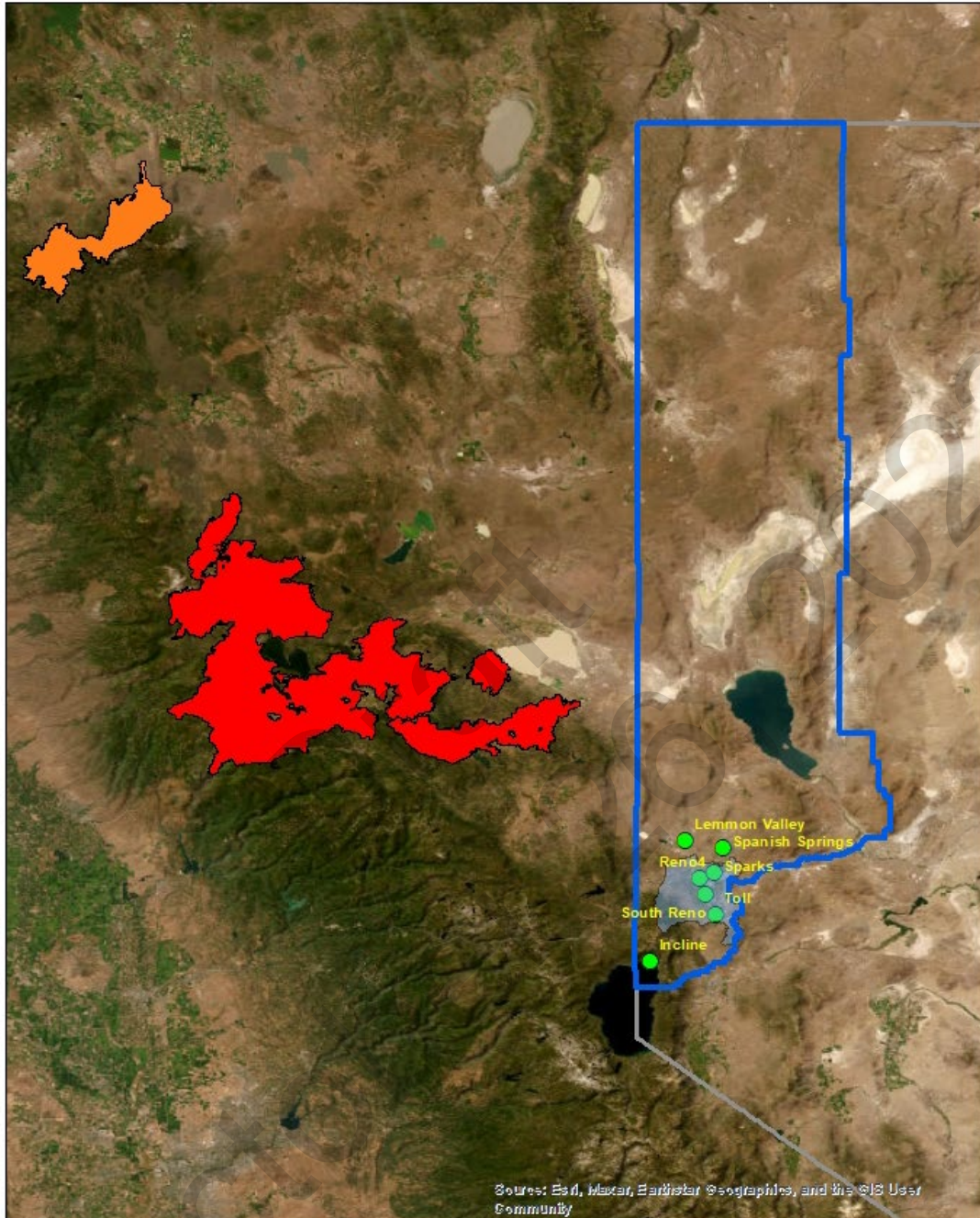
On July 13, 2021, the Dixie fire ignited on U.S. Forest Service land in the Plumas National Forest in Butte County, California, approximately 90 miles northwest of the Truckee Meadows region. The fire started when a tree fell onto a PG&E power transmission line and one of the fuses remained active, causing electric arcing onto wildfire fuels below. From then on, the fire grew rapidly over the next few months with some days showing an increase of up to 100,000 acres burned. Fire crews fought the fire until it was announced as fully contained on October 25, 2021. In total, the Dixie Fire burned 963,309 acres with a perimeter illustrated in Figure 2-7.

### Antelope Fire

On August 1, 2021, the Antelope Fire was reported in the drainage of Antelope Creek in Klamath National Forest in Siskiyou County, California, approximately 180 miles northwest of the Truckee Meadows region. The fire was caused by a lightning strike during a thunderstorm. Red flag conditions caused the fire to grow quickly. Between August 5, and August 6 of 2021, extreme fire conditions were reported with flames over 100 feet in height. Over the next couple of months, the fire grew to 145,632 acres until it was fully contained on October 15, 2021. The perimeter of the fire is illustrated in Figure 2-7.

An important factor in the start of these fires was dry wildfire fuels. The fires took place in areas that were considered to be either Extreme or Exceptional Drought based on the U.S. Drought Monitor. Figure 2-8 shows what the U.S. Drought Monitor was on August 10, 2021 and illustrates how dry the wildfire fuels were at that time.

Figure 2-7: The Dixie and Antelope Fire in Relation to Washoe County



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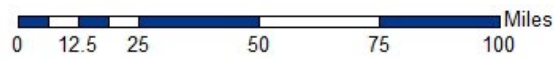
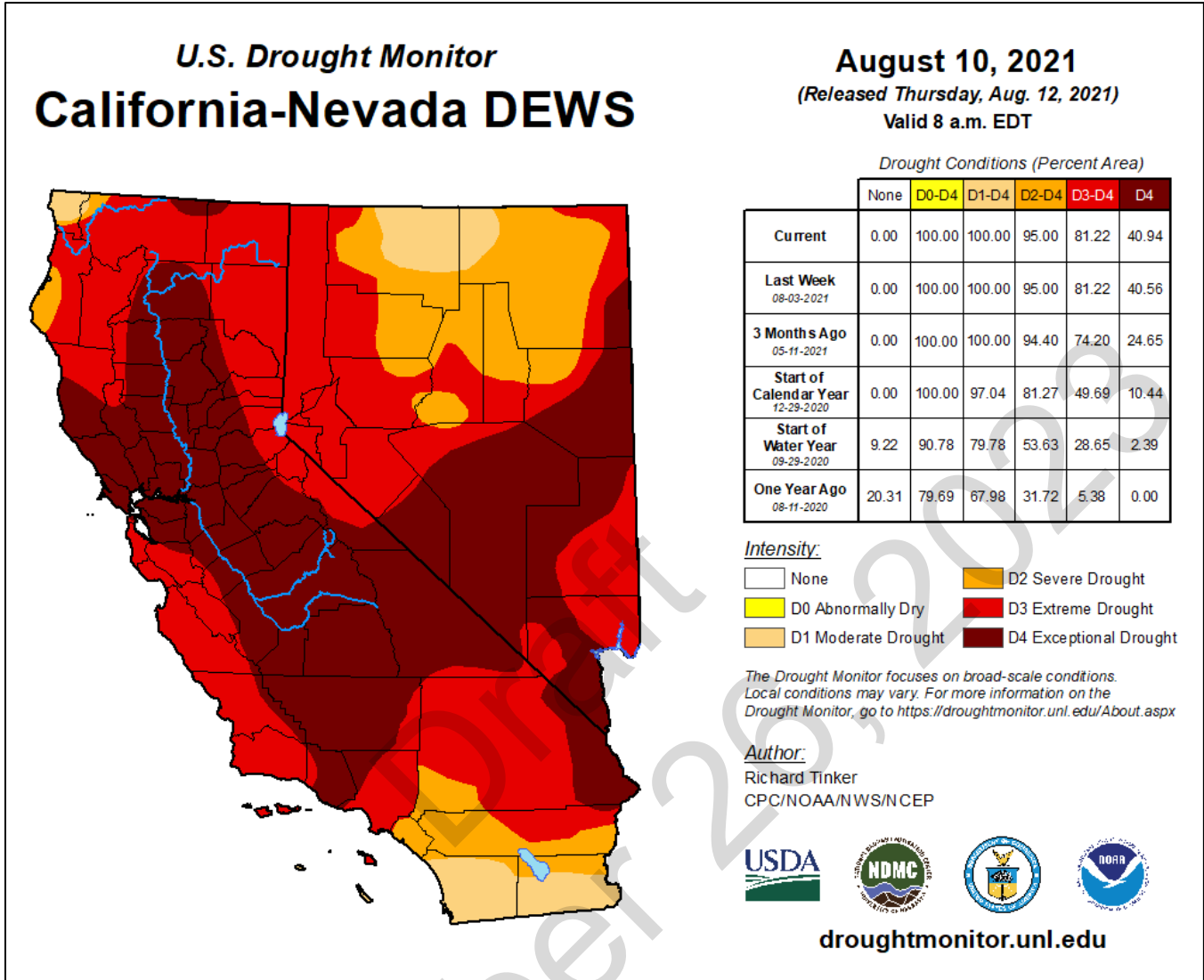


Figure 2-8: The Drought Conditions Near the Time of the Dixie and Antelope Fires



## 2.5 PM<sub>10</sub> Air Quality Impacts from the Dixie and Antelope Fires

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### 2.5.1 Data Requested to be Excluded

As was mentioned in Section 1.1 of this document, the purpose of this demonstration is to request exclusion of air quality data that was elevated due to exceptional events. Table 2-3 below shows the data that is requested to be excluded as part of this exceptional events demonstration and the corresponding 24-hour PM<sub>10</sub> NAAQS averages. AQMD is requesting exclusion of all hourly PM<sub>10</sub> data points on the days of the exceedances from 0000 PST through 2300 PST. For a complete list of each data point to be excluded, see Appendix D of this document.

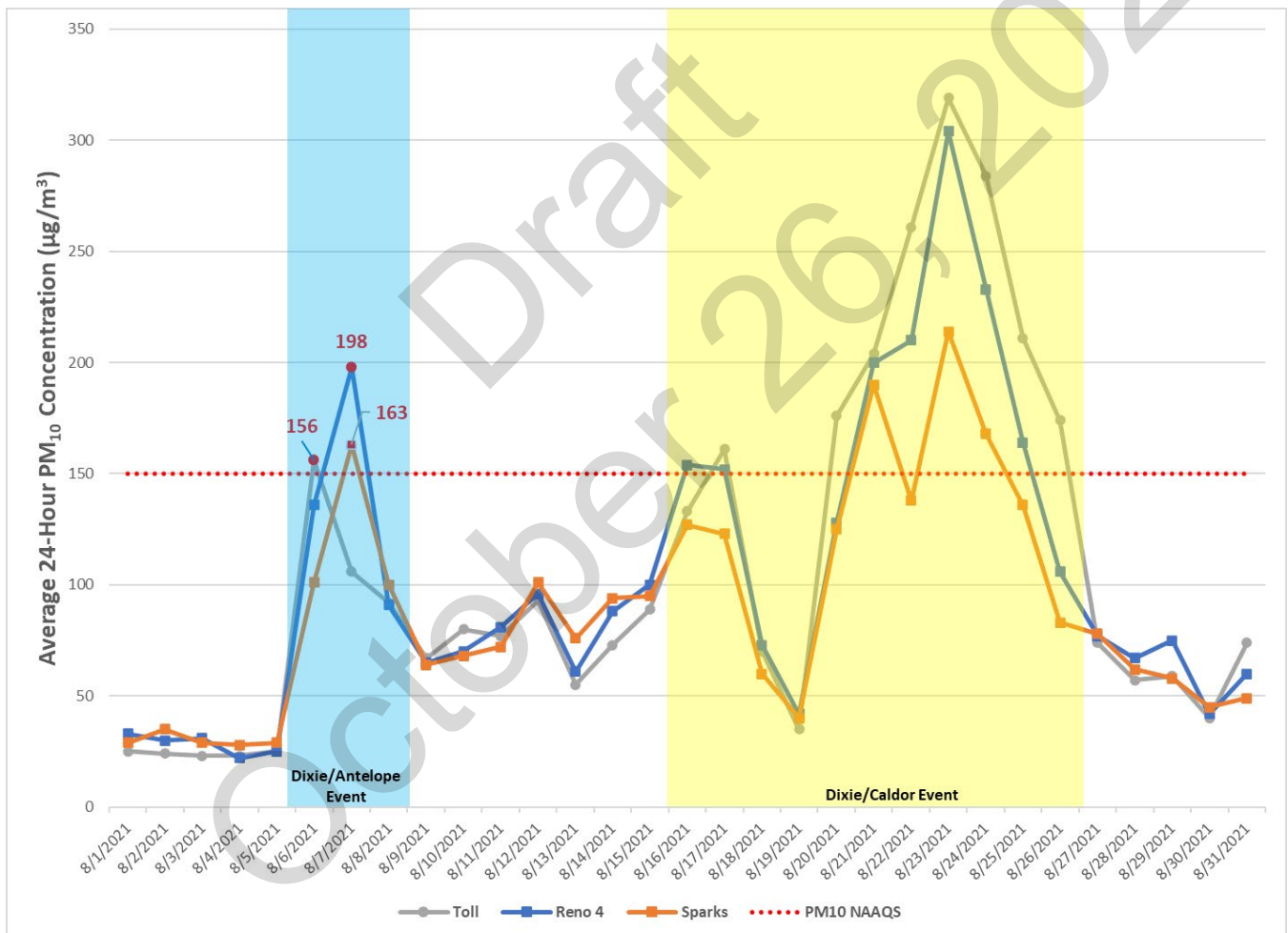
Table 2-3: PM<sub>10</sub> Data Requested to be Excluded

Monitoring Site (AQS ID)	8/6/2021	8/7/2021
Toll (AQS ID: 32-031-0025-81102-2)	156 µg/m <sup>3</sup>	-
Reno4 (AQS ID: 32-031-0031-81102-2)	-	198 µg/m <sup>3</sup>
Sparks (AQS ID: 32-031-1005-81102-4)	-	163 µg/m <sup>3</sup>

## 2.5.2 Narrative of Air Quality Impacts

In early August of 2021, wildfire smoke was transported into the Truckee Meadows from the Dixie and Antelope Fires which eventually led to PM<sub>10</sub> exceedances on August 6, 2021 at the Toll air monitoring station and on August 7, 2021 at the Sparks and Reno4 air monitoring stations. On August 5, 24-hour PM<sub>10</sub> averages were as low as 23, 25, and 29 µg/m<sup>3</sup> at Reno4, Sparks, and Toll respectively. By the next day, the 24-hour PM<sub>10</sub> average at Toll was 156 ug/m<sup>3</sup>. The next day, August 7, the 24-hour PM<sub>10</sub> average was 198 and 163 ug/m<sup>3</sup> at Reno4 and Sparks, respectively. As the wind increased, the smoke vacated the Truckee Meadows and dropped the PM<sub>10</sub> concentrations back below the NAAQS. An overview of 24-hour average concentrations for PM<sub>10</sub> for the month of August 2021 is shown in Figure 2-9. Since this figure includes data for the whole month, it is important to note that this demonstration is only for the Dixie/Antelope event, the Dixie/Caldor event will have a separate EE demonstration. The days of the exceedances that are relevant to this demonstration are denoted by the red data points on August 6-7, 2021.

Figure 2-9: 24-hour PM<sub>10</sub> Concentrations in August 2021



The National Weather Service Office in Reno, Nevada provides at least two daily Area Forecast Discussions that summarize the short and long-term weather forecast for the area. It also provides a synopsis of current observations as well as weather events such as smoke and haze. Below are excerpts from Area Forecast Discussions issued on the days of the exceedances. This excerpt confirms that the previously mentioned sequence of events is accurate.

*“Smoke from the Dixie Fire and other fires across northern CA will continue to pour into the Sierra/western NV with HRRR near surface smoke models bringing deteriorating conditions all the way south to Hawthorne and Mammoth Lakes. Afternoon mixing will only improve conditions slightly through Saturday as winds will generally be light. A bump in westerlies could briefly mix things a bit better Sunday before the surface flow resumes an unfavorable pattern of smoke transport Monday.”*

Excerpt from NWS-Reno Area Forecast Discussion  
(225 AM PDT Fri Aug 6 2021)

*“Smoke has inundated much of western NV and the eastern Sierra with many locations reporting unhealthy air quality early this morning. There is not going to be much improvement today until later in the afternoon when some westerly zephyr winds arrive to help disperse some of the smoke, primarily from Reno southward along the eastern Sierra/far western NV mainly west of Hwy 95. Conditions will likely deteriorate farther to the east across the Basin and Range, including Fallon/Lovelock/Hawthorne as the smoke pushes eastward. HRRR near surface smoke models do not indicate any significant improvement potential until Sunday afternoon when we get a more pronounced afternoon breeze. On Monday, winds decrease and turn in a more unfavorable direction once again. So as long as the Dixie Fire remains active, expect another round of smoke Monday.”*

Excerpt from NWS-Reno Area Forecast Discussion  
(257 AM PDT Sat Aug 7 2021)

Satellite imagery also confirms the sequence of events of the exceedance. As can be seen in Figure 2-10 below, smoke from the Dixie and Antelope fires had not entered HA 87 as of August 5, 2021. As wind patterns shifted, smoke from the fires moved into HA 87 causing the exceedance on August 6, 2021, at Toll. This is seen in Figure 2-11 below. The smoke stayed in HA 87 and caused an exceedance on August 7, 2021, at Reno4 and Sparks. This is shown in figure 2-12 below. Within a few days, the smoke had mostly vacated HA 87 which can be seen in Figure 2-13 below. The maps shown in Figures 2-14, 2-15, 2-16, and 2-17 are daily weather maps that were issued by the National Weather Service around the time of the exceedance that provide extra evidence in support of the aforementioned sequence of events.

Figure 2-10: Satellite Imagery from August 5, 2021





Figure 2-11: Satellite Imagery from August 6, 2021

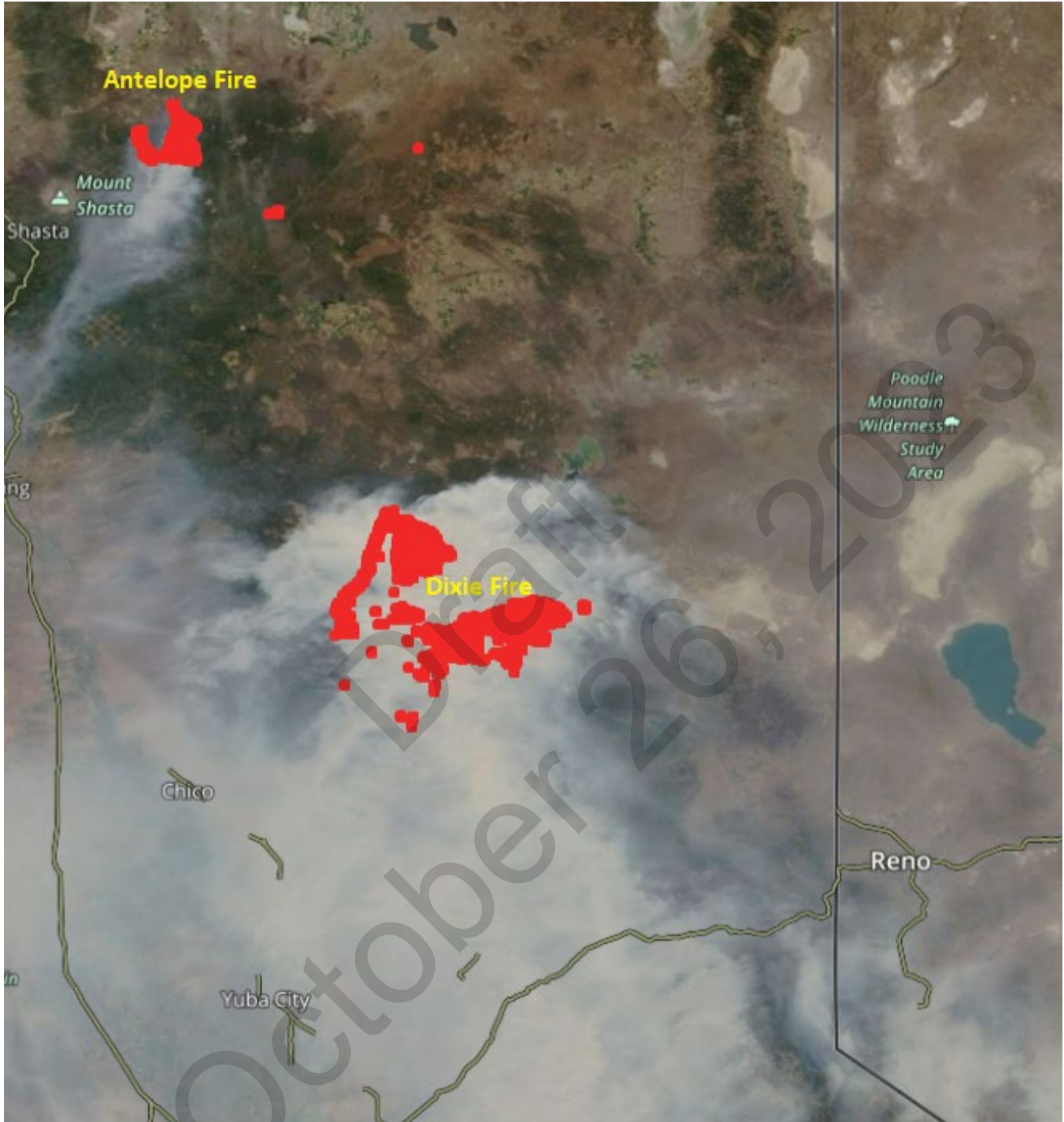


Figure 2-12: Satellite Imagery from August 7, 2021

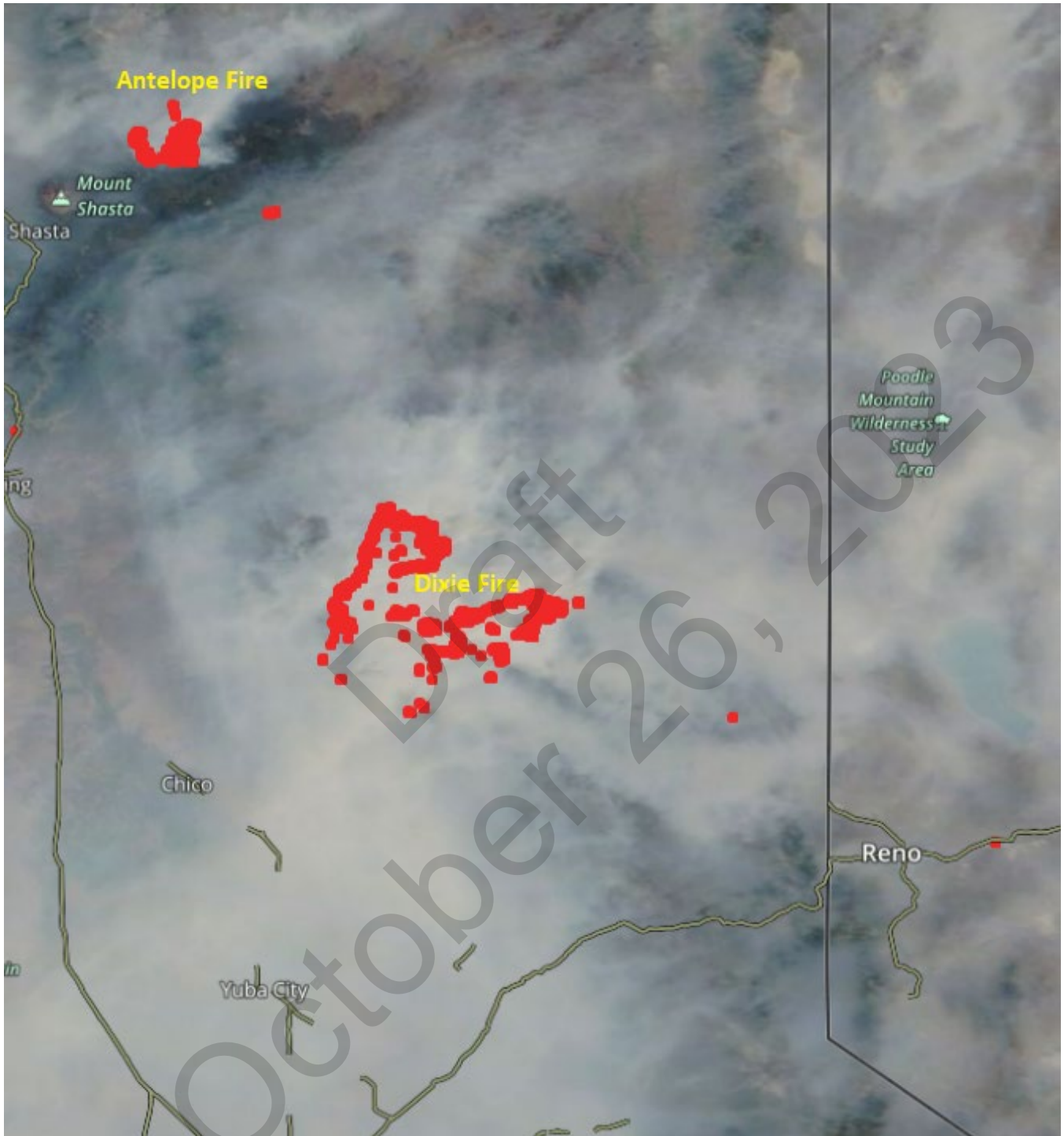


Figure 2-13: Satellite Imagery from August 9, 2021

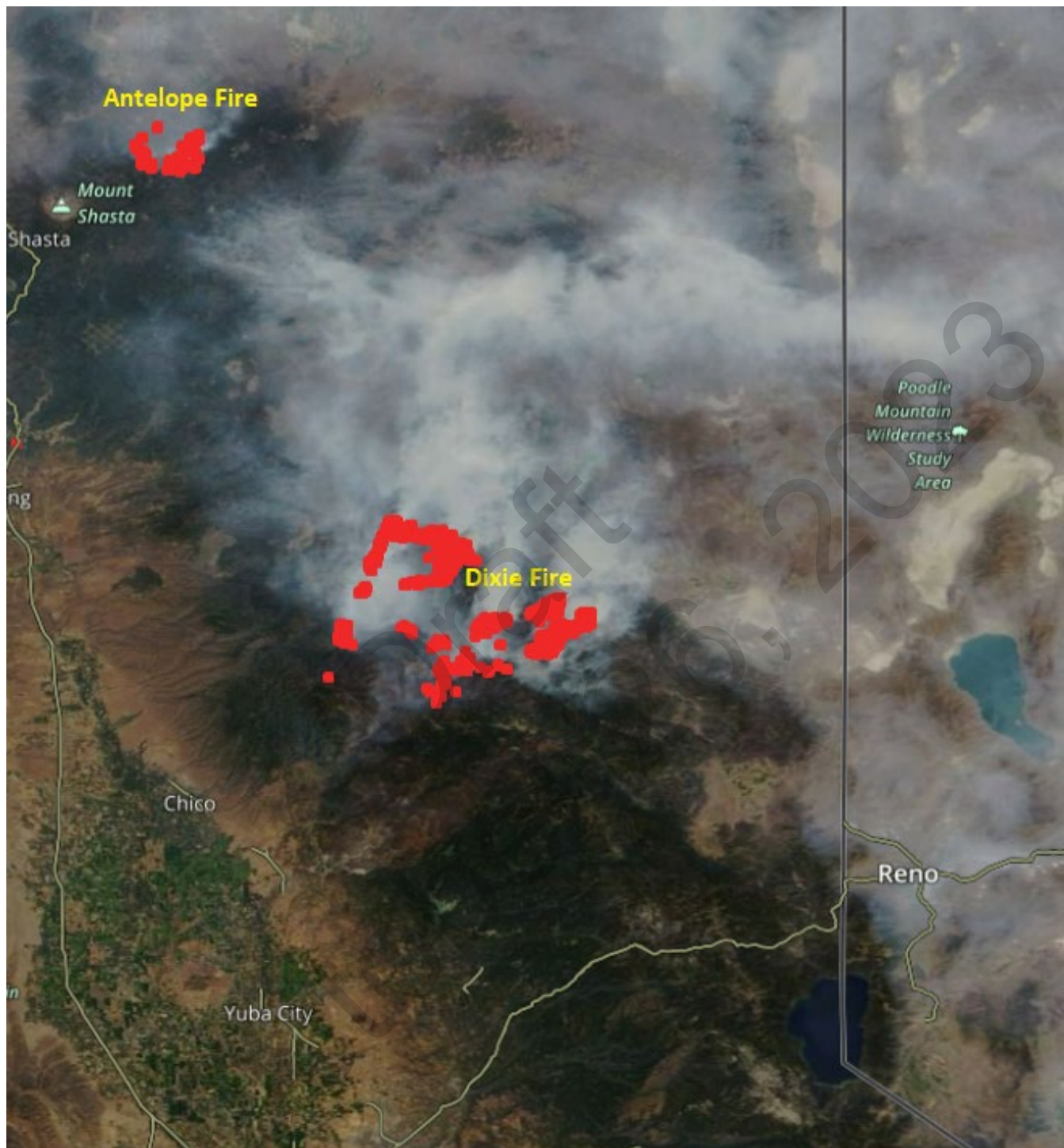


Figure 2-14: Daily Weather Maps for Aug 5, 2021

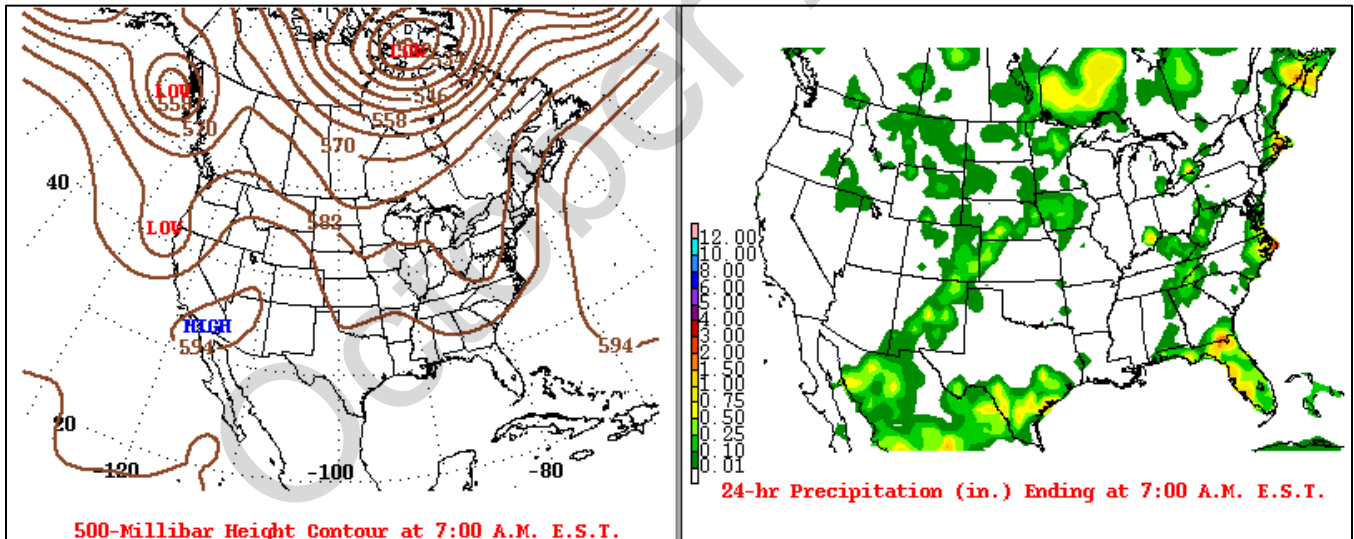
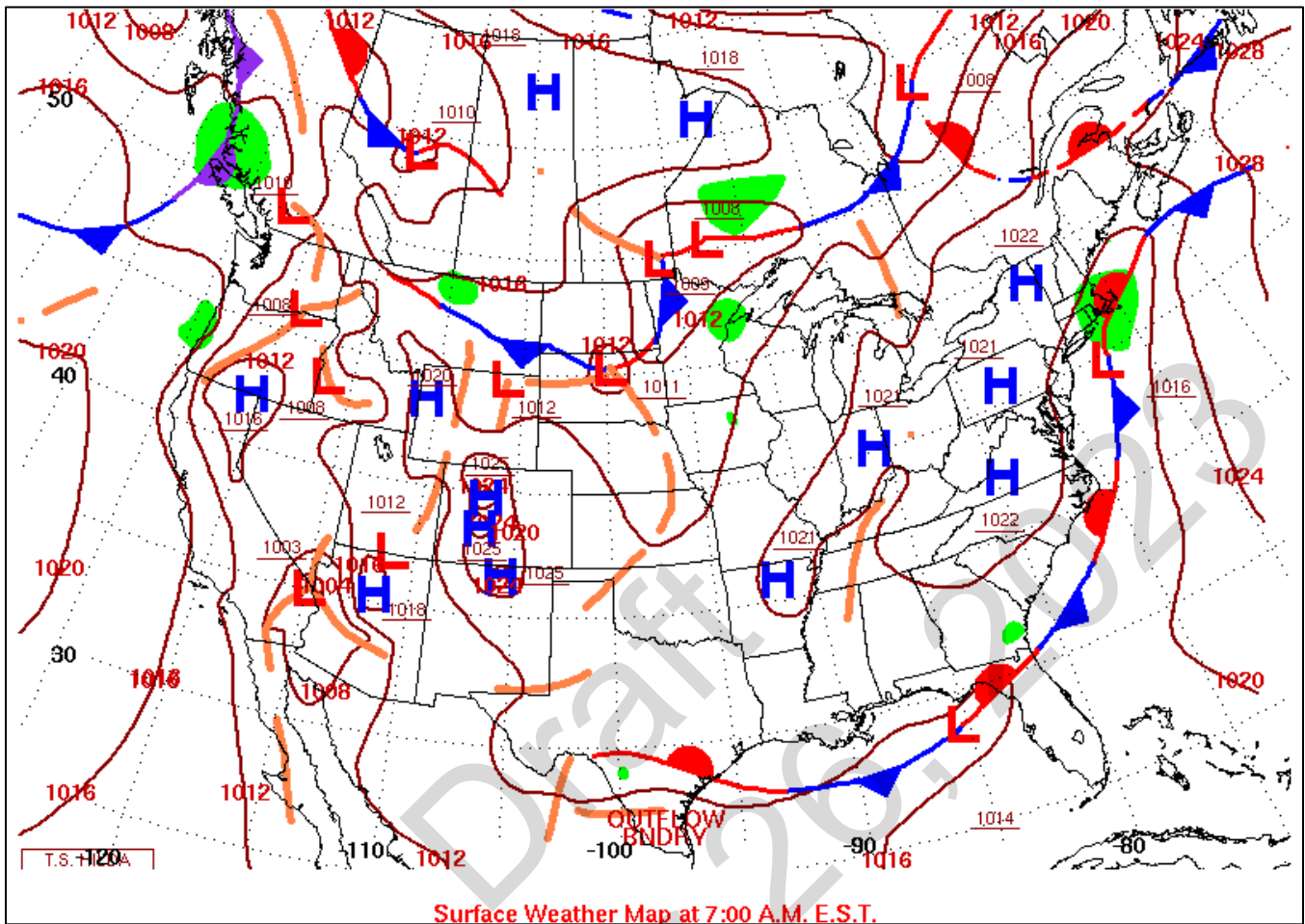


Figure 2-15: Daily Weather Maps for Aug 6, 2021

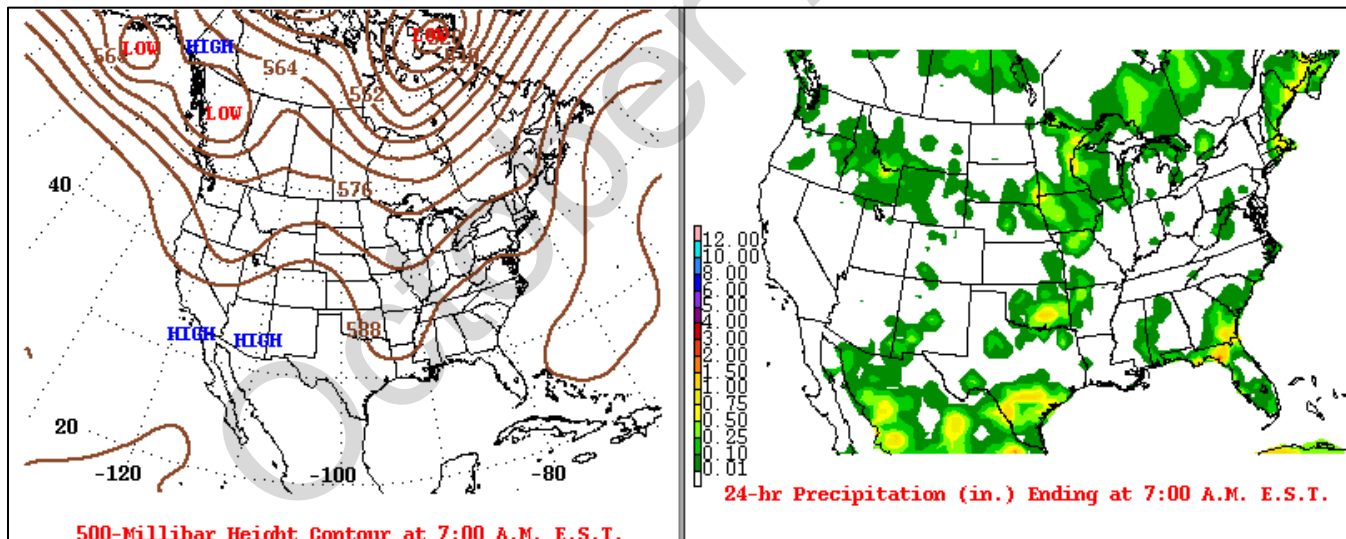
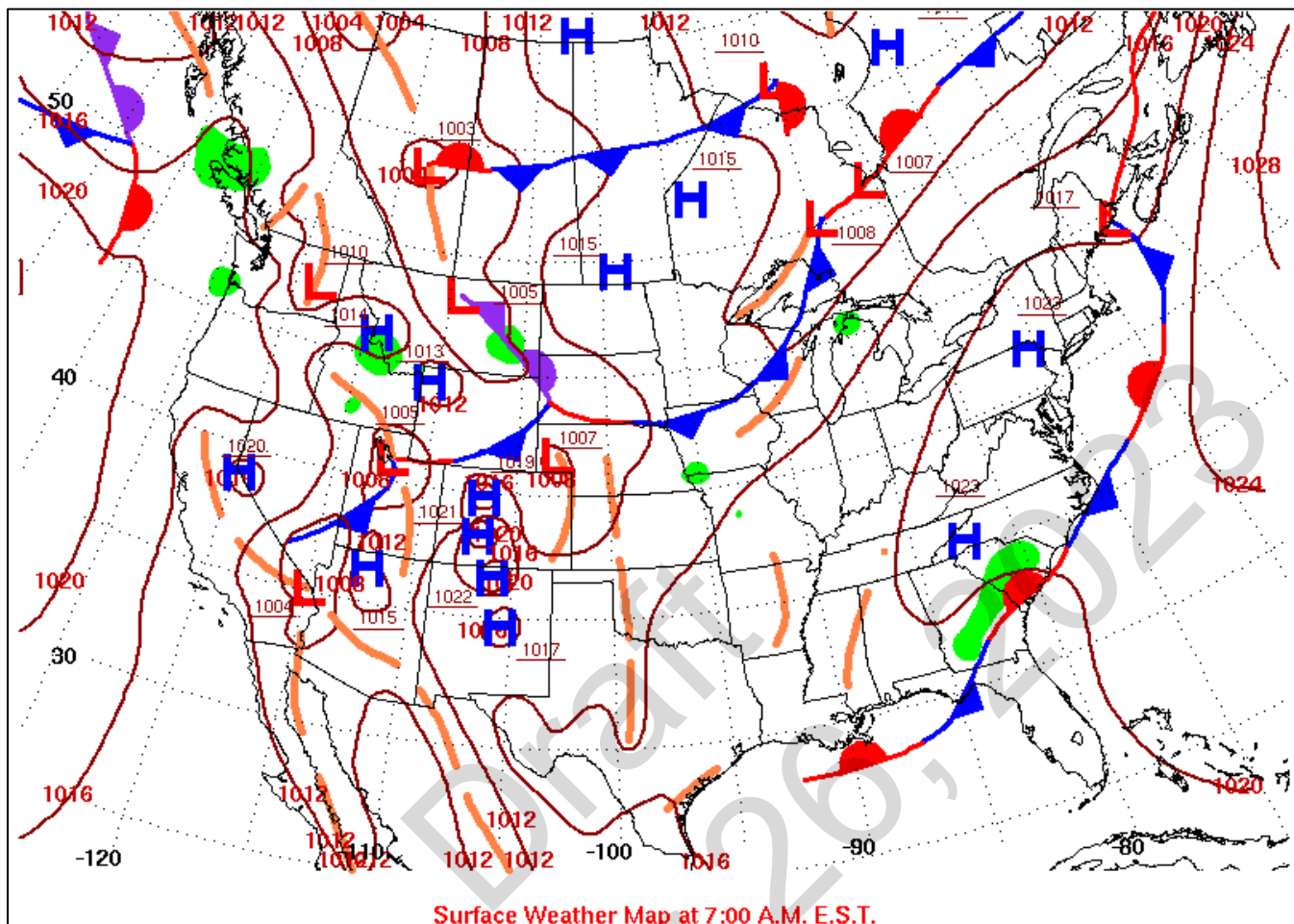


Figure 2-16: Daily Weather Maps for Aug 7, 2021

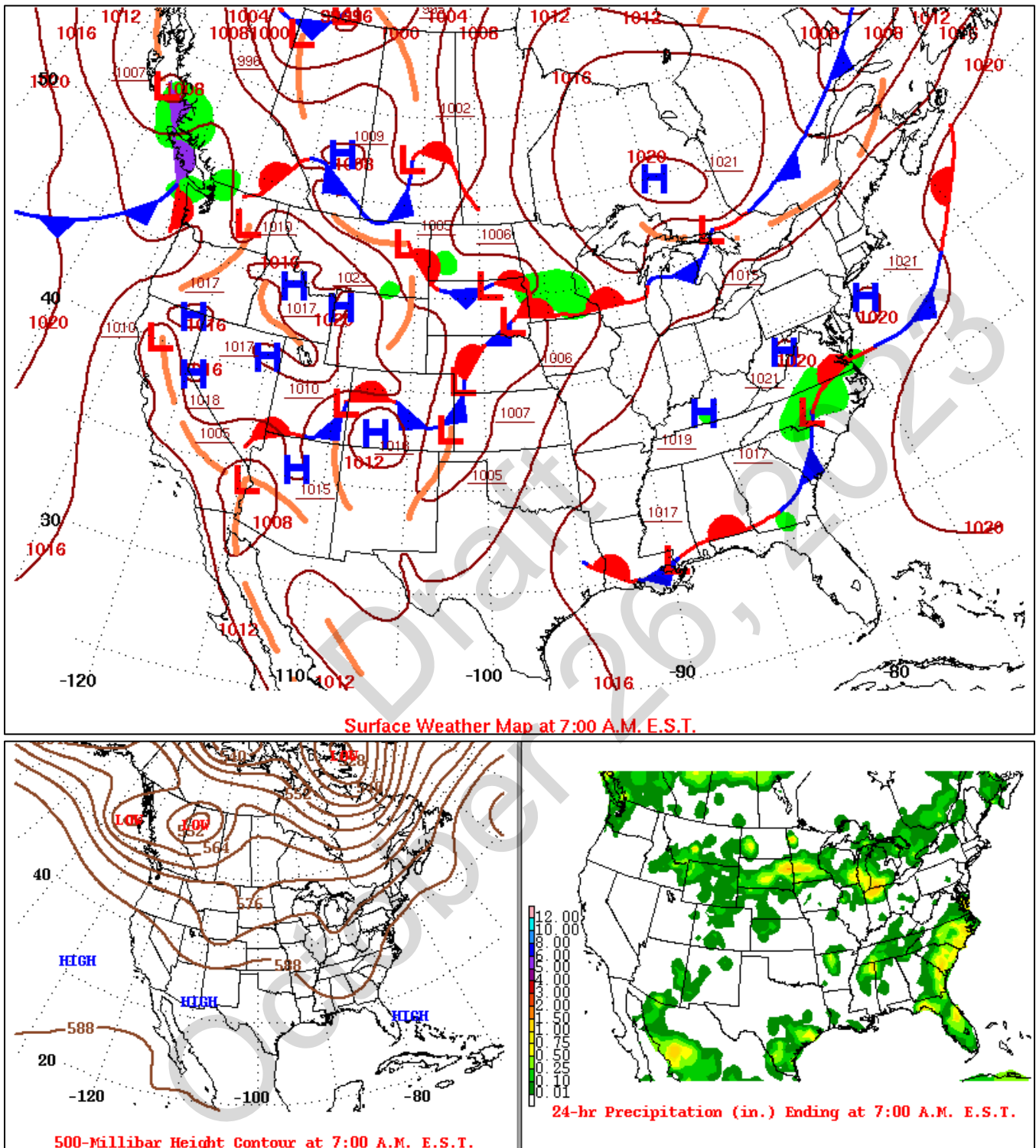
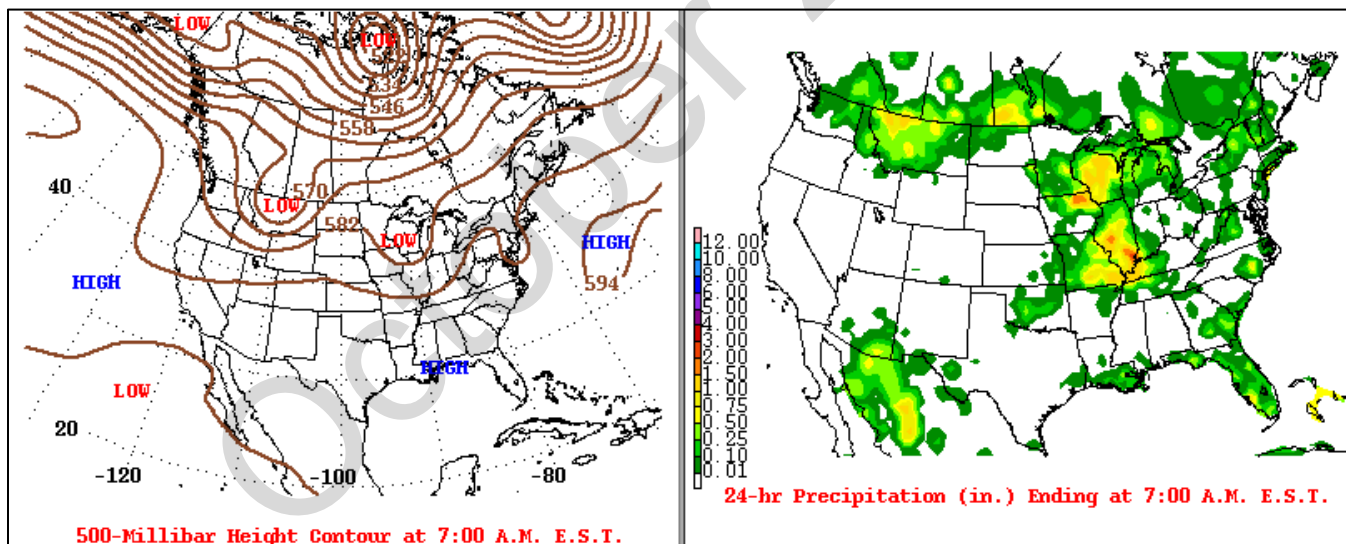
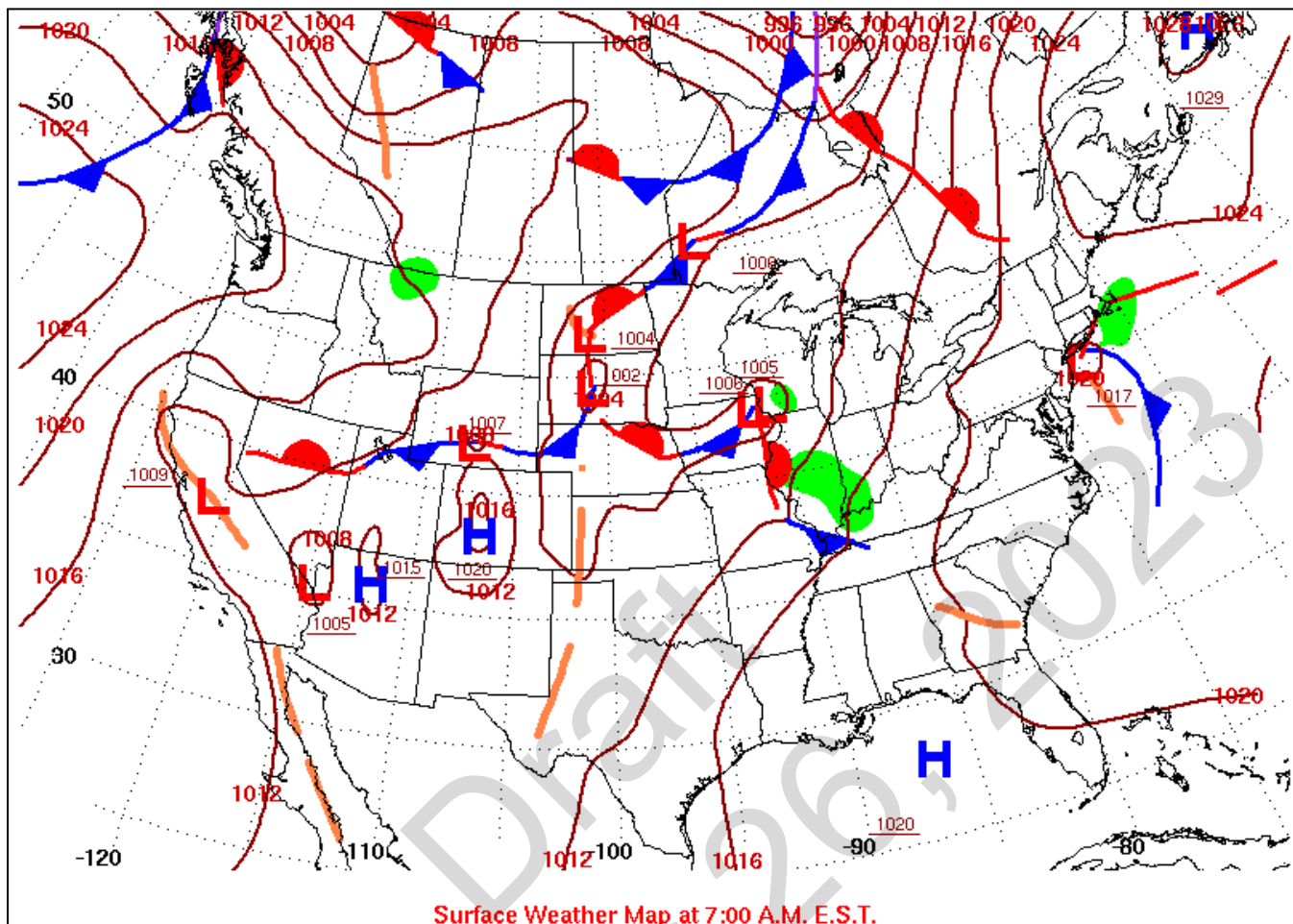


Figure 2-17: Daily Weather Maps for Aug 9, 2021



### 3.0 Not Reasonably Controllable or Preventable

Section 40 CFR 50.14 (c)(3)(iv)(D) requires a demonstration that the event was both not reasonably controllable and not reasonably preventable. Wildfires on wildland satisfy both requirements unless there is evidence to the contrary. This is explained in 40 CFR 50.14(b)(4) which states:

*The Administrator shall exclude data from use in determinations of exceedances and violations where a State demonstrates to the Administrator's satisfaction that emissions from wildfires caused a specific air pollution concentration in excess of one or more national ambient air quality standard at a particular air quality monitoring location and otherwise satisfies the requirements of this section. Provided the Administrator determines that there is no compelling evidence to the contrary in the record, the Administrator will determine every wildfire occurring predominantly on wildland to have met the requirements identified in paragraph (c)(3)(iv)(D) of this section regarding the not reasonably controllable or preventable criterion.*

As was shown in Figure 2-7, the wildfires that caused the PM<sub>10</sub> exceedances on August 6-7, 2021, were both started in the State of California on US Forest Service land. According to the definition of wildland provided in 40 CFR Part 50, §50.1(o), both the Dixie and Antelope fires occurred on wildland because the areas that the fires started were in areas with little human activity.

*40 CFR 50.1(o): Wildland means an area in which human activity and development are essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered.*

In addition, since the wildfires were not within the jurisdiction of Washoe County and the pollution impacts were due to interstate transport, there is no reasonable control method that AQMD could have taken to prevent the PM<sub>10</sub> exceedances from happening. The exceedances were caused by the excessive PM<sub>10</sub> emissions from the Dixie and Antelope fires, not from anthropogenic sources within Washoe County. This is proven beyond a reasonable doubt in Section 4 of this document, Clear Causal Relationship.



## 4.0 Clear Causal Relationship

### 4.1 Fire Emissions Analysis

As can be seen in Figure 2-9, smoke from the Dixie and Antelope fires impacted the Toll, Reno4, and Sparks PM<sub>10</sub> monitors starting on August 5, 2021. Between August 5 – August 7, 2021, the wildfires grew quickly and burned through large amounts of fuel, sending thousands of tons of emissions into the air, some of which was transported to the Truckee Meadows region, causing PM<sub>10</sub> exceedances. PM<sub>10</sub> emissions from the fire during this time frame were estimated by AQMD using the U.S Forest Service BlueSky Playground tool, Version 3.5. The inputs to the BlueSky Playground modeling tool include 1) Latitude and Longitude of fire origination, 2) Emissions Type, 3) Fuel Moisture Condition, 4) FCCS Fuelbed type and 5) acreage burned. For the Antelope Fire, the latitude and longitude were (41.5, -121.929), the emissions type was “Wildfire”, the Fuel Moisture Condition was “Dry”, and the FCCS Fuelbed type was “Fuel bed code 7 – Douglas-fir-sugar pine-tanoak forest.” For the Dixie Fire, the latitude and longitude were (39.8713, -121.3894), the emissions type was “Wildfire”, the Fuel Moisture Condition was “Dry”, and the FCCS Fuelbed type was “Fuel bed code 16 – Jeffrey pine-ponderosa pine-Douglas Fir-California black oak forest.” The Fuel Moisture Condition was determined to be “Dry” as a conservative estimate based on the U.S. Drought Monitor from August 10, 2021 shown in Figure 2-7. Fire acreage growth for both fires was determined by changes in acreage burned between daily Smoke Outlook reports issued by the Interagency Wildland Fire Air Quality Response Program. At most large wildfire events, a daily Smoke Outlook report is issued by an Air Resource Advisor that includes the size of the fire (in acres). By finding the difference in fire size listed on consecutive daily Smoke Outlook reports, daily fire growth can be calculated.

As can be seen in Table 4-1, the total PM<sub>10</sub> emissions that resulted from the Antelope and Dixie Fires between August 5 and August 7, 2021 was approximately 93,171 tons. As was mentioned in Section 2.3, and as per the 2020 Emissions Inventory, Washoe County produces approximately 38,833 lbs/day of PM<sub>10</sub>. That is a total of 7,087 tons over the course of the year. By comparison, the emissions from the Antelope Fire and Dixie Fire over this three-day period were over thirteen times the annual PM<sub>10</sub> emissions that Washoe County produces.

Table 4-1: PM<sub>10</sub> Emissions Calculations for the Period Prior to the Exceedances.

Date	Antelope Fire Growth (Acres)	Dixie Fire Growth (Acres)	Antelope Fire PM <sub>10</sub> Emissions (Tons)	Dixie Fire PM <sub>10</sub> Emissions (Tons)	Total PM <sub>10</sub> Emissions (Tons)
August 5, 2021	13,499	110,311	14,553.46	55,782.82	70,336.28
August 6, 2021	5,909	13,910	6,370.58	7,034.10	13,404.68
August 7, 2021	1,570	16,754	957.77	8,472.28	9,430.05
<b>Total</b>	<b>20,978</b>	<b>140,975</b>	<b>21,881.81</b>	<b>71,289.2</b>	<b>93,171.01</b>

## 4.2 Comparison of Event PM<sub>10</sub> Concentrations to Historical Concentrations

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In order to prove that the day of the exceedance had abnormally high PM<sub>10</sub> concentrations, AQMD compared the hourly data to what would be expected on a non-event day in wildfire season. AQMD completed a diurnal pattern analysis to do this. Each hour on the exceedance days were compared to the 5<sup>th</sup> percentile, 50<sup>th</sup> percentile, and 95<sup>th</sup> percentile of historical hourly concentrations. The historical concentrations were from the five-year period from 2016-2020 in the wildfire season of July-September. This analysis was done at the Toll, Reno4, and Sparks PM<sub>10</sub> monitors. For the Reno4 historical PM<sub>10</sub> concentrations of 2016, 2017, 2018, and 2019, Reno3 data was used to add to Reno4's 2020 data.

As can be seen in Figure 4-1, Figure 4-2, and Figure 4-3 below, the hourly PM<sub>10</sub> concentrations at Toll, Reno4, and Sparks on the days of the exceedances were much higher than what would be expected based on historical concentrations. Most hourly concentrations were orders of magnitude higher than what would be expected (50<sup>th</sup> percentile). Additionally, most hourly concentrations were much higher than the 95<sup>th</sup> percentile of the data set.

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Figure 4-1: 2016-2020 PM<sub>10</sub> Diurnal Pattern Comparison for Toll on 08/06/21

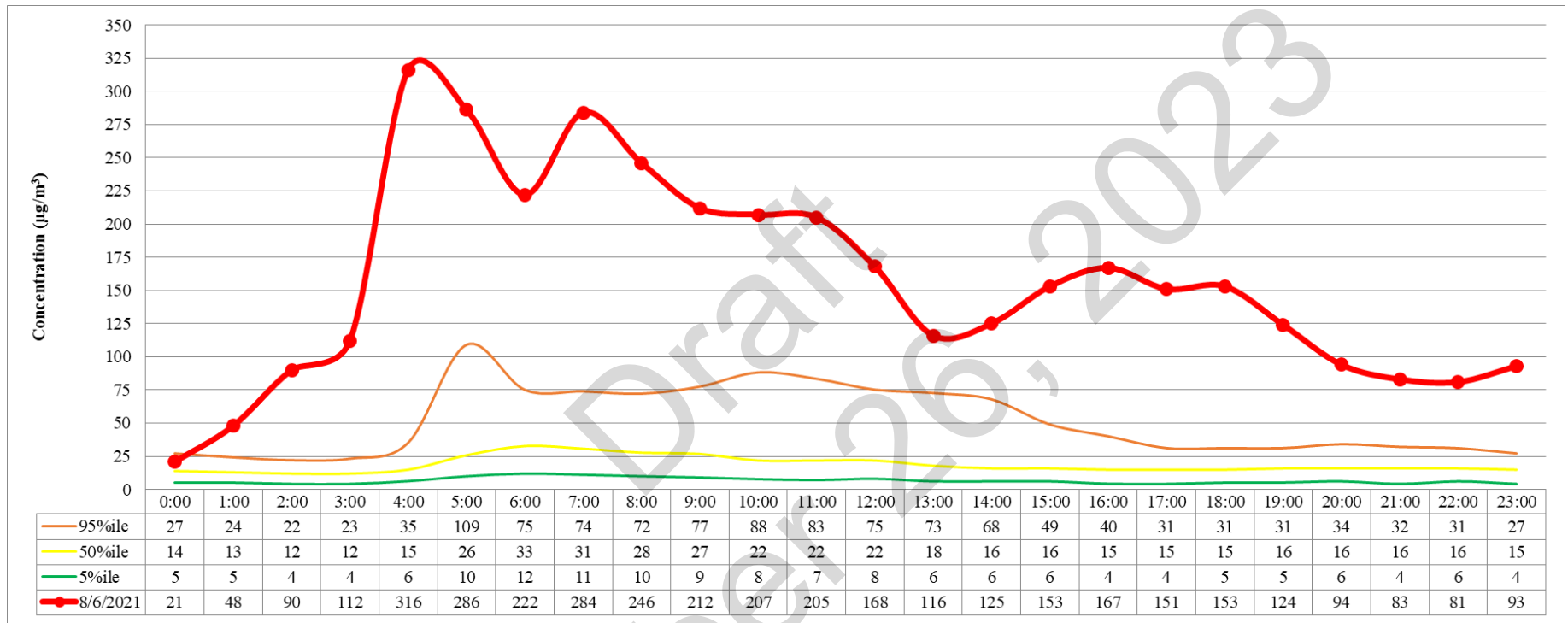


Figure 4-2: 2016-2020 PM<sub>10</sub> Diurnal Pattern Comparison for Reno4 on 08/07/21

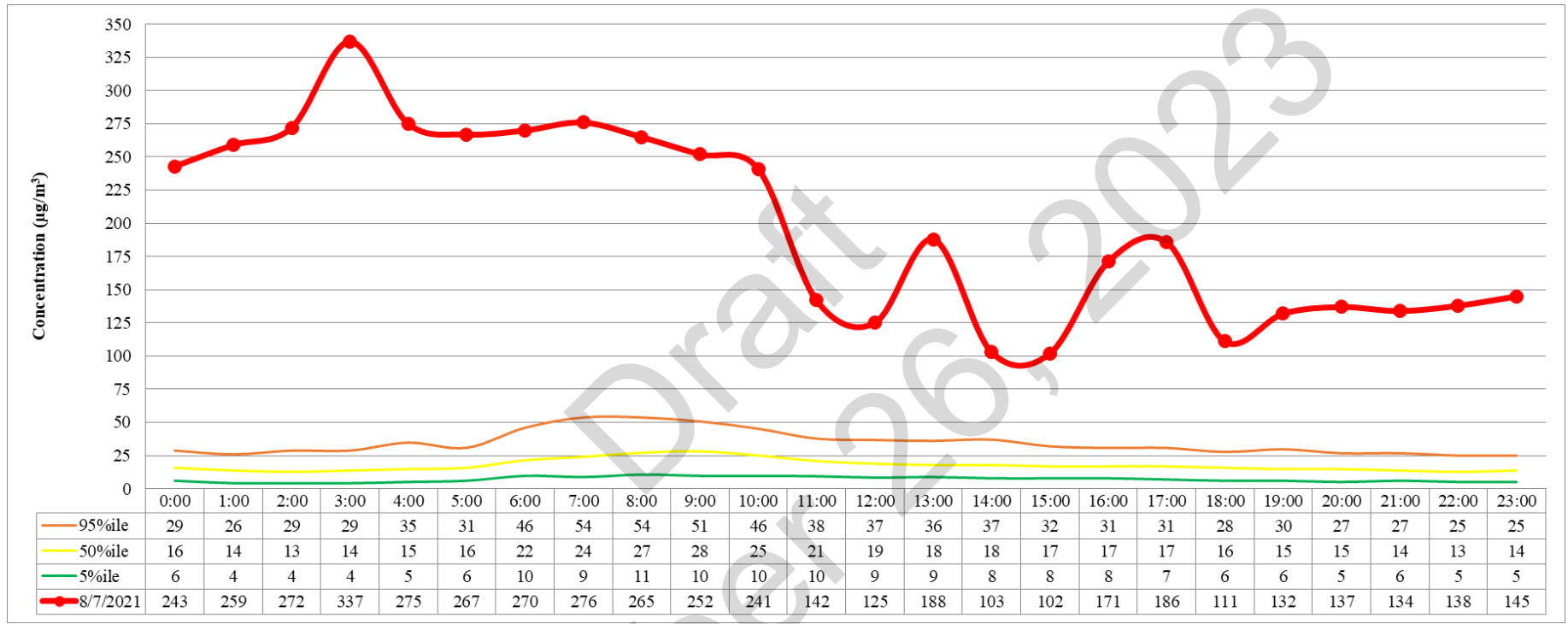
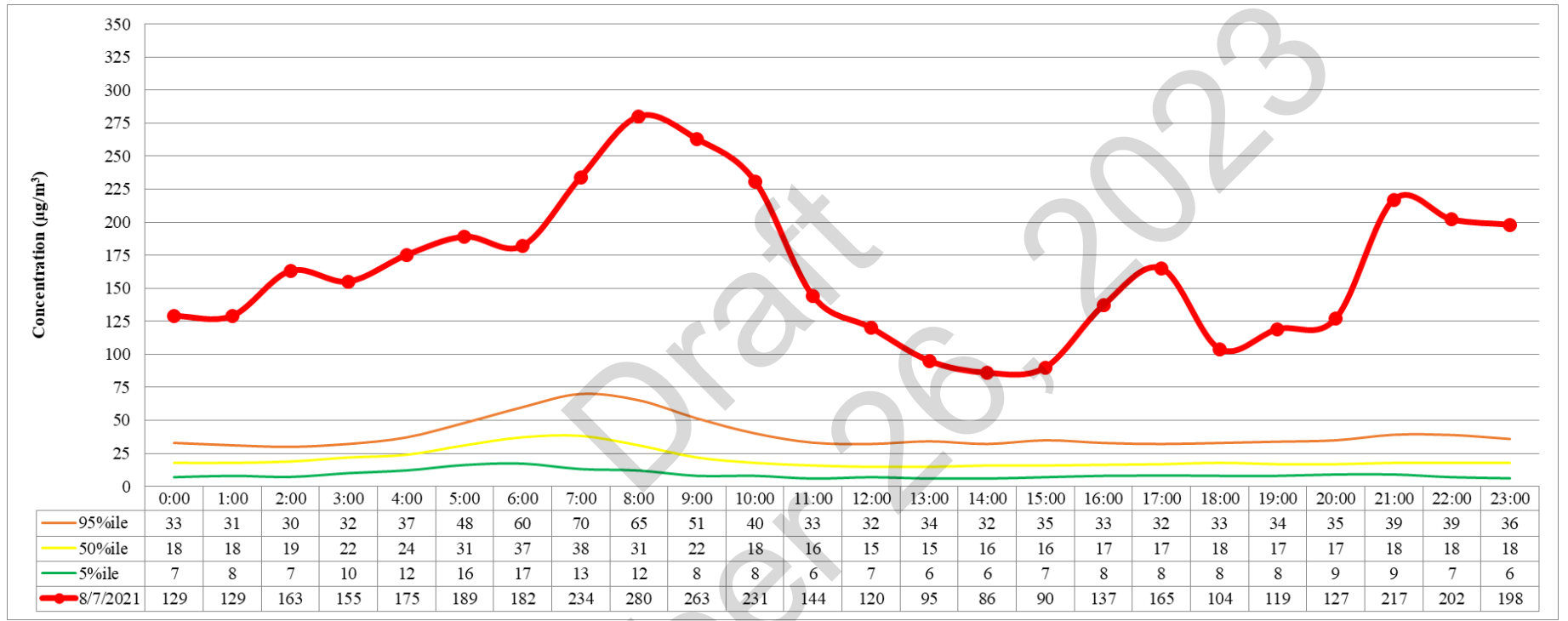


Figure 4-3: 2016-2020 PM<sub>10</sub> Diurnal Pattern Comparison for Sparks on 08/07/21



### 4.3 Methods for Determining the Presence of Wildfire Smoke

#### 4.3.1 PM<sub>2.5</sub> Concentrations

Although this demonstration is written for PM<sub>10</sub>, analyzing the PM<sub>2.5</sub> concentrations during the event supports this demonstration by highlighting that the fine particulate matter concentrations followed the same trend as PM<sub>10</sub>. If the particulate is made up of smoke, PM<sub>2.5</sub> and PM<sub>10</sub> should follow the same trend. If the particulate was made up of something else such as a geologic source, PM<sub>2.5</sub> would not follow the same trend as PM<sub>10</sub>. As can be seen in Figure 4-4, Figure 4-5, and Figure 4-6, concentrations of PM<sub>2.5</sub> and PM<sub>10</sub> followed the same trend over duration of the event at all affected monitors, thus supporting AQMD’s position that wildfire smoke was present.

Figure 4-4: 24-hour PM<sub>2.5</sub> and PM<sub>10</sub> Concentrations at Toll in August 2021

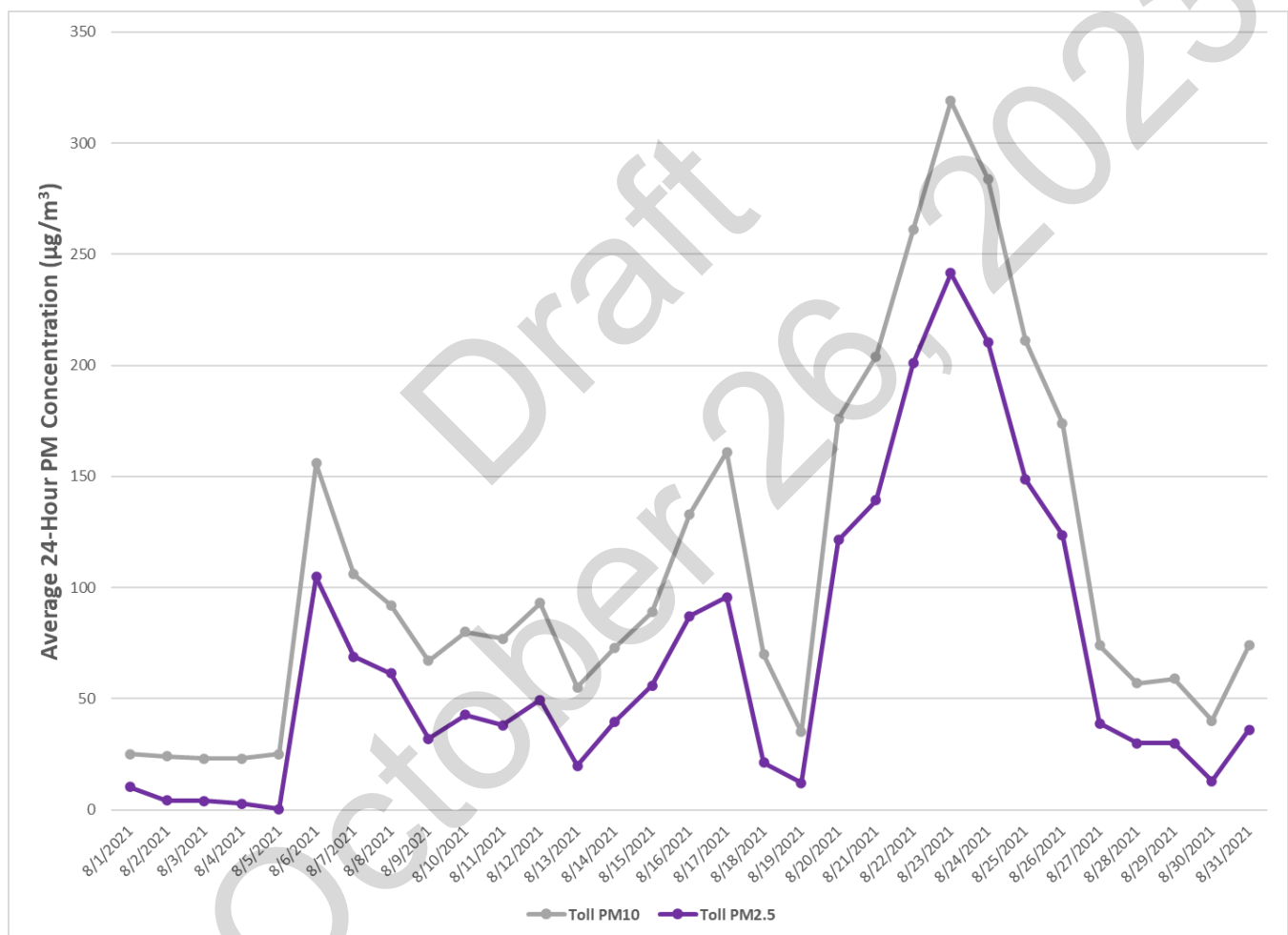


Figure 4-5: 24-hour PM<sub>2.5</sub> and PM<sub>10</sub> Concentrations at Reno4 in August 2021

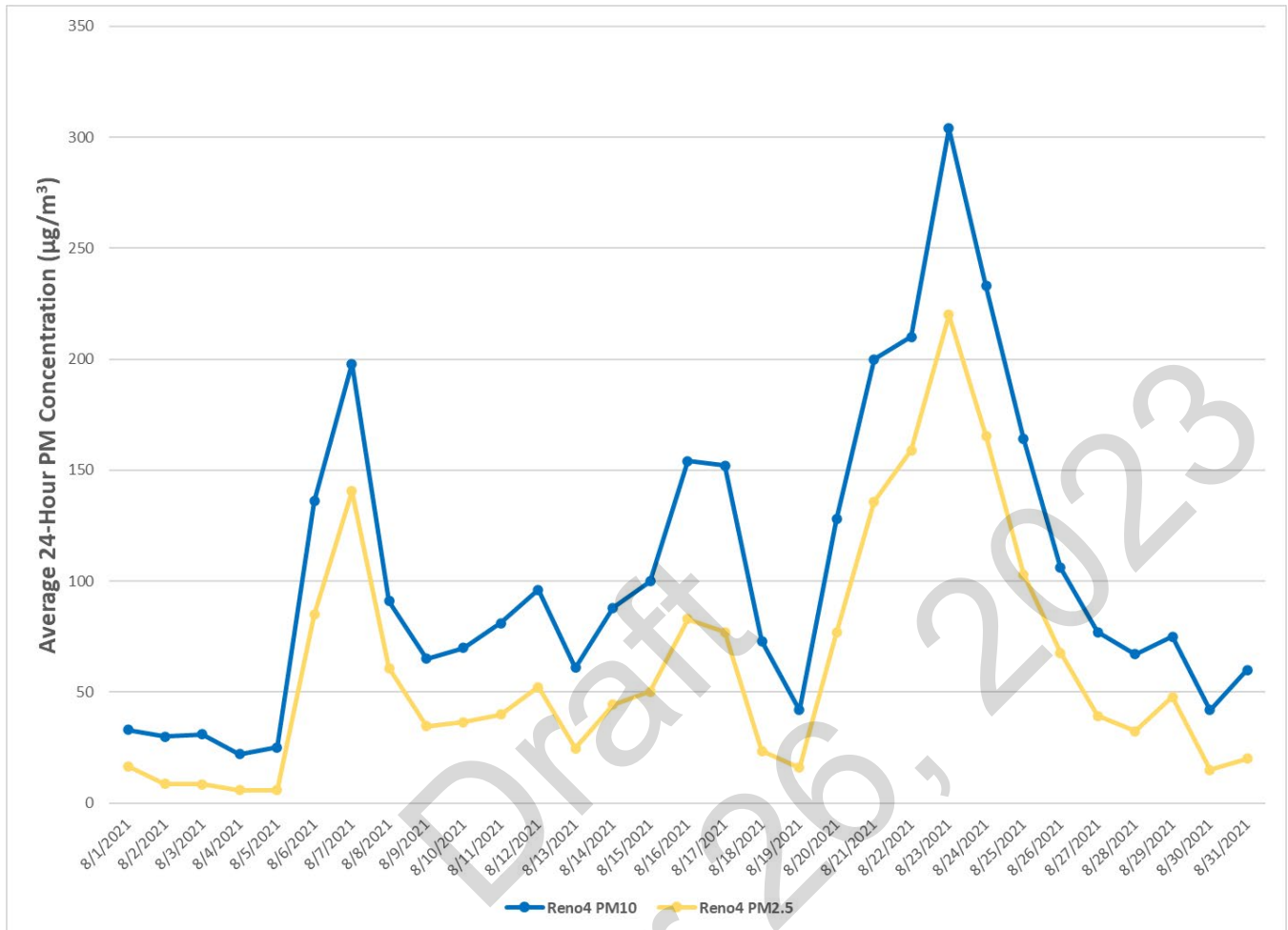
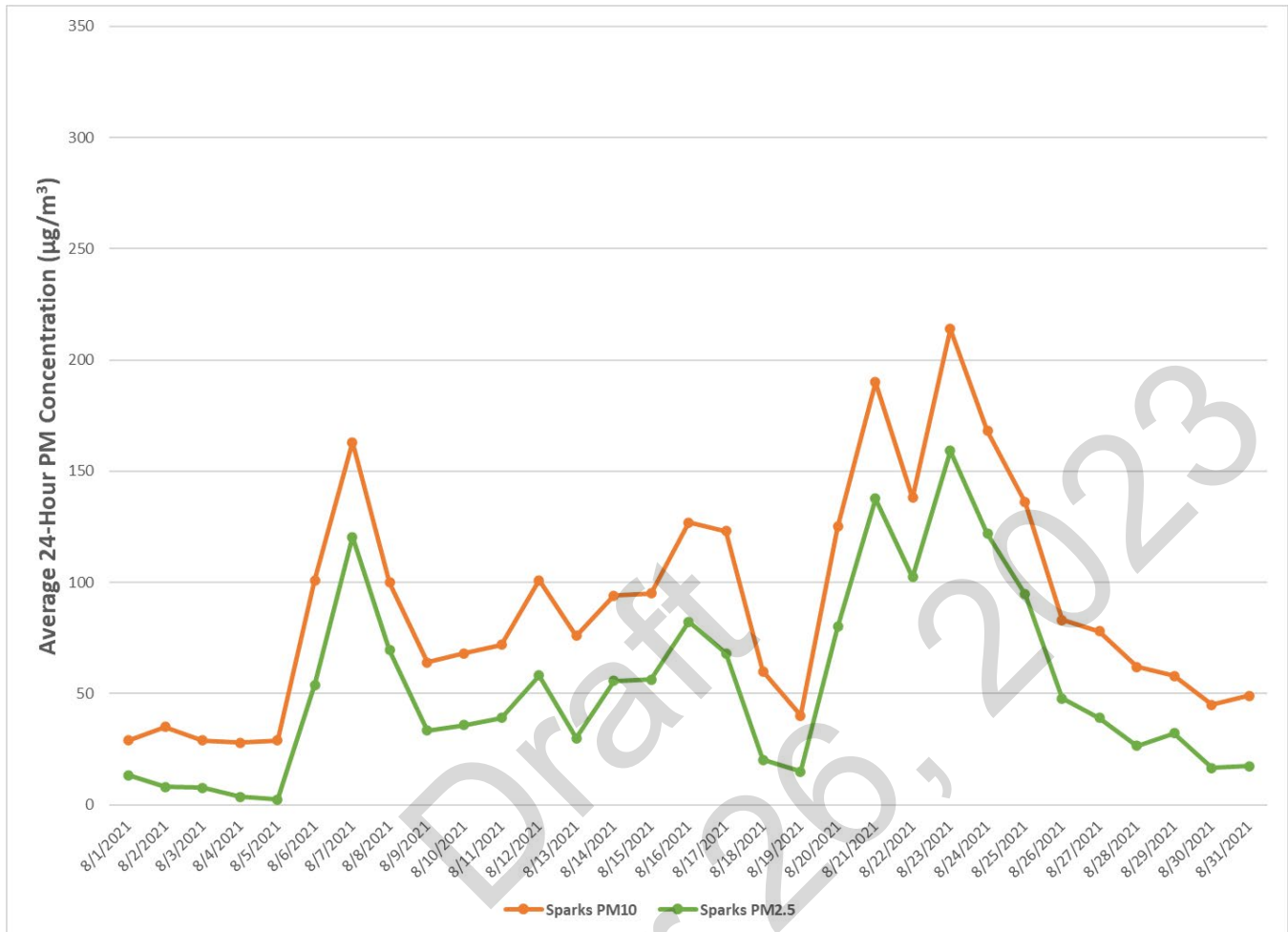


Figure 4-6: 24-hour PM<sub>2.5</sub> and PM<sub>10</sub> Concentrations at Sparks in August 2021



Similar to PM<sub>10</sub>, AQMD also completed a diurnal pattern analysis for PM<sub>2.5</sub>. Each hour on the exceedance day was compared to the 5<sup>th</sup> percentile, 50<sup>th</sup> percentile, and 95<sup>th</sup> percentile of historical hourly concentrations. The historical concentrations were from non-event days in the five-year period from 2016-2020 during the wildfire season of July-September. This analysis was done for Reno4, and Sparks PM<sub>2.5</sub> on the days of the exceedances. Since Toll did not monitor for PM<sub>2.5</sub> until 2019, a diurnal was created for 2019-2020. For the Reno4 historical PM<sub>2.5</sub> concentrations of 2016, 2017, 2018, and 2019, Reno3 data was used to add to Reno4's 2020 data.

As can be seen in Figure 4-7, 4-8, and 4-9 below, nearly every hour of the exceedance was multiple times higher than what would be expected (50<sup>th</sup> percentile) and still much higher than the 95<sup>th</sup> percentile of the data set.



Figure 4-7: 2019-2020 PM<sub>2.5</sub> Diurnal Pattern Comparison for Toll on 08/06/21

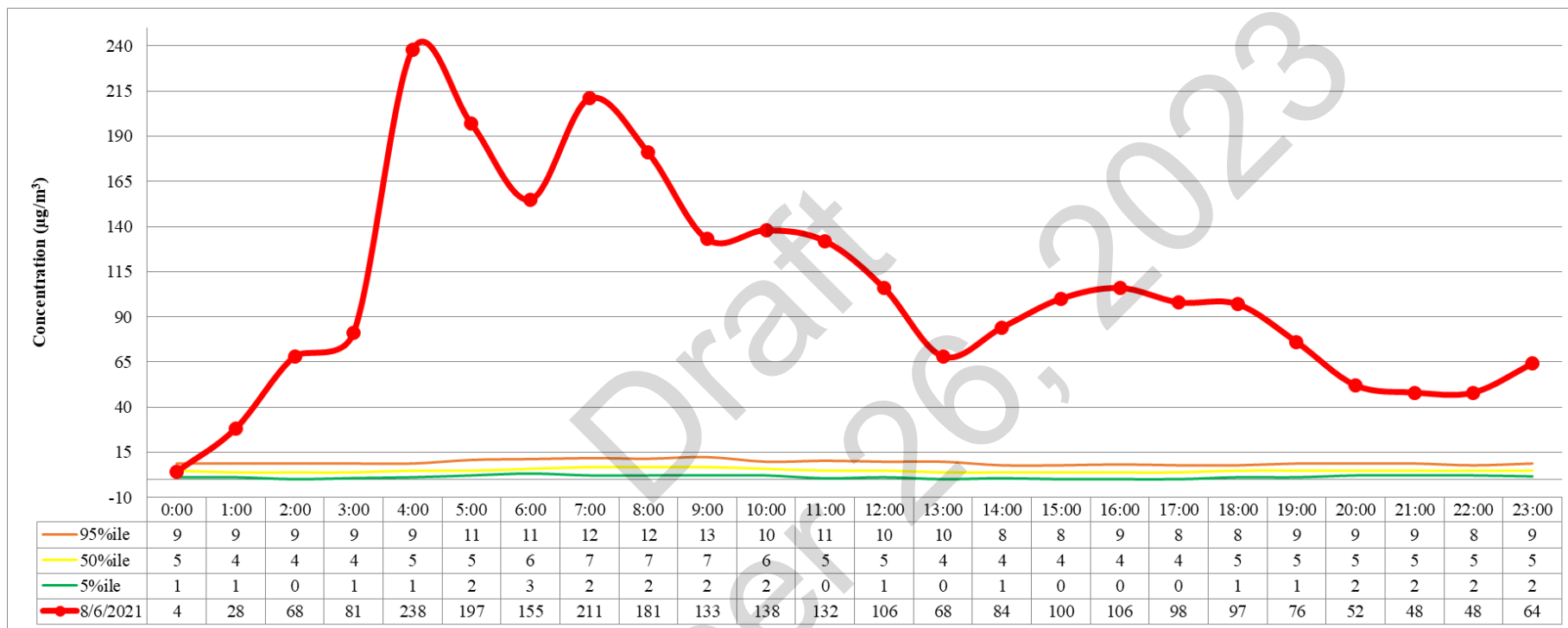


Figure 4-8: 2016-2020 PM<sub>2.5</sub> Diurnal Pattern Comparison for Reno4 on 08/07/21

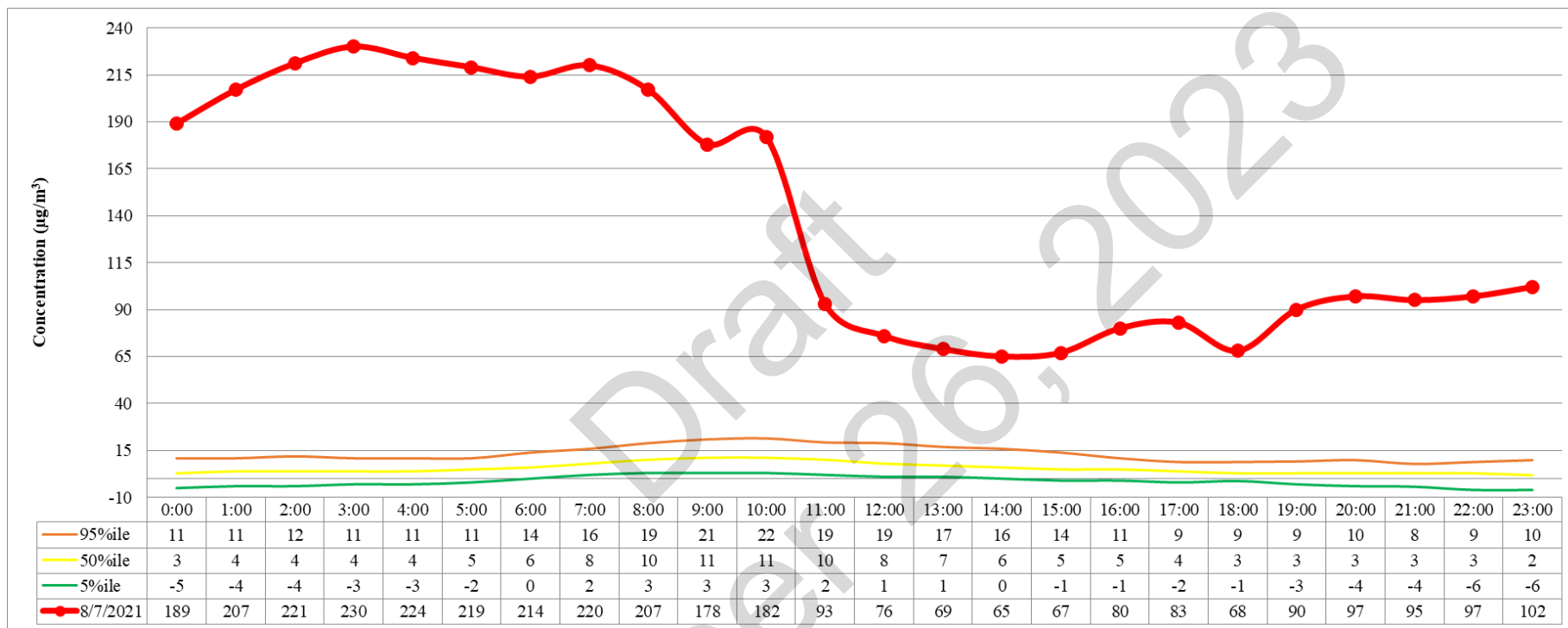
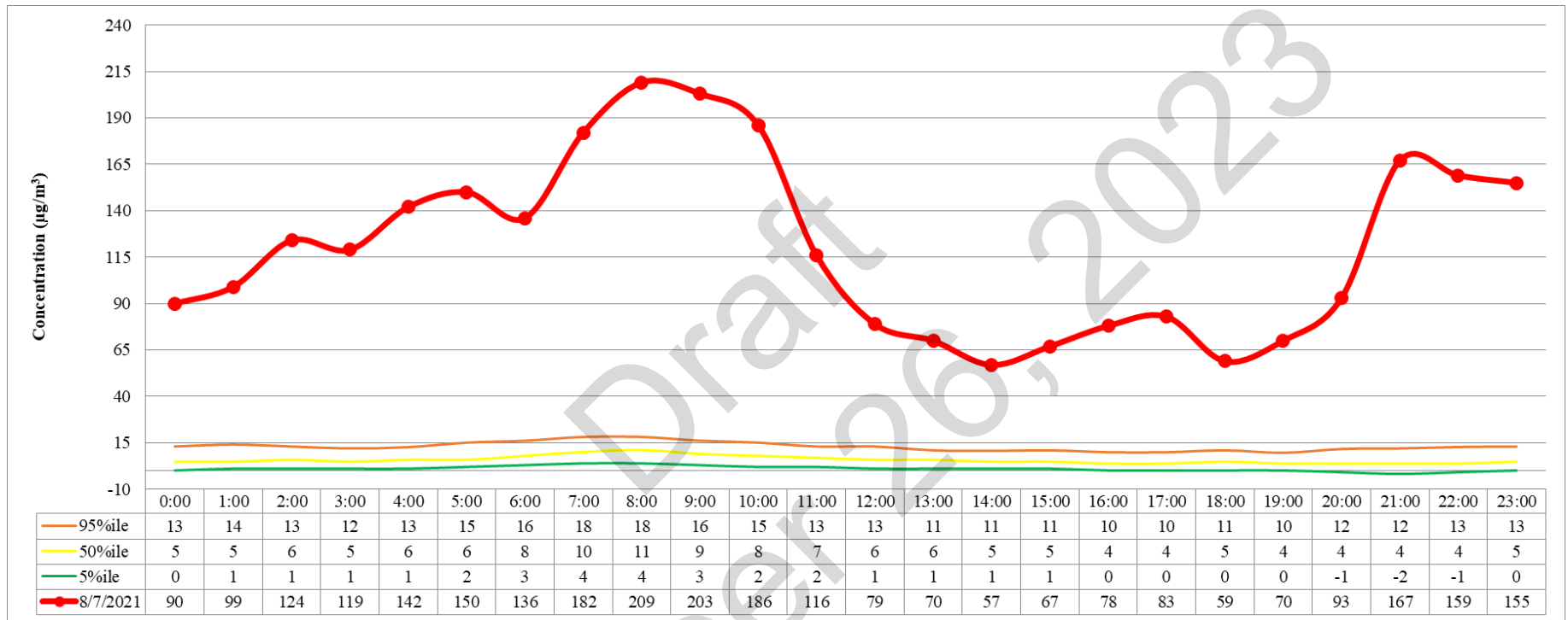


Figure 4-9: 2016-2020 PM<sub>2.5</sub> Diurnal Pattern Comparison for Sparks on 08/07/21



#### 4.3.2 PM<sub>2.5</sub>/PM<sub>10</sub> Ratio

One method for determining whether the elevated PM<sub>10</sub> concentrations were caused by wildfire smoke is by analyzing the ratio of PM<sub>2.5</sub> to PM<sub>10</sub>. If a higher fraction of the PM<sub>10</sub> is made up of PM<sub>2.5</sub>, this is indicative that smoke is present in the region. A lower PM<sub>2.5</sub>/PM<sub>10</sub> ratio would mean that more of the particulate is larger than 2.5 microns and is most likely of a geologic origin. As can be seen in Table 4-2, Table 4-3, and Table 4-4, the PM<sub>2.5</sub>/PM<sub>10</sub> ratio at Toll, Reno4, and Sparks started to increase on August 5, 2021, leading up to the exceedance days. The days of the exceedances are highlighted in yellow and show an elevated ratio compared to when the monitors were not affected by the wildfire smoke on August 5 of 2021.

Table 4-2: PM<sub>2.5</sub>/PM<sub>10</sub> Ratios at Toll

<b>Toll</b>			
Date	24-hour Average (µg/m <sup>3</sup> )		PM <sub>2.5</sub> /PM <sub>10</sub>
	PM <sub>2.5</sub>	PM <sub>10</sub>	
8/4/2021	2.8	23	0.12
8/5/2021	0.4	25	0.02
8/6/2021	104.7	156	0.67
8/7/2021	68.9	106	0.65
8/8/2021	61.3	92	0.67
8/9/2021	31.9	67	0.48
8/10/2021	42.7	80	0.53

Table 4-3: PM<sub>2.5</sub>/PM<sub>10</sub> Ratios at Reno4

<b>Reno4</b>			
Date	24-hour Average (µg/m <sup>3</sup> )		PM <sub>2.5</sub> /PM <sub>10</sub>
	PM <sub>2.5</sub>	PM <sub>10</sub>	
8/4/2021	5.8	22	0.26
8/5/2021	5.7	25	0.23
8/6/2021	84.9	136	0.62
8/7/2021	140.5	198	0.71
8/8/2021	60.8	91	0.67
8/9/2021	34.7	65	0.53
8/10/2021	36.4	70	0.52

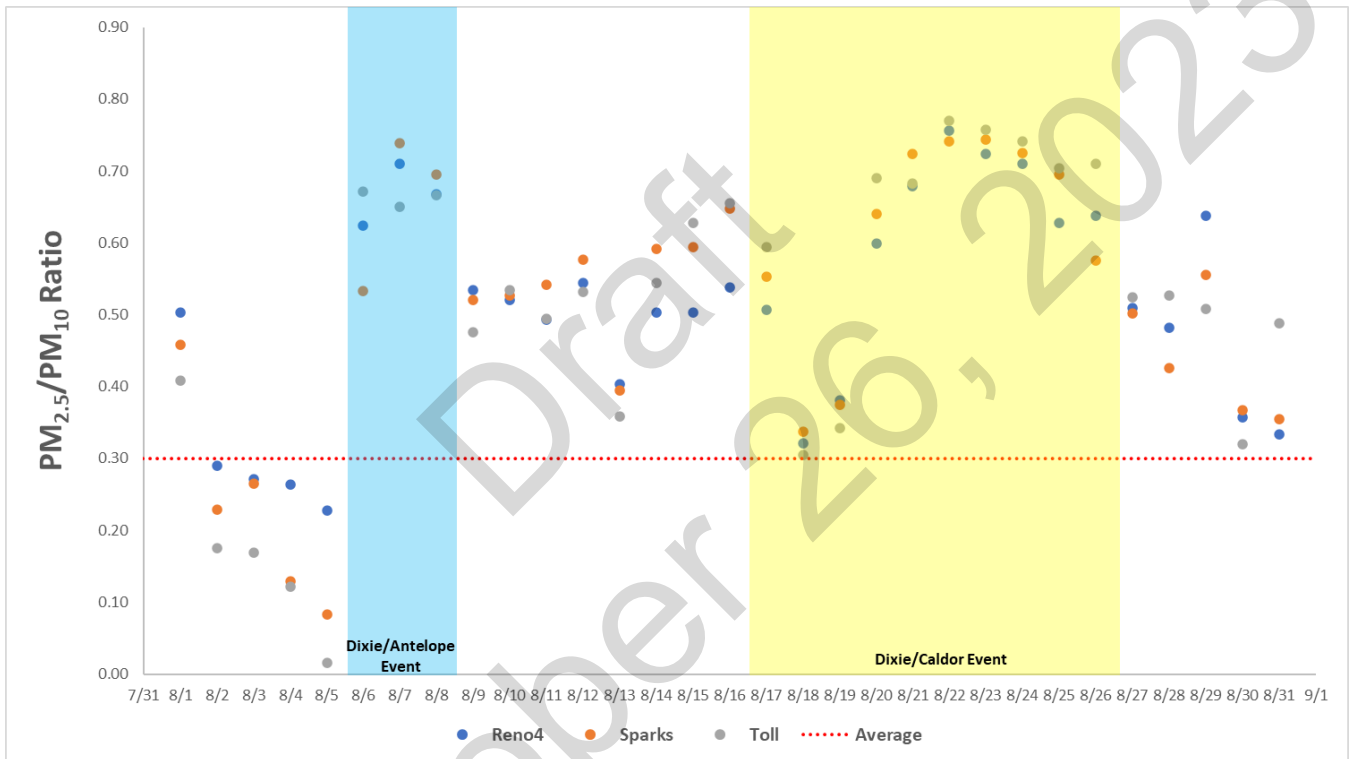
Table 4-4: PM<sub>2.5</sub>/PM<sub>10</sub> Ratios at Sparks

Sparks			
Date	24-hour Average (µg/m <sup>3</sup> )		PM <sub>2.5</sub> /PM <sub>10</sub>
	PM <sub>2.5</sub>	PM <sub>10</sub>	
8/4/2021	3.6	28	0.13
8/5/2021	2.4	29	0.08
8/6/2021	53.9	101	0.53
8/7/2021	120.5	163	0.74
8/8/2021	69.5	100	0.70
8/9/2021	33.3	64	0.52
8/10/2021	35.8	68	0.53

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The  $PM_{2.5}/PM_{10}$  ratio during the Dixie/Antelope event was higher than the rest of August 2021 and what would be expected on a typical summer day. AQMD determined what a typical summertime  $PM_{2.5}/PM_{10}$  ratio would be by finding the regional average ratio during July-September between 2016 and 2020. The regional average ratio is the average of the Reno4 and Sparks  $PM_{2.5}/PM_{10}$  ratios. The  $PM_{2.5}/PM_{10}$  ratio that could be expected when not influenced by wildfire smoke or other events is 0.30. The ratios on the days of the exceedances were 0.67 at Toll on August 6, 2021, and 0.71 and 0.74 at Reno4 and Sparks respectively on August 7, 2021. The ratios were more than twice what would be expected, thus supporting AQMD's position that the exceedances were caused by wildfire smoke. Figure 4-10 illustrates this.

Figure 4-10:  $PM_{2.5}/PM_{10}$  Ratios throughout August 2021



### 4.3.3 PM<sub>2.5</sub>/CO Ratio

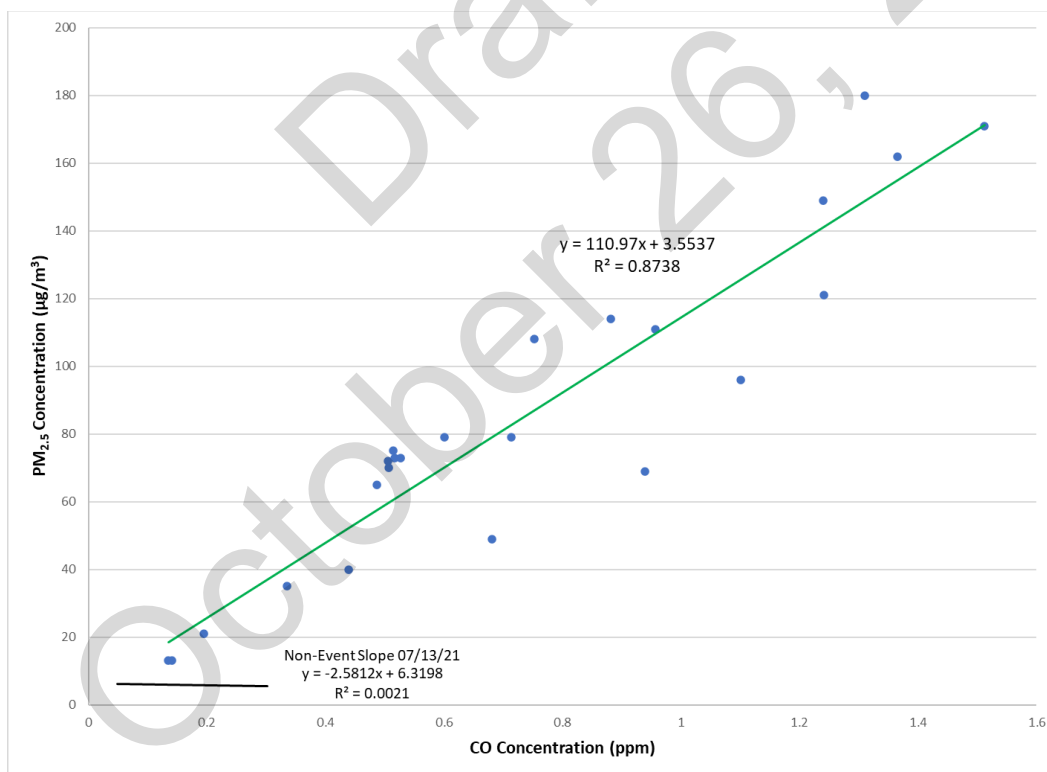
It has been documented that ambient PM<sub>2.5</sub> and CO concentrations are correlated in the presence of wildfire smoke in urban areas.<sup>1</sup> AQMD completed a linear regression analysis that compared the PM<sub>2.5</sub> and CO concentrations at the Reno4 and Sparks monitoring sites on the days of the exceedances. Since the Toll monitoring site does not measure CO, this same analysis was done using Reno4 as a proxy. This information was then compared to a linear regression analysis completed for a non-event day on July 13, 2021. The equation and coefficient of determination (R<sup>2</sup>) that resulted from the linear regression on the non-event day is shown below.

Non-Event Slopes (July 13, 2021)

Reno4: $y = -2.5812x + 6.3198$	$R^2 = 0.0021$
Sparks: $y = 2.6136x + 3.017$	$R^2 = 0.0028$

As can be seen in Figure 4-11, Figure 4-12, and Figure 4-13, a strong correlation was found on the days of the exceedances between PM<sub>2.5</sub> and CO concentration. The coefficient of determination for Reno4 on the August 6 exceedance was 0.8738. The coefficient of determination for Reno4 and Sparks on the August 7 exceedance was 0.9769 and 0.7865, respectively. This signals a presence of wildfire smoke on the days of the exceedances.

Figure 4-11: Hourly PM<sub>2.5</sub>/CO at Reno4 on August 6, 2021



<sup>1</sup> Jaffe, D. A., Schnieder, B., and Inouye, D.: Technical note: Use of PM<sub>2.5</sub> to CO ratio as an indicator of wildfire smoke in urban areas, Atmos. Chem. Phys., 22, 12695-12704, <https://doi.org/10.5194/acp-22-12695-2022>, 2022.

Figure 4-12: Hourly PM<sub>2.5</sub>/CO at Reno4 on August 7, 2021

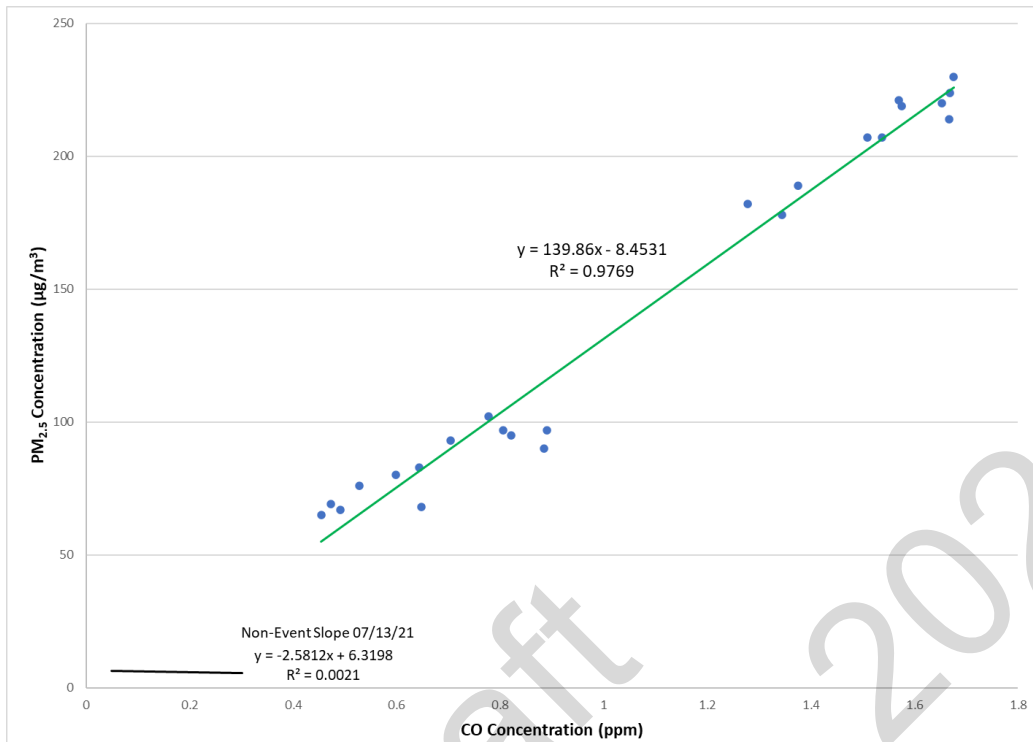
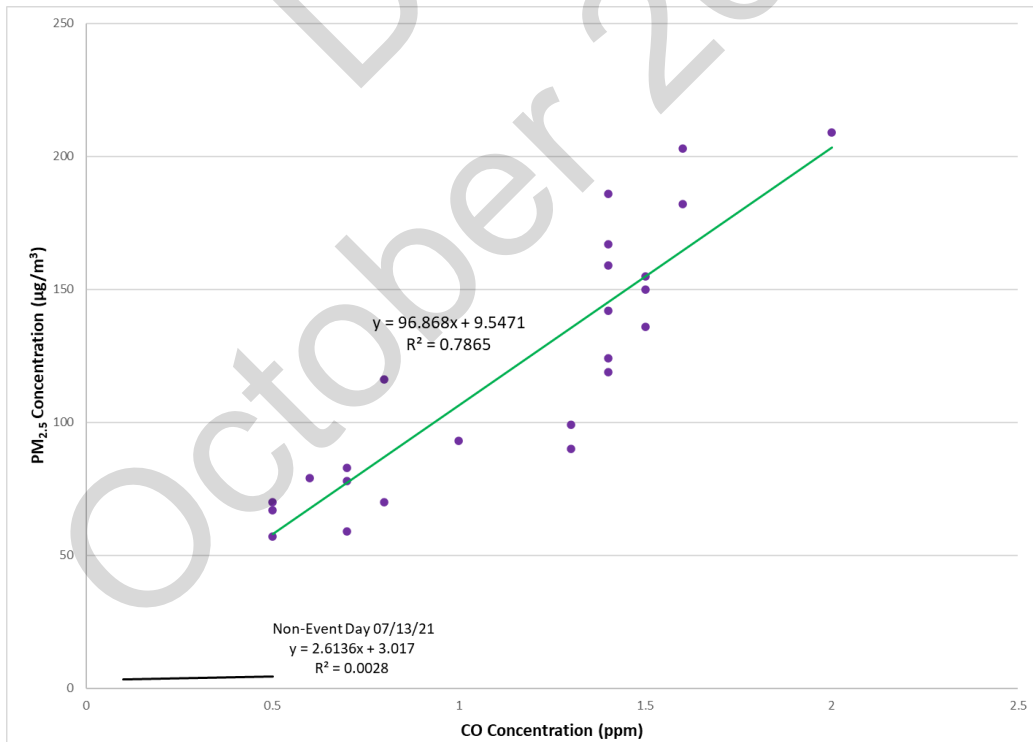


Figure 4-13: Hourly PM<sub>2.5</sub>/CO at Sparks on August 7, 2021





#### 4.3.4 PM<sub>10</sub>/CO Ratio

When an area has the presence of wildfire smoke, the CO and PM<sub>10</sub> concentrations should also be correlated, although not as strongly correlated as CO and PM<sub>2.5</sub>. Similar to section 4.3.3, a linear regression analysis was completed with CO and PM<sub>10</sub> data on the days of the exceedances and compared to a non-event day on July 13, 2021. Since the Toll monitoring site does not measure CO, this same analysis was done using Reno4 as a proxy. The equation and coefficient of determination that resulted from the linear regression on the non-event day is shown below.

Non-Event Slopes (July 13, 2021)

Reno4: $y = 107.41x + 8.5459$	$R^2 = 0.2209$
Sparks: $y = 66.023x + 11.528$	$R^2 = 0.4516$

As can be seen in Figure 4-14, Figure 4-15, and Figure 4-16, a strong correlation was found on the days of the exceedances between PM<sub>10</sub> and CO concentration. The coefficient of determination for Reno4 on the August 6 exceedance was 0.8719. The coefficient of determination for Reno4 and Sparks on the August 7 exceedance was 0.8419 and 0.7311, respectively. This also signals the presence of wildfire smoke in the region on the day of the exceedance.

Figure 4-14: Hourly PM<sub>10</sub>/CO at Reno4 on August 6, 2021

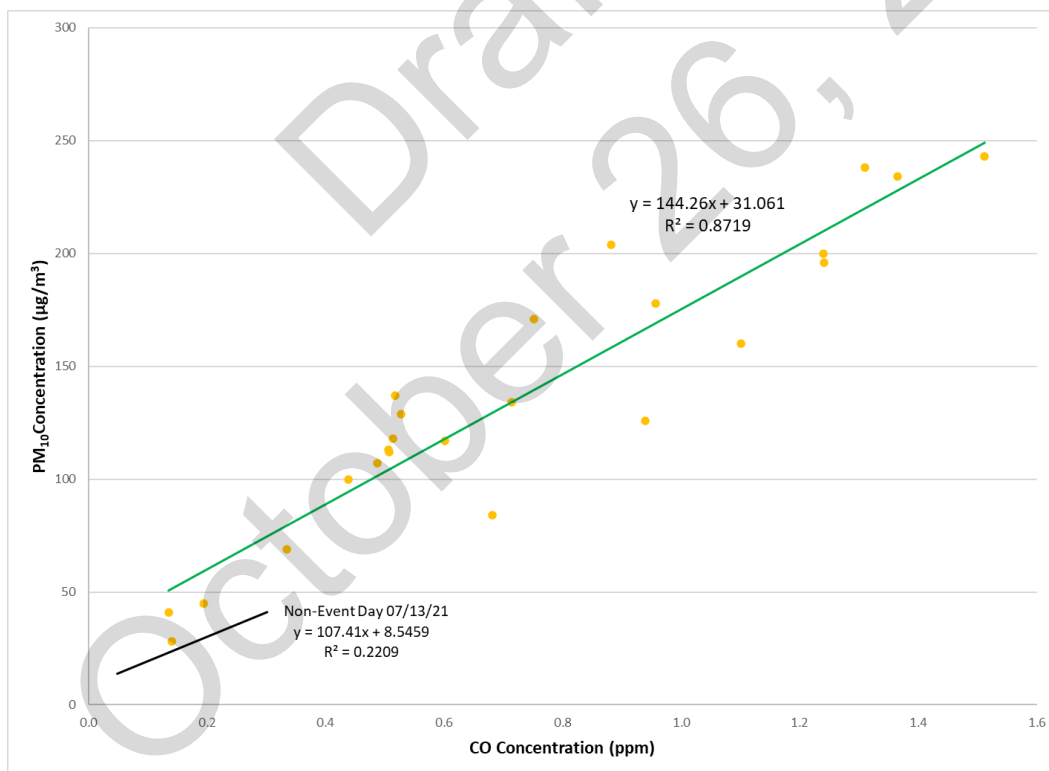


Figure 4-15: Hourly PM<sub>10</sub>/CO at Reno4 on August 7, 2021

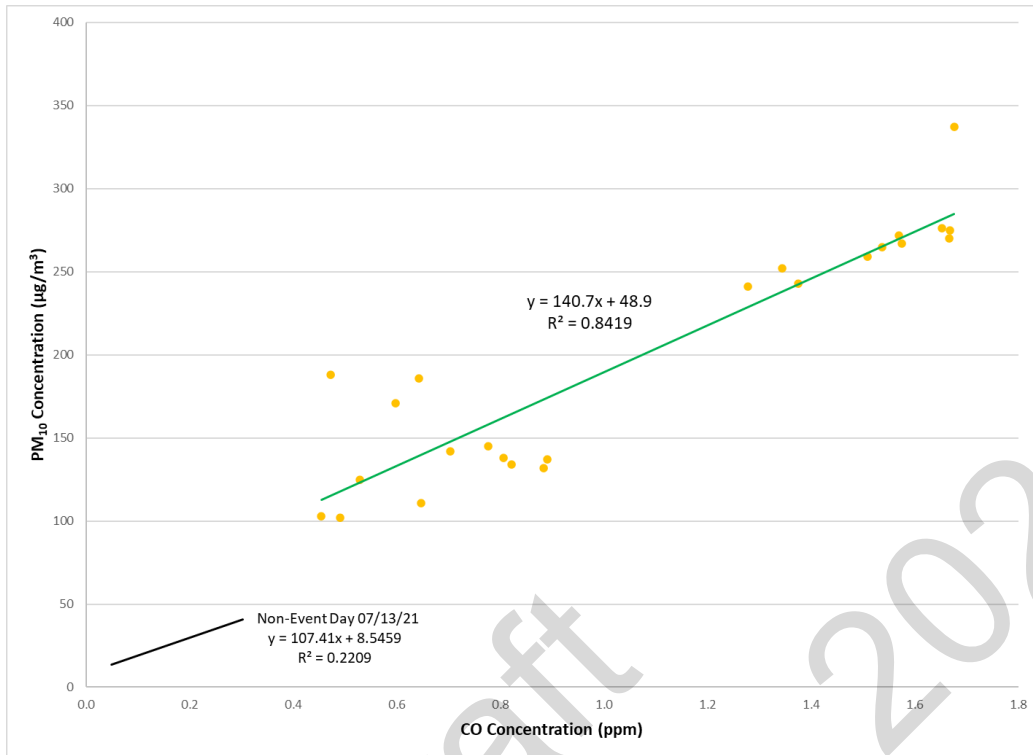
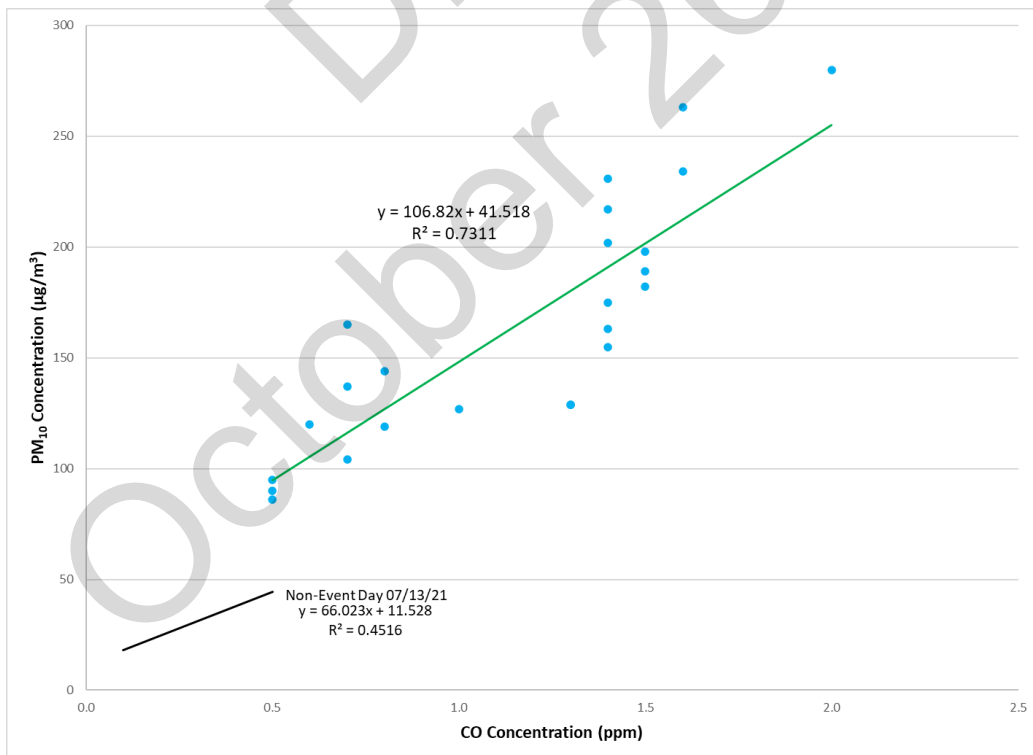


Figure 4-16: Hourly PM<sub>10</sub>/CO at Sparks on August 7, 2021



## 4.4 Trajectory Analysis

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A trajectory analysis was completed for the event using the Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) model to compute simple air parcel trajectories and determine where the smoke originated from. The HYSPLIT model's calculation method is a hybrid between the Lagrangian approach, which uses a moving frame of reference as the air parcels move from their initial location, and the Eulerian approach, which uses a fixed three-dimensional grid as a frame of reference. The trajectory models in this section were created with the EPA AirNow-Tech Navigator page and the HYSPLIT model was provided by NOAA's Air Resources Laboratory. The model used the North American Mesoscale Model (NAM) 12-kilometer domain. Each HYSPLIT was completed at 50, 1000, and 2500 meters above ground level (agl). These values were chosen to best illustrate the dynamics of the air mass that affected the Washoe County region before and during the days of the exceedances. According to NWS-Reno, 50 meters agl is a good proxy for boundary layer height in the region. The HYSPLIT figures below include the "HMS Fire" layer which shows the location of each fire, the "HMS Smoke" layer which shows where smoke is at the time, and the 24-hour, midnight to midnight average PM<sub>10</sub> concentration in µg/m<sup>3</sup> for each air monitoring site in the region.

### 4.4.1 Monitoring Site Analysis - Backward Trajectory

In order to accurately understand where the affected air mass originated from, AQMD completed 24-hour backward trajectory HYSPLIT models from the affected PM<sub>10</sub> monitors at Toll, Reno4, and Sparks. In the figures below, the green line denotes 50 meters agl, the blue line denotes 1000 meters agl, and the red line denotes 2500 meters agl. The points on each line denote 6-hour increments. Because this section is for backward trajectory HYSPLIT models, the first point on the line would denote 6-hours before the start time of the model.

Figure 4-17: Backward Trajectory from Toll starting August 6, 2021 at 0000 PST

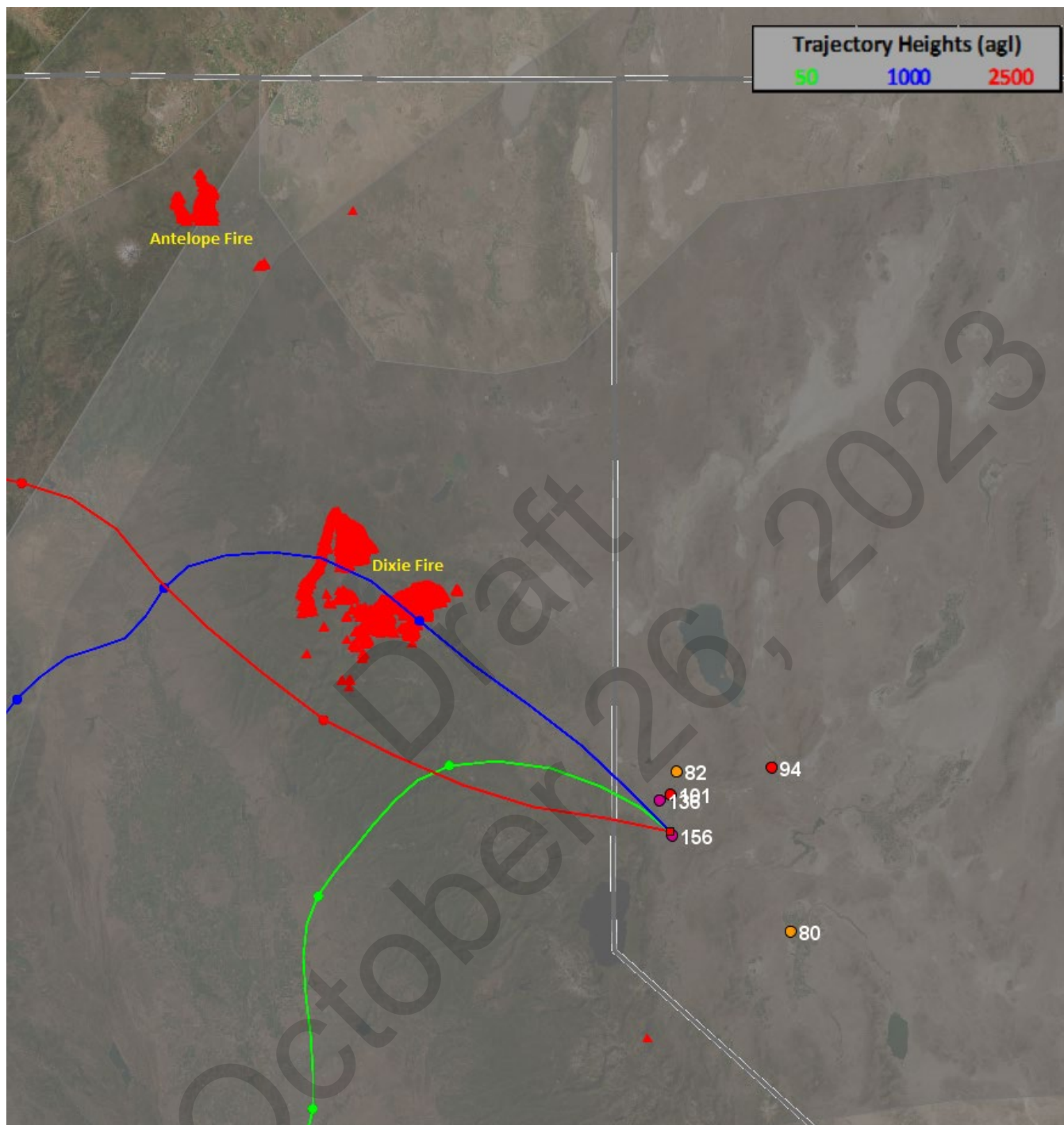


Figure 4-18: Backward Trajectory from Toll starting August 7, 2021 at 0000 PST

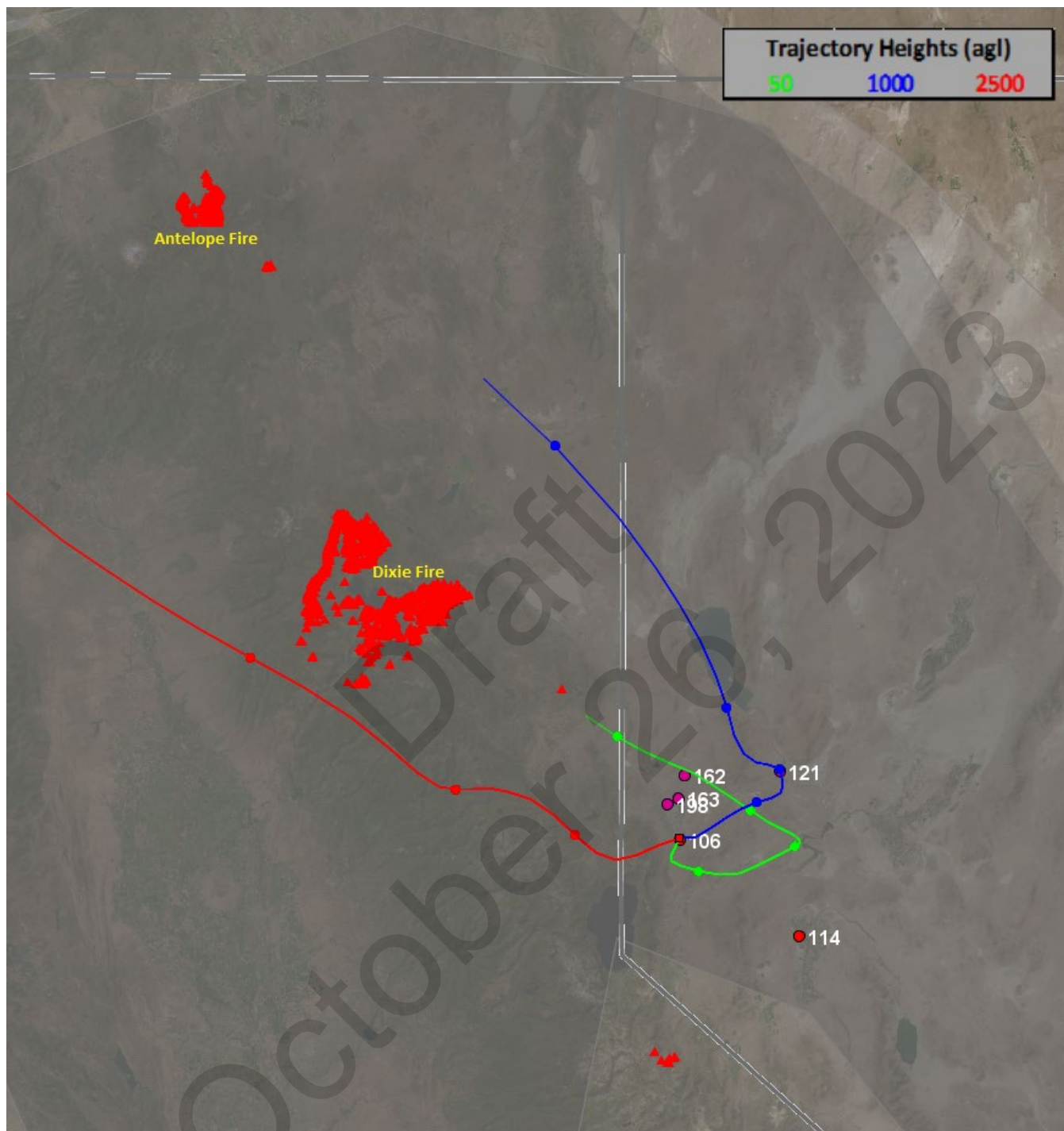


Figure 4-19: Backward Trajectory from Reno4 starting August 7, 2021 at 0000 PST

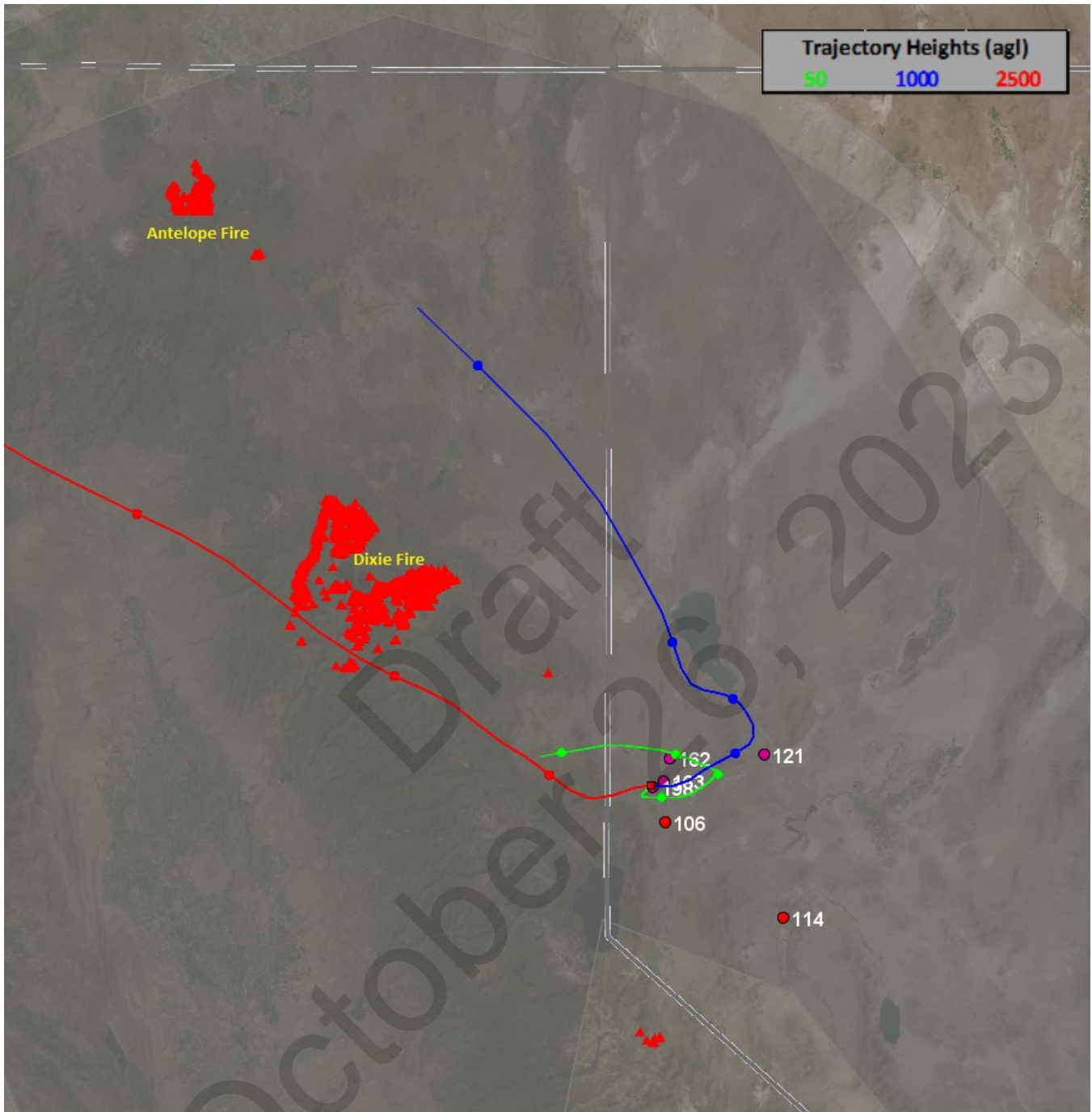


Figure 4-20: Backward Trajectory from Sparks starting August 7, 2021 at 0000 PST

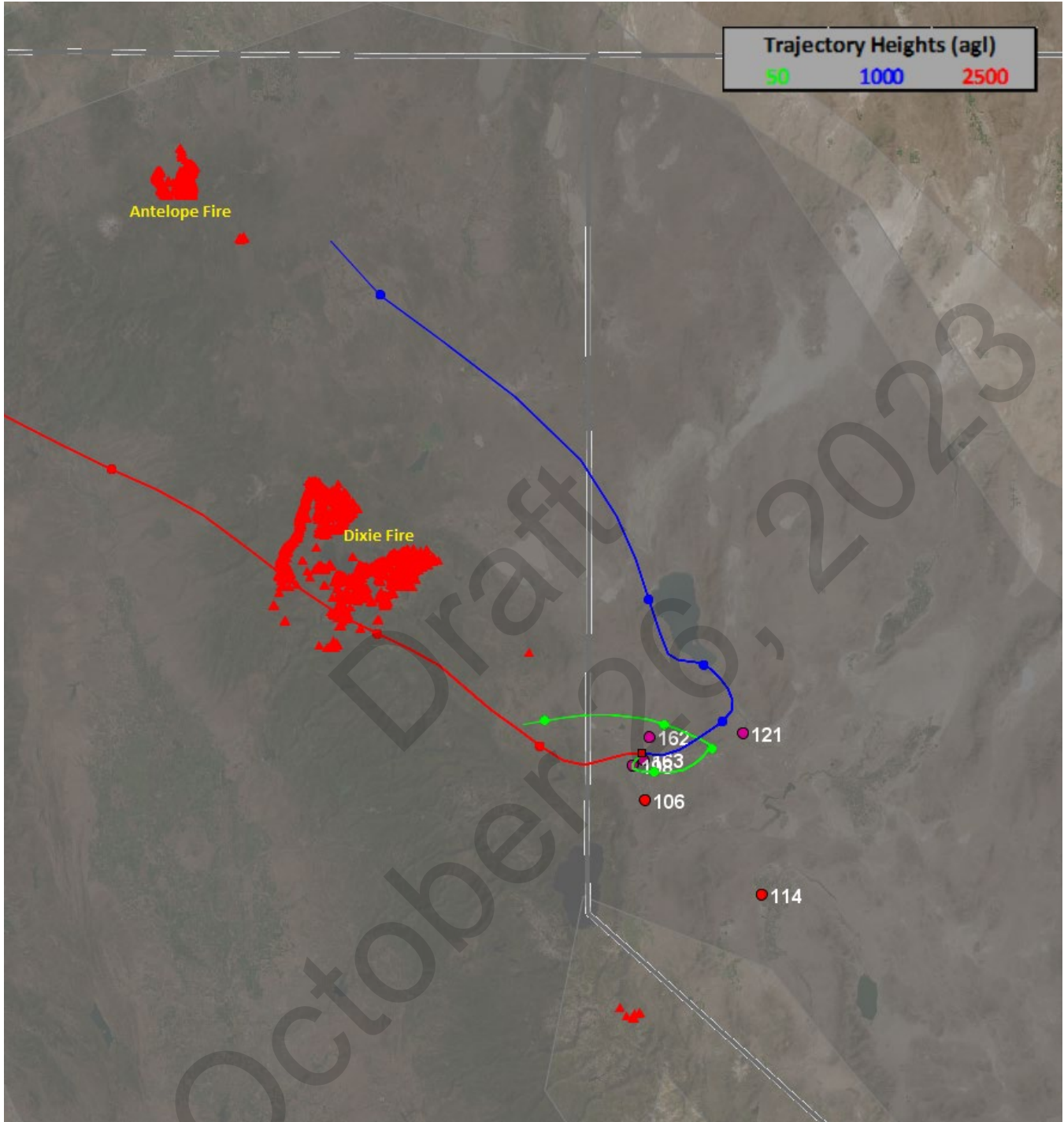


Figure 4-21: Backward Trajectory from Reno4 starting August 8, 2021 at 0000 PST

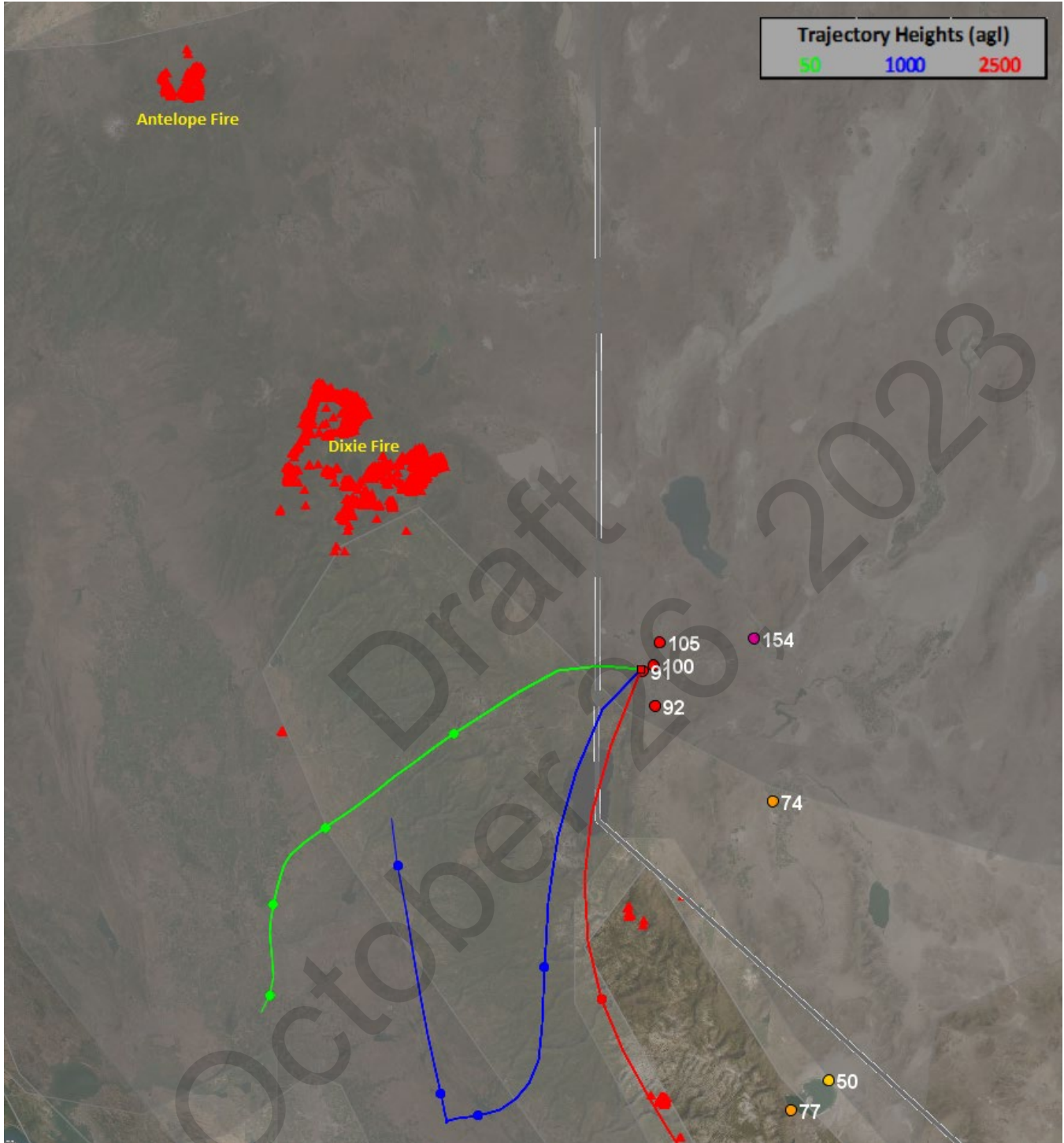
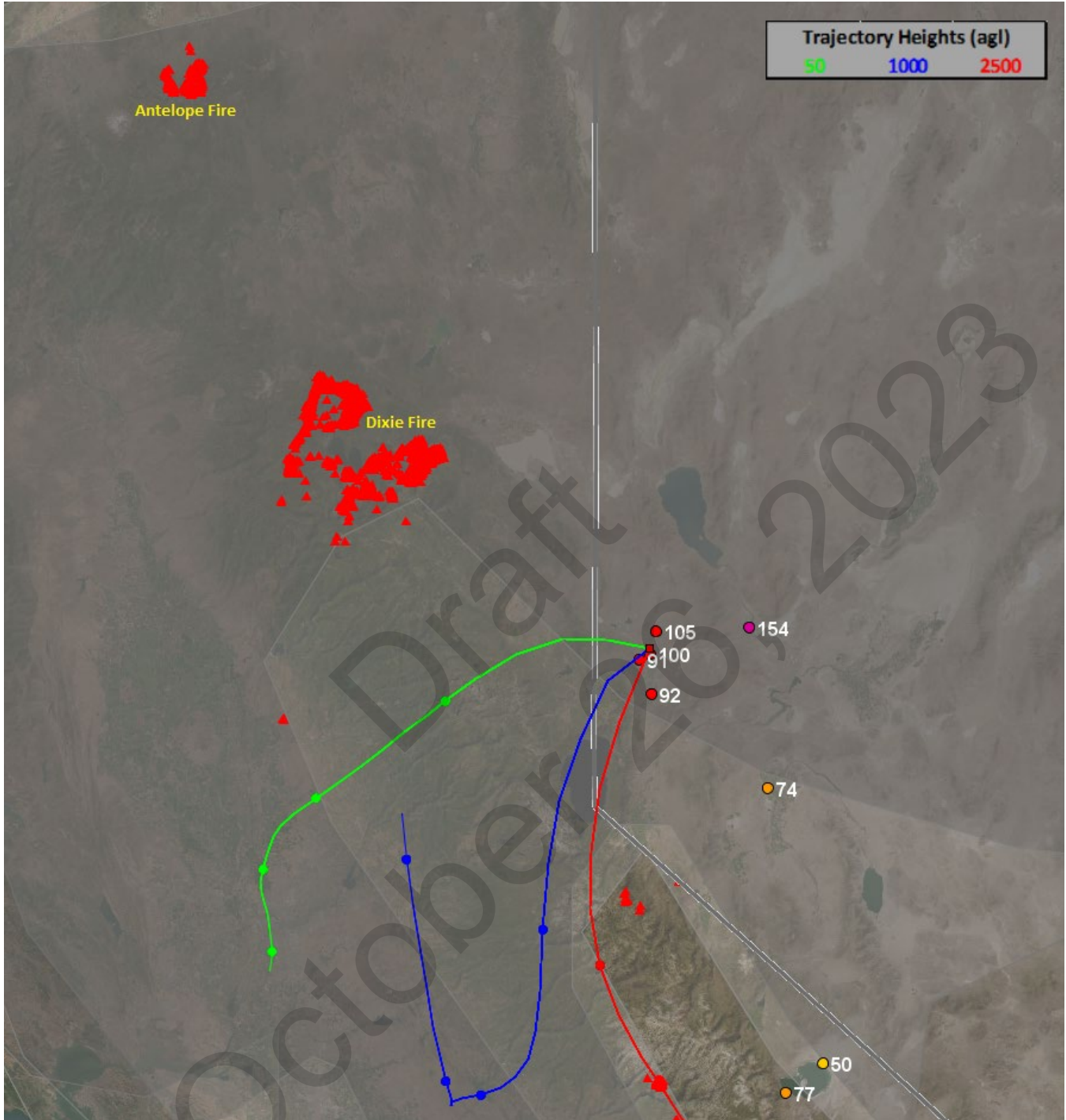




Figure 4-22: Backward Trajectory from Sparks starting August 8, 2021 at 0000 PST



#### 4.4.2 Source Analysis – Forward Trajectory

In order to fully understand where smoke emissions from each fire moved prior to and on the days of the exceedances, an emissions source analysis was done which included 24-hour forward trajectory HYSPLIT models from both the Antelope and Dixie fires. In the figures below, the green line denotes 50 meters agl, the blue line denotes 1000 meters agl, and the red line denotes 2500 meters agl. The points on each line denote 6-hour increments. Because this section is for forward trajectory HYSPLIT models, the first point on the line would denote 6-hours after the start time of the model.

Figure 4-23: Forward Trajectory from Dixie Fire starting August 5, 2021 at 0000 PST

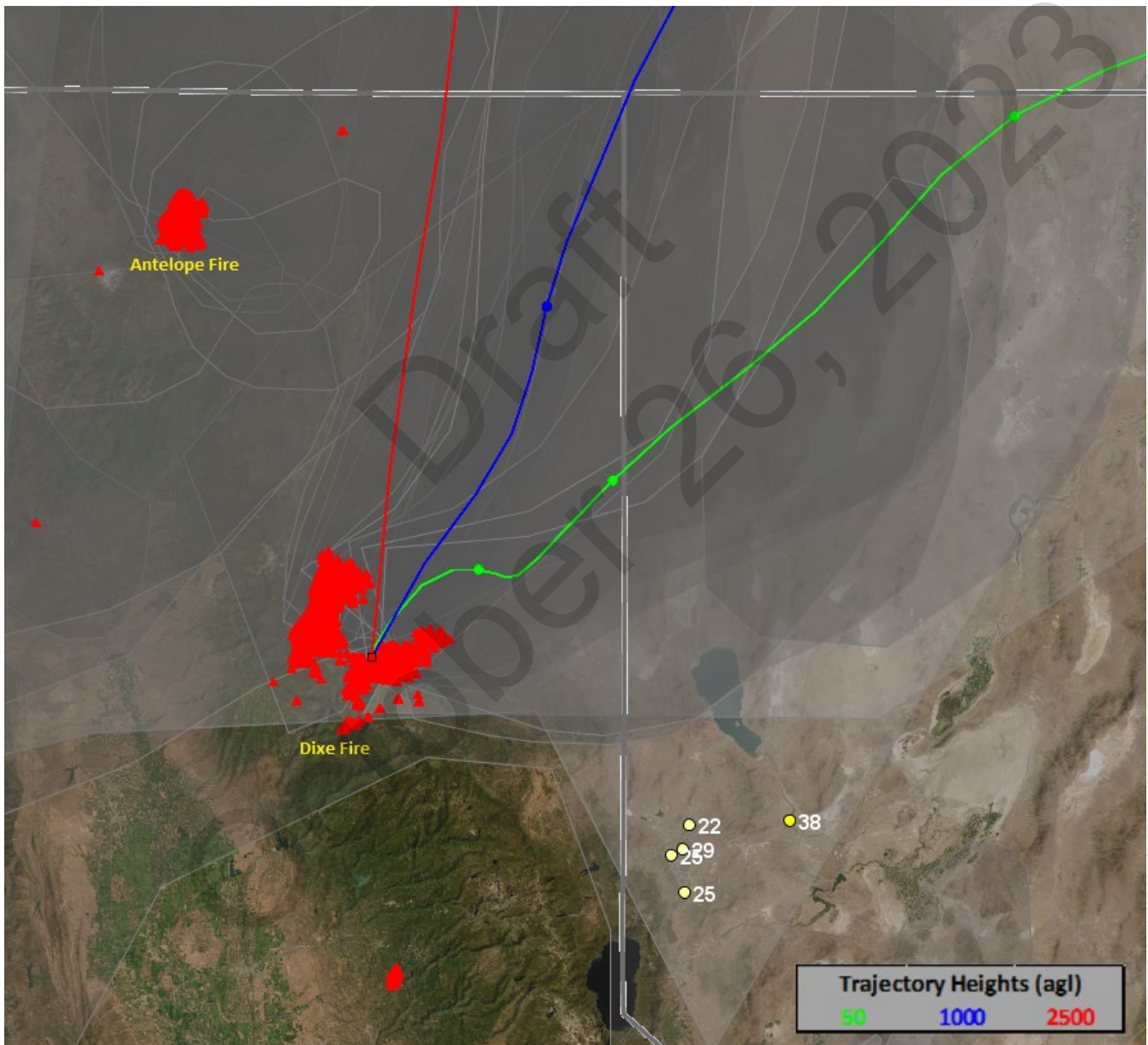


Figure 4-24: Forward Trajectory from Antelope Fire starting August 5, 2021 at 0000 PST

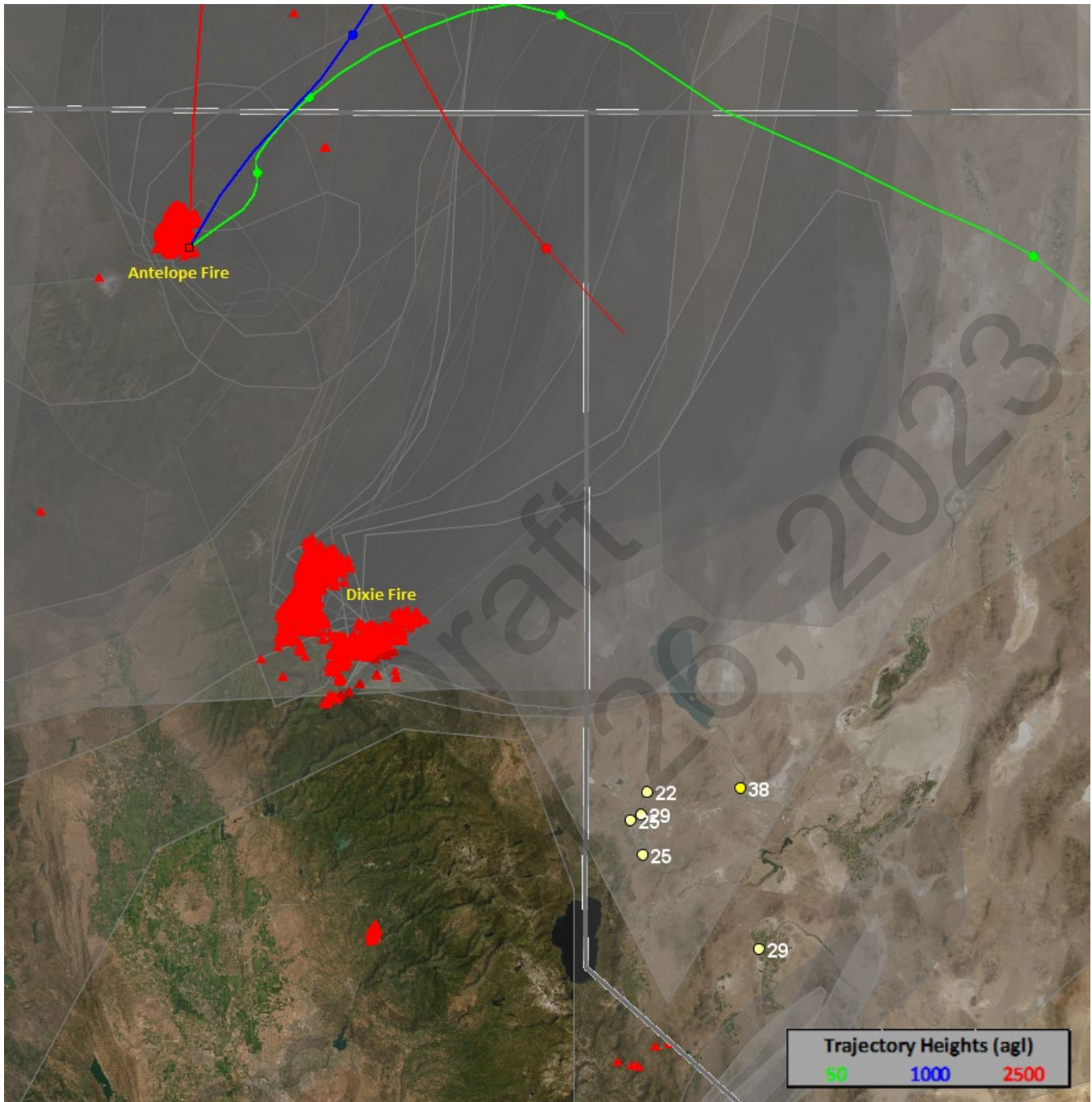


Figure 4-25: Forward Trajectory from Dixie Fire starting August 6, 2021 at 0000 PST

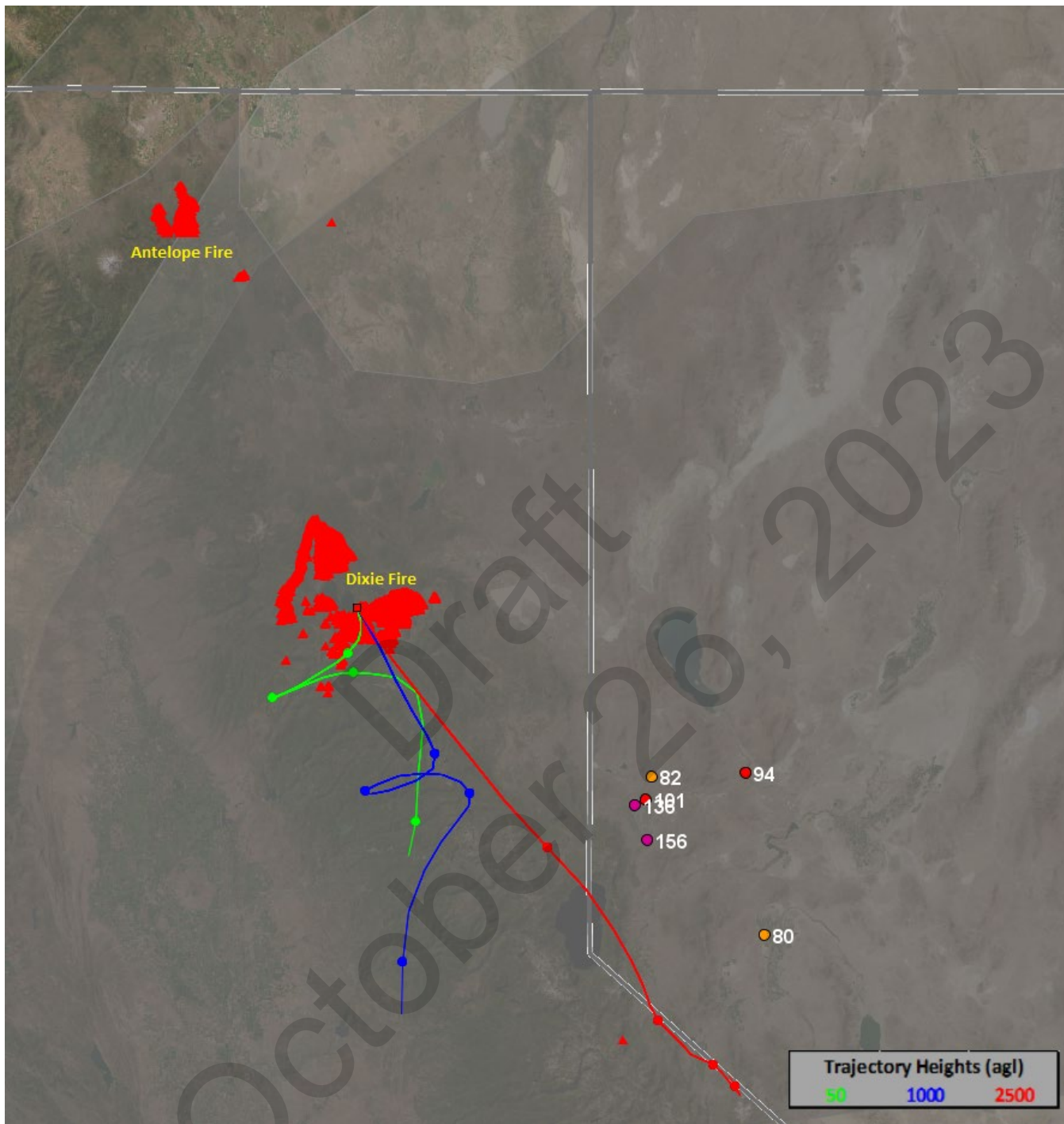


Figure 4-26: Forward Trajectory from Antelope Fire starting August 6, 2021 at 0000 PST

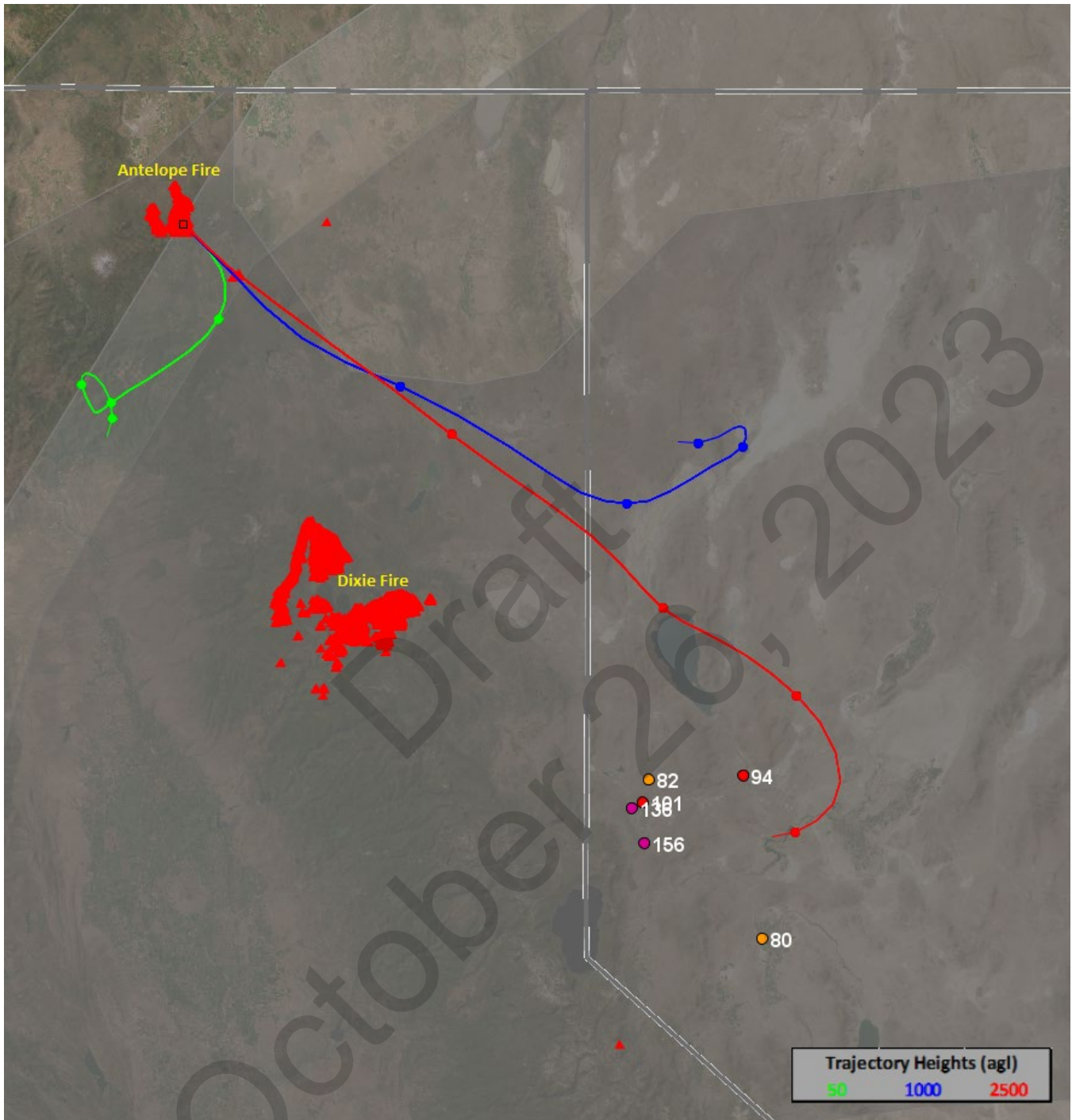


Figure 4-27: Forward Trajectory from Dixie Fire starting August 7, 2021 at 0000 PST

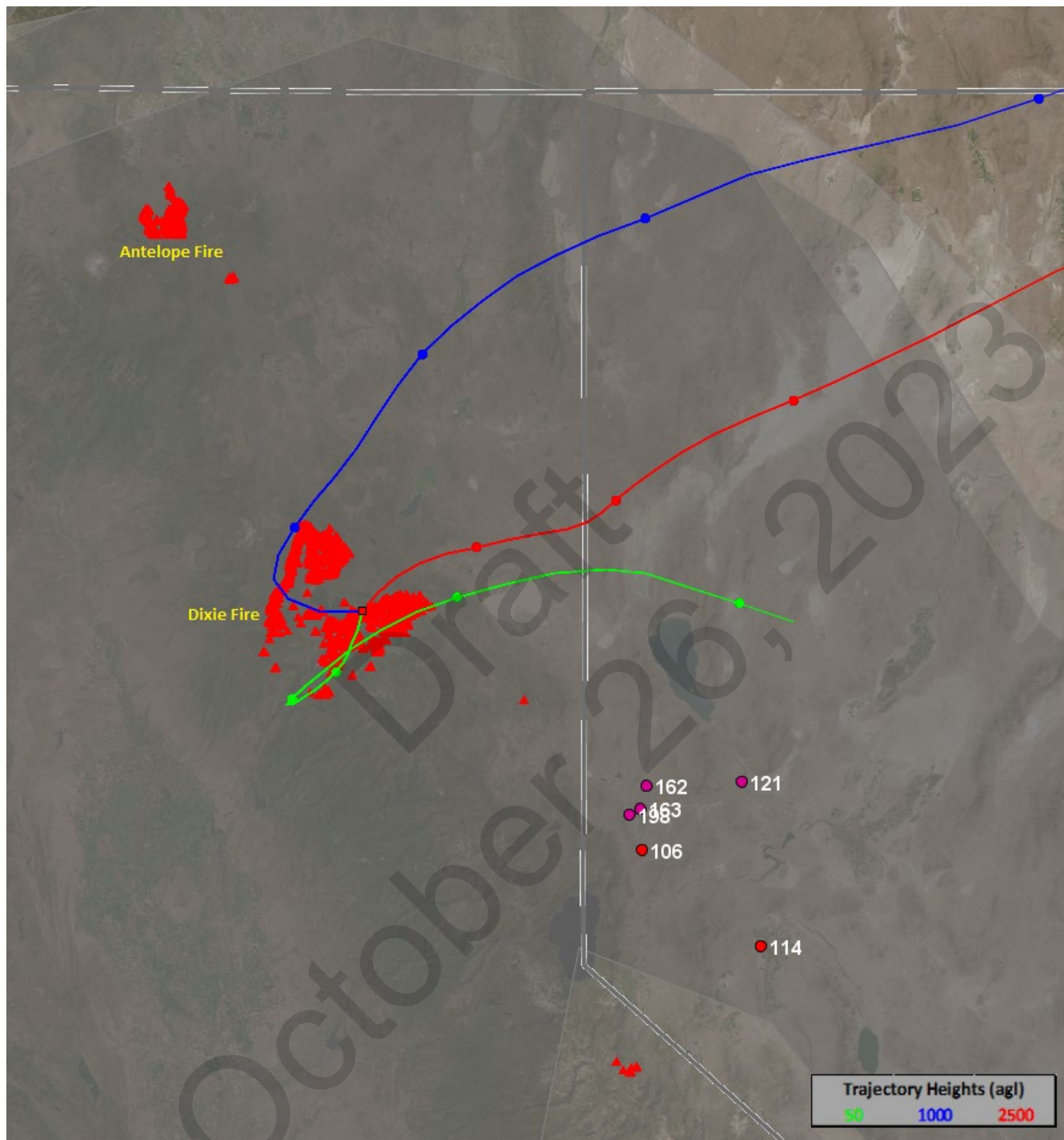
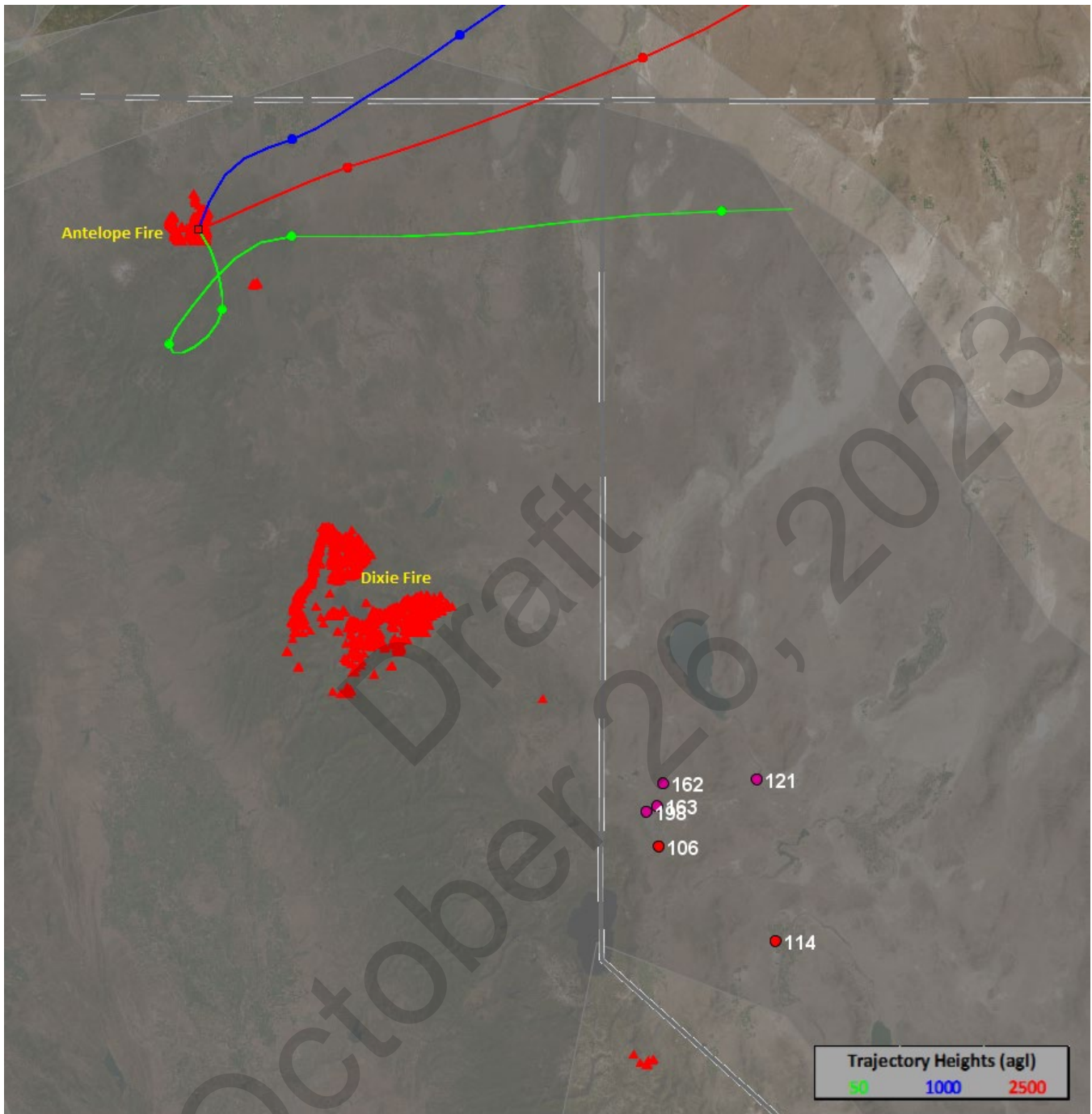


Figure 4-28: Forward Trajectory from Antelope Fire starting August 7, 2021 at 0000 PST



#### 4.4.3 Trajectory Analysis Explanation

The methodology behind this section is to bracket the exceedance days with forward and backward HYSPLITs. A forward trajectory was completed for August 5, August 6, and August 7 of 2021 to accurately depict the characteristics of the wildfire smoke that would have affected HA 87 on the exceedance days. A backward trajectory was completed for August 6, August 7, and August 8 of 2021 to characterize where the airmass on the exceedance days came from.

As can be seen in the backward trajectory section, the airmasses at 50, 1000, and 2500 meter agl on August 6 and August 7, 2021 all originated at or near the Dixie or Antelope fires. The backward trajectories on August 8, 2021 shows how wind patterns shifted to vacate the smoke from the region and led to lower  $PM_{10}$  concentration in the days following the exceedances. As can be seen in the forward trajectory section, the smoke from the Dixie and Antelope fires was transported into HA 87 between August 5 and August 7 of 2021 with August 6, 2021 having the most direct wildfire smoke transport. Similar to the backward trajectory section, the forward trajectories on August 7, 2021 show the changing wind patterns that decreased  $PM_{10}$  concentrations following the exceedances.

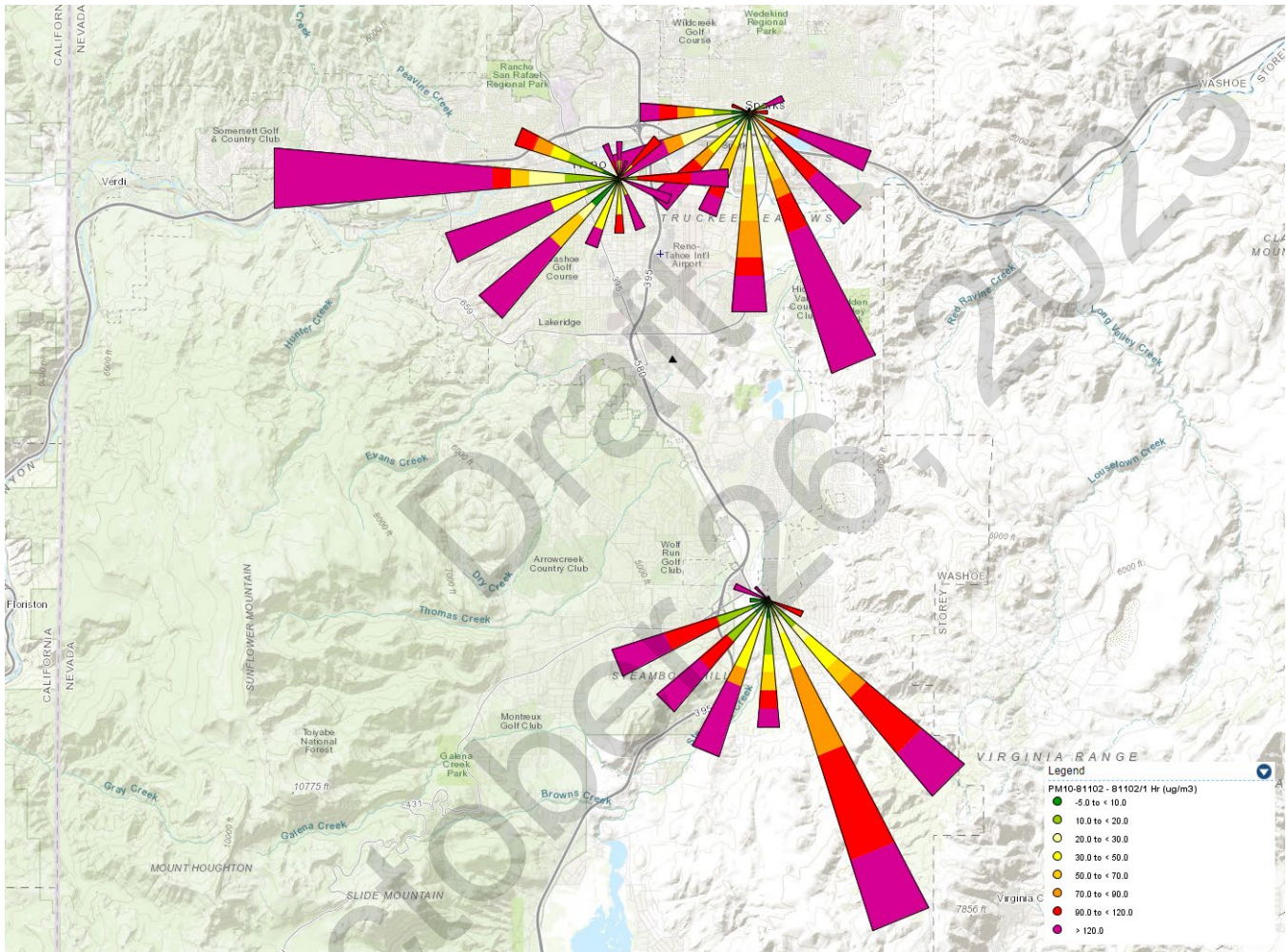
Draft  
October 26, 2023



## 4.5 Pollution Rose Analysis

Using the AirNow-Tech Navigator Rose Tool, wind/pollution roses were generated for Toll, Reno4, and Sparks monitoring sites for the days leading to and the days of the exceedances. Hourly PM<sub>10</sub> and wind direction data was used to create the roses. These show predominantly westerly and southerly wind components that carried Dixie and Antelope wildfire smoke to Washoe County.

Figure 4-29: PM<sub>10</sub> Wind/Pollution Rose for Toll, Reno4, and Sparks for August 5-7



#### 4.6 Conclusion Showing a Clear Causal Relationship

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Section 4.0 of this document demonstrates that the elevated  $PM_{10}$  concentrations that led to an exceedance of the primary and secondary  $PM_{10}$  NAAQS was caused by the Dixie and Antelope wildfires. The emissions analysis, historical concentration comparison analysis,  $PM_{2.5}$  analysis,  $PM_{2.5}/PM_{10}$  ratio analysis,  $PM_{2.5}/CO$  ratio analysis,  $PM_{10}/CO$  ratio analysis, trajectory analysis, and pollution rose analysis all support this premise.

The comparisons and statistical analyses provided in this section of the document supports AQMD's demonstration that the Dixie and Antelope wildfire events affected air quality in such a way that there exists a clear causal relationship between the specific events and the monitored  $PM_{10}$  exceedance on August 6 and 7, 2021. Section 4.0 thus satisfies the clear causal relationship criterion as required by the EER and 40 CFR 50.14(c)(3)(iv).

Draft  
October 26, 2023

## 5.0 Natural Event or Human Activity Unlikely to Recur

Section 40 CFR 50.14(c)(3)(iv)(E) requires that an exceptional event be unlikely to recur at a particular location or was a natural event. The Dixie and Antelope Fires qualify as natural events because human activity played no direct causal role in the start of the fires. A natural event as per 40 CFR 50.1(k) is defined as:

*40 CFR 50.1(k): Natural event means an event and its resulting emissions, which may recur at the same location, in which human activity plays little or no direct causal role. For purposes of the definition of a natural event, anthropogenic sources that are reasonably controlled shall be considered to not play a direct role in causing emissions.*

As was mentioned in Section 2.4 of this document, the Antelope Fire was started by a lightning strike hitting a tree and the Dixie Fire was started by a tree falling on a power transmission line. AQMD sees no direct causal role by human activity, thus qualifying these wildfires as natural events.

Draft  
October 26, 2023

## 6.0 Public Outreach

An important role that AQMD plays during exceptional events that affect air quality is to notify the public of the current air quality, the air quality forecast, and ways to mitigate potential health impacts that are a result of degraded air quality. Examples of this public outreach showing the current air quality and the forecast for the coming days can be seen in Figure 6-1. AQMD has a public education program called “Be Smoke Smart” that informs citizens of the best ways to protect themselves from wildfire smoke. Figure 6-2 shows a social media post on the day of the exceedance with “Be Smoke Smart” information so that people could take the proper precautions.

In order to reach the public, AQMD uses Twitter, Facebook, press releases, and local partners to properly inform citizens. One local partner that is beneficial is National Weather Service (NWS) – Reno. Working together, AQMD and NWS-Reno are able to better reach the public through their respective social media networks. An example of this is shown in Figure 6-3. In addition, AQMD communicates with local news outlets through interviews and press releases. Figure 6-4 shows a press release that was made near the time of the event to inform local news outlets so that they could properly report on the event. This press release in addition to the other outreach actions also fulfills the public notification requirements of the Emergency Episode Plan and the PM<sub>2.5</sub> Mitigation Plan.

Draft  
October 26, 2023

Figure 6-1: Public Notification of Poor Air Quality during the 08/06/21 Exceedance

Washoe County AQMD @WashoeCountyAQ

#DixieFire smoke is impacting Washoe County with Moderate to Hazardous air quality. Everyone should avoid outdoor activity and do less strenuous activities even when indoors. #BeSmokeSmart: create a clean room in your home. For more information go to: [epa.gov/indoor-air-qua...](https://epa.gov/indoor-air-qua...)

8:01 AM · Aug 6, 2021

View Tweet analytics

6 Retweets 8 Likes

Tweet your reply Reply

Washoe County AQMD @WashoeCountyAQ · Aug 6, 2021  
Replying to @WashoeCountyAQ  
For those that must be outside, consider canceling or rescheduling outdoor work/activities, take more frequent indoor breaks, stay hydrated, do less strenuous activities even when indoors, follow the advice of your doctor especially those with heart/lung disease.

Figure 6-2: Be Smoke Smart Social Media Post from the day of the 08/06/21 Exceedance

**Washoe County AQMD**  ...  
**@WashoeCountyAQ**

You know the current AQI. You know where the wildfires are. What can you do now? There are some actions you can take. [#BeSmokeSmart](#). Protect yourself and others from wildfire smoke.

**What can I do to protect myself from wildfire smoke?**

1. Reduce or stop outdoor activity.
2. Keep AC on if available, the fresh-air intake closed, filter clean, and windows closed.
3. Pay attention to air quality on [AirNow.gov](#).
4. Follow the advice of your doctor especially those with heart or lung disease.
5. Wet or dry cloth, dust, or surgical masks do not protect you from ozone or fine particulates
6. If you are a healthy adult and you must be outside, respirators marked NIOSH N95 can provide some protection from fine particulates with adequate fit.
7. Stay hydrated. Take more breaks if exerting yourself outside.
8. Keep indoor air clean; don't burn candles, vacuum, or smoke tobacco products.
9. Use a portable air purifier. Create a clean air room in your home.
10. Consider relocating temporarily.

**Keep it Clean.** **Be Smoke Smart.**  
**Protect yourself from wildfire smoke.**  
**OurCleanAir.com**

WASHOE COUNTY HEALTH DISTRICT  
ENHANCING QUALITY OF LIFE   

11:52 AM · Aug 6, 2021

Figure 6-3: NWS-Reno Post that was Reposted by AQMD

**Washoe County Health District: Air Quality Management Division**  
August 6, 2021 · 🌐

**NWS RENO**

**SMOKE & HAZE**

**US National Weather Service Reno Nevada**  
August 6, 2021 · 🌐

Widespread smoke and haze for today and Saturday.  
For details and tips check out the special weather statement - <https://bit.ly/3CeYEsu>


1

Like Comment

Figure 6-4: Press Release from AQMD During Exceptional Event

**UPDATE: HEALTH DISTRICT ISSUES STAGE 2 EMERGENCY EPISODE**

by Matthew Clark | Aug 6, 2021



**Reno/Sparks, Nev. August 5, 2021** – The Washoe County Health District – Air Quality Management Division (AQMD) has issued a Stage 2 Emergency Episode due to anticipated smoke from area wildfires. The air quality index (AQI) for the Reno-Sparks area is expected reach “Unhealthy” to “Very Unhealthy” at times Friday, Saturday, and Sunday.

The Stage 2 Emergency Episode means that all residents should stay indoors and reduce activity levels due to the susceptibility of increased health risks. This is the third time AQMD has issued a Stage 2 (last time July 24, 2021). The Dixie Fire continues to be the main wildfire contributing to the poor air quality.

To see [current air quality in Reno-Sparks](#), [click here](#); for information on what the [air quality index colors mean](#), [click here](#).

Periods of heavy smoke and clearing may rapidly fluctuate during the weekend depending on wind patterns. AQMD has issued these recommendations to reduce exposure to smoke:

- Avoid or reduce outdoor and physical activities
- Stay indoors with the windows and doors closed; if possible, run the air conditioner on recirculation function
- Avoid using a swamp cooler or whole-house fan to prevent bringing additional smoke inside
- Consult your physician for health questions, especially those with heart and lung issues

AQMD can issue a Stage 1, Stage 2, or Stage 3 notifications with the Stage 3 Emergency Episode being the most severe. [More information on the stages can be found here](#).

Visit [OurCleanAir.com](#) for additional information on the Air Quality Management Division.



## 7.0 Conclusions and Recommendations

The Antelope Fire was started on August 1, 2021, when a lightning strike hit a tree in the Antelope Creek in Klamath National Forest, approximately 180 miles northwest of the Truckee Meadows. The Dixie Fire was ignited on July 13, 2021, when a tree fell on a power line in Plumas National Forest, approximately 90 miles northwest of the Truckee Meadows. Both fires emitted large quantities of PM<sub>10</sub> emissions which eventually led to a PM<sub>10</sub> exceedance at the Toll PM<sub>10</sub> monitor on August 6, 2021, and at the Reno4 and Sparks PM<sub>10</sub> monitor on August 7, 2021. The 2021 Dixie/Antelope Fire EE Demonstration supports the criteria for an exceptional event detailed in the 2016 Exceptional Events Rule. Specifically, the documentation used the following evidence to demonstrate the exceptional event:

- ambient air monitoring data
- statistical analyses of the monitoring data compared to historical concentrations
- analyses of wildfire smoke emissions
- satellite imagery (visible and detected smoke)
- narratives from the National Oceanic and Atmospheric Administration and National Weather Service (Reno)
- HYSPLIT trajectory analyses
- social and traditional media posts

This EE Demonstration clearly demonstrates justification for exclusion of data for August 6 and 7, 2021, due to an exceptional event under 40 CFR 50.14(c)(3)(iv). The 2021 Dixie/Antelope Fire EE Demonstration has provided evidence that:

1. Emissions from a wildfire event caused PM<sub>10</sub> exceedances at the Toll, Reno4, and Sparks monitor;
2. The event affected air quality in such a way that there exists a clear causal relationship between the event and the exceedances on August 6-7, 2021;
3. Event-influenced concentrations were unusual and above normal historical concentrations;
4. The event was a wildfire and a natural event predominately occurring on wildland; and
5. The event was not reasonably controllable or preventable.

The AQMD recommends that EPA Region 9 concur with the 2021 Dixie/Antelope Fire EE Demonstration and exclude data from the Toll PM<sub>10</sub> monitor on August 6, 2021, and the Reno4 and Sparks PM<sub>10</sub> monitors on August 7, 2021, from comparison to the NAAQS.

Draft  
October 26, 2023

WASHOE COUNTY  
**HEALTH DISTRICT**  
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Please contact Matt McCarthy for  
questions or comments at  
[mmccarthy@nnph.org](mailto:mmccarthy@nnph.org)

**Appendix A**  
**Public Comment Plan**

Draft  
October 26, 2023

## Public Comment Period

This Exceptional Event Demonstration was available for public inspection from October 26 to November 26, 2023 at the AQMD website ([OurCleanAir.com](https://www.aqmd.ca.gov/our-clean-air)). AQMD issued a press release on October 26, 2023 to inform the public of the comment period. The press release provides a web link to the draft demonstration and explains how to submit written comments during the comment period. A hardcopy of the plan was also available at the AQMD office. All comments received during this inspection period are outlined below, along with the press release.

Draft  
October 26, 2023

## Appendix B

### Exceptional Event Initial Notification

Draft  
October 26, 2023

Initial Notification of Potential Exceptional Event Information Summary for PM<sub>10</sub>

Submitting Agency: Washoe County Health District Air Quality Management Division

Agency Contact: Daniel Inouye, Branch Chief

Date Submitted: July 1, 2022

Applicable NAAQS: 1987 PM<sub>10</sub>

Affected Regulatory Decision<sup>1</sup>: None

Area Name/Designation Status: Truckee Meadows Hydrographic Basin 87 PM<sub>10</sub> Maintenance Area

Design Value Period: 2019-2021

Draft  
October 26, 2023

Table A(1): Information specific to each flagged monitor day that may be submitted to EPA in support of the affected regulatory decision listed above

Date(s) of Event(s)	Type of Event (high wind, volcano, wildfires/prescribed fire, other <sup>2</sup> )	AQS Flags	Monitor AQS IDs (and POCs)	Monitor Names	24-hour average Exceedance Concentration (µg/m <sup>3</sup> )	Notes (e.g. event name, links to other events)
07/24/2021	Wildfires	IT	32-031-1007-81102-1	Spanish Springs	173	
07/25/2021	Wildfires	IT	32-031-1007-81102-1	Spanish Springs	187	
07/26/2021	Wildfires	IT	32-031-1007-81102-1 32-031-1005-81102-4 32-031-0031-81102-2	Spanish Springs Sparks Reno4	186 174 171	
08/06/2021	Wildfires	IT	32-031-0025-81102-2	Toll	156	
08/07/2021	Wildfires	IT	32-031-0031-81102-2 32-031-1005-81102-4 32-031-1007-81102-1	Reno4 Sparks Spanish Springs	198 163 162	
08/16/2021	Wildfires	IT	32-031-1007-81102-1	Spanish Springs	197	
08/17/2021	Wildfires	IT	32-031-0025-81102-2	Toll	161	
08/20/2021	Wildfires	IT	32-031-0025-81102-2	Toll	176	
08/21/2021	Wildfires	IT	32-031-0025-81102-2 32-031-0031-81102-2 32-031-1007-81102-1 32-031-1005-81102-4	Toll Reno4 Spanish Springs Sparks	204 200 195 190	
08/22/2021	Wildfires	IT	32-031-0025-81102-2 32-031-0031-81102-2	Toll Reno4	261 210	
08/23/2021	Wildfires	IT	32-031-0025-81102-2 32-031-0031-81102-2 32-031-1005-81102-4 32-031-1007-81102-1	Toll Reno4 Sparks Spanish Springs	319 304 214 187	
08/24/2021	Wildfires	IT	32-031-0025-81102-2 32-031-0031-81102-2 32-031-1005-81102-4	Toll Reno4 Sparks	284 233 168	
08/25/2021	Wildfires	IT	32-031-0025-81102-2 32-031-0031-81102-2	Toll Reno4	211 164	
08/26/2021	Wildfires	IT	32-031-0025-81102-2	Toll	174	

<sup>1</sup> designation, classification, attainment determination, attainment date extension, or finding of SIP inadequacy leading to SIP call

<sup>2</sup> Provide additional information for types of event described as “other”

Table B(1): Violating Monitors Information

Monitor (AQS ID and POC)	Design Value ( <u>without</u> EPA concurrence on any of the events listed in table A above)	Design Value ( <u>with</u> EPA concurrence on all events listed in table A above)
32-031-1007-81102-1	4.0 expected exceedances	1.7 expected exceedances
32-031-0025-81102-2	4.0 expected exceedances	
32-031-1005-81102-4	2.7 expected exceedances	
32-031-0031-81102-2	2.7 expected exceedances	

Table C(1): Summary of Maximum Design Value (DV) Monitor Information

	Design Value	Design Value Monitor (AQS ID and POC)	Comment(s)
Maximum DV monitor (AQS ID and POC) <b>without EPA concurrence</b> on any of the events listed in table A above	4.0 expected exceedances 4.0 expected exceedances	32-031-1007-81102-1 32-031-0025-81102-2	Includes exceptional event data from 2020 that has not been concurred.
Maximum DV monitor (AQS ID and POC) <b>with EPA concurrence</b> on all events listed in table A above	1.7 expected exceedances	32-031-1007-81102-1	Includes exceptional event data from 2020 that has not been concurred.

Table D(1): List of any monitors (AQS ID and POC) within planning area with invalid design values (e.g. due to data incompleteness)

Monitor (AQS ID and POC)	Comment
---	---



## Appendix C

### 2021 Data Certification Letter

Draft  
October 26, 2023

**WASHOE COUNTY  
HEALTH DISTRICT**  
ENHANCING QUALITY OF LIFE

April 26, 2022

Gwen Yoshimura  
Manager, Air Quality Analysis Office  
U.S. EPA, Region 9  
75 Hawthorne Street, Mail Stop AIR-7  
San Francisco, CA 94105

Re: CY2021 Ambient Air Monitoring Data Certification

Dear Ms. Yoshimura:

Attached please find a copy of the Washoe County Health District, Air Quality Management Division's (AQMD) AQS AMP600 Data Certification Report and AMP450NC Quick Look summary report for ambient air monitoring data for all State and Local Air Monitoring Stations (SLAMS) and Special Purpose Monitors (SPMs) which meet criteria in 40 CFR 58 Appendix A operated from January 1 to December 31, 2021. Included is data from Federal Reference Method (FRM) and Federal Equivalent Method (FEM) monitors for CO, NO<sub>2</sub>, ozone, PM<sub>10</sub>, PM<sub>10-2.5</sub>, PM<sub>2.5</sub>, and SO<sub>2</sub> (hourly and 5-minute average data).

*This letter certifies that the ambient concentration data and the quality assurance data are completely submitted to AQS, and the ambient data are accurate to the best of my knowledge taking into consideration the quality assurance findings.*

Please contact Mr. Daniel Timmons or me at (775) 784-7200 with any questions or concerns.

Sincerely,



Francisco Vega, P.E., MBA  
Director, Air Quality Management Division  
Washoe County Health District

Attachments

cc: Fletcher Clover, Air Quality Analysis Office, U.S. EPA, Region 9

User ID: BAA

QUICKLOOK ALL PARAMETERS

Report Request ID: 2005956

Report Code: AMP450NC

Apr. 4, 2022

GEOGRAPHIC SELECTIONS

Tribal Code	State	County	Site	Parameter	POC	City	AQCR	UAR	CBSA	CSA	EPA Region
	32	031		86101							
	32	031		42401	2						

PROTOCOL SELECTIONS

Parameter Classification	Parameter	Method	Duration
ALL			

AGENCY SELECTIONS

Washoe County District Health Department

SELECTED OPTIONS

Option Type	Option Value
EVENTS PROCESSING	EXCLUDE REGIONALLY CONCURRED EVENTS
AGENCY ROLE	PQAO
MERGE PDF FILES	YES

SORT ORDER

Order	Column
1	STATE_CODE
2	COUNTY_CODE
3	SITE_ID
4	PARAMETER_CODE
5	POC
6	DATES
7	EDT_ID

SCR GROUP SELECTIONS

Washoe Co,NV

DATE CRITERIA

Start Date	End Date
2021	2021

APPLICABLE STANDARDS

Standard Description
CO 8-hour 1971
Lead 3-Month 2009
Lead 3-Month PM10 Surrogate 2009
Lead Quarterly 1978
NO2 Annual 1971
Ozone 8-hour 2015
PM10 24-hour 2006
PM25 24-hour 2012
SO2 1-hour 2010

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
AIR QUALITY SYSTEM

QUICKLOOK ALL PARAMETERS

Apr. 4, 2022

EXCEPTIONAL DATA TYPES

EDT	DESCRIPTION
0	NO EVENTS
1	EVENTS EXCLUDED
2	EVENTS INCLUDED
5	EVENTS WITH CONCURRENCE EXCLUDED

Draft  
October 26, 2023

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
AIR QUALITY SYSTEM

QUICKLOOK ALL PARAMETERS

Apr. 4, 2022

Parameter	Unit	P O C	PQAO	Year	Meth	# Obs	1st Max Value	2nd Max Value	3rd Max Value	4th Max Value	Arith. Mean	Duration	Cert & Eval	EDH
Site ID: 32-031-0025	City: Reno													
		County:	Washoe				Address:	684A STATE ROUTE 341, RENO NV 89521						
86101 PM10-2.5 - Local Conditions	Micrograms/cubic meter (LC)	1	1138	2021	185	8524	881.0	602.0	586.0	563.0	13.46	1 HOUR		5
Site ID: 32-031-0031	City: Reno													
		County:	Washoe				Address:	1260-A Stewart St.						
42401 Sulfur dioxide	Parts per billion	2	1138	2021	600	98036	8.8	7.1	5.6	4.7	.25	5 MINUTE		0
86101 PM10-2.5 - Local Conditions	Micrograms/cubic meter (LC)	1	1138	2021	000	118	56.1	51.5	43.1	37.0	14.27	24 HOUR		5
86101 PM10-2.5 - Local Conditions	Micrograms/cubic meter (LC)	2	1138	2021	185	8581	488.0	434.0	387.0	311.0	14.99	1 HOUR		5
Site ID: 32-031-1005	City: Sparks													
		County:	Washoe				Address:	750 4TH ST, SPARKS, NV 89431						
86101 PM10-2.5 - Local Conditions	Micrograms/cubic meter (LC)	1	1138	2021	185	8592	425.0	354.0	330.0	305.0	14.58	1 HOUR		5
Site ID: 32-031-1007	City: Sparks													
		County:	Washoe				Address:	7200 Pyramid Hwy, Sparks, NV, 89441						
86101 PM10-2.5 - Local Conditions	Micrograms/cubic meter (LC)	1	1138	2021	185	8618	709.0	707.0	495.0	370.0	9.74	1 HOUR		5

Draft 2023  
October 26

Note: The \* indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
AIR QUALITY SYSTEM

QUICKLOOK ALL PARAMETERS

Apr. 4, 2022

METHODS USED IN THIS REPORT

PARAMETER	METHOD CODE	COLLECTION METHOD	ANALYSIS METHOD
42401	600	Instrumental	Ultraviolet Fluorescence API 100 EU
86101	000	MULTIPLE METHODS	MULTIPLE METHODS
86101	185	Met One BAM-1020 System	Paired Beta Difference

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October 26, 2023

Note: The \* indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
AIR QUALITY SYSTEM

QUICKLOOK ALL PARAMETERS

Apr. 4, 2022

PQAOS USED IN THIS REPORT

PQAO	AGENCY DESCRIPTION
1138	Washoe County District Health Department

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October 26, 2023

Note: The \* indicates that the mean does not satisfy summary criteria.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
AIR QUALITY SYSTEM

QUICKLOOK ALL PARAMETERS

Apr. 4, 2022

CERTIFICATION EVALUATION AND CONCURRENCE FLAG MEANINGS

FLAG	MEANING
M	The monitoring organization has revised data from this monitor since the most recent certification letter received from the state.
N	The certifying agency has submitted the certification letter and required summary reports, but the certifying agency and/or EPA has determined that issues regarding the quality of the ambient concentration data cannot be resolved due to data completeness, the lack of performed quality assurance checks or the results of uncertainty statistics shown in the AMP255 report or the certification and quality assurance report.
S	The certifying agency has submitted the certification letter and required summary reports. A value of "S" conveys no Regional assessment regarding data quality per se. This flag will remain until the Region provides an "N" or "Y" concurrence flag.
U	Uncertified. The certifying agency did not submit a required certification letter and summary reports for this monitor even though the due date has passed, or the state's certification letter specifically did not apply the certification to this monitor.
X	Certification is not required by 40 CFR 58.15 and no conditions apply to be the basis for assigning another flag value
Y	The certifying agency has submitted a certification letter, and EPA has no unresolved reservations about data quality (after reviewing the letter, the attached summary reports, the amount of quality assurance data submitted to AQS, the quality statistics, and the highest reported concentrations).

October 26, 2023

Note: The \* indicates that the mean does not satisfy summary criteria.



User ID: BAA

CERTIFICATION EVALUATION AND CONCURRENCE

Report Request ID: 2014498

Report Code: AMP600

Apr. 26, 2022

GEOGRAPHIC SELECTIONS

Tribal Code	State	County	Site	Parameter	POC	City	AQCR	UAR	CBSA	CSA	EPA Region
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32

PROTOCOL SELECTIONS

Parameter Classification	Parameter	Method	Duration
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CRITERIA

AGENCY SELECTIONS

Washoe County District Health Department

SELECTED OPTIONS

Option Type	Option Value
MERGE PDF FILES	YES
AGENCY ROLE	CERTIFYING

DATE CRITERIA

Start Date	End Date
2021	2021

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October 26, 2023

# Data Evaluation and Concurrence Report Summary

**Certification Year:** 2021

**Certifying Agency (CA):** Washoe County District Health Department (1138)

**Pollutants in Report:**

<u>Parameter Name</u>	<u>Code</u>	<u>Monitors Evaluated</u>	<u>Monitors Recommended for Concurrence by AQS</u>	<u>Monitors NOT Recommended for Concurrence by AQS</u>
Carbon monoxide	42101	2	2	0
Nitrogen dioxide (NO2)	42602	1	1	0
Ozone	44201	7	7	0
PM10 Total 0-10um STP	81102	4	4	0
PM2.5 - Local Conditions	88101	5	5	0
Sulfur dioxide	42401	1	1	0

**PQAOs in Report:**

<u>PQAO Name</u>	<u>PQAO Code</u>	<u>TSA Date</u>
Washoe County District Health Department	1138	08/15/19

**Summary of 'N' flags for all pollutants:**

<u>PQAO</u>	<u>Code</u>	<u>AQS Site-ID</u>	<u>POC</u>	<u>AQS Recommended Flag</u>	<u>Cert. Agency Recommended Flag</u>	<u>Reason for AQS Recommendation</u>

**Signature of Monitoring Organization Representative:** \_\_\_\_\_

*Esavisa Vega*

# Data Evaluation and Concurrence Report for Gaseous Pollutants

**Certifying Year** 2021  
**Certifying Agency Code** Washoe County District Health Department (1138)  
**Parameter** Carbon monoxide (42101) (ppm)

**PQAO Name** Washoe County District Health Department (1138)  
**QAPP Approval Date** 12/12/2019

**NPAP Audit Summary:**

Number of Passed Audits	NPAP Bias	Criteria Met
1	2.84708	Y

AQS Site ID	POC Monitor Type	Routine Data						One Point Quality Check			Annual PE		NPAP		Concur. Flag			
		Mean	Min	Max	Exceed. Count	Outlier Count	Perc. Comp.	Precision	Bias	Complete	Bias	Complete	Bias	PQAO Level Criteria	QAPP Appr.	Aqs Rec Flag	CA Rec Flag	Epa Concur
32-031-0031	1 SLAMS	0.274	0.032	2.437	0	0	97	2.66	+/-2.11	100	- 0.04	100	2.85	Y	Y	Y	Y	S
32-031-1005	1 SLAMS	0.387	0.000	2.200	0	0	99	1.08	+/-0.61	100	1.94	100		Y	Y	Y	Y	S

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October 26, 2023

# Data Evaluation and Concurrence Report for Gaseous Pollutants

**Certifying Year** 2021  
**Certifying Agency Code** Washoe County District Health Department (1138)  
**Parameter** Nitrogen dioxide (NO2) (42602) (ppb)

**PQAO Name** Washoe County District Health Department (1138)  
**QAPP Approval Date** 12/12/2019

**NPAP Audit Summary:**

<b>Number of Passed Audits</b>	<b>NPAP Bias</b>	<b>Criteria Met</b>
0	8.18765	Y

AQS Site ID	POC Monitor Type	Routine Data					One Point Quality Check			Annual PE		NPAP		Concur. Flag				
		Mean	Min	Max	Exceed. Count	Outlier Count	Perc. Comp.	Precision	Bias	Complete	Bias	Complete	PQAO Level Criteria	QAPP Appr.	Aqs Rec Flag	CA Rec Flag	Epa Concur	
32-031-0031	1 SLAMS	11.8	0.1	54.6		0	97	4.08	+/-3.40	100	- 1.60	100	8.19	Y	Y	Y	Y	S

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 October 26, 2023

# Data Evaluation and Concurrence Report for Gaseous Pollutants

**Certifying Year** 2021  
**Certifying Agency Code** Washoe County District Health Department (1138)  
**Parameter** Ozone (44201) (ppm)

**PQAO Name** Washoe County District Health Department (1138)  
**QAPP Approval Date** 12/12/2019

**NPAP Audit Summary:**

Number of Passed Audits	NPAP Bias	Criteria Met
1	3.05318	Y

AQS Site ID	POC Monitor Type	Routine Data						One Point Quality Check			Annual PE		NPAP			Concur. Flag		
		Mean	Min	Max	Exceed. Count	Outlier Count	Perc. Comp.	Precision	Bias	Complete	Bias	Complete	Bias	PQAO Level Criteria	QAPP Appr.	Aqs Rec Flag	CA Rec Flag	Epa Concur
32-031-0020	1 SLAMS	0.052	0.006	0.102	0	0	99	1.98	+/-1.65	100	2.96	100	3.05	Y	Y	Y	Y	S
32-031-0025	1 SLAMS	0.051	0.013	0.096	0	0	99	1.77	+/-1.23	100	0.25	100		Y	Y	Y	Y	S
32-031-0031	1 SLAMS	0.051	0.009	0.099	0	0	96	1.61	+/-1.65	100	1.63	100		Y	Y	Y	Y	S
32-031-1005	1 SLAMS	0.051	0.015	0.100	0	0	99	1.62	+/-1.28	100	- 0.25	100		Y	Y	Y	Y	S
32-031-1007	1 SLAMS	0.049	0.017	0.100	0	0	99	1.72	+/-1.57	100	0.71	100		Y	Y	Y	Y	S
32-031-2002	1 SLAMS	0.053	0.029	0.093	0	0	95	5.01	+/-3.55	100	3.29	100		Y	Y	Y	Y	S
32-031-2009	1 SLAMS	0.053	0.022	0.096	0	0	98	2.01	+/-1.57	100	1.31	100		Y	Y	Y	Y	S

Draft October 26, 2023

# Data Evaluation and Concurrence Report for Gaseous Pollutants

**Certifying Year** 2021  
**Certifying Agency Code** Washoe County District Health Department (1138)  
**Parameter** Sulfur dioxide (42401) (ppb)

**PQAO Name** Washoe County District Health Department (1138)  
**QAPP Approval Date** 12/12/2019

**NPAP Audit Summary:**

Number of Passed Audits	NPAP Bias	Criteria Met
0	2.92973	Y

AQS Site ID	POC Monitor Type	Routine Data					One Point Quality Check			Annual PE		NPAP		Concur. Flag				
		Mean	Min	Max	Exceed. Count	Outlier Count	Perc. Comp.	Precision	Bias	Complete	Bias	Complete	Bias	PQAO Level Criteria	QAPP Appr.	Aqs Rec Flag	CA Rec Flag	Epa Concur
32-031-0031	1 SLAMS	0.2	- 0.6	3.6		0	97	4.06	+/-3.20	100	- 3.74	100	2.93	Y	Y	Y	Y	S

Draft  
 October 26, 2023

# Data Evaluation and Concurrence Report for Particulate Matter

**Certifying Year:**2021

**Certifying Agency:**Washoe County District Health Department (1138)

**Parameter:** PM10 Total 0-10um STP (81102) CONTINUOUS

**PQAO Name:** Washoe County District Health Department (1138)

**Quality Assurance Project Plan Approval Date:** 12/12/2019

## Monitors Summaries

AQS Site ID	POC	Monitor Type	Routine Data (ug/m3)					Flow Rate Verification		Flow Rate Audit		Collocation Concurrence Flag				
			Mean	Min	Max	Exceed. Count	Outlier Count	% Complete	% Bias	% Complete	% Bias	% Complete	QAPP Appr.	AQS Rec Flag	CA Rec Flag	EPA Rec Concur
32-031-0025	2	SLAMS	28.45	-4.0	985.0	0	97	+/-0.48	100	+0.16	100	Y	Y	Y	S	
32-031-0031	2	SLAMS	31.36	-1.0	597.0	0	98	+/-0.44	100	+0.41	100	Y	Y	Y	S	
32-031-1005	4	SLAMS	30.48	-5.0	552.0	0	98	+/-0.44	100	+0.17	100	Y	Y	Y	S	
32-031-1007	1	SLAMS	24.53	-2.0	985.0	0	98	+/-0.69	100	+0.52	100	Y	Y	Y	S	

**Parameter:** PM2.5 - Local Conditions (88101)

**PQAO Name:** Washoe County District Health Department (1138)

**Quality Assurance Project Plan Approval Date:** 12/12/2019

## Collocation Summary

Method	# Sites	# Sites Req	# Sites Collocated	% Collocated	CV Est	CV UB	Criteria Met?
170	4	1	1	100	10.03	11.08	Y

## PEP Summary

# Methods	# Audited Methods	# PEP Required	# PEP Submitted	% Complete	Bias	Criteria Met?
1	1	5	3	60	-3.18	Y

## Monitors Summaries

AQS Site ID	POC	Method	Monitor Type	Routine Data (ug/m3)					Flow Rate Audit		Collocation			Concurrence Flag				
				Mean	Min	Max	Exceed. Count	Outlier Count	% Complete	% Bias	% Complete	PQAO Crit. Met	PEP PQAO Crit. Met	QAPP Appr.	AQS Rec Flag	CA Rec Flag	EPA Rec Concur	
32-031-0025	1	170	SLAMS	11.17	-8.0	375.0	0	98	+0.57	100			Y	Y	Y	Y	Y	S
32-031-0031	1	545/142	SLAMS	12.16	.6	218.9	0	97	-0.95	100			Y	Y	Y	Y	Y	S
32-031-0031	2	170	SLAMS	12.59	-7.0	312.0	0	98	-0.58	100	11.08	100	Y	Y	Y	Y	Y	S
32-031-1005	1	170	SLAMS	12.10	-7.0	278.0	0	99	-0.43	100			Y	Y	Y	Y	Y	S
32-031-1007	1	170	SLAMS	11.59	-3.0	364.0	0	99	+0.29	100			Y	Y	Y	Y	Y	S

**Data Concurrence and Evaluation Report for Lead**

Draft  
October 26, 2023



## Appendix D

### AQS Report Showing RT Flags Applied

Draft  
October 26, 2023

User ID: BMC MULLEN

RAW DATA QUALIFIER REPORT

Report Request ID: 2107458

Report Code: AMP360

May. 22, 2023

GEOGRAPHIC SELECTIONS

Tribal Code	State	County	Site	Parameter	POC	City	AQCR	UAR	CBSA	CSA	EPA Region
	32	031									

PROTOCOL SELECTIONS

Parameter Classification	Parameter	Method	Duration
CRITERIA	81102		

AGENCY SELECTIONS

Washoe County District Health Department

SELECTED OPTIONS

Option Type	Option Value
MERGE PDF FILES	YES
AGENCY ROLE	PQAO
CONCURRENCE STATUS	All Data (Concurred and Non-concurred)
QUALIFIER TYPES	REQUEST EXCLUSION (EVENT) QUALIFIERS ONLY
QUALIFIER COUNTS BY MONITOR	YES
QUALIFIER CODE	RT - Wildfire-U. S. (REQEXC)

SCR GROUP SELECTIONS

Washoe Co, NV

DATE CRITERIA

Start Date	End Date
2021 08 06	2021 08 07

Draft October 26, 2023

United States Environmental Protection Agency

Air Quality System

Raw Data Qualifier Report (v 1.1)

Report Date: May. 22, 2023

Parameter: PM10 Total 0-10um STP ( 81102 )

Standard Units: Micrograms/cubic meter (25 C) ( 001 )

Monitor Key / Site Address	Sample Date-Time	Qualifier Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind Date
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 00:00	21	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 01:00	48	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 02:00	90	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 03:00	112	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 04:00	316	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 05:00	286	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 06:00	222	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 07:00	284	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 08:00	246	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 09:00	212	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 10:00	207	RT	Wildfire-U. S.	2021-11-22		
		<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		

**United States Environmental Protection Agency  
Air Quality System**

**Raw Data Qualifier Report (v 1.1)**

**Report Date: May. 22, 2023**

**Parameter:** PM10 Total 0-10um STP ( 81102 )

**Standard Units:** Micrograms/cubic meter (25 C) ( 001 )

<u>Monitor Key / Site Address</u>	<u>Sample Date-Time</u>	<u>Value</u>	<u>Code</u>	<u>Description</u>	<u>Action Date</u>	<u>NAAQS Standard</u>	<u>Concurrence Ind Date</u>
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 11:00	205	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 12:00	168	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 13:00	116	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 14:00	125	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 15:00	153	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 16:00	167	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 17:00	151	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 18:00	153	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 19:00	124	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 20:00	94	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 21:00	83	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		

**United States Environmental Protection Agency  
Air Quality System**

**Raw Data Qualifier Report (v 1.1)**

**Report Date: May. 22, 2023**

**Parameter:** PM10 Total 0-10um STP ( 81102 )

**Standard Units:** Micrograms/cubic meter (25 C) ( 001 )

<u>Monitor Key / Site Address</u>	<u>Sample Date-Time</u>	<u>Value</u>	<u>Code</u>	<u>Description</u>	<u>Action Date</u>	<u>NAAQS Standard</u>	<u>Concurrence Ind Date</u>
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 22:00	81	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0025-81102-2 684A STATE ROUTE 341, RENO NV 89521	2021-08-06 23:00	93	RT	Wildfire-U. S.	2021-11-22		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		

**Monitor Qualifier Counts: RT Wildfire-U. S.**

**Count: 24**

<u>Monitor Key / Site Address</u>	<u>Sample Date-Time</u>	<u>Value</u>	<u>Code</u>	<u>Description</u>	<u>Action Date</u>	<u>NAAQS Standard</u>	<u>Concurrence Ind Date</u>
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 00:00	243	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 01:00	259	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 02:00	272	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 03:00	337	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 04:00	275	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 05:00	267	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 06:00	270	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 07:00	276	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 08:00	265	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 09:00	252	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 10:00	241	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 11:00	142	RT	Wildfire-U. S.	2021-11-17		
	<b>Event:</b>			Dixie and Antelope Wildfires	2023-05-22		

**United States Environmental Protection Agency  
Air Quality System**

**Raw Data Qualifier Report (v 1.1)**

**Report Date: May. 22, 2023**

**Parameter:** PM10 Total 0-10um STP ( 81102 )

**Standard Units:** Micrograms/cubic meter (25 C) ( 001 )

<u>Monitor Key / Site Address</u>	<u>Sample Date-Time</u>	<u>Value</u>	<u>Sample Qualifier Code Description</u>	<u>Action Date</u>	<u>NAAQS Standard</u>	<u>Concurrence Ind Date</u>
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 12:00	125	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 13:00	188	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 14:00	103	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 15:00	102	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 16:00	171	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 17:00	186	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 18:00	111	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 19:00	132	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 20:00	137	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 21:00	134	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 22:00	138	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-0031-81102-2 1260-A Stewart St.	2021-08-07 23:00	145	RT Wildfire-U. S.	2021-11-17		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		

**Monitor Qualifier Counts: RT Wildfire-U. S.**

**Count: 24**

<u>Monitor Key / Site Address</u>	<u>Sample Date-Time</u>	<u>Value</u>	<u>Sample Qualifier Code Description</u>	<u>Action Date</u>	<u>NAAQS Standard</u>	<u>Concurrence Ind Date</u>
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 00:00	129	RT Wildfire-U. S.	2021-11-18		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 01:00	129	RT Wildfire-U. S.	2021-11-18		
	<b>Event:</b>		Dixie and Antelope Wildfires	2023-05-22		

**United States Environmental Protection Agency**

**Air Quality System**

**Raw Data Qualifier Report (v 1.1)**

**Report Date: May. 22, 2023**

**Parameter:** PM10 Total 0-10um STP ( 81102 )

**Standard Units:** Micrograms/cubic meter (25 C) ( 001 )

<u>Monitor Key /</u> <u>Site Address</u>	<u>Sample</u> <u>Date-Time</u>	<u>Value</u>	<u>Code</u>	<u>Description</u>	<u>Action</u> <u>Date</u>	<u>NAAQS Standard</u>	<u>Concurrence</u> <u>Ind Date</u>
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 02:00	163	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 03:00	155	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 04:00	175	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 05:00	189	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 06:00	182	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 07:00	234	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 08:00	280	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 09:00	263	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 10:00	231	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 11:00	144	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 12:00	120	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		

**United States Environmental Protection Agency  
Air Quality System**

**Raw Data Qualifier Report (v 1.1)**

**Report Date: May. 22, 2023**

**Parameter:** PM10 Total 0-10um STP ( 81102 )

**Standard Units:** Micrograms/cubic meter (25 C) ( 001 )

<u>Monitor Key / Site Address</u>	<u>Sample Date-Time</u>	<u>Value</u>	<u>Code</u>	<u>Description</u>	<u>Action Date</u>	<u>NAAQS Standard</u>	<u>Concurrence Ind Date</u>
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 13:00	95	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 14:00	86	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 15:00	90	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 16:00	137	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 17:00	165	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 18:00	104	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 19:00	119	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 20:00	127	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 21:00	217	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 22:00	202	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		
32-031-1005-81102-4 750 4TH ST, SPARKS, NV 89431	2021-08-07 23:00	198	RT	Wildfire-U. S. Dixie and Antelope Wildfires	2021-11-18 2023-05-22		



United States Environmental Protection Agency  
Air Quality System

Raw Data Qualifier Report (v 1.1)

Report Date: May. 22, 2023

Parameter: PM10 Total 0-10um STP ( 81102 )

Standard Units: Micrograms/cubic meter (25 C) ( 001 )

Monitor Qualifier Counts: RT Wildfire-U. S.

Count: 24

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October 26, 2023

United States Environmental Protection Agency  
Air Quality System

Report Date: May. 22, 2023

All Qualifiers Utilized:

<u>Qualifier</u>		<u>Qualifier</u>
<u>Code:</u>	<u>Qualifier Description:</u>	<u>Count:</u>
RT	Wildfire-U. S.	72

Draft  
October 26, 2023