WASHOE COUNTY
HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

Exceptional Event Demonstration for August 17 and 20-26, 2021 PM_{10} Exceedance due to Dixie/Caldor Fire

Submitted to U.S. EPA Region 9 on Date

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VISION

A healthy community

MISSION

To improve and protect our community's quality of life and increase equitable opportunities for better health.

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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
ºF	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/m³	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_2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NOy	Reactive Nitrogen Compounds
NWS	National Weather Service
O_3	Ozone
PG&E	Pacific Gas and Electric
PM	Particulate Matter
$PM_{2.5}$	Particulate Matter less than or equal to 2.5 microns in aerodynamic diameter
PM_{10}	Particulate Matter less than or equal to 10 microns in aerodynamic diameter
ppm	Parts Per Million
PST	Pacific Standard Time
R^2	Coefficient of Determination
SO_2	Sulfur Dioxide
TSP	Total Suspended Particles

1.0 Introduction

1.1 Purpose

The analysis in this report demonstrates that the exceedances of the primary and secondary 24-hour PM_{10} National Ambient Air Quality Standard (NAAQS) recorded on August 17, and 20-26 of 2021 at the Toll air monitoring site, on August 21-25 of 2021 at the Reno4 air monitoring site, and on August 21, and 23-24 of 2021 at the Sparks air monitoring site were caused by the Dixie and Caldor wildfires. Pursuant to the Exceptional Event (EE) requirements under the Clean Air Act (CAA), the data may be excluded from regulatory decisions for PM_{10} NAAQS. Washoe County Health District Air Quality Management Division (AQMD) is requesting to exclude all PM_{10} data from the Toll (AQS ID: 32-031-0025-81102-2), Reno4 (AQS ID: 32-031-0031-81102-2), and Sparks (AQS ID: 32-031-1005-81102-4) PM_{10} primary monitors on the previously mentioned days. Exclusion of the data caused by this exceptional event will have a regulatory impact on the approval of the 2nd 10-Year Maintenance Plan for PM_{10}.

1.2 Exceptional Events Rule Procedure

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

This demonstration was available for public comment from October 26 to November 26, 2023 at the AQMD website (OurCleanAir.com). 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

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

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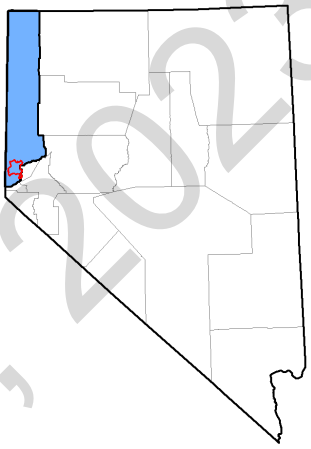
2.0 Conceptual Model

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.

Figure 2-1
Washoe County, Nevada



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.

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

	Temperature (°F)			Precipitation (inches)
Month	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_3). Wildfire smoke throughout the year, especially during the summer months, can dramatically increase summertime PM and O_3.

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 ($PM_{2.5}$), Particulate Matter less than or equal to 10 microns in aerodynamic diameter (PM_{10}), Nitrogen Dioxide (NO_2), 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_3 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_3, CO, NO_2, and SO_2) concentrations but typically increase PM levels, especially PM_{10}. Hourly PM_{10} levels can reach more than 500 micrograms per cubic meter ($\mu g/m^3$) 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_3 (1-hour); and 4) 1987 PM_{10} (24-hour and Annual). Some pollutants and standards, such as 1-hour O_3 and TSP, have been revoked and no longer apply. For the other pollutants, CO and PM_{10}, 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.

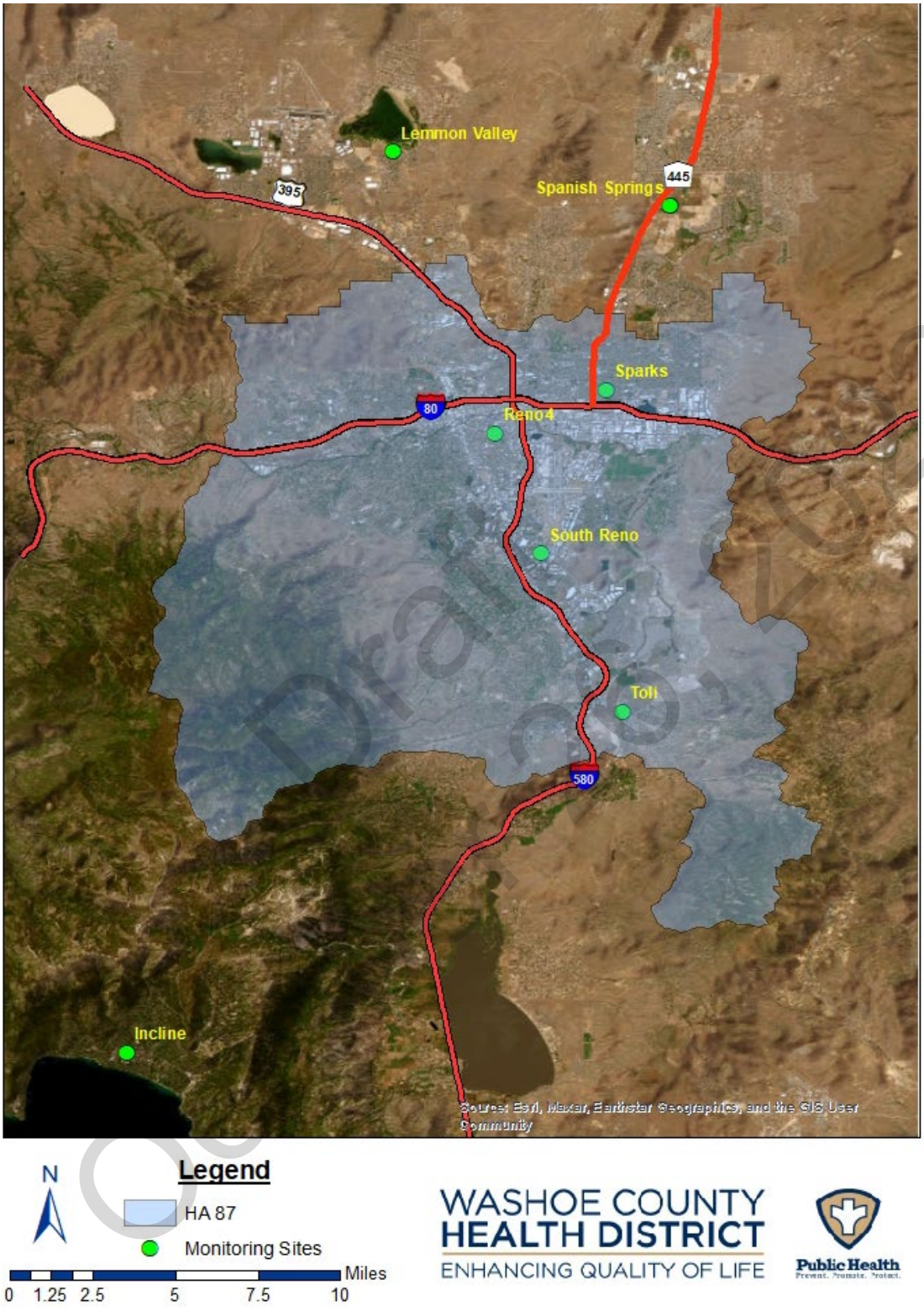
2.2 Overview of Monitoring Network

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_3	CO	Trace CO	Trace NO	NO_2	NO_x	Trace NOy	Trace SO_2	PM_{10}	$PM_{2.5}$	PM_{coarse}	$PM_{2.5}$ Speciation	Meteorology
Incline	✓												
Lemmon Valley	✓												
Reno4	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
South Reno	✓												✓
Sparks	✓	✓							✓	✓	✓		✓
Spanish Springs	✓								✓	✓	✓		
Toll	✓								✓	✓	✓		✓

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

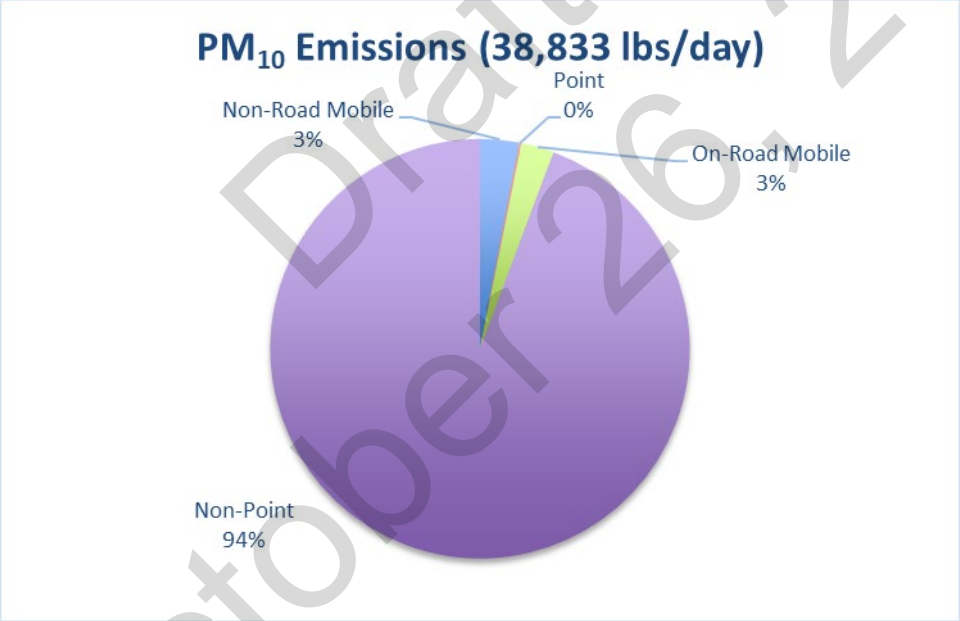


The AQMD's ambient air monitoring network meets the minimum monitoring requirements for all criteria pollutants pursuant to Title 40, Part 58 of the Code of Federal Regulations (CFR), Appendix D. Washoe County's monitoring network is reviewed annually pursuant to 40 CFR 58.10 to ensure the network meets 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_{10} Concentrations

Without exceptional events, ambient PM_{10} concentrations within Washoe County are under the limit of the PM_{10} NAAQS standard. This is because the PM_{10} 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_{10} 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_{10} Emissions by Source Category



Based on historic, non-event PM_{10} monitoring data for the previous six years, below are the characteristics of PM_{10} levels throughout the year in the Truckee Meadows.

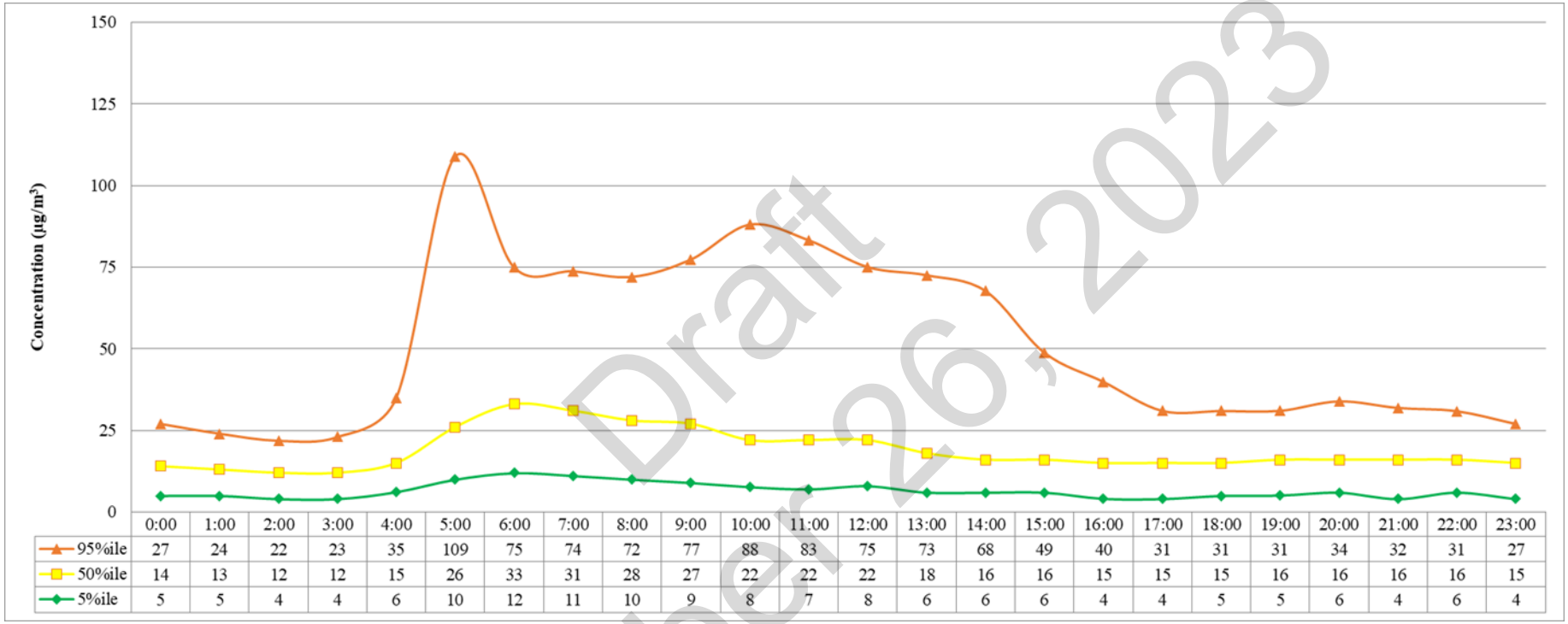
1. October through March: Ambient PM_{10} concentrations are relatively high during the colder months because some Washoe County residents utilize wood-burning devices for heat. Additionally, PM_{10} concentrations can increase after snowstorms due to local street sanding and sweeping. The Truckee Meadows 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 µg/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.

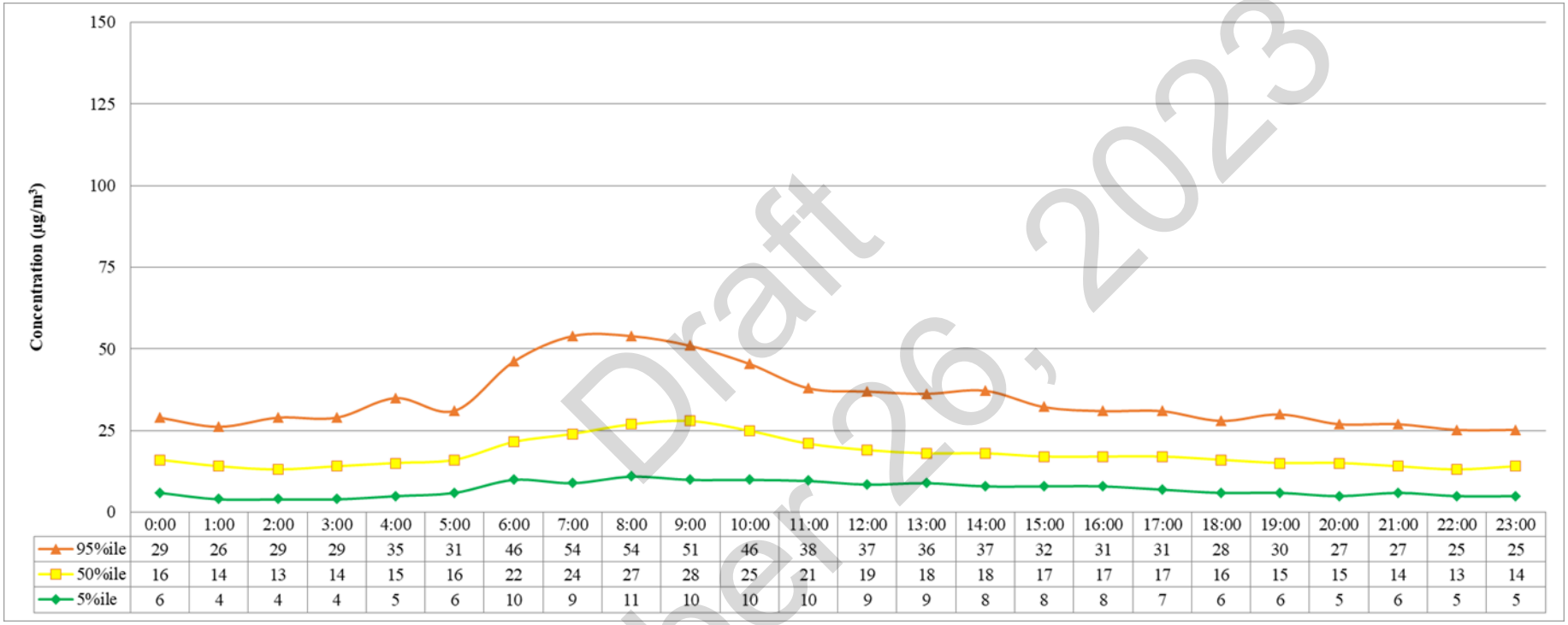
The wildfire events that have caused exceedances have occurred in the July through September period. For the purpose of this demonstration, it is worthwhile to evaluate the diurnal pattern of PM_{10} concentrations during this time period. Figure 2-4 through Figure 2-6 below shows the 2016-2020 PM_{10} diurnal pattern for non-event days at the Toll, Reno4 and Sparks monitors with the 5th, 50th, and 95th 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_{10} Diurnal Pattern at Toll



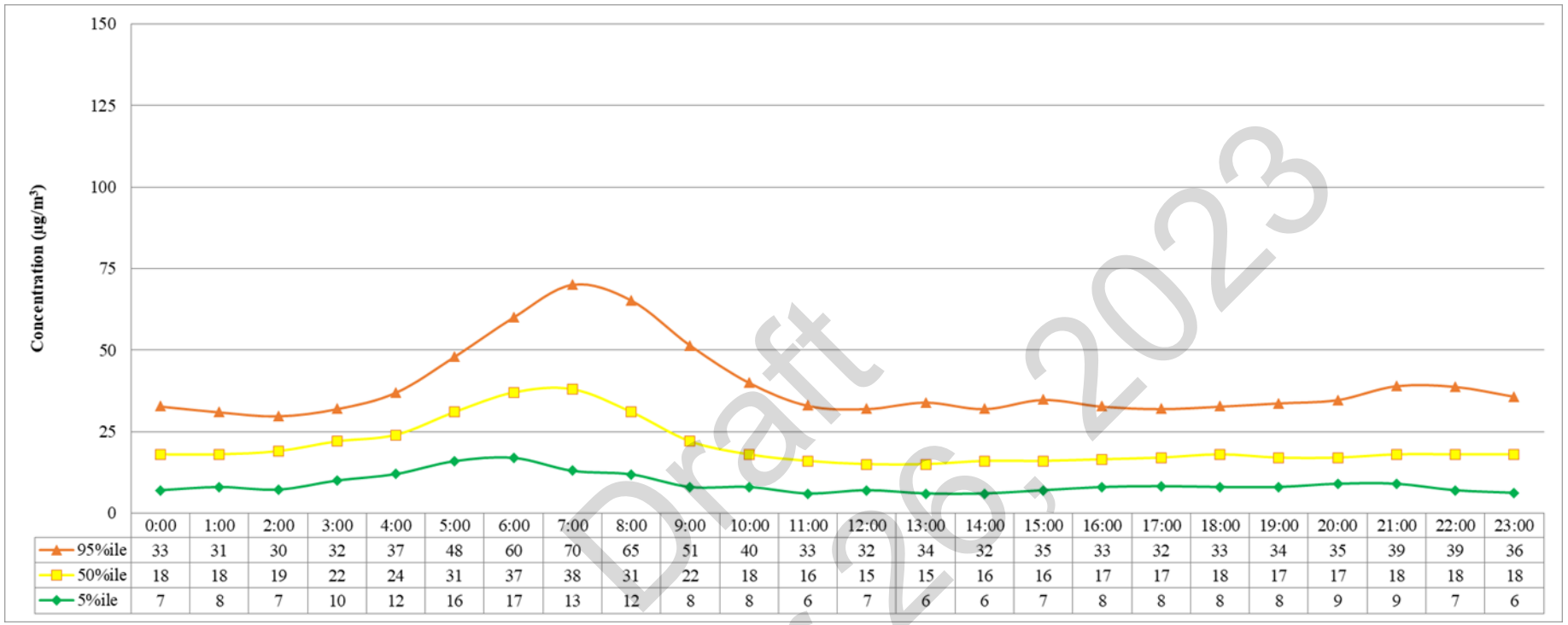
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	27	24	22	23	35	109	75	74	72	77	88	83	75	73	68	49	40	31	31	31	34	32	31	27
50%ile	14	13	12	12	15	26	33	31	28	27	22	22	22	18	16	16	15	15	15	16	16	16	16	15
5%ile	5	5	4	4	6	10	12	11	10	9	8	7	8	6	6	6	4	4	5	5	6	4	6	4

Figure 2-5: 2016-2020 Wildfire Season PM_{10} Diurnal Pattern at Reno4



	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	29	26	29	29	35	31	46	54	54	51	46	38	37	36	37	32	31	31	28	30	27	27	25	25
50%ile	16	14	13	14	15	16	22	24	27	28	25	21	19	18	18	17	17	17	16	15	15	14	13	14
5%ile	6	4	4	4	5	6	10	9	11	10	10	10	9	9	8	8	8	7	6	6	5	6	5	5

Figure 2-6: 2016-2020 Wildfire Season PM_{10} Diurnal Pattern at Sparks



	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	33	31	30	32	37	48	60	70	65	51	40	33	32	34	32	35	33	32	33	34	35	39	39	36
50%ile	18	18	19	22	24	31	37	38	31	22	18	16	15	15	16	16	17	17	18	17	17	18	18	18
5%ile	7	8	7	10	12	16	17	13	12	8	8	6	7	6	6	7	8	8	8	8	9	9	7	6

2.4 Description of Fires that caused PM_{10} Exceedances

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.

Caldor Fire

The Caldor Fire was first reported on August 14, 2021 in Eldorado National Forest in El Dorado County, California, approximately 75 miles southwest of the Truckee Meadows Region. Although not fully proven, officials believe the fire was "likely ignited when a projectile discharged from a firearm and struck an object, causing heated fragments of the projectile to land in a dry receptive fuel bed, igniting the fuels." The fire exploded in size and ultimately led to the evacuation of South Lake Tahoe. Fire crews fought the fire until it was announced as fully contained on October 21, 2021 after having burned 221,835 acres. 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 24, 2021 and illustrates how dry the wildfire fuels were at that time.

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

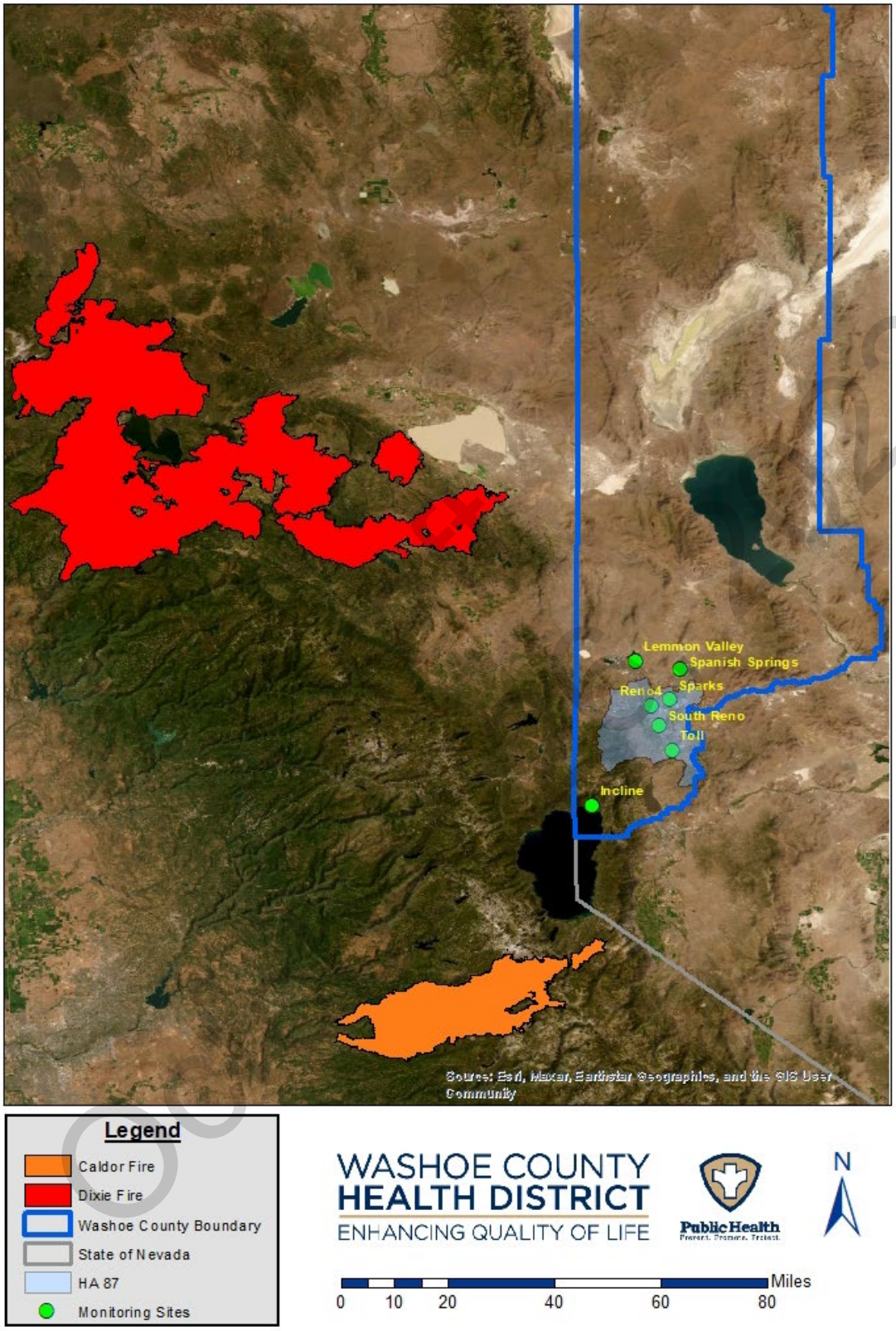
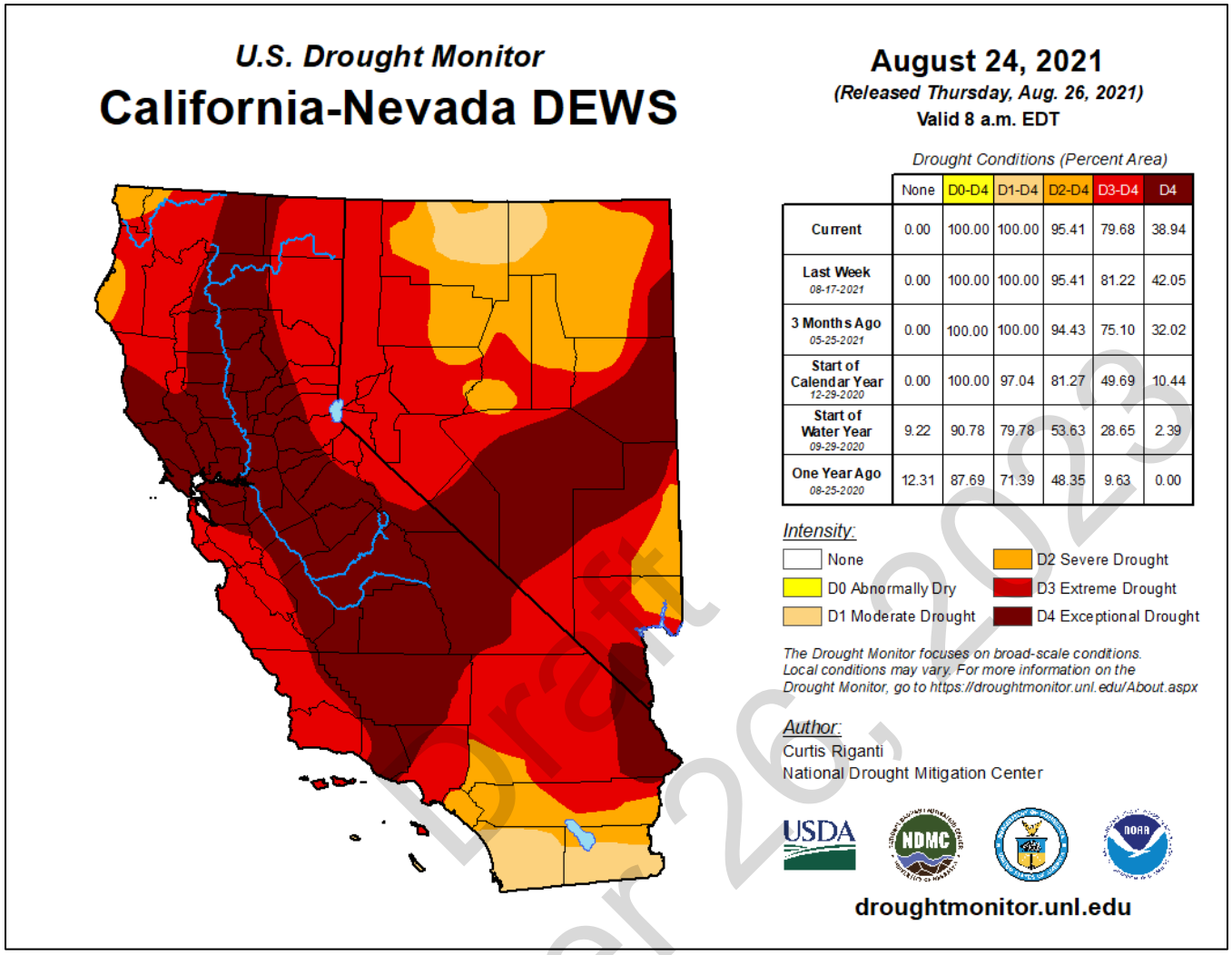


Figure 2-8: The Drought Conditions Near the Time of the Dixie and Caldor Fires



2.5 PM_{10} Air Quality Impacts from the Dixie and Caldor Fires

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_{10} NAAQS averages. AQMD is requesting exclusion of all hourly PM_{10} 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.

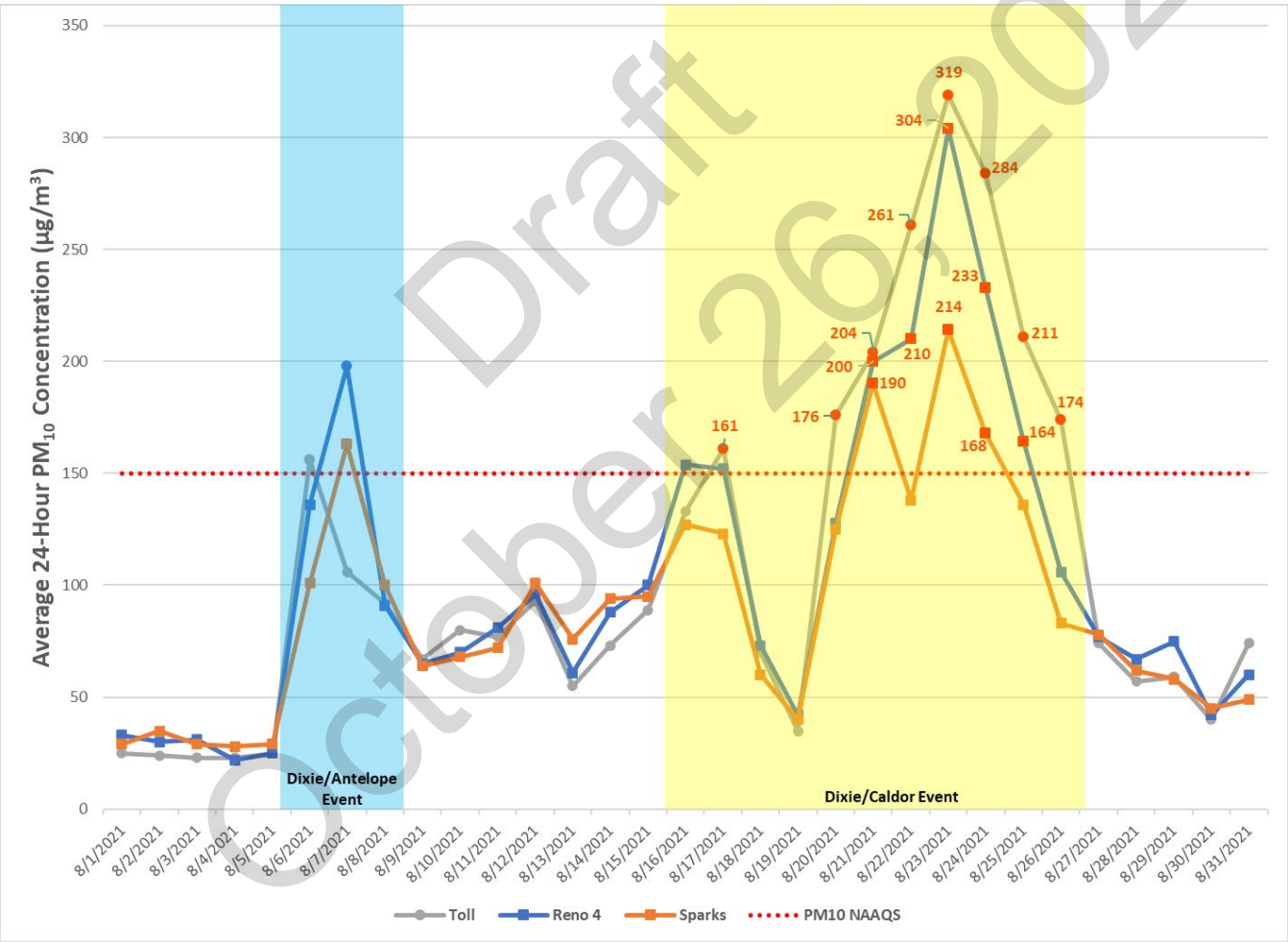
Table 2-3: PM_{10} Data Requested to be Excluded

	Monitoring Site (AQS ID)		
	Toll (AQS ID: 32-031-0025-81102-2)	**Reno4 (AQS ID: 32-031-0031-81102-2)**	**Sparks (AQS ID: 32-031-1005-81102-4)**
8/17/2021	161µg/m3	-	-
8/20/2021	176 µg/m3	-	-
8/21/2021	204 µg/m3	200 µg/m3	190 µg/m3
8/22/2021	261 µg/m3	210 µg/m3	-
8/23/2021	319 µg/m3	304 µg/m3	214 µg/m3
8/24/2021	284 µg/m3	233 µg/m3	168 µg/m3
8/25/2021	211 µg/m3	164 µg/m3	-
8/26/2021	174 µg/m3	-	-

2.5.2 Narrative of Air Quality Impacts

In the middle of August of 2021, wildfire smoke was transported into the Truckee Meadows from the Dixie and Caldor Fires which eventually led to various PM_{10} exceedances at the Toll, Reno4, and Sparks air monitoring stations. On August 13, 24-hour PM_{10} averages were as low as 55, 61, and 76 µg/m³ at Toll, Reno4, and Sparks respectively. Concentrations steadily rose until an exceedance at Toll on August 17. As the wind patterns changed, the smoke vacated the Truckee Meadows and dropped the PM_{10} concentrations back below the NAAQS for a few days. Wind patterns shifted again and brought large quantities of wildfire smoke into HA 87 resulting in degraded air quality for approximately one week and numerous exceedances. An overview of 24-hour average concentrations for PM_{10} 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/Caldor event, the Dixie/Antelope event has a separate EE demonstration. The days of the exceedances that are relevant to this demonstration are denoted by the red data points between August 17 and August 26, 2021.

Figure 2-9: 24-hour PM_{10} 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. These excerpts confirm that the previously mentioned sequence of events is accurate.

> *"Smoke forecast for today into this evening is complex with competing factors. Increasing winds aloft have brought smoke from yet another fire (Caldor) into the region resulting in hazardous air quality in the Truckee-Tahoe region already and not much better around Reno. Expect this pattern to persist this morning with improvements in the afternoon as stronger winds through the boundary layer help mix/thin smoke more. HRRR Smoke model has plumes from Dixie/Caldor turning more easterly by 0z just ahead of the front. Real air quality improvement on the east side probably won't take place until tonight into Wednesday and Thursday when transport winds turn more N/NE."*
>
> Excerpt from NWS-Reno Area Forecast Discussion
> (239 AM PDT Tue Aug 17 2021)

> *"Today will see a return of wildfire smoke from the Dixie and Caldor fires to the eastern Sierra and western NV as winds shift more from the west and southwest this afternoon into Saturday…Expect periods of moderate to poor air quality depending on fire activity and wind trajectory. CAMS guidance shows a west to southwest wind flow continuing through at least Sunday."*
>
> Excerpt from NWS-Reno Area Forecast Discussion
> (235 AM PDT Fri Aug 20 2021)

> *"The gusty conditions will also bring with it elevated fire weather concerns across the region. Smoke and unhealthy air quality impacts will also return from the Dixie and Caldor fires. Winds will lessen into Sunday but wildfire smoke impacts will continue through the remainder of the short-term forecast period."*
>
> Excerpt from NWS Reno Area Forecast Discussion
> (307 AM PDT Sat Aug 21 2021)

> *"What will be making its return is the typical afternoon and evening Zephyr breezes. Their surface development each afternoon and evening will, unfortunately, bring continued influxes of denser smoke from the Caldor and Dixie fires into the eastern Sierra and western NV. Check with fire.airnow.gov for the latest air quality and airnow.gov for the air quality forecast in your area."*
>
> Excerpt from NWS Reno Area Forecast Discussion
> (241 AM PDT Sun Aug 22 2021)

"The persistent southwest to west lower-level winds each afternoon and evening will allow an increased incursion of dense smoke from the Caldor and Dixie fires into the eastern Sierra and western NV. Some improvement in air quality is possible each afternoon and evening as mixing allows for some dispersion of smoke particulates only to have air quality once again degrade late at night and in the morning."

Excerpt from NWS Reno Area Forecast Discussion
(214 AM PDT Mon Aug 23 2021)

"A broad trough with a dry southwest flow will promote continued southwest-west afternoon breezes at least through Thursday. This trajectory unfortunately will continue to yield influxes of smoke from the Caldor Fire across western Nevada while Dixie Fire smoke continues to spread across Plumas, Lassen, eastern Modoc, and far northern Washoe counties."

Excerpt from NWS Reno Area Forecast Discussion
(300 AM PDT Tue Aug 24 2021)

"While the afternoon winds should produce a few hours of modest air quality improvements as a result of afternoon mixing, it will however allow for more influxes of smoke from the Caldor and Dixie wildfires. As a result, air quality is likely to degrade again later this evening and into the morning."

Excerpt from NWS Reno Area Forecast Discussion
(251 AM PDT Wed Aug 25 2021)

"Lighter breezes and some warming are expected late week into the weekend. There is a chance for less smoke over western Nevada, especially north of Highway 50, as light westerly afternoon winds retreat to the Sierra late in the week. Some smoke and haze will continue to bring the potential for more air quality impacts. Westerly afternoon winds increasing next week may send heavier smoke into western NV."

Excerpt from NWS Reno Area Forecast Discussion
(249 AM PDT Thu Aug 26 2021)

Satellite imagery also confirms the sequence of events of the exceedances. As can be seen in Figure 2-10 below, smoke from the Dixie and Caldor fires had not entered HA 87 as of August 13, 2021. As wind patterns shifted, smoke from the fires moved into HA 87 causing numerous exceedances between August 17-26, 2021. This is seen in Figures 2-11 through 2-18 below. The maps shown in Figures 2-19 through 2-26 are daily weather maps that were issued by the National Weather Service around the time of the exceedances that provide extra evidence in support of the aforementioned sequence of events.

Figure 2-10: Satellite Imagery from August 13, 2021

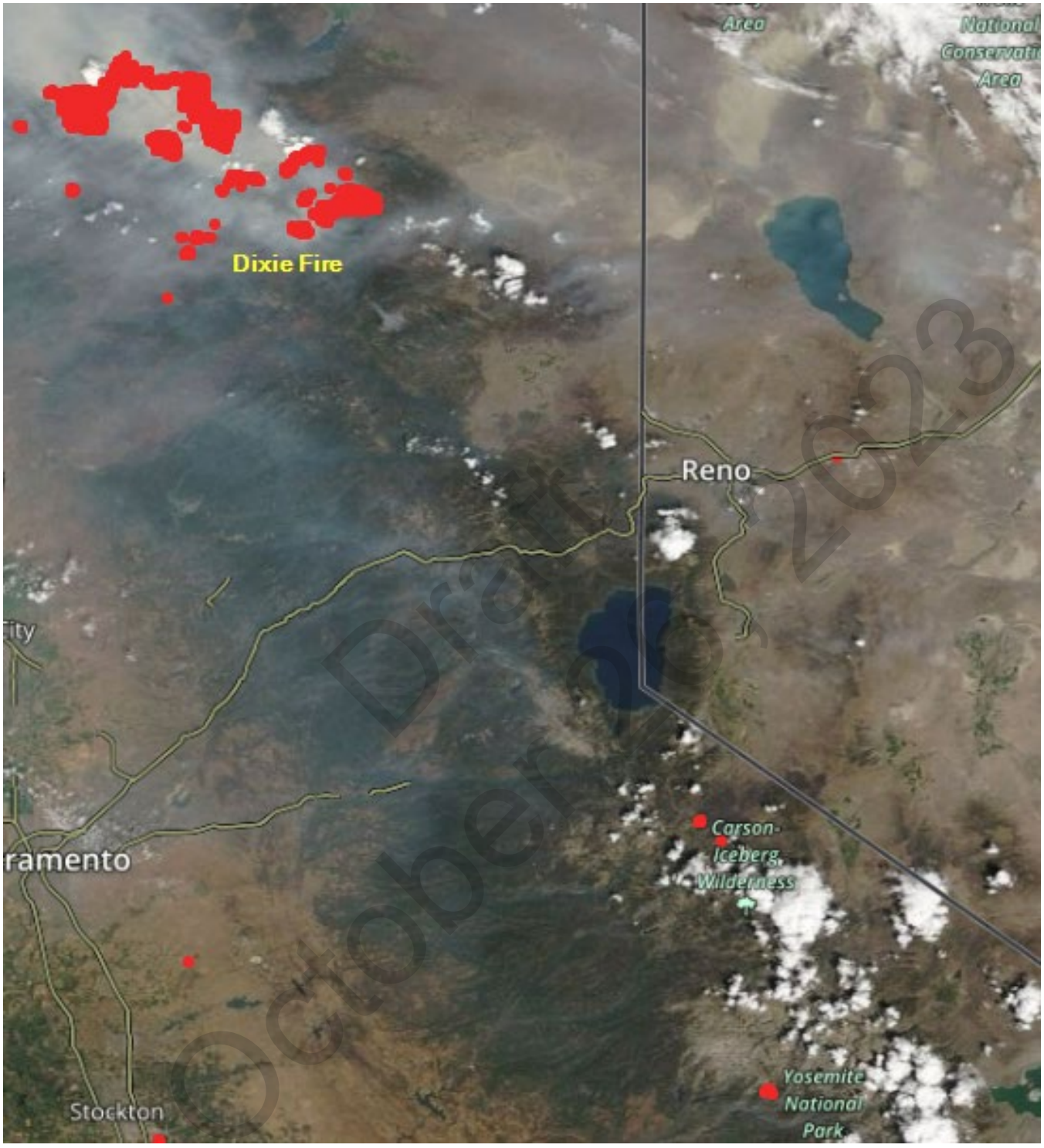


Figure 2-11: Satellite Imagery from August 17, 2021

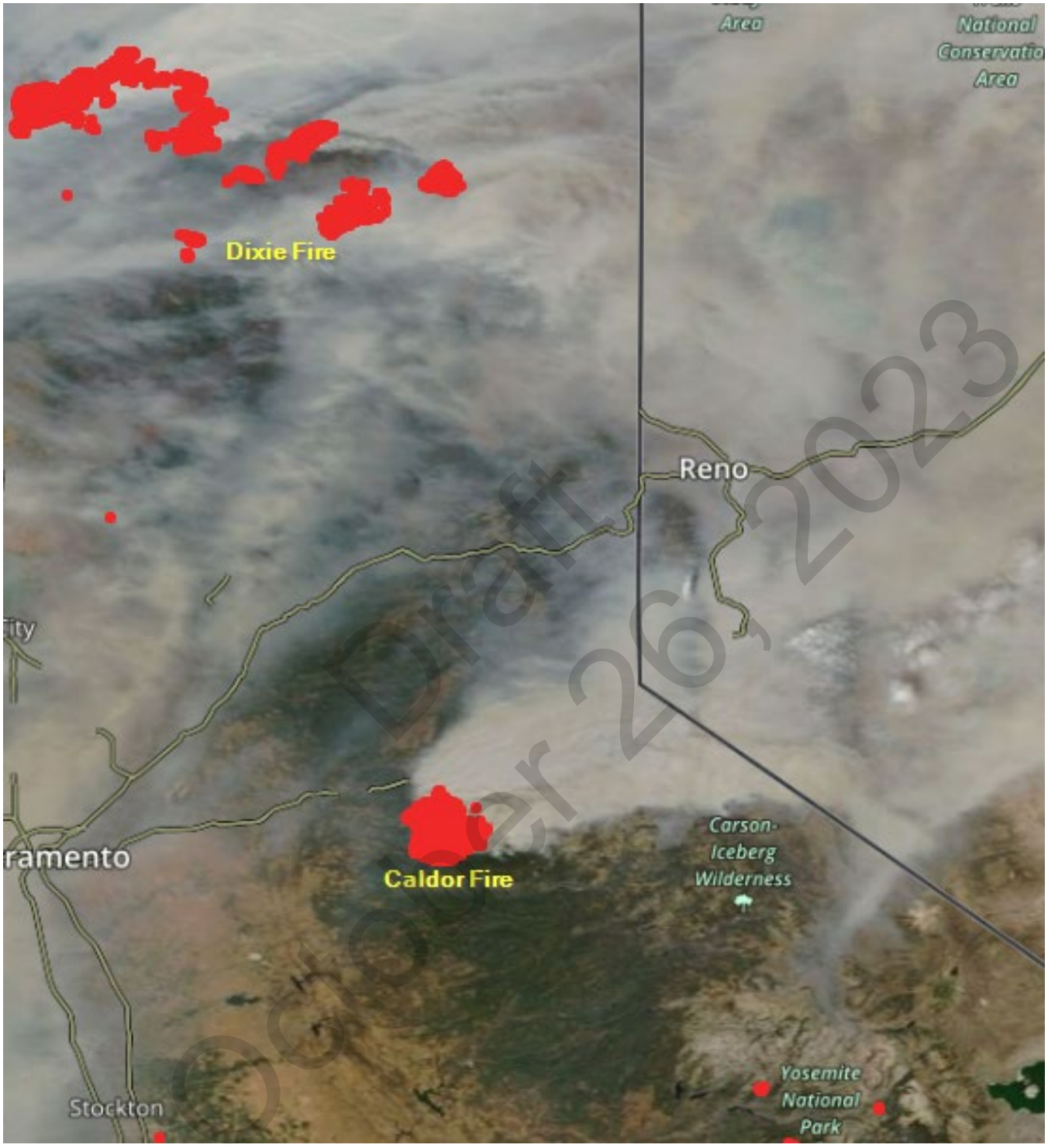


Figure 2-12: Satellite Imagery from August 20, 2021

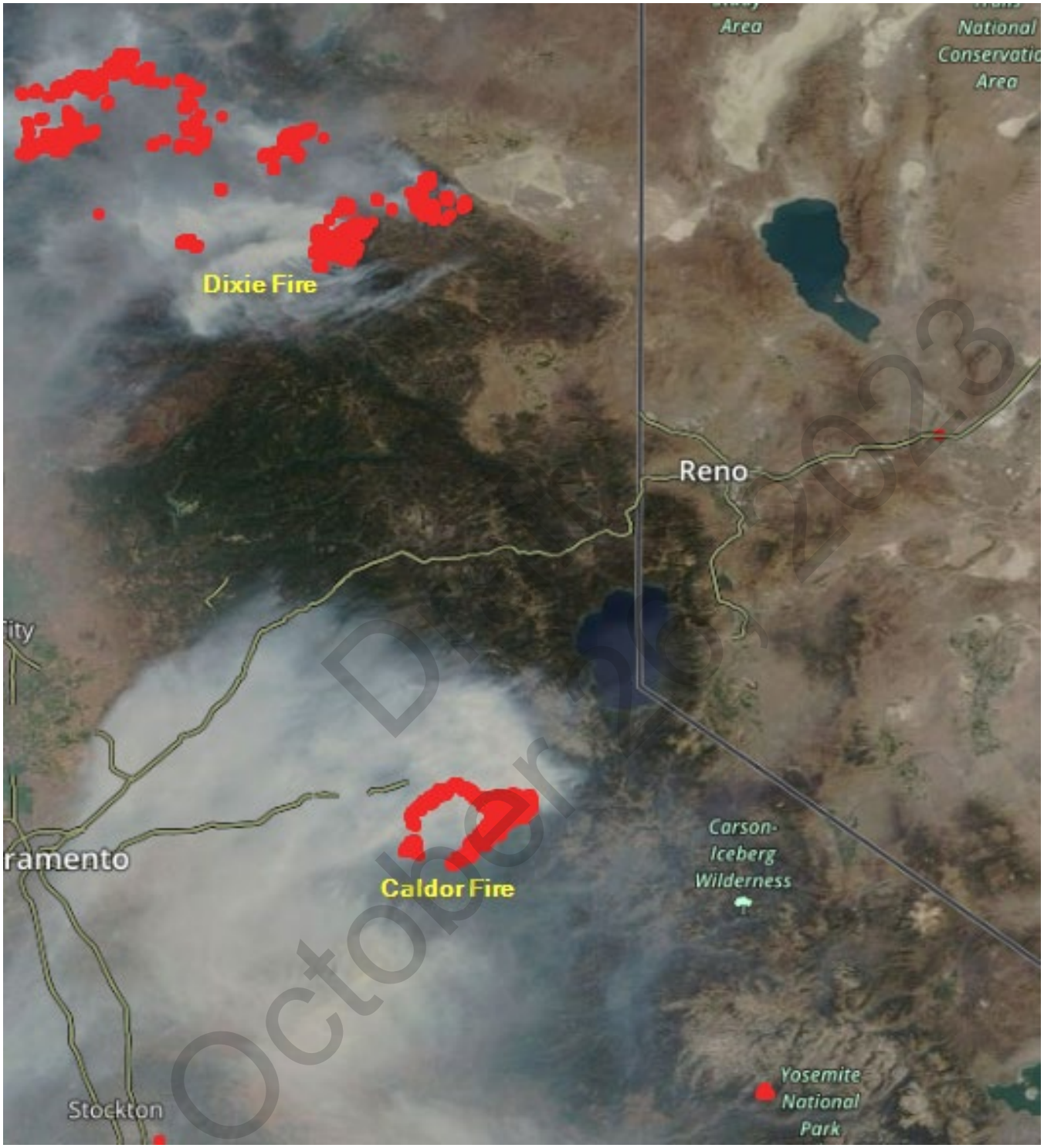


Figure 2-13: Satellite Imagery from August 21, 2021

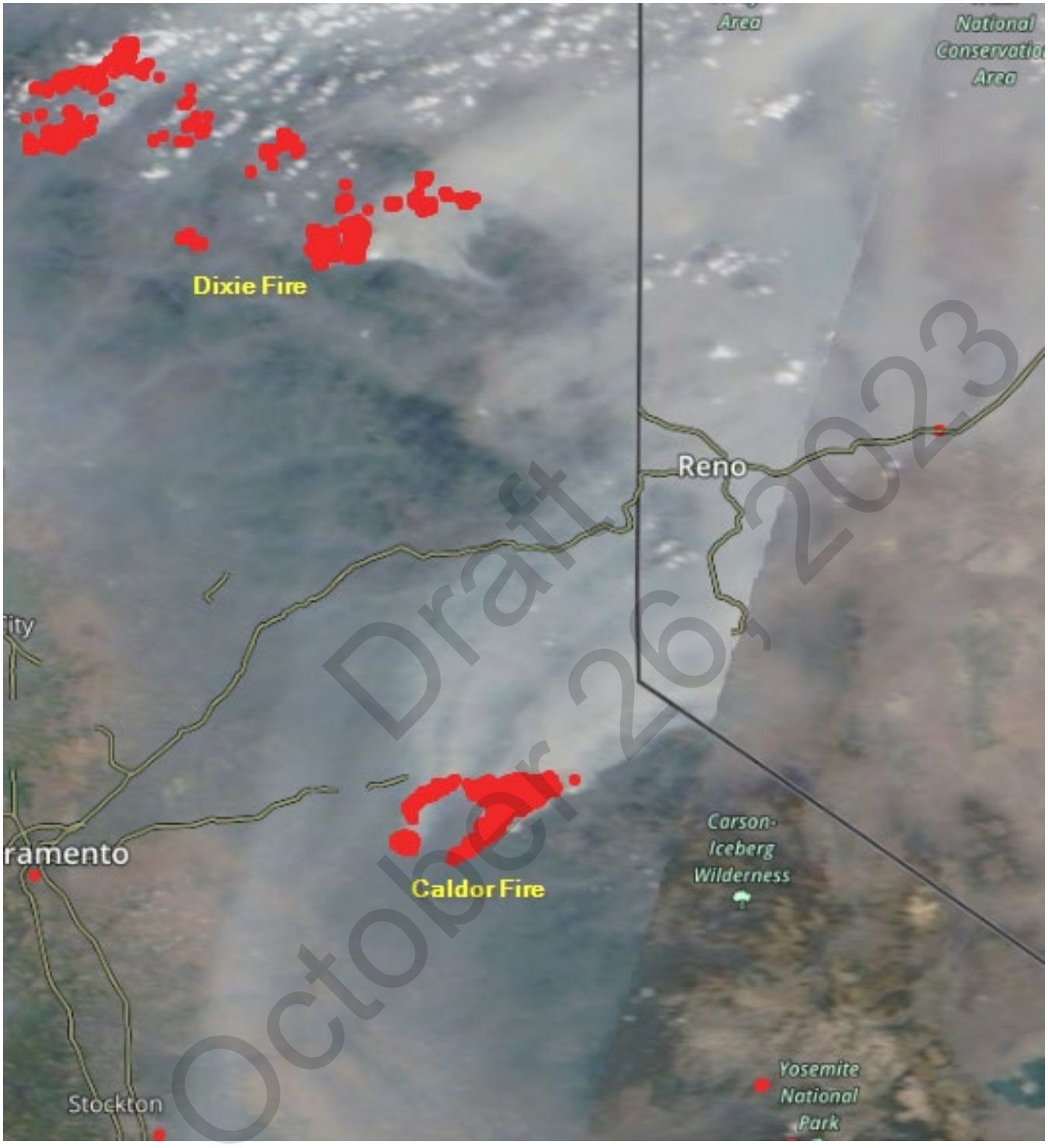


Figure 2-14: Satellite Imagery from August 22, 2021

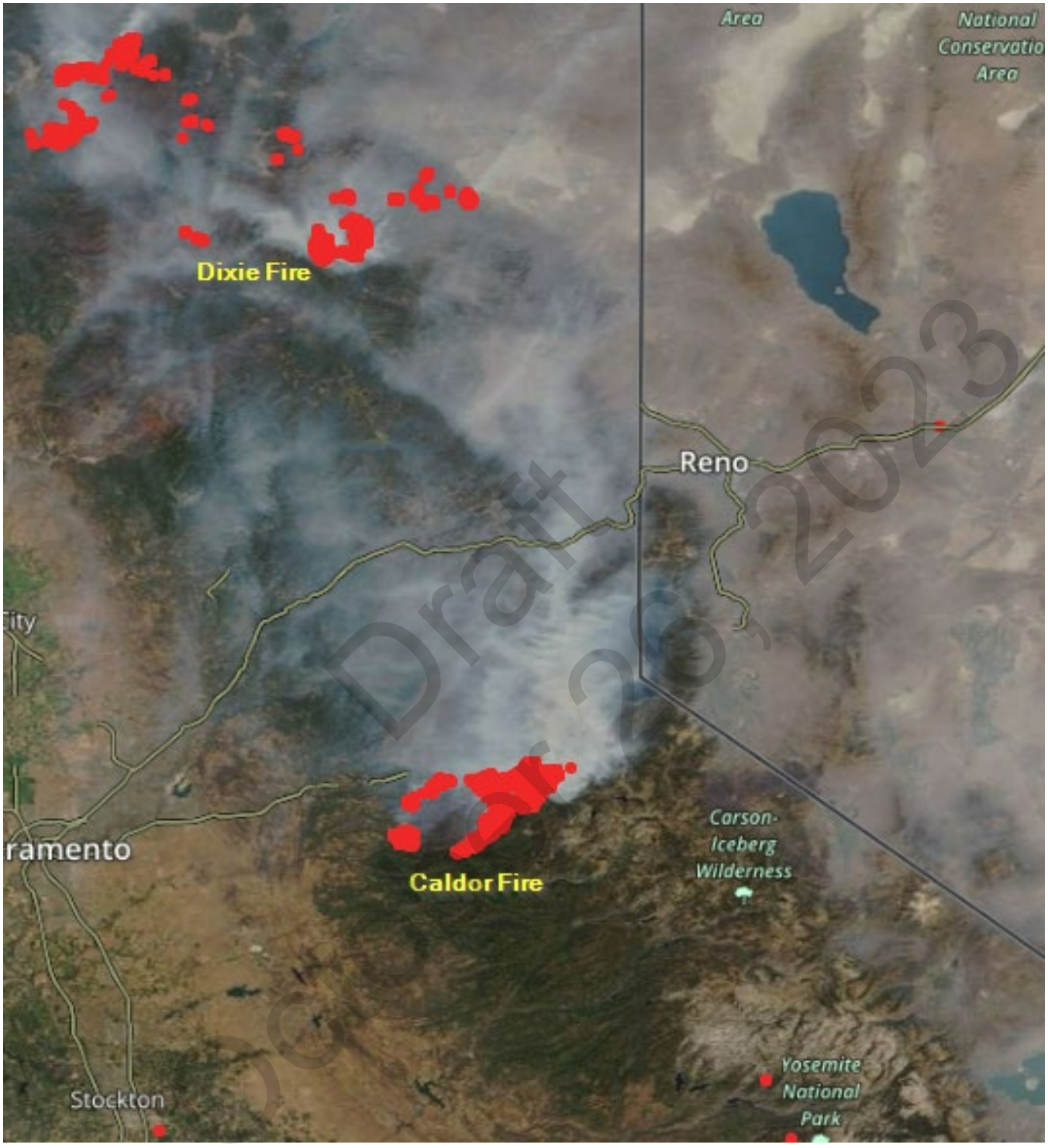


Figure 2-15: Satellite Imagery from August 23, 2021

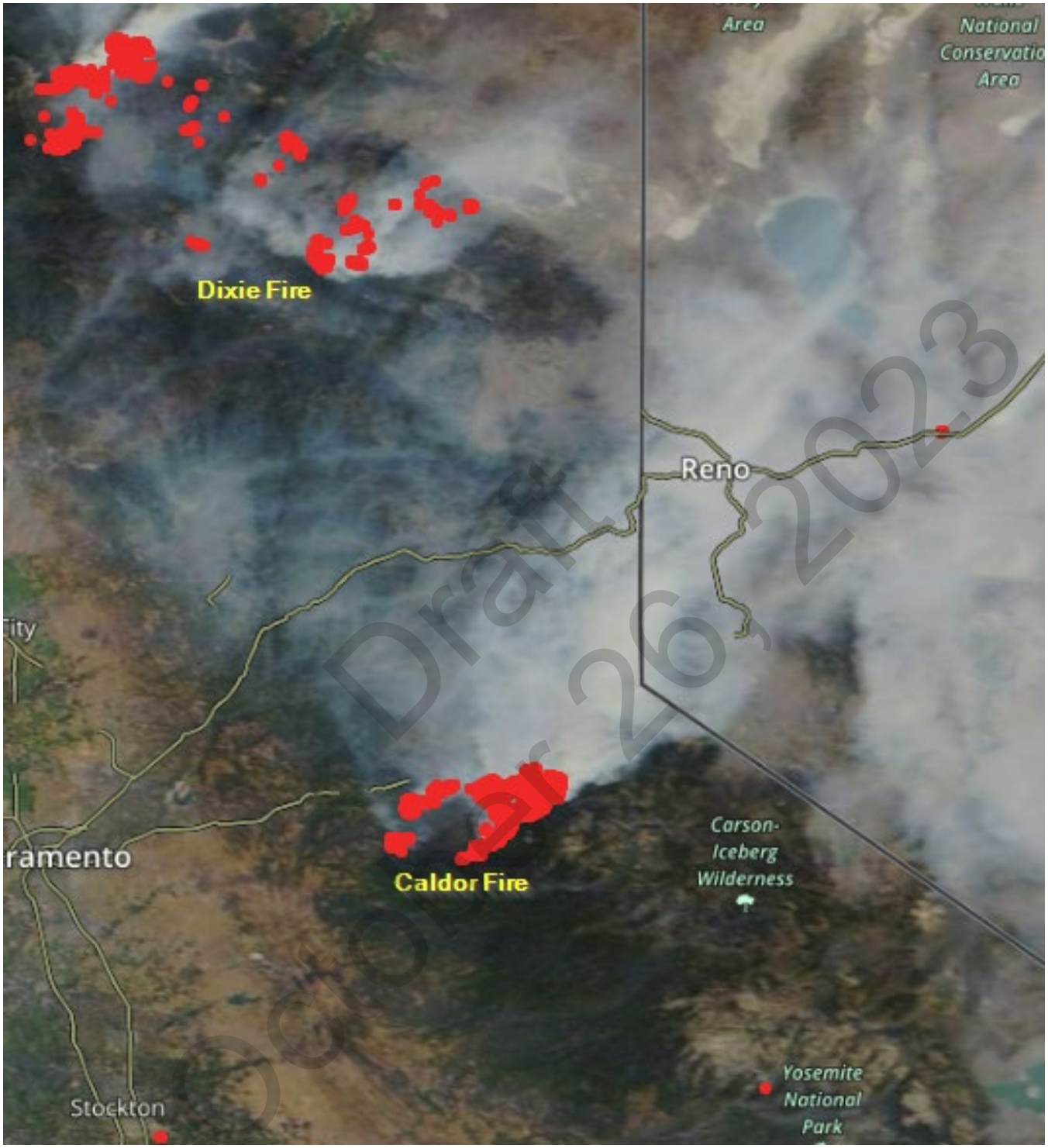


Figure 2-16: Satellite Imagery from August 24, 2021

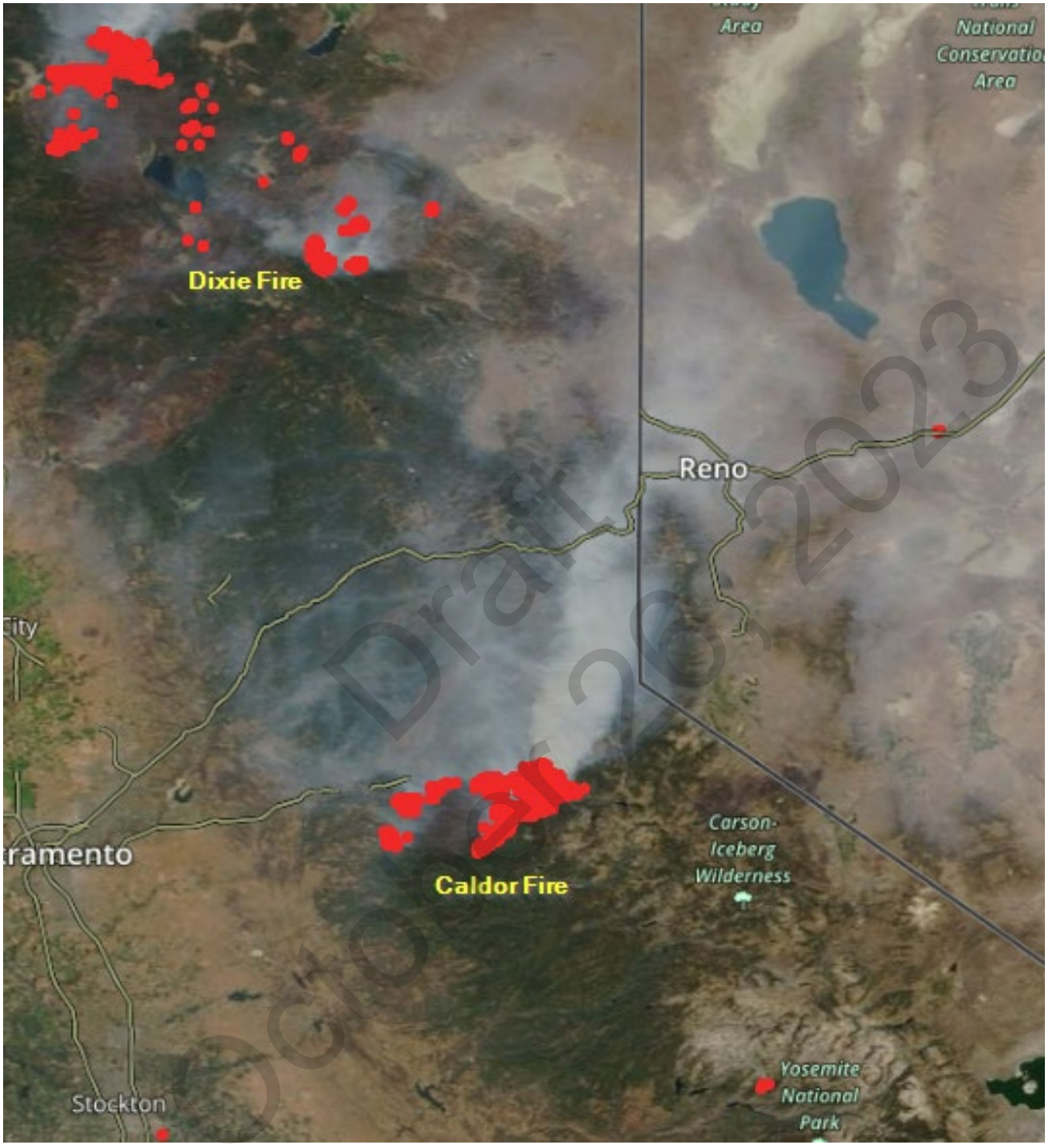


Figure 2-17: Satellite Imagery from August 25, 2021

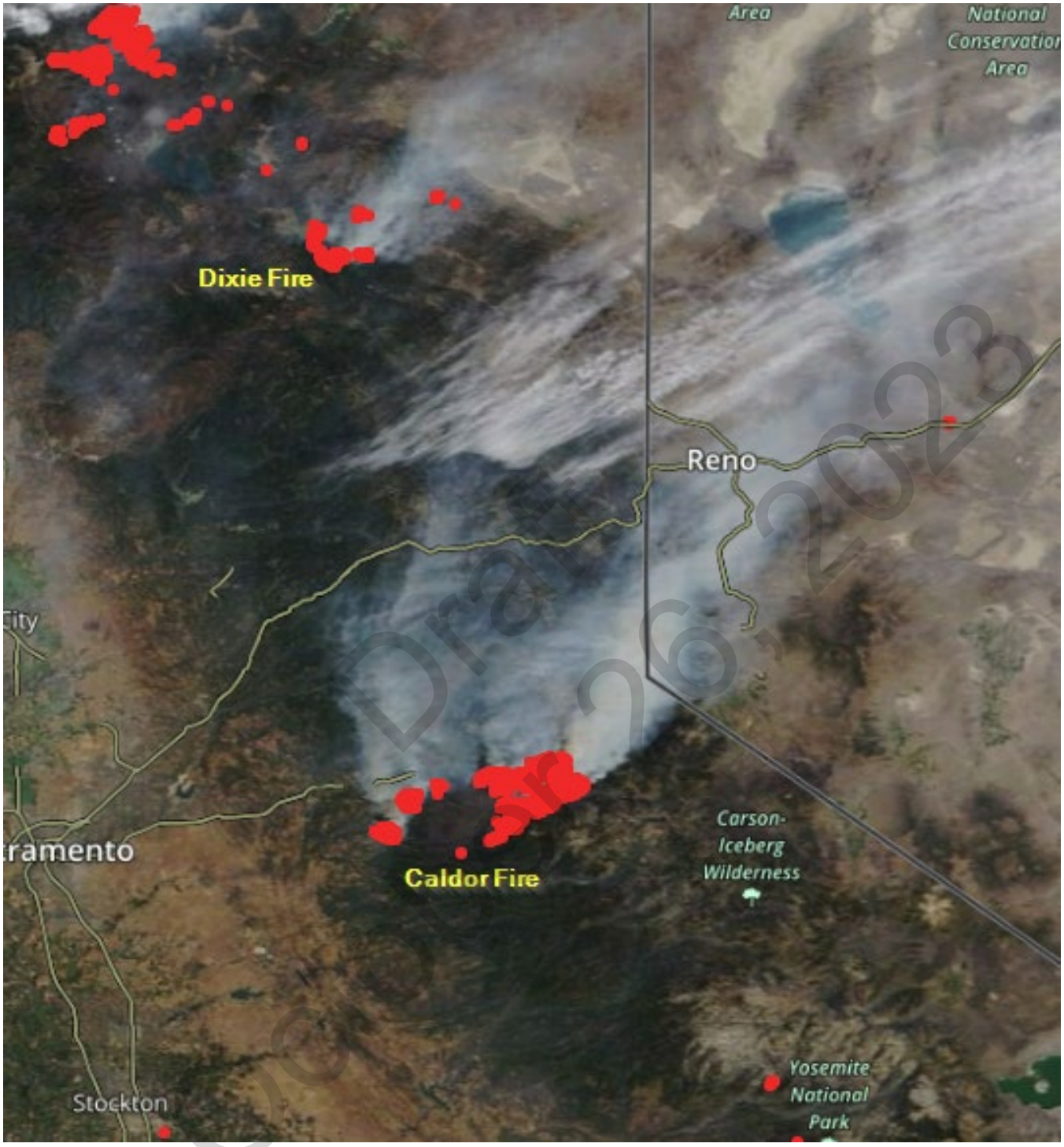


Figure 2-18: Satellite Imagery from August 26, 2021

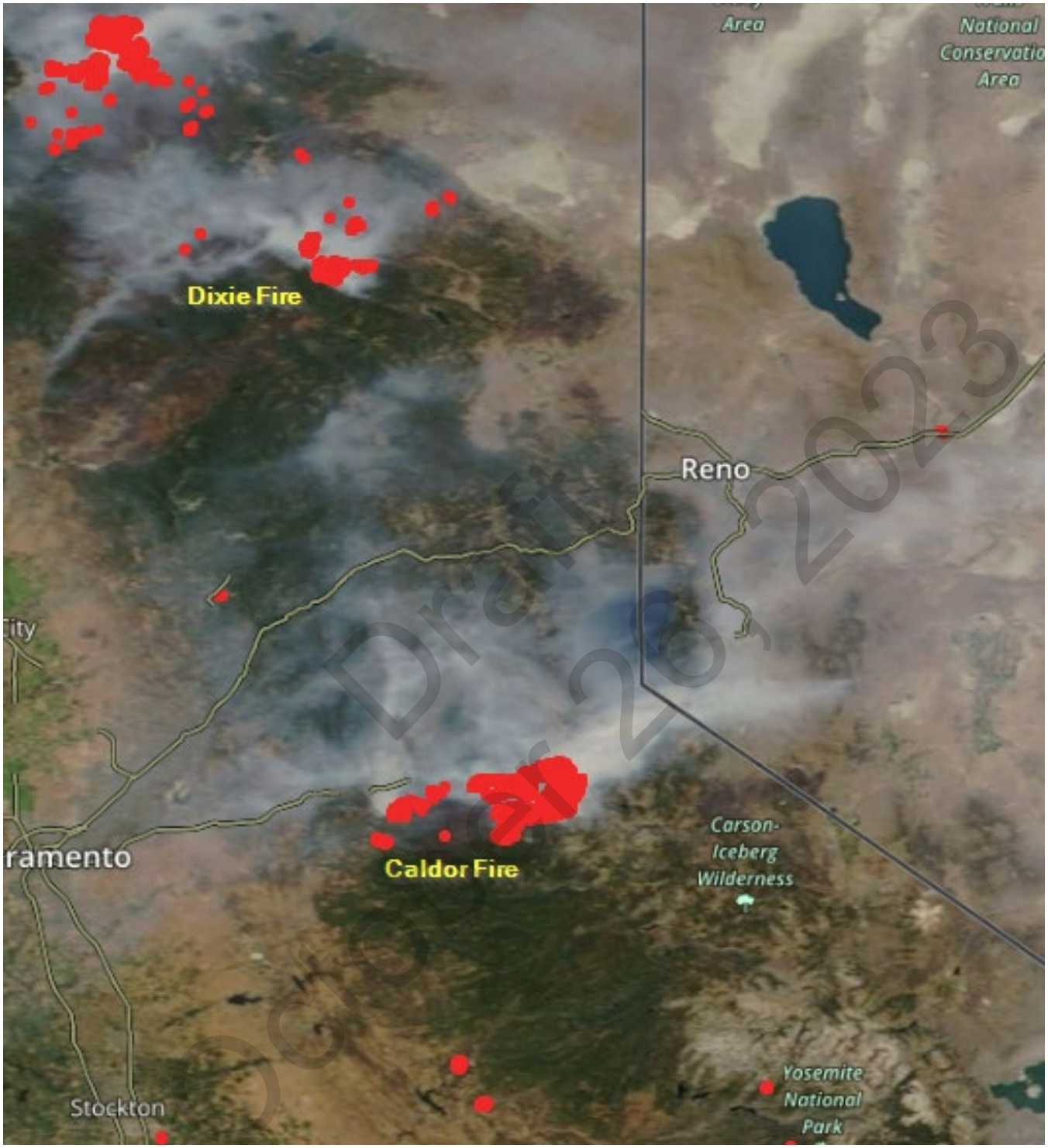


Figure 2-19: Daily Weather Maps for Aug 17, 2021

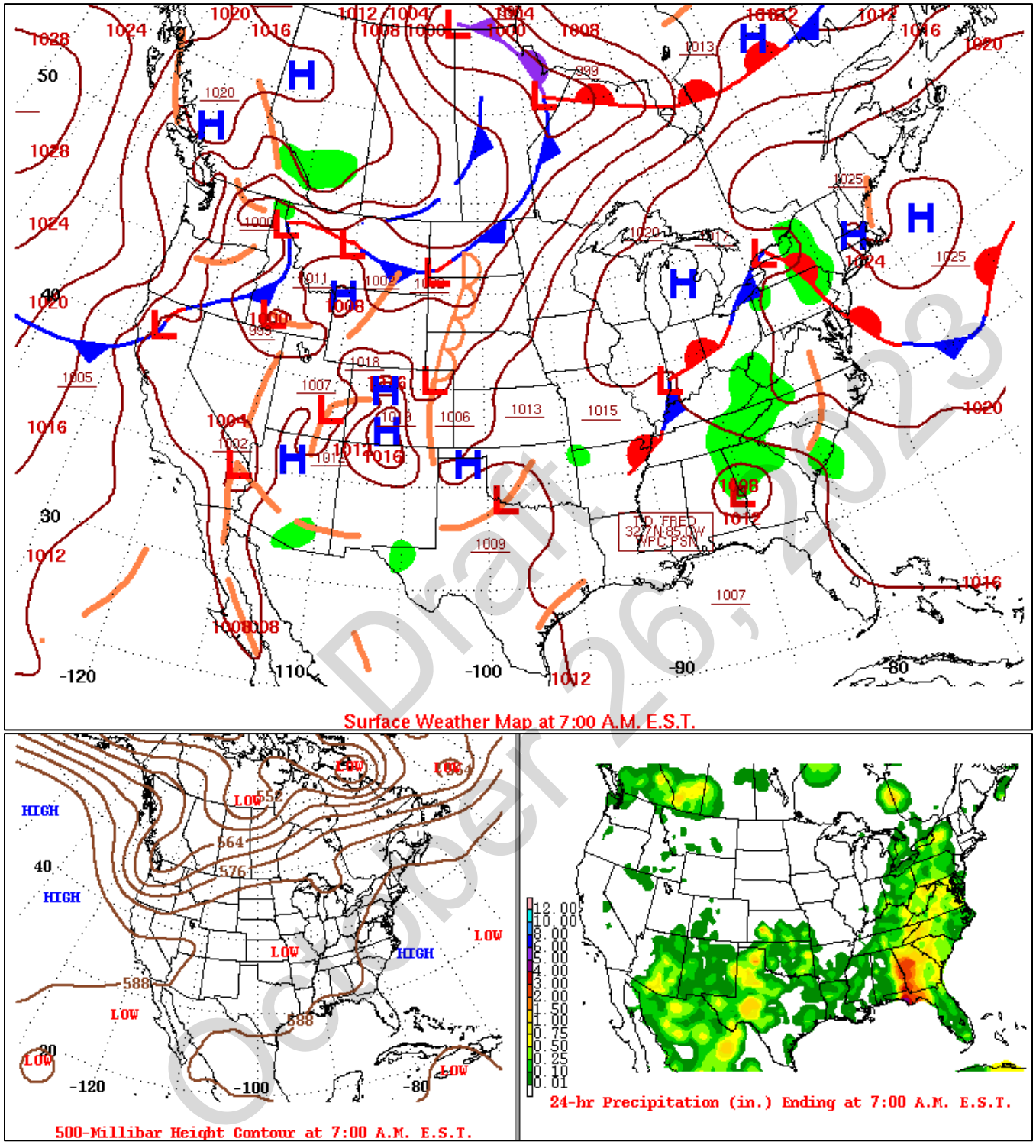


Figure 2-20: Daily Weather Maps for Aug 20, 2021

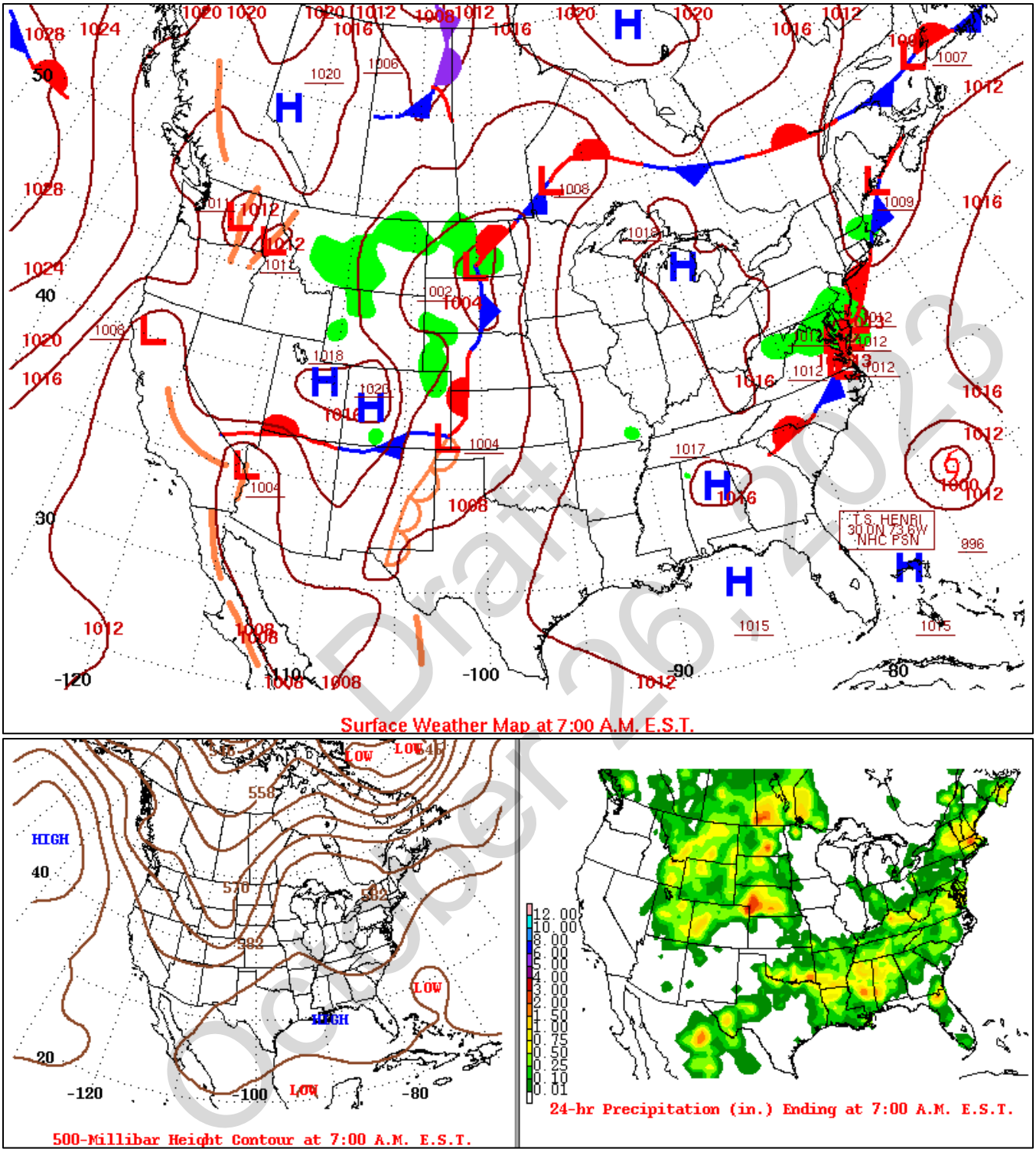


Figure 2-21: Daily Weather Maps for Aug 21, 2021

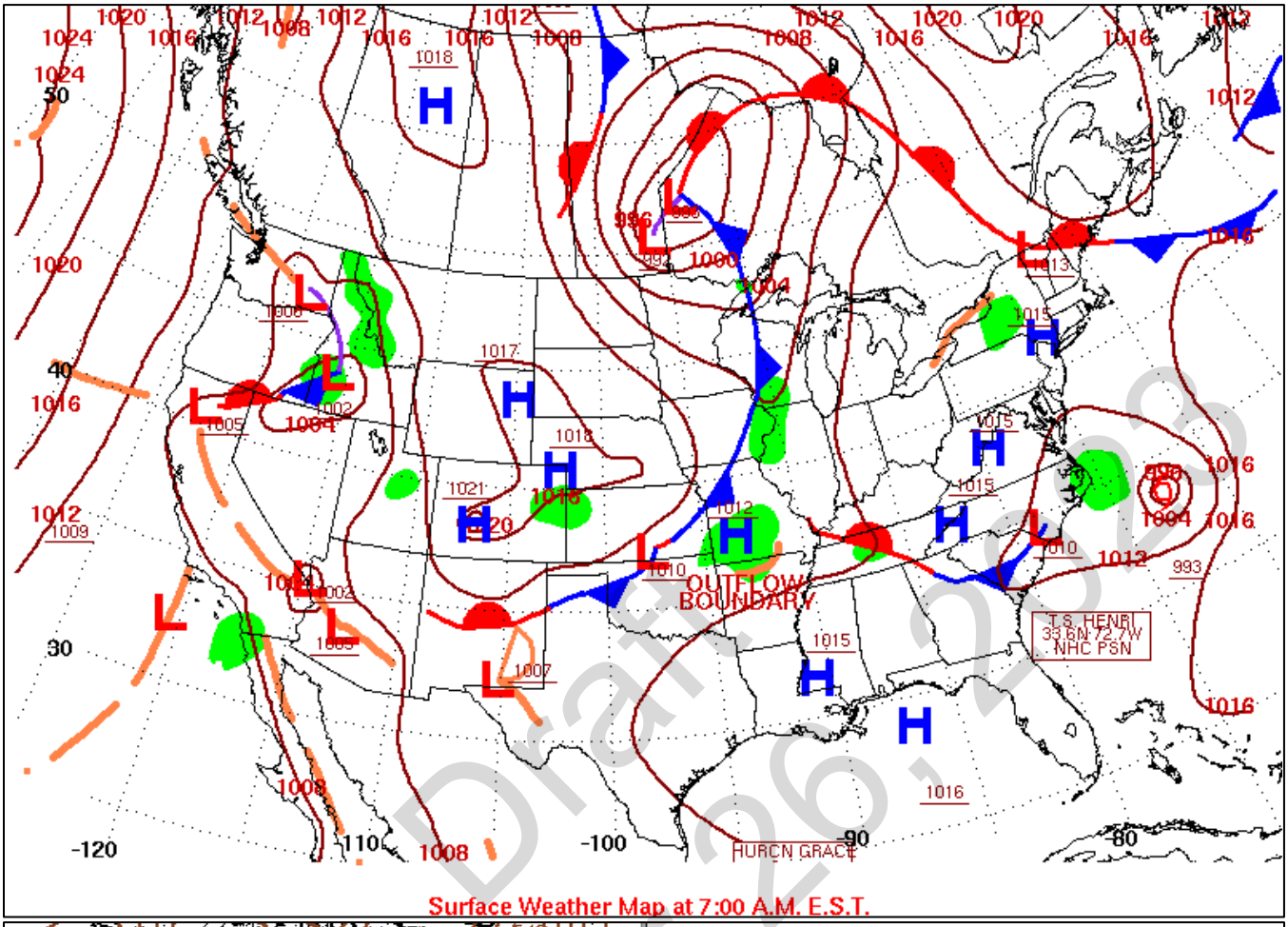


Figure 2-22: Daily Weather Maps for Aug 22, 2021

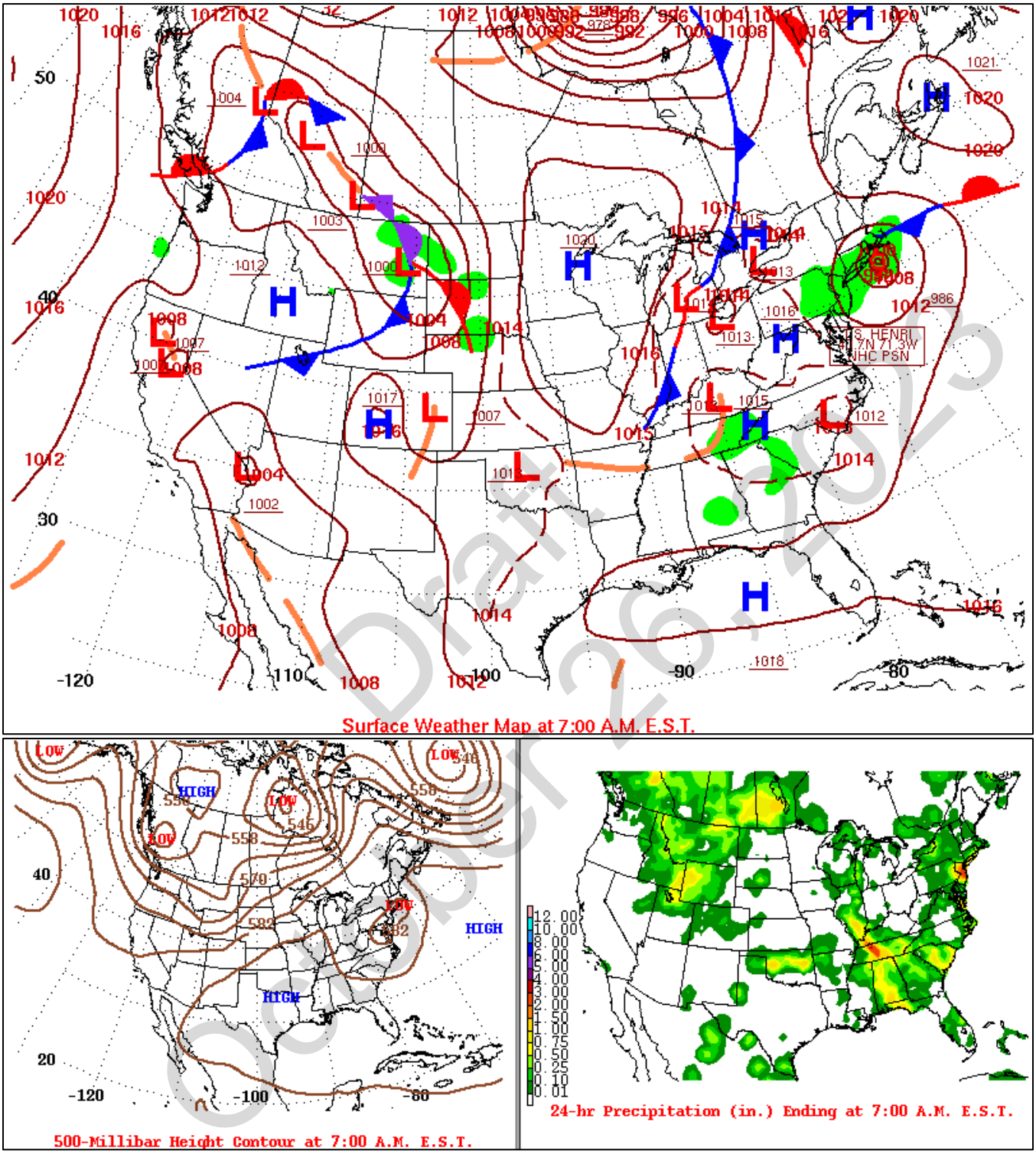


Figure 2-23: Daily Weather Maps for Aug 23, 2021

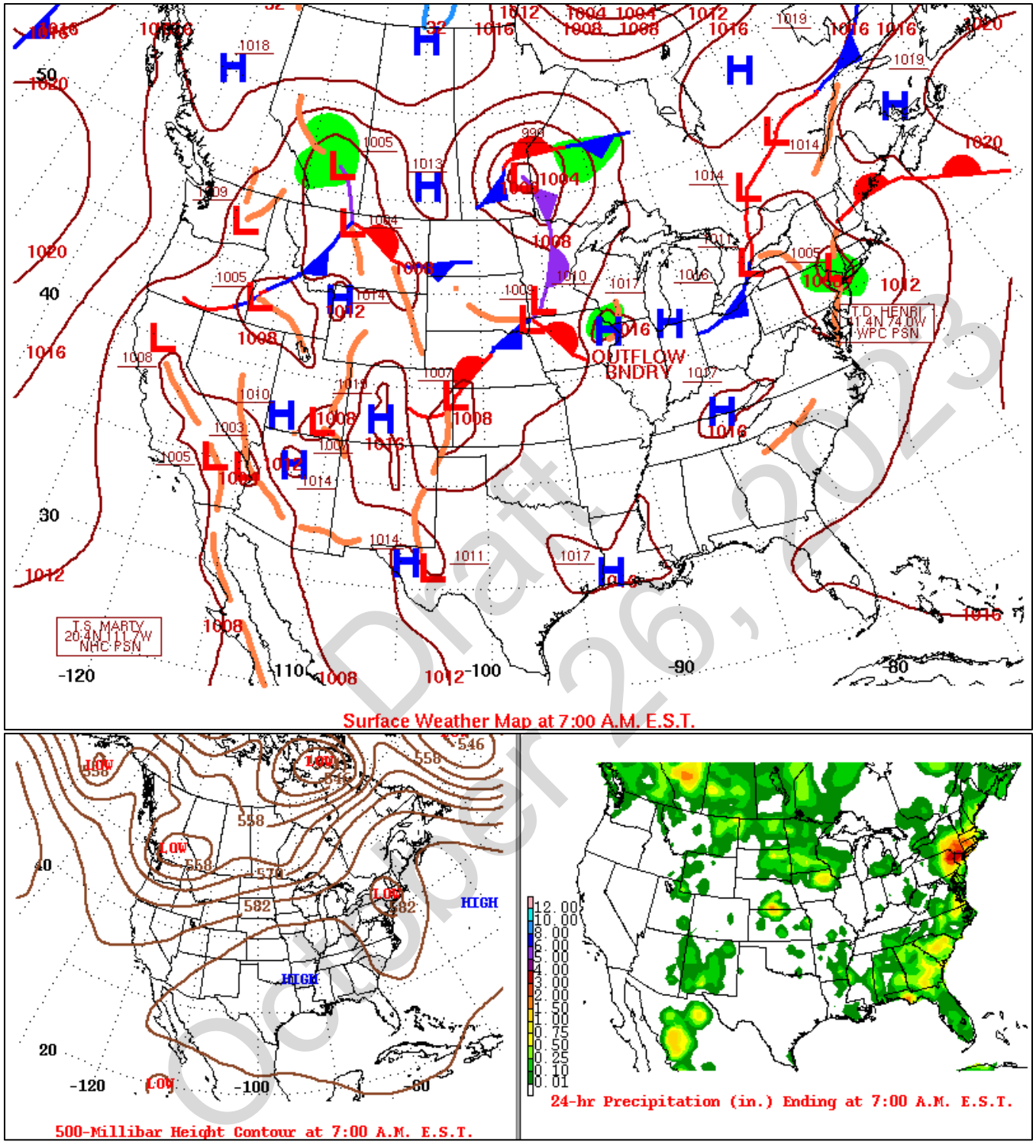


Figure 2-24: Daily Weather Maps for Aug 24, 2021

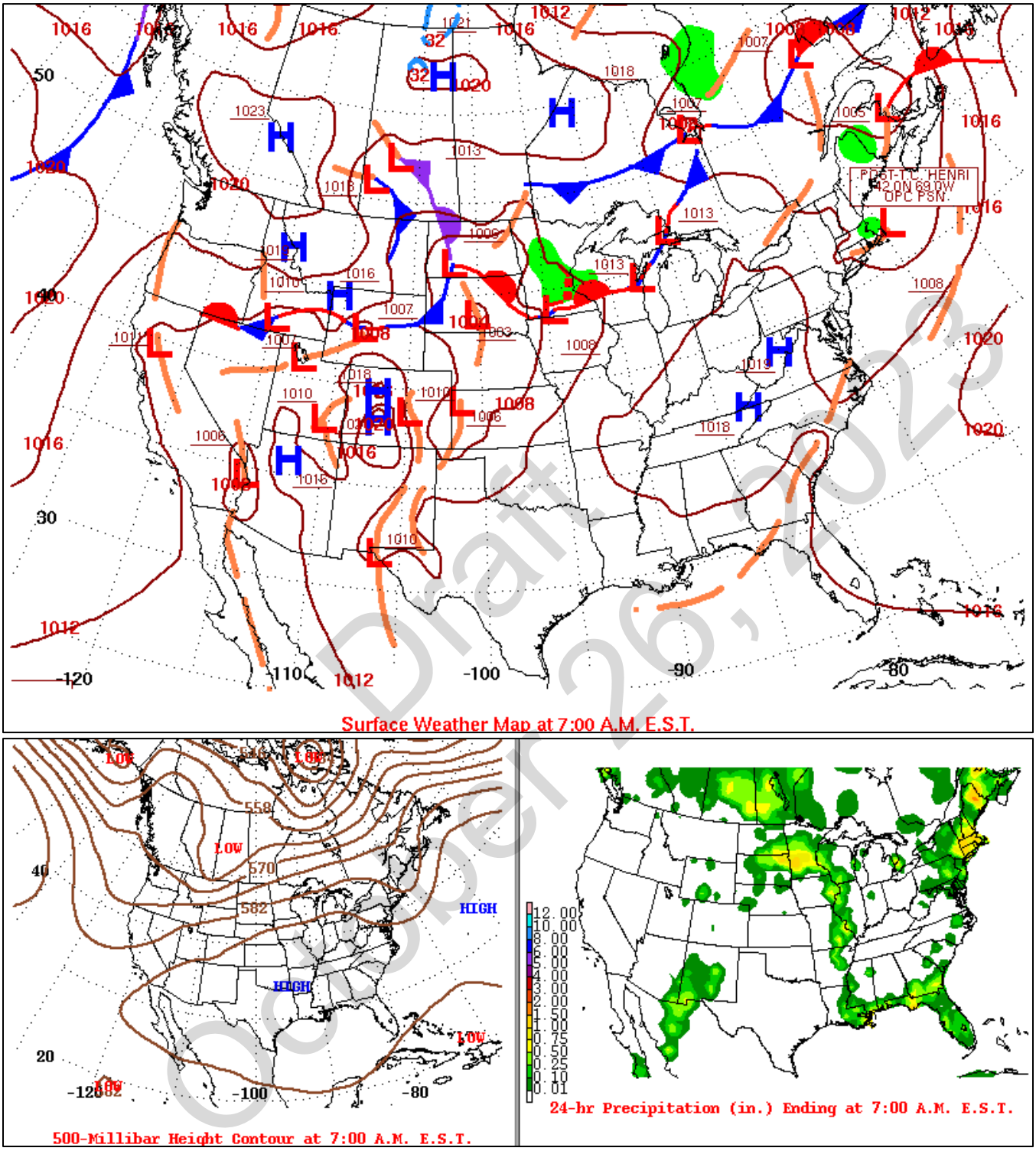
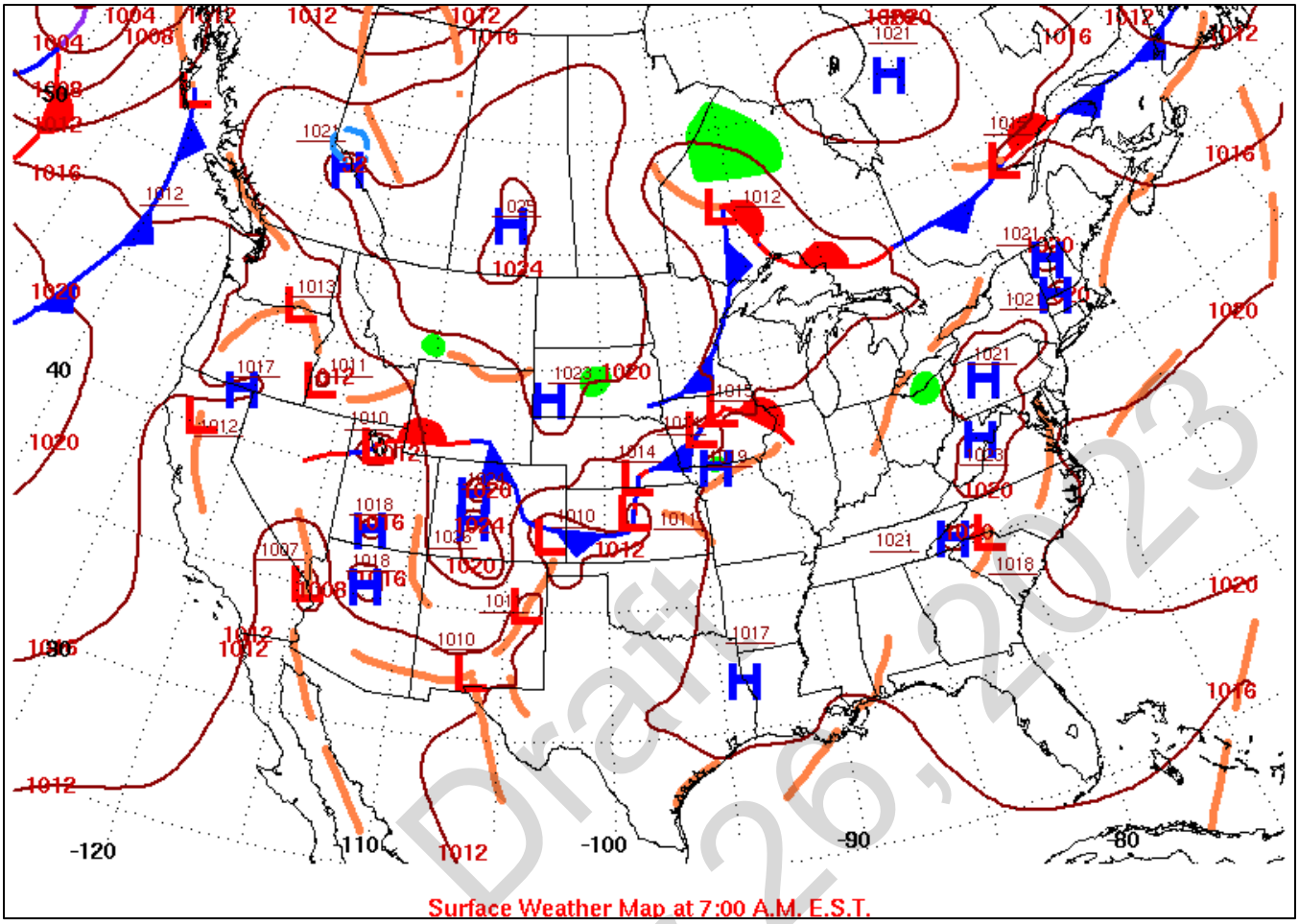
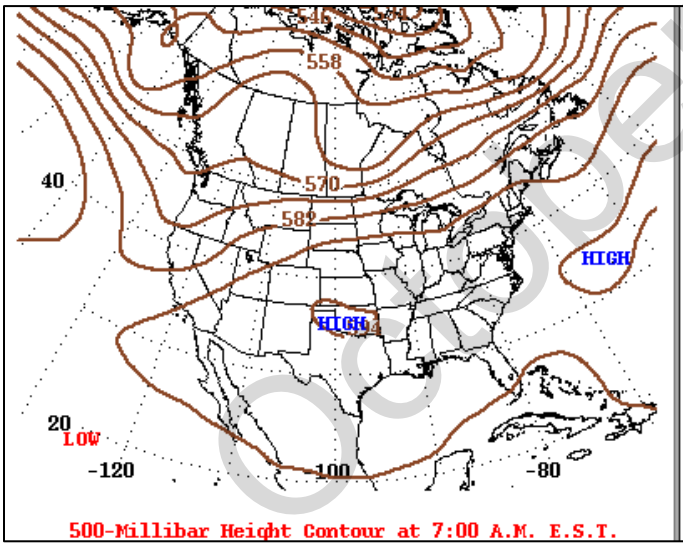


Figure 2-25: Daily Weather Maps for Aug 25, 2021





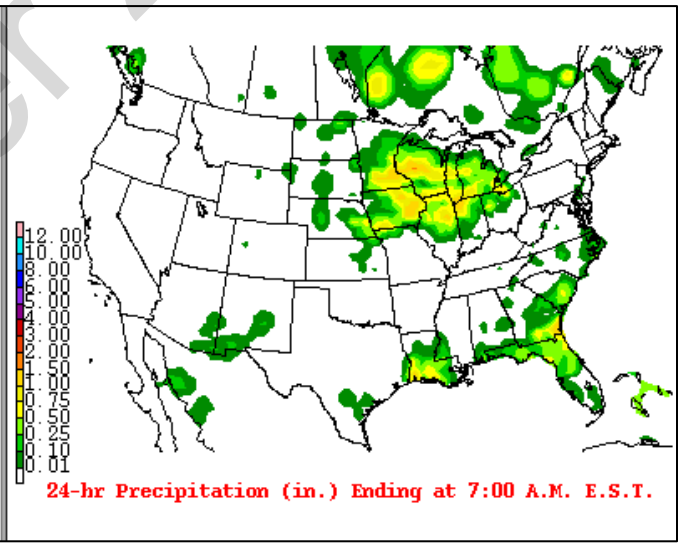
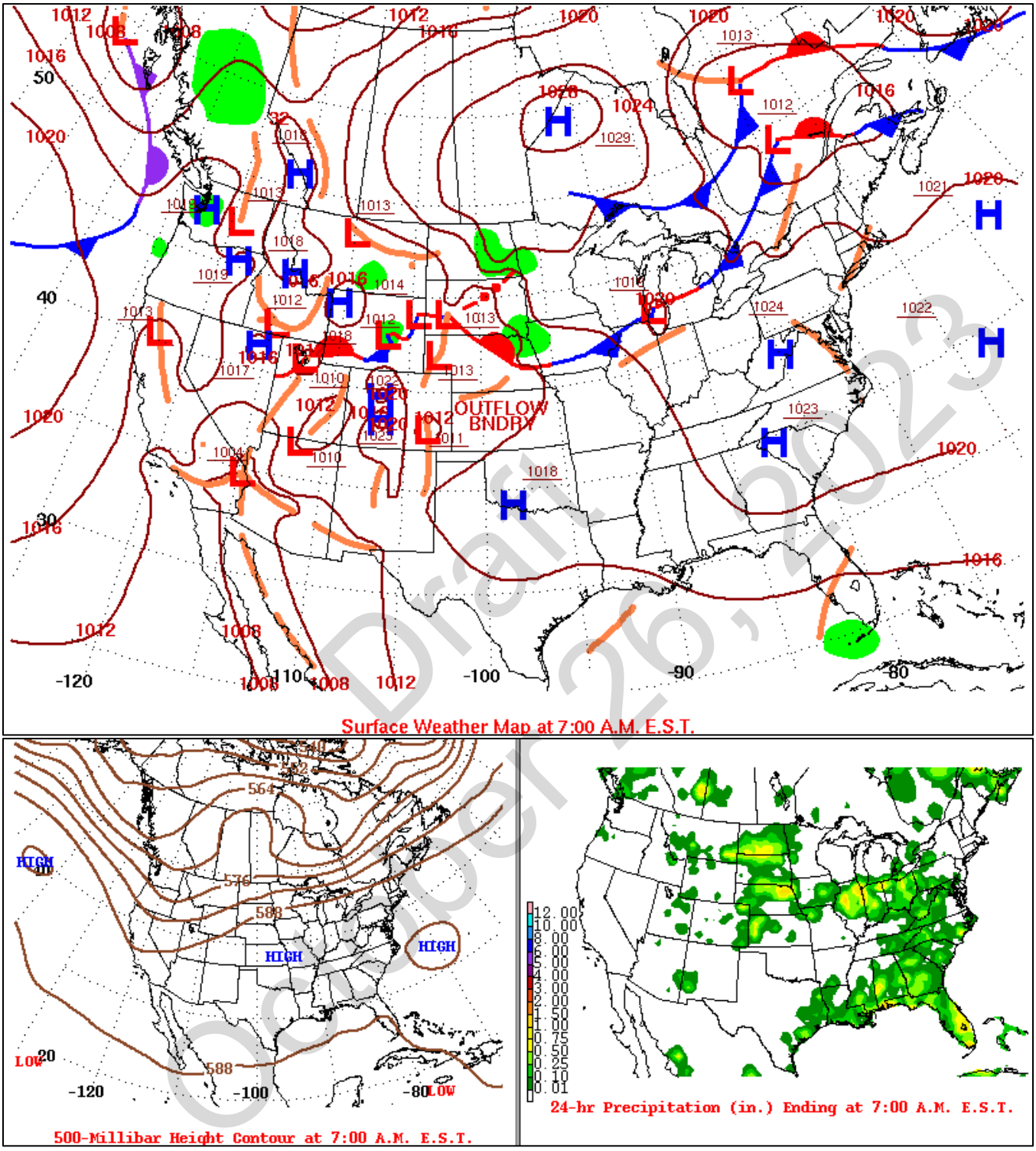


Figure 2-26: Daily Weather Maps for Aug 26, 2021



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_{10} exceedances between August 17-26, 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 Caldor 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_{10} exceedances from happening. The exceedances were caused by the excessive PM_{10} emissions from the Dixie and Caldor 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 Caldor fires impacted the Toll, Reno4, and Sparks PM_{10} monitors starting on August 14, 2021. Between August 14 – August 26, 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_{10} exceedances. PM_{10} 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 Caldor Fire, the latitude and longitude were (38.586, -120.538), 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." 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 24, 2021 shown in Figure 2-8. 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_{10} emissions that resulted from the Caldor and Dixie Fires between August 14 and August 26, 2021 was approximately 179,799 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_{10}. That is a total of 7,087 tons over the course of the year. By comparison, the emissions from the Caldor Fire and Dixie Fire over this thirteen-day period were over twenty-five times the annual PM_{10} emissions that Washoe County produces.

Table 4-1: PM_{10} Emissions Calculations for the Period Prior to the Exceedances

Date	Caldor Fire Growth (Acres)	Dixie Fire Growth (Acres)	Caldor Fire PM_{10} Emissions (Tons)	Dixie Fire PM_{10} Emissions (Tons)	Total PM_{10} Emissions (Tons)
August 14, 2021	*1,131	14,235	571.93	7,198.45	7,770.38
August 15, 2021	*1,131	14,891	571.93	7,530.18	8,102.11
August 16, 2021	20,658	34,804	10,446.48	17,599.92	28,046.40
August 17, 2021	39,667	31,217	20,059.08	15,786.02	35,845.10
August 18, 2021	6,044	42,641	3,056.37	21,562.99	24,619.36
August 19, 2021	7,215	22,261	3,648.53	11,257.09	14,905.62
August 20, 2021	14,262	13,589	7,212.10	6,871.78	14,083.88
August 21, 2021	14,202	7,079	7,181.76	3,579.76	10,761.52
August 22, 2021	9,857	4,523	4,984.55	2,287.22	7,271.77
August 23, 2021	8,814	5,489	4,457.12	2,775.71	7,232.83
August 24, 2021	3,586	3,754	1,813.39	1,898.35	3,711.74
August 25, 2021	12,944	12,027	6,545.61	6,081.90	12,627.51
August 26, 2021	5,953	3,581	3,010.35	1,810.86	4,821.21
Total	**145,464**	**210,091**	**73,559.20**	**106,240.23**	**179,799.43**

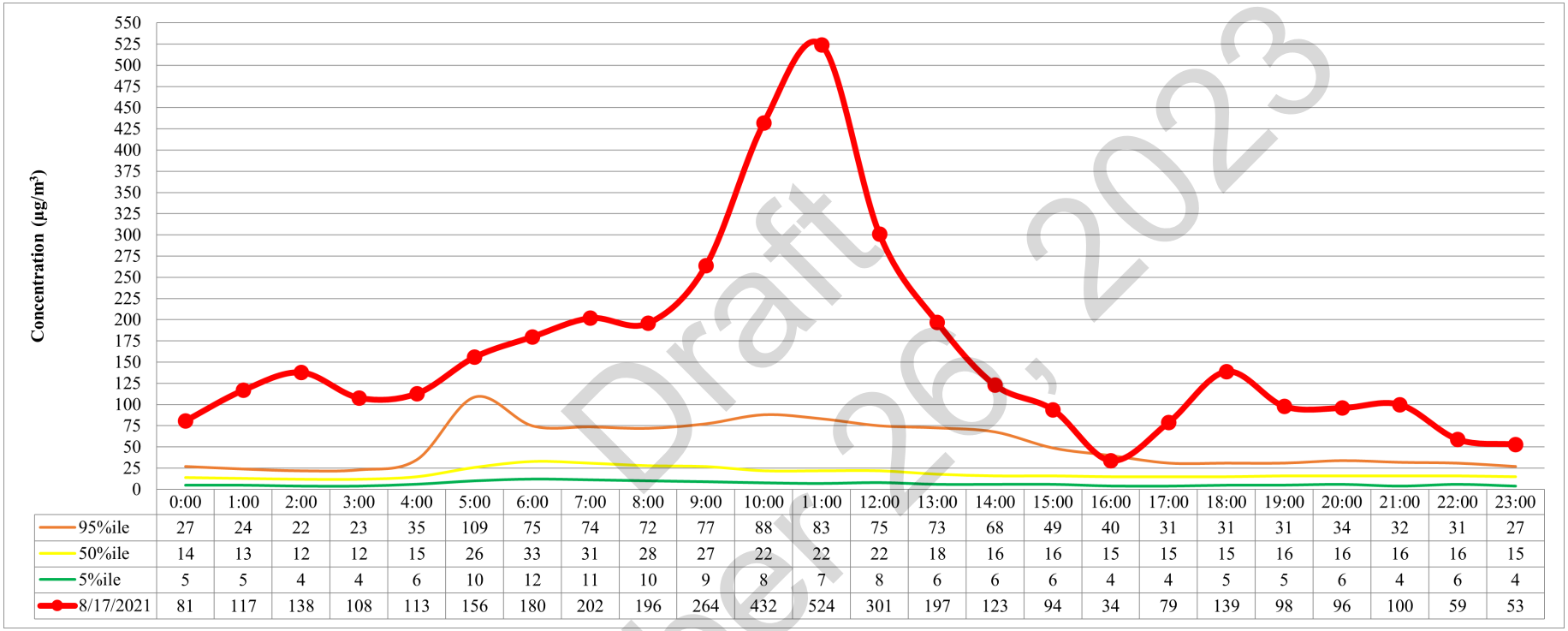
*First report not until August 16, August 14 and August 15 were calculated through straight-line interpolation.

4.2 Comparison of Event PM_{10} Concentrations to Historical Concentrations

In order to prove that the days of the exceedances had abnormally high PM_{10} 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 5th percentile, 50th percentile, and 95th 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_{10} monitors. For the Reno4 historical PM_{10} 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 through 4-16 below, the hourly PM_{10} 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 (50th percentile). Additionally, most hourly concentrations were much higher than the 95th percentile of the data set.

Figure 4-1: 2016-2020 PM_{10} Diurnal Pattern Comparison for Toll on 08/17/21



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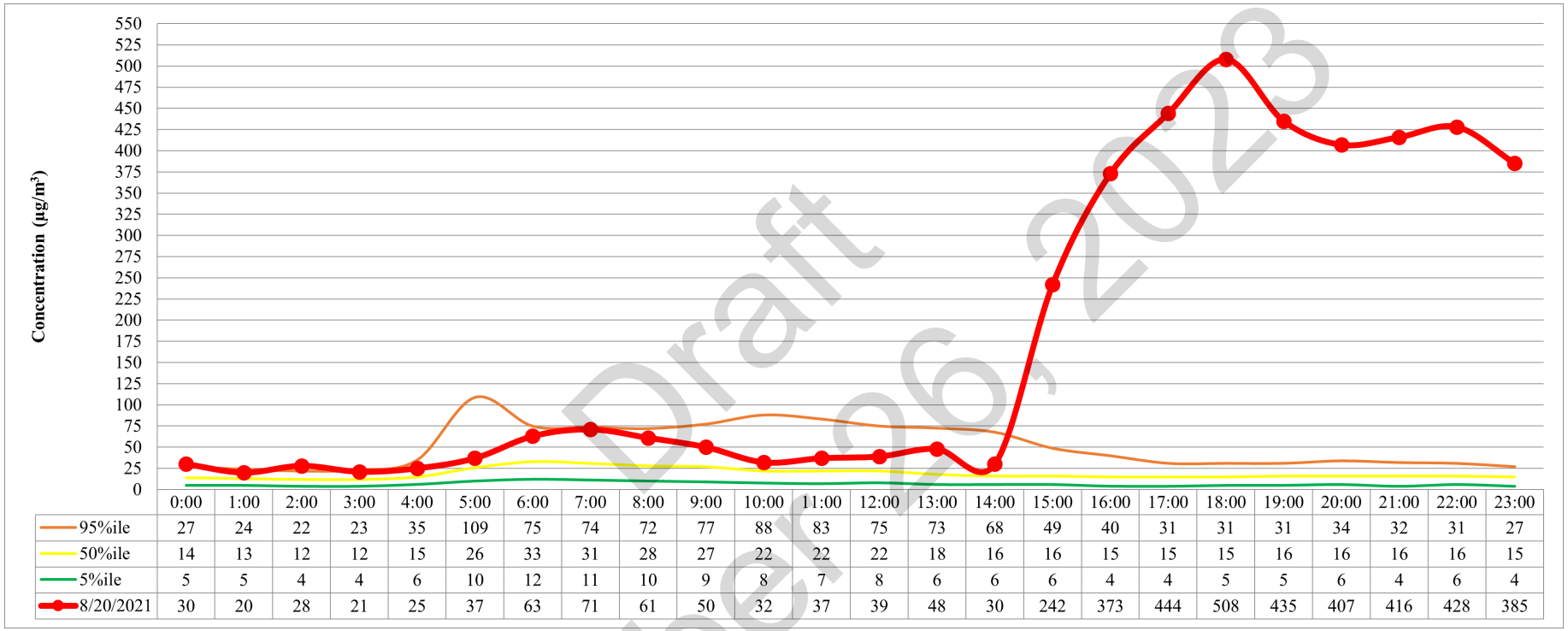
95%ile	27	24	22	23	35	109	75	74	72	77	88	83	75	73	68	49	40	31	31	31	34	32	31	27
50%ile	14	13	12	12	15	26	33	31	28	27	22	22	22	18	16	16	15	15	15	16	16	16	16	15
5%ile	5	5	4	4	6	10	12	11	10	9	8	7	8	6	6	6	4	4	5	5	6	4	6	4
8/17/2021	81	117	138	108	113	156	180	202	196	264	432	524	301	197	123	94	34	79	139	98	96	100	59	53

Figure 4-2: 2016-2020 PM_{10} Diurnal Pattern Comparison for Toll on 08/20/21



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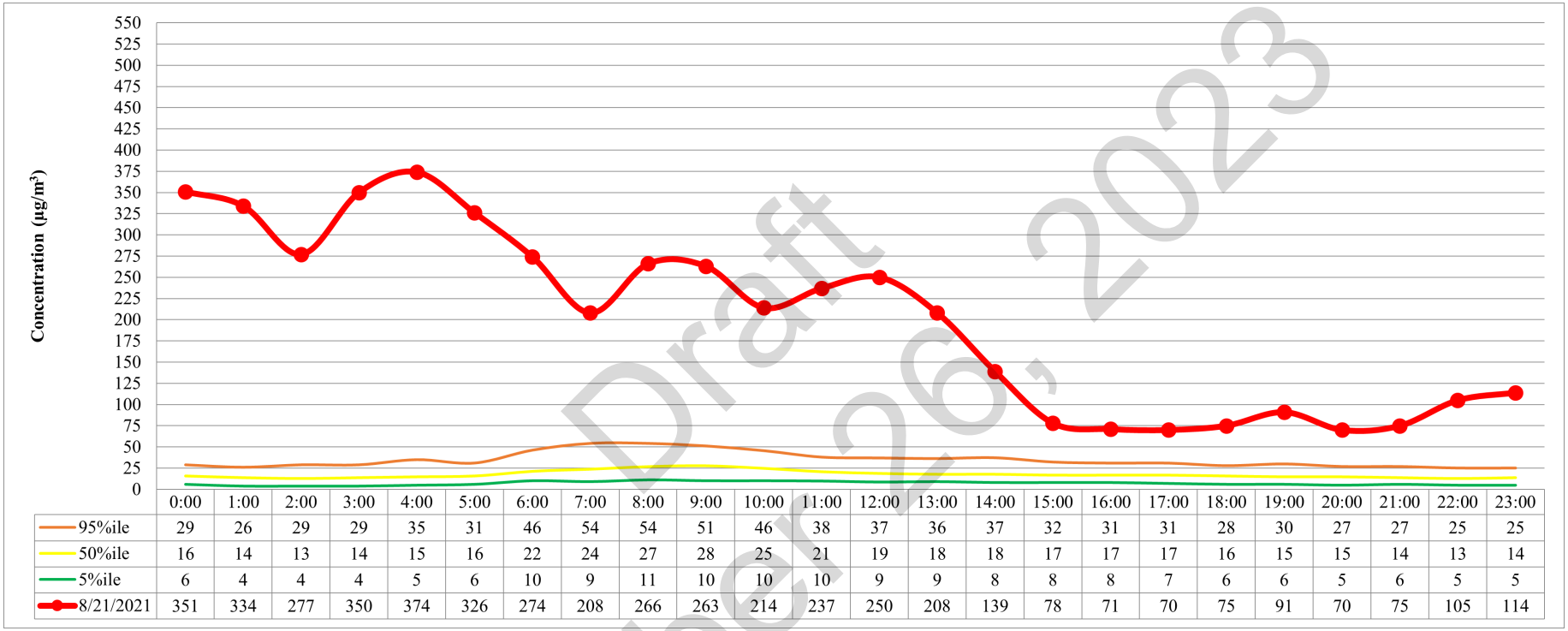
95%ile	27	24	22	23	35	109	75	74	72	77	88	83	75	73	68	49	40	31	31	31	34	32	31	27
50%ile	14	13	12	12	15	26	33	31	28	27	22	22	22	18	16	16	15	15	15	16	16	16	16	15
5%ile	5	5	4	4	6	10	12	11	10	9	8	7	8	6	6	6	4	4	5	5	6	4	6	4
8/20/2021	30	20	28	21	25	37	63	71	61	50	32	37	39	48	30	242	373	444	508	435	407	416	428	385

Figure 4-3: 2016-2020 PM_{10} Diurnal Pattern Comparison for Reno4 on 08/21/21



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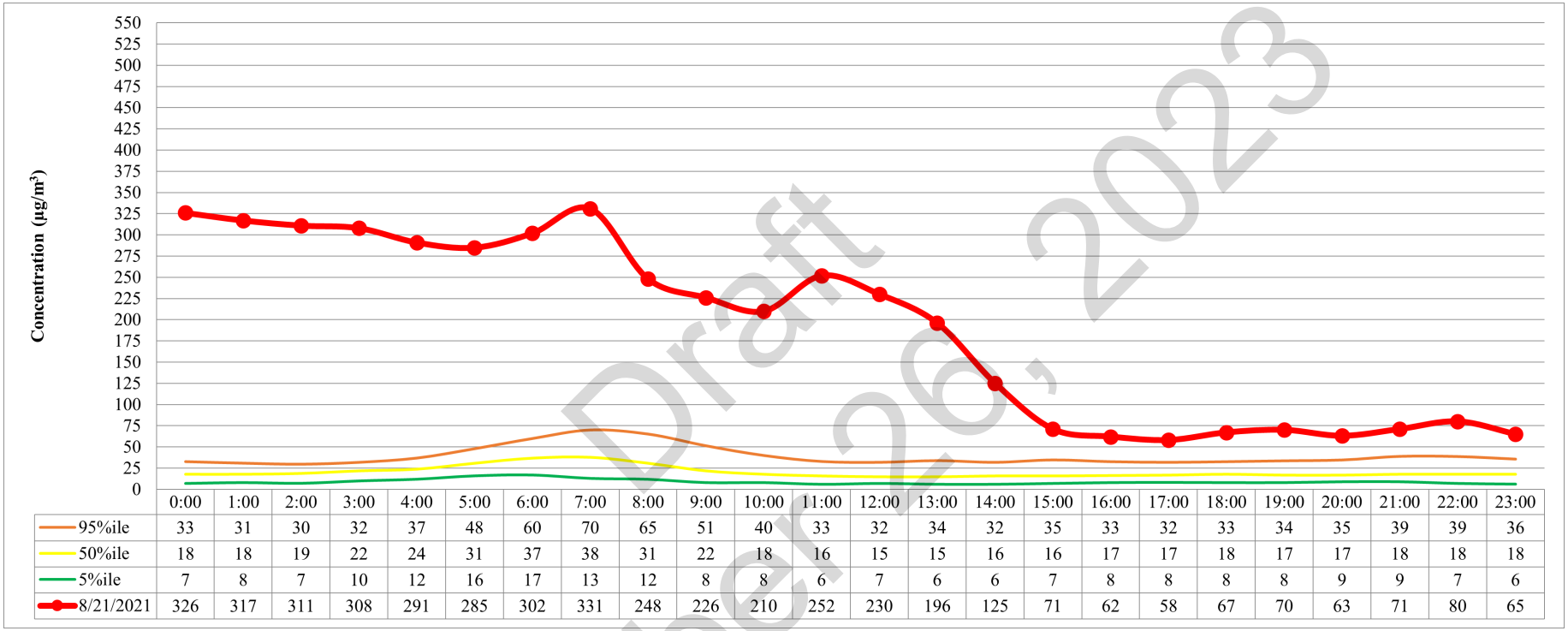
95%ile	29	26	29	29	35	31	46	54	54	51	46	38	37	36	37	32	31	31	28	30	27	27	25	25
50%ile	16	14	13	14	15	16	22	24	27	28	25	21	19	18	18	17	17	17	16	15	15	14	13	14
5%ile	6	4	4	4	5	6	10	9	11	10	10	10	9	9	8	8	8	7	6	6	5	6	5	5
8/21/2021	351	334	277	350	374	326	274	208	266	263	214	237	250	208	139	78	71	70	75	91	70	75	105	114

Figure 4-4: 2016-2020 PM_{10} Diurnal Pattern Comparison for Sparks on 08/21/21



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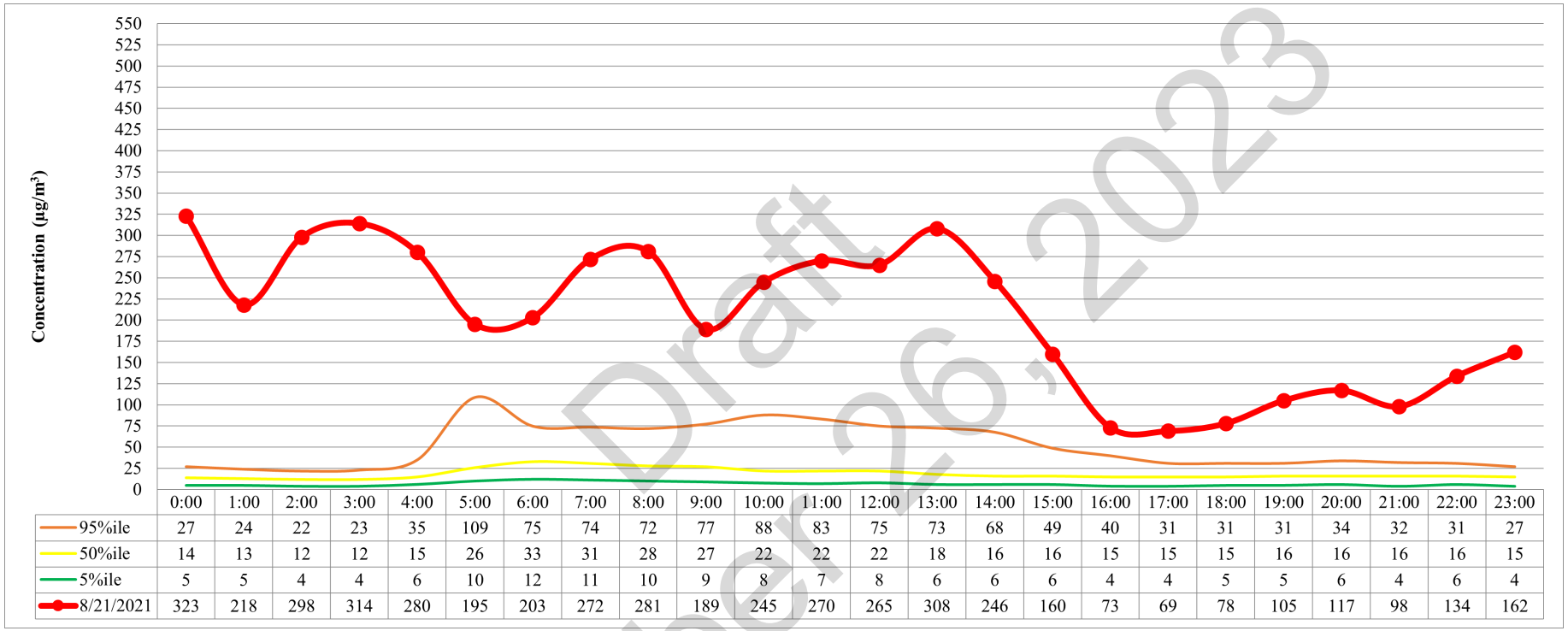
95%ile	33	31	30	32	37	48	60	70	65	51	40	33	32	34	32	35	33	32	33	34	35	39	39	36
50%ile	18	18	19	22	24	31	37	38	31	22	18	16	15	15	16	16	17	17	18	17	17	18	18	18
5%ile	7	8	7	10	12	16	17	13	12	8	8	6	7	6	6	7	8	8	8	8	9	9	7	6
8/21/2021	326	317	311	308	291	285	302	331	248	226	210	252	230	196	125	71	62	58	67	70	63	71	80	65

Figure 4-5: 2016-2020 PM_{10} Diurnal Pattern Comparison for Toll on 08/21/21



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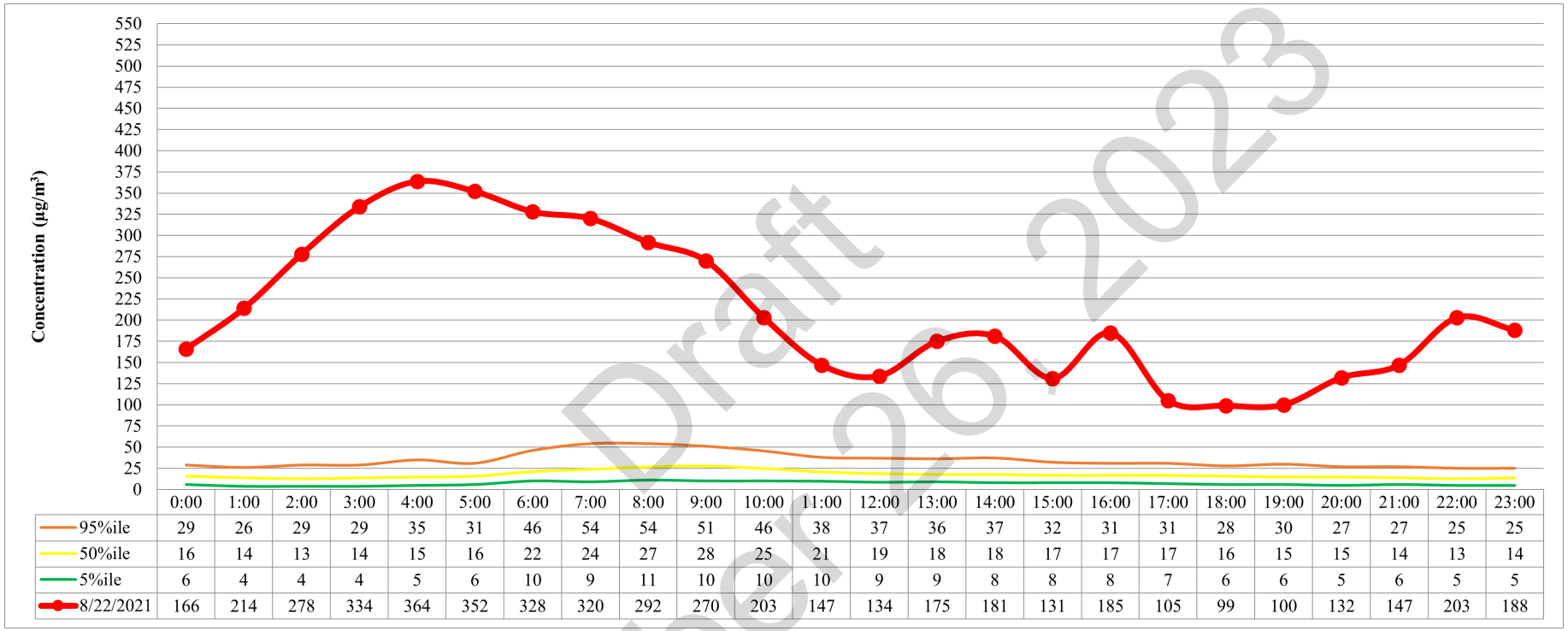
95%ile	27	24	22	23	35	109	75	74	72	77	88	83	75	73	68	49	40	31	31	31	34	32	31	27
50%ile	14	13	12	12	15	26	33	31	28	27	22	22	22	18	16	16	15	15	15	16	16	16	16	15
5%ile	5	5	4	4	6	10	12	11	10	9	8	7	8	6	6	6	4	4	5	5	6	4	6	4
8/21/2021	323	218	298	314	280	195	203	272	281	189	245	270	265	308	246	160	73	69	78	105	117	98	134	162

Figure 4-6: 2016-2020 PM_{10} Diurnal Pattern Comparison for Reno4 on 08/22/21



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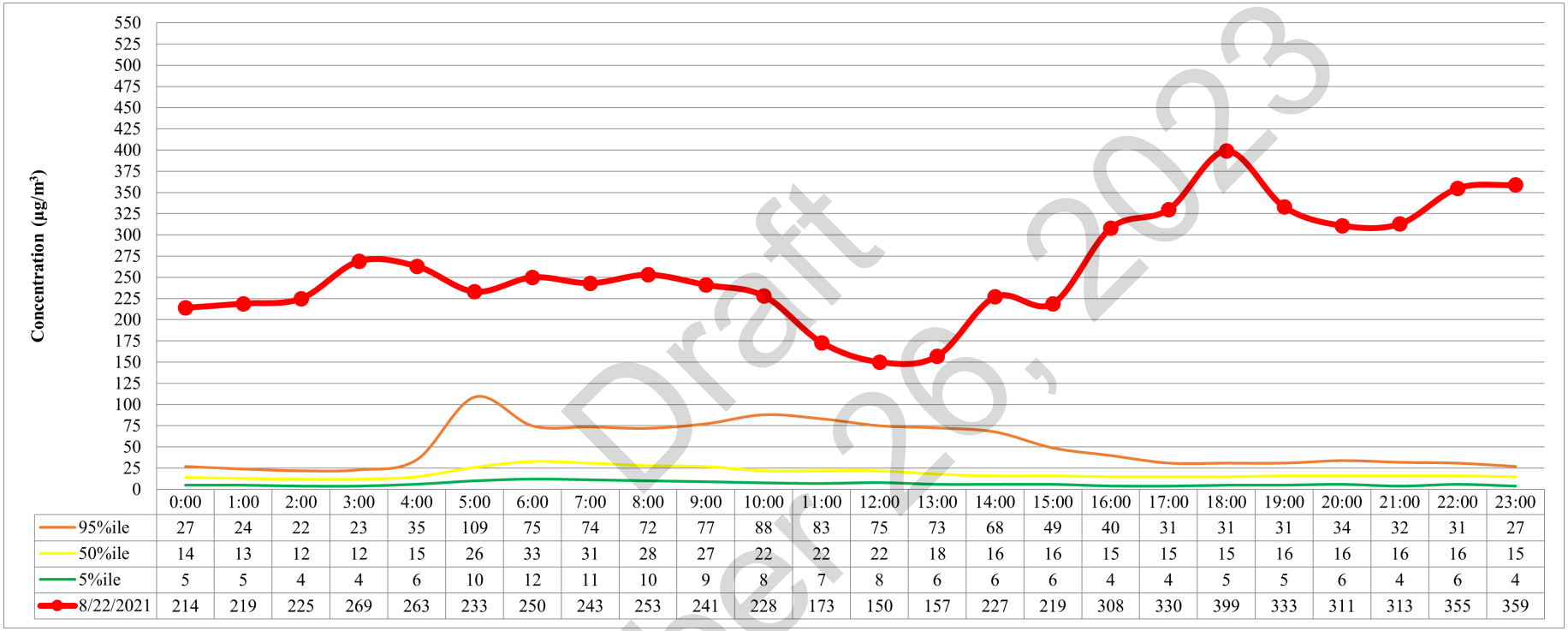
95%ile	29	26	29	29	35	31	46	54	54	51	46	38	37	36	37	32	31	31	28	30	27	27	25	25
50%ile	16	14	13	14	15	16	22	24	27	28	25	21	19	18	18	17	17	17	16	15	15	14	13	14
5%ile	6	4	4	4	5	6	10	9	11	10	10	10	9	9	8	8	8	7	6	6	5	6	5	5
8/22/2021	166	214	278	334	364	352	328	320	292	270	203	147	134	175	181	131	185	105	99	100	132	147	203	188

Figure 4-7: 2016-2020 PM_{10} Diurnal Pattern Comparison for Toll on 08/22/21



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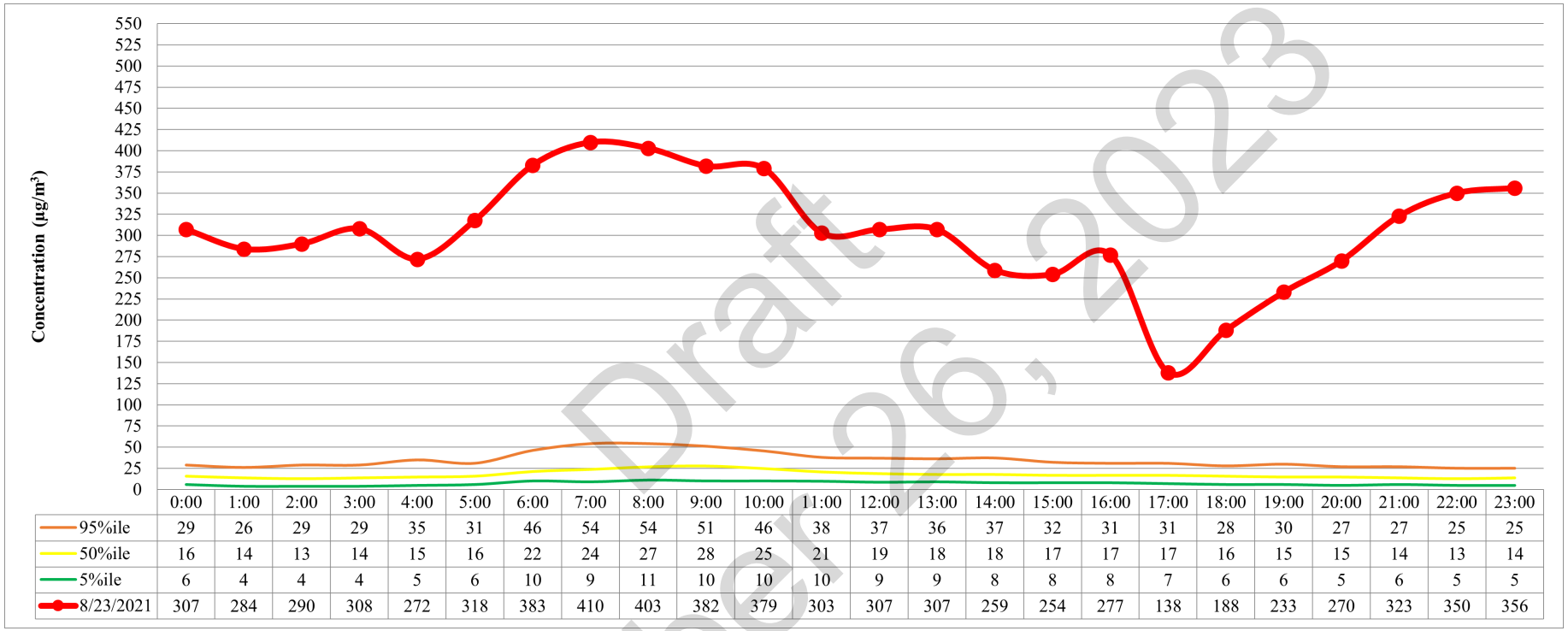
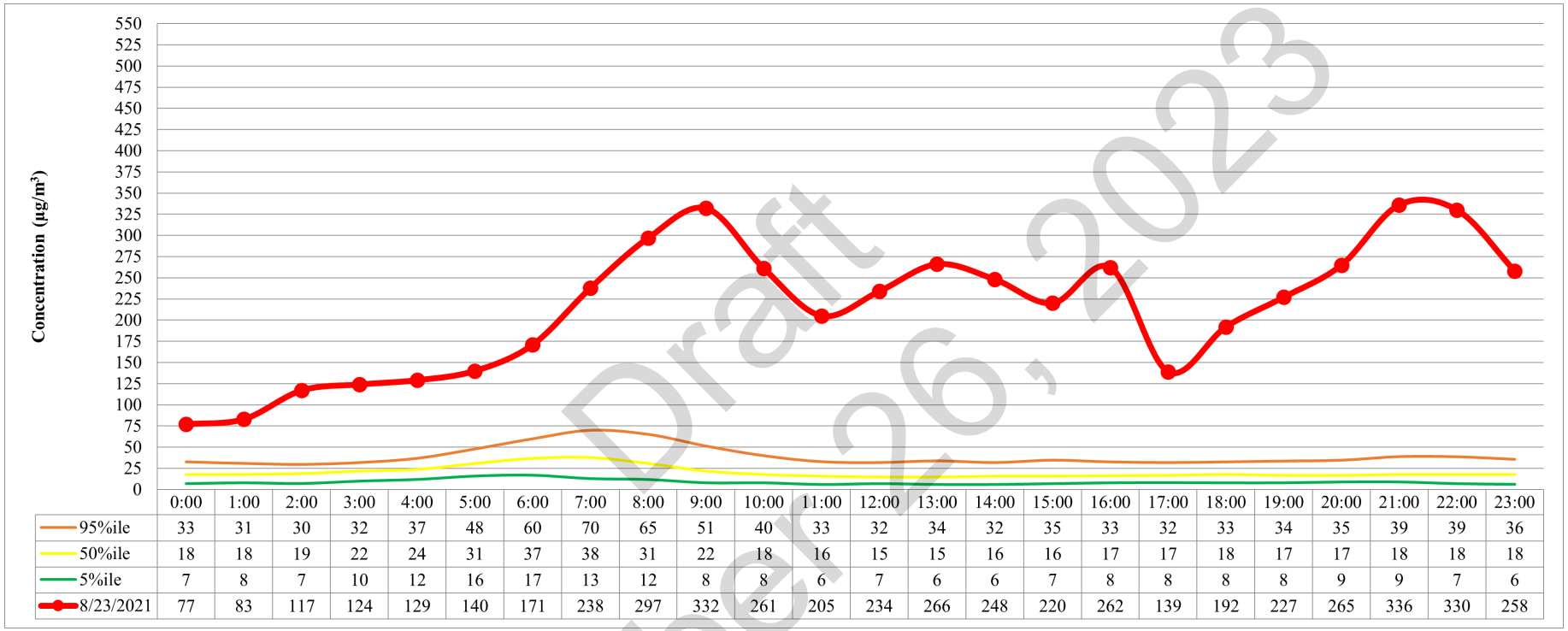
95%ile	27	24	22	23	35	109	75	74	72	77	88	83	75	73	68	49	40	31	31	31	34	32	31	27
50%ile	14	13	12	12	15	26	33	31	28	27	22	22	22	18	16	16	15	15	15	16	16	16	16	15
5%ile	5	5	4	4	6	10	12	11	10	9	8	7	8	6	6	6	4	4	5	5	6	4	6	4
8/22/2021	214	219	225	269	263	233	250	243	253	241	228	173	150	157	227	219	308	330	399	333	311	313	355	359

Figure 4-8: 2016-2020 PM_{10} Diurnal Pattern Comparison for Reno4 on 08/23/21



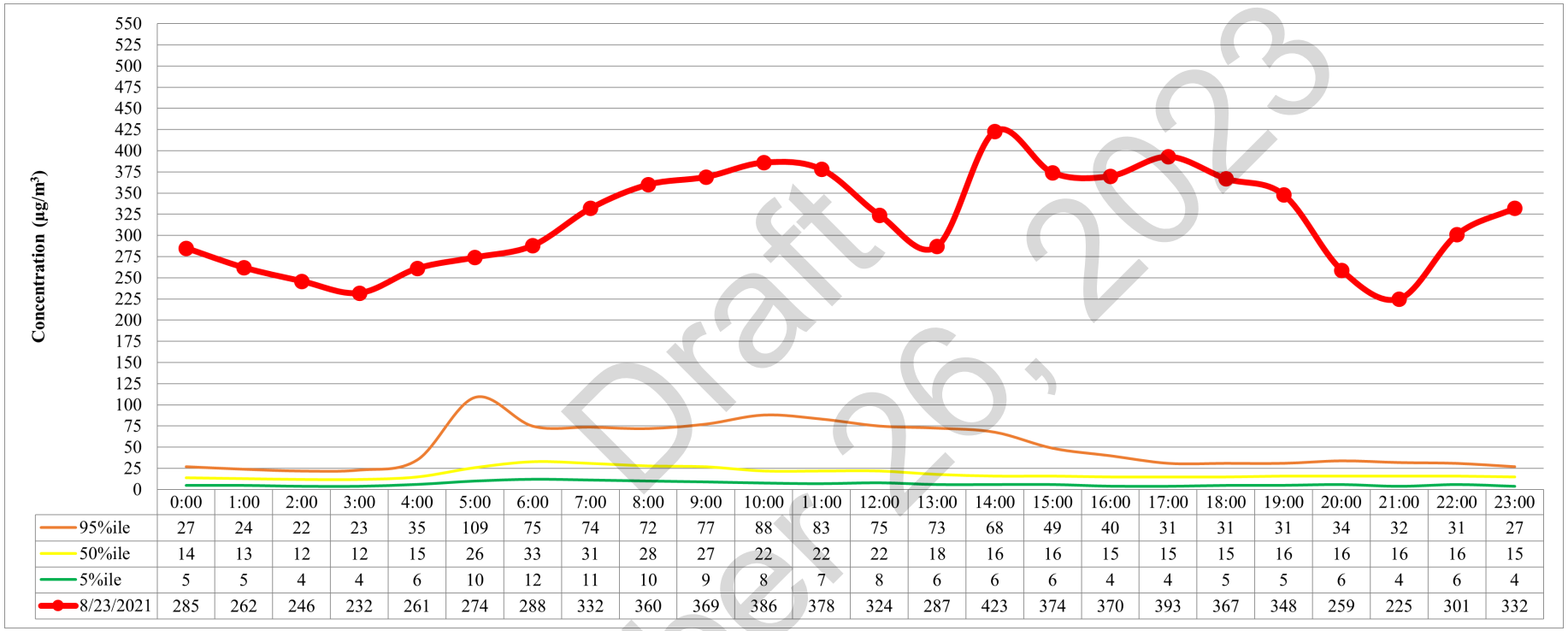
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	29	26	29	29	35	31	46	54	54	51	46	38	37	36	37	32	31	31	28	30	27	27	25	25
50%ile	16	14	13	14	15	16	22	24	27	28	25	21	19	18	18	17	17	17	16	15	15	14	13	14
5%ile	6	4	4	4	5	6	10	9	11	10	10	10	9	9	8	8	8	7	6	6	5	6	5	5
8/23/2021	307	284	290	308	272	318	383	410	403	382	379	303	307	307	259	254	277	138	188	233	270	323	350	356

Figure 4-9: 2016-2020 PM_{10} Diurnal Pattern Comparison for Sparks on 08/23/21



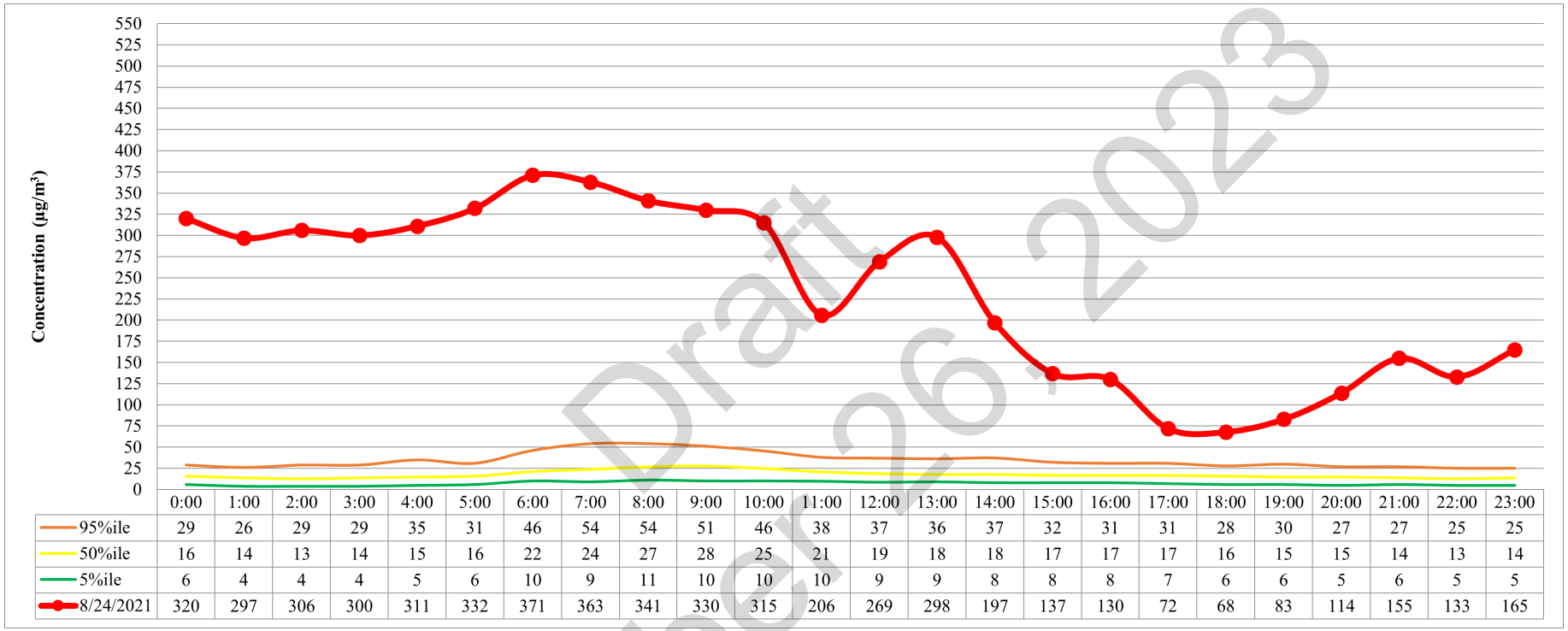
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	33	31	30	32	37	48	60	70	65	51	40	33	32	34	32	35	33	32	33	34	35	39	39	36
50%ile	18	18	19	22	24	31	37	38	31	22	18	16	15	15	16	16	17	17	18	17	17	18	18	18
5%ile	7	8	7	10	12	16	17	13	12	8	8	6	7	6	6	7	8	8	8	8	9	9	7	6
8/23/2021	77	83	117	124	129	140	171	238	297	332	261	205	234	266	248	220	262	139	192	227	265	336	330	258

Figure 4-10: 2016-2020 PM_{10} Diurnal Pattern Comparison for Toll on 08/23/21



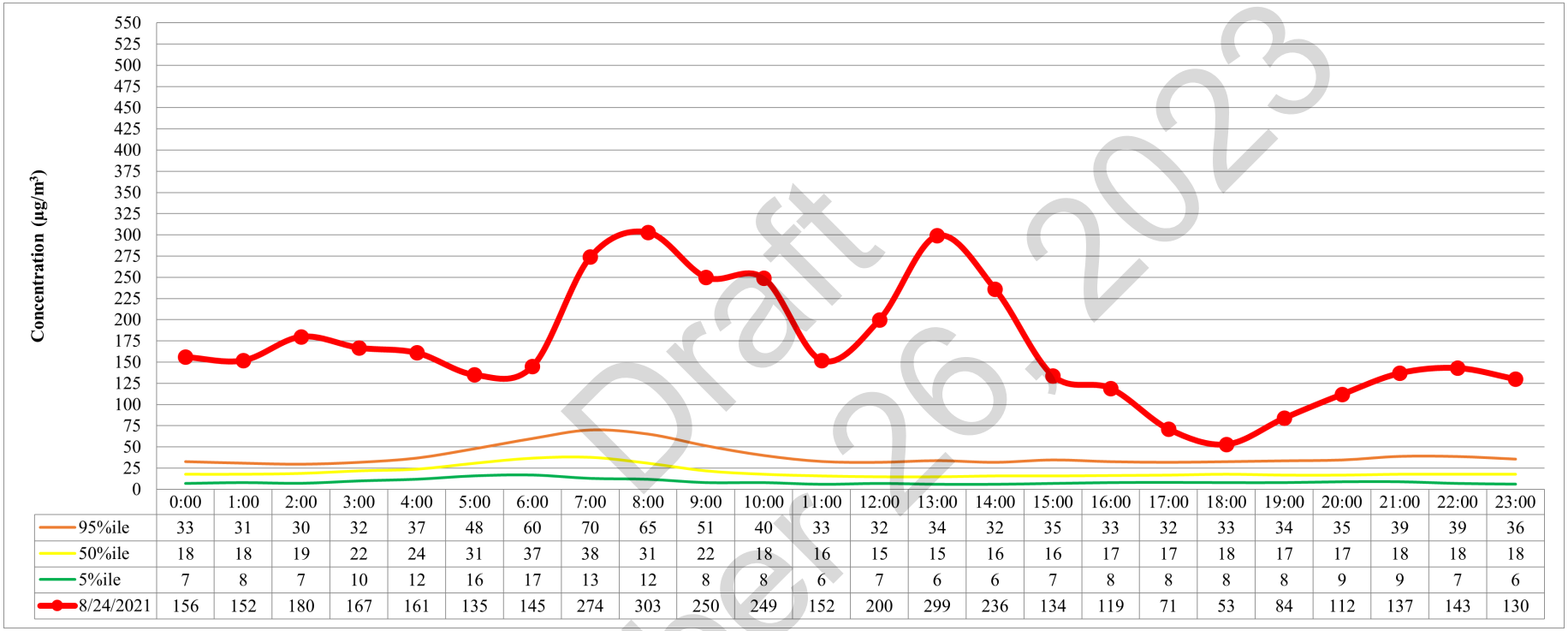
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	27	24	22	23	35	109	75	74	72	77	88	83	75	73	68	49	40	31	31	31	34	32	31	27
50%ile	14	13	12	12	15	26	33	31	28	27	22	22	22	18	16	16	15	15	15	16	16	16	16	15
5%ile	5	5	4	4	6	10	12	11	10	9	8	7	8	6	6	6	4	4	5	5	6	4	6	4
8/23/2021	285	262	246	232	261	274	288	332	360	369	386	378	324	287	423	374	370	393	367	348	259	225	301	332

Figure 4-11: 2016-2020 PM_{10} Diurnal Pattern Comparison for Reno4 on 08/24/21



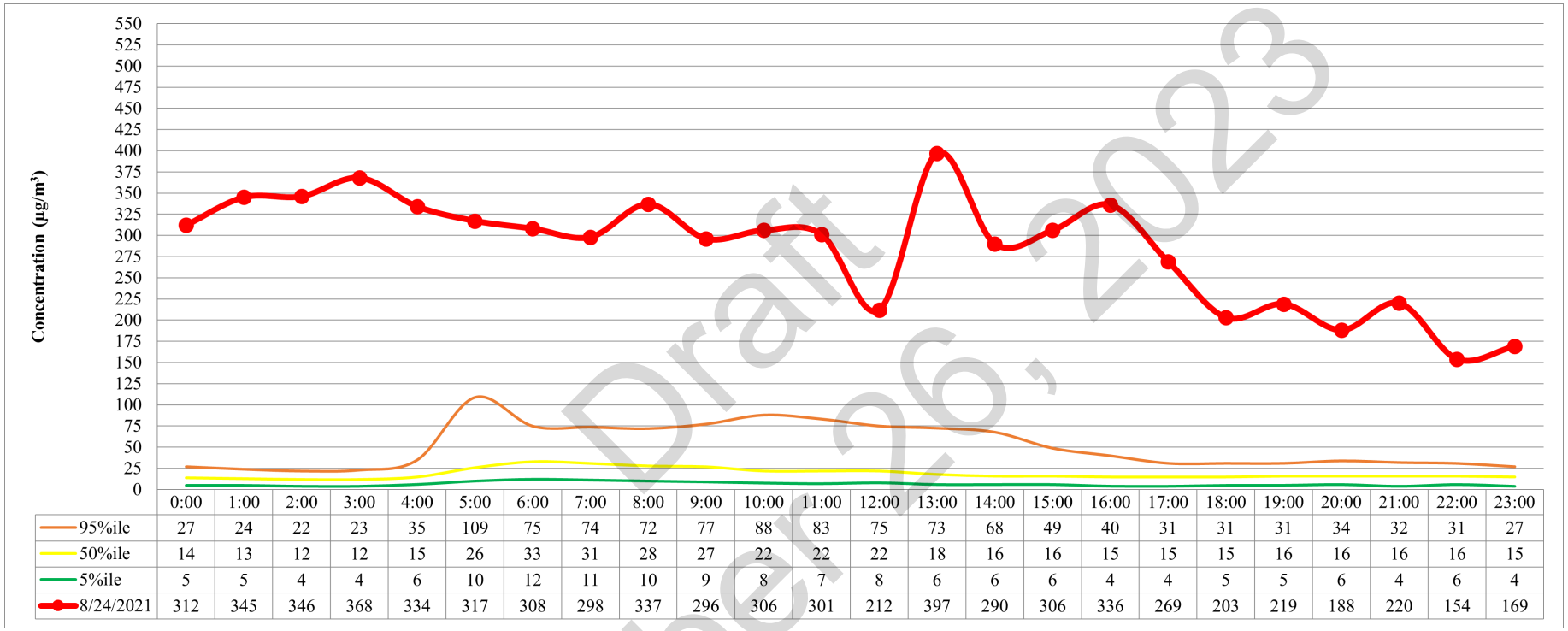
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	29	26	29	29	35	31	46	54	54	51	46	38	37	36	37	32	31	31	28	30	27	27	25	25
50%ile	16	14	13	14	15	16	22	24	27	28	25	21	19	18	18	17	17	17	16	15	15	14	13	14
5%ile	6	4	4	4	5	6	10	9	11	10	10	10	9	9	8	8	8	7	6	6	5	6	5	5
8/24/2021	320	297	306	300	311	332	371	363	341	330	315	206	269	298	197	137	130	72	68	83	114	155	133	165

Figure 4-12: 2016-2020 PM_{10} Diurnal Pattern Comparison for Sparks on 08/24/21



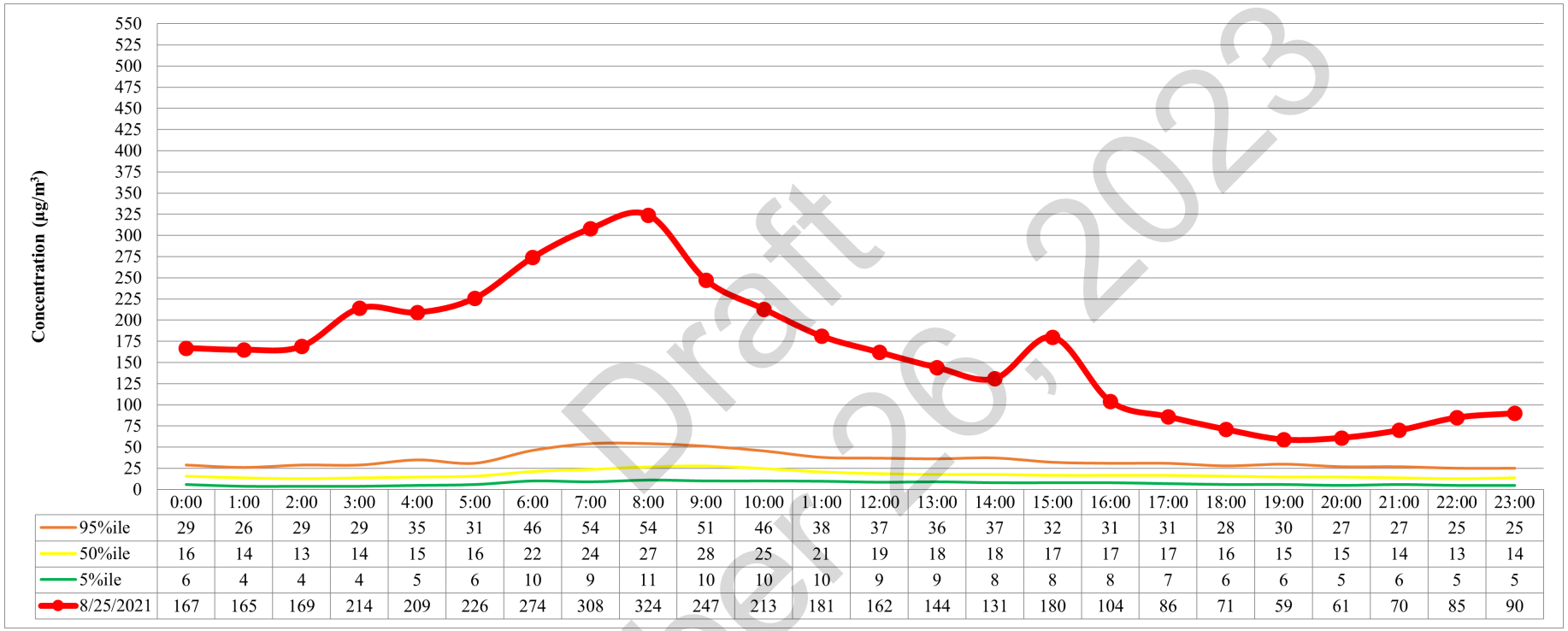
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	33	31	30	32	37	48	60	70	65	51	40	33	32	34	32	35	33	32	33	34	35	39	39	36
50%ile	18	18	19	22	24	31	37	38	31	22	18	16	15	15	16	16	17	17	18	17	17	18	18	18
5%ile	7	8	7	10	12	16	17	13	12	8	8	6	7	6	6	7	8	8	8	8	9	9	7	6
8/24/2021	156	152	180	167	161	135	145	274	303	250	249	152	200	299	236	134	119	71	53	84	112	137	143	130

Figure 4-13: 2016-2020 PM_{10} Diurnal Pattern Comparison for Toll on 08/24/21



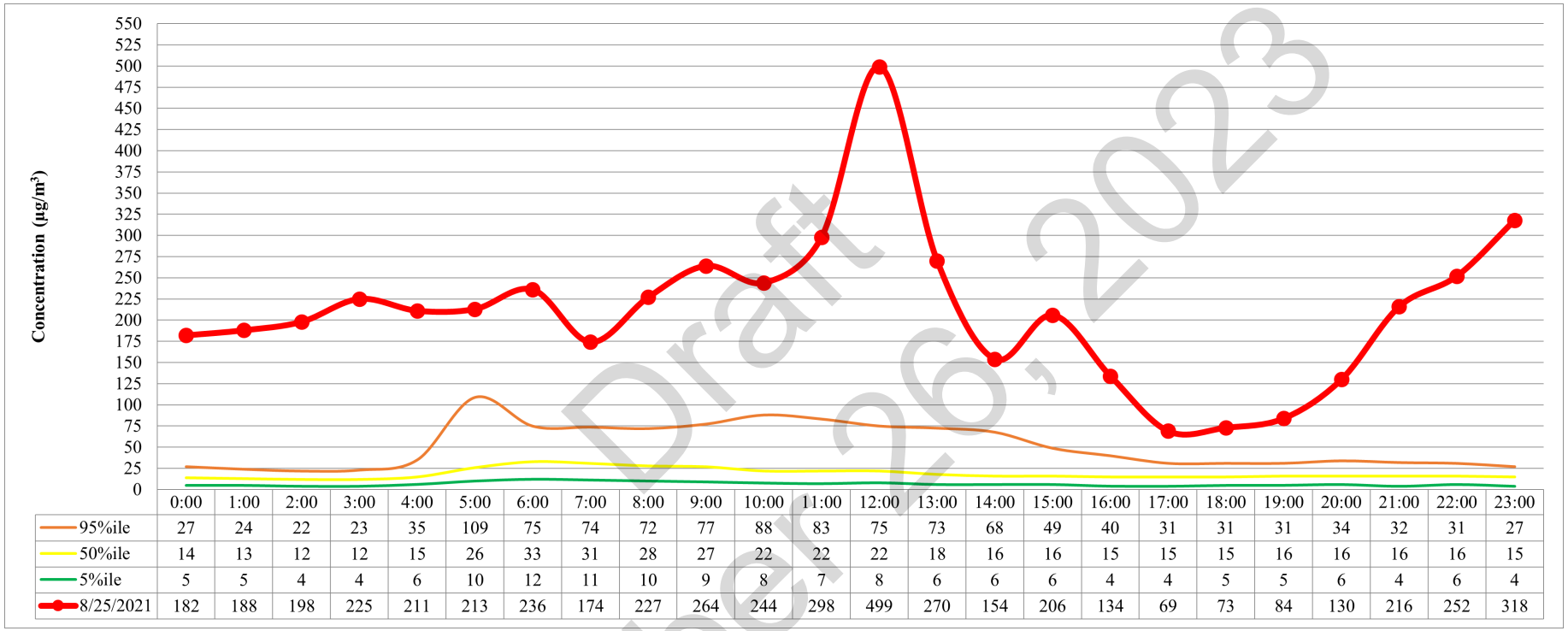
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	27	24	22	23	35	109	75	74	72	77	88	83	75	73	68	49	40	31	31	31	34	32	31	27
50%ile	14	13	12	12	15	26	33	31	28	27	22	22	22	18	16	16	15	15	15	16	16	16	16	15
5%ile	5	5	4	4	6	10	12	11	10	9	8	7	8	6	6	6	4	4	5	5	6	4	6	4
8/24/2021	312	345	346	368	334	317	308	298	337	296	306	301	212	397	290	306	336	269	203	219	188	220	154	169

Figure 4-14: 2016-2020 PM_{10} Diurnal Pattern Comparison for Reno4 on 08/25/21



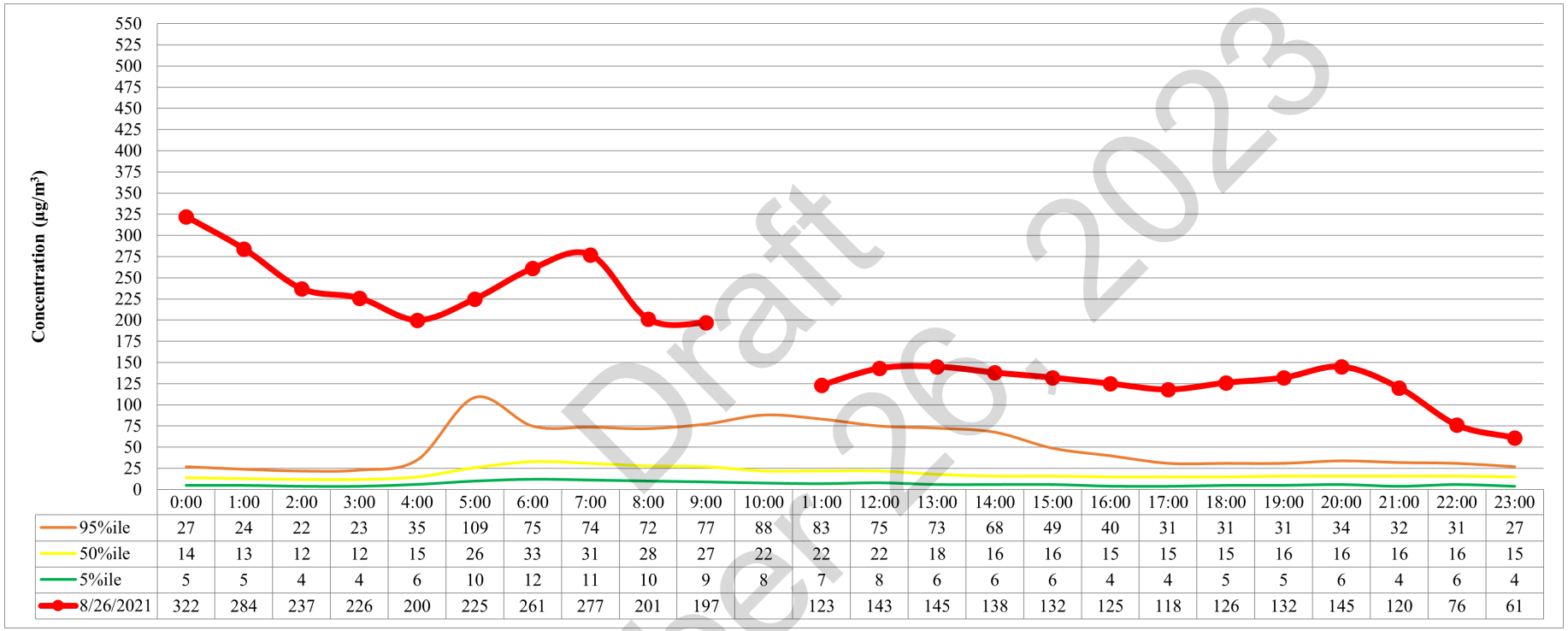
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	29	26	29	29	35	31	46	54	54	51	46	38	37	36	37	32	31	31	28	30	27	27	25	25
50%ile	16	14	13	14	15	16	22	24	27	28	25	21	19	18	18	17	17	17	16	15	15	14	13	14
5%ile	6	4	4	4	5	6	10	9	11	10	10	10	9	9	8	8	8	7	6	6	5	6	5	5
8/25/2021	167	165	169	214	209	226	274	308	324	247	213	181	162	144	131	180	104	86	71	59	61	70	85	90

Figure 4-15: 2016-2020 PM_{10} Diurnal Pattern Comparison for Toll on 08/25/21



	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	27	24	22	23	35	109	75	74	72	77	88	83	75	73	68	49	40	31	31	31	34	32	31	27
50%ile	14	13	12	12	15	26	33	31	28	27	22	22	22	18	16	16	15	15	15	16	16	16	16	15
5%ile	5	5	4	4	6	10	12	11	10	9	8	7	8	6	6	6	4	4	5	5	6	4	6	4
8/25/2021	182	188	198	225	211	213	236	174	227	264	244	298	499	270	154	206	134	69	73	84	130	216	252	318

Figure 4-16: 2016-2020 PM_{10} Diurnal Pattern Comparison for Toll on 08/26/21



	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	27	24	22	23	35	109	75	74	72	77	88	83	75	73	68	49	40	31	31	31	34	32	31	27
50%ile	14	13	12	12	15	26	33	31	28	27	22	22	22	18	16	16	15	15	15	16	16	16	16	15
5%ile	5	5	4	4	6	10	12	11	10	9	8	7	8	6	6	6	4	4	5	5	6	4	6	4
8/26/2021	322	284	237	226	200	225	261	277	201	197		123	143	145	138	132	125	118	126	132	145	120	76	61

4.3 Methods for Determining the Presence of Wildfire Smoke

4.3.1 $PM_{2.5}$ Concentrations

Although this demonstration is written for PM_{10}, analyzing the $PM_{2.5}$ concentrations during the event supports this demonstration by highlighting that the fine particulate matter concentrations followed the same trend as PM_{10}. If the particulate is made up of smoke, $PM_{2.5}$ and PM_{10} should follow the same trend. If the particulate was made up of something else such as a geologic source, $PM_{2.5}$ would not follow the same trend as PM_{10}. As can be seen in Figure 4-17, Figure 4-18, and Figure 4-19, concentrations of $PM_{2.5}$ and PM_{10} followed the same trend over duration of the event at all affected monitors, thus supporting AQMD's position that wildfire smoke was present.

Figure 4-17: 24-hour $PM_{2.5}$ and PM_{10} Concentrations at Toll in August 2021

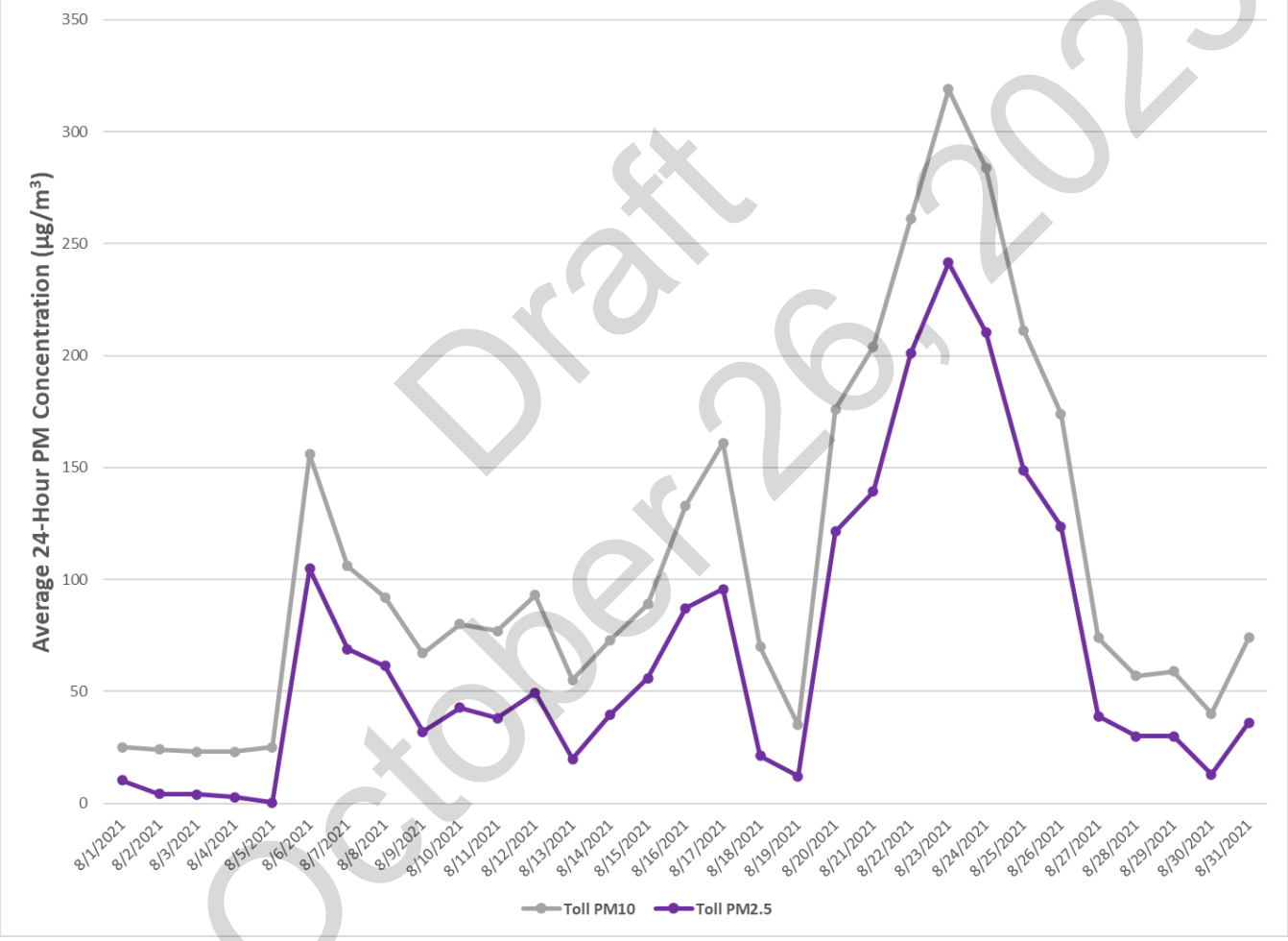


Figure 4-18: 24-hour $PM_{2.5}$ and PM_{10} Concentrations at Reno4 in August 2021

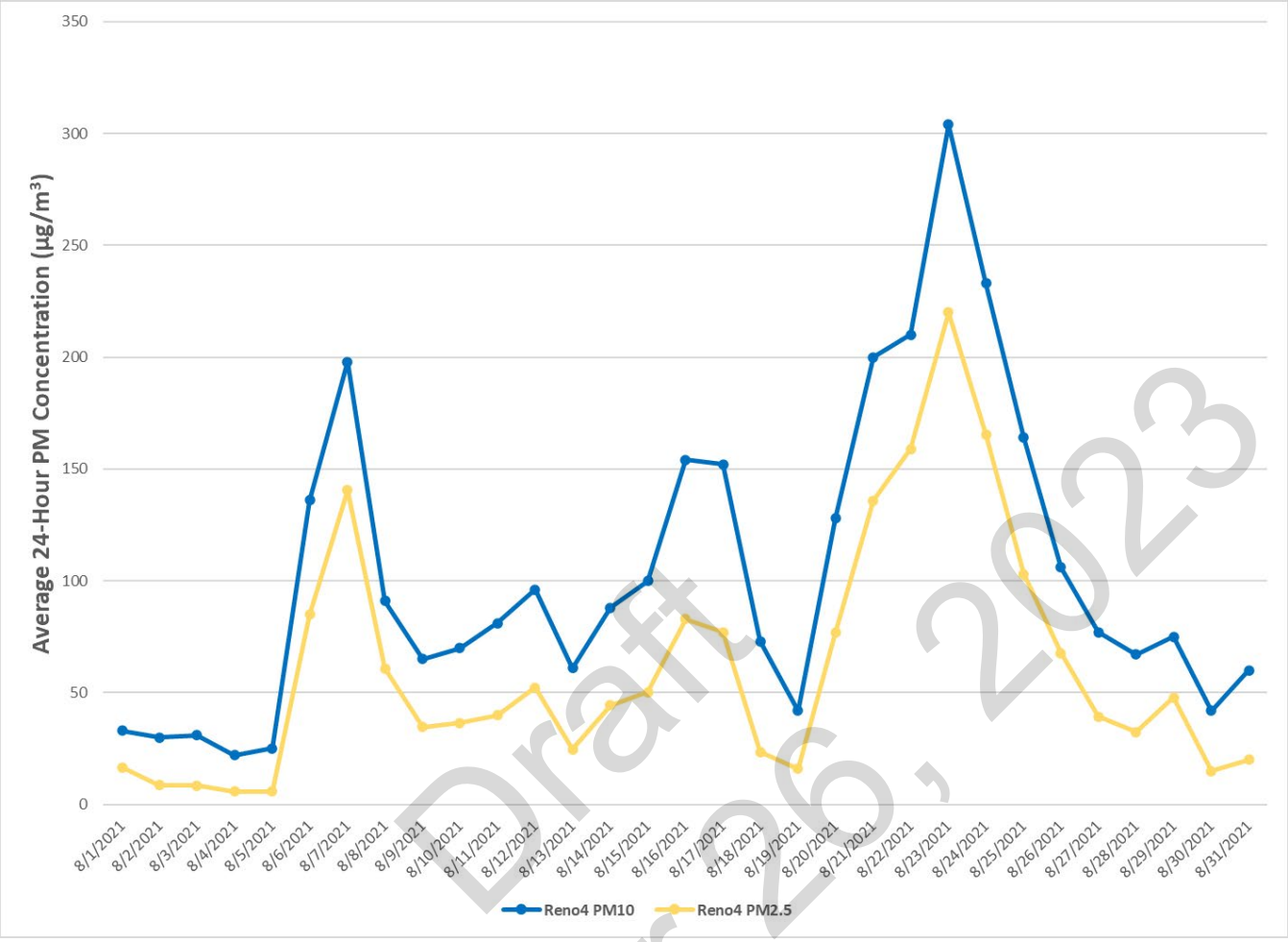
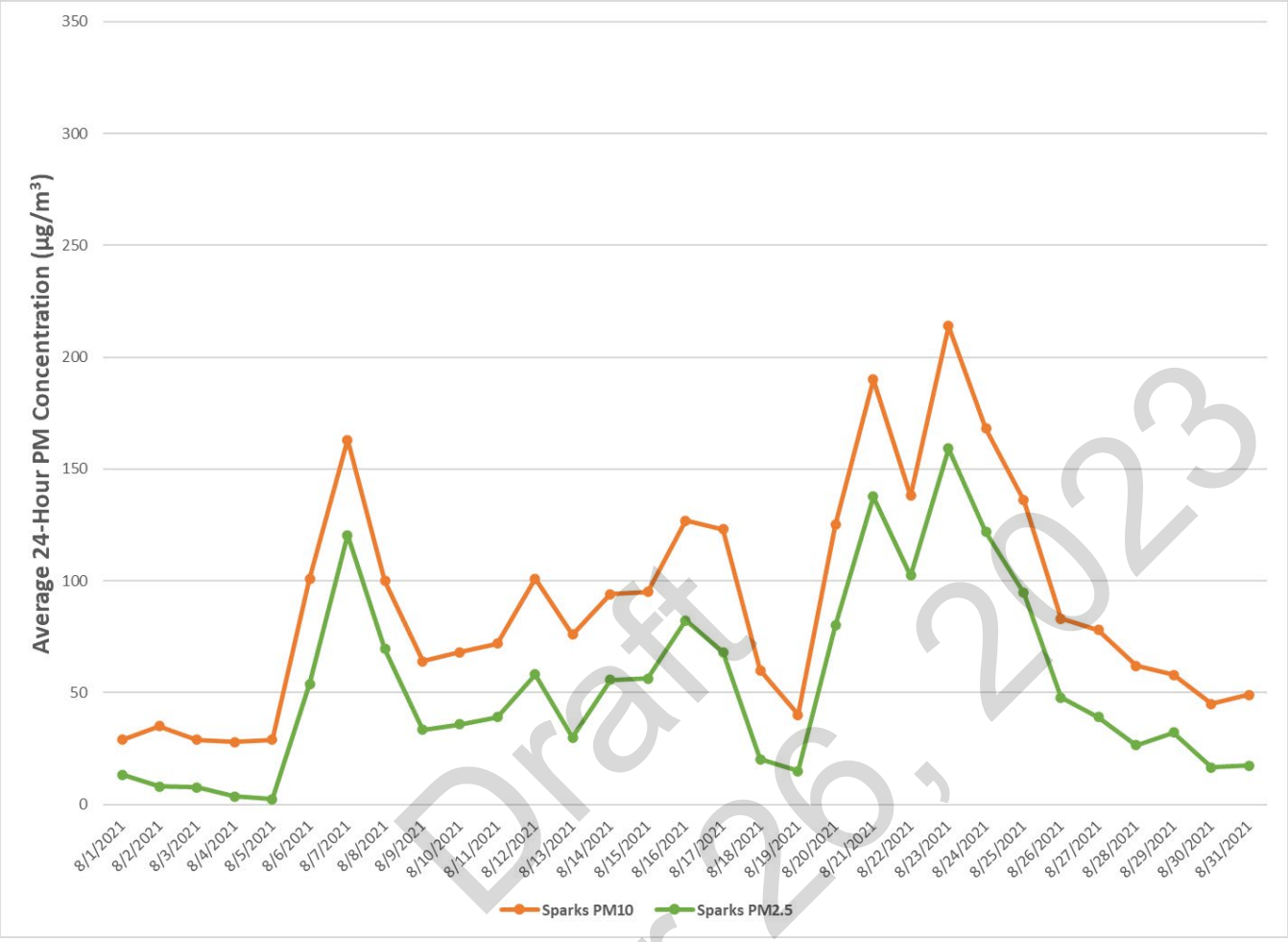


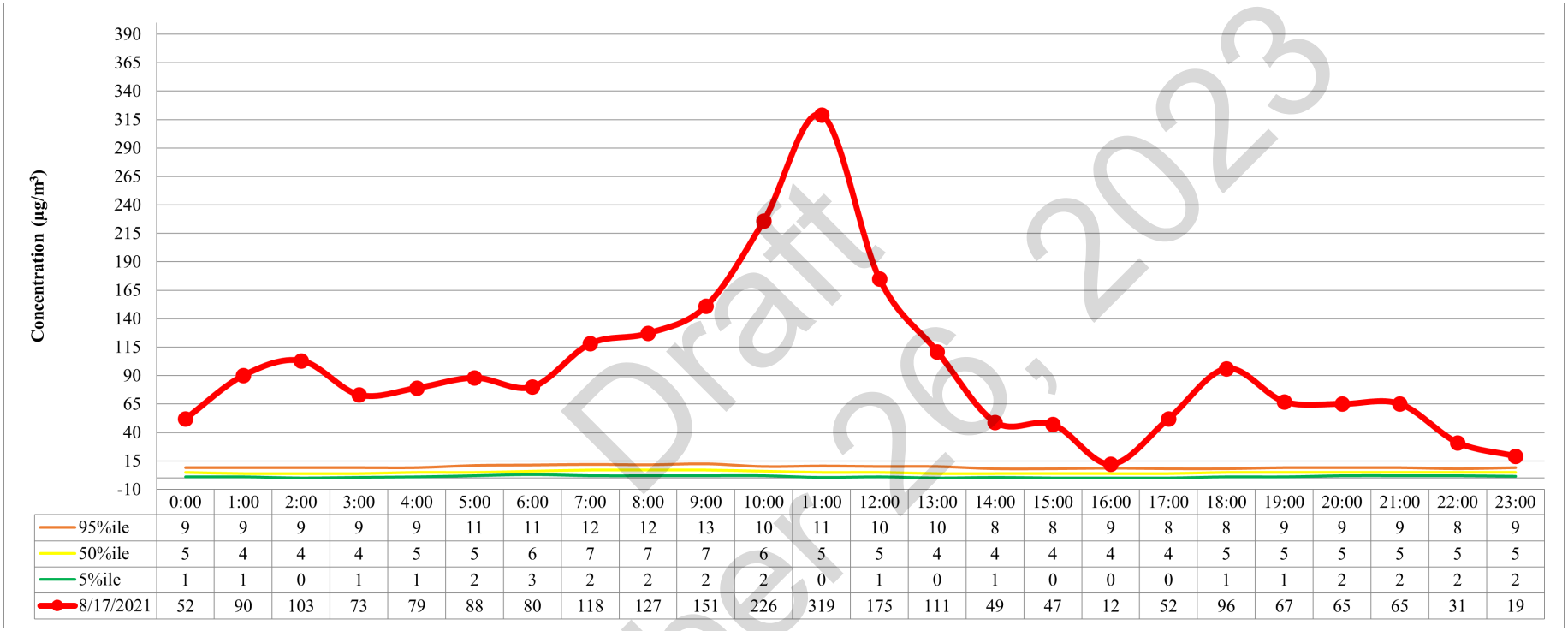
Figure 4-19: 24-hour $PM_{2.5}$ and PM_{10} Concentrations at Sparks in August 2021



Similar to PM_{10}, AQMD also completed a diurnal pattern analysis for $PM_{2.5}$. Each hour on the exceedance day was compared to the 5th percentile, 50th percentile, and 95th 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 $PM_{2.5}$ on the days of the exceedances. Since Toll did not monitor for $PM_{2.5}$ until 2019, a diurnal was created for 2019-2020. For the Reno4 historical $PM_{2.5}$ concentrations of 2016, 2017, 2018, and 2019, Reno3 data was used to add to Reno4's 2020 data.

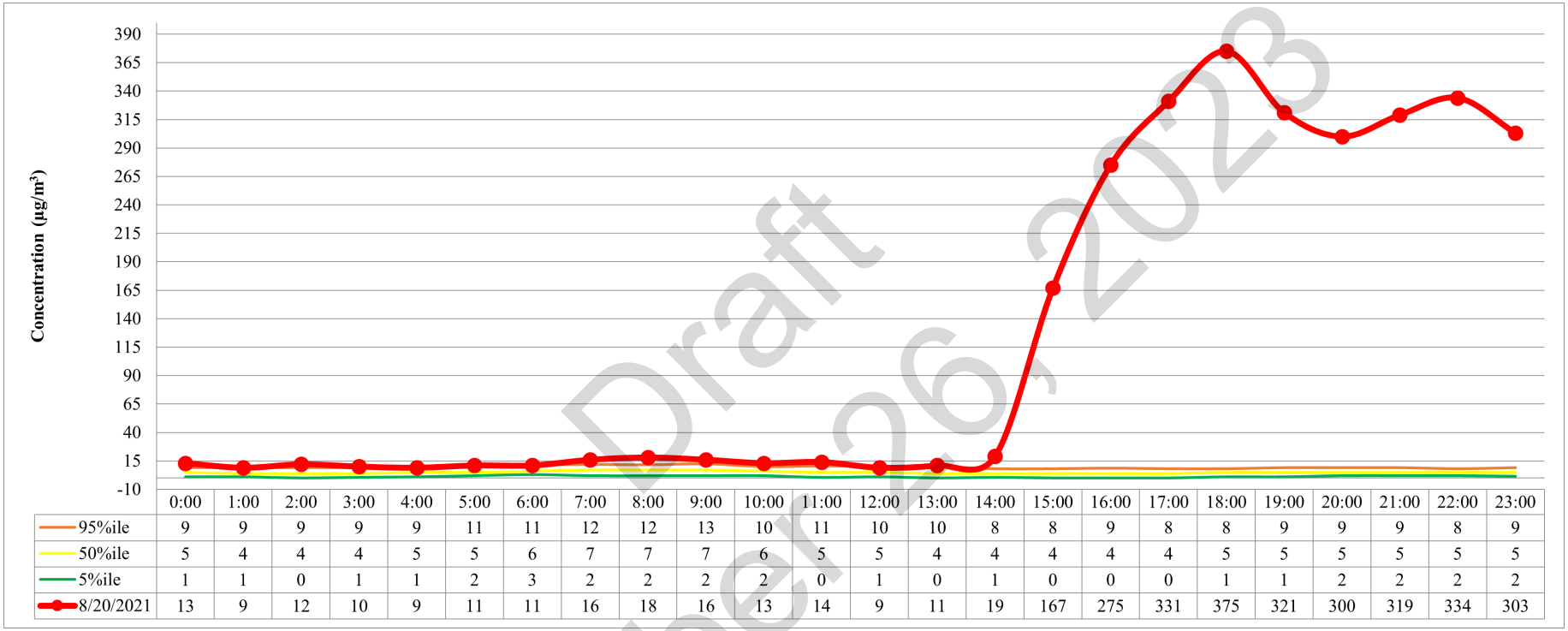
As can be seen in Figure 4-20 through 4-35 below, nearly every hour of the exceedance was multiple times higher than what would be expected (50th percentile) and still much higher than the 95th percentile of the data set.

Figure 4-20: 2019-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Toll on 08/17/21



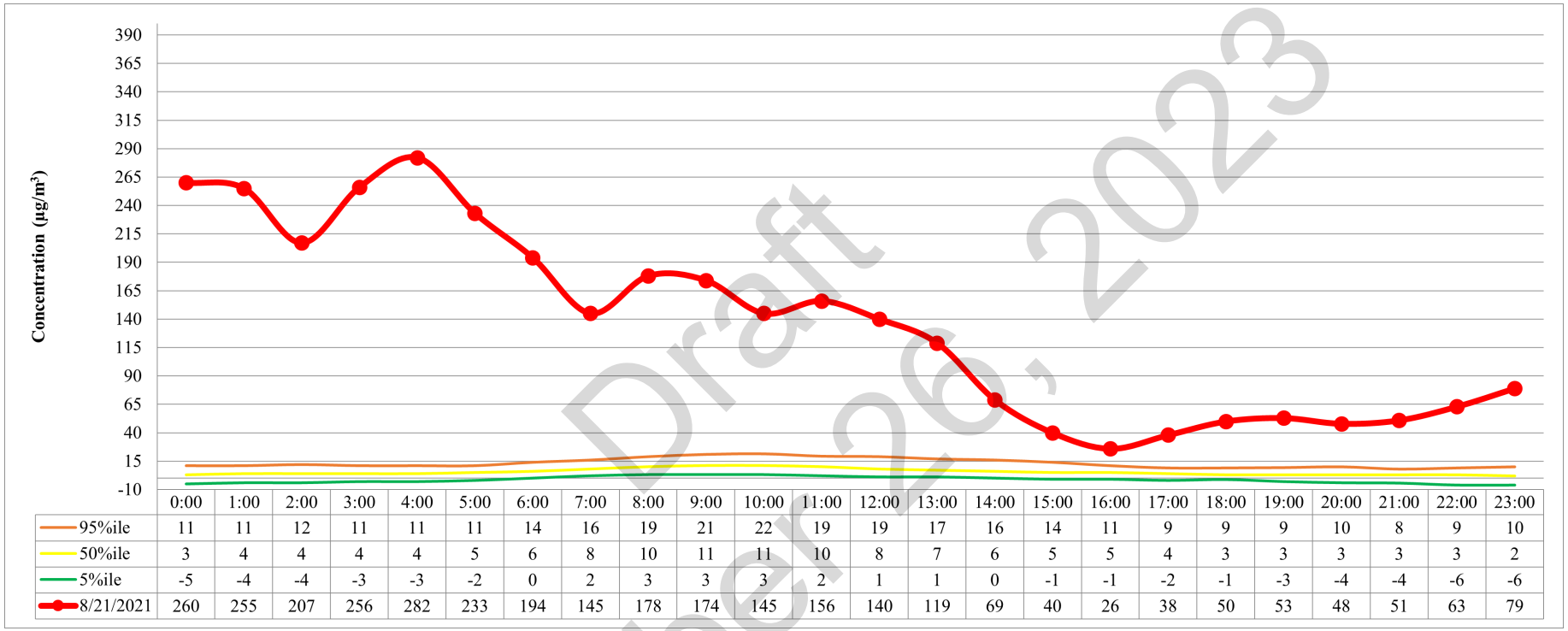
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	9	9	9	9	9	11	11	12	12	13	10	11	10	10	8	8	9	8	8	9	9	9	8	9
50%ile	5	4	4	4	5	5	6	7	7	7	6	5	5	4	4	4	4	4	5	5	5	5	5	5
5%ile	1	1	0	1	1	2	3	2	2	2	2	0	1	0	1	0	0	0	1	1	2	2	2	2
8/17/2021	52	90	103	73	79	88	80	118	127	151	226	319	175	111	49	47	12	52	96	67	65	65	31	19

Figure 4-21: 2019-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Toll on 08/20/21



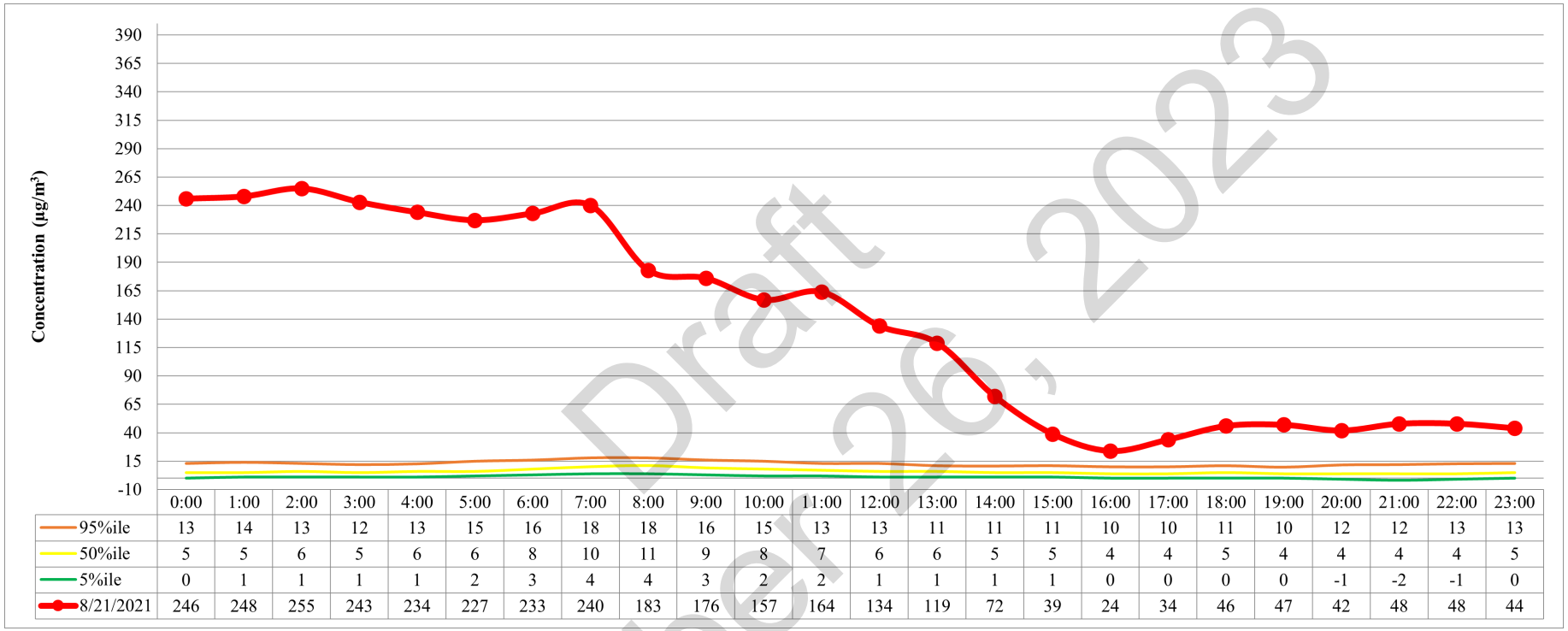
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	9	9	9	9	9	11	11	12	12	13	10	11	10	10	8	8	9	8	8	9	9	9	8	9
50%ile	5	4	4	4	5	5	6	7	7	7	6	5	5	4	4	4	4	4	5	5	5	5	5	5
5%ile	1	1	0	1	1	2	3	2	2	2	2	0	1	0	1	0	0	0	1	1	2	2	2	2
8/20/2021	13	9	12	10	9	11	11	16	18	16	13	14	9	11	19	167	275	331	375	321	300	319	334	303

Figure 4-22: 2016-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Reno4 on 08/21/21



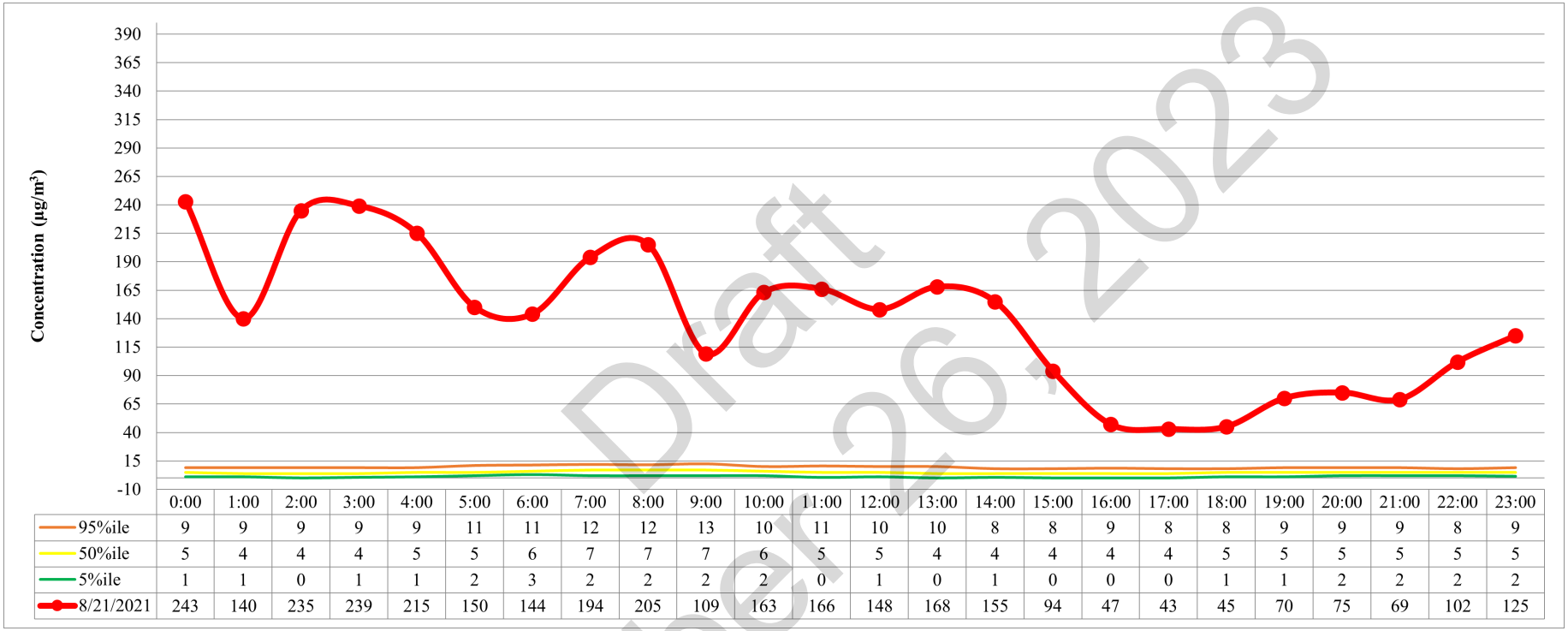
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	11	11	12	11	11	11	14	16	19	21	22	19	19	17	16	14	11	9	9	9	10	8	9	10
50%ile	3	4	4	4	4	5	6	8	10	11	11	10	8	7	6	5	5	4	3	3	3	3	3	2
5%ile	-5	-4	-4	-3	-3	-2	0	2	3	3	3	2	1	1	0	-1	-1	-2	-1	-3	-4	-4	-6	-6
8/21/2021	260	255	207	256	282	233	194	145	178	174	145	156	140	119	69	40	26	38	50	53	48	51	63	79

Figure 4-23: 2016-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Sparks on 08/21/21



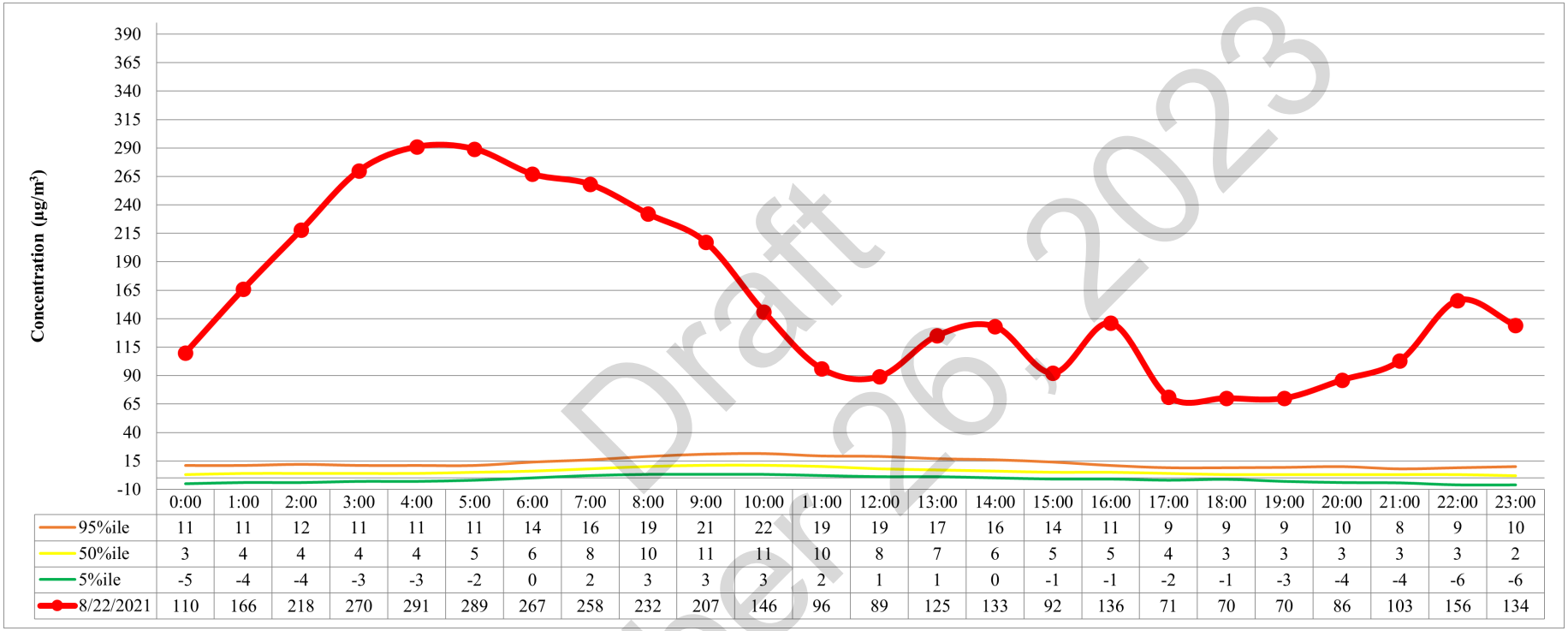
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	13	14	13	12	13	15	16	18	18	16	15	13	13	11	11	11	10	10	11	10	12	12	13	13
50%ile	5	5	6	5	6	6	8	10	11	9	8	7	6	6	5	5	4	4	5	4	4	4	4	5
5%ile	0	1	1	1	1	2	3	4	4	3	2	2	1	1	1	1	0	0	0	0	-1	-2	-1	0
8/21/2021	246	248	255	243	234	227	233	240	183	176	157	164	134	119	72	39	24	34	46	47	42	48	48	44

Figure 4-24: 2019-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Toll on 08/21/21



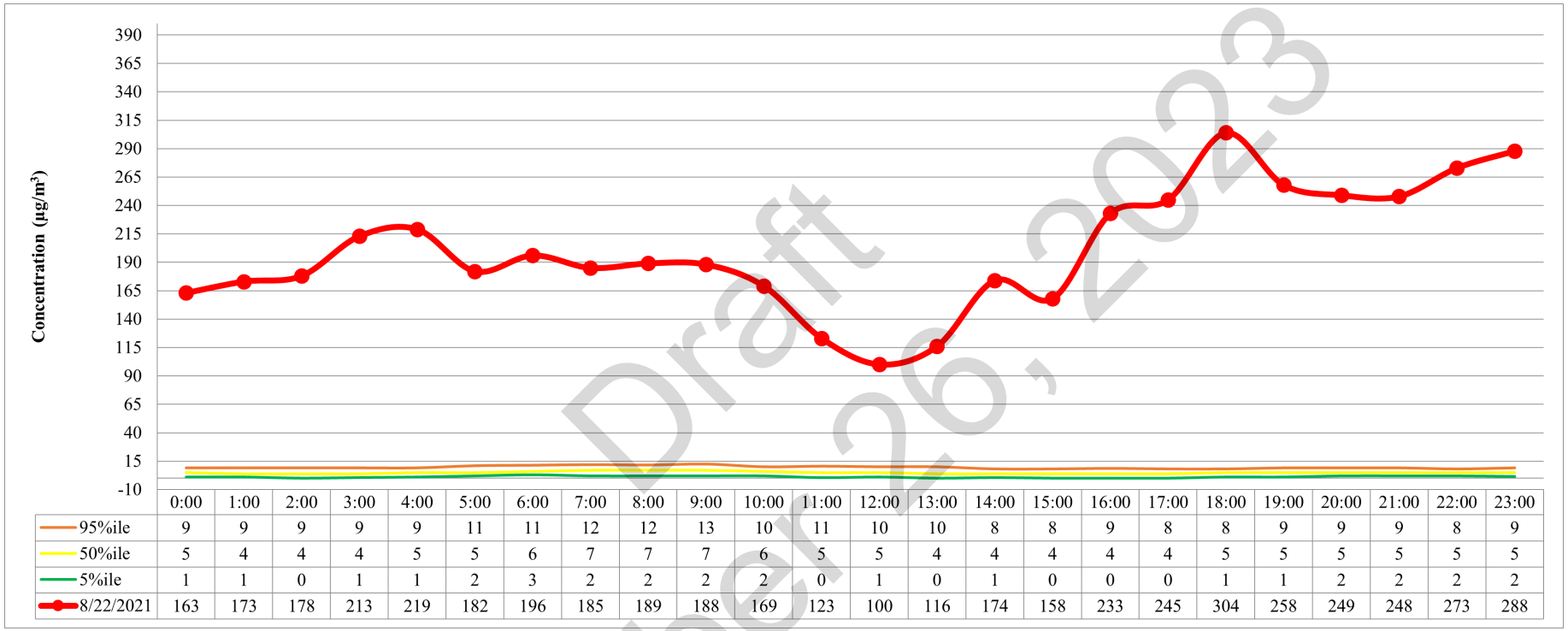
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	9	9	9	9	9	11	11	12	12	13	10	11	10	10	8	8	9	8	8	9	9	9	8	9
50%ile	5	4	4	4	5	5	6	7	7	7	6	5	5	4	4	4	4	4	5	5	5	5	5	5
5%ile	1	1	0	1	1	2	3	2	2	2	2	0	1	0	1	0	0	0	1	1	2	2	2	2
8/21/2021	243	140	235	239	215	150	144	194	205	109	163	166	148	168	155	94	47	43	45	70	75	69	102	125

Figure 4-25: 2016-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Reno4 on 08/22/21



	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	11	11	12	11	11	11	14	16	19	21	22	19	19	17	16	14	11	9	9	9	10	8	9	10
50%ile	3	4	4	4	4	5	6	8	10	11	11	10	8	7	6	5	5	4	3	3	3	3	3	2
5%ile	-5	-4	-4	-3	-3	-2	0	2	3	3	3	2	1	1	0	-1	-1	-2	-1	-3	-4	-4	-6	-6
8/22/2021	110	166	218	270	291	289	267	258	232	207	146	96	89	125	133	92	136	71	70	70	86	103	156	134

Figure 4-26: 2019-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Toll on 08/22/21



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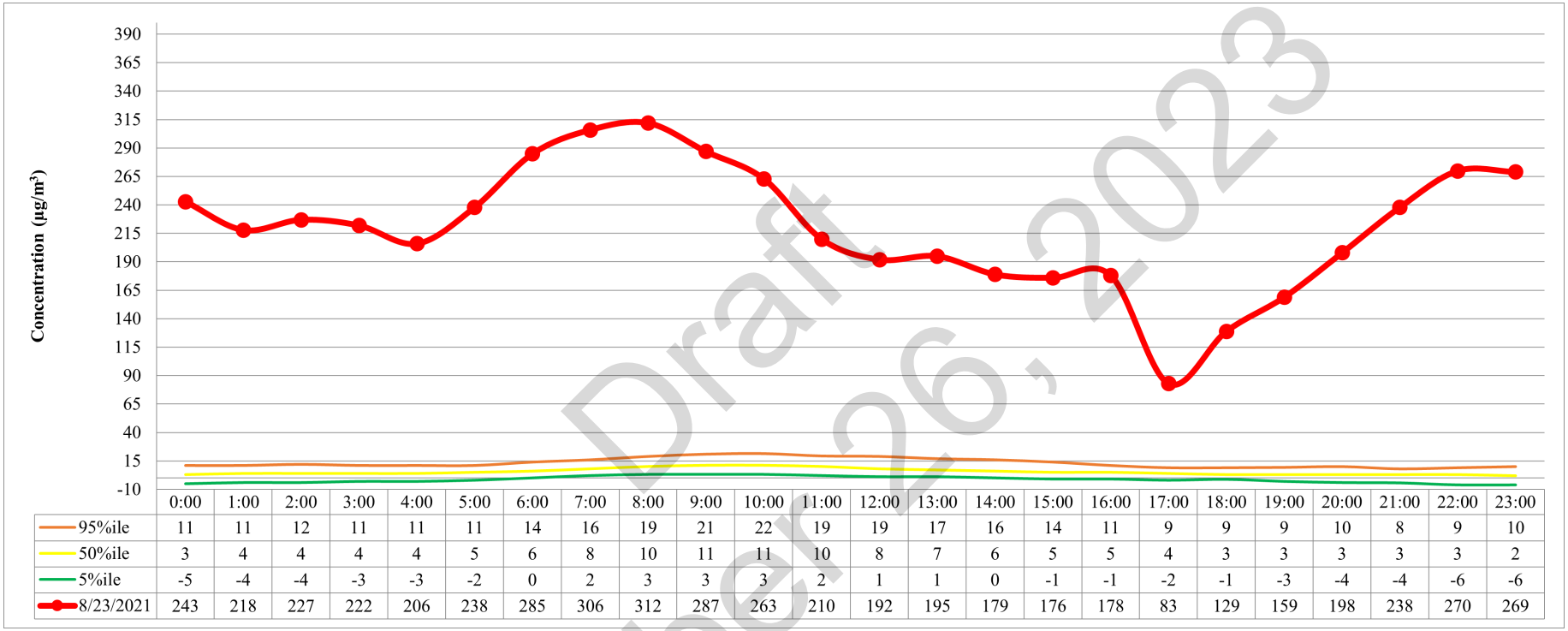
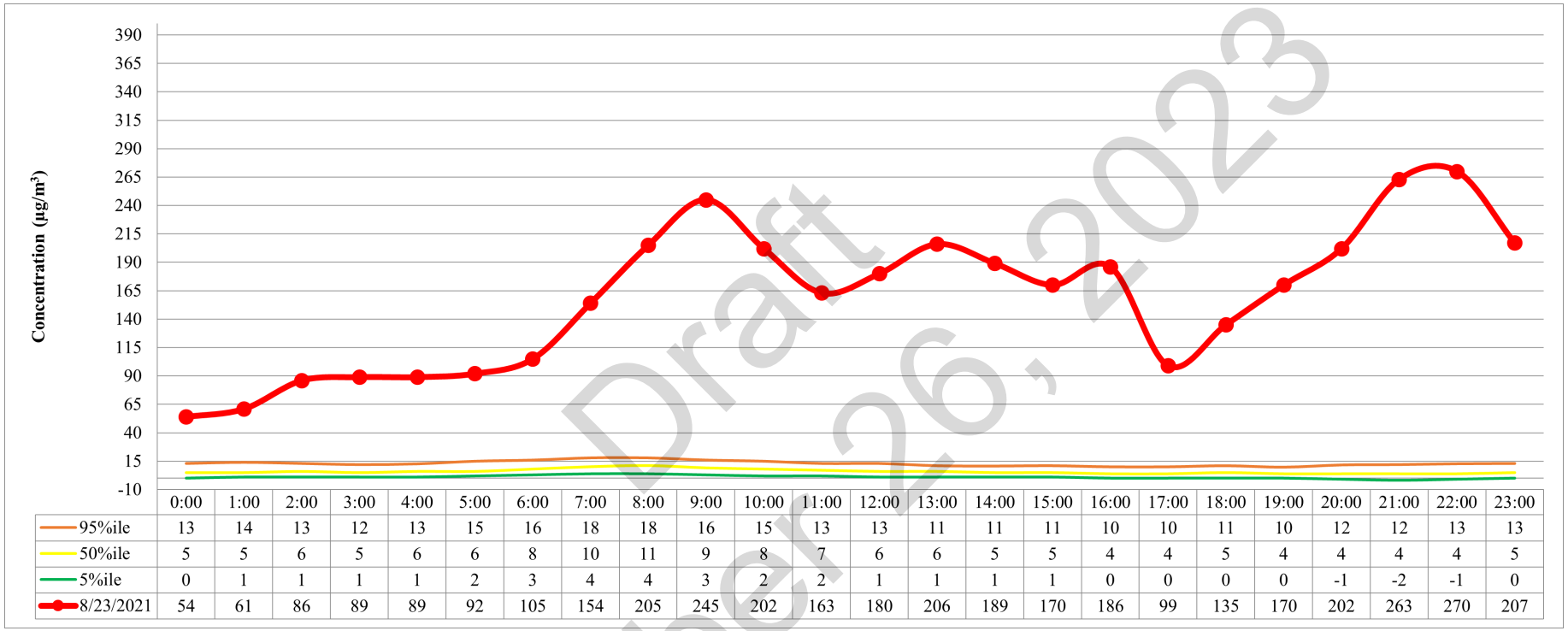
95%ile	9	9	9	9	9	11	11	12	12	13	10	11	10	10	8	8	9	8	8	9	9	9	8	9
50%ile	5	4	4	4	5	5	6	7	7	7	6	5	5	4	4	4	4	4	5	5	5	5	5	5
5%ile	1	1	0	1	1	2	3	2	2	2	2	0	1	0	1	0	0	0	1	1	2	2	2	2
8/22/2021	163	173	178	213	219	182	196	185	189	188	169	123	100	116	174	158	233	245	304	258	249	248	273	288

Figure 4-27: 2016-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Reno4 on 08/23/21



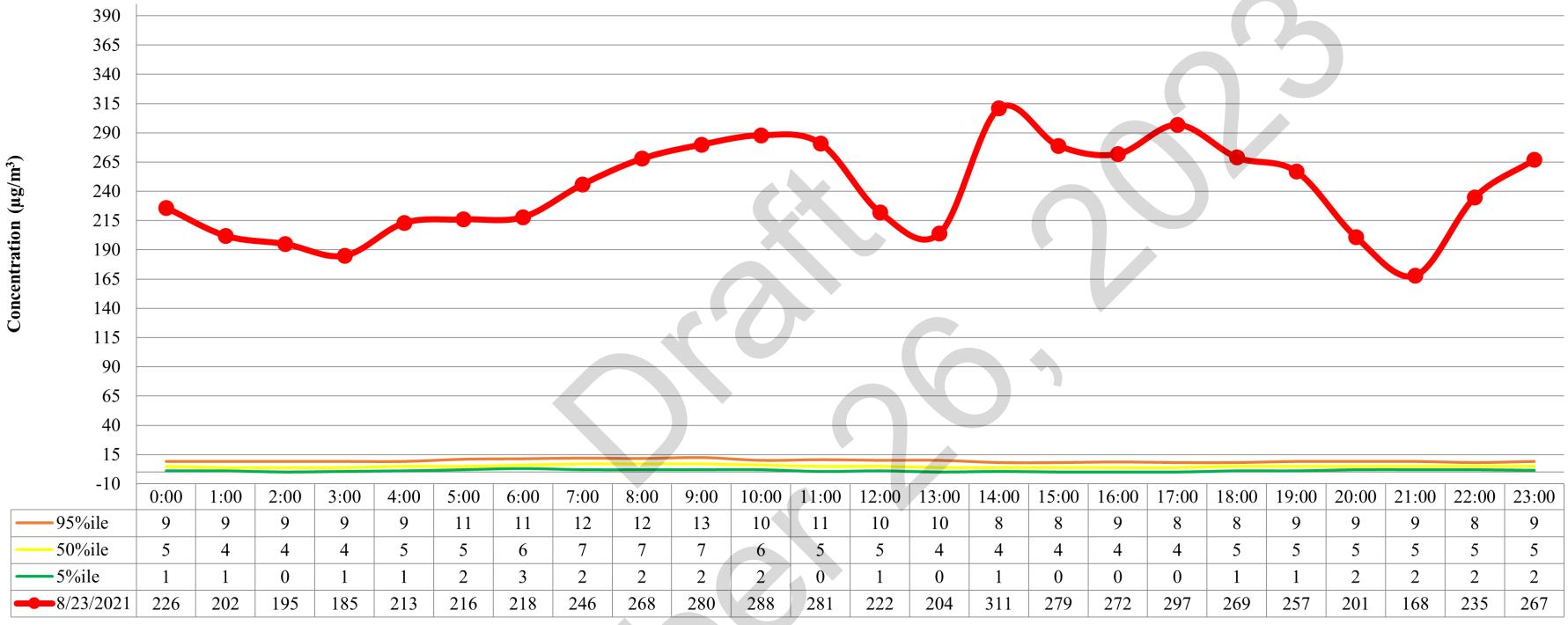
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	11	11	12	11	11	11	14	16	19	21	22	19	19	17	16	14	11	9	9	9	10	8	9	10
50%ile	3	4	4	4	4	5	6	8	10	11	11	10	8	7	6	5	5	4	3	3	3	3	3	2
5%ile	-5	-4	-4	-3	-3	-2	0	2	3	3	3	2	1	1	0	-1	-1	-2	-1	-3	-4	-4	-6	-6
8/23/2021	243	218	227	222	206	238	285	306	312	287	263	210	192	195	179	176	178	83	129	159	198	238	270	269

Figure 4-28: 2016-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Sparks on 08/23/21



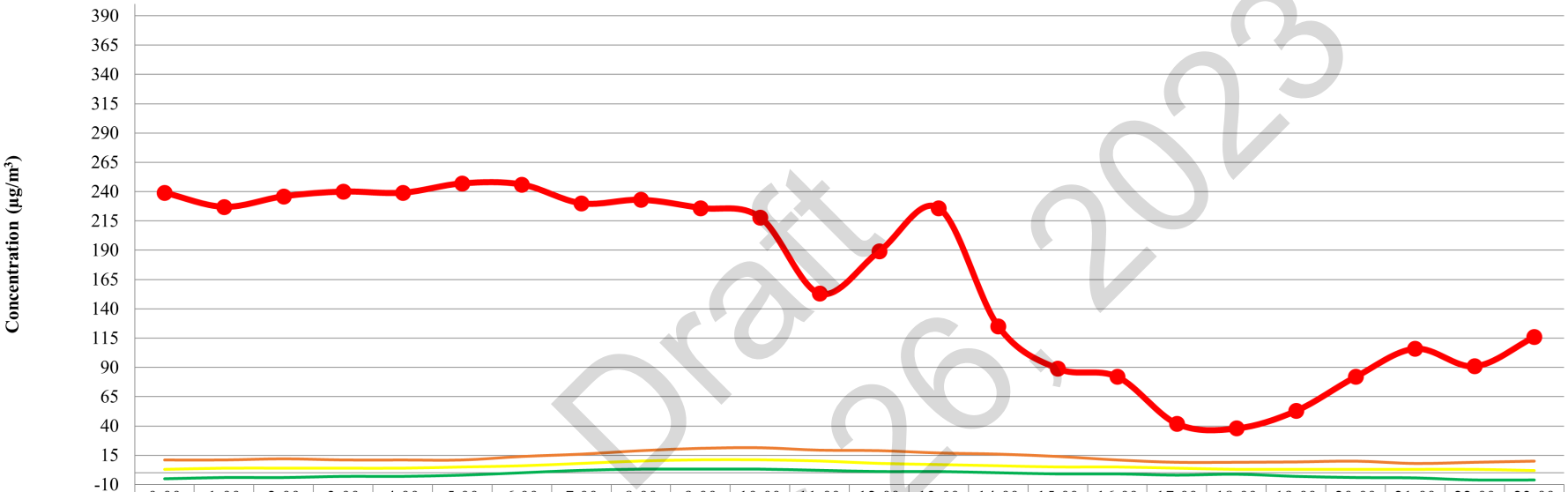
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	13	14	13	12	13	15	16	18	18	16	15	13	13	11	11	11	10	10	11	10	12	12	13	13
50%ile	5	5	6	5	6	6	8	10	11	9	8	7	6	6	5	5	4	4	5	4	4	4	4	5
5%ile	0	1	1	1	1	2	3	4	4	3	2	2	1	1	1	1	0	0	0	0	-1	-2	-1	0
8/23/2021	54	61	86	89	89	92	105	154	205	245	202	163	180	206	189	170	186	99	135	170	202	263	270	207

Figure 4-29: 2019-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Toll on 08/23/21



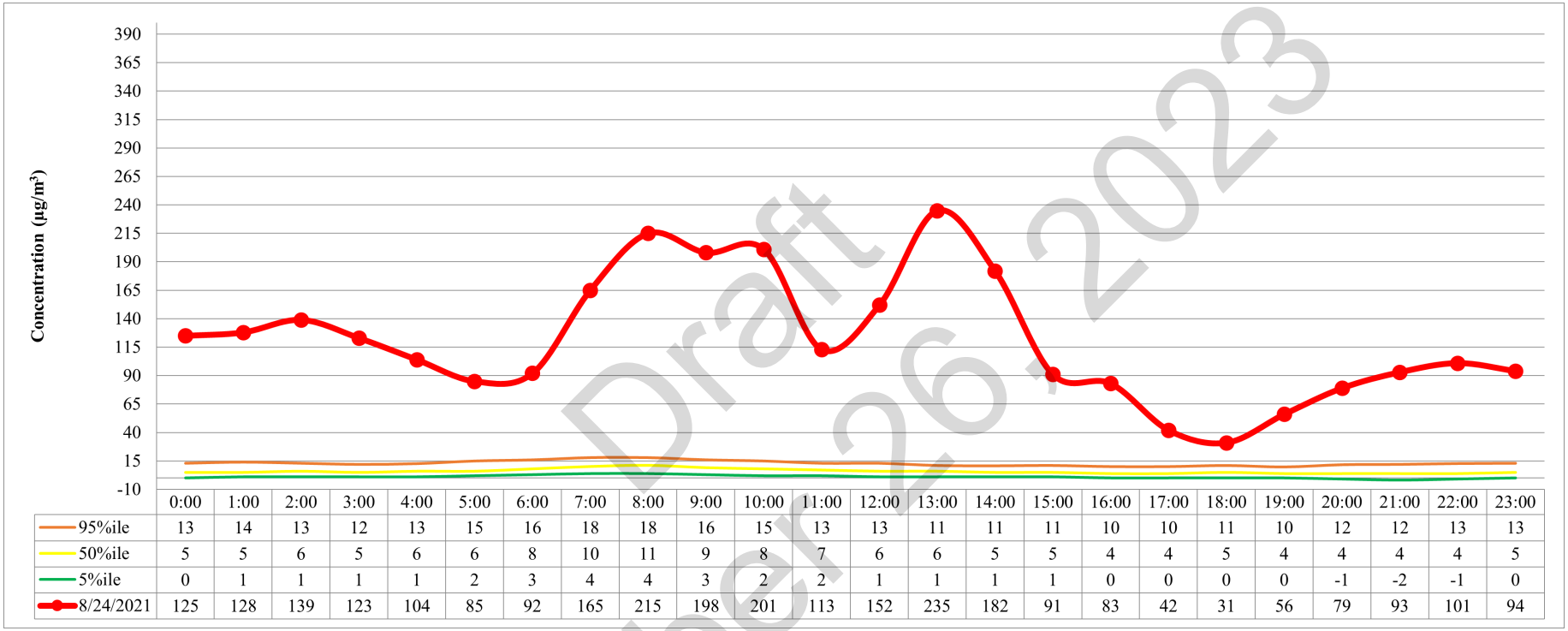
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	9	9	9	9	9	11	11	12	12	13	10	11	10	10	8	8	9	8	8	9	9	9	8	9
50%ile	5	4	4	4	5	5	6	7	7	7	6	5	5	4	4	4	4	4	5	5	5	5	5	5
5%ile	1	1	0	1	1	2	3	2	2	2	2	0	1	0	1	0	0	0	1	1	2	2	2	2
8/23/2021	226	202	195	185	213	216	218	246	268	280	288	281	222	204	311	279	272	297	269	257	201	168	235	267

Figure 4-30: 2016-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Reno4 on 08/24/21



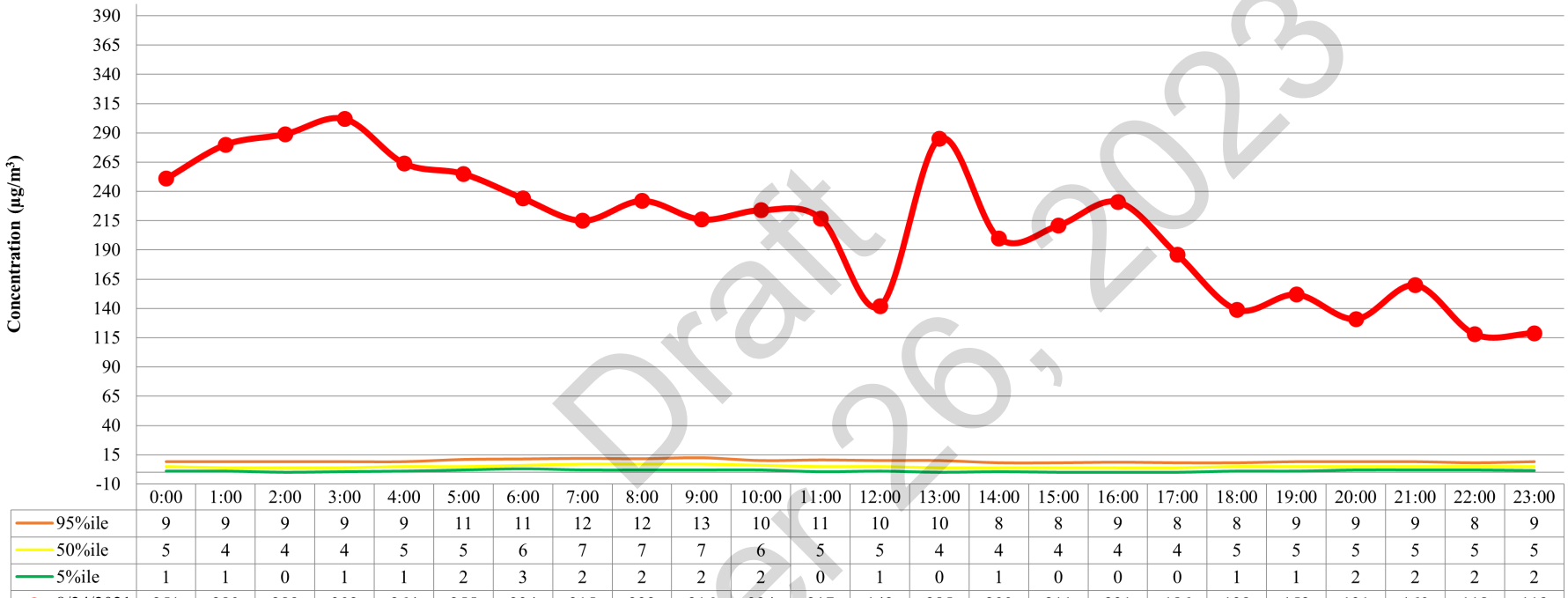
	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	11	11	12	11	11	11	14	16	19	21	22	19	19	17	16	14	11	9	9	9	10	8	9	10
50%ile	3	4	4	4	4	5	6	8	10	11	11	10	8	7	6	5	5	4	3	3	3	3	3	2
5%ile	-5	-4	-4	-3	-3	-2	0	2	3	3	3	2	1	1	0	-1	-1	-2	-1	-3	-4	-4	-6	-6
8/24/2021	239	227	236	240	239	247	246	230	233	226	218	153	189	226	125	89	82	42	38	53	82	106	91	116

Figure 4-31: 2016-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Sparks on 08/24/21



	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	13	14	13	12	13	15	16	18	18	16	15	13	13	11	11	11	10	10	11	10	12	12	13	13
50%ile	5	5	6	5	6	6	8	10	11	9	8	7	6	6	5	5	4	4	5	4	4	4	4	5
5%ile	0	1	1	1	1	2	3	4	4	3	2	2	1	1	1	1	0	0	0	0	-1	-2	-1	0
8/24/2021	125	128	139	123	104	85	92	165	215	198	201	113	152	235	182	91	83	42	31	56	79	93	101	94

Figure 4-32: 2019-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Toll on 08/24/21



	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
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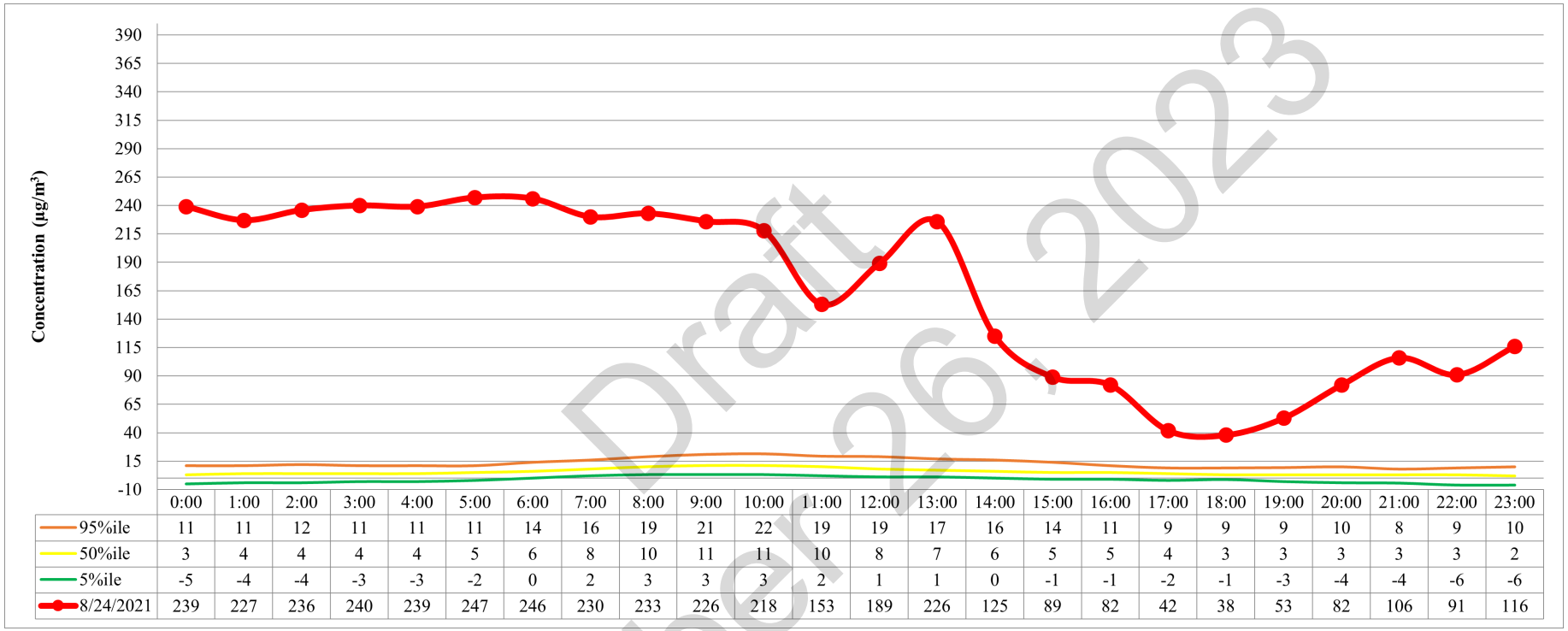
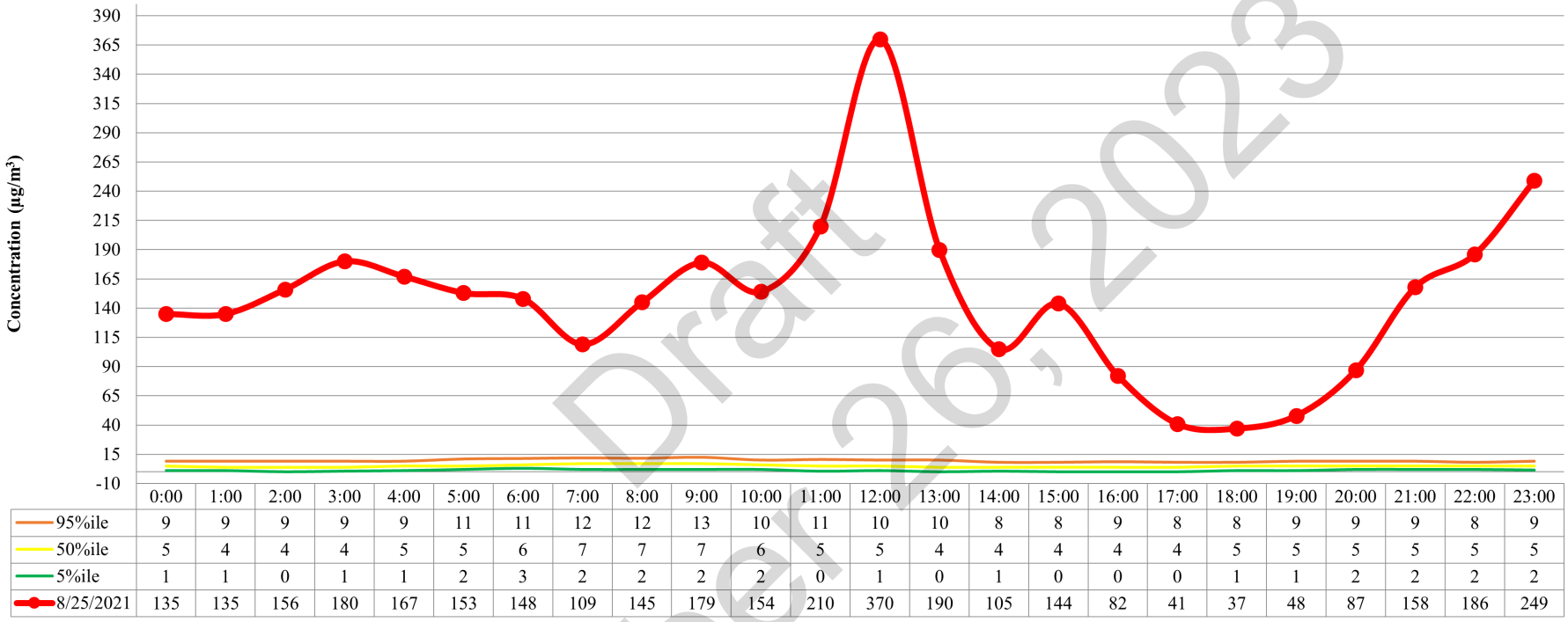
5%ile	1	1	0	1	1	2	3	2	2	2	2	0	1	0	1	0	0	0	1	1	2	2	2	2
8/24/2021	251	280	289	302	264	255	234	215	232	216	224	217	142	285	200	211	231	186	139	152	131	160	118	119

Figure 4-33: 2016-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Reno4 on 08/25/21



	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	11	11	12	11	11	11	14	16	19	21	22	19	19	17	16	14	11	9	9	9	10	8	9	10
50%ile	3	4	4	4	4	5	6	8	10	11	11	10	8	7	6	5	5	4	3	3	3	3	3	2
5%ile	-5	-4	-4	-3	-3	-2	0	2	3	3	3	2	1	1	0	-1	-1	-2	-1	-3	-4	-4	-6	-6
8/24/2021	239	227	236	240	239	247	246	230	233	226	218	153	189	226	125	89	82	42	38	53	82	106	91	116

Figure 4-34: 2019-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Toll on 08/25/21



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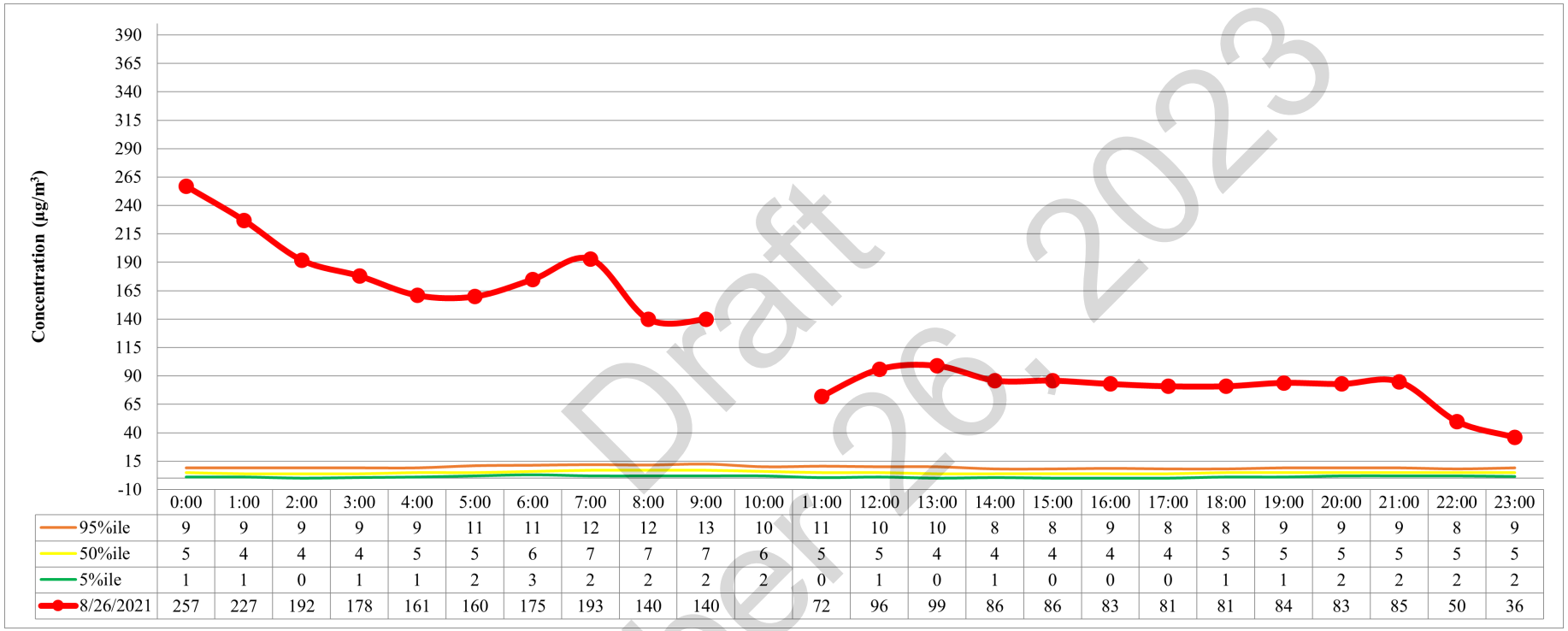
95%ile	9	9	9	9	9	11	11	12	12	13	10	11	10	10	8	8	9	8	8	9	9	9	8	9
50%ile	5	4	4	4	5	5	6	7	7	7	6	5	5	4	4	4	4	4	5	5	5	5	5	5
5%ile	1	1	0	1	1	2	3	2	2	2	2	0	1	0	1	0	0	0	1	1	2	2	2	2
8/25/2021	135	135	156	180	167	153	148	109	145	179	154	210	370	190	105	144	82	41	37	48	87	158	186	249

Figure 4-35: 2019-2020 $PM_{2.5}$ Diurnal Pattern Comparison for Toll on 08/26/21



	0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
95%ile	9	9	9	9	9	11	11	12	12	13	10	11	10	10	8	8	9	8	8	9	9	9	8	9
50%ile	5	4	4	4	5	5	6	7	7	7	6	5	5	4	4	4	4	4	5	5	5	5	5	5
5%ile	1	1	0	1	1	2	3	2	2	2	2	0	1	0	1	0	0	0	1	1	2	2	2	2
8/26/2021	257	227	192	178	161	160	175	193	140	140		72	96	99	86	86	83	81	81	84	83	85	50	36

4.3.2 $PM_{2.5}/PM_{10}$ Ratio

One method for determining whether the elevated PM_{10} concentrations were caused by wildfire smoke is by analyzing the ratio of $PM_{2.5}$ to PM_{10}. If a higher fraction of the PM_{10} is made up of $PM_{2.5}$, this is indicative that smoke is present in the region. A lower $PM_{2.5}/PM_{10}$ 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 $PM_{2.5}/PM_{10}$ ratio at Toll, Reno4, and Sparks started to increase on August 13, 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 less affected by the wildfire smoke on August 13,18, and 30 of 2021.

Table 4-2: $PM_{2.5}/PM_{10}$ Ratios at Toll

Toll			
	24-Hour Average (µg/m³)		
Date	$PM_{2.5}$	PM_{10}	$PM_{2.5}/PM_{10}$
8/13/2021	19.7	55	0.36
8/14/2021	39.7	73	0.54
8/15/2021	55.9	89	0.63
8/16/2021	87.2	133	0.66
8/17/2021	95.6	161	0.59
8/18/2021	21.3	70	0.30
8/19/2021	12	35	0.34
8/20/2021	121.5	176	0.69
8/21/2021	139.3	204	0.68
8/22/2021	201	261	0.77
8/23/2021	241.6	319	0.76
8/24/2021	210.5	284	0.74
8/25/2021	148.6	211	0.70
8/26/2021	123.6	174	0.71
8/27/2021	38.8	74	0.52
8/28/2021	30	57	0.53
8/29/2021	30	59	0.51
8/30/2021	12.8	40	0.32

Table 4-3: $PM_{2.5}/PM_{10}$ Ratios at Reno4

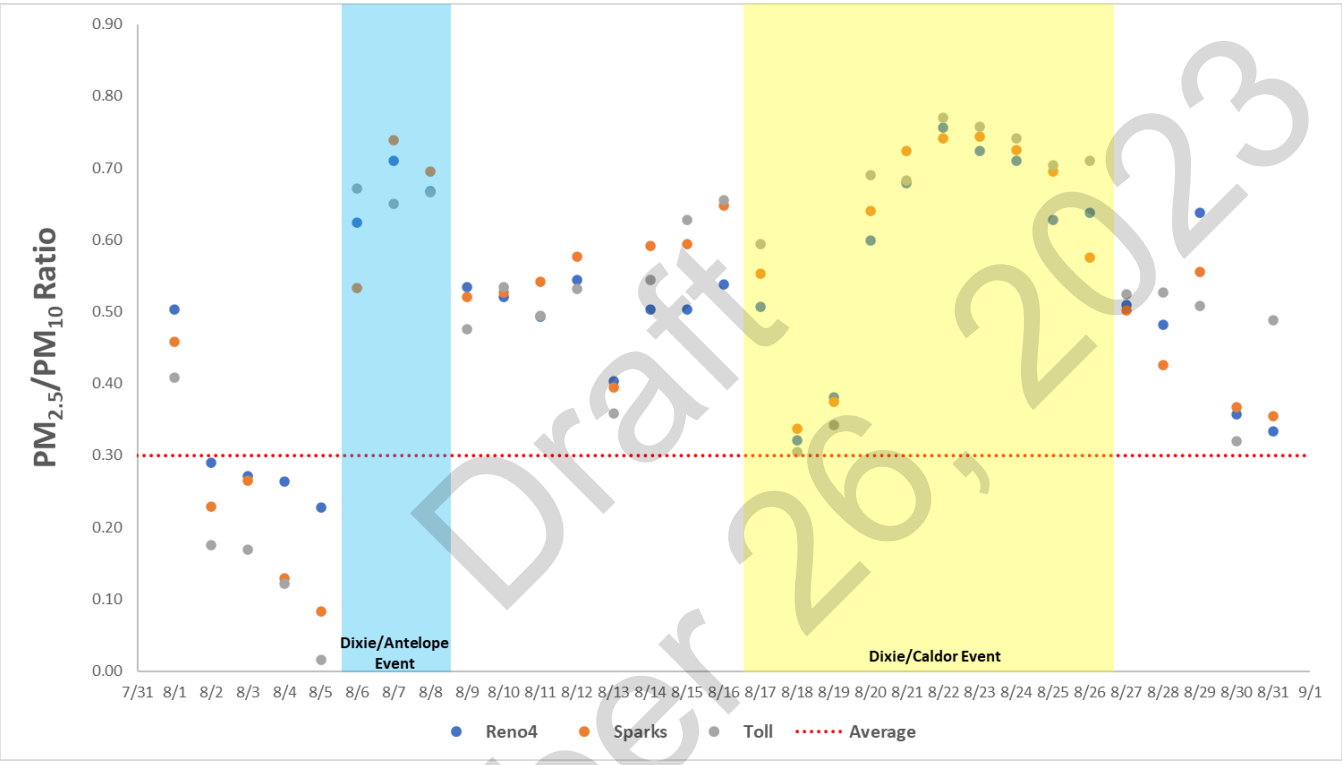
Reno4			
	24-Hour Average ($\mu g/m^3$)		
Date	$PM_{2.5}$	PM_{10}	$PM_{2.5}/PM_{10}$
8/13/2021	24.6	61	0.40
8/14/2021	44.3	88	0.50
8/15/2021	50.3	100	0.50
8/16/2021	82.9	154	0.54
8/17/2021	77.1	152	0.51
8/18/2021	23.4	73	0.32
8/19/2021	16	42	0.38
8/20/2021	76.7	128	0.60
8/21/2021	135.8	200	0.68
8/22/2021	158.9	210	0.76
8/23/2021	220.1	304	0.72
8/24/2021	165.5	233	0.71
8/25/2021	102.9	164	0.63
8/26/2021	67.6	106	0.64
8/27/2021	39.2	77	0.51
8/28/2021	32.3	67	0.48
8/29/2021	47.8	75	0.64
8/30/2021	15	42	0.36

Table 4-4: $PM_{2.5}/PM_{10}$ Ratios at Sparks

Sparks			
	24-Hour Average (µg/m³)		
Date	$PM_{2.5}$	PM_{10}	$PM_{2.5}/PM_{10}$
8/13/2021	30	76	0.39
8/14/2021	55.6	94	0.59
8/15/2021	56.4	95	0.59
8/16/2021	82.2	127	0.65
8/17/2021	68	123	0.55
8/18/2021	20.2	60	0.34
8/19/2021	15	40	0.38
8/20/2021	80	125	0.64
8/21/2021	137.6	190	0.72
8/22/2021	102.3	138	0.74
8/23/2021	159.2	214	0.74
8/24/2021	121.9	168	0.73
8/25/2021	94.6	136	0.70
8/26/2021	47.8	83	0.58
8/27/2021	39.1	78	0.50
8/28/2021	26.4	62	0.43
8/29/2021	32.2	58	0.56
8/30/2021	16.5	45	0.37

The $PM_{2.5}/PM_{10}$ ratio during the Dixie/Caldor 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. As can be seen in Tables 4-2 through 4-4, the ratios on the days of the exceedances were at least twice what would be expected. This supports AQMD's position that the exceedances were caused by wildfire smoke. Figure 4-36 illustrates this.

Figure 4-36: $PM_{2.5}/PM_{10}$ Ratios throughout August 2021



4.3.3 $PM_{2.5}$/CO Ratio

It has been documented that ambient $PM_{2.5}$ and CO concentrations are correlated in the presence of wildfire smoke in urban areas.[1] AQMD completed a linear regression analysis that compared the $PM_{2.5}$ 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^2) that resulted from the linear regression on the non-event day is shown below.

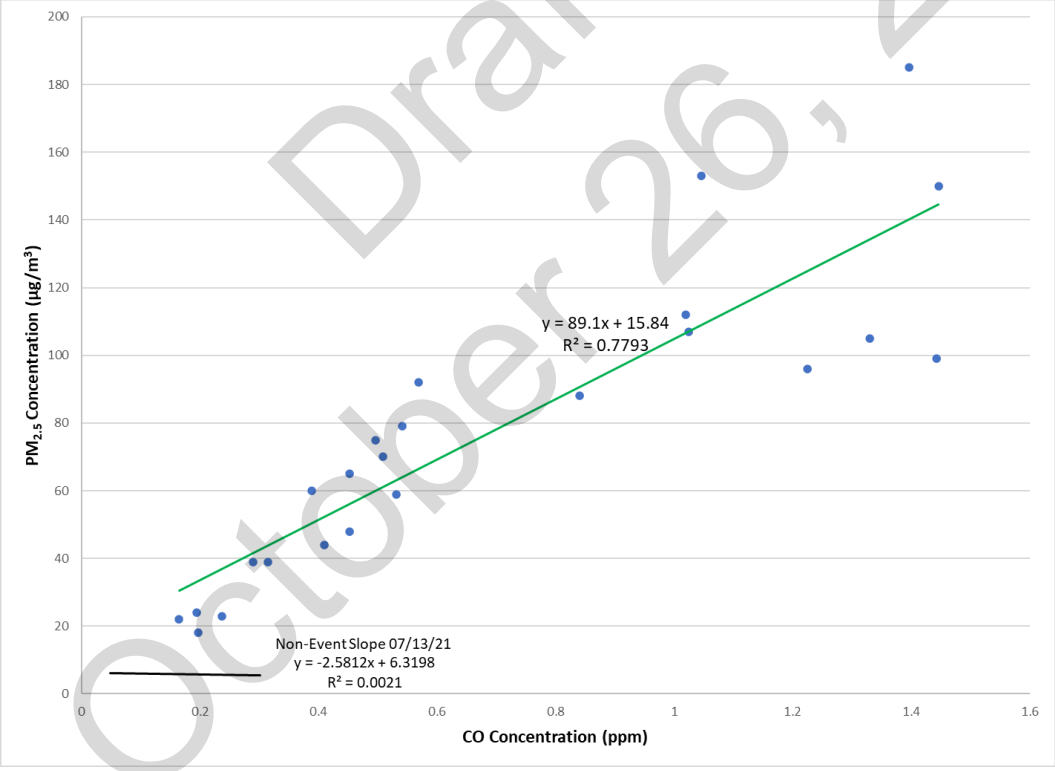
Non-Event Slopes (July 13, 2021)

Reno4: $y = -2.5812x + 6.3198$ $\quad R^2 = 0.0021$

Sparks: $y = 2.6136x + 3.017$ $\quad R^2 = 0.0028$

As can be seen in Figure 4-37 through 4-47, a strong correlation was found on the days of the exceedances between $PM_{2.5}$ and CO concentrations. The coefficients of determination for the exceedance days ranged from 0.7127 at a minimum to 0.982 at a maximum. Even at the minimum, this analysis signals a presence of wildfire smoke on the days of the exceedances.

Figure 4-37: Hourly $PM_{2.5}$/CO at Reno4 on August 17, 2021



[1] Jaffe, D. A., Schnieder, B., and Inouye, D.: Technical note: Use of $PM_{2.5}$ 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 4-38: Hourly $PM_{2.5}$/CO at Reno4 on August 20, 2021

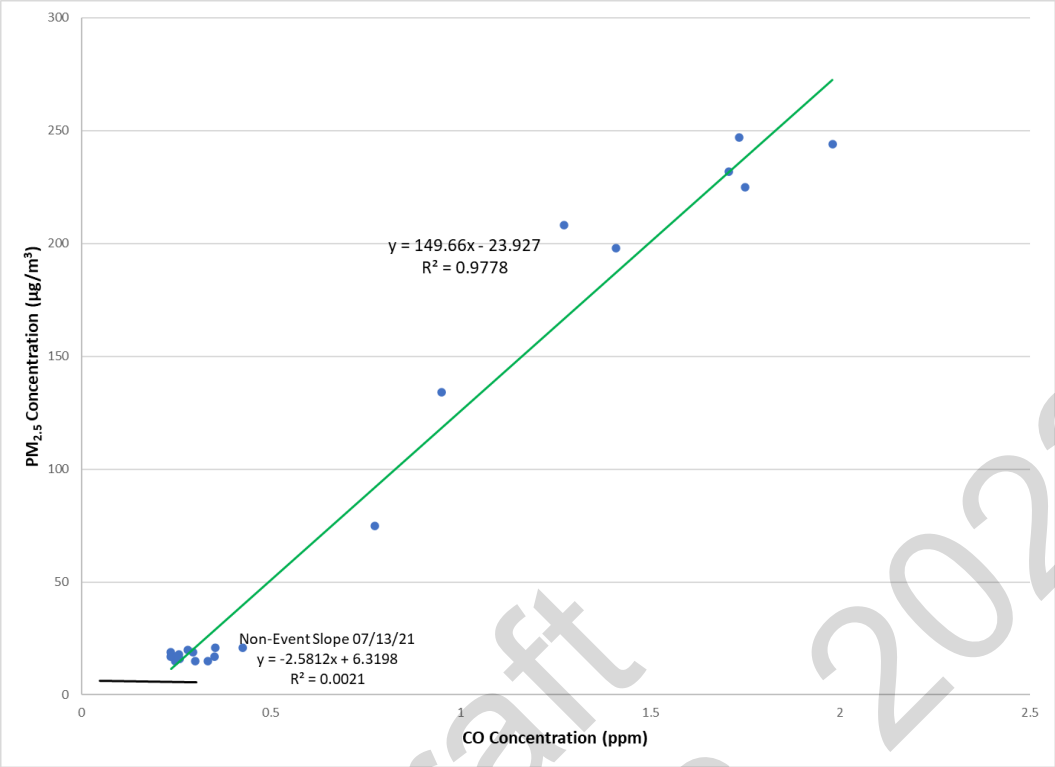


Figure 4-39: Hourly $PM_{2.5}$/CO at Reno4 on August 21, 2021

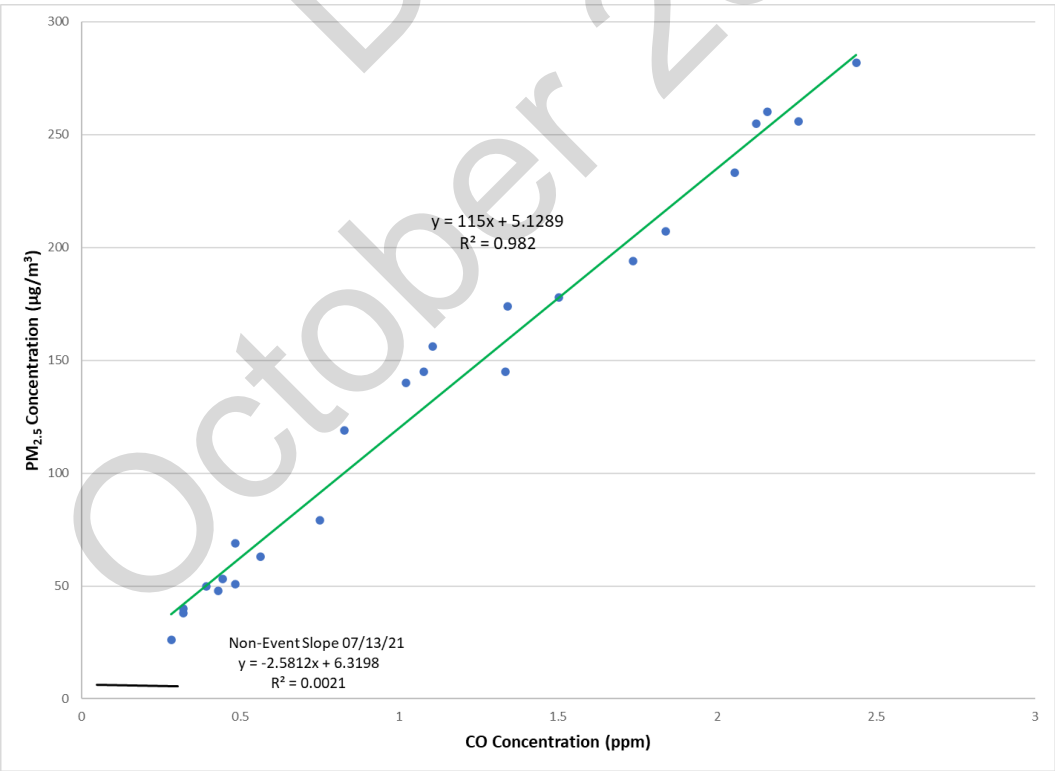


Figure 4-40: Hourly $PM_{2.5}$/CO at Sparks on August 21, 2021

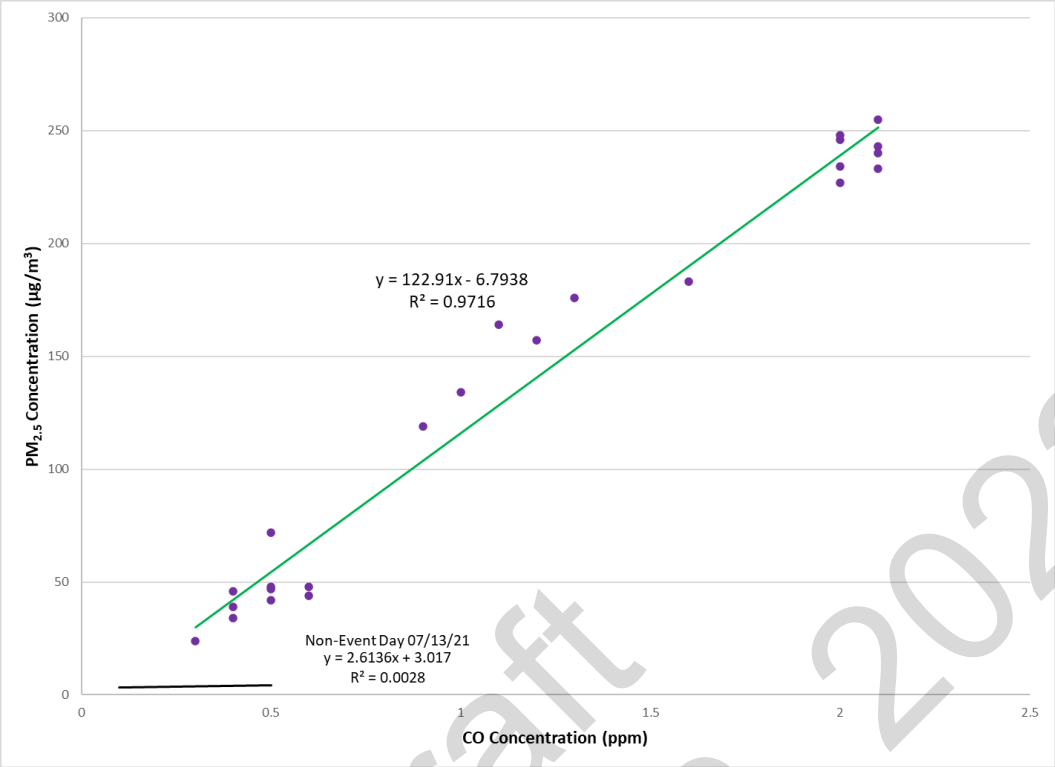


Figure 4-41: Hourly $PM_{2.5}$/CO at Reno4 on August 22, 2021

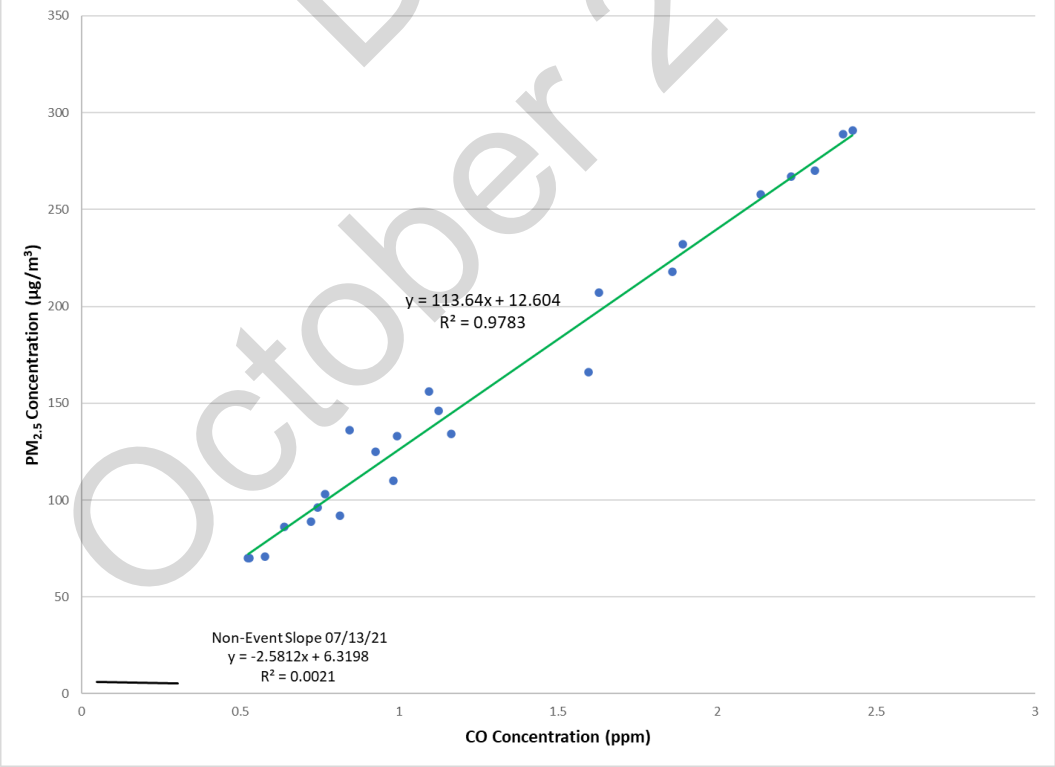


Figure 4-42: Hourly $PM_{2.5}$/CO at Reno4 on August 23, 2021

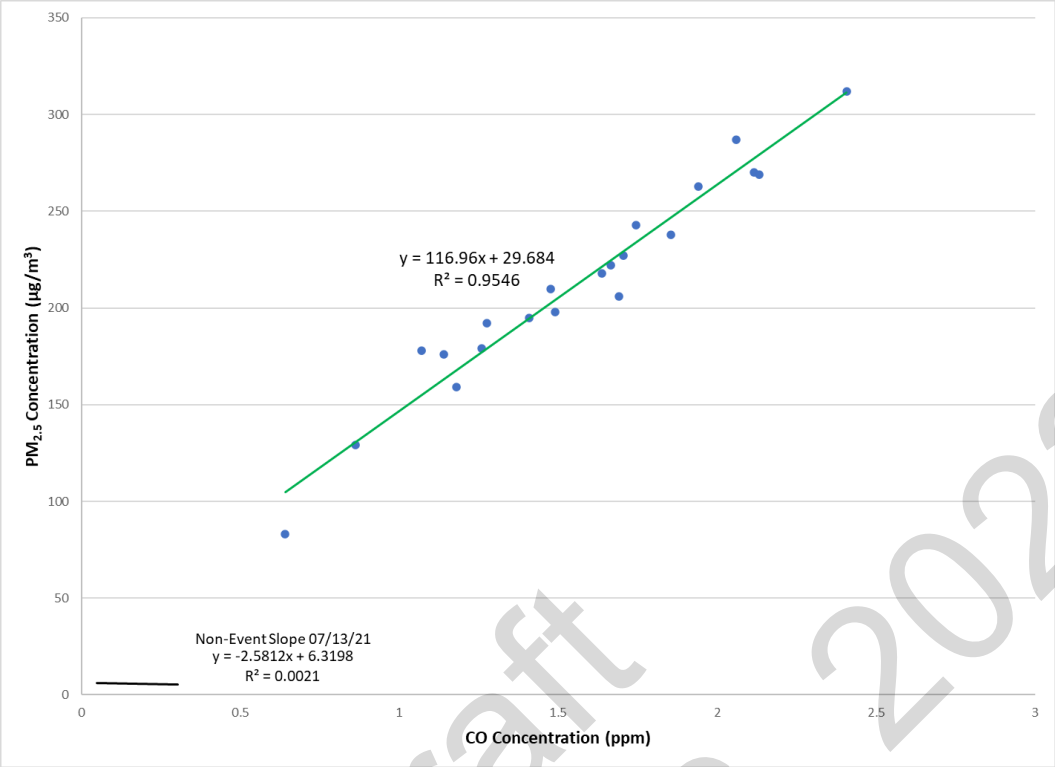


Figure 4-43: Hourly $PM_{2.5}$/CO at Sparks on August 23, 2021

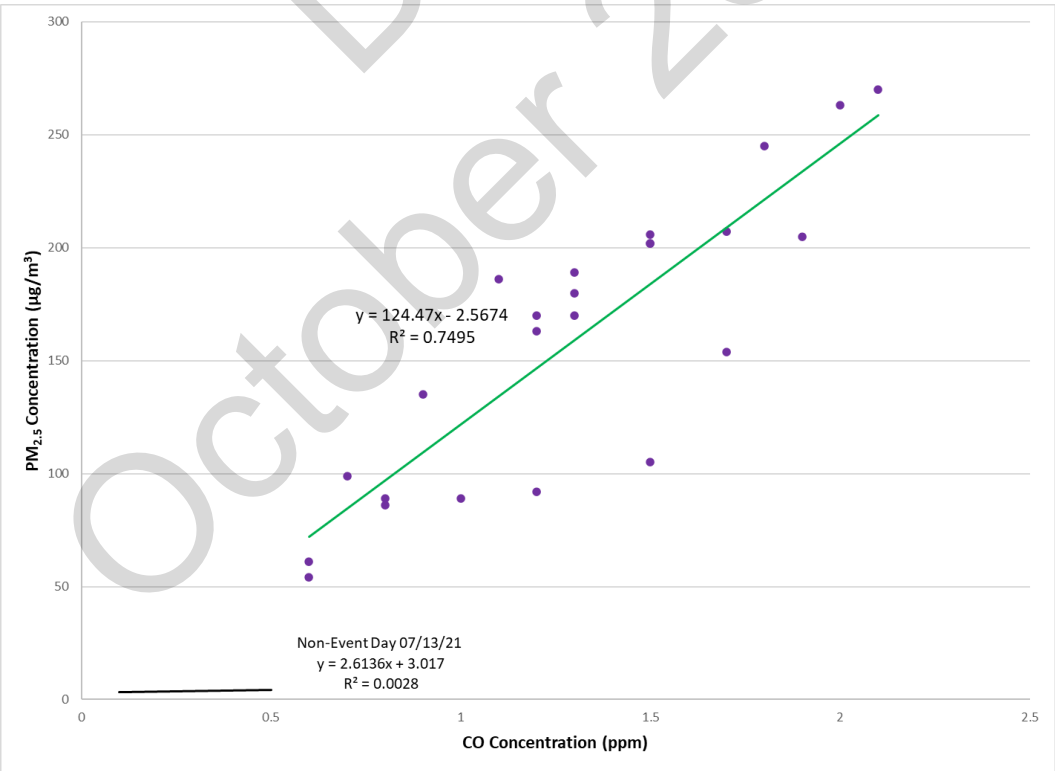


Figure 4-44: Hourly $PM_{2.5}$/CO at Reno4 on August 24, 2021

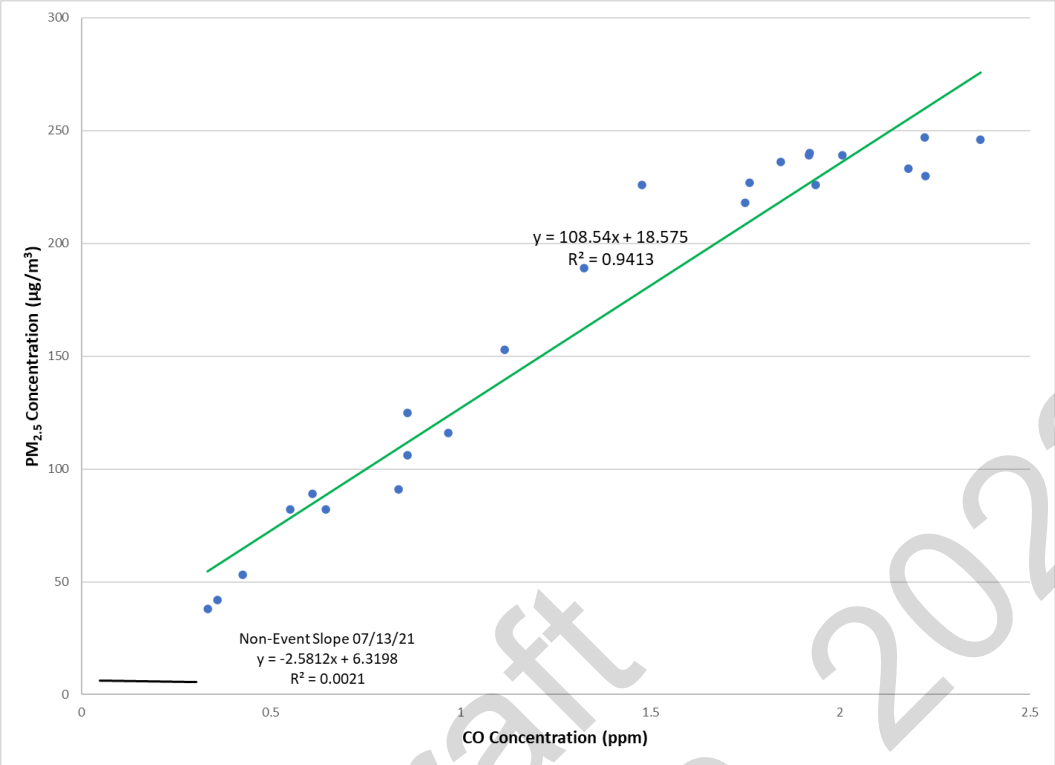


Figure 4-45: Hourly $PM_{2.5}$/CO at Sparks on August 24, 2021

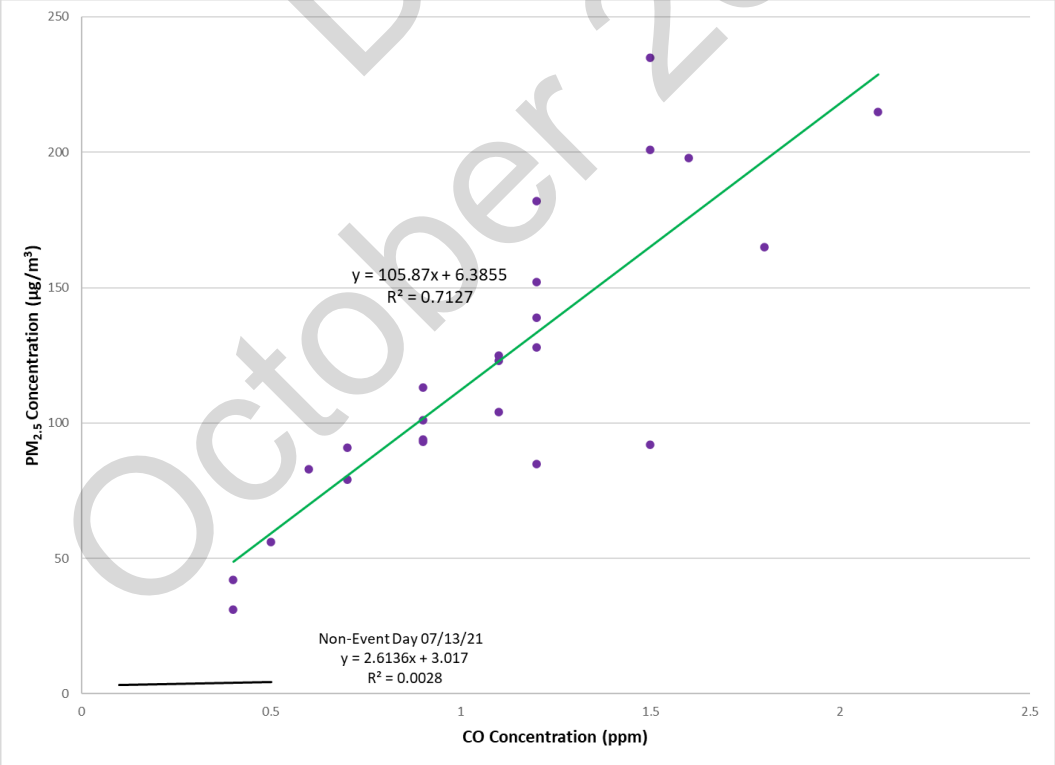


Figure 4-46: Hourly $PM_{2.5}$/CO at Reno4 on August 25, 2021

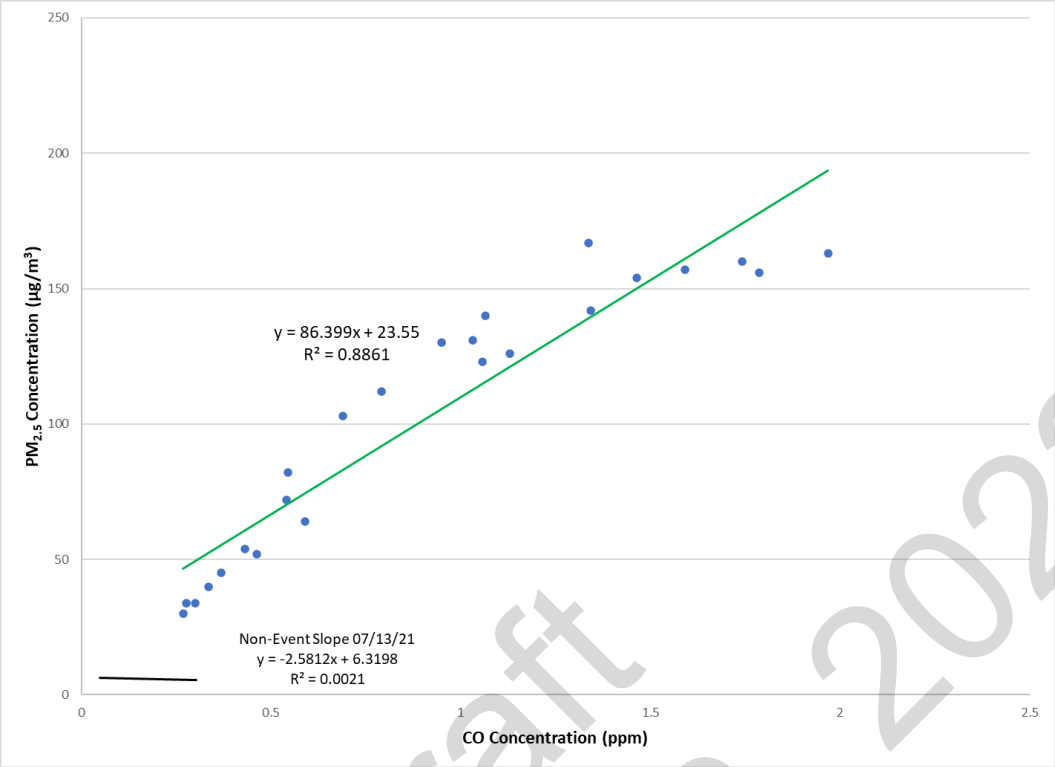
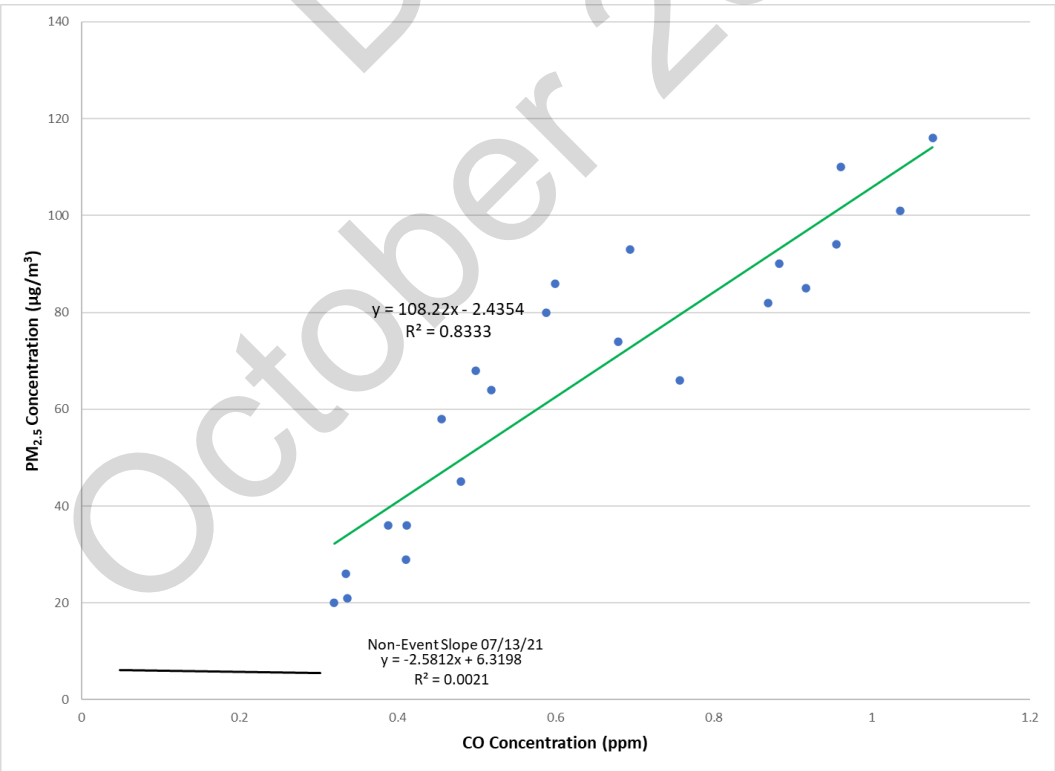


Figure 4-47: Hourly $PM_{2.5}$/CO at Reno4 on August 26, 2021



4.3.4 PM_{10}/CO Ratio

When an area has the presence of wildfire smoke, the CO and PM_{10} concentrations should also be correlated, although not as strongly correlated as CO and $PM_{2.5}$. Similar to section 4.3.3, a linear regression analysis was completed with CO and PM_{10} 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 4-48 through 4-58, a strong correlation was found on the days of the exceedances between PM_{10} and CO concentration. The coefficients of determination on the exceedance days ranged from 0.7183 to 0.9734. Even at the minimum, this analysis signals a presence of wildfire smoke on the days of the exceedances.

Figure 4-48: Hourly PM_{10}/CO at Reno4 on August 17, 2021

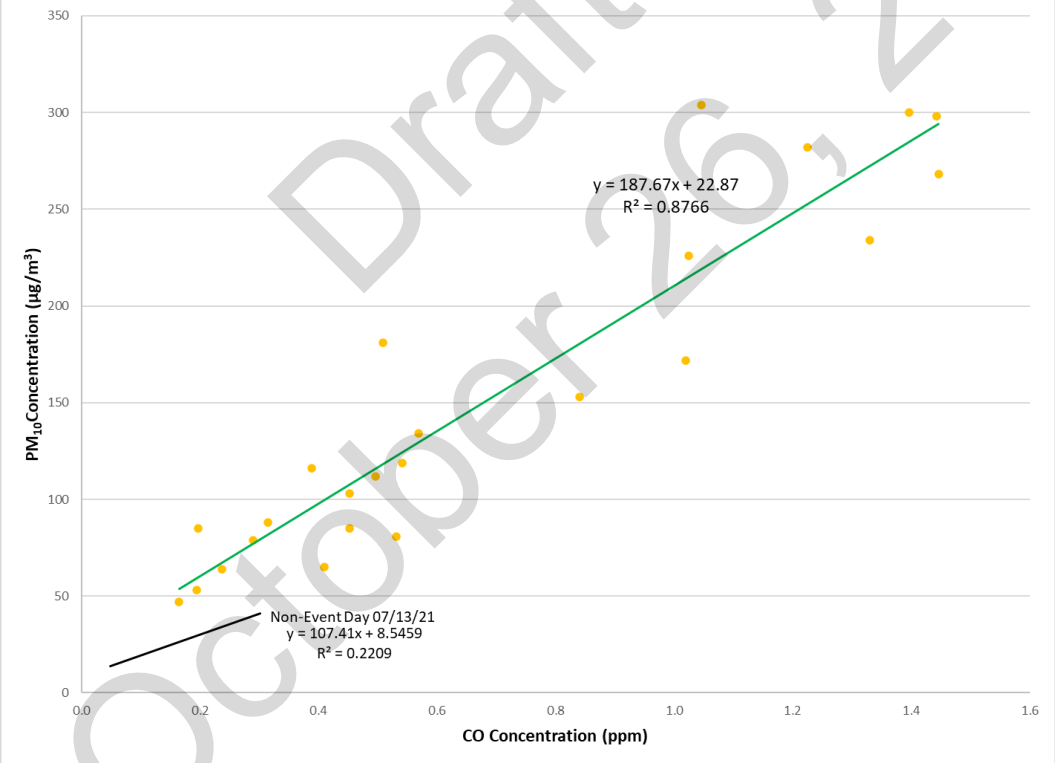


Figure 4-49: Hourly PM_{10}/CO at Reno4 on August 20, 2021

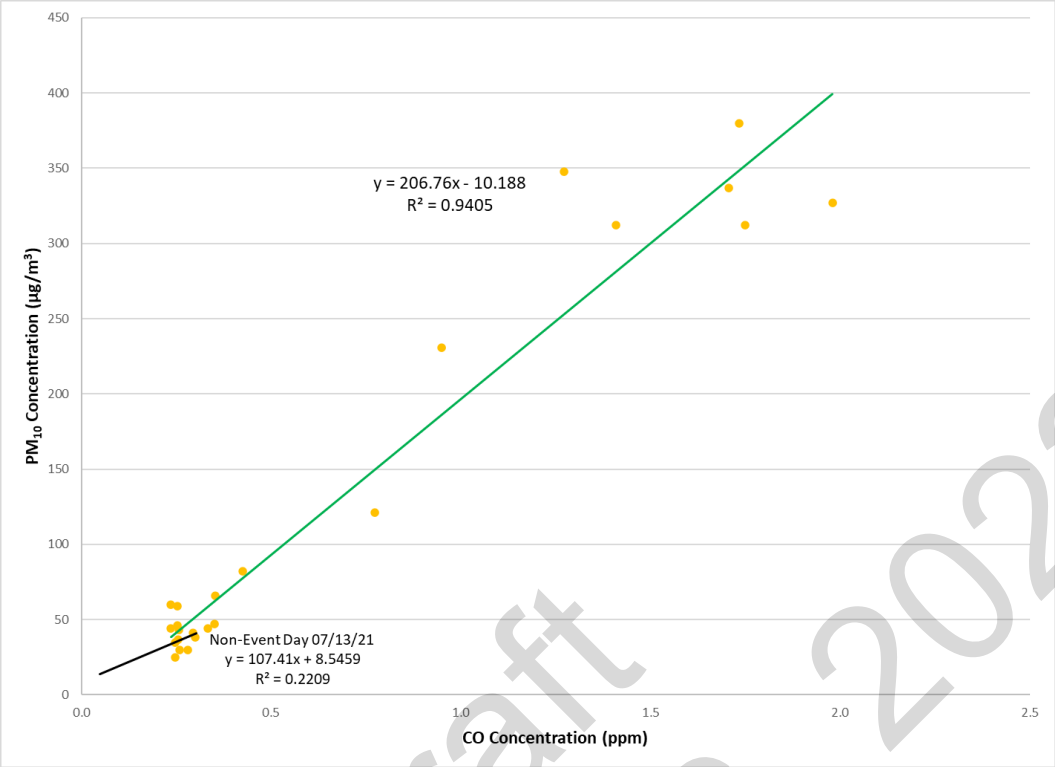


Figure 4-50: Hourly PM_{10}/CO at Reno4 on August 21, 2021

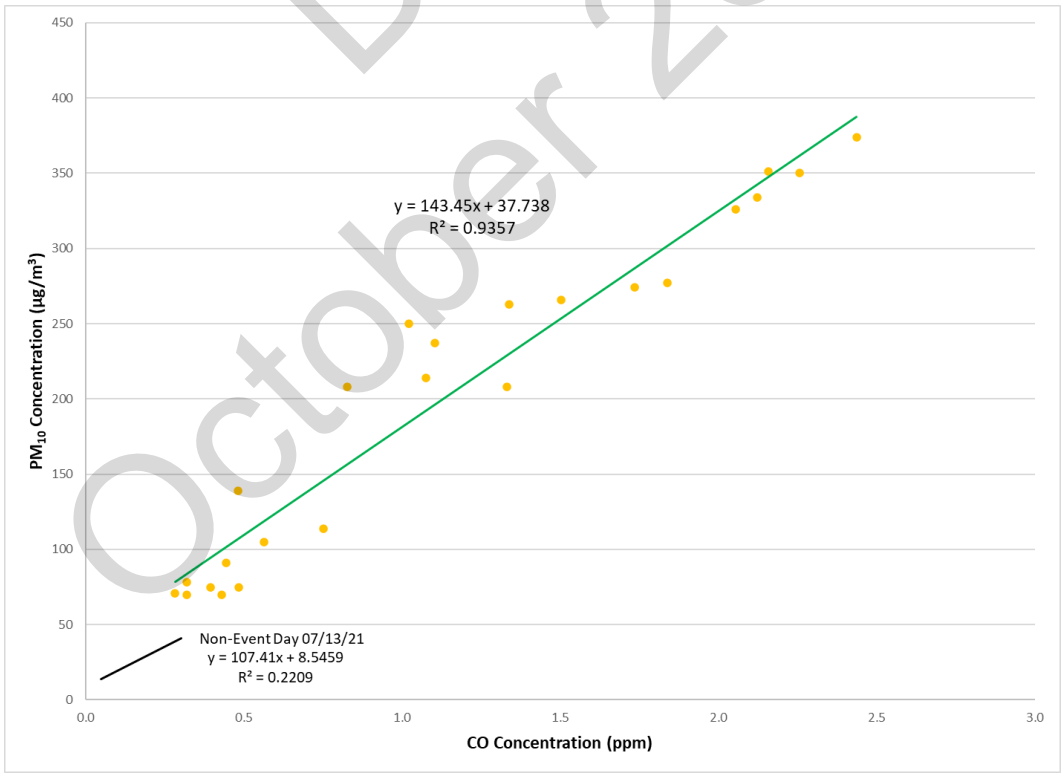


Figure 4-51: Hourly PM_{10}/CO at Sparks on August 21, 2021

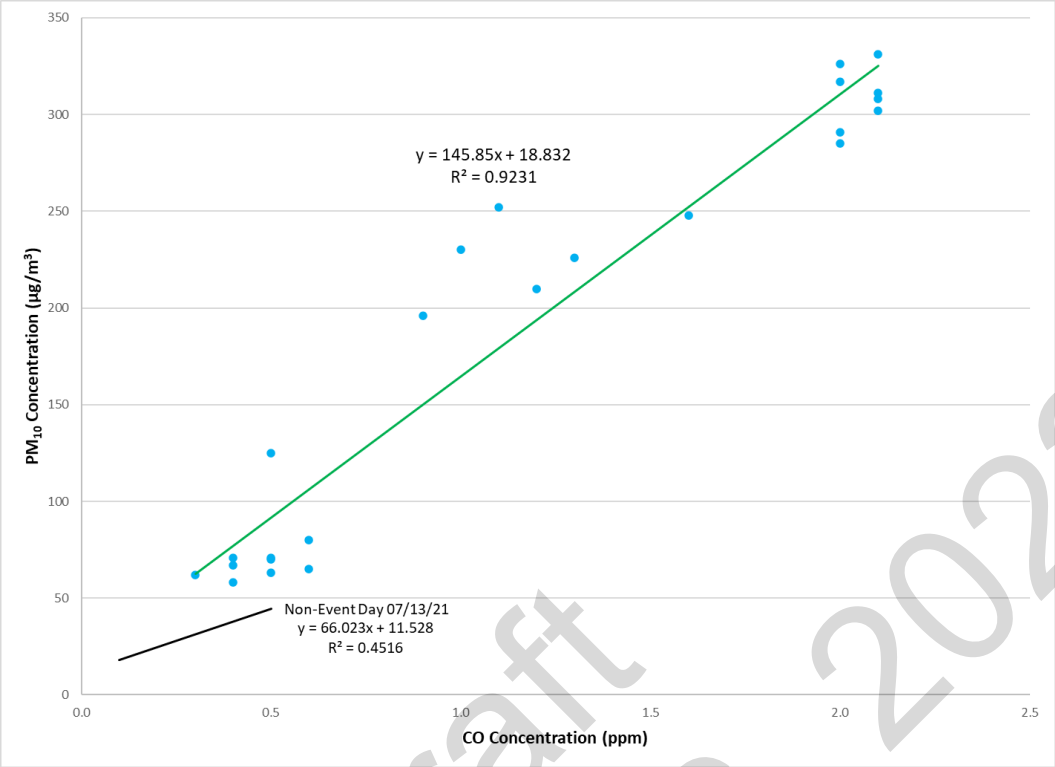


Figure 4-52: Hourly PM_{10}/CO at Reno4 on August 22, 2021

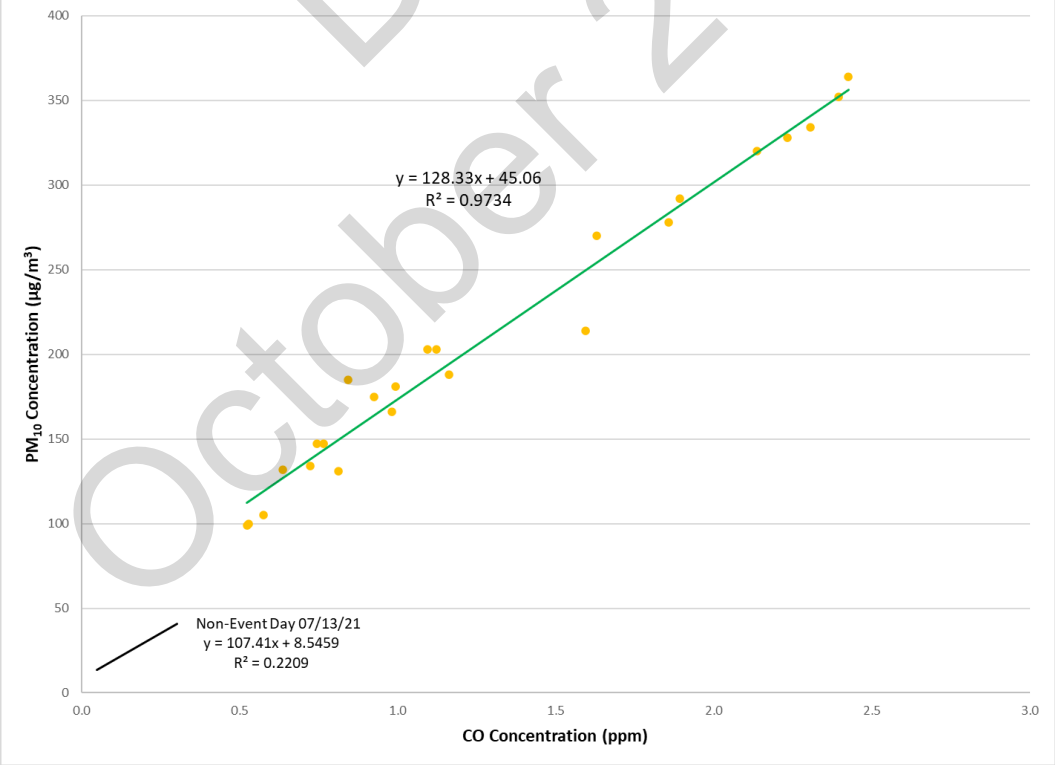


Figure 4-53: Hourly PM_{10}/CO at Reno4 on August 23, 2021

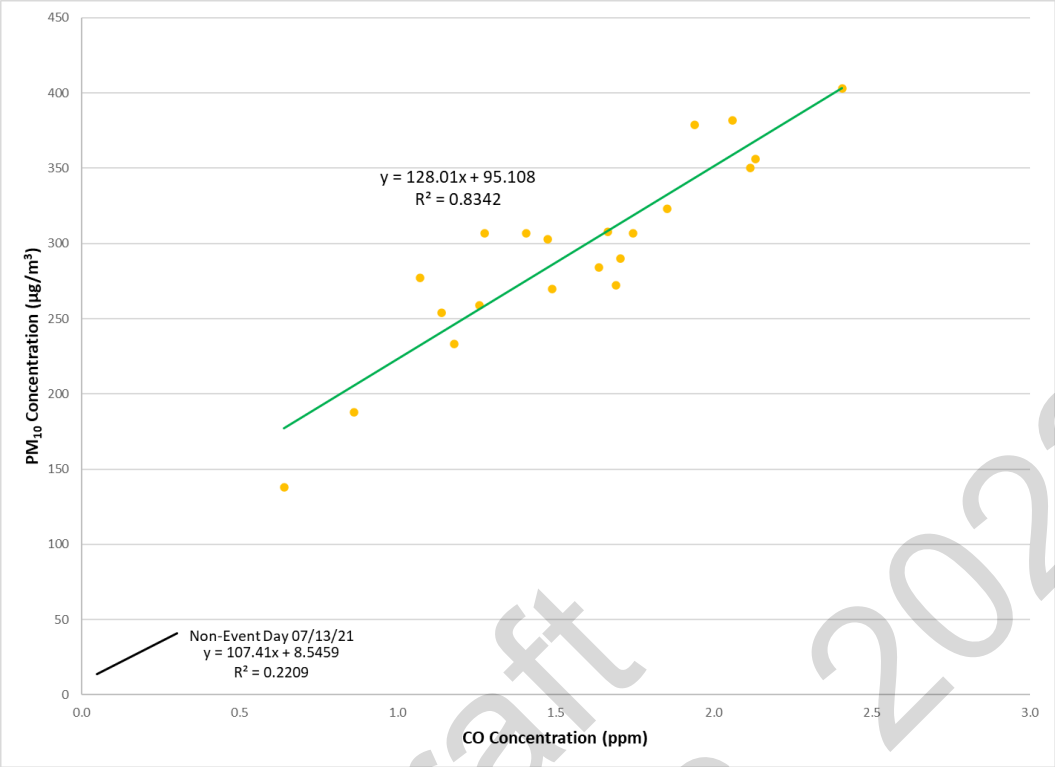


Figure 4-54: Hourly PM_{10}/CO at Sparks on August 23, 2021

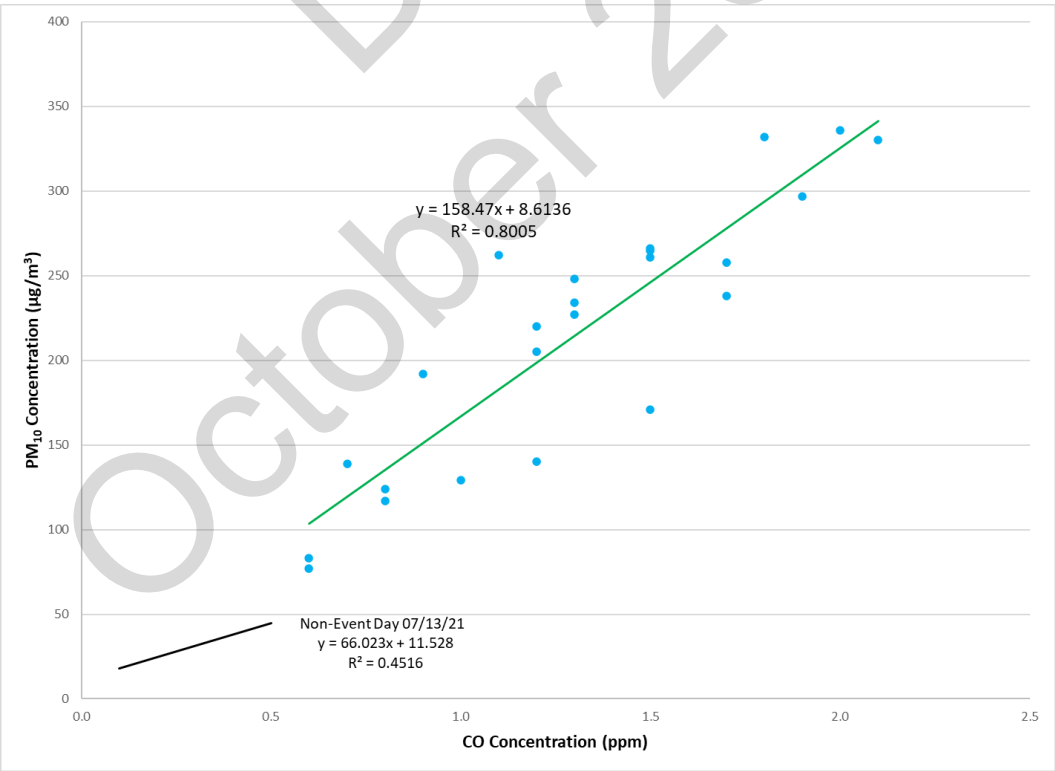


Figure 4-55: Hourly PM_{10}/CO at Reno4 on August 24, 2021

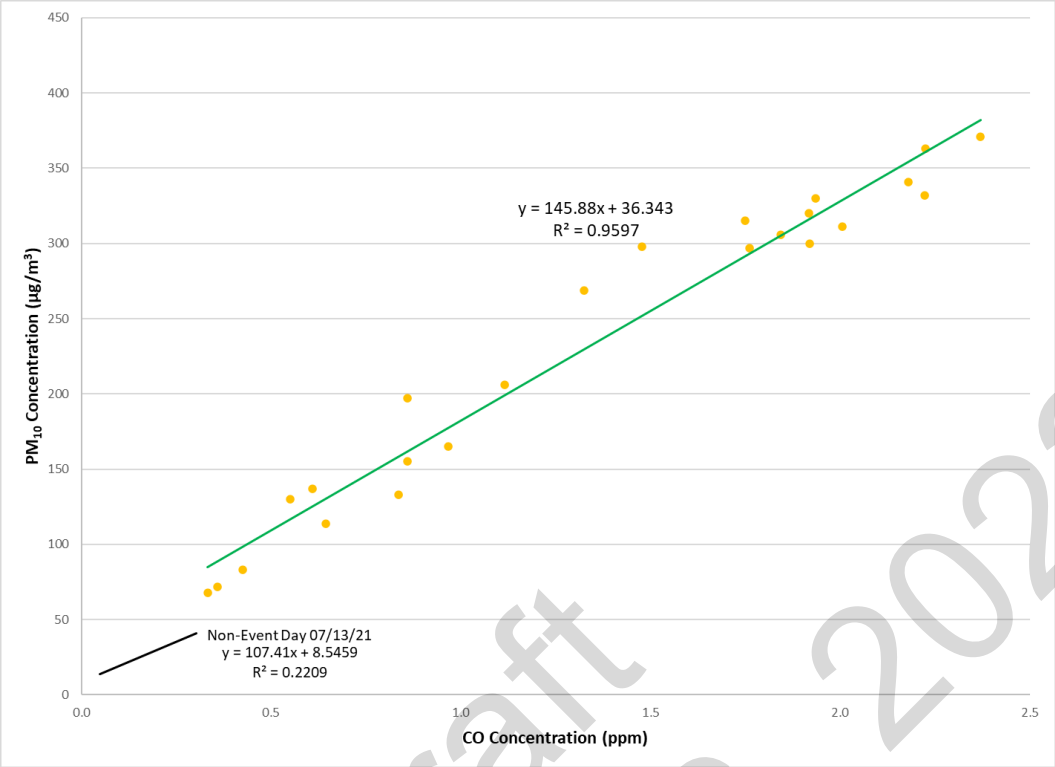


Figure 4-56: Hourly PM_{10}/CO at Sparks on August 24, 2021

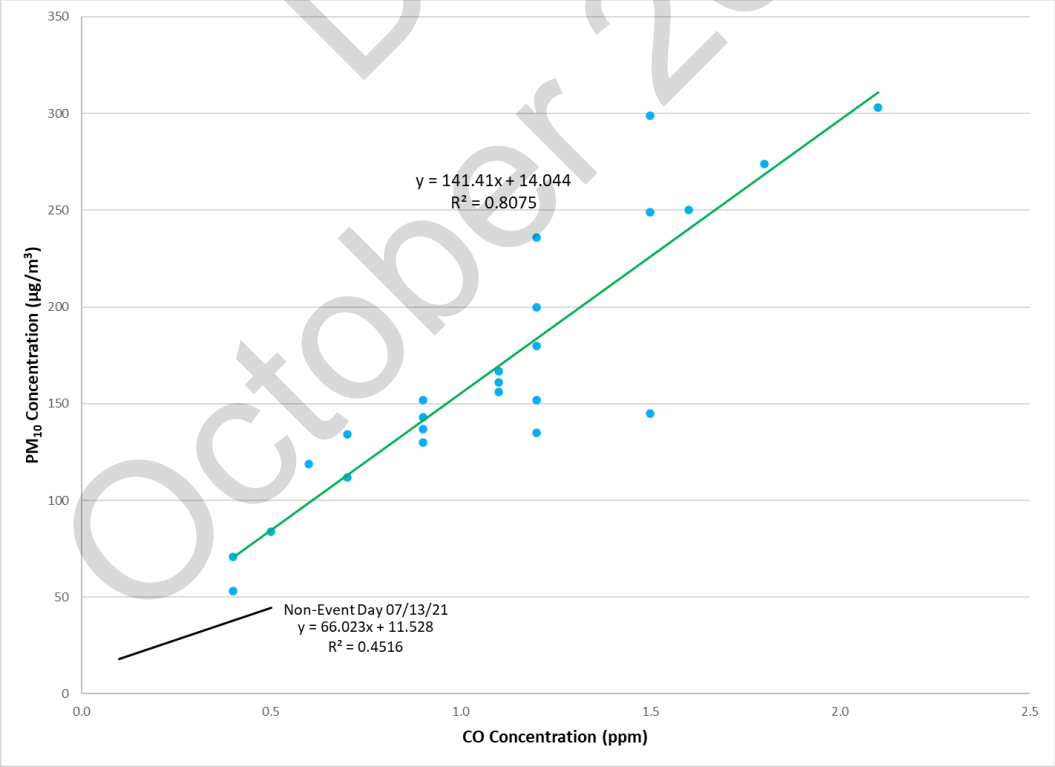


Figure 4-57: Hourly PM_{10}/CO at Reno4 on August 25, 2021

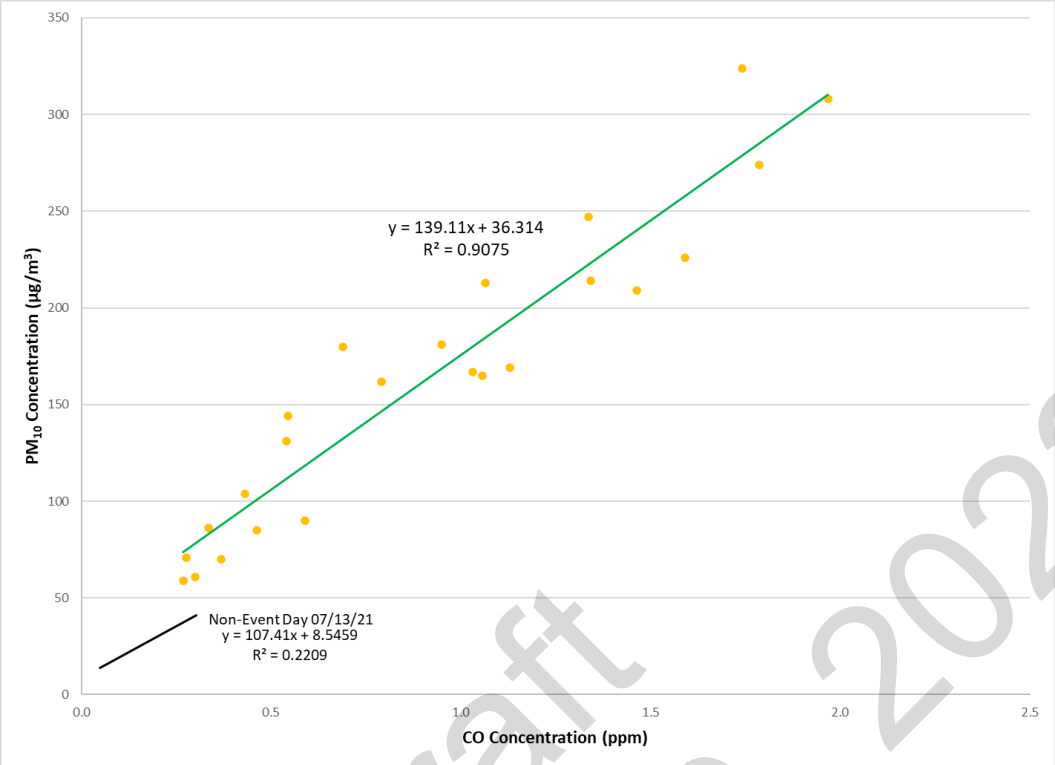
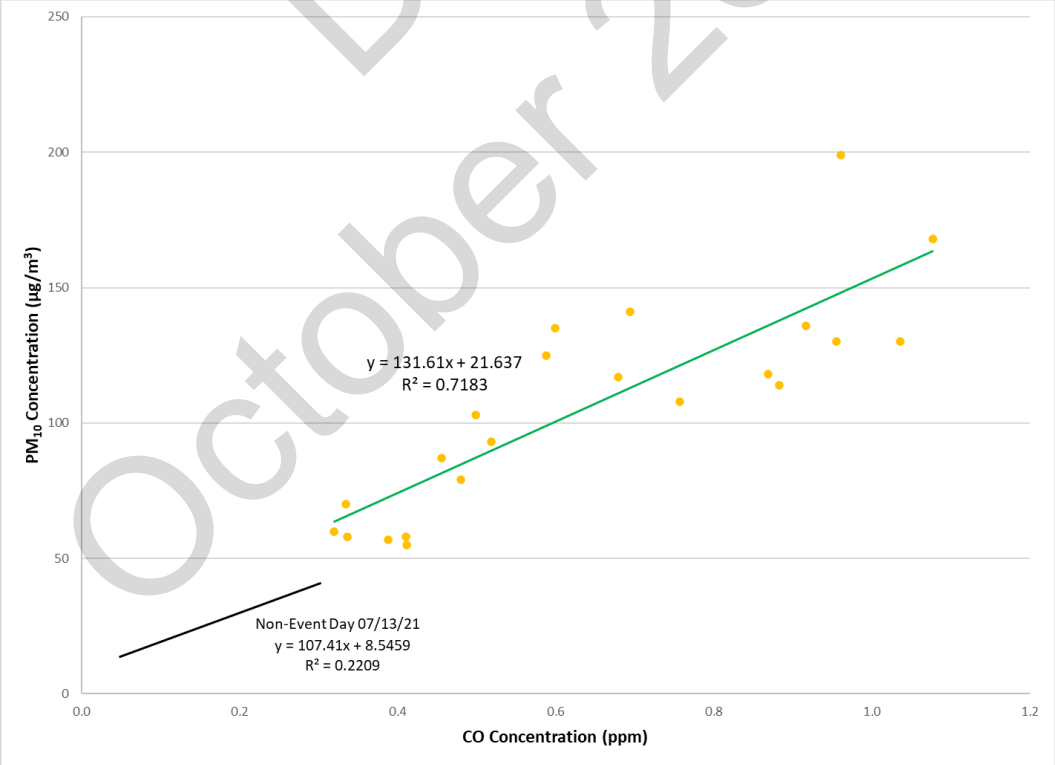


Figure 4-58: Hourly PM_{10}/CO at Reno4 on August 26, 2021



4.4 Trajectory Analysis

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_{10} concentration in $\mu g/m^3$ for each air monitoring site in the region.

4.4.1 Monitoring Site Analysis – Backward Trajectory

In order to accurately understand where the affected airmass originated from, AQMD completed 24-hour backward trajectory HYSPLIT models from the affected PM_{10} 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 4-59: Backward Trajectory from Toll starting August 17, 2021 at 0000 PST

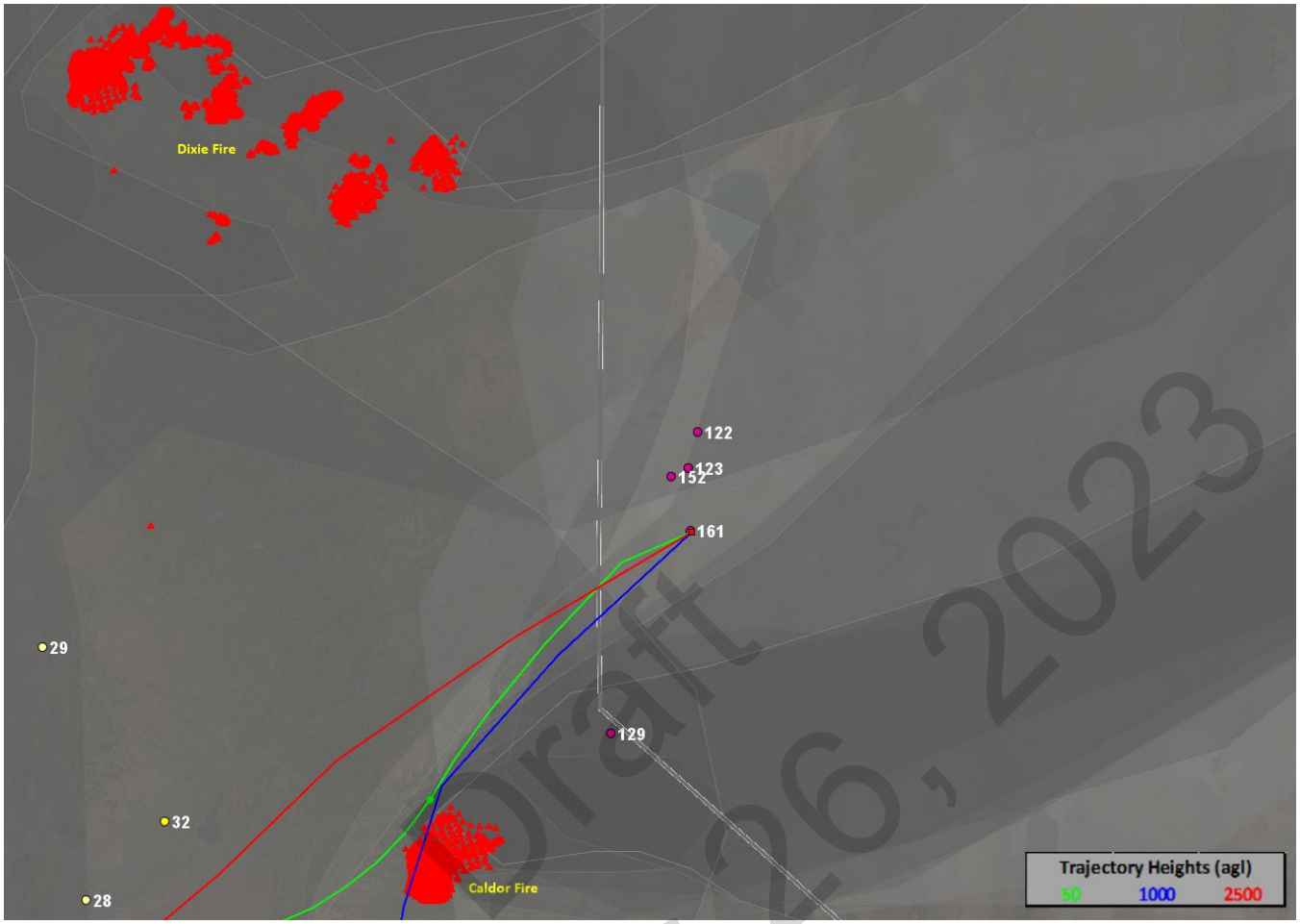


Figure 4-60: Backward Trajectory from Toll starting August 18, 2021 at 0000 PST

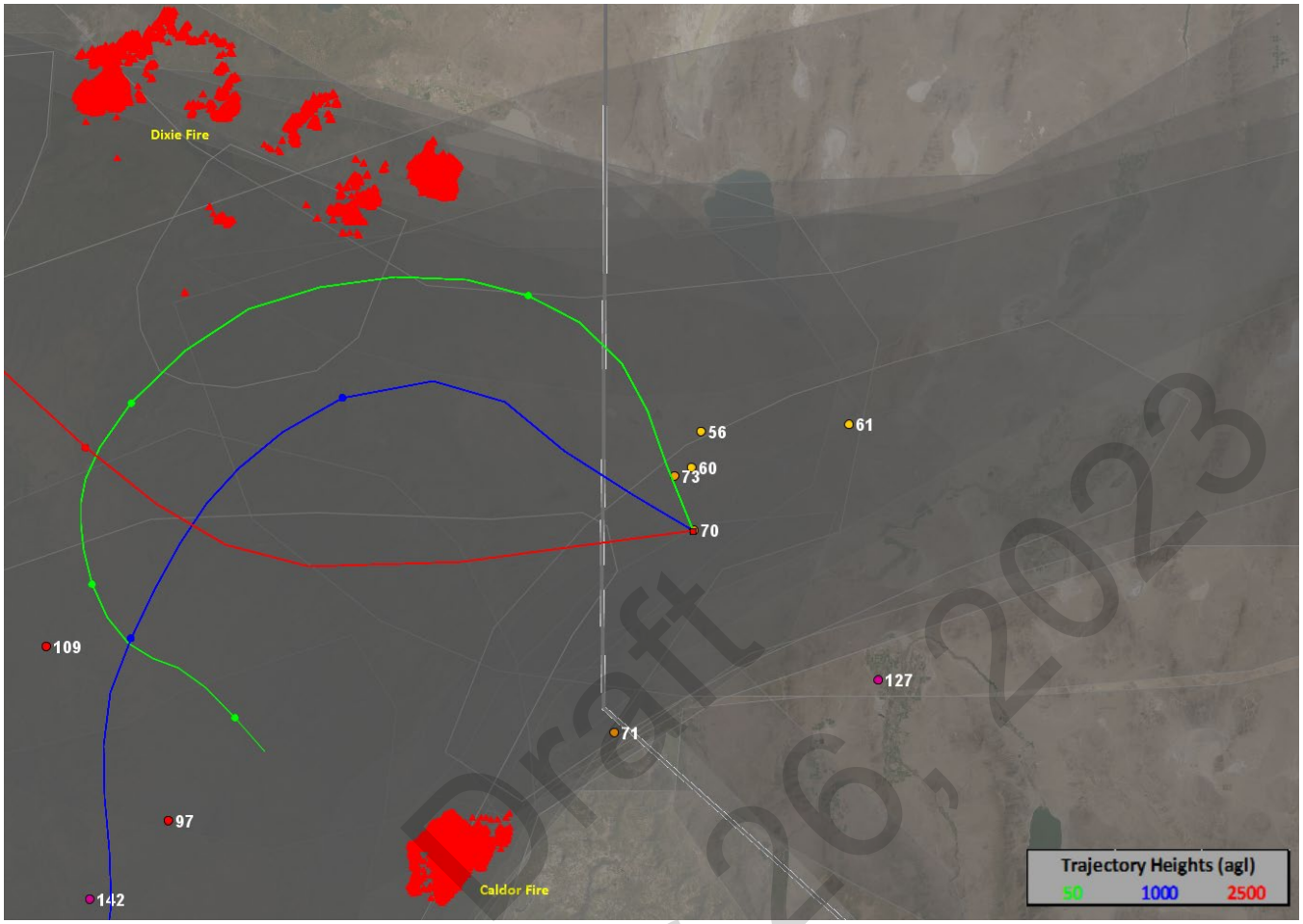


Figure 4-61: Backward Trajectory from Reno4 starting August 21, 2021 at 0000 PST

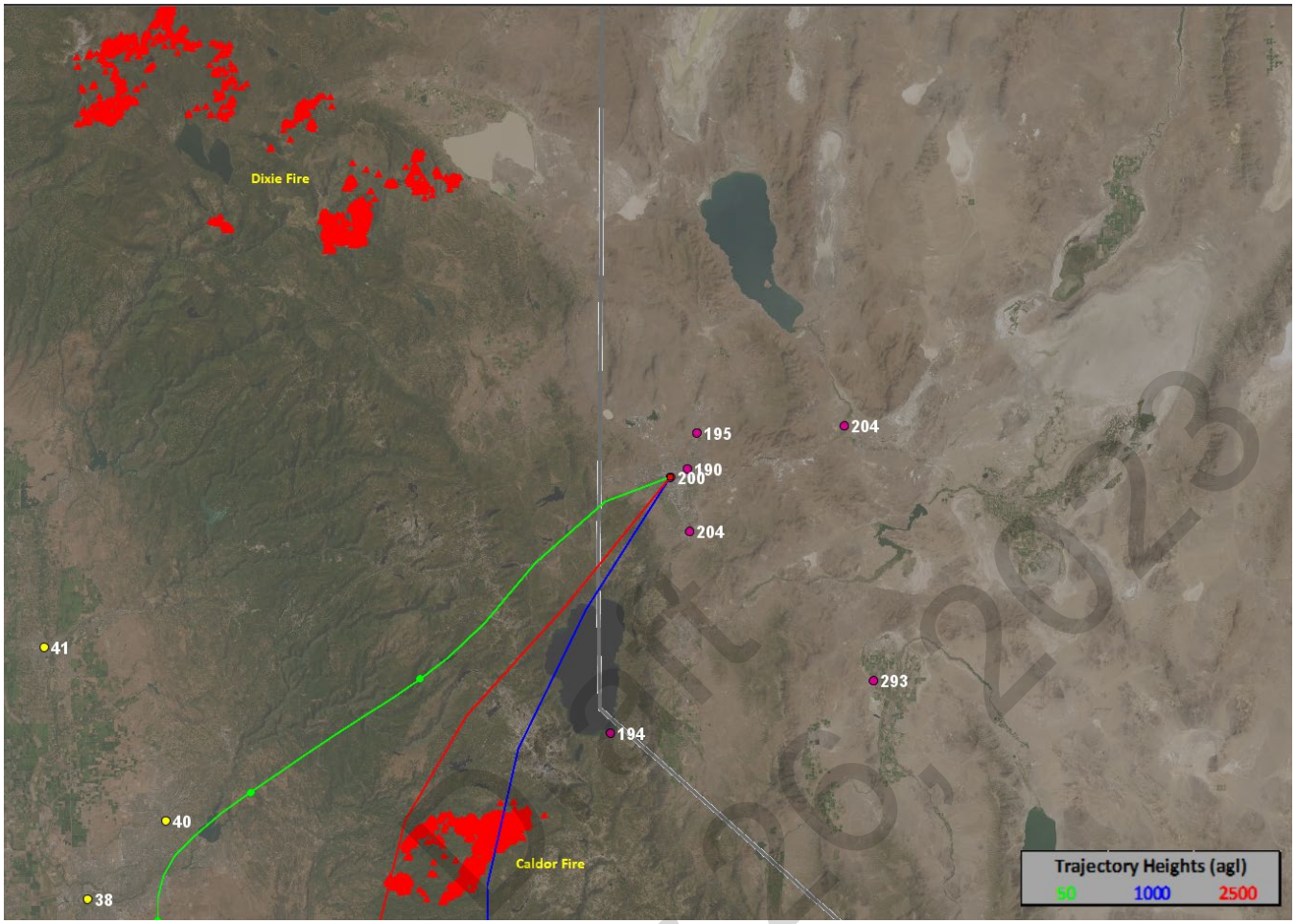


Figure 4-62: Backward Trajectory from Sparks starting August 21, 2021 at 0000 PST

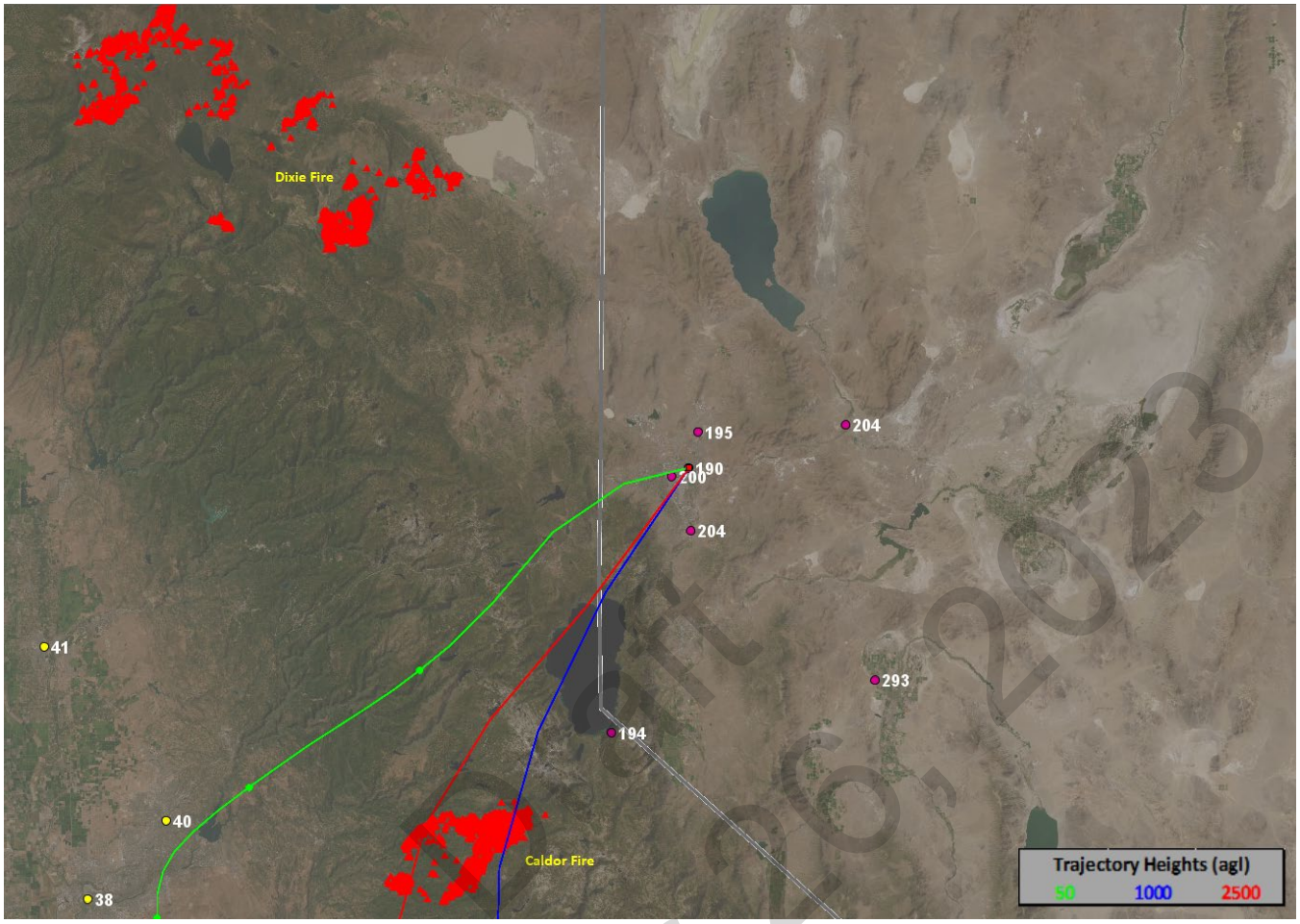


Figure 4-63: Backward Trajectory from Toll starting August 21, 2021 at 0000 PST

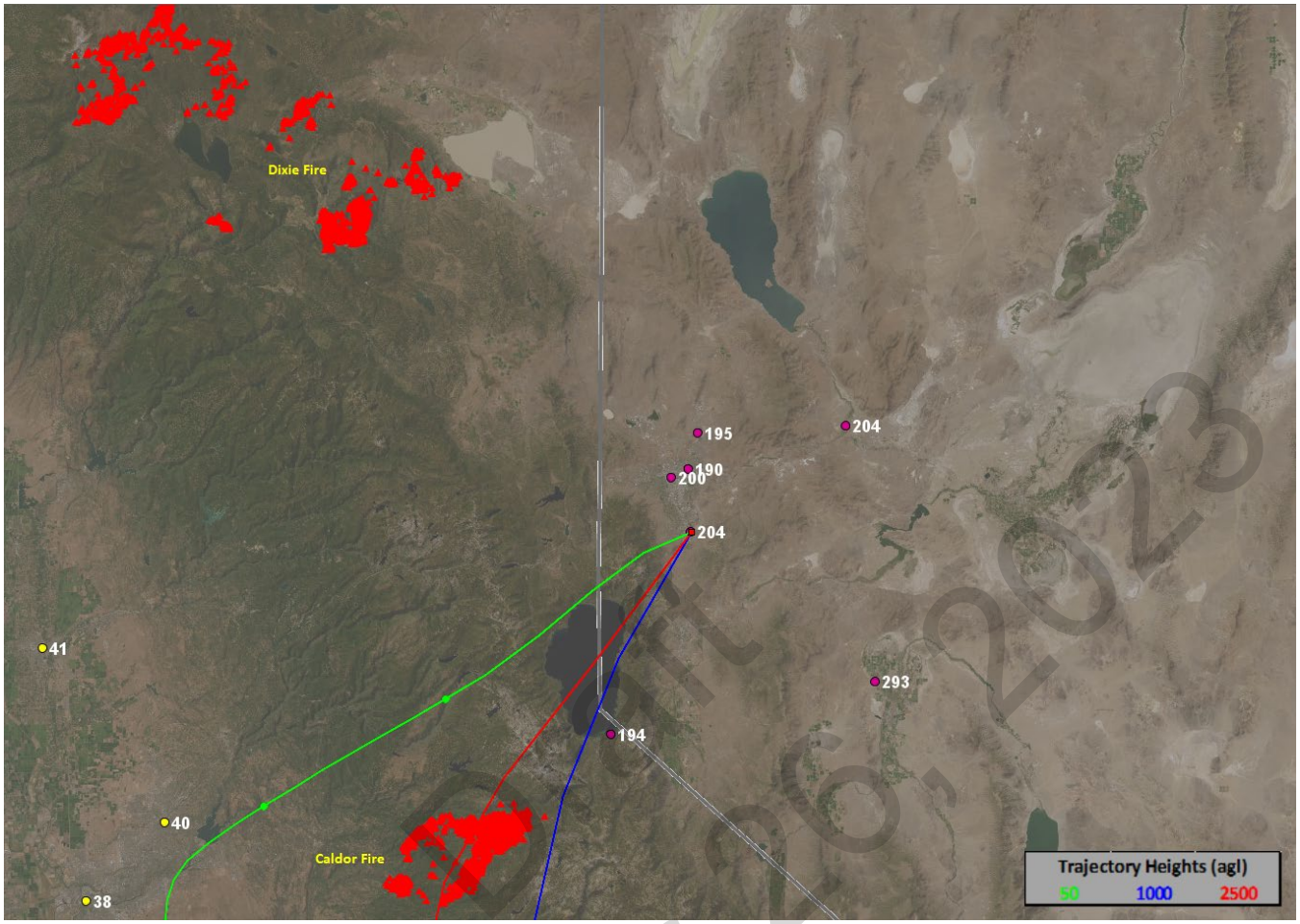


Figure 4-64: Backward Trajectory from Reno4 starting August 22, 2021 at 0000 PST

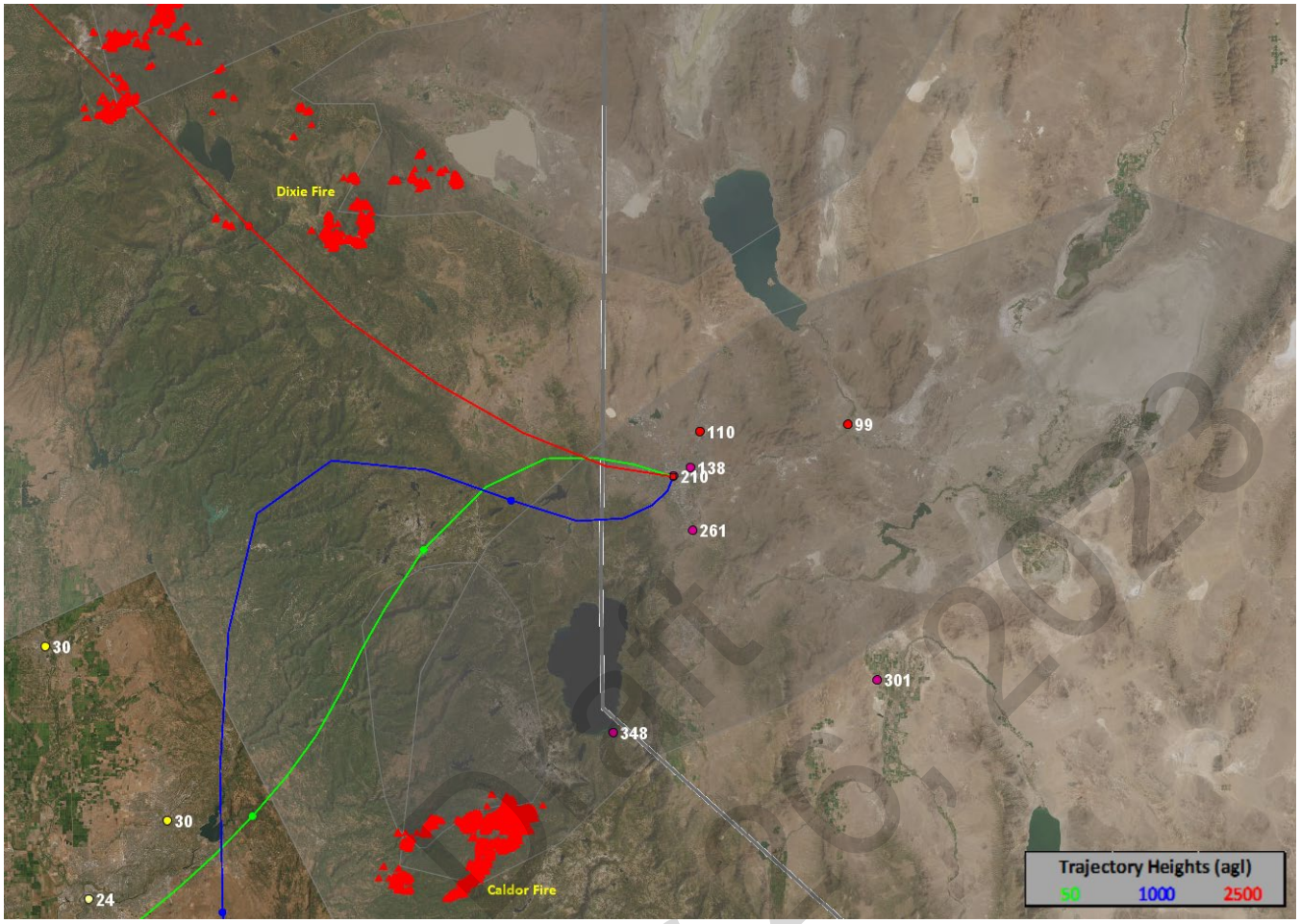


Figure 4-65: Backward Trajectory from Sparks starting August 22, 2021 at 0000 PST

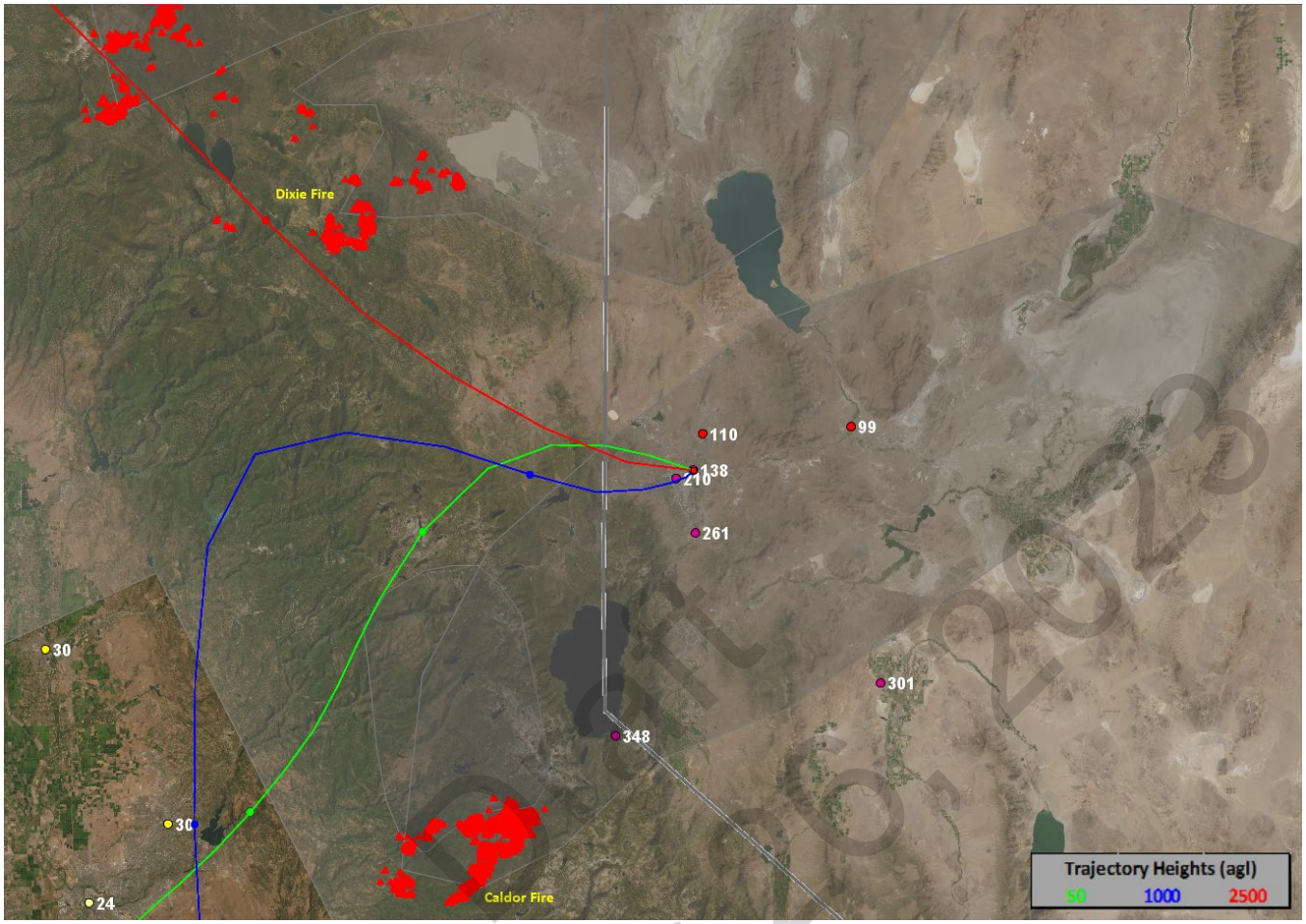


Figure 4-66: Backward Trajectory from Toll starting August 22, 2021 at 0000 PST

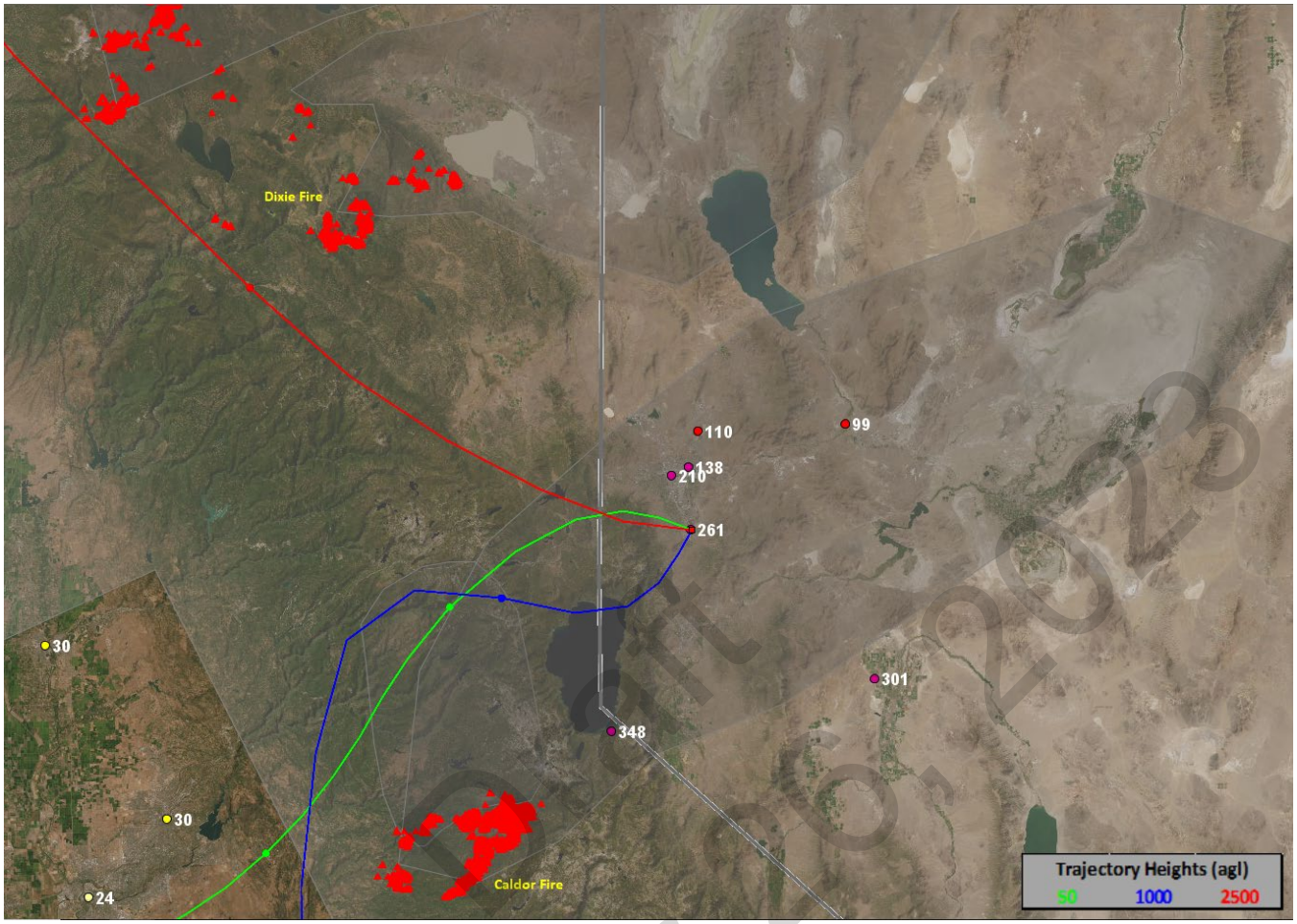


Figure 4-67: Backward Trajectory from Reno4 starting August 23, 2021 at 0000 PST

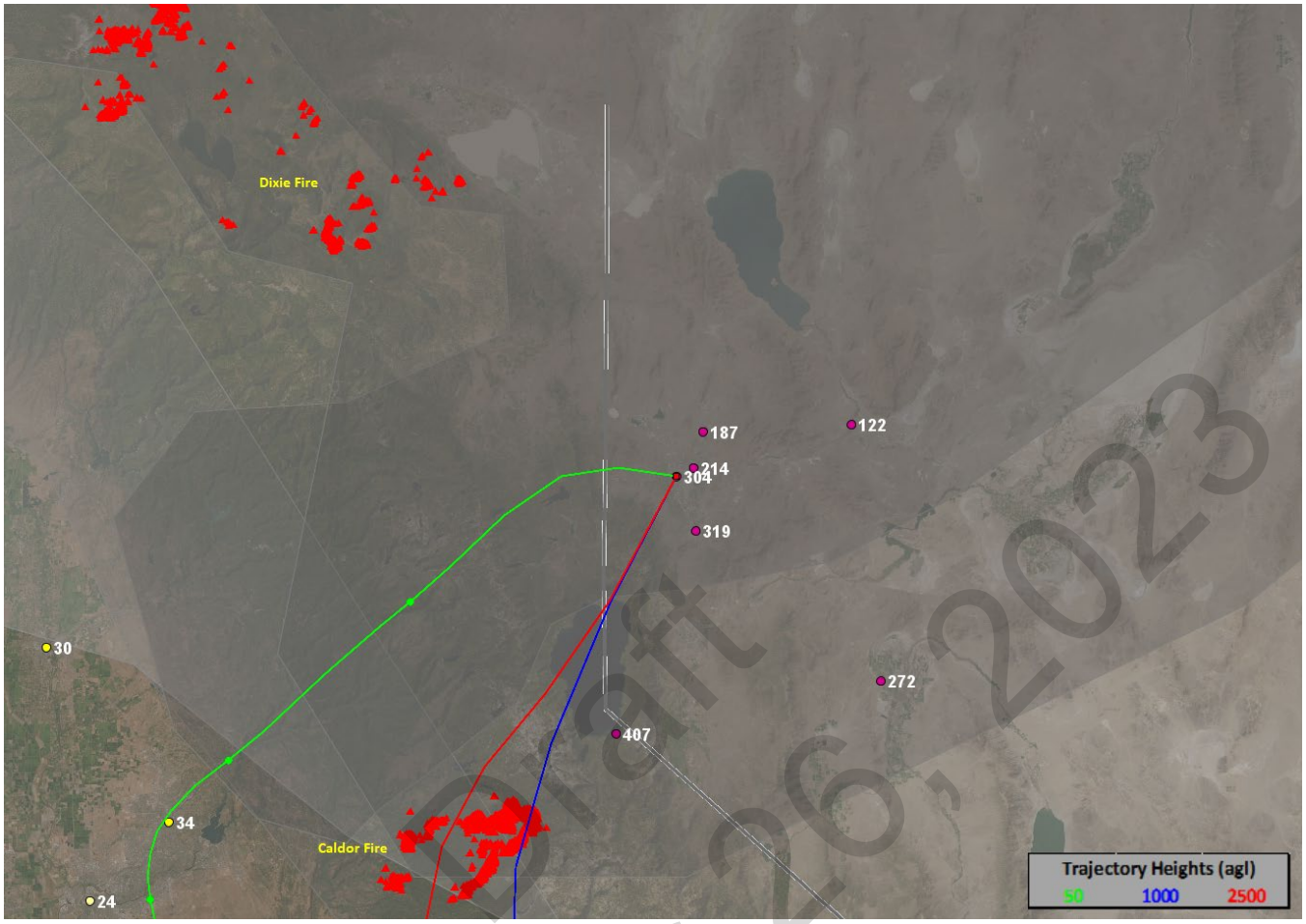


Figure 4-68: Backward Trajectory from Sparks starting August 23, 2021 at 0000 PST

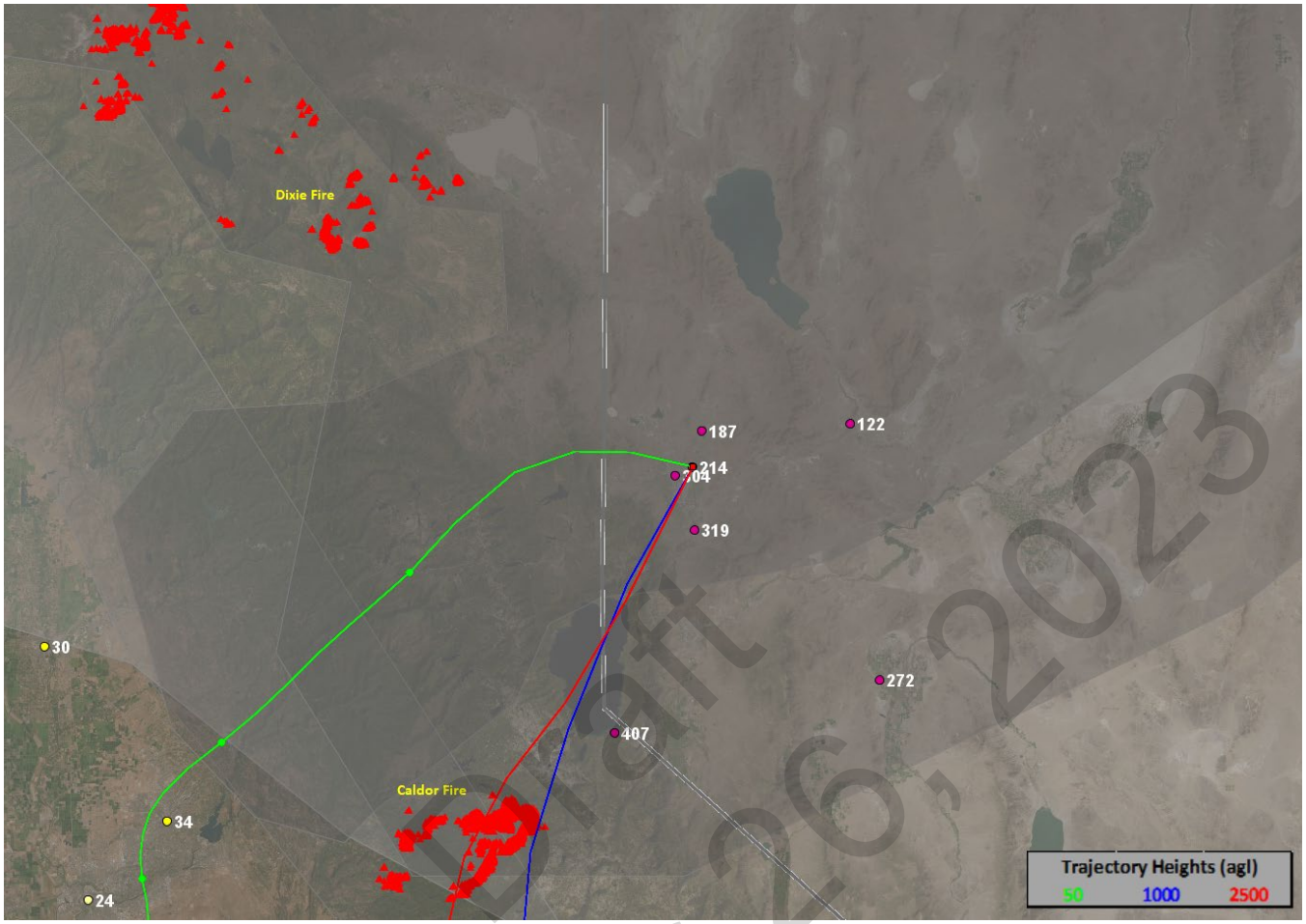


Figure 4-69: Backward Trajectory from Toll starting August 23, 2021 at 0000 PST

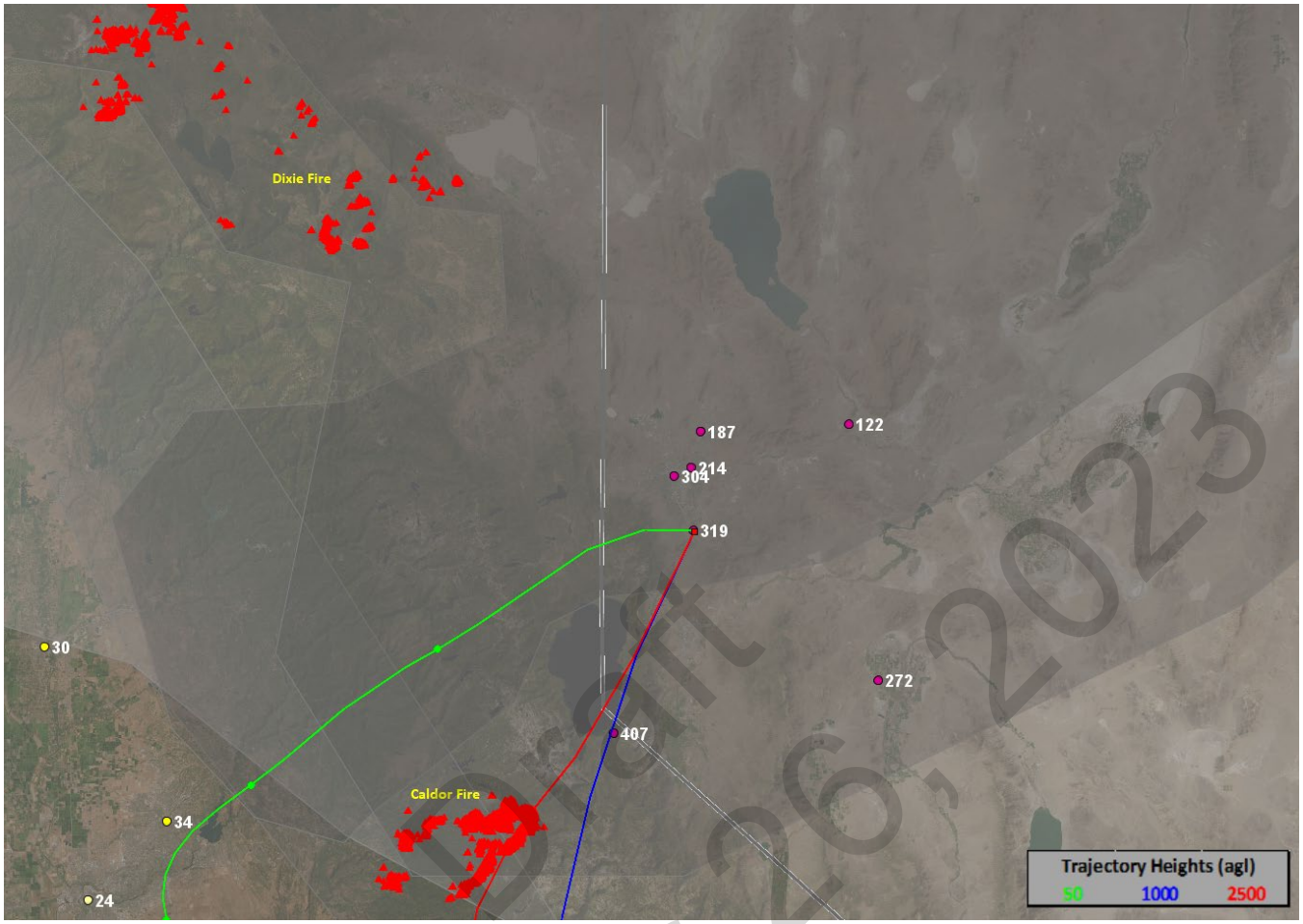


Figure 4-70: Backward Trajectory from Reno4 starting August 24, 2021 at 0000 PST

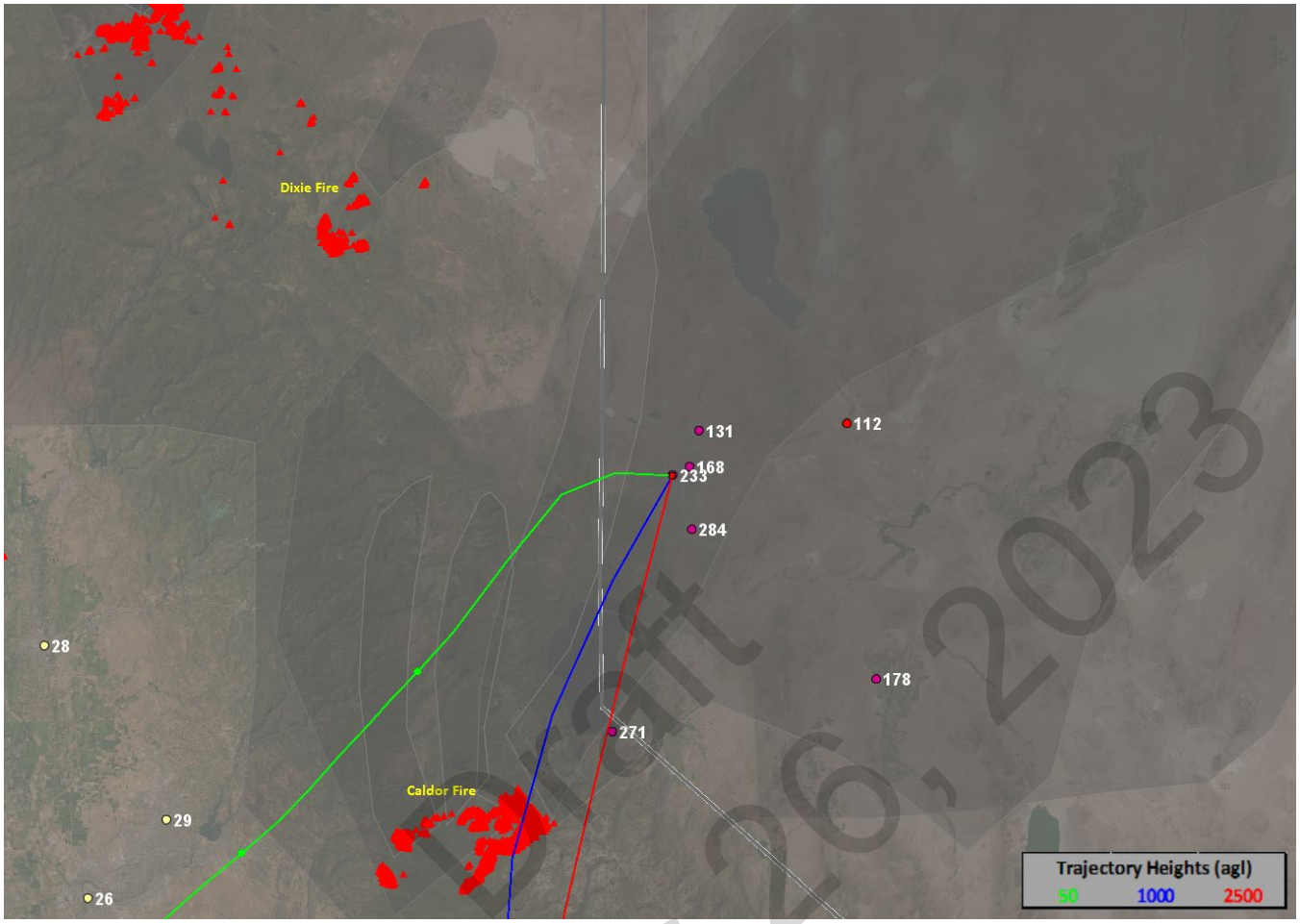


Figure 4-71: Backward Trajectory from Sparks starting August 24, 2021 at 0000 PST

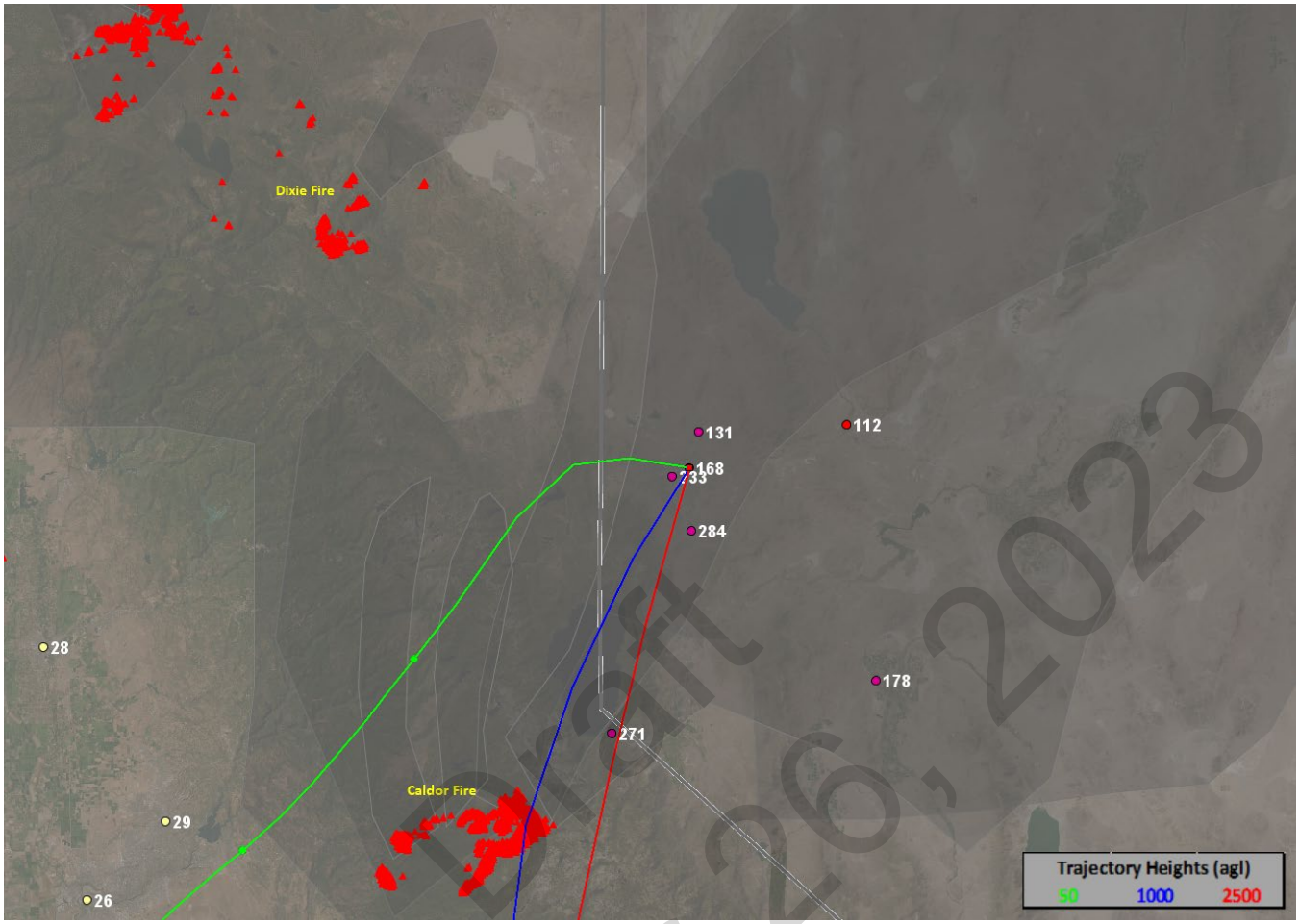


Figure 4-72: Backward Trajectory from Toll starting August 24, 2021 at 0000 PST

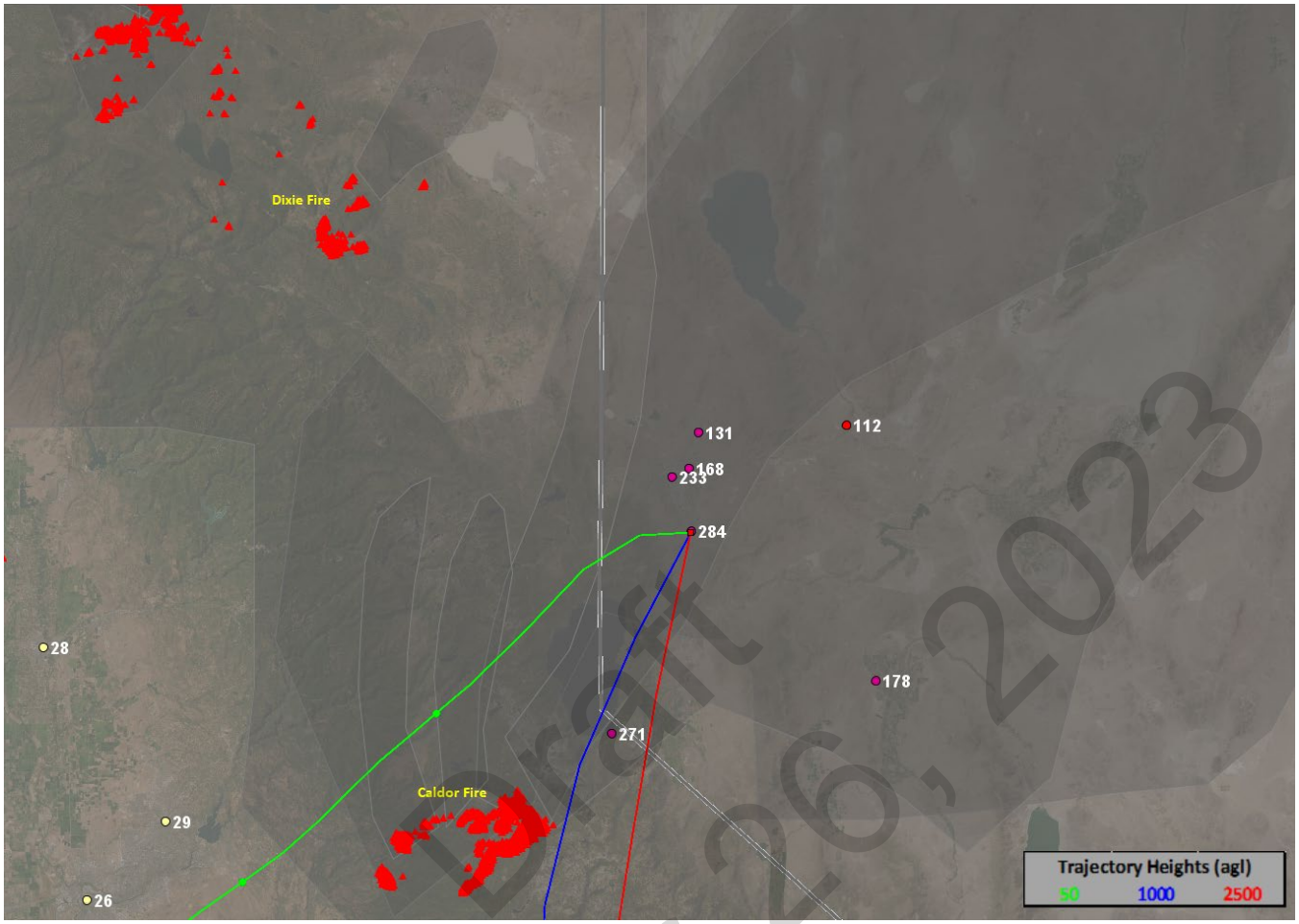


Figure 4-73: Backward Trajectory from Reno4 starting August 25, 2021 at 0000 PST

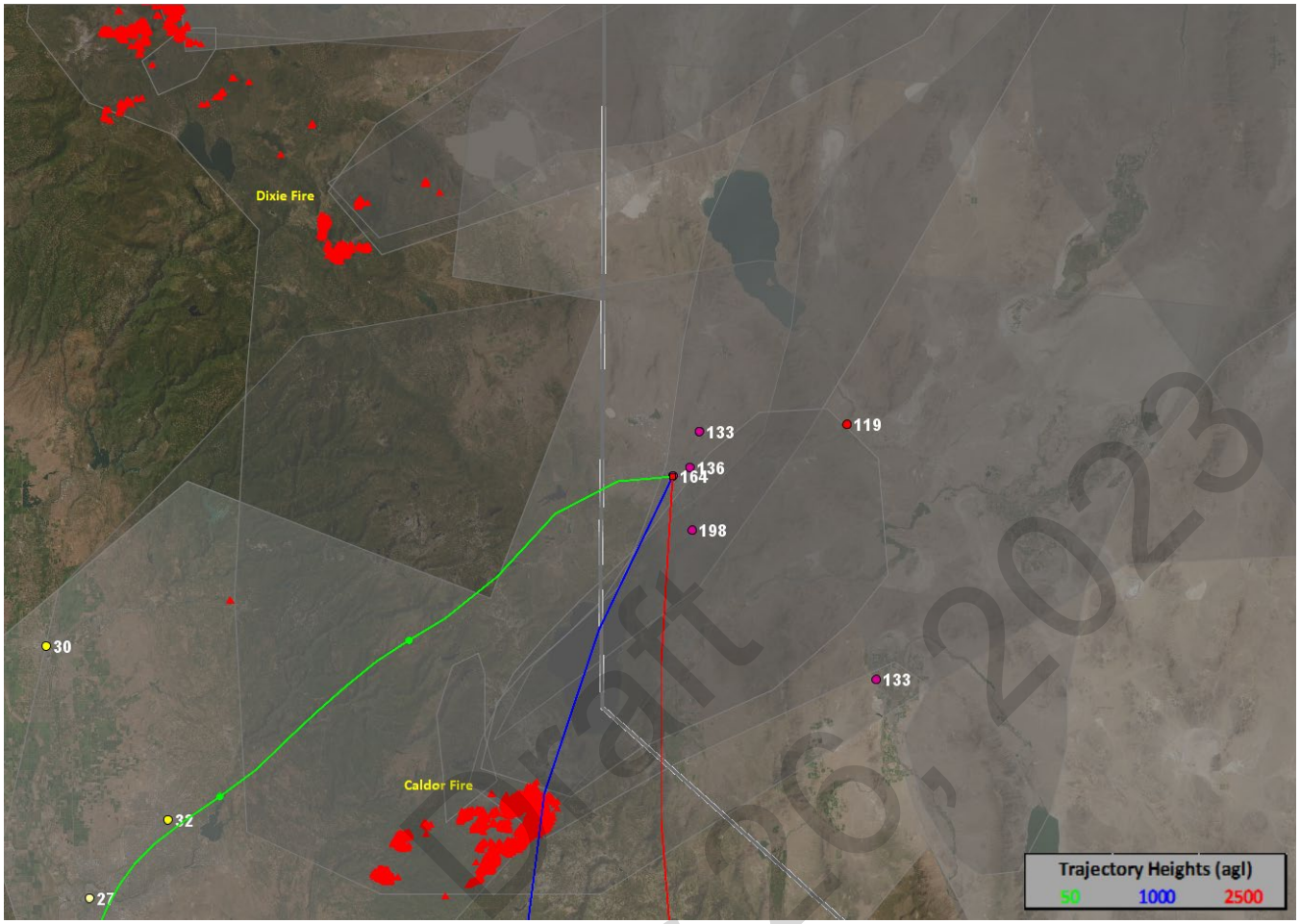


Figure 4-74: Backward Trajectory from Sparks starting August 25, 2021 at 0000 PST

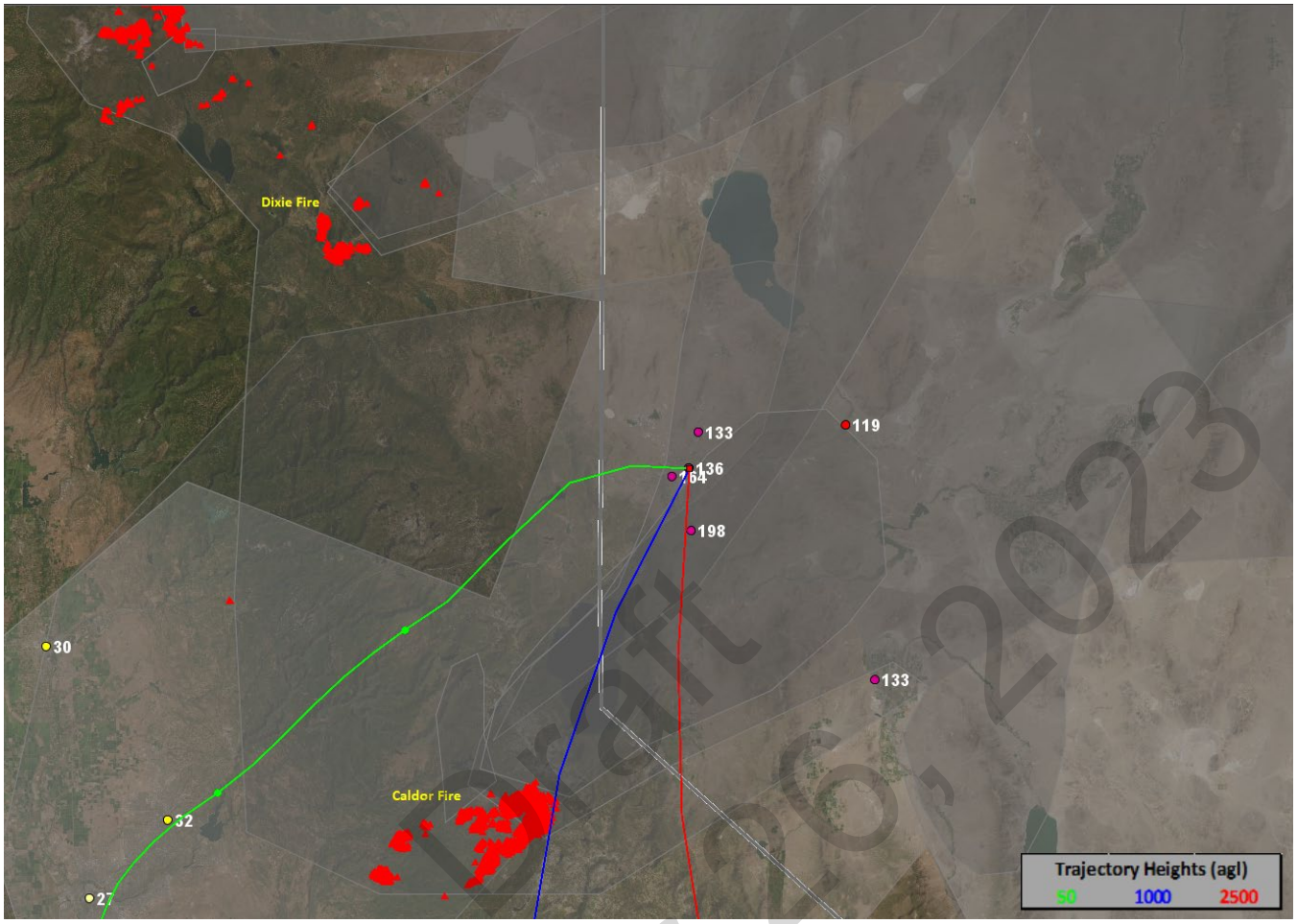


Figure 4-75: Backward Trajectory from Toll starting August 25, 2021 at 0000 PST

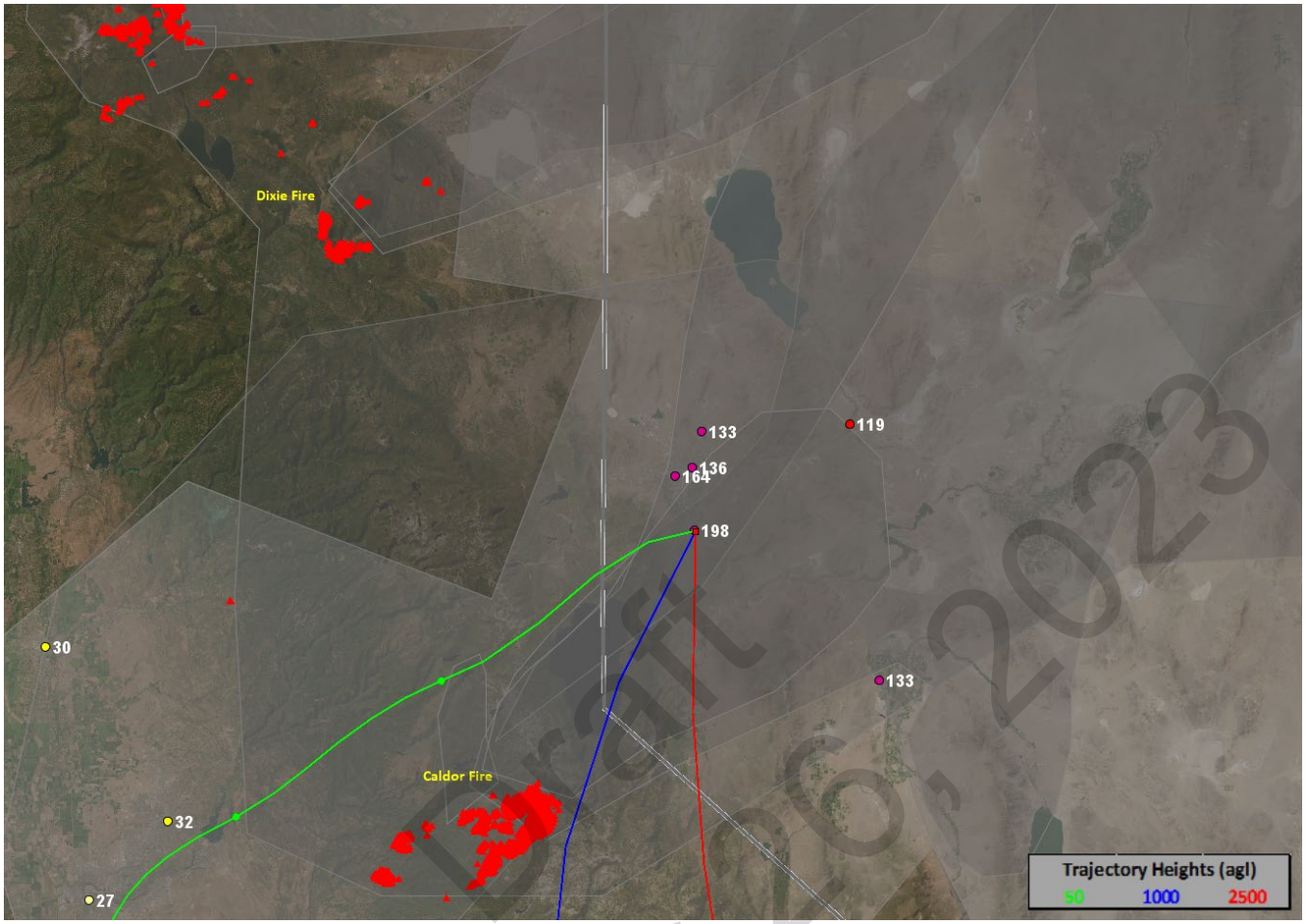


Figure 4-76: Backward Trajectory from Reno4 starting August 26, 2021 at 0000 PST

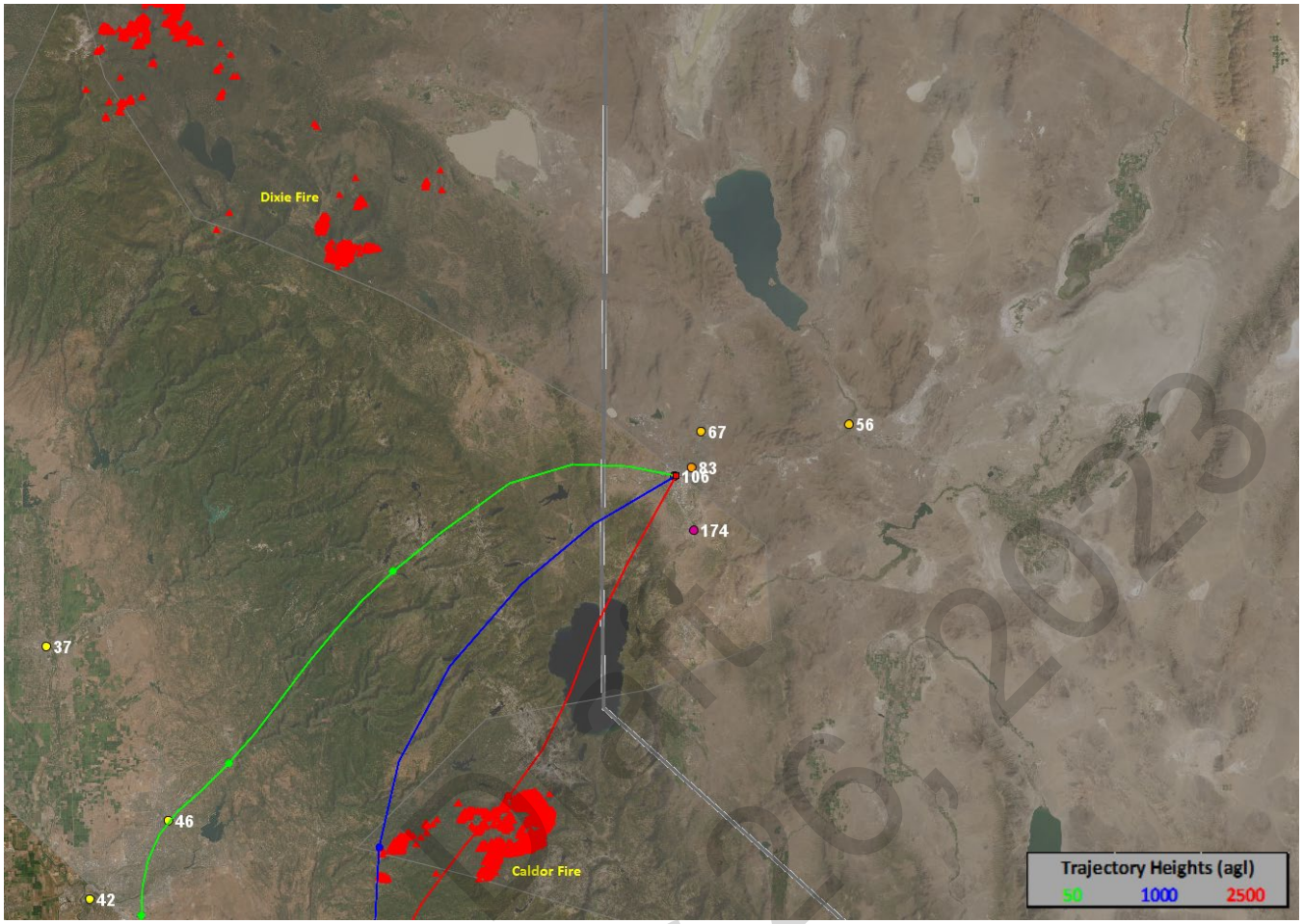


Figure 4-77: Backward Trajectory from Toll starting August 26, 2021 at 0000 PST

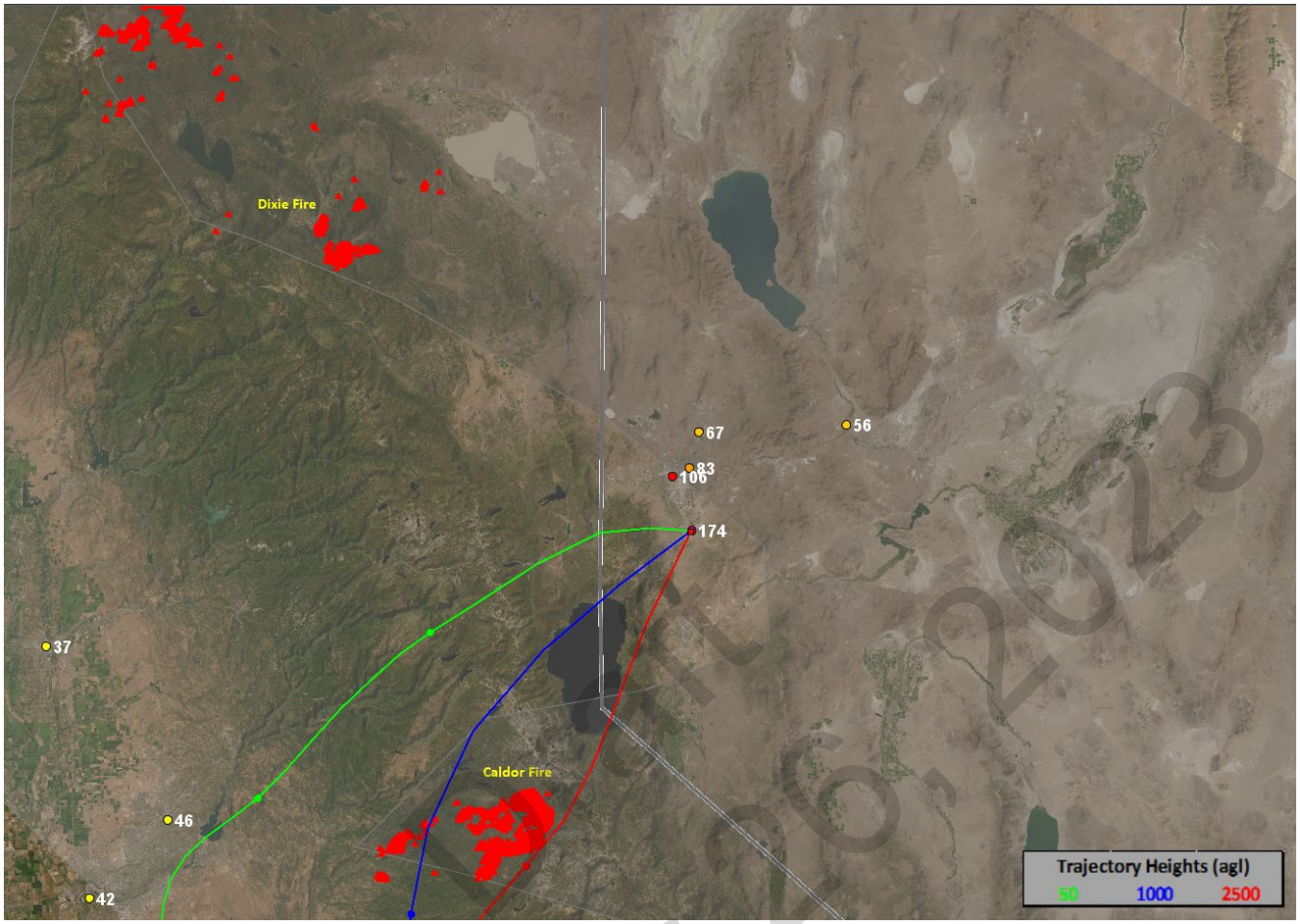
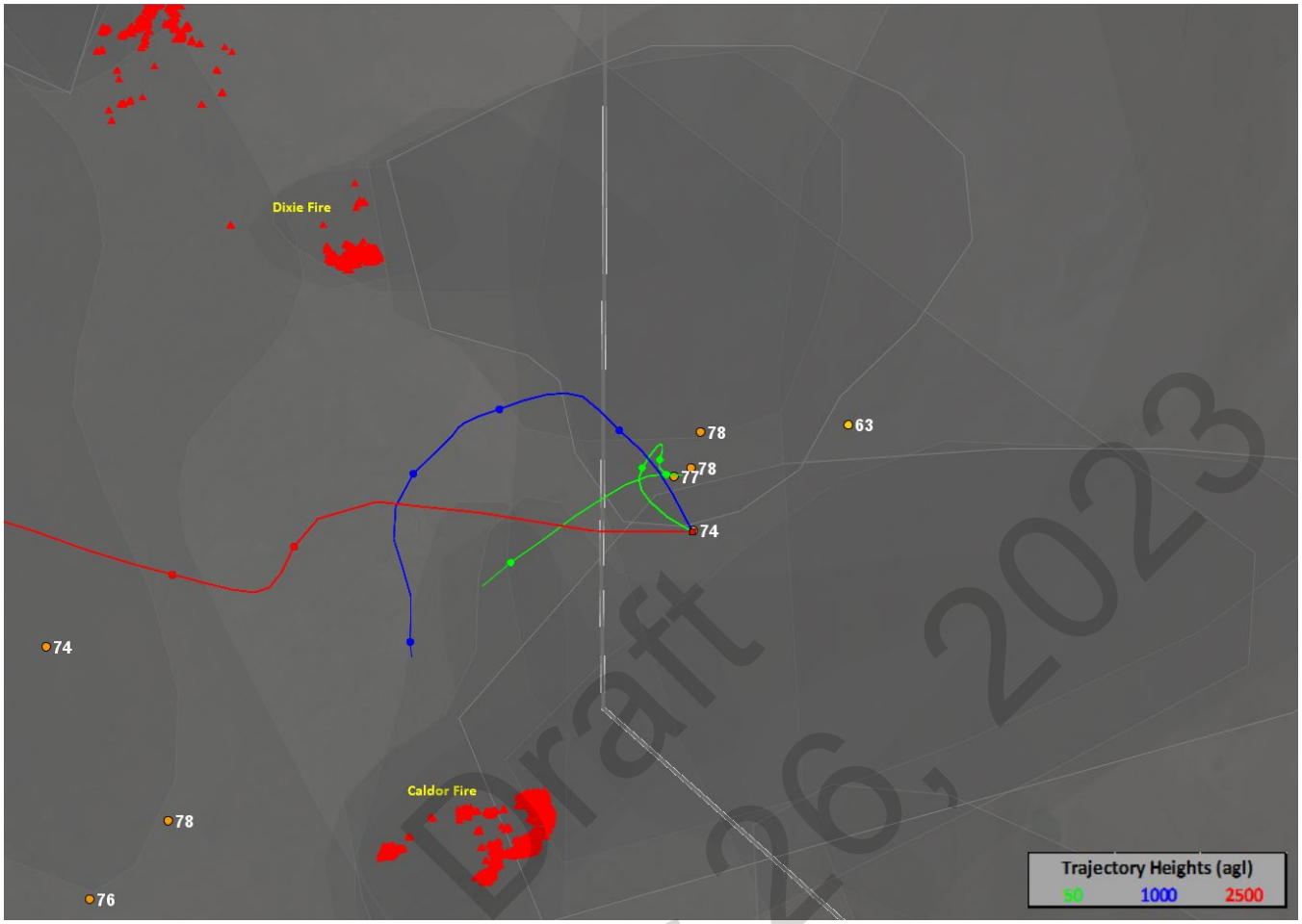


Figure 4-78: Backward Trajectory from Toll starting August 27, 2021 at 0000 PST



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 Caldor 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 4-79: Forward Trajectory from Dixie/Caldor Fire starting August 16, 2021 at 0000 PST

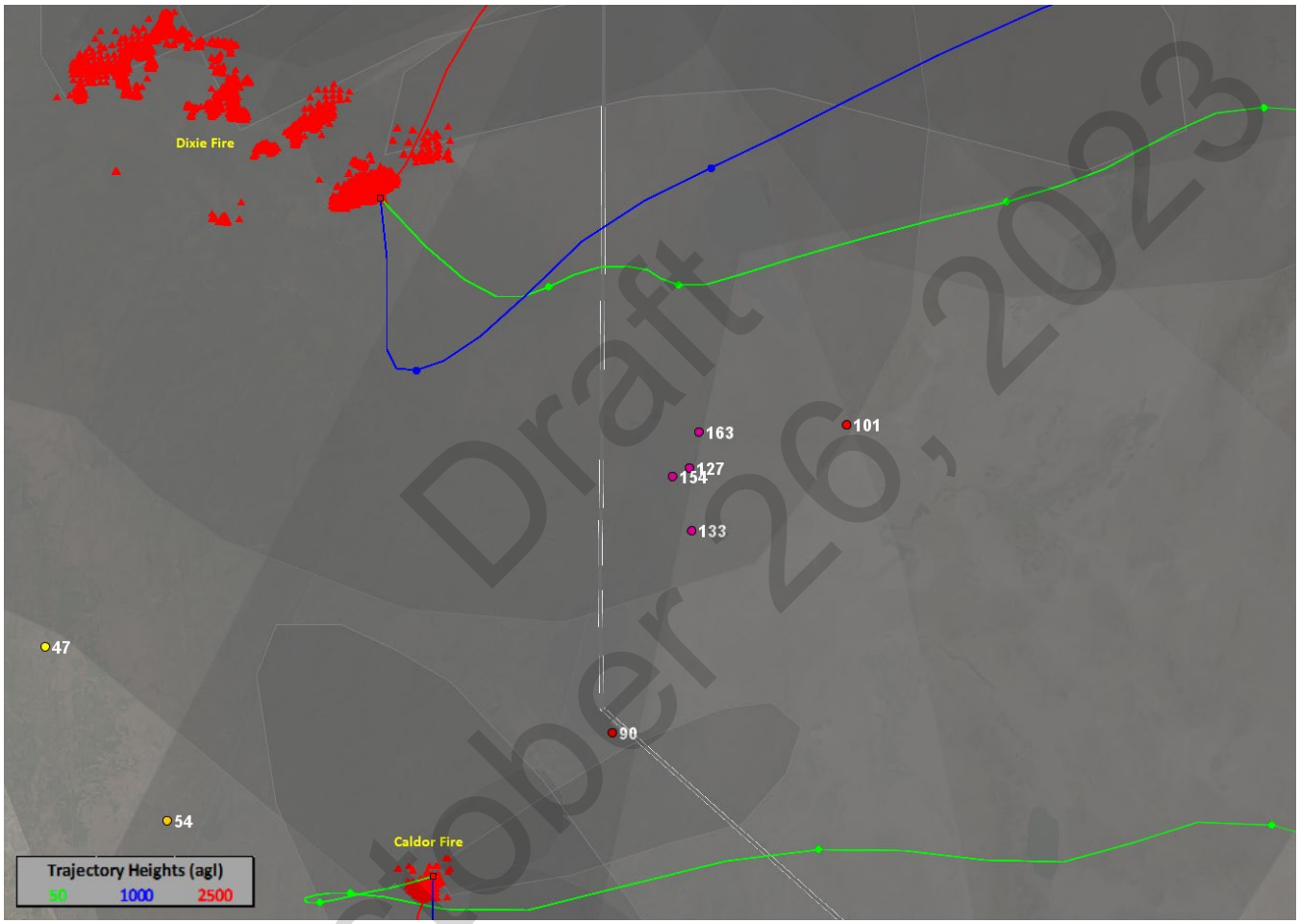


Figure 4-80: Forward Trajectory from Dixie/Caldor Fire starting August 17, 2021 at 0000 PST

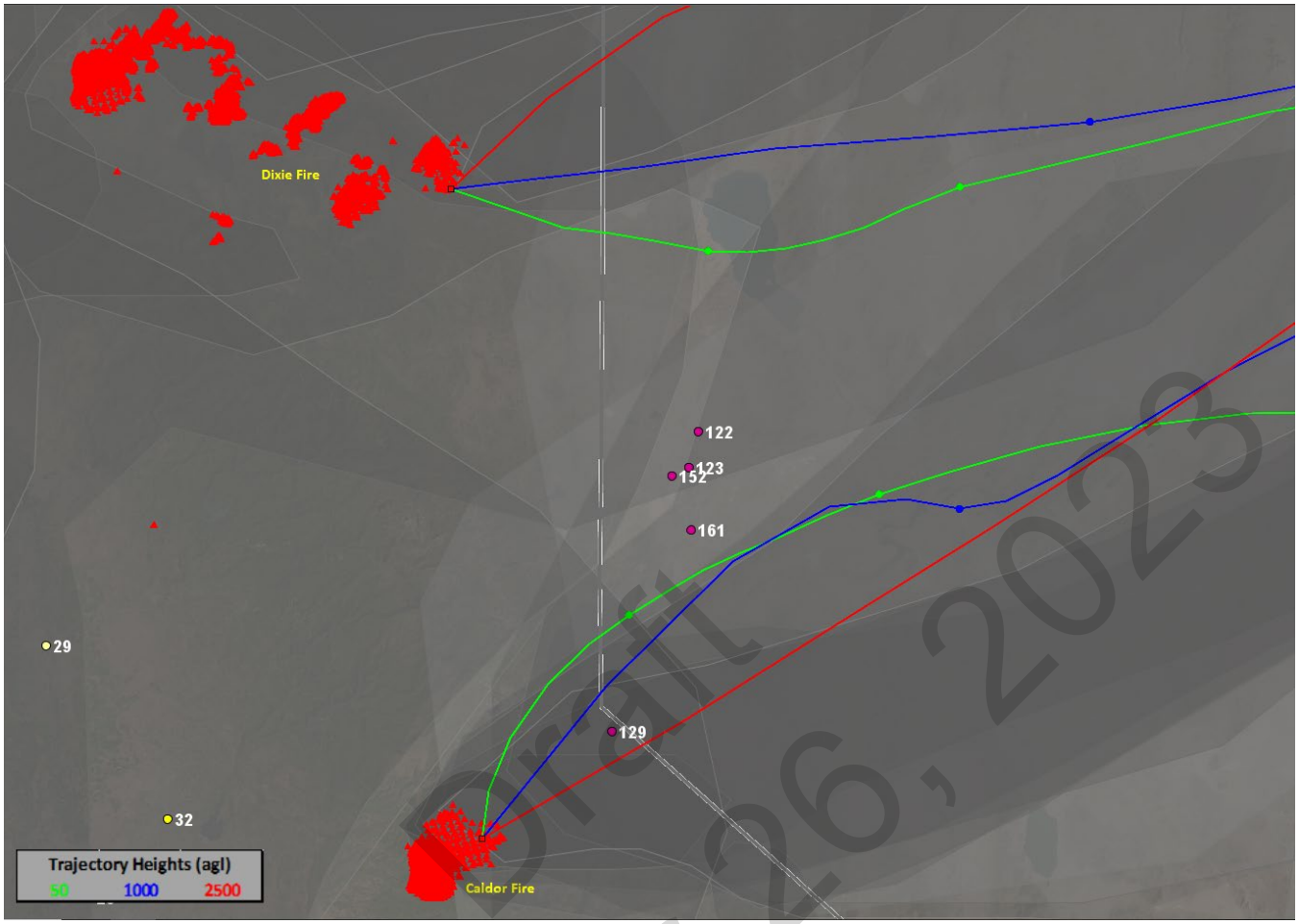


Figure 4-81: Forward Trajectory from Dixie/Caldor Fire starting August 18, 2021 at 0000 PST

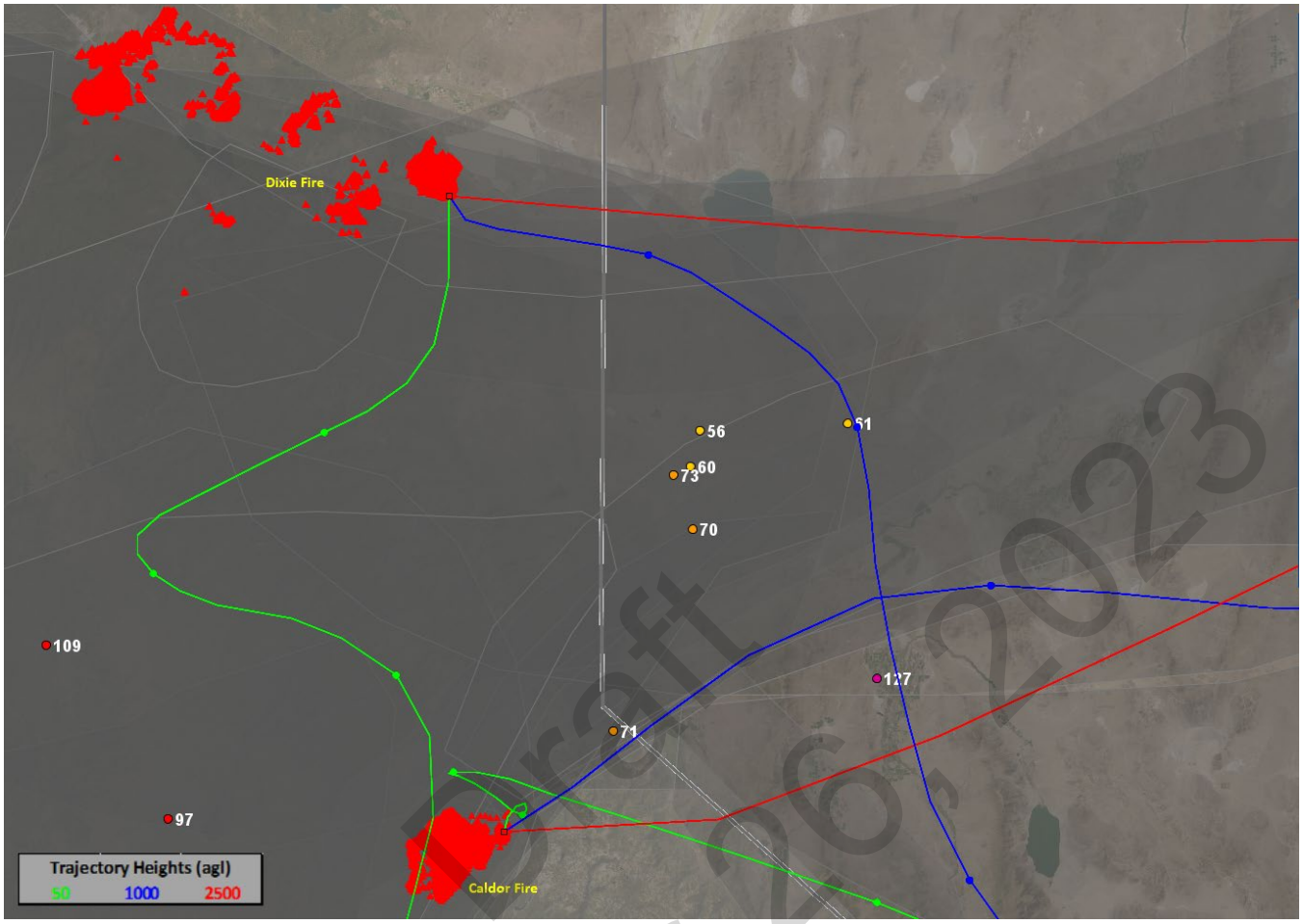


Figure 4-82: Forward Trajectory from Dixie/Caldor Fire starting August 19, 2021 at 0000 PST

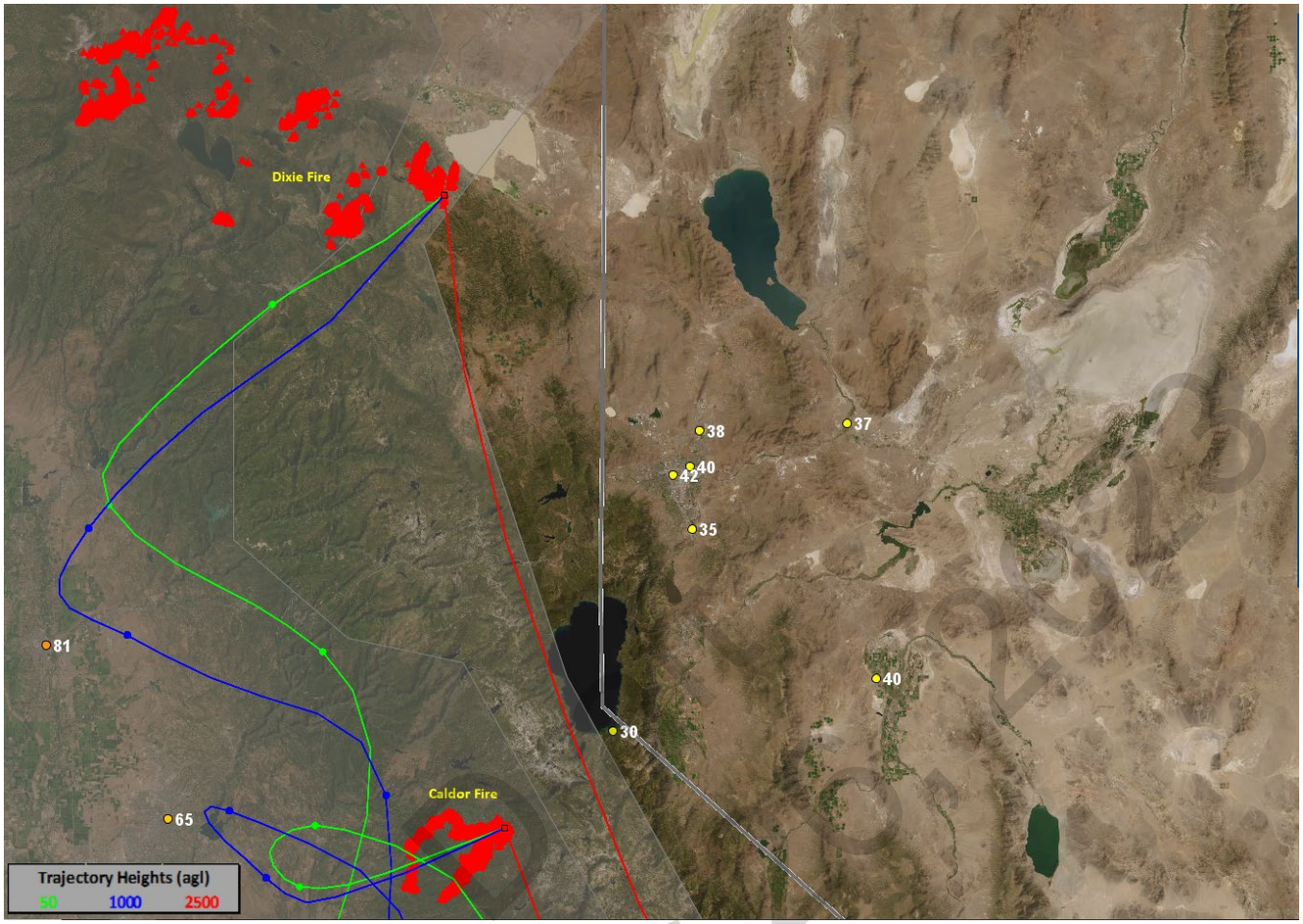


Figure 4-83: Forward Trajectory from Dixie/Caldor Fire starting August 20, 2021 at 0000 PST

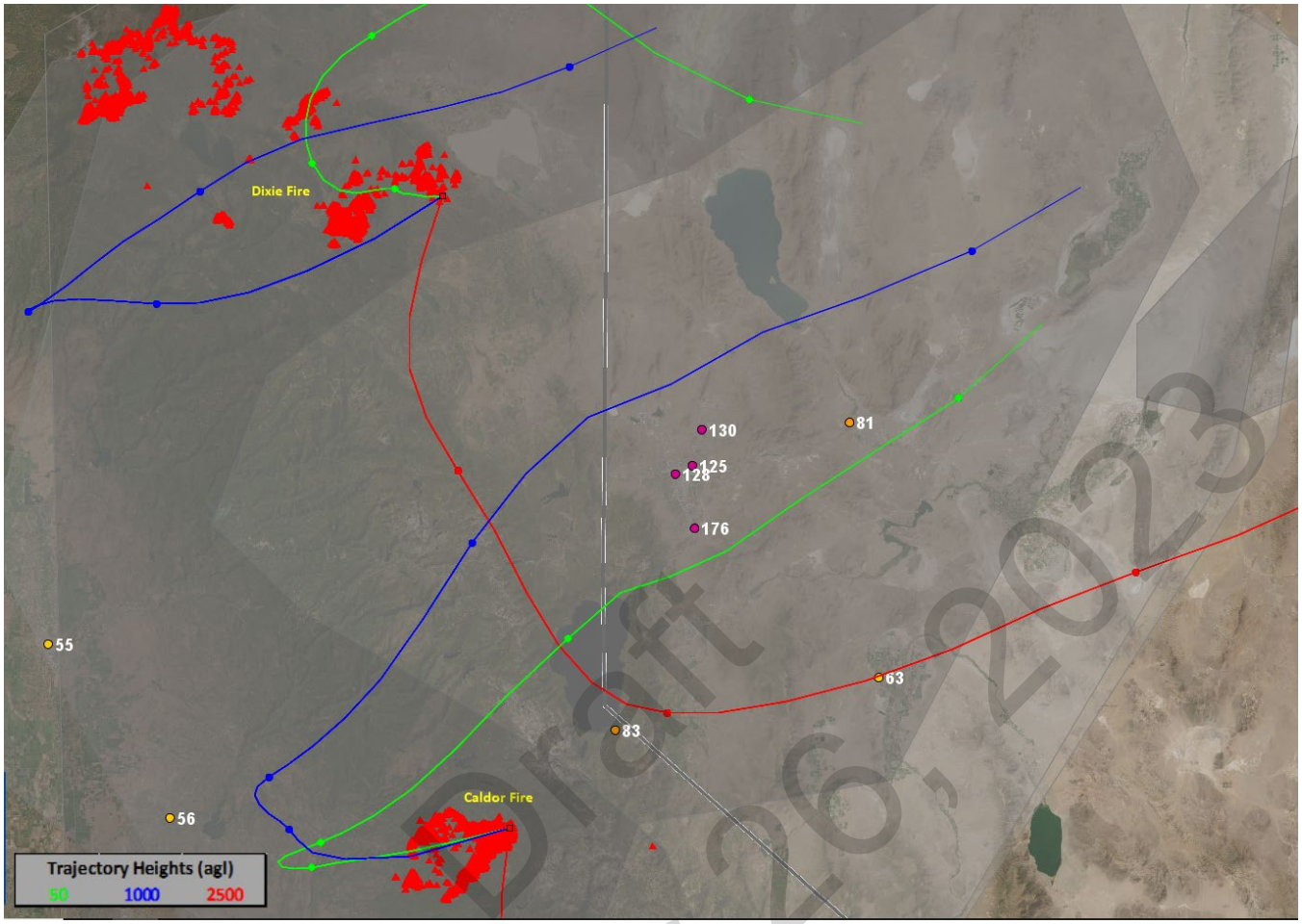


Figure 4-84: Forward Trajectory from Dixie/Caldor Fire starting August 21, 2021 at 0000 PST

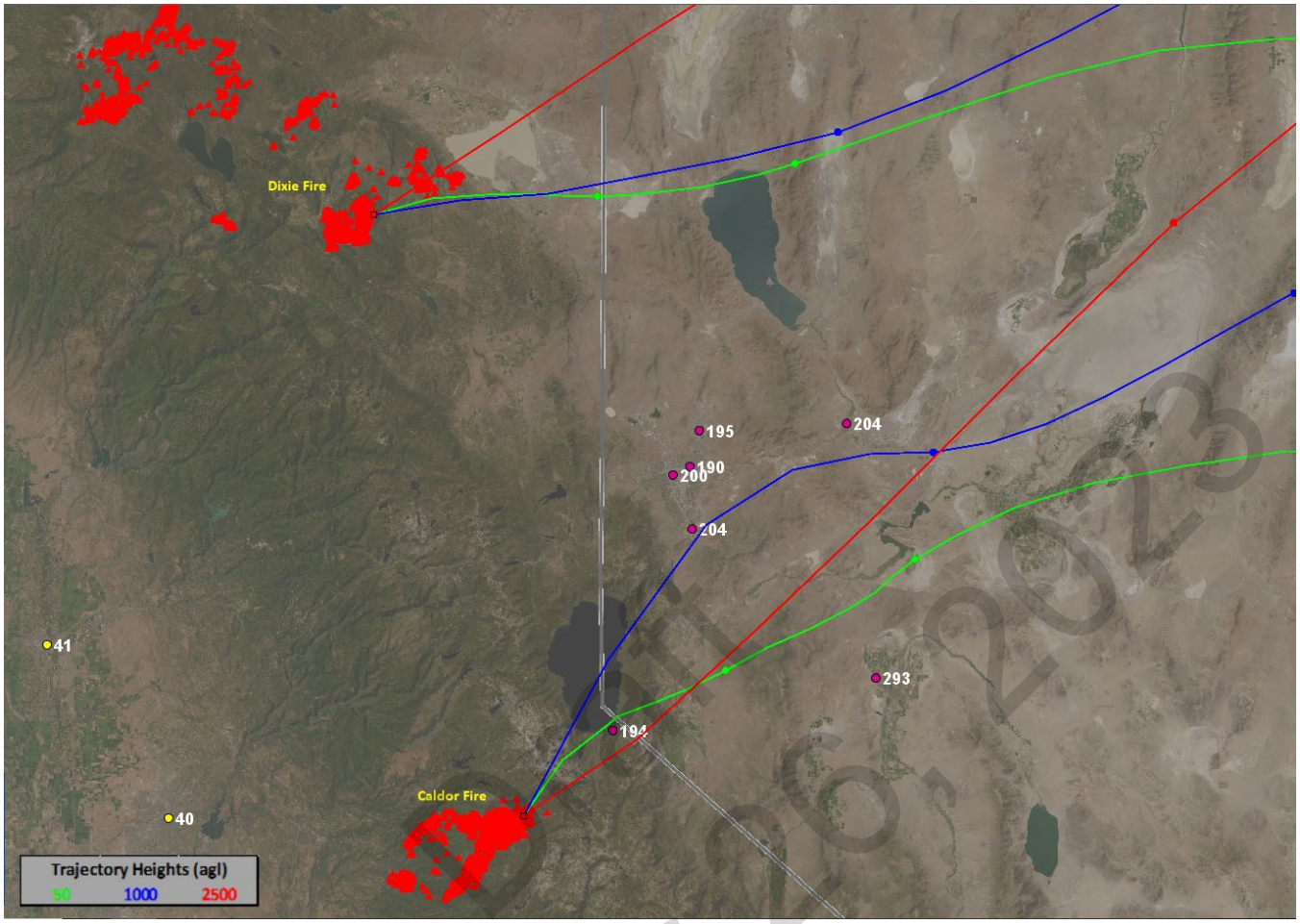


Figure 4-85: Forward Trajectory from Dixie/Caldor Fire starting August 22, 2021 at 0000 PST

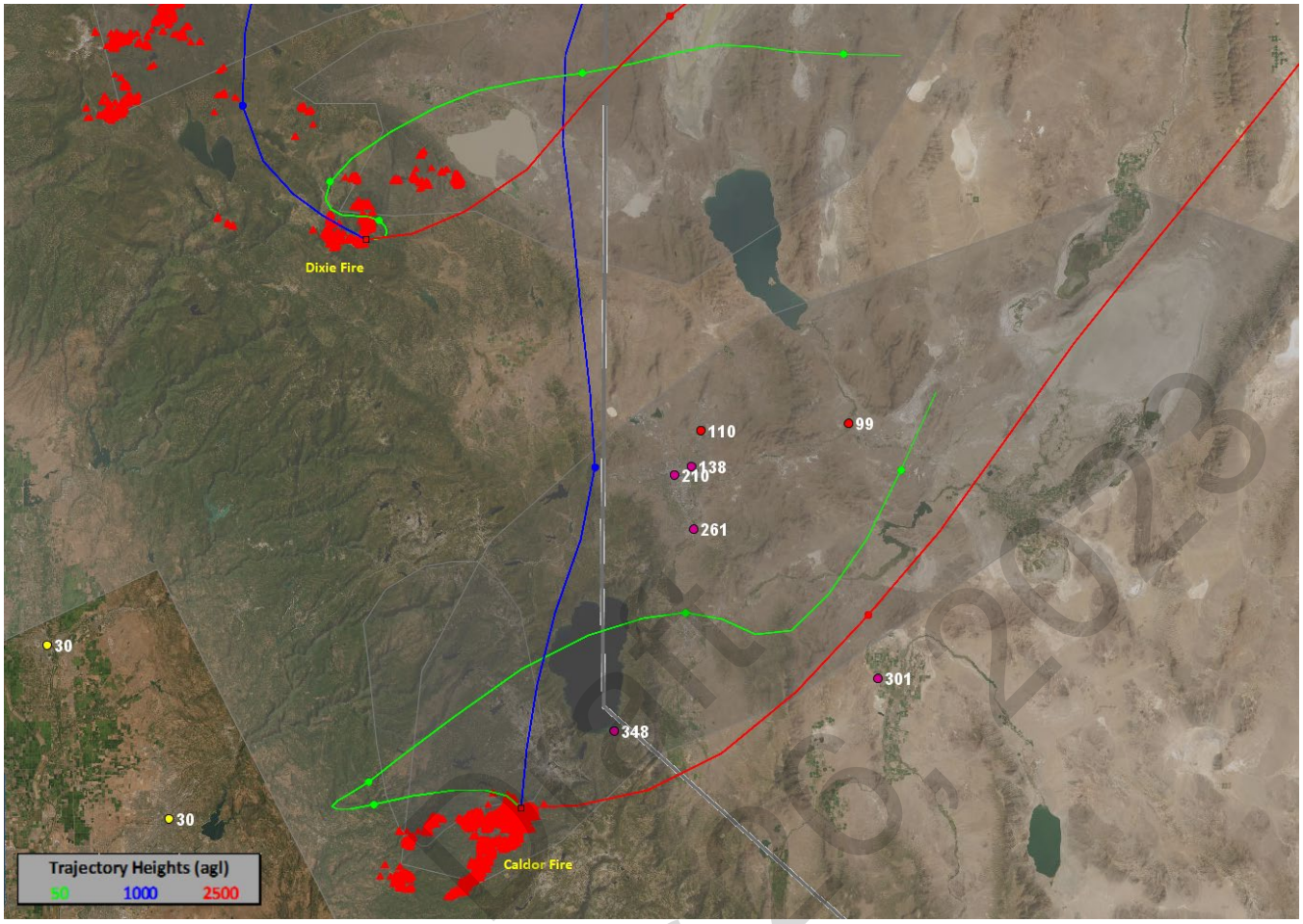


Figure 4-86: Forward Trajectory from Dixie/Caldor Fire starting August 23, 2021 at 0000 PST

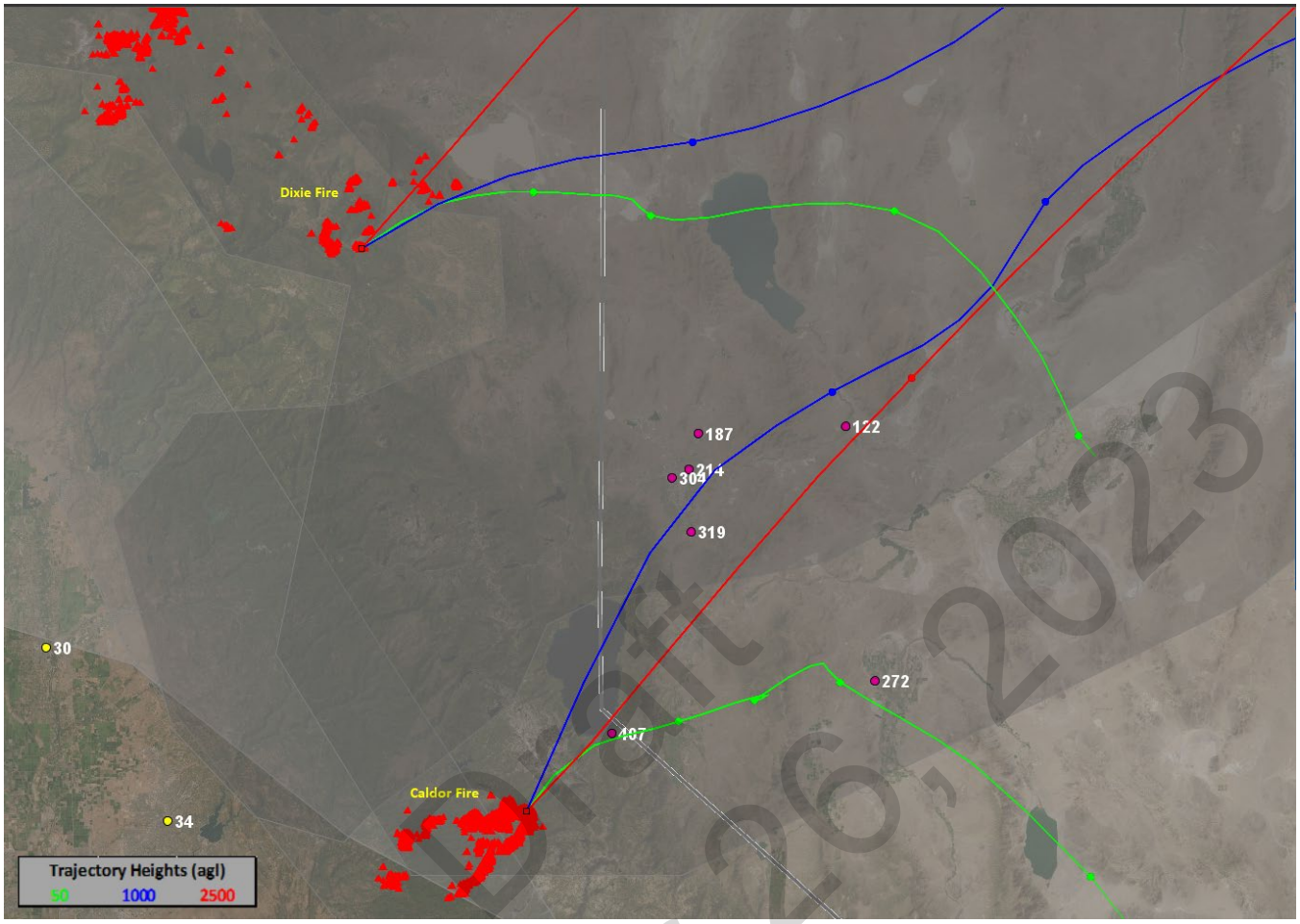


Figure 4-87: Forward Trajectory from Dixie/Caldor Fire starting August 24, 2021 at 0000 PST

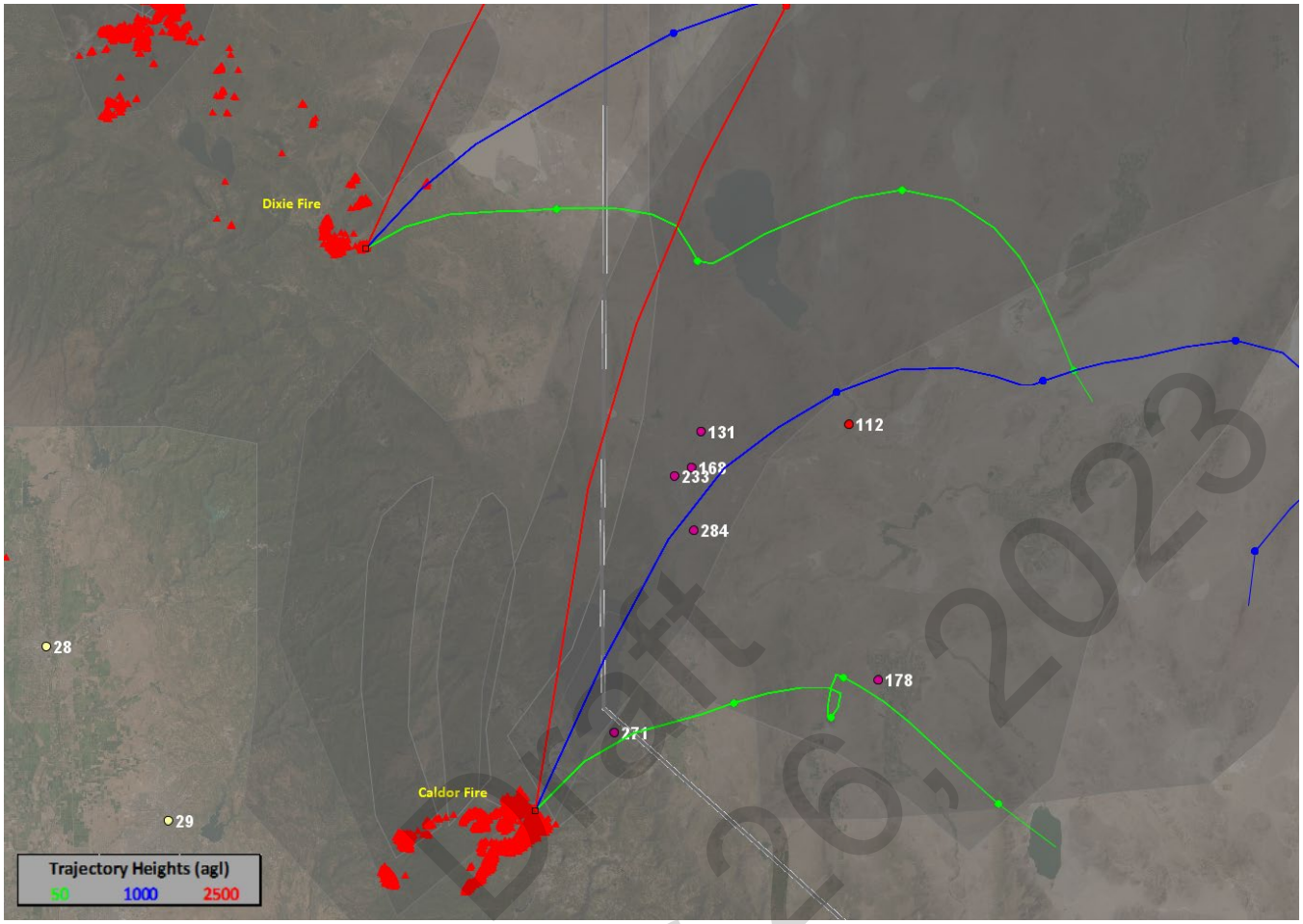


Figure 4-88: Forward Trajectory from Dixie/Caldor Fire starting August 25, 2021 at 0000 PST

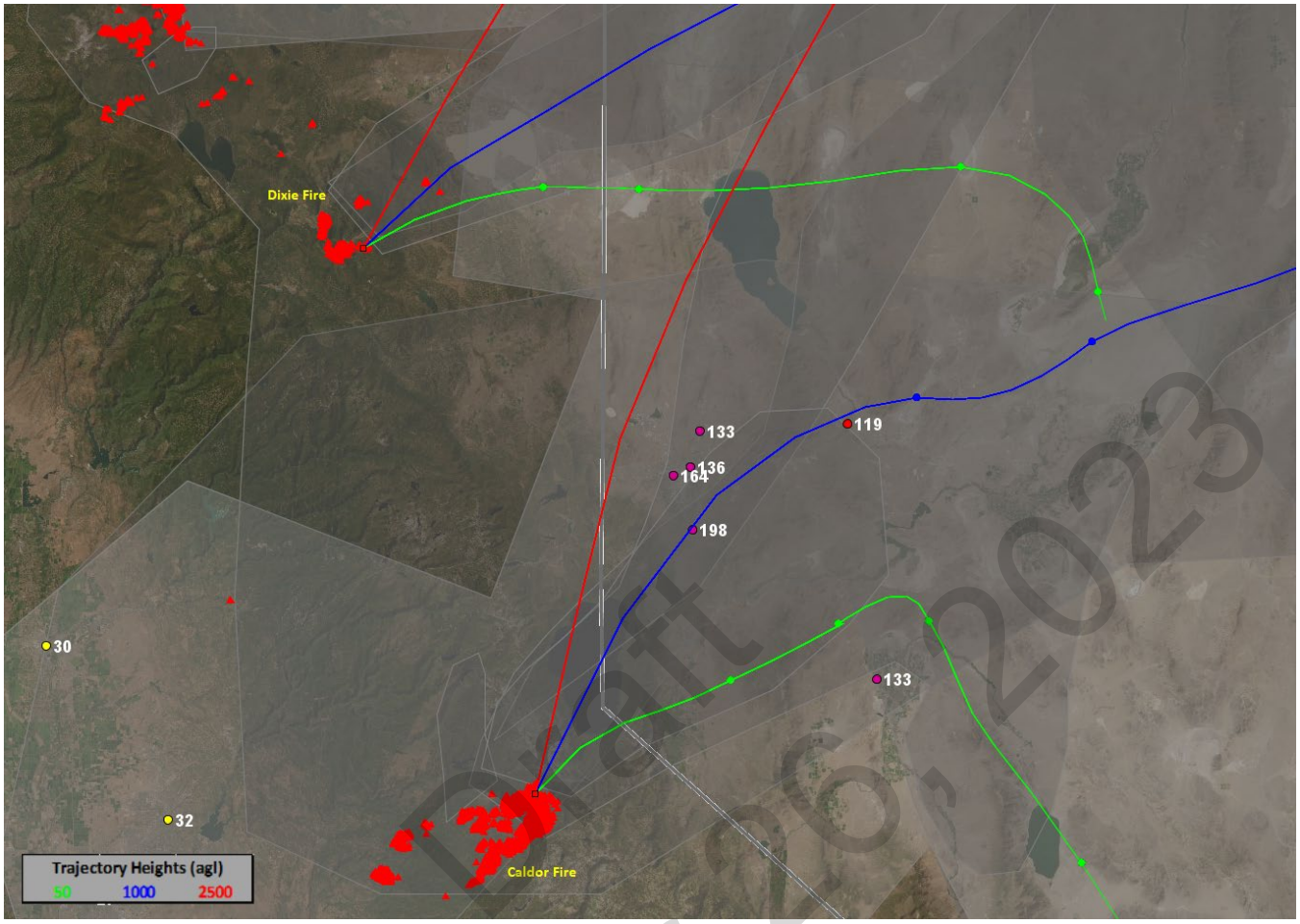


Figure 4-89: Forward Trajectory from Dixie/Caldor Fire starting August 26, 2021 at 0000 PST

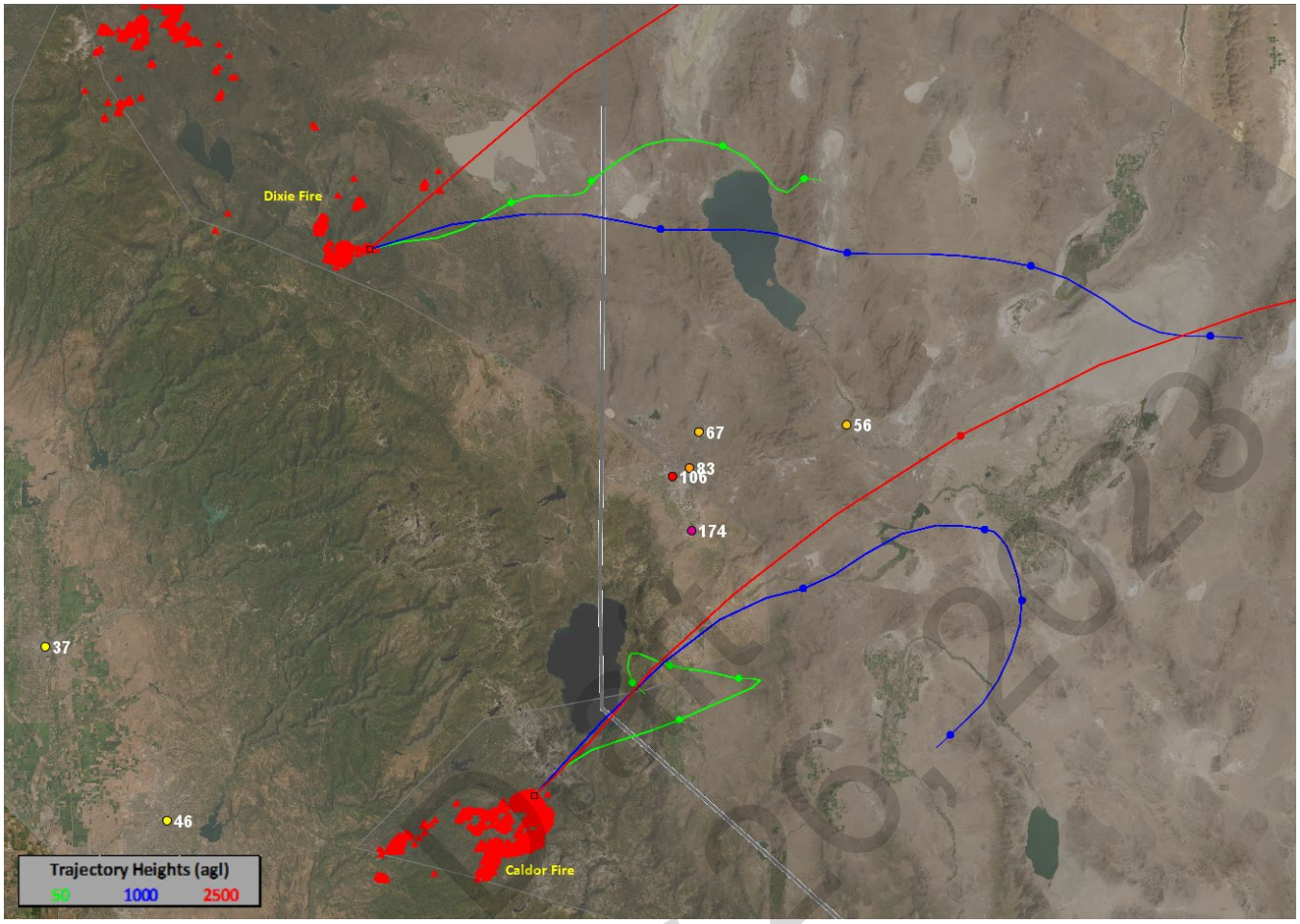
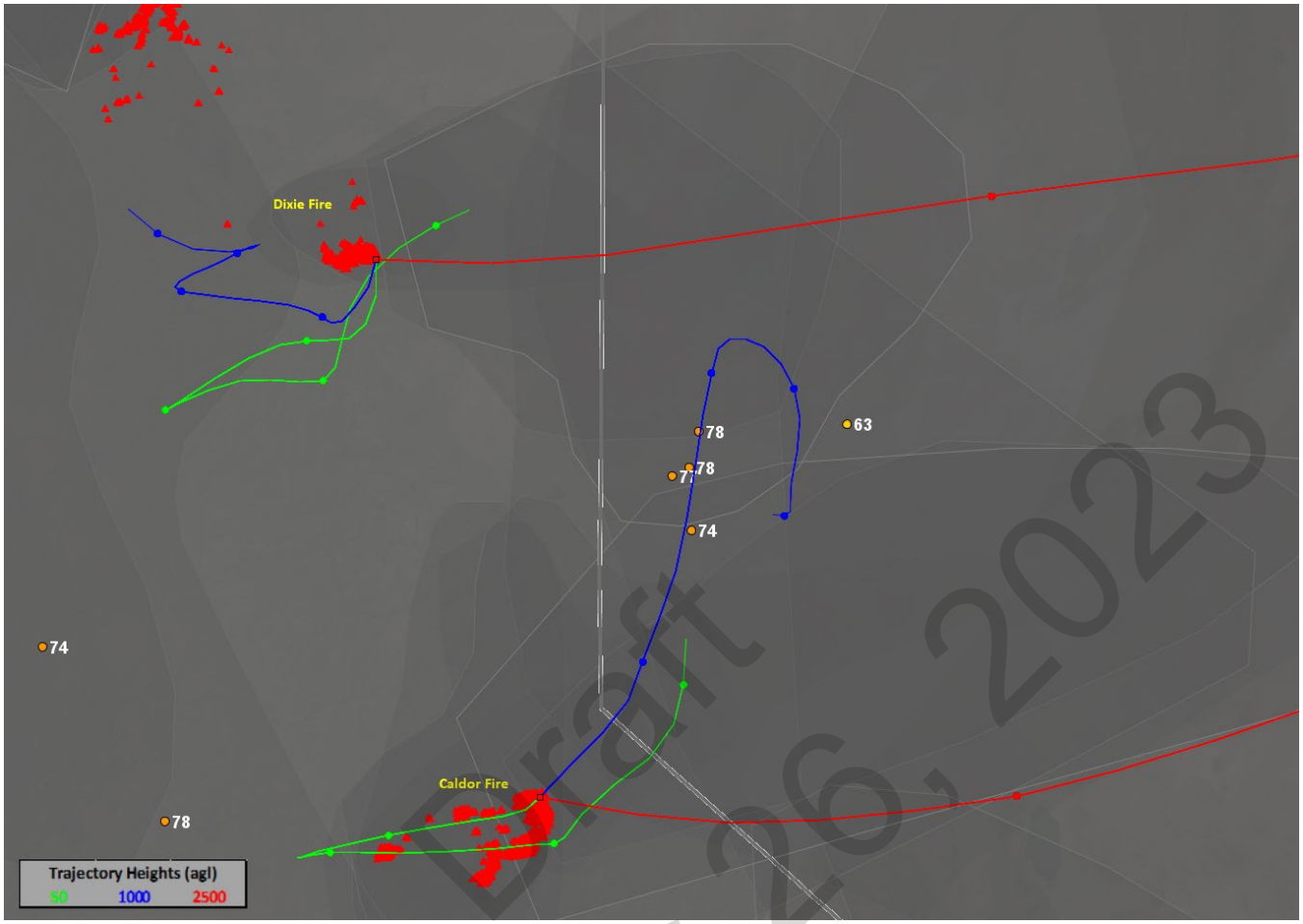


Figure 4-90: Forward Trajectory from Dixie/Caldor Fire starting August 27, 2021 at 0000 PST



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 16 through August 27 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 17, August 18, and August 21 through August 27 of 2021 to characterize where the airmass on the exceedance days came from.

As can be seen in the backward trajectory section, the airmasses that affected HA 87 on the days of the exceedances mostly originated from the Caldor Fire with many HYSPLITs tracing directly over the fire. Additionally, the HYSPLITs on August 18 and August 22 of 2021 illustrate when the Dixie Fire affected HA 87. As can be seen in the forward trajectory section, the smoke from the Dixie and Caldor fires was transported into HA 87 on the days of the exceedances. This section also helps illustrate why there was not an exceedance day between August 17 and August 20 of 2021. As can be seen in the forward trajectory section, the wind patterns changed to help vacate some of the smoke from HA 87, and then changed again to reintroduce the smoke.

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_{10} and wind direction data was used to create the roses. These show predominantly westerly and southerly wind components that carried Dixie and Caldor wildfire smoke to Washoe County.

Figure 4-91: PM_{10} Wind/Pollution Rose for Toll and Reno4 for August 14-26

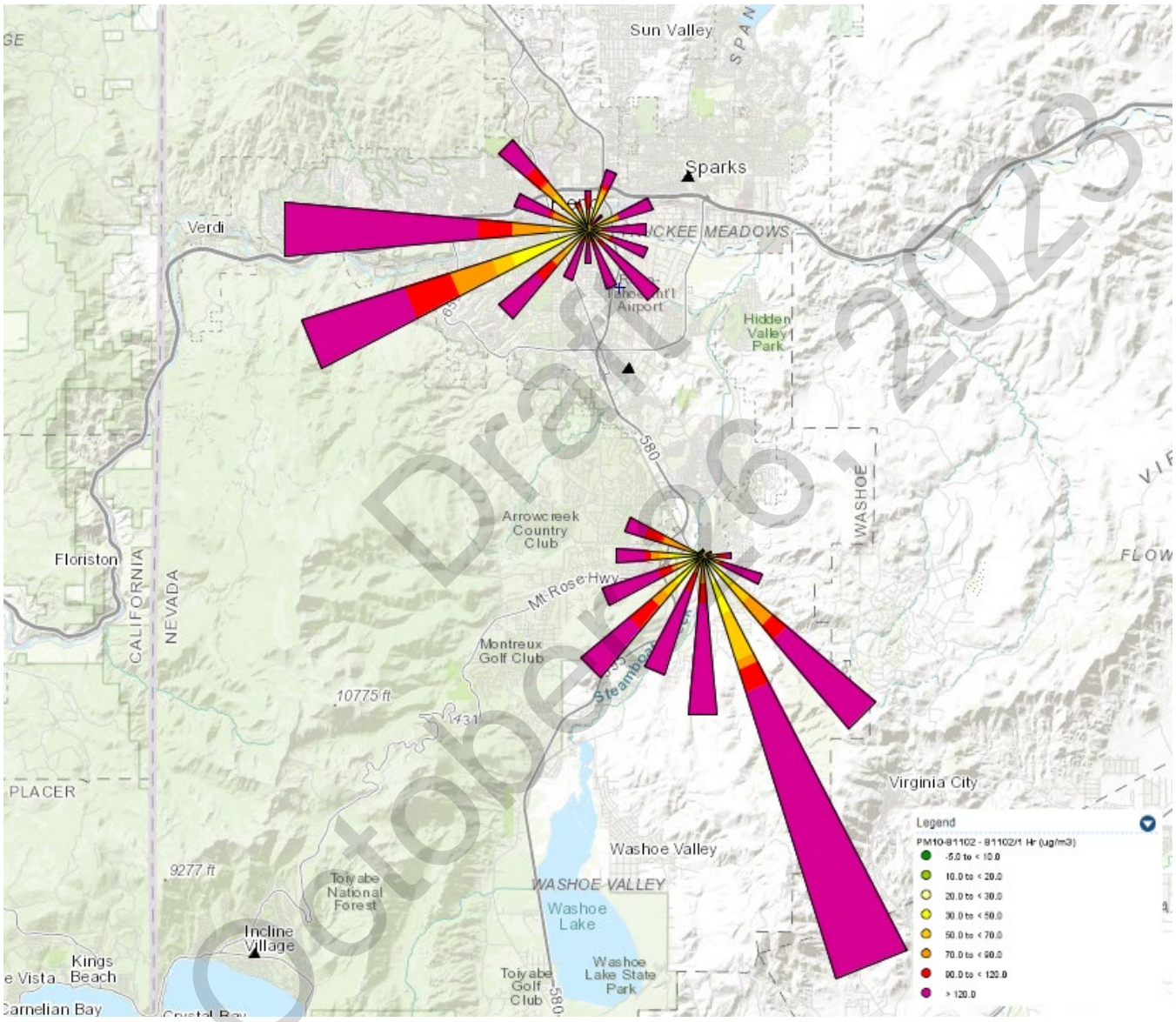
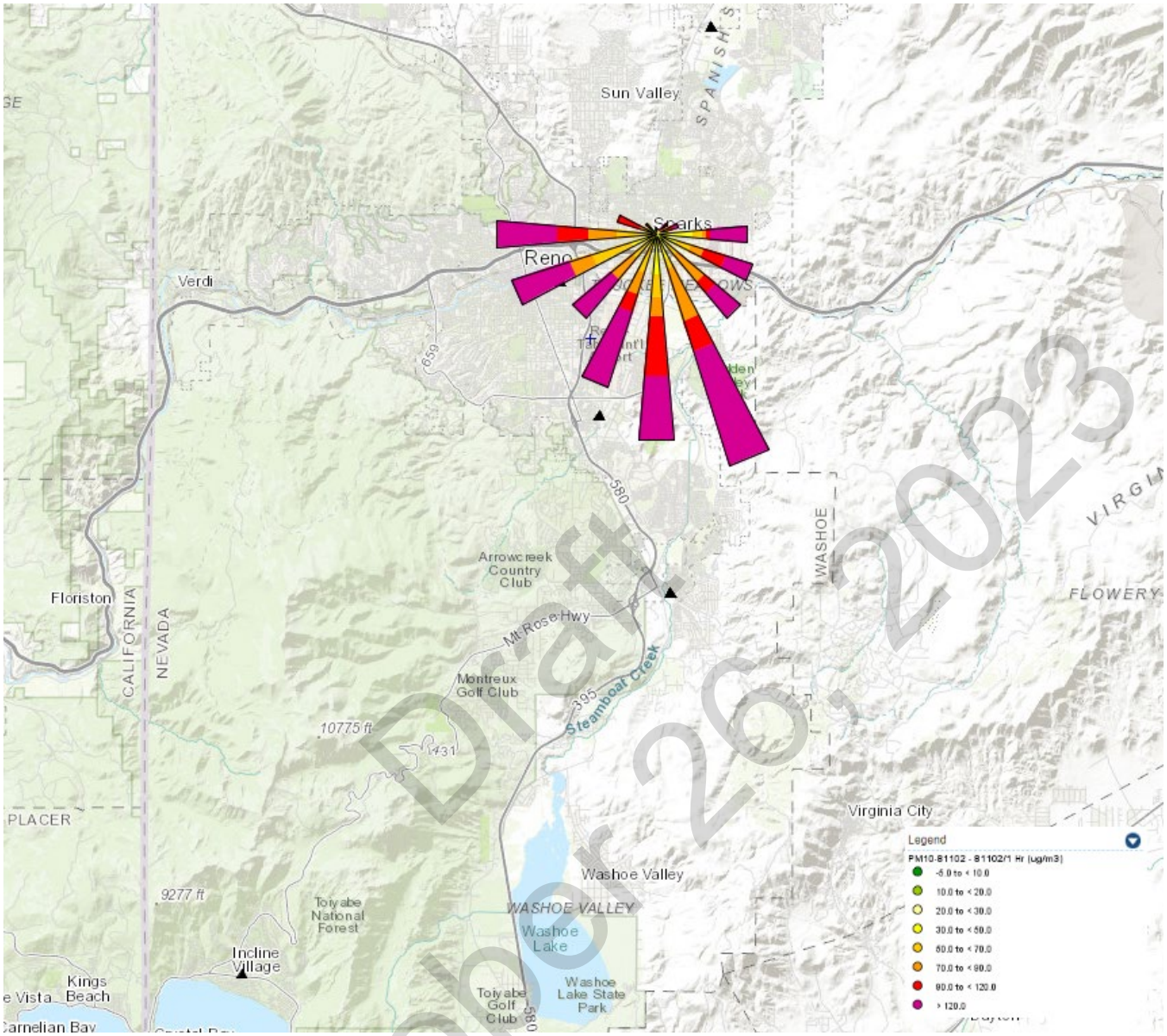


Figure 4-92: PM_{10} Wind/Pollution Rose for Sparks for August 14-26



4.6 Conclusion Showing a Clear Causal Relationship

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 Caldor 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 Caldor 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 17 and August 20-26, 2021. Section 4.0 thus satisfies the clear causal relationship criterion as required by the EER and 40 CFR 50.14(c)(3)(iv).

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 be a natural event. The Dixie Fire qualifies as a natural event 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 Dixie Fire was started by a tree falling on a power transmission line. AQMD sees no direct causal role by human activity for the Dixie Fire, thus qualifying it as a natural event.

The Caldor Fire was most likely caused by human activity (firearm target shooting). AQMD believes it is unlikely that the event will recur at the same location in the foreseeable future, thus qualifying the Caldor Fire to also be applicable to Section 40 CFR 50.14(c)(3)(iv)(E).

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. AQMD uses a variety of outlets to reach the public during exceptional events including Twitter, Facebook, press releases, and local partners to inform citizens of degraded air quality.

As can be seen in Figure 6-1 through 6-17 below, a majority of social media posts issued by AQMD during the event included information regarding the current AQI, AQI forecasting, and AQMD's public education program, "Be Smoke Smart." "Be Smoke Smart" informs the public of the best ways to protect themselves from wildfire smoke during these events. AQMD also utilized satellite imagery in these posts to highlight the widespread smoke in the region. AQMD also shared links to the published press releases highlighting the Emergency Episode issued during the event. The press releases are a requirement of AQMD's $PM_{2.5}$ Mitigation Plan as well as AQMD's Emergency Episode Plan. Seen in Figure 6-7, a Stage 3 Emergency Episode for $PM_{2.5}$ was issued on August 23, 2021. This was the first time AQMD issued an Emergency Episode to Stage 3. There had been an active $PM_{2.5}$ Emergency Episode since July 23.

AQMD's local partner, NWS Reno, was also very active on social media during the event. NWS Reno shared weather forecasts and how these forecasts impact smoke in the area. NWS Reno also shared imagery from the HRRR Modeling system to share forecasts of smoke movement. AQMD frequently reposted the NWS to increase the social media reach. These reposts are shown below in Figure 6-3, 6-10, and 6-12. By working together, NWS Reno and AQMD were able to reach as many citizens as possible throughout the event to provide accurate information and actions to take.

Figure 6-1: Public Notification of Poor Air Quality on the First Exceedance Day of the Event, August 17, 2021

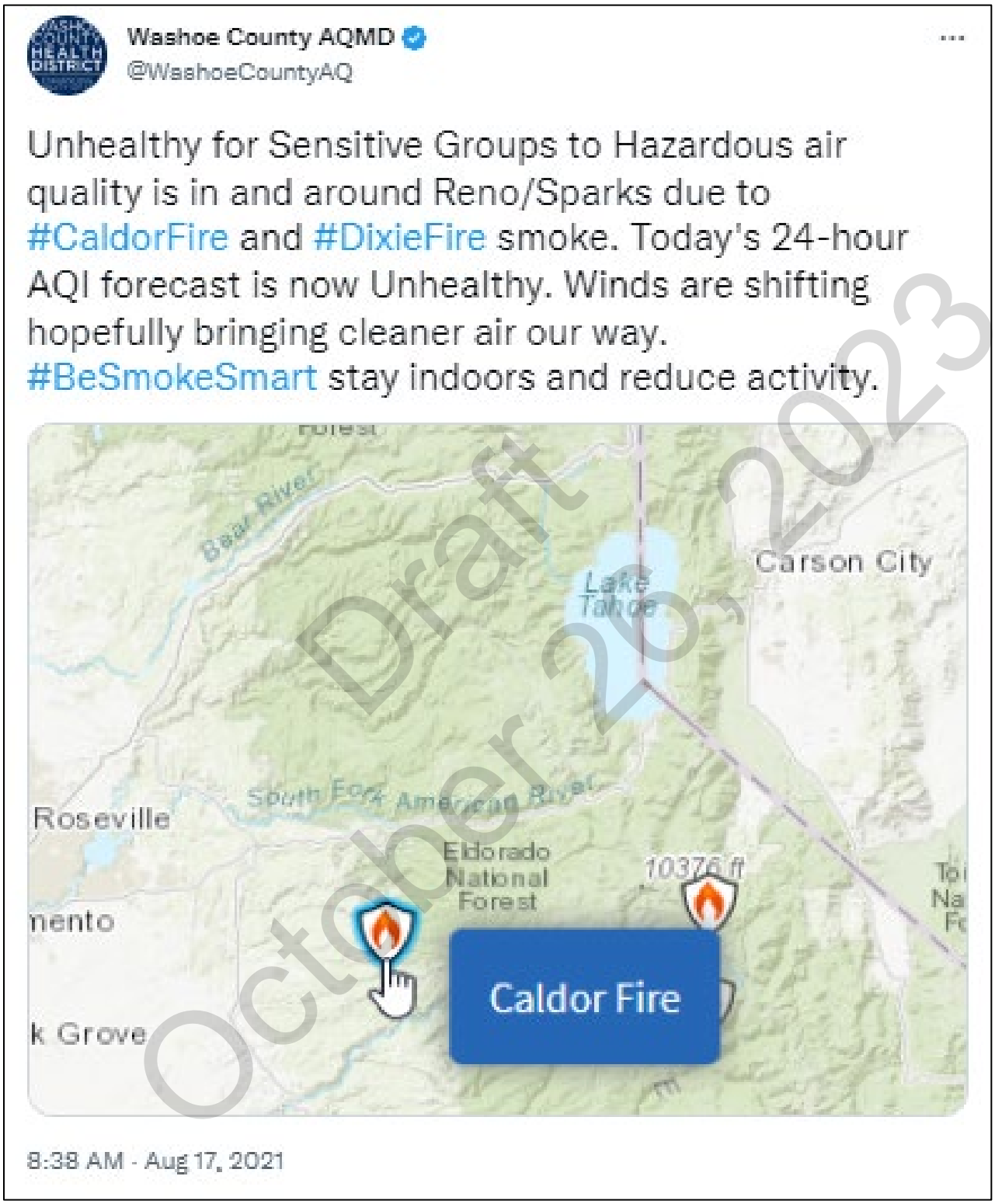


Figure 6-2: Tweet of the NowCast AQI on August 17, 2021

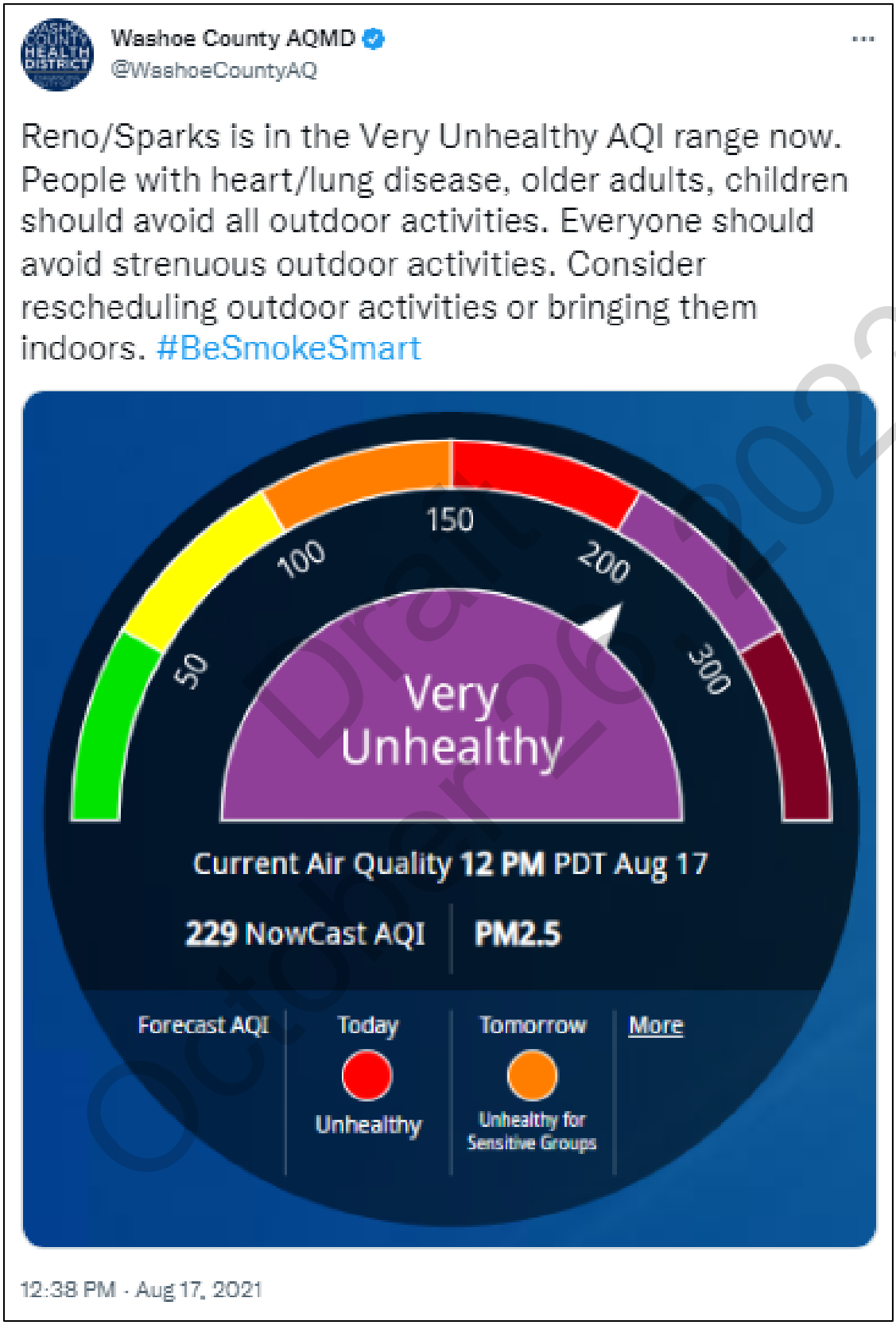


Figure 6-3: Facebook Satellite Image of Widespread Smoke August 17, 2021

Figure 6-4: Facebook Satellite Image of Widespread Smoke August 20, 2021

Figure 6-5: Twitter AQI Forecast August 20, 2021

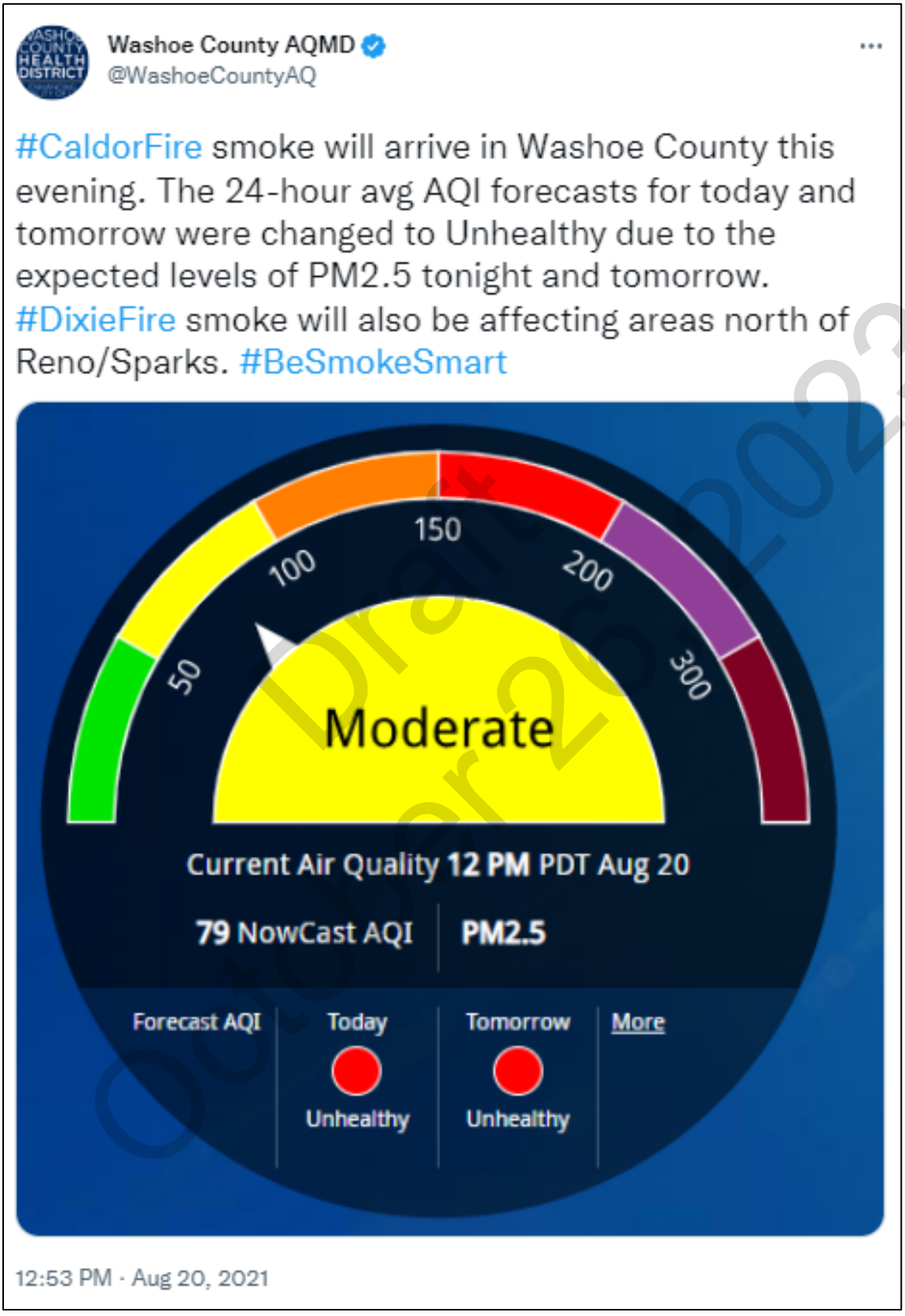


Figure 6-6: Tweet of Upgrade to Stage 3 Emergency Episode, August 23, 2021

Figure 6-7: Stage 3 Emergency Episode Press Release August 23, 2021

HEALTH DISTRICT ISSUES STAGE 3 AIR QUALITY EMERGENCY EPISODE

by Scott Oxarart | Aug 23, 2021

Reno/Sparks, Nev. Aug. 23, 2021 – The Washoe County Health District – Air Quality Management Division (AQMD) has issued a Stage 3 Emergency Episode due to smoke from area wildfires. The air quality index (AQI) for the Reno-Sparks area is expected to be "Very Unhealthy" to "Hazardous" at times Monday, Tuesday, and Wednesday.

The Stage 3 Emergency Episode was issued because the PM2.5 AQI was over 200 for a 24-period of time. It also means that all residents should stay indoors as much as possible. This is the first time AQMD has issued a Stage 3 Emergency Episode. The Caldor Fire is 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.

For Washoe County Air Quality Updates to your inbox, sign up here

Expect periods of heavy smoke during the first half of the week depending on wind patterns and proximity to the Caldor Fire smoke plume. AQMD has issued these recommendations to reduce exposure to smoke:

- Everyone should stay indoors and avoid any outdoor activity
- Stay indoors with the windows and doors closed
- Consult your physician for health questions, especially those with heart and lung issues
- Create a clean air room

AQMD can issue a Stage 1, Stage 2, Stage 3, and Stage 4 Emergency Episode with the Stage 4 being the most severe. More information on the stages can be found here. The Emergency Episode rule was recently revised and adopted by the District Board of Health on July 22, 2021.

Visit OurCleanAir.com for additional information on the Air Quality Management Division.

Figure 6-8: Tweet Highlighting Highest AQI on Record August 23, 2021

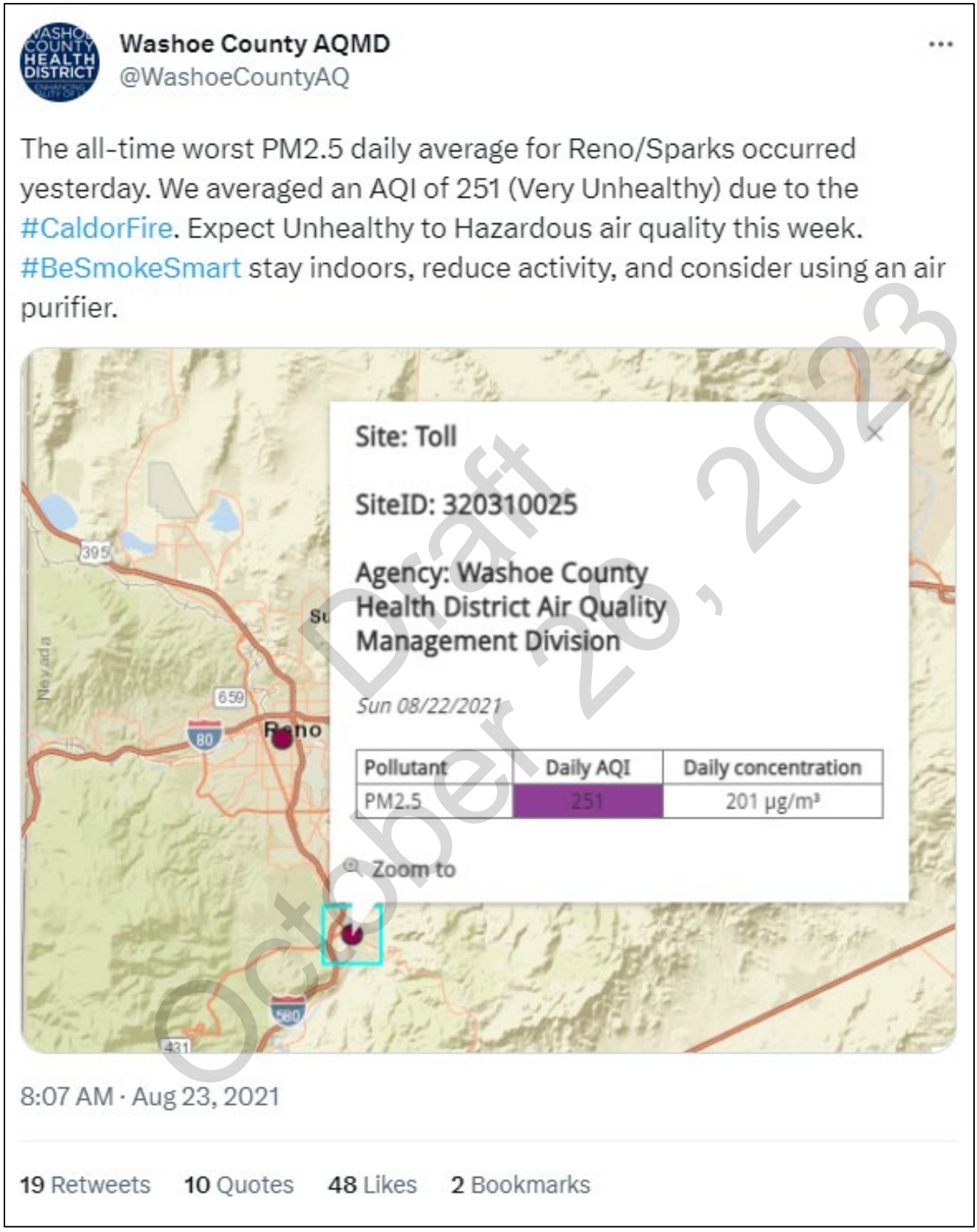


Figure 6-9: Tweet Linking EPA's Clean Room Webpage August 23, 2021

Figure 6-10: Facebook Share of NWS Reno Post August 23, 2021

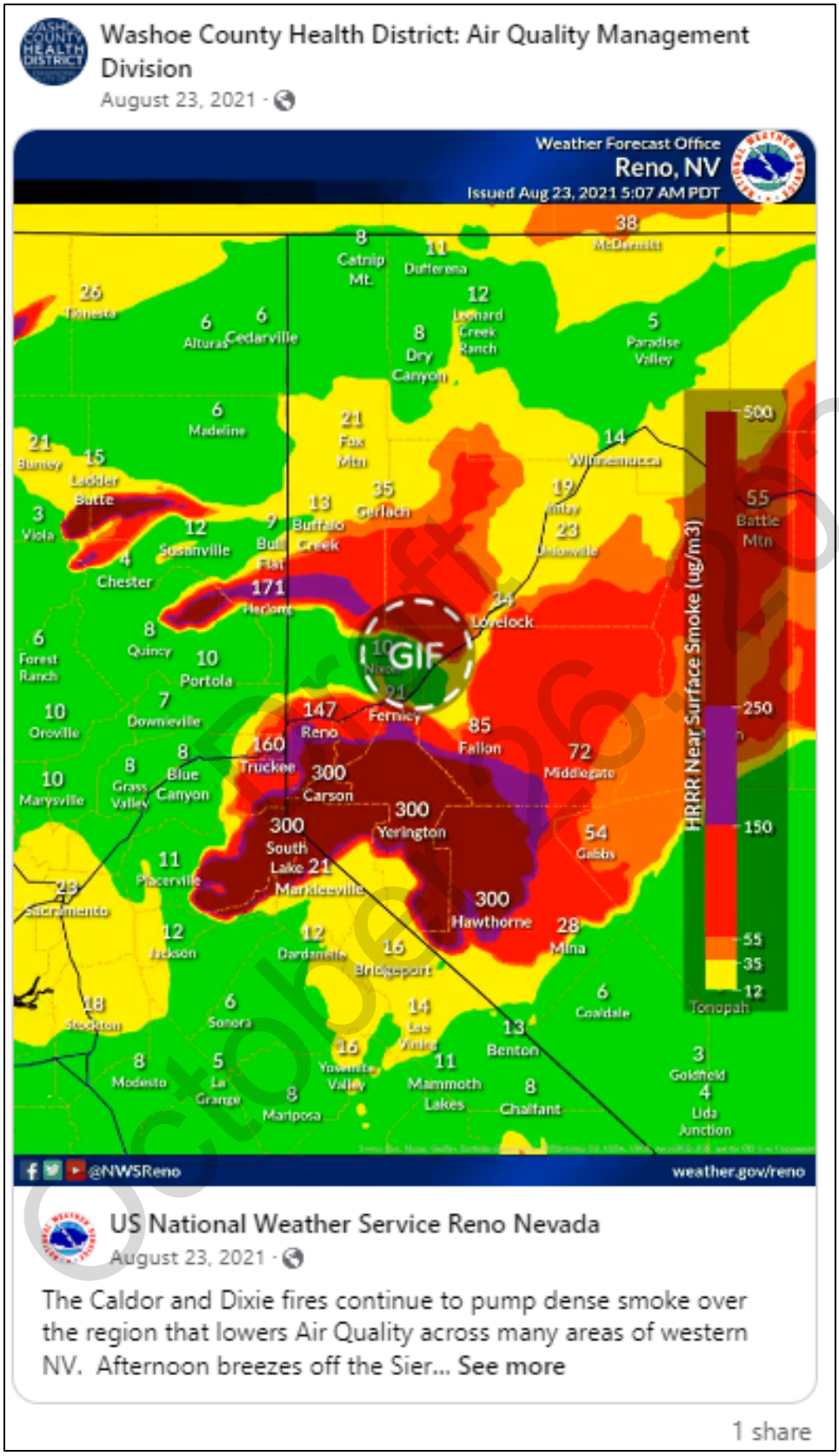


Figure 6-11: Tweet of Satellite GIF August 24, 2021

Figure 6-12: Facebook Share of NWS Reno Post August 24, 2021

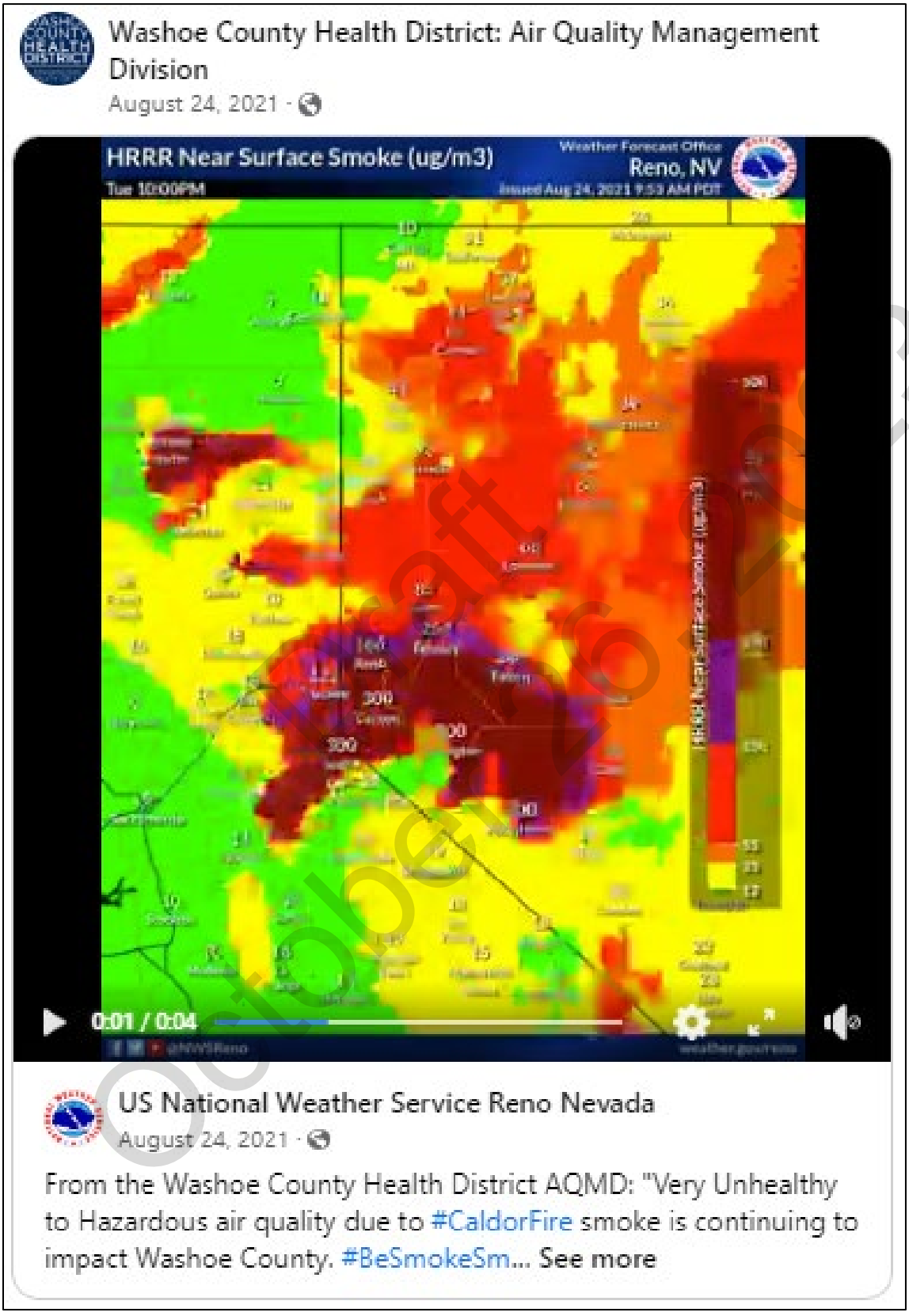


Figure 6-13: Tweet of Webcams August 24, 2021

Figure 6-14: Tweet of AirNow Fire and Smoke Map August 25, 2021

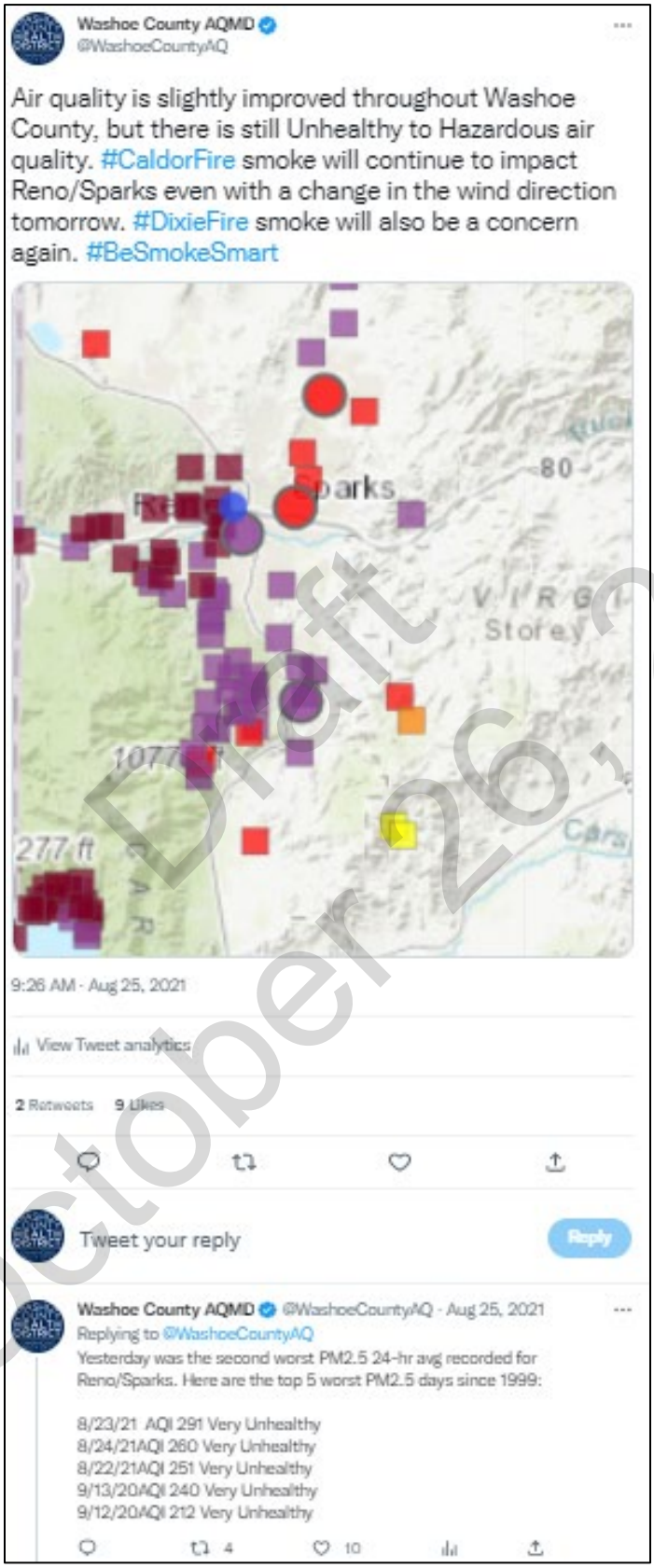


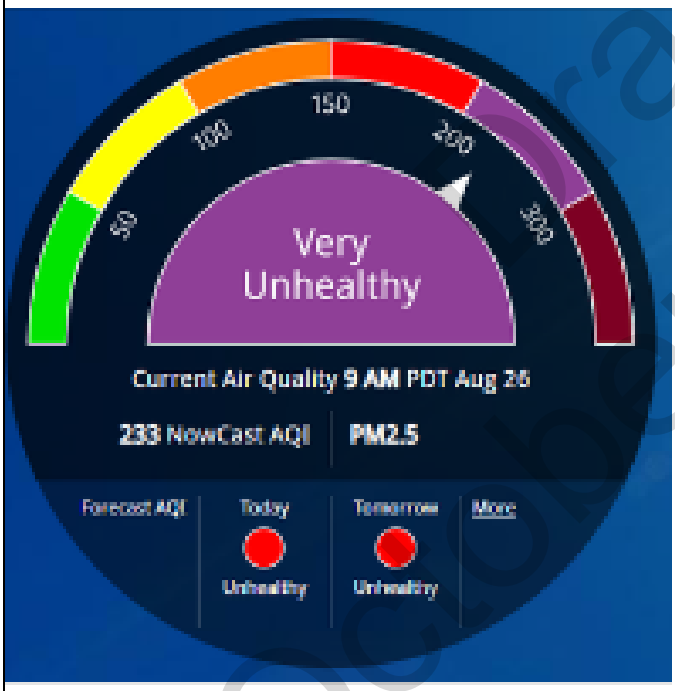
Figure 6-15: Facebook Post of NowCast and Fire and Smoke Map August 26, 2021

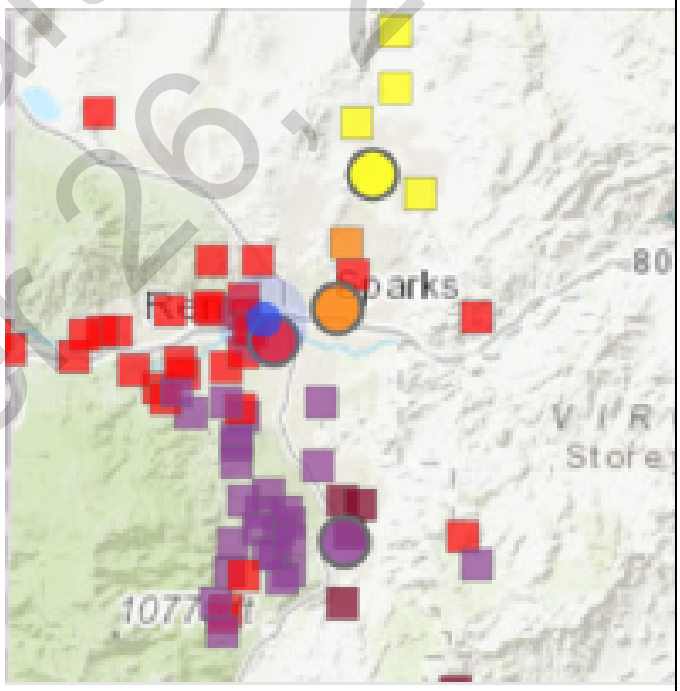
Washoe County Health District: Air Quality Management Division

August 26, 2021 ·

When it is smoky outside, #BeSmokeSmart check both the AQI on http://AirNow.gov for the highest regional AQI from our monitors and the Fire and Smoke Map (http://fire.airnow.gov) for the closest air monitor or sensor AQI.

Expect overall Unhealthy air quality today meaning children, older adults, and those with heart/lung disease should reduce your exposure by avoiding strenuous outdoor activities or keeping outdoor activities short. Consider moving physical activities indoo... See more

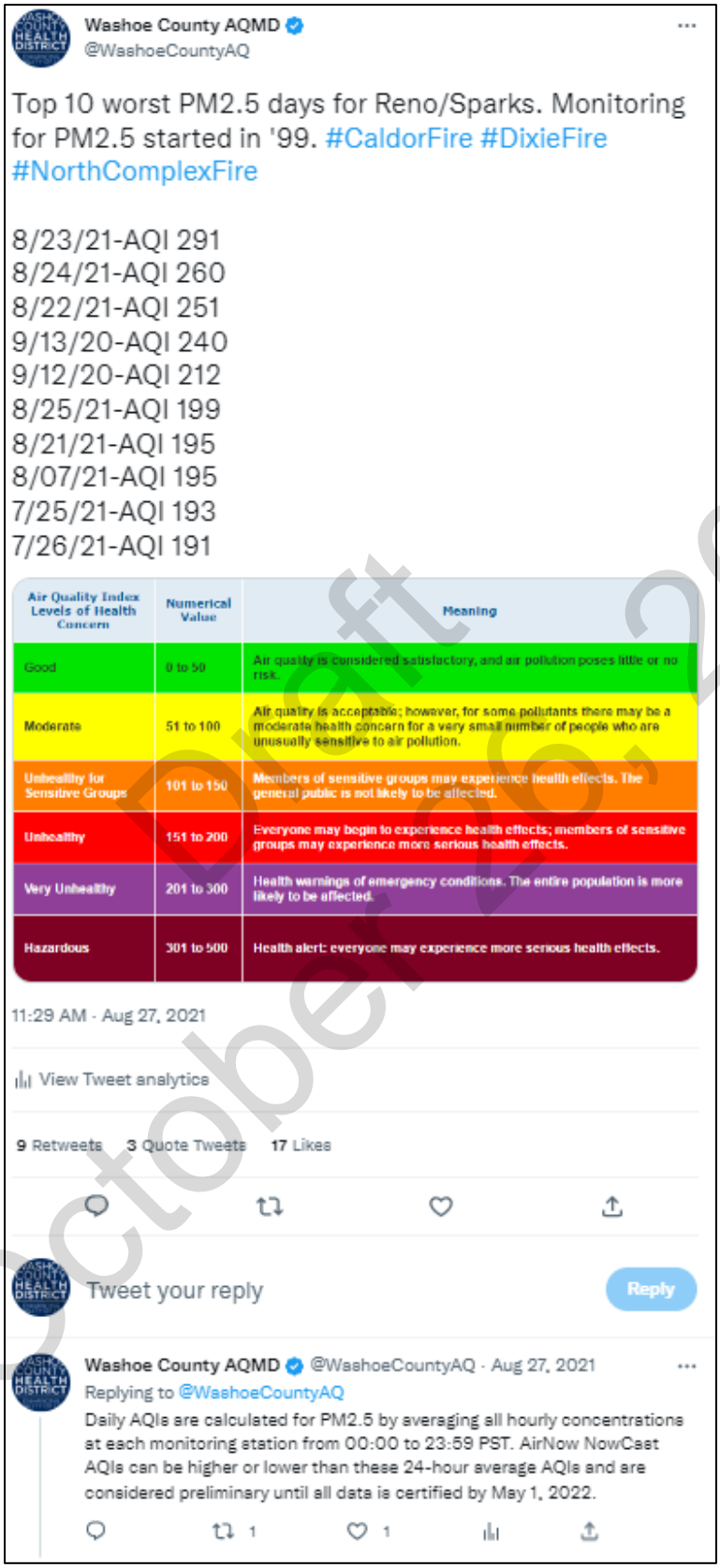




8

2 shares

Figure 6-16: Tweet of Top 10 Worst $PM_{2.5}$ days on Record August 27, 2021



Washoe County AQMD
@WashoeCountyAQ

Top 10 worst PM2.5 days for Reno/Sparks. Monitoring for PM2.5 started in '99. #CaldorFire #DixieFire #NorthComplexFire

8/23/21-AQI 291
8/24/21-AQI 260
8/22/21-AQI 251
9/13/20-AQI 240
9/12/20-AQI 212
8/25/21-AQI 199
8/21/21-AQI 195
8/07/21-AQI 195
7/25/21-AQI 193
7/26/21-AQI 191

Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0 to 50	Air quality is considered satisfactory, and air pollution poses little or no risk.
Moderate	51 to 100	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is not likely to be affected.
Unhealthy	151 to 200	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201 to 300	Health warnings of emergency conditions. The entire population is more likely to be affected.
Hazardous	301 to 500	Health alert: everyone may experience more serious health effects.

11:29 AM · Aug 27, 2021

View Tweet analytics

9 Retweets 3 Quote Tweets 17 Likes

Tweet your reply

Reply

Washoe County AQMD @WashoeCountyAQ · Aug 27, 2021
Replying to @WashoeCountyAQ
Daily AQIs are calculated for PM2.5 by averaging all hourly concentrations at each monitoring station from 00:00 to 23:59 PST. AirNow NowCast AQIs can be higher or lower than these 24-hour average AQIs and are considered preliminary until all data is certified by May 1, 2022.

1 1

Figure 6-17: Press Release Downgrading Stage 3 Emergency Episode to Stage 1 August 27, 2021 at the End of the Event

STAGE 3 AIR QUALITY EMERGENCY EPISODE DOWNGRADED TO STAGE 1

by Scott Oxarart | Aug 27, 2021

WASHOE COUNTY
HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

Reno/Sparks, Nev. Aug. 27, 2021 – The Health Officer for the Washoe County Health District has downgraded the Stage 3 Emergency Episode issued on Monday, August 23 to a Stage 1 Emergency Episode which is the lowest level of the four Emergency Episode Stages. The air quality index (AQI) for the Reno-Sparks area is expected to be "Unhealthy for Sensitive Groups" through the weekend.

Sign Up for Air Quality Email Updates Here

The Stage 3 Emergency Episode was downgraded to a Stage 1 because the 24-hour PM2.5 AQI was less than 200. The 24-hour PM2.5 AQI is expected to be above 100 for Friday, Saturday, and Sunday. Those in sensitive groups including children, older adults, and those with heart/lung disease should consider reducing prolonged or heavy exertion outdoors. The Dixie and Caldor Fires remain active and are continuing to contribute to the poor air quality in the region.

Expect improved air quality this weekend, but periods of smoke and haze are possible especially areas nearest the wildfires. AQMD has issued these recommendations to reduce exposure to smoke:

- Check the AQI on both AirNow and AirNow's Fire and Smoke Map for the AQI nearest you
- If the smoke is affecting you, stay indoors and reduce activity
- Replace you air filter in your home more frequently during wildfire smoke events
- After periods of heavy smoke, air out your home when air quality has improved

During wildfires, the role of the AQMD is to provide the most current and accurate information and data possible so that the residents and businesses of Washoe County can make the best decisions possible regarding their health.

AQMD can issue a Stage 1, Stage 2, Stage 3, and Stage 4 Emergency Episode with the Stage 4 being the most severe. More information on the stages can be found here. The Emergency Episode rule was recently revised and adopted by the District Board of Health on July 22, 2021. An air pollution Emergency Episode for Washoe County is not a state of emergency as issued by the Governor or President. The main purposes of an Emergency Episode are to notify the public of the air pollution levels, give recommendations to reduce exposure, and reduce or stop emissions from a local source if it is determined to be significantly contributing to the Emergency Episode.

Visit OurCleanAir.com for additional information on the Air Quality Management Division.

7.0 Conclusions and Recommendations

The Caldor Fire started on August 14, 2021 in Eldorado National Forest in El Dorado County, California, approximately 75 miles southwest of the Truckee Meadows Region. The Caldor Fire was most likely caused by target shooting with firearms. 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_{10} emissions which eventually led to numerous PM_{10} exceedances at the Toll, Reno4, and Sparks PM_{10} monitors between August 17 and August 26, 2021. The 2021 Dixie/Caldor 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 the requested data between August 17 and August 26, 2021, due to an exceptional event under 40 CFR 50.14(c)(3)(iv). The 2021 Dixie/Caldor Fire EE Demonstration has provided evidence that:

1. Emissions from a wildfire event caused PM_{10} 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 17 and 20-26, 2021;
3. Event-influenced concentrations were unusual and above normal historical concentrations;
4. The event was related to wildfires of which one was a natural event predominately occurring on wildland, and one was human activity unlikely to recur; and
5. The event was not reasonably controllable or preventable.

The AQMD recommends that EPA Region 9 concur with the 2021 Dixie/Caldor Fire EE Demonstration and exclude the data defined in Table 2-3, from comparison to the NAAQS.

WASHOE COUNTY
HEALTH DISTRICT
ENHANCING QUALITY OF LIFE

Please contact Matt McCarthy for
questions or comments at
mmccarthy@nnph.org

Appendix A

Public Comment Plan

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). 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.

Appendix B

Exceptional Event Initial Notification

Initial Notification of Potential Exceptional Event Information Summary for PM_{10}

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_{10}
Affected Regulatory Decision[1]: None
Area Name/Designation Status: Truckee Meadows Hydrographic Basin 87 PM_{10} Maintenance Area
Design Value Period: 2019-2021

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[2])	AQS Flags	Monitor AQS IDs (and POCs)	Monitor Names	24-hour average Exceedance Concentration ($\mu g/m^3$)	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	

[1] designation, classification, attainment determination, attainment date extension, or finding of SIP inadequacy leading to SIP call

[2] Provide additional information for types of event described as "other"

Table B(1): Violating Monitors Information

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

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_2, ozone, PM_{10}, $PM_{10-2.5}$, $PM_{2.5}$, and SO_2 (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

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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

EXCEPTIONAL DATA TYPES

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

Parameter	Unit	POC	PQAO	Year	Meth	# Obs	1st Max Value	2nd Max Value	3rd Max Value	4th Max Value	Arith. Mean	Duration	Cert& Eval	EDT
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

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

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

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

QUICKLOOK ALL PARAMETERS

Apr. 4, 2022

PQAOS USED IN THIS REPORT

PQAO	AGENCY DESCRIPTION
1138	Washoe County District Health Department

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

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).

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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
	32										

PROTOCOL SELECTIONS

Parameter Classification	Parameter	Method	Duration
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

Data Evaluation and Concurrence Report Summary

Certification Year: 2021
Certifying Agency (CA): Washoe County District Health Department (1138)

Pollutants in Report:

Parameter Name	Code	Monitors Evaluated	Monitors Recommended for Concurrence by AQS	Monitors NOT Recommended for Concurrence by AQS
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:

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

Summary of 'N' flags for all pollutants:

PQAO	Parameter Code	AQS Site-ID	POC	AQS Recommended Flag	Cert. Agency Recommended Flag	Reason for AQS Recommendation

Signature of Monitoring Organization Representative: Francisca 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		QAPP Appr.	Concur. Flag		
			Mean	Min	Max	Exceed. Count	Outlier Count	Perc. Comp.	Precision	Bias	Complete	Bias	Complete	Bias	PQAO Level Criteria		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

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:

Number of Passed Audits	NPAP Bias	Criteria Met
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	Bias	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

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

			Routine Data						One Point Quality Check			Annual PE		NPAP			Concur. Flag		
AQS Site ID	POC	Monitor Type	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		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	3.05	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

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

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

			Routine Data (ug/m3)						Flow Rate Verification		Flow Rate Audit			Concurrence Flag		
AQS Site ID	POC	Monitor Type	Mean	Min	Max	Exceed. Count	Outlier Count	% Complete	Bias	% Complete	Bias	% Complete	QAPP Appr.	AQS Rec Flag	CA Rec Flag	EPA 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

				Routine Data (ug/m3)						Flow Rate Audit		Collocation			PEP PQAO	QAPP	Concurrence Flag		
AQS Site ID	POC	Method	Monitor Type	Mean	Min	Max	Exceed. Count	Outlier Count	% Complete	Bias	% Complete	CV	% Complete	PQAO Crit. Met	Crit. Met	Appr.	AQS Rec Flag	CA Rec Flag	EPA 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

Appendix D

AQS Report Showing RT Flags Applied

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

User ID: BMCMULLEN

RAW DATA QUALIFIER REPORT

Report Request ID: 2107456 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 17	2021 08 26

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	Sample Value	Qualifier Code	Qualifier Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-17 00:00	81	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 01:00	117	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 02:00	138	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 03:00	108	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 04:00	113	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 05:00	156	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 06:00	180	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 07:00	202	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 08:00	196	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 09:00	264	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 10:00	432	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-17 11:00	524	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 12:00	301	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 13:00	197	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 14:00	123	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 15:00	94	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 16:00	34	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 17:00	79	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 18:00	139	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 19:00	98	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 20:00	96	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 21:00	100	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	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 Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-17 22:00	59	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-17 23:00	53	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 00:00	30	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 01:00	20	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 02:00	28	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 03:00	21	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 04:00	25	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 05:00	37	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 07:00	71	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 08:00	61	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 09:00	50	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	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 Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-20 10:00	32	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 11:00	37	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 12:00	39	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 13:00	48	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 14:00	30	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 15:00	242	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 16:00	373	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 17:00	444	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 18:00	508	RT	Wildfire-U. S.	2023-05-16			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 19:00	435	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 20:00	407	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-20 21:00	416	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 22:00	428	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-20 23:00	385	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 00:00	323	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 01:00	218	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 02:00	298	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 03:00	314	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 04:00	280	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 05:00	195	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 06:00	203	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 07:00	272	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-21 08:00	281	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 09:00	189	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 10:00	245	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 11:00	270	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 12:00	265	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 13:00	308	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 14:00	246	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 15:00	160	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 16:00	73	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 17:00	69	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 18:00	78	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-21 19:00	105	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 20:00	117	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 21:00	98	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 22:00	134	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-21 23:00	162	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 00:00	214	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 01:00	219	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 02:00	225	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 03:00	269	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 04:00	263	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 05:00	233	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-22 06:00	250	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 07:00	243	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 08:00	253	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 09:00	241	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 10:00	228	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 11:00	173	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 12:00	150	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 13:00	157	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 14:00	227	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 15:00	219	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 16:00	308	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-22 17:00	330	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 18:00	399	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 19:00	333	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 20:00	311	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 21:00	313	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 22:00	355	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-22 23:00	359	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 00:00	285	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 01:00	262	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 02:00	246	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 03:00	232	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-23 04:00	261	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 05:00	274	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 06:00	288	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 07:00	332	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 08:00	360	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 09:00	369	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 10:00	386	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 11:00	378	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 12:00	324	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 13:00	287	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 14:00	423	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-23 15:00	374	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 16:00	370	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 17:00	393	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 18:00	367	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 19:00	348	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 20:00	259	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 21:00	225	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 22:00	301	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-23 23:00	332	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 00:00	312	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 01:00	345	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-24 02:00	346	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 03:00	368	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 04:00	334	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 05:00	317	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 06:00	308	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 07:00	298	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 08:00	337	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 09:00	296	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 10:00	306	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 11:00	301	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 12:00	212	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-24 13:00	397	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 14:00	290	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 15:00	306	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 16:00	336	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 17:00	269	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 18:00	203	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 19:00	219	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 20:00	188	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 21:00	220	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 22:00	154	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-24 23:00	169	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-25 00:00	182	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 01:00	188	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 02:00	198	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 03:00	225	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 04:00	211	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 05:00	213	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 06:00	236	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 07:00	174	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 08:00	227	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 09:00	264	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 10:00	244	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-25 11:00	298	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 12:00	499	RT	Wildfire-U. S.	2023-05-16			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 13:00	270	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 14:00	154	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 15:00	206	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 16:00	134	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 17:00	69	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 18:00	73	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 19:00	84	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 20:00	130	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 21:00	216	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-25 22:00	252	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-25 23:00	318	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 00:00	322	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 01:00	284	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 02:00	237	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 03:00	226	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 04:00	200	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 05:00	225	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 06:00	261	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 07:00	277	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 08:00	201	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-26 09:00	197	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 11:00	123	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 12:00	143	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 13:00	145	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 14:00	138	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 15:00	132	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 16:00	125	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 17:00	118	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 18:00	126	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 19:00	132	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 20:00	145	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Qualifier Code	Qualifier Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0025-81102-2	2021-08-26 21:00	120	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 22:00	76	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0025-81102-2	2021-08-26 23:00	61	RT	Wildfire-U. S.	2021-11-22			
684A STATE ROUTE 341, RENO NV 89521	**Event:**			Dixie and Caldor Fires	2023-05-22			

Monitor Qualifier Counts: RT Wildfire-U. S. **Count: 190**

Monitor Key / Site Address	Sample Date-Time	Sample Value	Qualifier Code	Qualifier Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0031-81102-2	2021-08-21 00:00	351	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 01:00	334	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 02:00	277	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 03:00	350	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 04:00	374	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 05:00	326	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 06:00	274	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 07:00	208	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 08:00	266	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 09:00	263	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 10:00	214	RT	Wildfire-U. S.	2021-11-17			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0031-81102-2	2021-08-21 10:00	214	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 11:00	237	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 12:00	250	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 13:00	208	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 14:00	139	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 15:00	78	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 16:00	71	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 17:00	70	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 18:00	75	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 19:00	91	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 20:00	70	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 21:00	75	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 22:00	105	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-21 23:00	114	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 00:00	166	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 01:00	214	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 02:00	278	RT	Wildfire-U. S.	2021-11-17			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0031-81102-2	2021-08-22 02:00	278	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 03:00	334	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 04:00	364	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 05:00	352	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 06:00	328	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 07:00	320	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 08:00	292	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 09:00	270	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 10:00	203	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 11:00	147	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 12:00	134	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 13:00	175	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 14:00	181	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 15:00	131	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 16:00	185	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 17:00	105	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 18:00	99	RT	Wildfire-U. S.	2021-11-17			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0031-81102-2	2021-08-22 18:00	99	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 19:00	100	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 20:00	132	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 21:00	147	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 22:00	203	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-22 23:00	188	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 00:00	307	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 01:00	284	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 02:00	290	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 03:00	308	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 04:00	272	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 05:00	318	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 06:00	383	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 07:00	410	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 08:00	403	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 09:00	382	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 10:00	379	RT	Wildfire-U. S.	2021-11-17			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0031-81102-2	2021-08-23 10:00	379	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 11:00	303	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 12:00	307	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 13:00	307	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 14:00	259	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 15:00	254	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 16:00	277	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 17:00	138	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 18:00	188	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 19:00	233	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 20:00	270	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 21:00	323	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 22:00	350	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-23 23:00	356	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 00:00	320	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 01:00	297	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 02:00	306	RT	Wildfire-U. S.	2021-11-17			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0031-81102-2	2021-08-24 02:00	306	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 03:00	300	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 04:00	311	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 05:00	332	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 06:00	371	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 07:00	363	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 08:00	341	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 09:00	330	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 10:00	315	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 11:00	206	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 12:00	269	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 13:00	298	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 14:00	197	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 15:00	137	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 16:00	130	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 17:00	72	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 18:00	68	RT	Wildfire-U. S.	2021-11-17			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0031-81102-2	2021-08-24 18:00	68	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 19:00	83	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 20:00	114	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 21:00	155	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 22:00	133	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-24 23:00	165	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 00:00	167	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 01:00	165	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 02:00	169	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 03:00	214	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 04:00	209	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 05:00	226	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 06:00	274	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 07:00	308	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 08:00	324	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 09:00	247	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 10:00	213	RT	Wildfire-U. S.	2021-11-17			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-0031-81102-2	2021-08-25 10:00	213	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 11:00	181	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 12:00	162	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 13:00	144	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 14:00	131	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 15:00	180	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 16:00	104	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 17:00	86	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 18:00	71	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 19:00	59	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 20:00	61	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 21:00	70	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 22:00	85	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-0031-81102-2	2021-08-25 23:00	90	RT	Wildfire-U. S.	2021-11-17			
1260-A Stewart St.	**Event:**			Dixie and Caldor Fires	2023-05-22			

Monitor Qualifier Counts: RT Wildfire-U. S. **Count: 120**

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-1005-81102-4	2021-08-21 00:00	326	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-1005-81102-4	2021-08-21 01:00	317	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 02:00	311	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 03:00	308	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 04:00	291	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 05:00	285	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 06:00	302	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 07:00	331	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 08:00	248	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 09:00	226	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 10:00	210	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 11:00	252	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-1005-81102-4	2021-08-21 12:00	230	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 13:00	196	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 14:00	125	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 15:00	71	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 16:00	62	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 17:00	58	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 18:00	67	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 19:00	70	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 20:00	63	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 21:00	71	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-21 22:00	80	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-1005-81102-4	2021-08-21 23:00	65	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 00:00	77	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 01:00	83	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 02:00	117	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 03:00	124	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 04:00	129	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 05:00	140	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 06:00	171	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 07:00	238	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 08:00	297	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 09:00	332	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-1005-81102-4	2021-08-23 10:00	261	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 11:00	205	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 12:00	234	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 13:00	266	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 14:00	248	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 15:00	220	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 16:00	262	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 17:00	139	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 18:00	192	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 19:00	227	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 20:00	265	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-1005-81102-4	2021-08-23 21:00	336	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 22:00	330	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-23 23:00	258	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 00:00	156	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 01:00	152	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 02:00	180	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 03:00	167	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 04:00	161	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 05:00	135	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 06:00	145	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 07:00	274	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-1005-81102-4	2021-08-24 08:00	303	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 09:00	250	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 10:00	249	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 11:00	152	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 12:00	200	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 13:00	299	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 14:00	236	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 15:00	134	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 16:00	119	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 17:00	71	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 18:00	53	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			

Parameter: PM10 Total 0-10um STP (81102)
Standard Units: Micrograms/cubic meter (25 C) (001)

Monitor Key / Site Address	Sample Date-Time	Sample Value	Code	Description	Action Date	NAAQS Standard	Concurrence Ind	Concurrence Date
32-031-1005-81102-4	2021-08-24 19:00	84	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 20:00	112	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 21:00	137	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 22:00	143	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			
32-031-1005-81102-4	2021-08-24 23:00	130	RT	Wildfire-U. S.	2021-11-18			
750 4TH ST, SPARKS, NV 89431	**Event:**			Dixie and Caldor Fires	2023-05-22			

Monitor Qualifier Counts: RT Wildfire-U. S. **Count: 72**

All Qualifiers Utilized:

Qualifier Code:	Qualifier Description:	Qualifier Count:
RT	Wildfire–U. S.	382