

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION



ANALYSIS OF THE RIM FIRE AS AN EXCEPTIONAL EVENT AND ITS CONTRIBUTION TO HIGH PM_{2.5} CONCENTRATIONS IN CARSON CITY AND GARDNERVILLE, NEVADA

DRAFT Report
July 2014

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/m³	micrograms per cubic meter
agl	above ground level
AQS	Air Quality System
BAQP	Bureau of Air Quality Planning
CC Armory	Carson City Armory
CFR	Code of Federal Regulations
EER	Exceptional Event Rule
FEM	Federal Equivalence Method
FRM	Federal Reference Method
HYSPLIT	Hybrid Single Particle Lagrangian Integrated Trajectory
m	meters
NAAQS	National Ambient Air Quality Standards
NDEP	Nevada Division of Environmental Protection
NOAA	National Oceanic and Atmospheric Administration
PM_{2.5}	Particulate Matter Smaller than 2.5 Micrometers
PST	Pacific Standard Time
U.S. EPA	United States Environmental Protection Agency
UTC	Coordinated Universal Time

ANALYSIS OF THE RIM FIRE AS AN EXCEPTIONAL EVENT AND ITS CONTRIBUTION TO HIGH PM_{2.5} CONCENTRATIONS IN CARSON CITY AND GARDNERVILLE, NV BETWEEN AUGUST 22, 2013 AND SEPTEMBER 9, 2013

1.0 INTRODUCTION

The Nevada Division of Environmental Protection (NDEP) Bureau of Air Quality Planning (BAQP) operates a network of ambient air quality monitors at a variety of locations throughout the state of Nevada. The NDEP BAQP's ambient air monitoring network meets the minimum monitoring requirements for all criteria pollutants pursuant to 40 Code of Federal Regulations (CFR) 58, Appendix D. The NDEP BAQP's monitoring network is reviewed annually pursuant to 40 CFR 58.10 to ensure that the network meets the monitoring objectives defined in 40 CFR 58, Appendix D. The approval letter for the NDEP BAQP Annual Network Plan is included in Appendix A. Ambient air monitoring data is collected and data quality is assured in accordance with 40 CFR 58. This data is submitted to the United States Environmental Protection Agency's (U. S. EPA) Air Quality System (AQS). The data for 2013 was certified on April 30, 2013. The Data Certification Letter was submitted to U. S. EPA Region IX on April 30, 2013 as well. The Data Certification Letter is included in Appendix B.

1.1 PURPOSE

On August 17, 2013, an illegal campfire near Yosemite National Park in California resulted in a large-scale wildland fire. The wildland fire, named the Rim Fire, was not contained until October 24, 2013, and burned more than 250,000 acres. Smoke from this wildland fire caused exceedances of the 35 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) of particulate matter smaller than 2.5 micrograms (PM_{2.5}) 24-hour National Ambient Air Quality Standard (NAAQS)¹ at two monitoring locations in Carson City (CC Armory) and Gardnerville (Ranchos), Nevada, approximately 75 miles north-northeast of the Rim Fire origin.

The purpose of this document is to request flagging of the 24-hour PM_{2.5} data from the CC Armory and Ranchos air monitoring sites that exceeded the NAAQS as exceptional events under the U.S. EPA's regulation for *The Treatment of Data Influenced by Exceptional Events; Final Rule* (72 FR 13560), known as the Exceptional Events Rule (EER; 40 CFR 50.1 and 51.14). The Rim Fire was a natural event that caused exceedances of the federal standard for two Federal Equivalent Method (FEM) Beta Attenuation Monitors and one Federal Reference Method (FRM) monitor between August 22, 2013 and September 9, 2013. The 24-hour average (FEM) concentrations exceeded 425 $\mu\text{g}/\text{m}^3$ at the Ranchos air monitoring station in Douglas County (AQS Site Code 32-005-0007) and 350 $\mu\text{g}/\text{m}^3$ at the CC Armory air monitoring station in Carson City (AQS Site Code 32-510-0020-1). In addition, the 24-hour average (FRM) concentration

¹ NAAQS are pollutant-specific levels set by the U. S. EPA to protect public health and welfare. The NAAQS for PM_{2.5} is 35 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) averaged over 24 hours.

exceeded $80 \mu\text{g}/\text{m}^3$ at the CC Armory air monitoring station (AQS Site Code 32-510-0020-2; this FRM monitor is operated on a 1-in-6 day operating schedule).

The elevated particulate matter concentrations observed between August 22, 2013 and September 9, 2013 occurred as a result of the smoke generated by the Rim Fire. The NDEP BAQP has submitted the hourly $\text{PM}_{2.5}$ data from the affected monitors on those days to the U.S. EPA AQS database and has placed the appropriate AQS flags throughout the data to indicate that the data was affected by an exceptional event due to wildfire. Informational flags (IT) were also included for other monitored criteria pollutants at each site for the same time period. This flagging indicates that the ambient air quality data was influenced by the smoke plume emissions and ensures that the data is properly represented in the regulatory process. This document provides evidence in support of this request.

Additional information used in this analysis beyond what is included in Section 2 is provided in separate appendices.

1.2 EXCEPTIONAL EVENTS RULE AND BACKGROUND

In 1977, the U.S. EPA began implementing policies to address the usage of ambient air quality monitoring data affected by exceptional and/or natural events. In July 1986, the U.S. EPA issued a document entitled *Guideline on the Identification and Use of Air Quality Data Affected by Exceptional Events*, which introduced a flagging system to identify air quality measurements that were influenced by exceptional events, and to exclude such data from consideration in determining compliance with the NAAQS. This data, if left unidentified, could lead to possible misinterpretation or misuse of the data. In March 2007, the U.S. EPA promulgated a formal rule, entitled *The Treatment of Data Influenced by Exceptional Events; Final Rule*. The rule defines exceptional events as either anthropogenic events that are unlikely to recur at a particular location, or natural events, which may recur, sometimes frequently. These exceptional events must affect air quality and may not be controllable or preventable using techniques that tribal, state, or local air agencies could reasonably implement in order to achieve and maintain the NAAQS. After an event is classified by the U.S. EPA as an exceptional event, the data related to that event is flagged as such in the U.S. EPA AQS database. The flagged data remains available to the public but is not considered in determining attainment status. The U.S. EPA Exceptional Event Rule has several goals. The rule:

- Ensures that air quality measurements are properly evaluated and characterized with regard to their cause(s);
- Identifies reasonable actions that should be taken to address the air quality and public health impacts caused by exceptional events;

- Intends to avoid imposing unreasonable planning requirements on state, local, and tribal air quality agencies related to exceedances of the NAAQS due to exceptional events; and
- Ensures that the use of air quality data, whether afforded special treatment or not, is subject to full public disclosure and review.

Packages requesting the exclusion of data affected by exceptional events must demonstrate that:

- The event affected air quality;
- The event was not reasonably controllable or preventable;
- The event was caused by human activity that is unlikely to reoccur at a particular location, or was a natural event;
- There was a clear causal relationship between the specific event and the monitored concentration(s);
- The event is associated with a measured concentration in excess of normal historical fluctuations, including background; and
- There would have been no exceedance or violation but for the event.

The following analysis demonstrates that a clear causal relationship exists between the smoke from the Rim Fire and the PM_{2.5} concentrations at the Ranchos and CC Armory monitoring sites. This analysis includes monitoring data, meteorological data, wind trajectories, emissions information, and historical data. The NDEP BAQP concludes that, but for smoke from the wildfire, the measured concentrations at the Ranchos and CC Armory monitoring sites would not have exceeded the NAAQS.

2.0 WILDLAND FIRE EXCEPTIONAL EVENT ANALYSIS

2.1 OVERVIEW OF EVENT

The Rim Fire started on August 17, 2013 due to an illegal campfire on Jawbone Ridge in the Stanislaus National Forest, about three miles east of Groveland, California (Figure 1). The fire had burned approximately 40 acres when it was discovered, and within 72 hours had grown to almost 10,000 acres. On August 22, 2013, the fire more than tripled in size from approximately 16,000 acres to a total of almost 54,000 acres, and by August 23, 2013, the fire doubled in size again to more than 105,000 acres. The rapid growth of the fire was due to a variety of factors, including a history of fire suppression, a second year of severe drought, and urban growth around the National Forest. The Rim Fire was declared 100 percent contained on October 24, 2013 after burning more than 250,000 acres within the Stanislaus National Forest and Yosemite National Park.

California and Nevada were experiencing a severe to exceptional drought in the summer of 2013, and 2013 was the driest calendar year in recorded history for the Sierra Nevada Mountains as measured in Tahoe City, California. The National Oceanic and Atmospheric Administration (NOAA) lists 2013 as the fourth warmest year since recordkeeping began in 1880.

2.2 AFFECTED AIR QUALITY

According to the EER, an event is considered to have affected air quality if there is a clear causal relationship between the event in question and the monitored exceedance, and if the event in question is associated with measured concentrations in excess of normal historical fluctuations (72 FR 13560). These criteria are discussed in Sections 2.5 and 2.6 of this document.

Although the Rim Fire started on August 17, 2013, smoke from the fire did not significantly impact air quality in Carson City and Gardnerville until August 22, 2013. This is in part due to a rapid escalation of the fire between August 21 and August 22, 2013. In addition, an unusual weather pattern (for August) generated south-southwest winds in western Nevada for much of the time period beginning on August 22, 2013. This caused the smoke plume from the Rim Fire to change direction. Figures 2A and 2B show the smoke plume from the Rim Fire on August 22, 2013 at 1400 coordinated universal time (UTC) and at 2200 UTC. Figures 3A and 3B show screen shots from a web camera on the roof of the NDEP building in Carson City, Nevada, for approximately the same time frames.

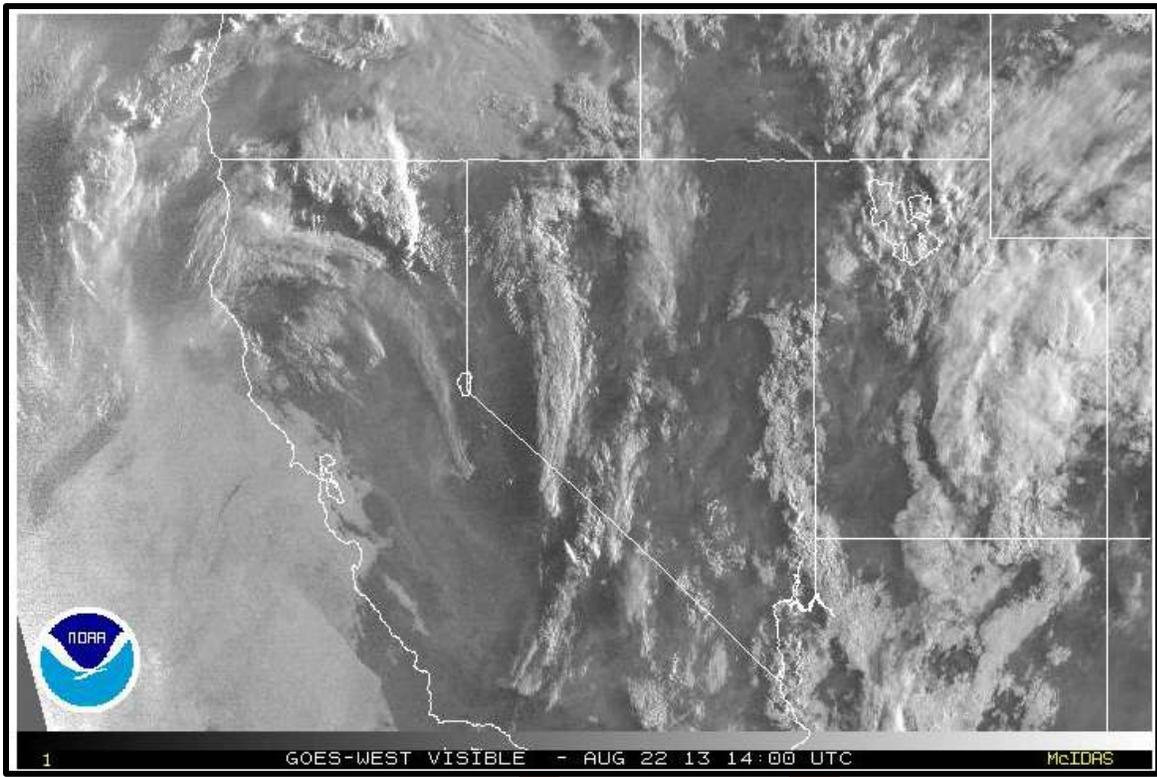


Figure 2A NOAA GOES WEST Satellite Imagery from August 22, 2013 at 1400 UTC

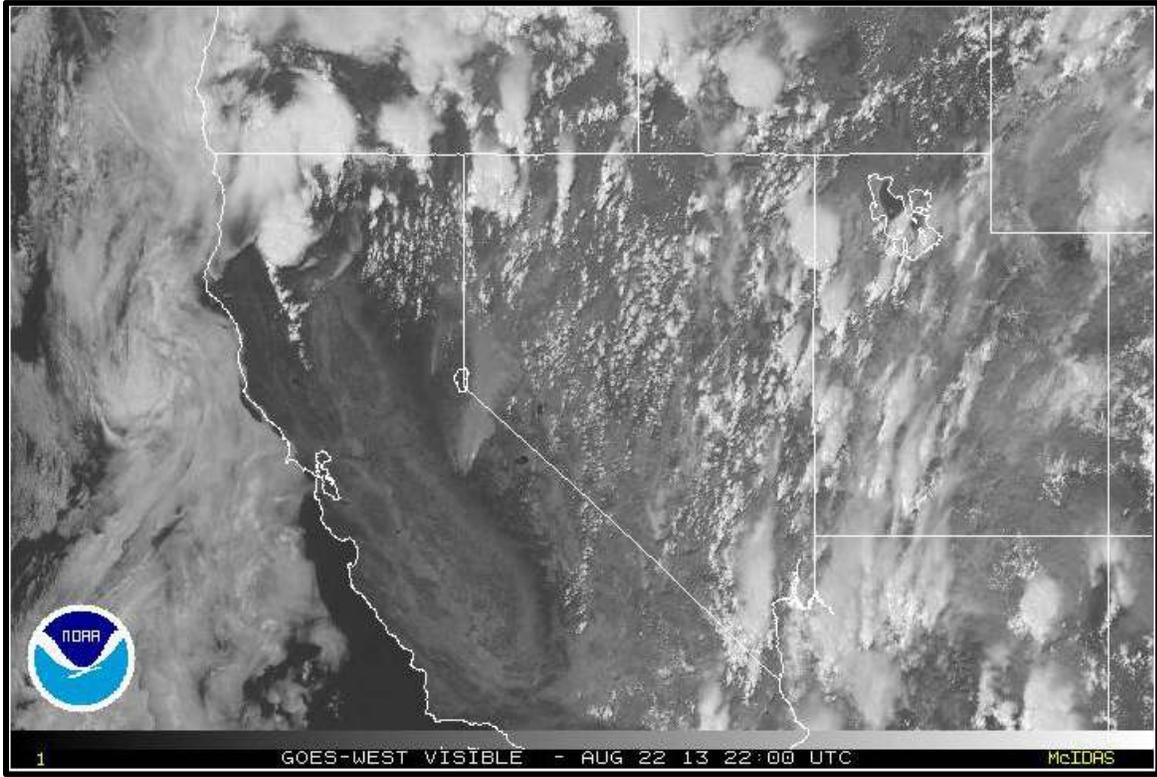


Figure 2B NOAA GOES WEST Satellite Imagery from August 22, 2013 at 2200 UTC



Figure 3A View to the Southwest from the NDEP Building in Carson City, Nevada, at Approximately 1100 PST (1900 UTC) on August 22, 2013



Figure 3B View to the South-southwest from the NDEP Building in Carson City, Nevada, at Approximately 1530 PST (2330 UTC) on August 22, 2013

Between August 22 and September 7, 2013, smoke from the Rim Fire resulted in abnormally high 24-hour average PM_{2.5} concentrations throughout western Nevada. Exceedances of the PM_{2.5} NAAQS were recorded at the Ranchos and CC Armory PM_{2.5} FEM/FRM monitors on most days during this period. The 24-hour average (midnight to midnight) concentrations for the monitors are listed in Tables 1 and 2 from midnight on August 16, 2013 through midnight on September 15, 2013.

Table 1 Monitoring Sites Exceeding NAAQS 24-hour Average PM_{2.5} Standard (35µg/m³)

Monitoring Site	AQS Number	Dates of Exceedance	Maximum 24-hour Average PM _{2.5} Concentration (µg/m ³)	Date of Maximum
CC Armory	32-510-0020-1	08/22/2013 – 09/05/2013	364	08/23/2013
CC Armory	32-510-0020-2	08/26/2013 09/01/2013 09/07/2013	83.9	08/26/2013
Ranchos	32-005-0007	08/22/2013 – 09/08/2013	427	08/25/2013

Table 2 PM_{2.5} Hourly Averages and Maximums for CC Armory and Ranchos Monitoring Sites from August 16, 2013 through September 15, 2013.

Date	PM _{2.5} Concentrations (µg/m ³)			
	CC Armory (FEM/FRM Data)		Ranchos	
	24-hour Average ¹	Daily Maximum	24-hour Average	Daily Maximum
08/16/2013	8.0	62.0	4.4	8.0
08/17/2013	18.8	71.0	10.8	26.0
08/18/2013	20.2	44.0	16.5	65.0
08/19/2013	28.7	83.0	15.7	31.0
08/20/2013	11.2/8.5	20.0	11.4	17.0
08/21/2013	11.0	31.0	8.5	16.0
08/22/2013	46.2	217.0	71.1	228.0
08/23/2013	170.2	364.0	207.4	336.0
08/24/2013	107.1	238.0	195.3	355.0
08/25/2013	130.0	290.0	186.9	427.0
08/26/2013	97.0/83.9	160.0	175.3	252.0
08/27/2013	149.0	253.0	170.7	293.0
08/28/2013	126.3	254.0	207.8	298.0
08/29/2013	97.6	192.0	149.7	274.0
08/30/2013	92.2	180.0	94.9	208.0
08/31/2013	13.3	38.0	20.5	63.0
09/01/2013	35.6/34.7	138.0	56.0	159.0
09/02/2013	52.9	116.0	78.1	170.0
09/03/2013	56.5	123.0	105.1	183.0
09/04/2013	87.1	169.0	101.0	163.0
09/05/2013	29.6	72.0	61.7	135.0
09/06/2013	15.7	38.0	53.3	94.0

Date	PM _{2.5} Concentrations (µg/m ³)			
	CC Armory (FEM/FRM Data)		Ranchos	
	24-hour Average ¹	Daily Maximum	24-hour Average	Daily Maximum
09/07/2013	27.2/23.8	42.0	31.7	65.0
09/08/2013	25.0	78.0	43.3	111.0
09/09/2013	7.0	13.0	8.5	15.0
09/10/2013	5.8	12.0	9.9	50.0
09/11/2013	10.0	19.0	17.1	41.0
09/12/2013	9.8	16.0	13.6	27.0
09/13/2013	8.0/6.0	17.0	10.5	16.0
09/14/2013	8.8	15.0	10.3	18.0
09/15/2013	9.6	15.0	13.5	21.0

¹: Cells with two entries contain both the FEM (primary) and FRM (collocated) data values. Note that the FRM is not the primary monitor for this site.

Figures 4A through 4S show this data graphically for the CC Armory and the Ranchos monitoring stations, from 0000 on August 22 through 2359 Pacific Standard Time (PST) on September 9, 2013. The hourly PM_{2.5} concentration at both sites first exceeded 35 µg/m³ during the 1300 PST hour on August 22, 2013. Both monitors failed to record data for five hours in the afternoon of August 22, 2013 due to high PM_{2.5} concentrations. From August 22, 2013 through August 29, 2013, the hourly PM_{2.5} concentrations at the CC Armory and Ranchos monitoring sites varied somewhat depending on severity of the fire and meteorological conditions; the Ranchos 24-hour average concentration exceeded the NAAQS on 16 of the 19 days and the CC Armory site exceeded the NAAQS on 13 of the 19 days. The peak concentrations during this time period were 427 µg/m³ at the Ranchos site (August 25, 2013) and 364 µg/m³ at the CC Armory site (August 23, 2013). The peak concentration for the CC Armory FRM data was 83.9 µg/m³ (August 26, 2013). Figures 4E, 4K, and 4Q include the 24-hour FRM concentrations for the CC Armory site.

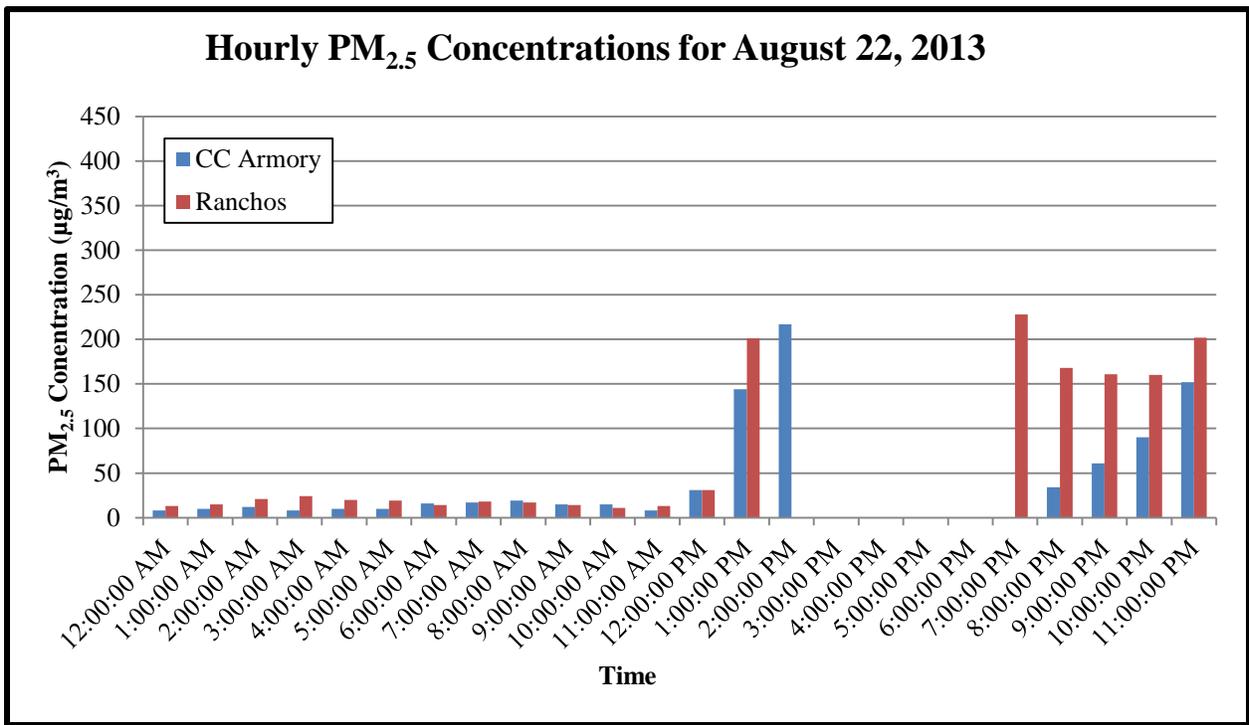


Figure 4A 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on August 22, 2013

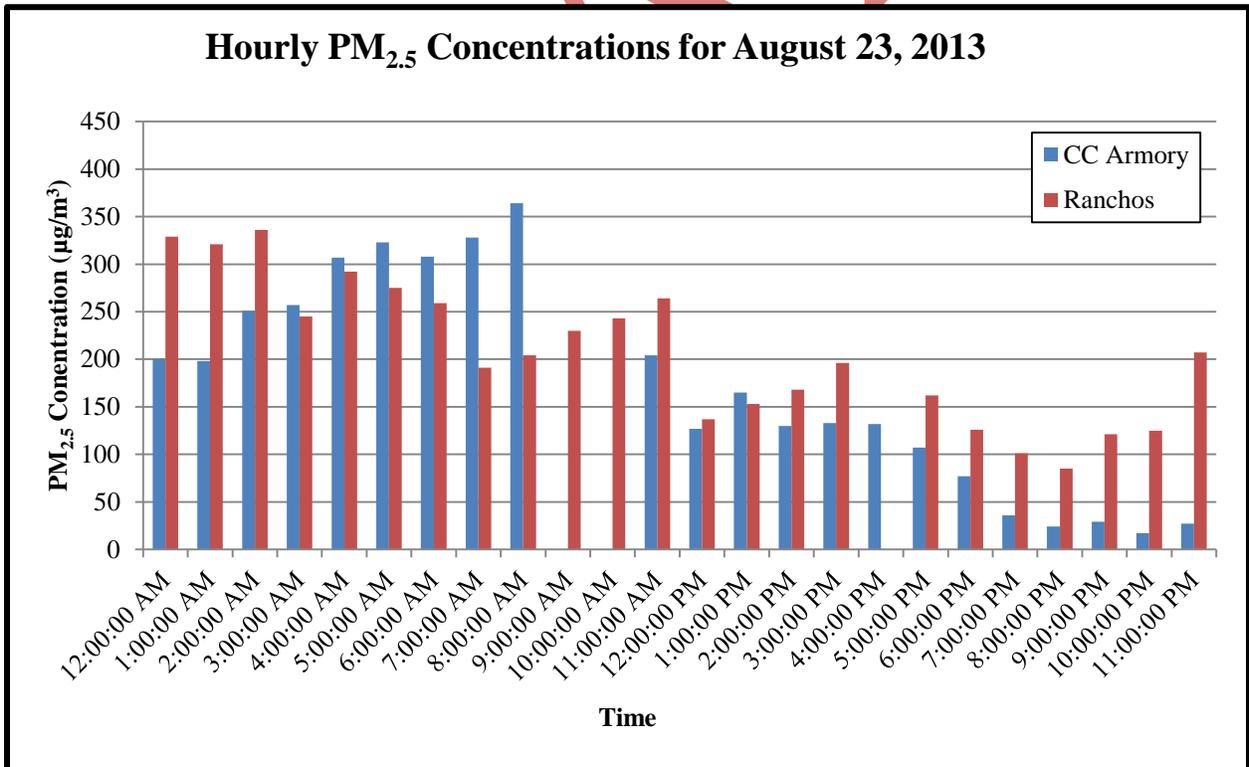


Figure 4B 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on August 23, 2013

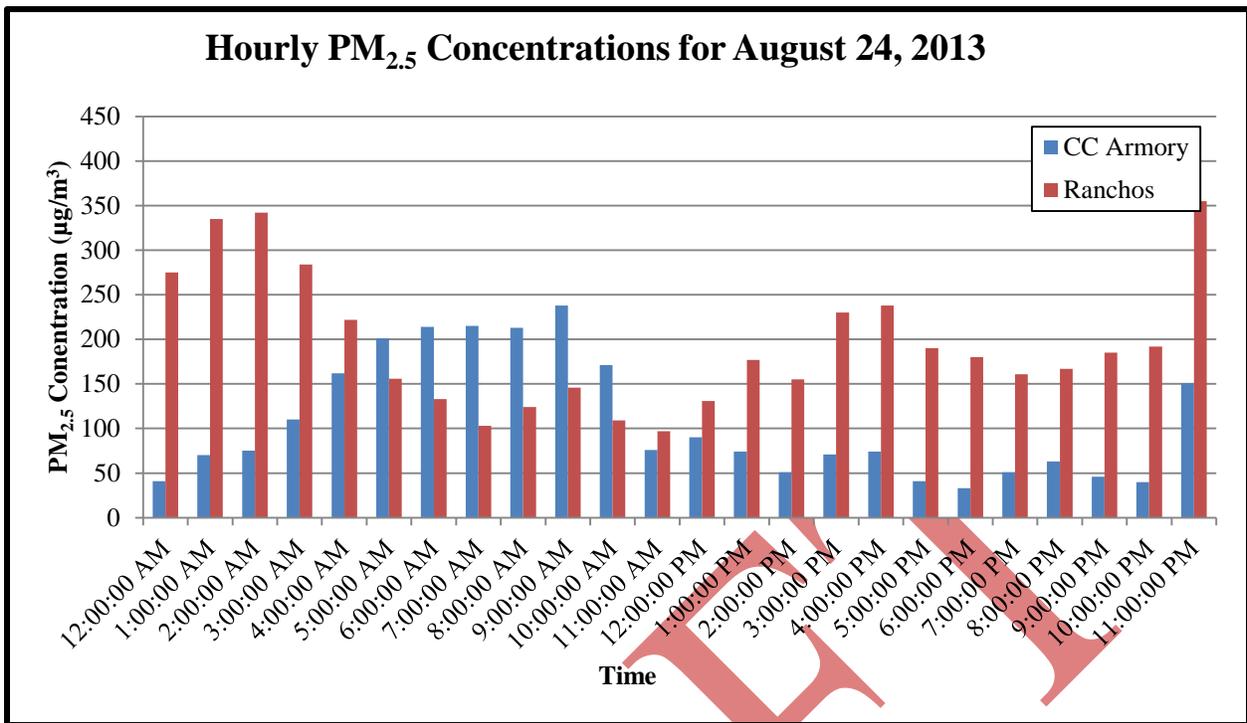


Figure 4C 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on August 24, 2013

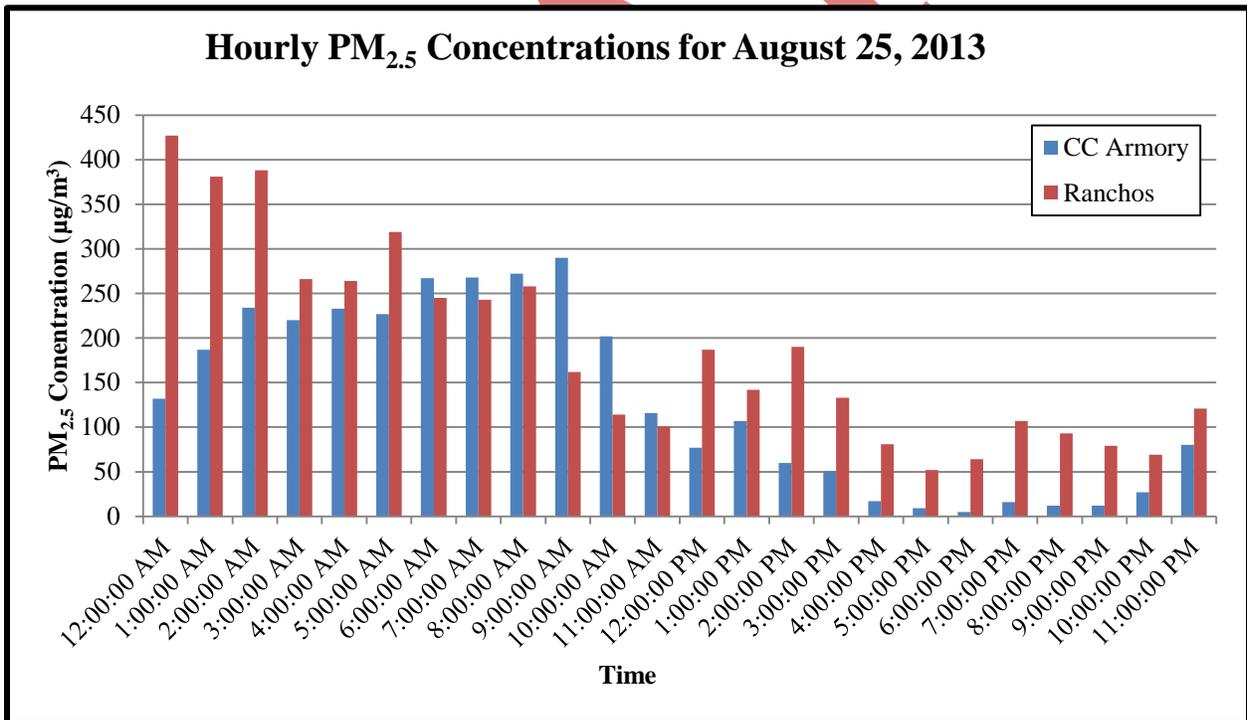


Figure 4D 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on August 25, 2013

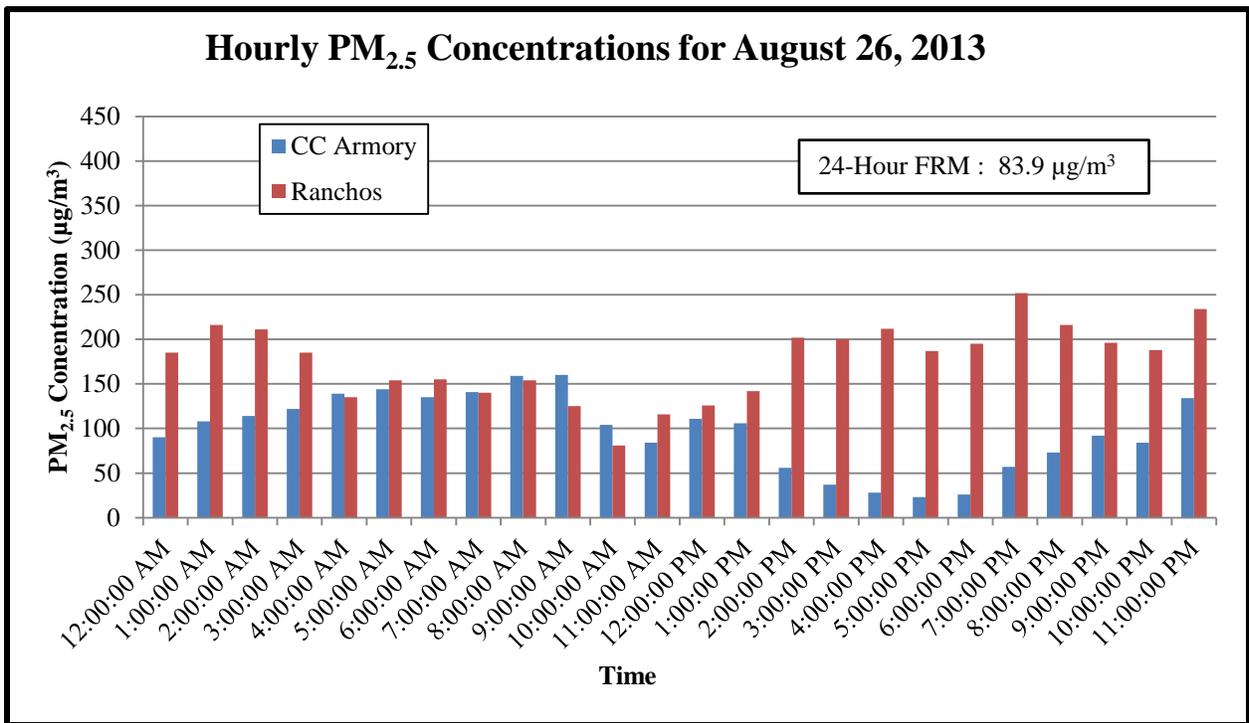


Figure 4E 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on August 26, 2013

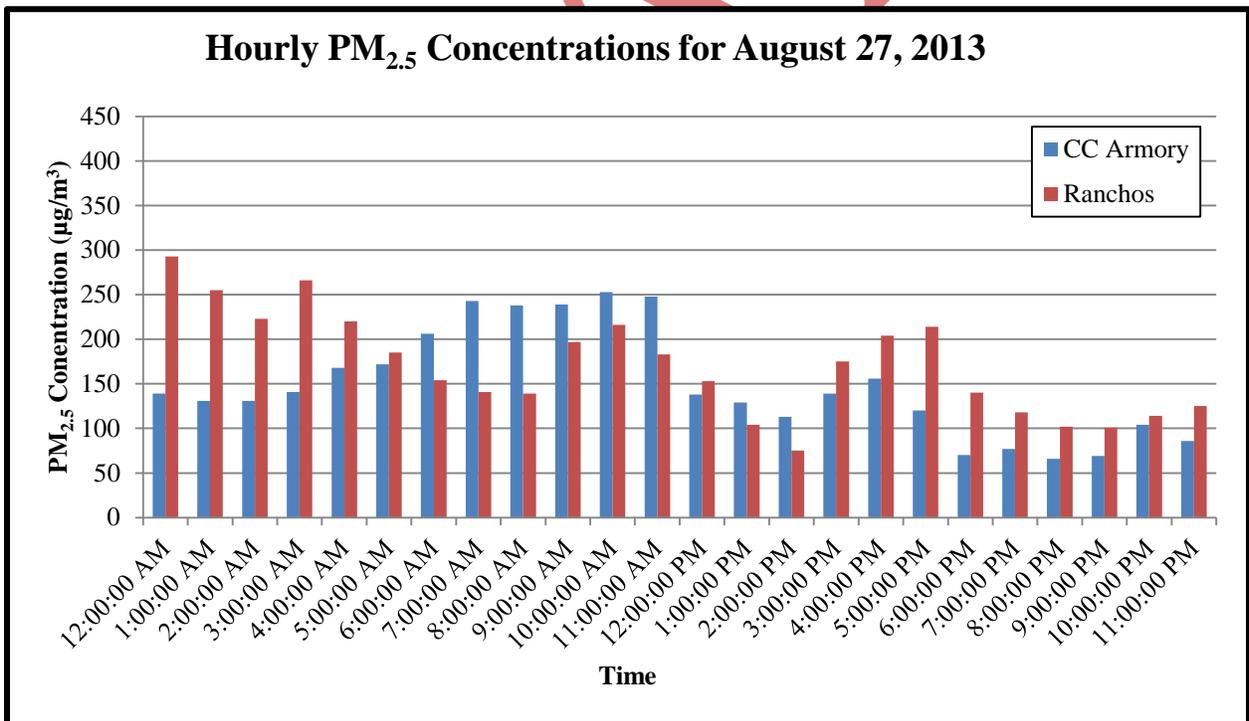


Figure 4F 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on August 27, 2013

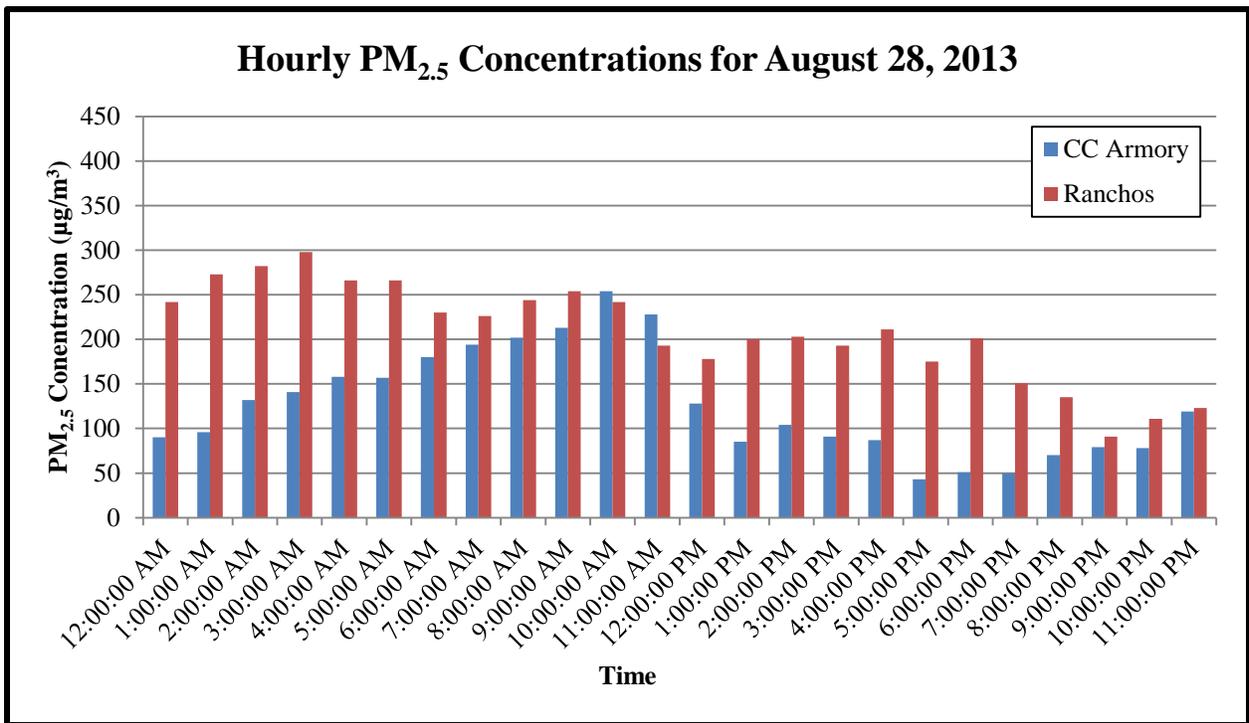


Figure 4G 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on August 28, 2013

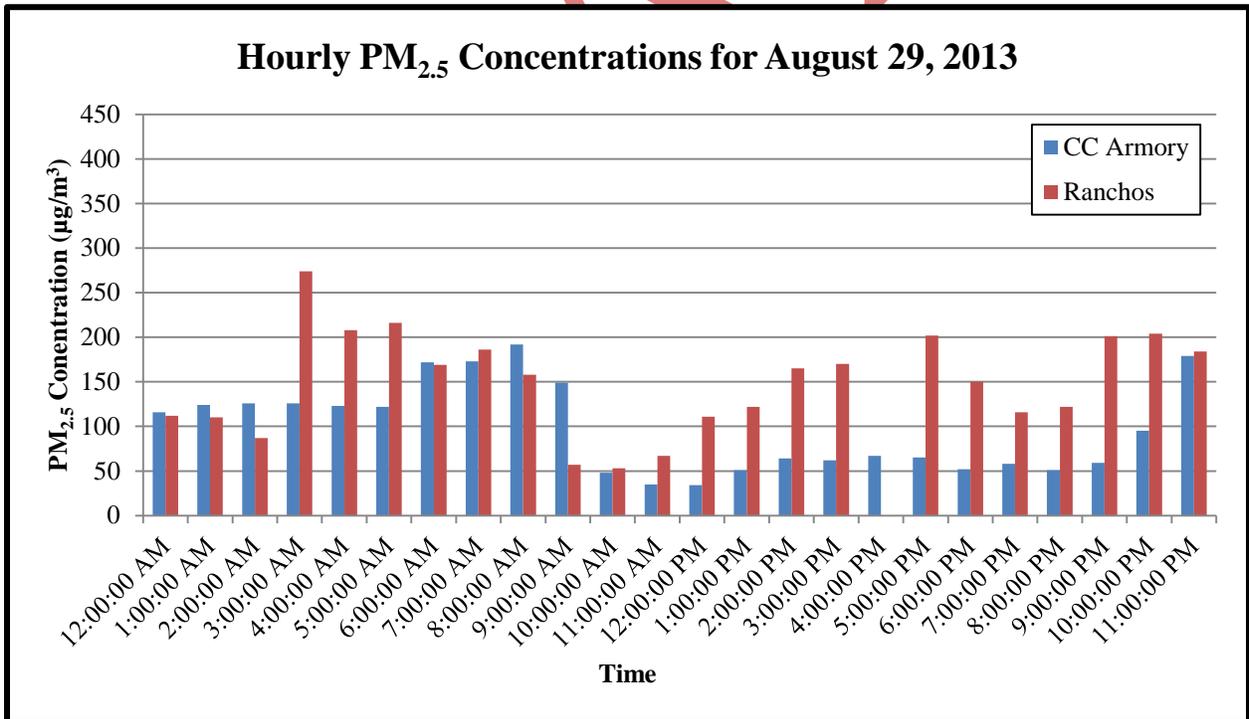


Figure 4H 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on August 29, 2013

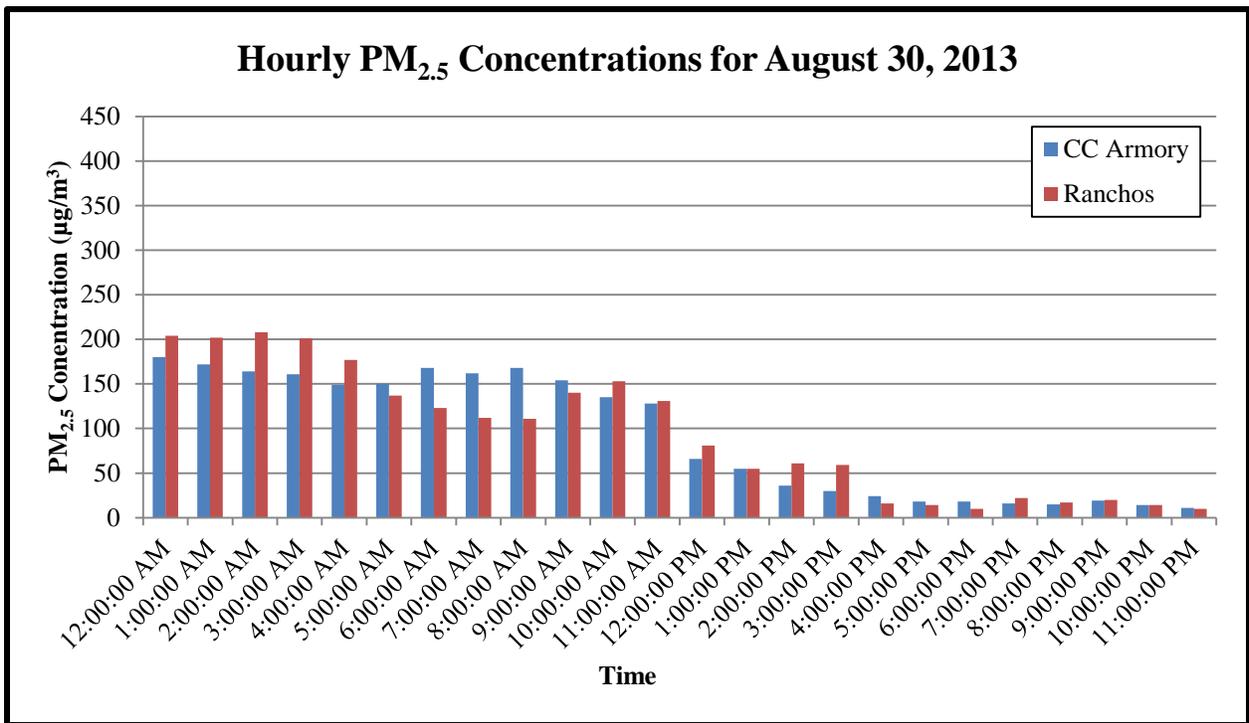


Figure 4I 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on August 30, 2013

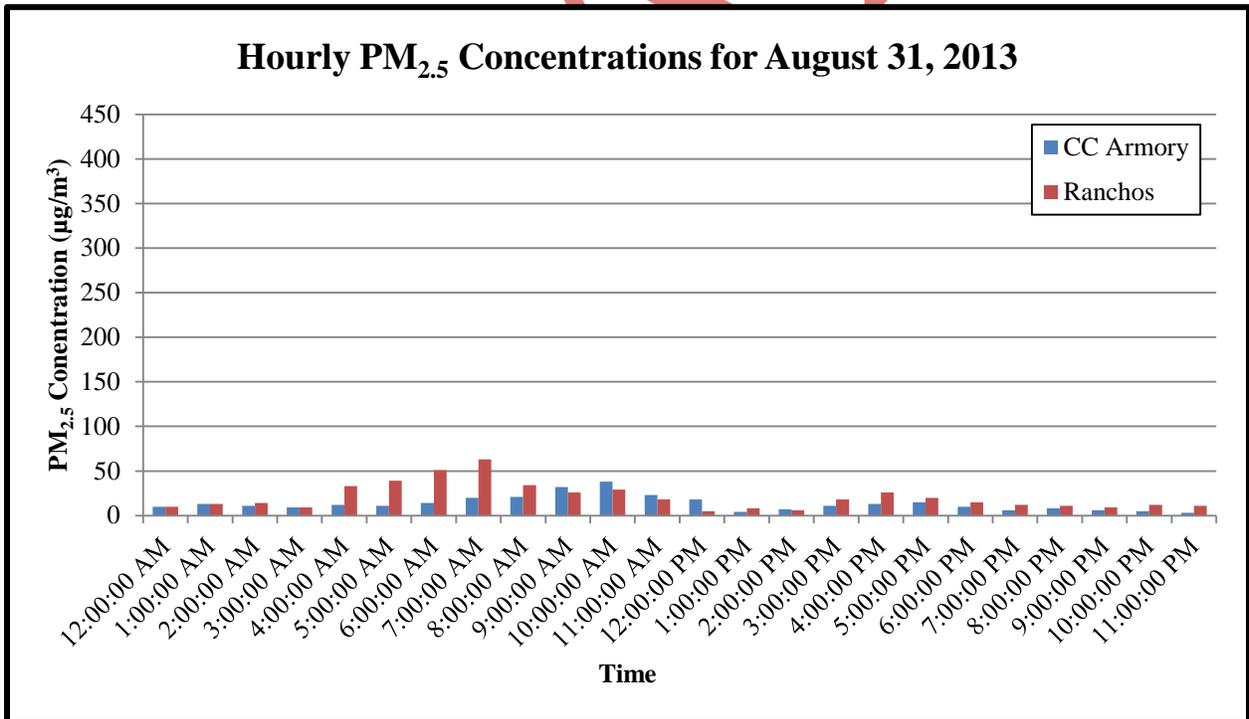


Figure 4J 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on August 31, 2013

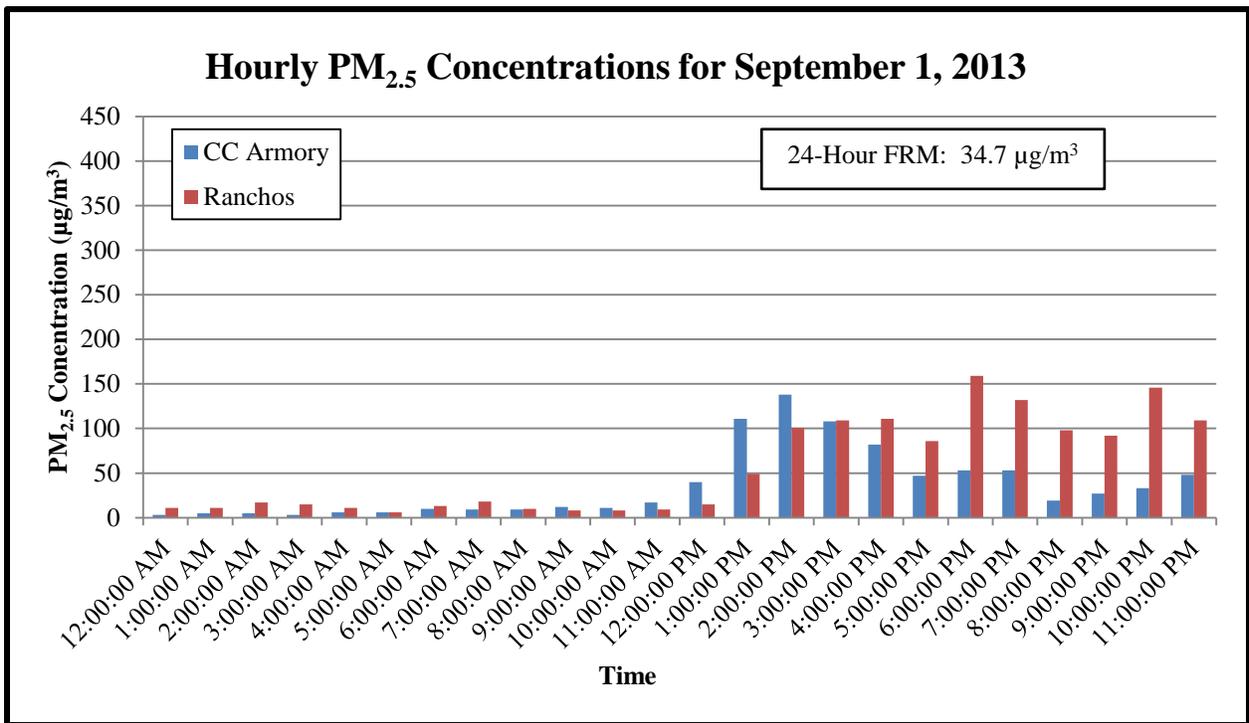


Figure 4K 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on September 1, 2013

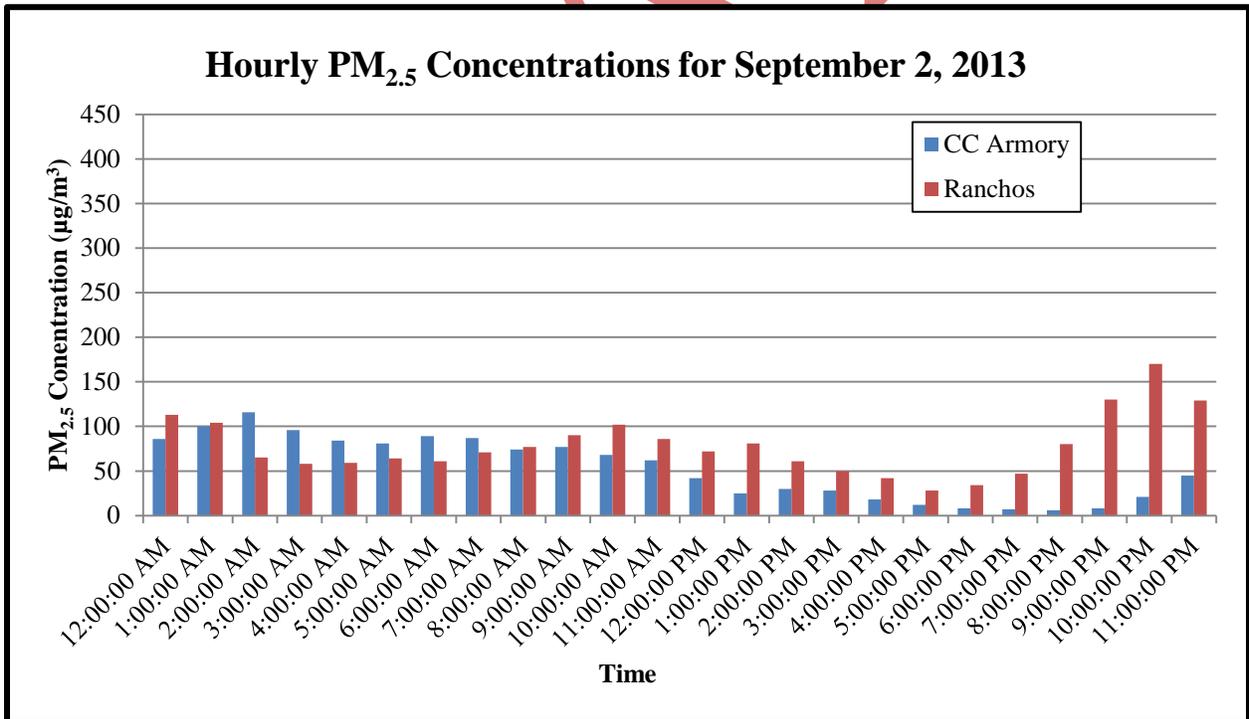


Figure 4L 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on September 2, 2013

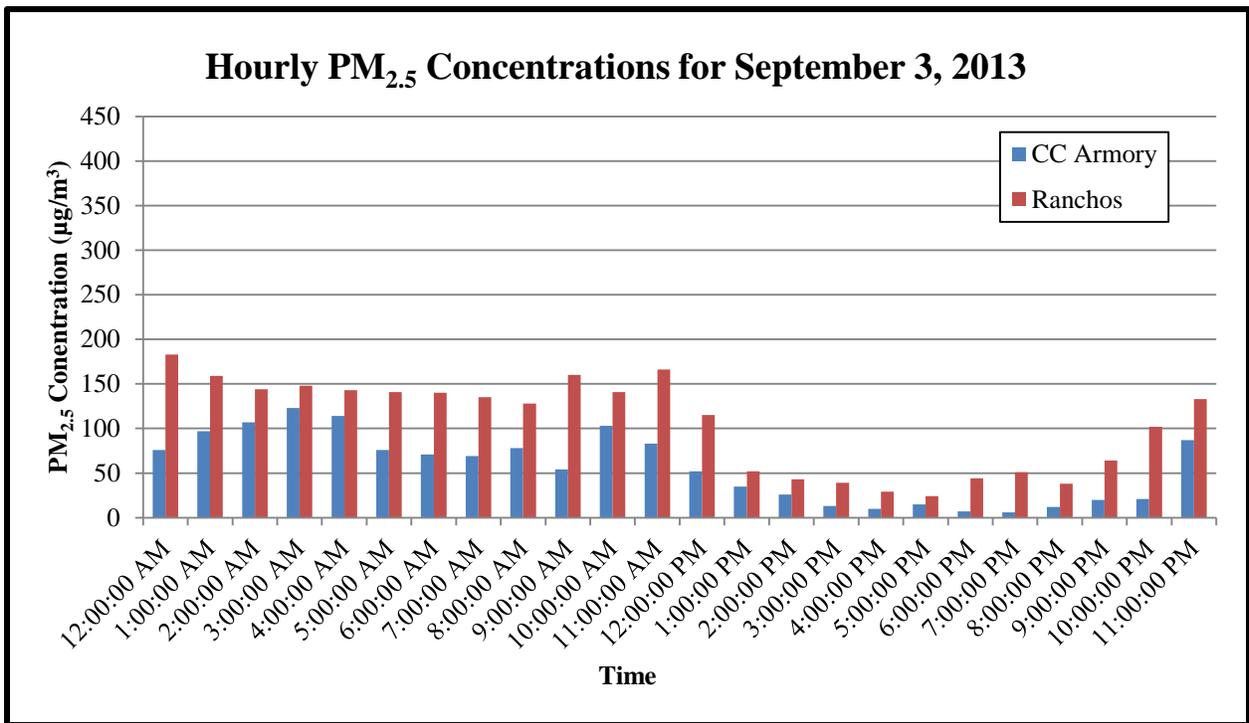


Figure 4M 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on September 3, 2013

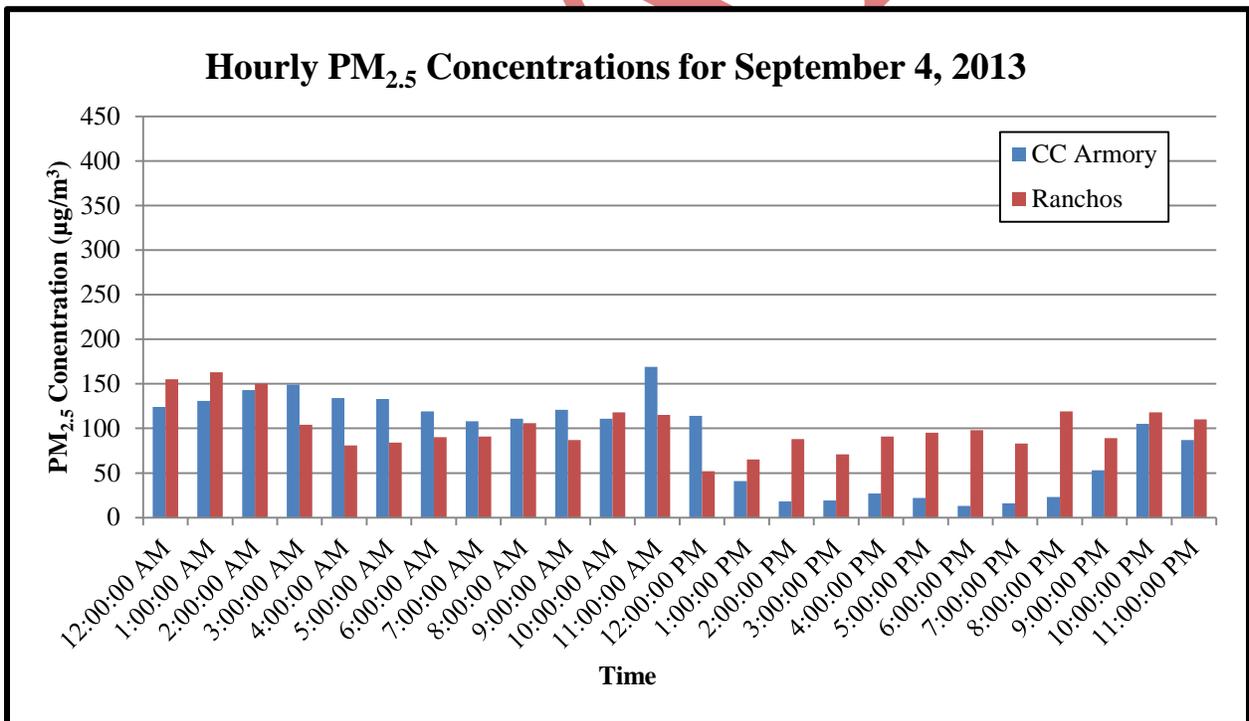


Figure 4N 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on September 4, 2013

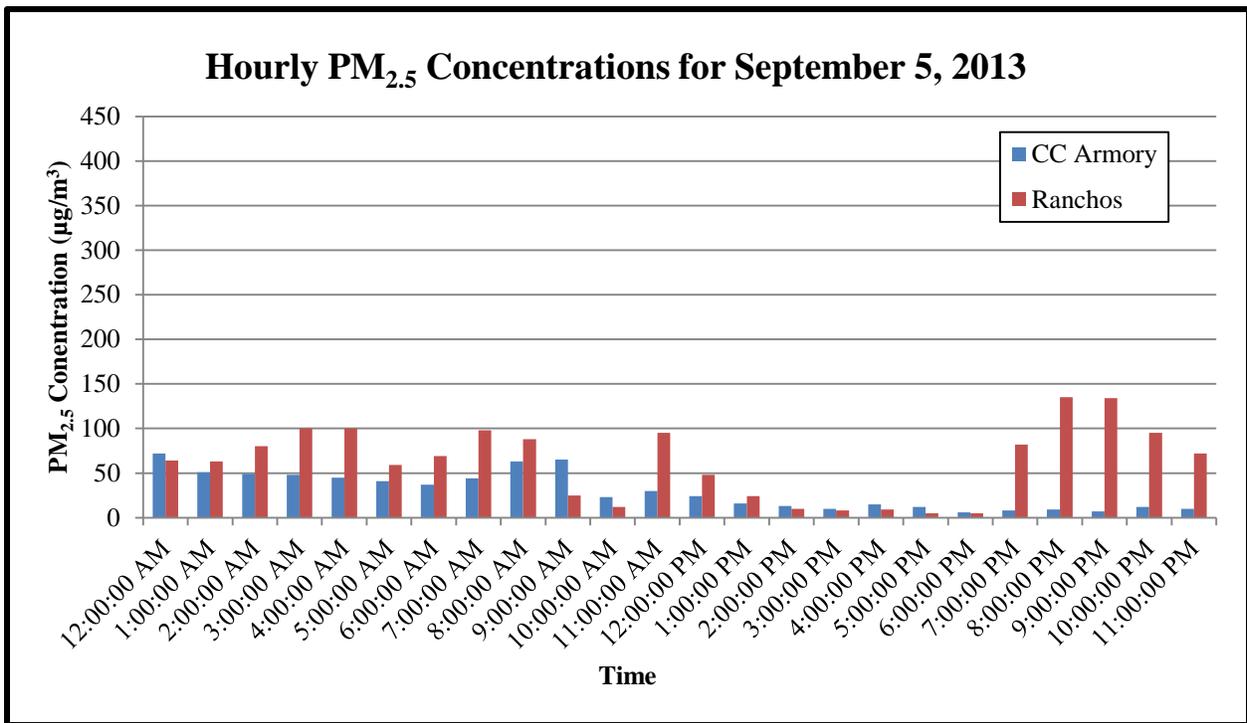


Figure 4O 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on September 5, 2013

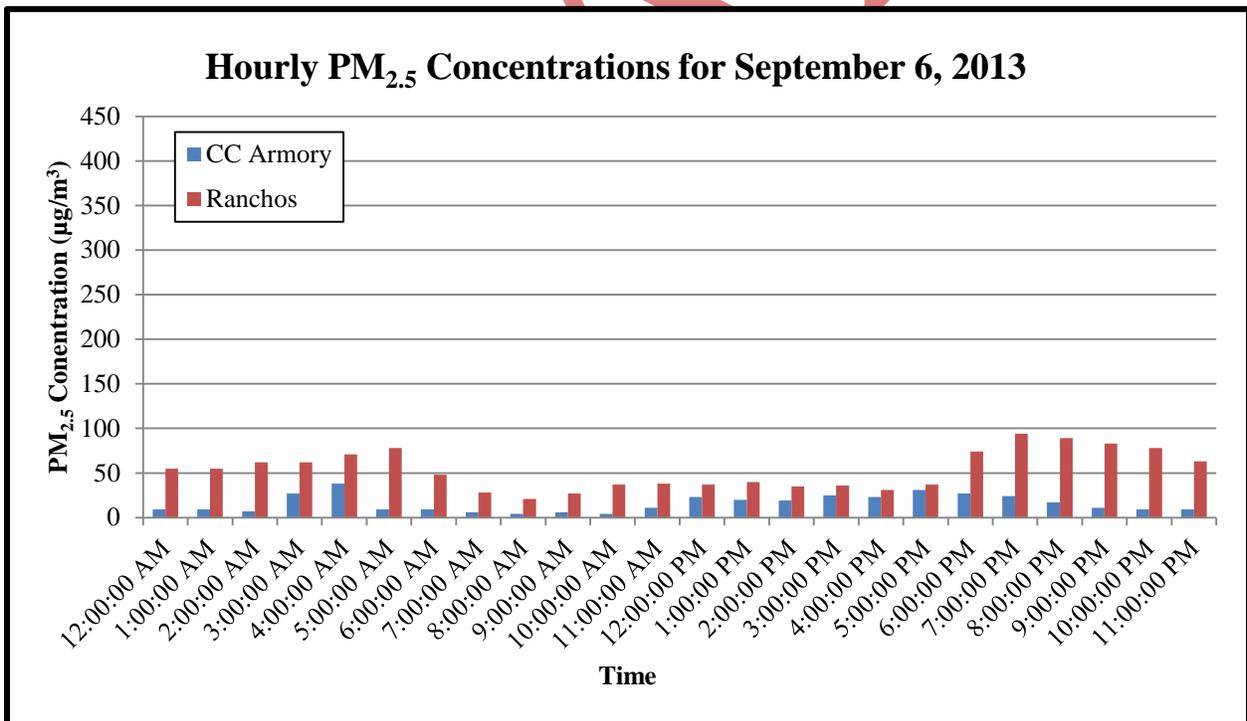


Figure 4P 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on September 6, 2013

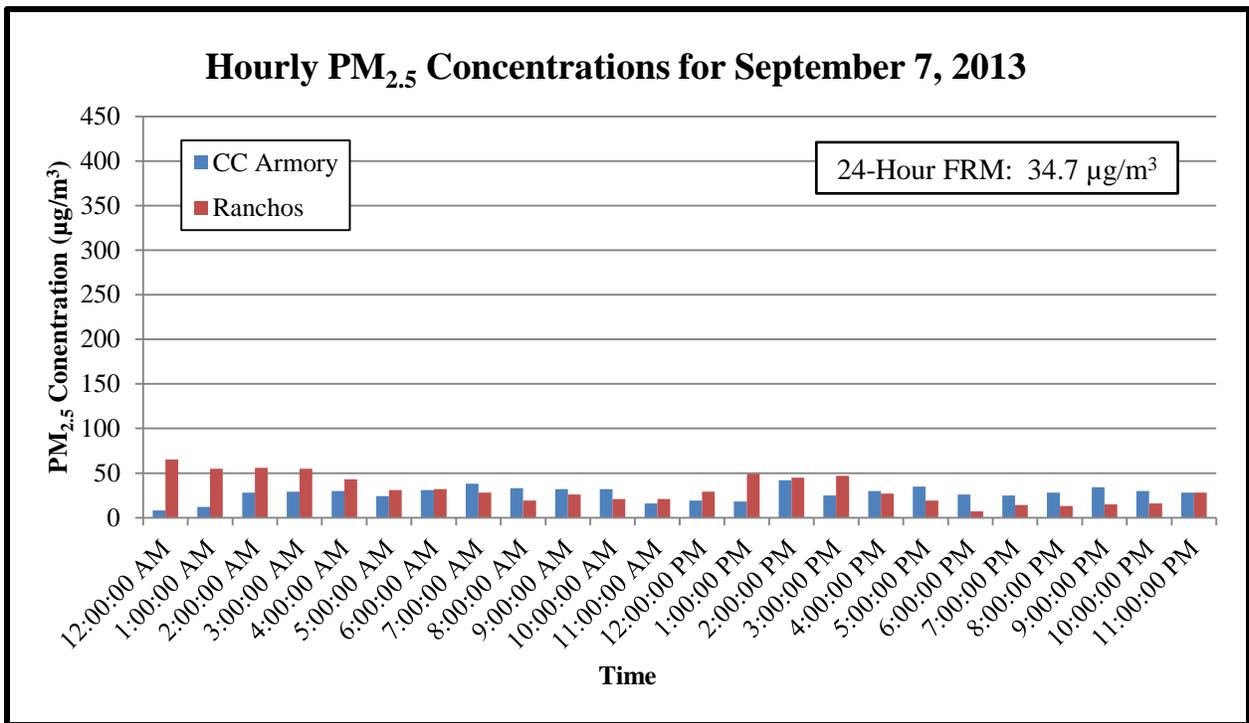


Figure 4Q 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on September 7, 2013

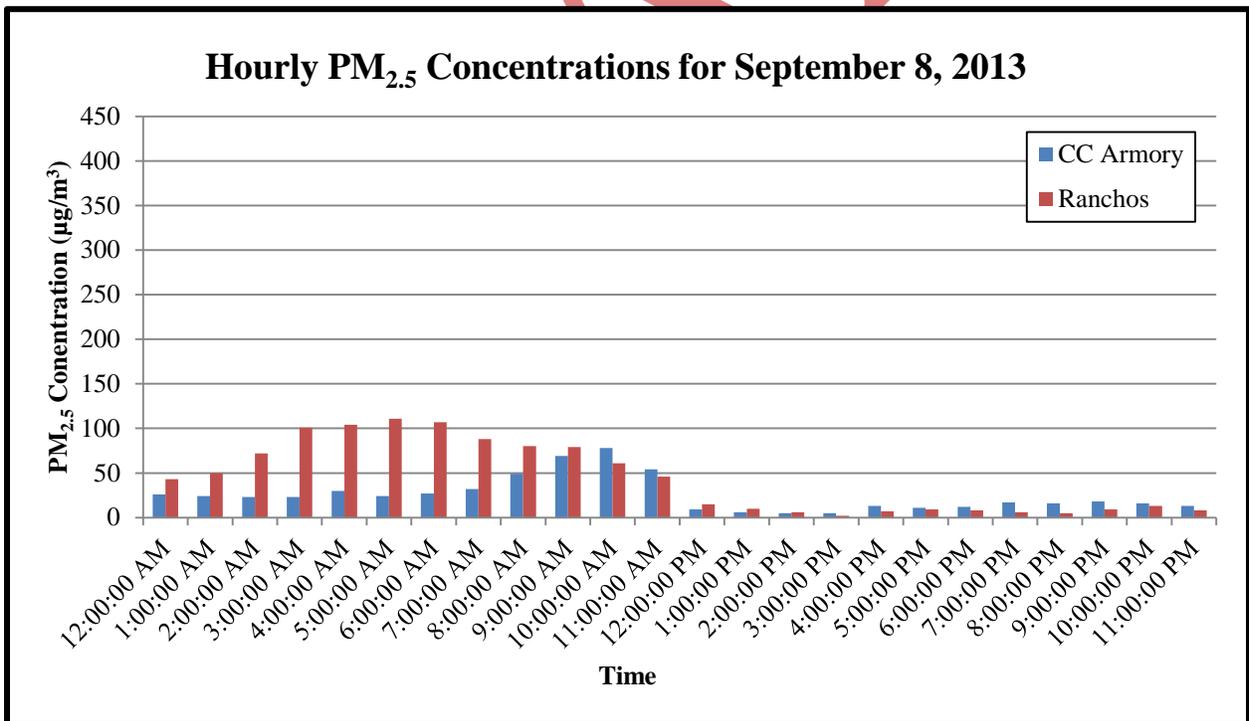


Figure 4R 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on September 8, 2013

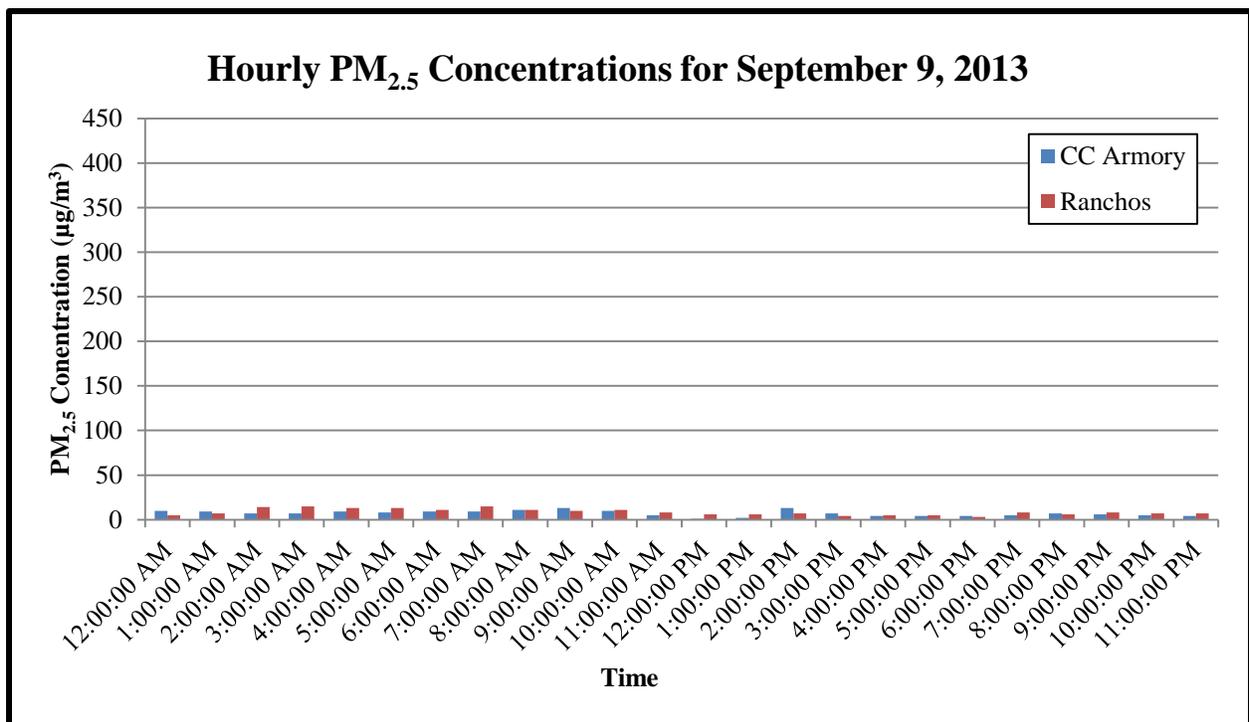


Figure 4S 24-Hour Average PM_{2.5} Concentrations at the Ranchos and CC Armory Monitoring Sites on September 9, 2013

2.3 NOT REASONABLY CONTROLLABLE OR PREVENTABLE

The EER considers wildland fire a type of natural event. The EER further defines a wildland fire as “...an unplanned, unwanted wildland fire...includ[ing] unauthorized human-caused fires (such as arson or careless acts of campers).” The Rim Fire was caused by an illegal campfire that became out of control, and therefore qualifies as a wildland fire.

The NDEP concludes that, because the Rim Fire was an unplanned wildland fire caused by carelessness and therefore qualifies as a natural event, this event was not reasonably controllable or preventable.

2.4 UNLIKELINESS OF REOCCURRENCE OR NATURAL EVENT

The Rim Fire was caused by an out-of-control illegal campfire, and the severity of the fire was due in part to historical fire suppression activities. The burned area is highly unlikely to burn again in the near future due to a lack of fuel.

The Rim Fire was caused by human activity that is unlikely to recur at the same location.

2.5 CLEAR CAUSAL CONNECTION

NOAA Hybrid Single Particle Lagrangian Integrated Trajectory (HYSPLIT) Models were used in conjunction with wind roses to show causal connection between the Rim Fire and elevated PM_{2.5} concentrations at the Ranchos and CC Armory monitoring sites. HYSPLIT forward

trajectories were generated from the location of the Rim Fire origin at 10, 100, and 500 meters (m) above ground level (agl) to demonstrate that smoke particles from the fire were transported toward Carson City and Gardnerville. HYSPLIT backward trajectories for the same heights were also generated. In addition, wind roses were created using wind speed and wind direction data from the CC Armory meteorological tower. Figures 5A through 24A show both the HYSPLIT forward trajectories and the wind roses for each day of exceedance, as well as the 24-hour average and maximum PM_{2.5} concentrations for both the Ranchos and the CC Armory FEM monitoring sites. Note that the wind speed and wind direction data are in Pacific Standard Time and the HYSPLIT trajectories are in Coordinated Universal Time; therefore the two images are offset by eight hours. The forward HYSPLIT models were originally generated with three trajectories, at 10, 100, and 500 m agl. Only the 500 m trajectory is shown on Figures 5A through 24A. The original forward HYSPLIT models with all three trajectories are included in Appendix C. Backward HYSPLIT trajectories are included in Appendix D. Satellite imagery of the smoke plume from the Rim Fire is shown for each exceedance day in Figures 5B through 24B. Although the forward HYSPLIT trajectories start at the origin of the Rim Fire, the smoke plume is the actual source of PM_{2.5} particles, and extends some distance from the origin.

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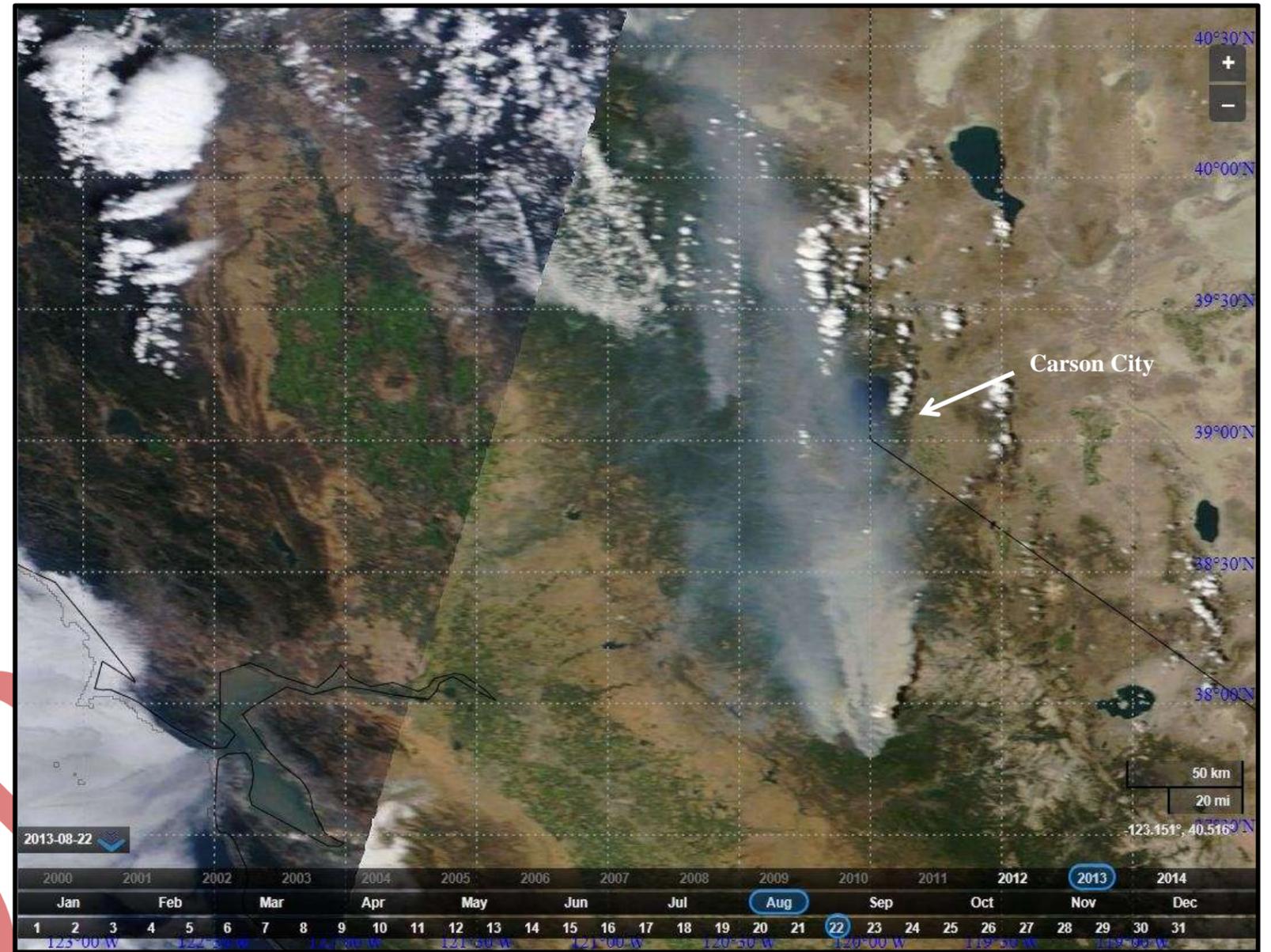
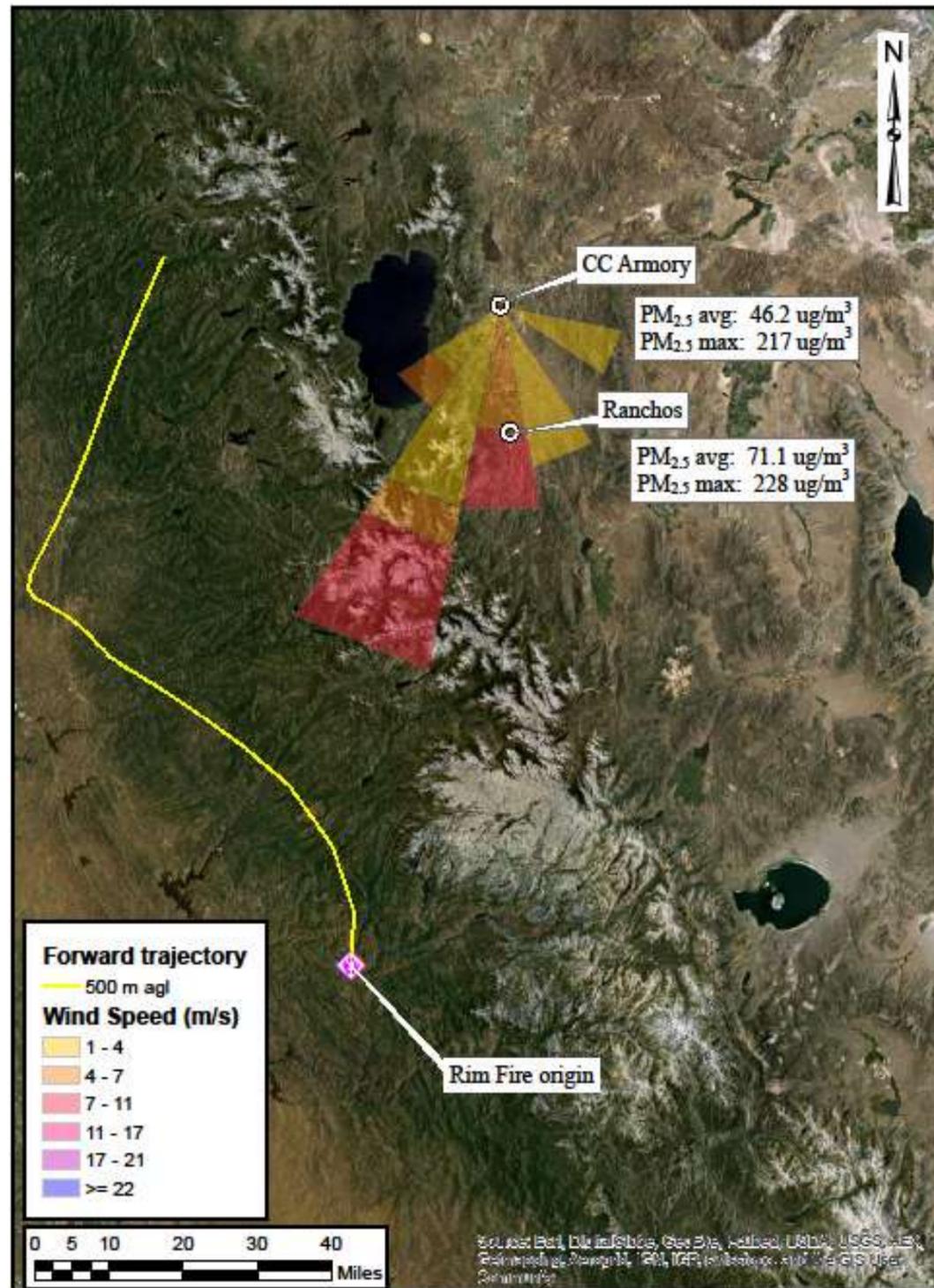


Figure 5A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for August 22, 2013

Figure 5B (right) Smoke Plume from the Rim Fire on August 22, 2013

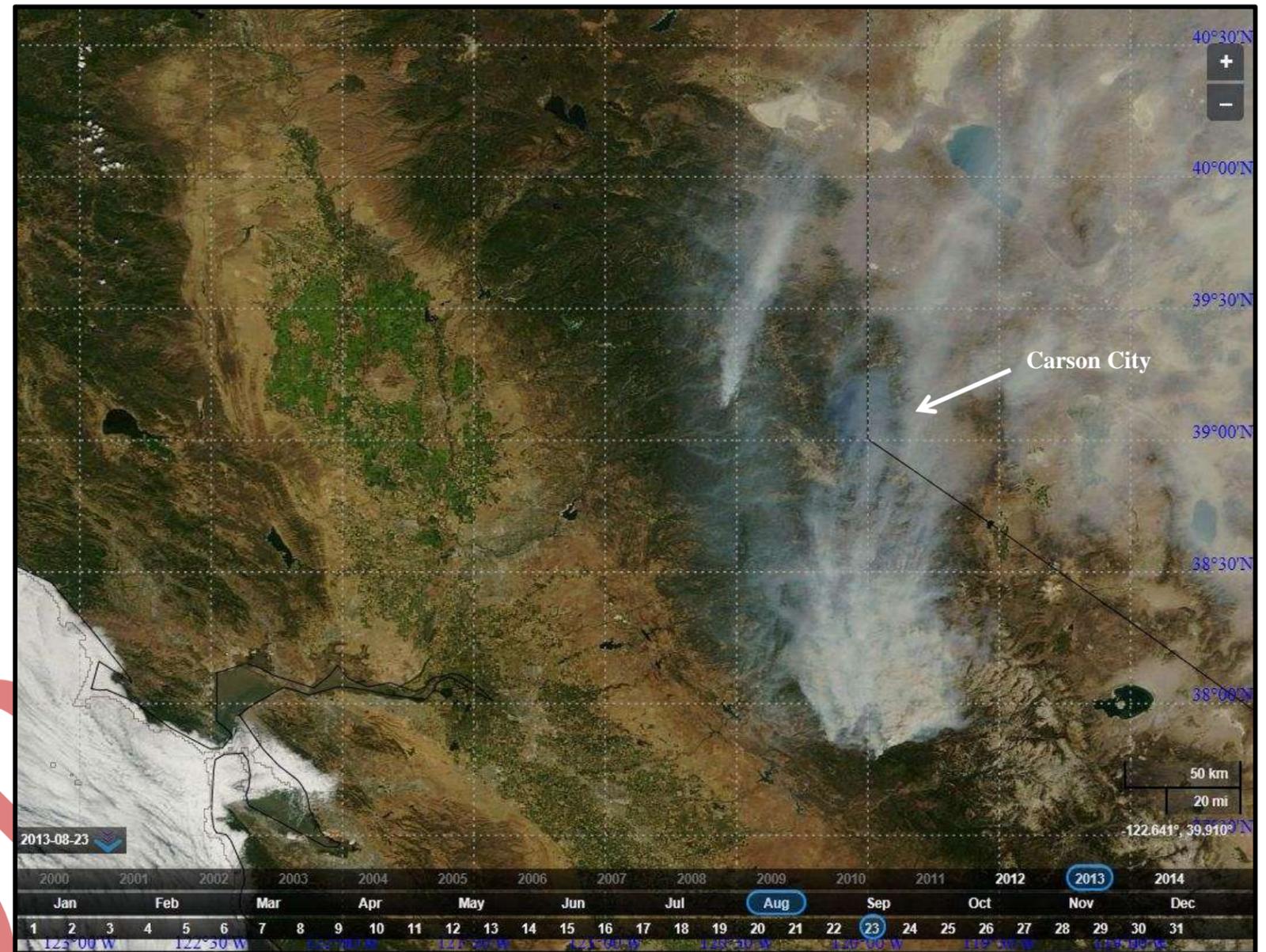
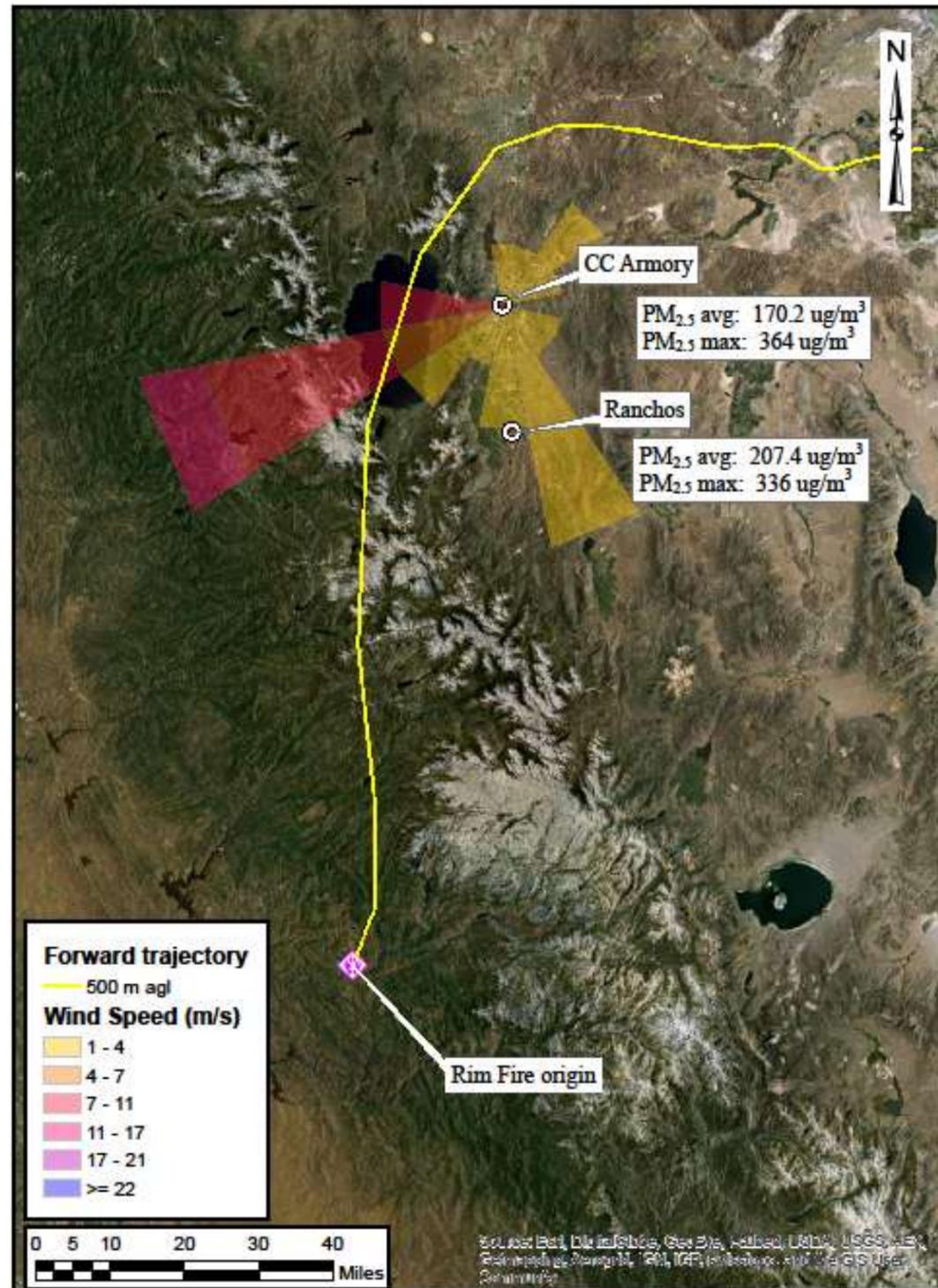


Figure 6A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for August 23, 2013

Figure 6B (right) Smoke Plume from the Rim Fire on August 23, 2013

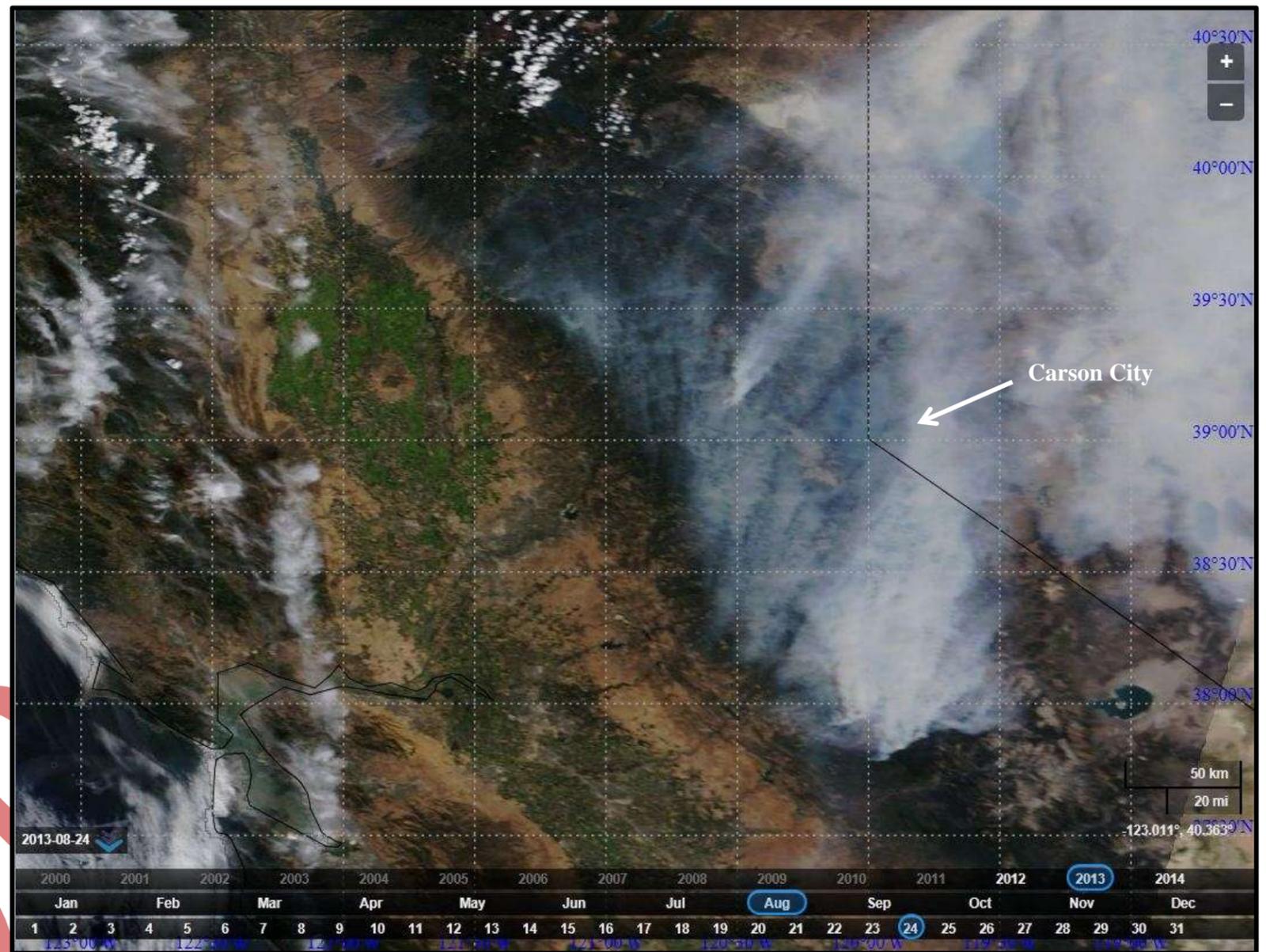
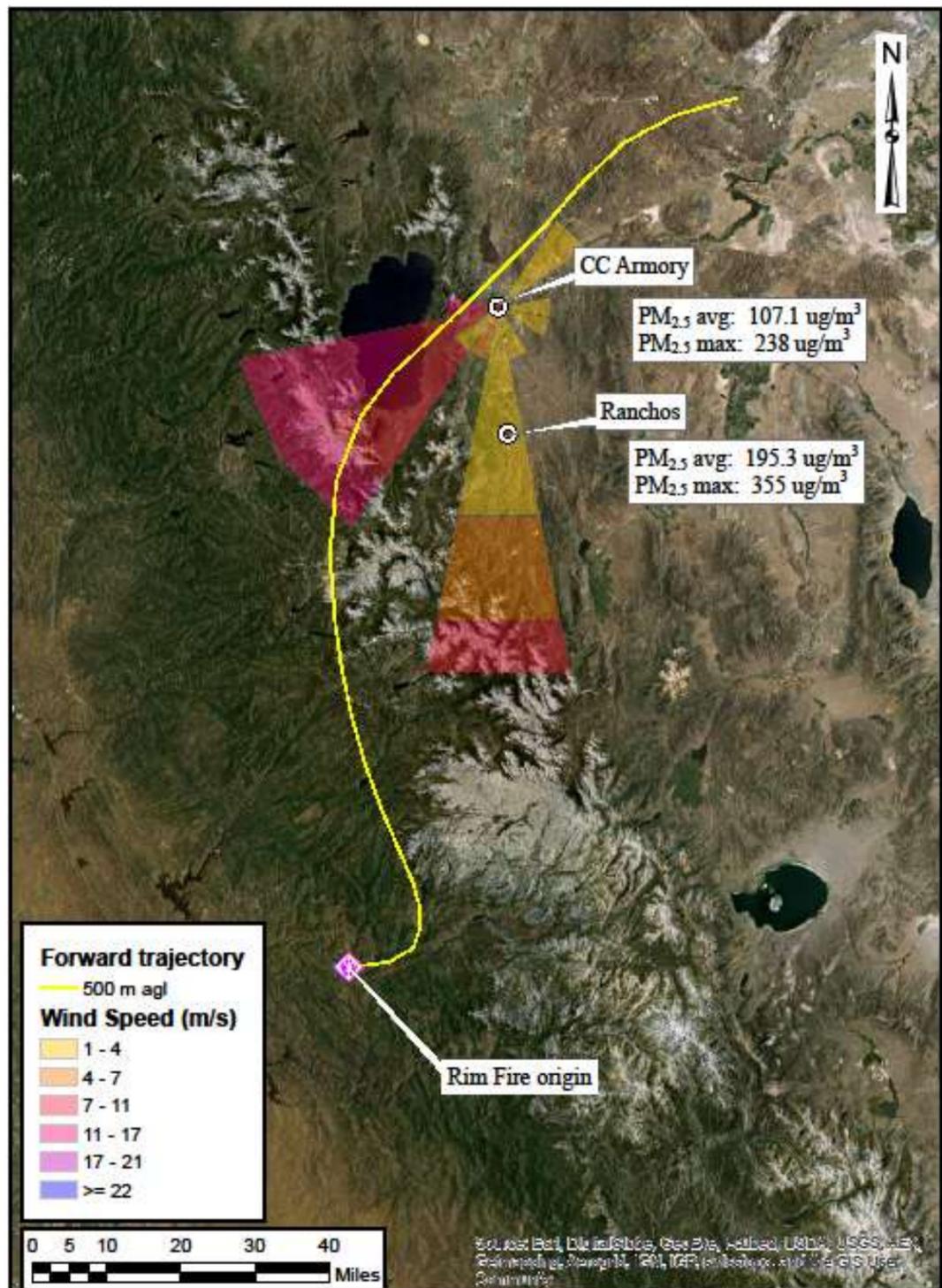


Figure 7A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for August 24, 2013

Figure 7B (right) Smoke Plume from the Rim Fire on August 24, 2013

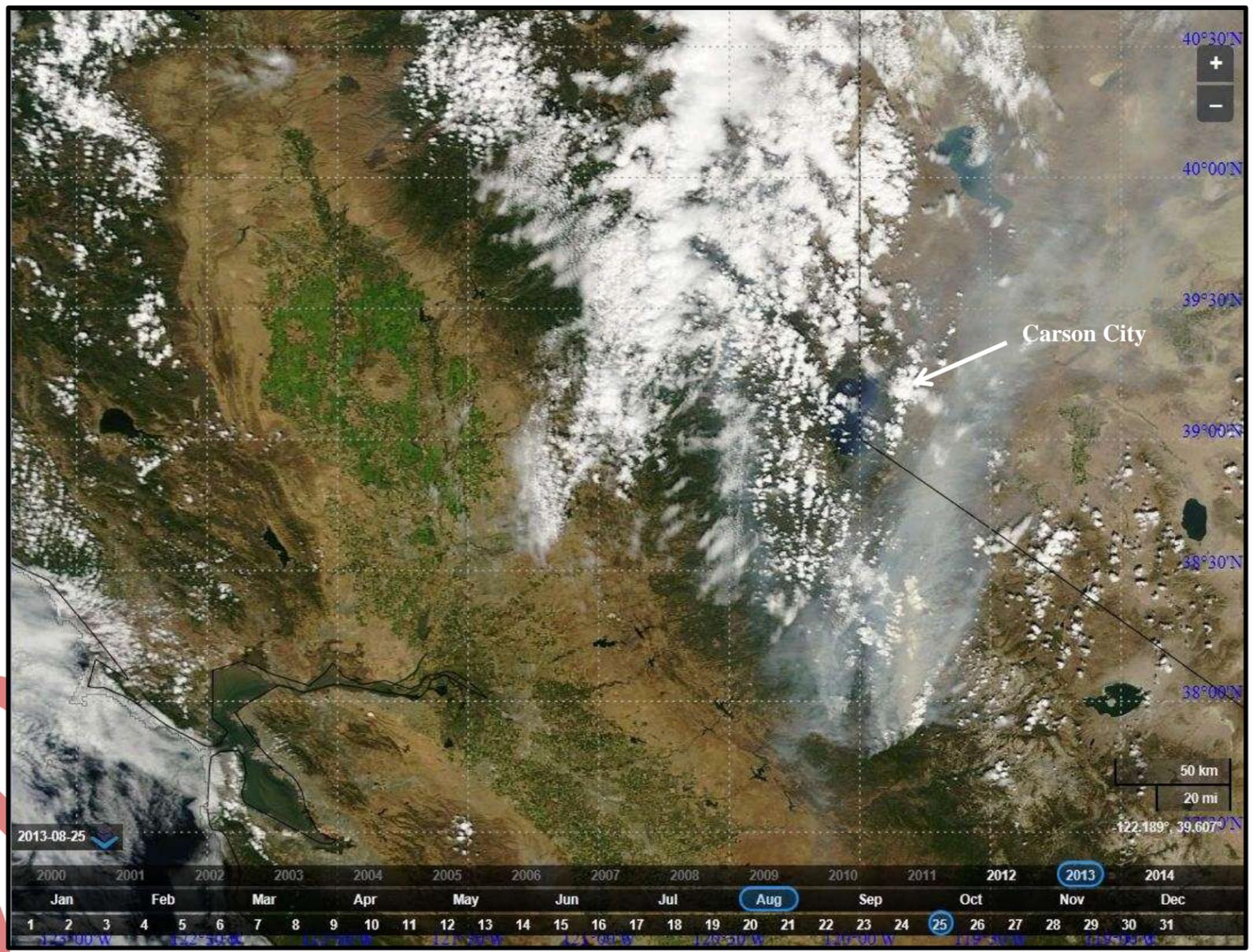
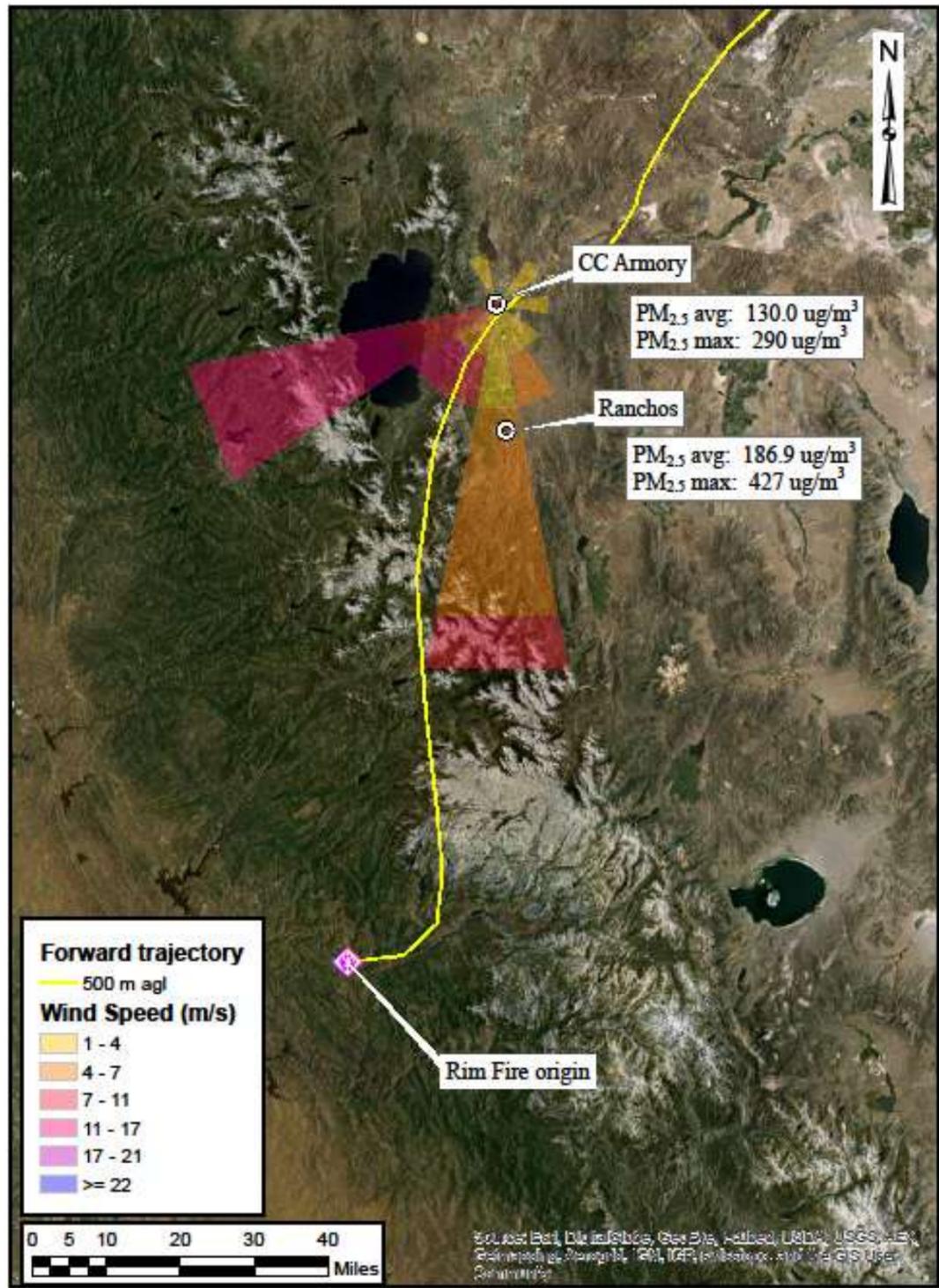


Figure 8A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for August 25, 2013

Figure 8B (right) Smoke Plume from the Rim Fire on August 25, 2013

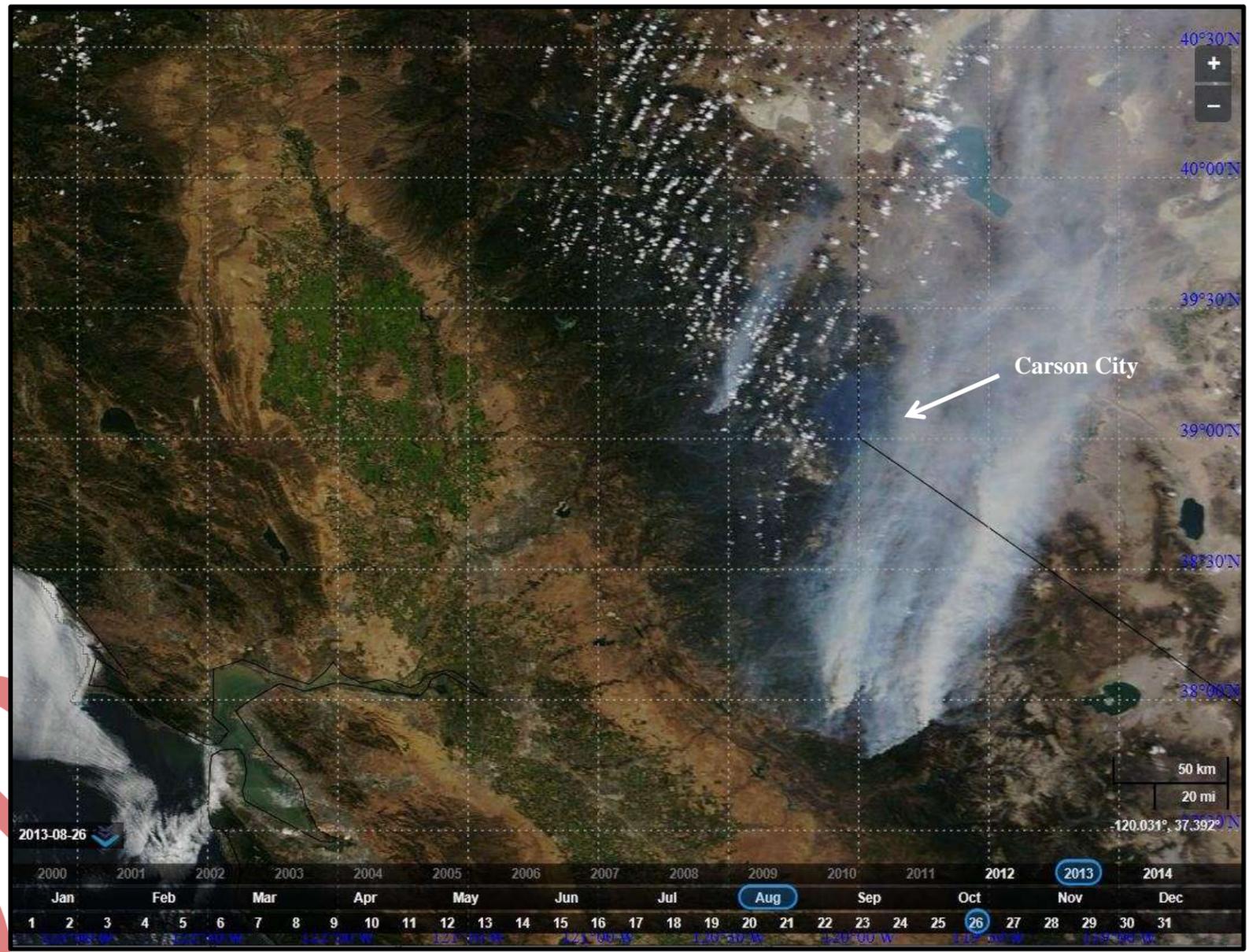
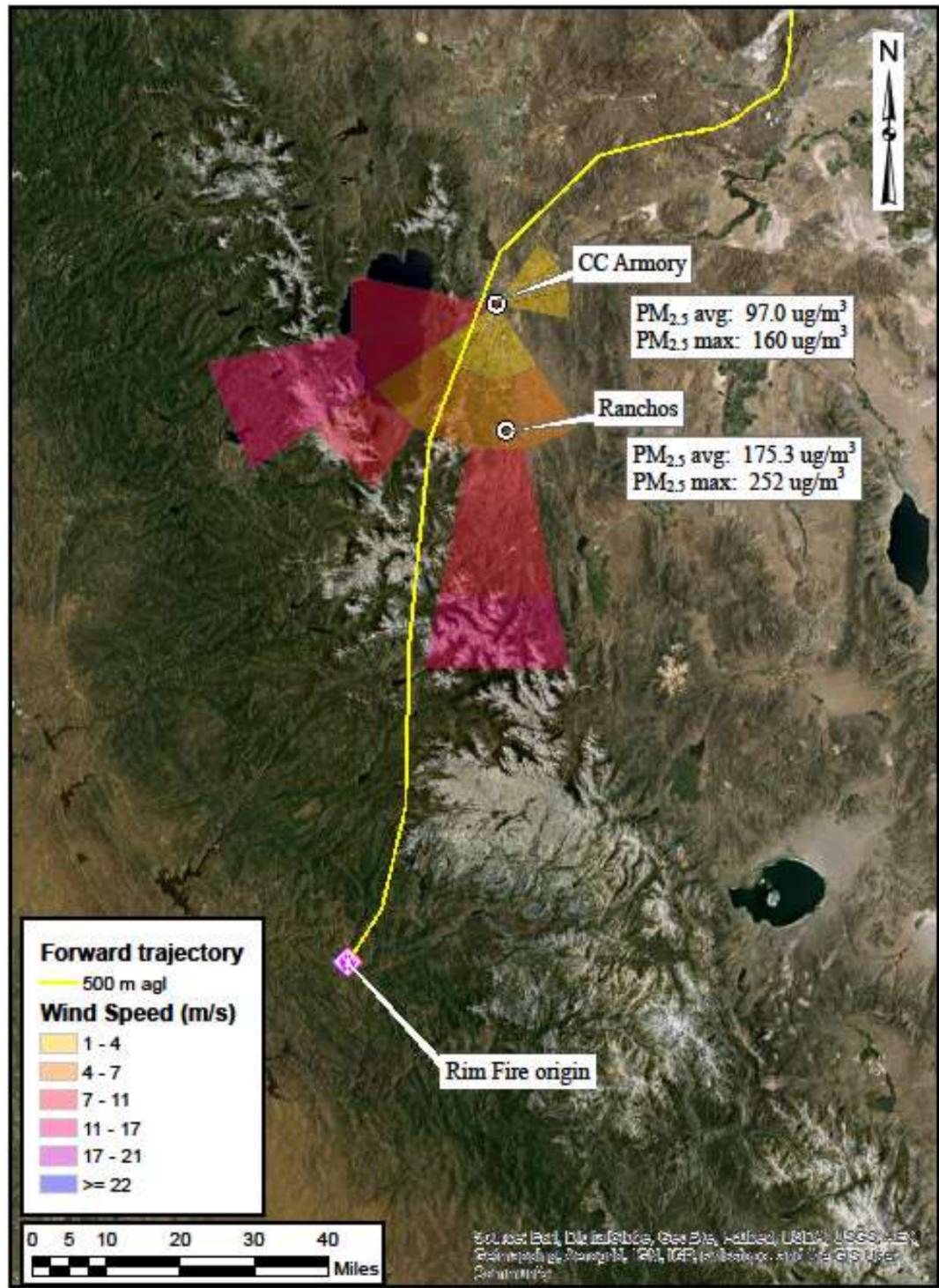


Figure 9A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for August 26, 2013

Figure 9B (right) Smoke Plume from the Rim Fire on August 26, 2013

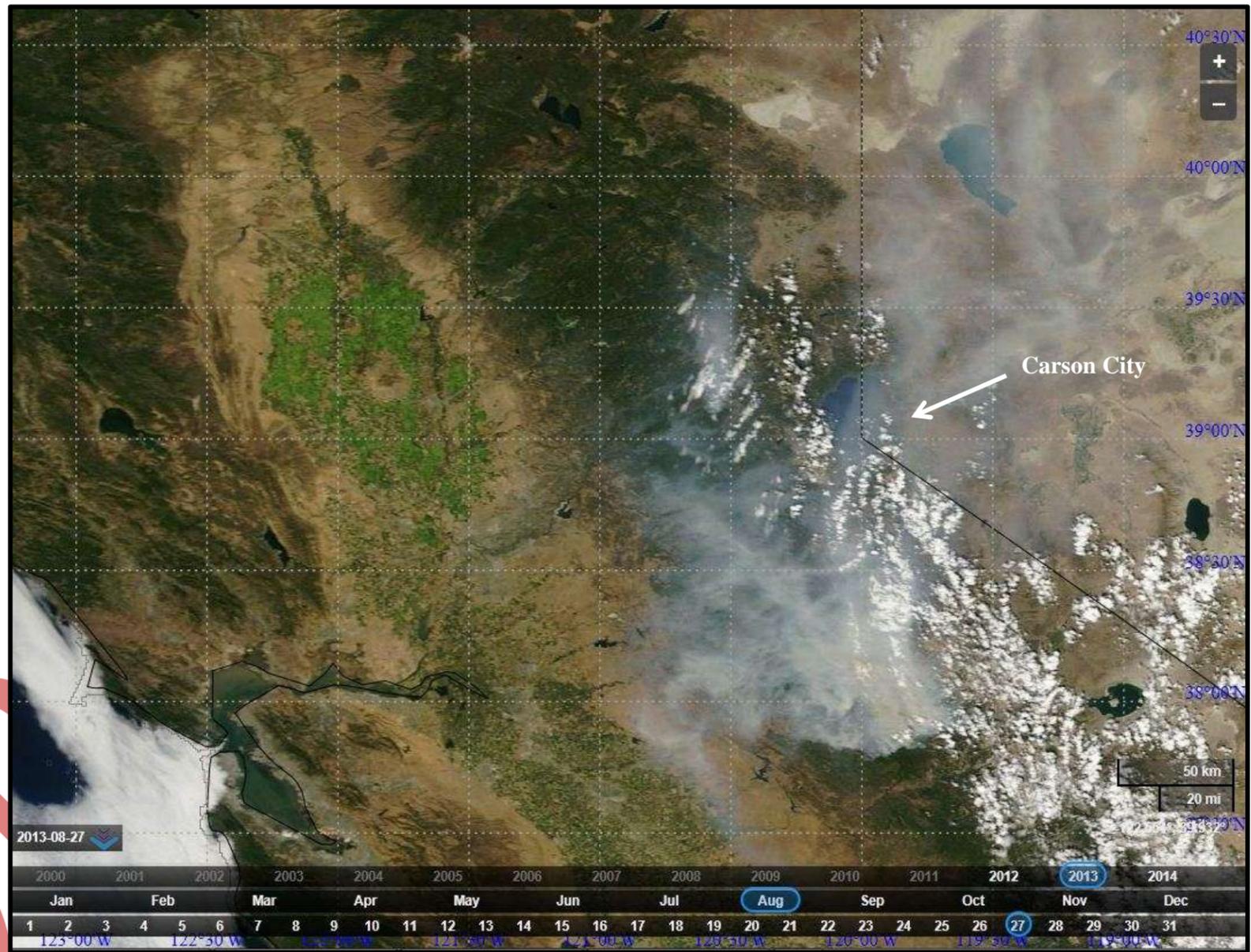
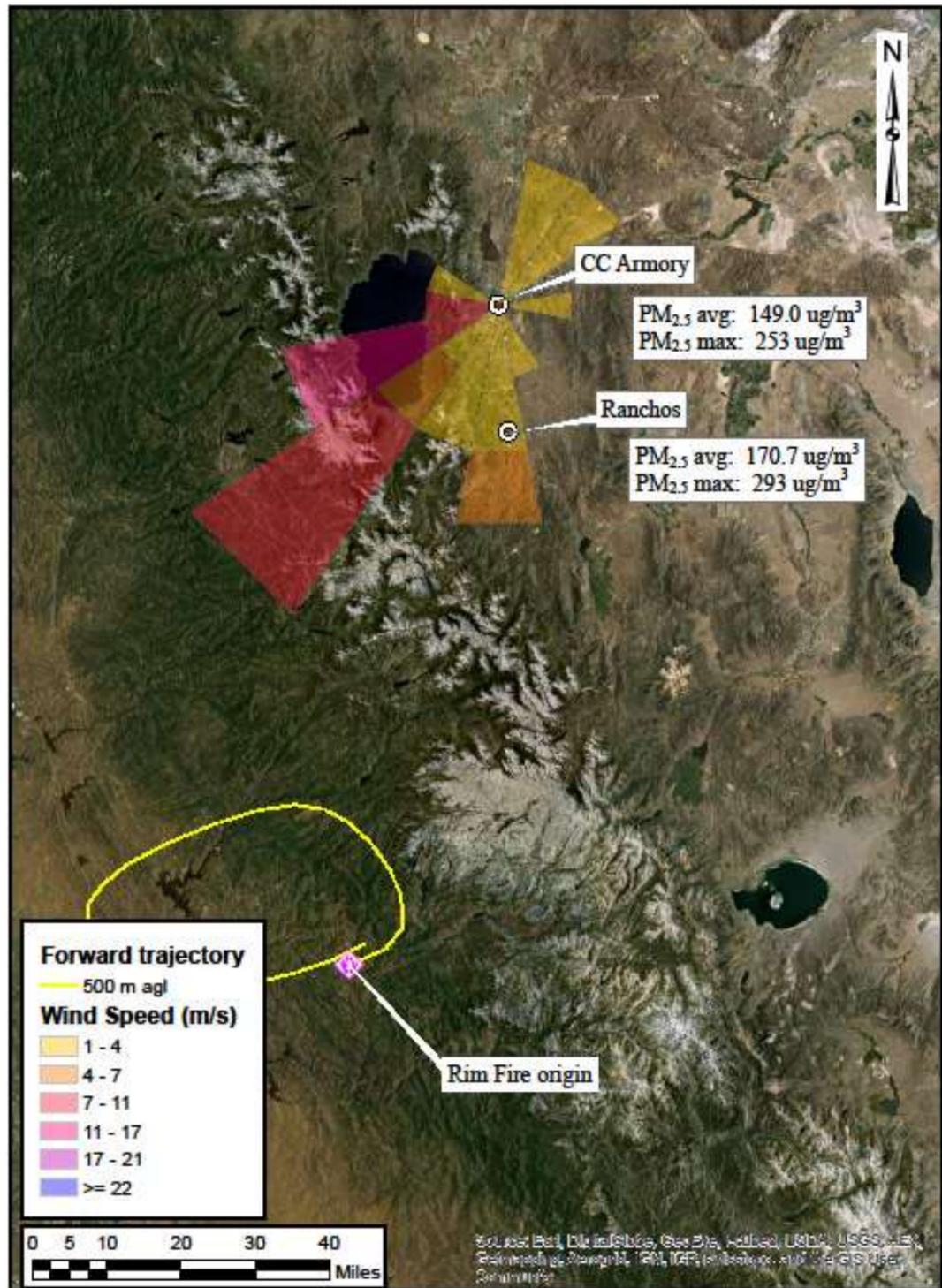


Figure 10A (left) Wind Rose, Average and Maximum $PM_{2.5}$ Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for August 27, 2013

Figure 10B (right) Smoke Plume from the Rim Fire on August 27, 2013

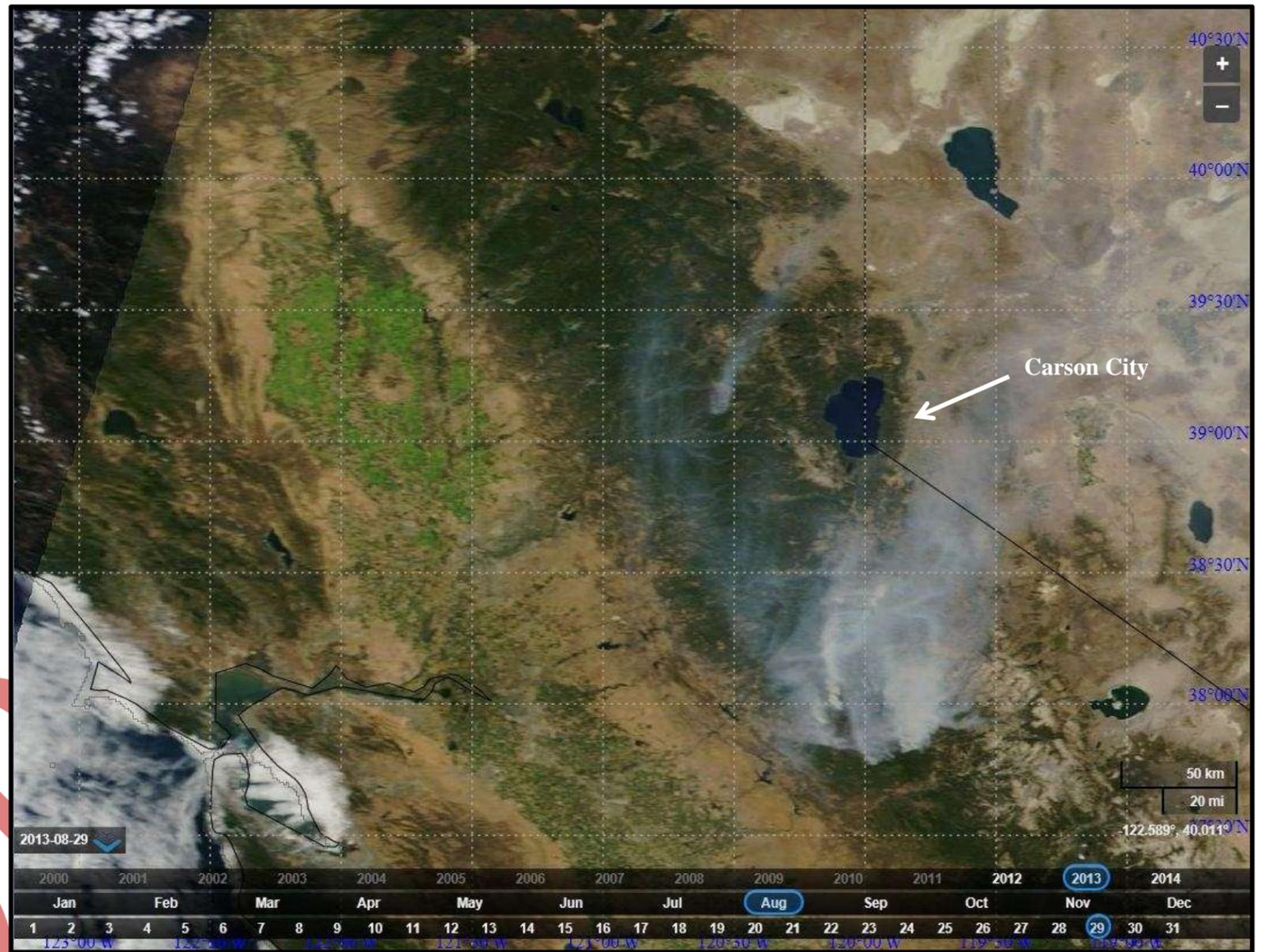
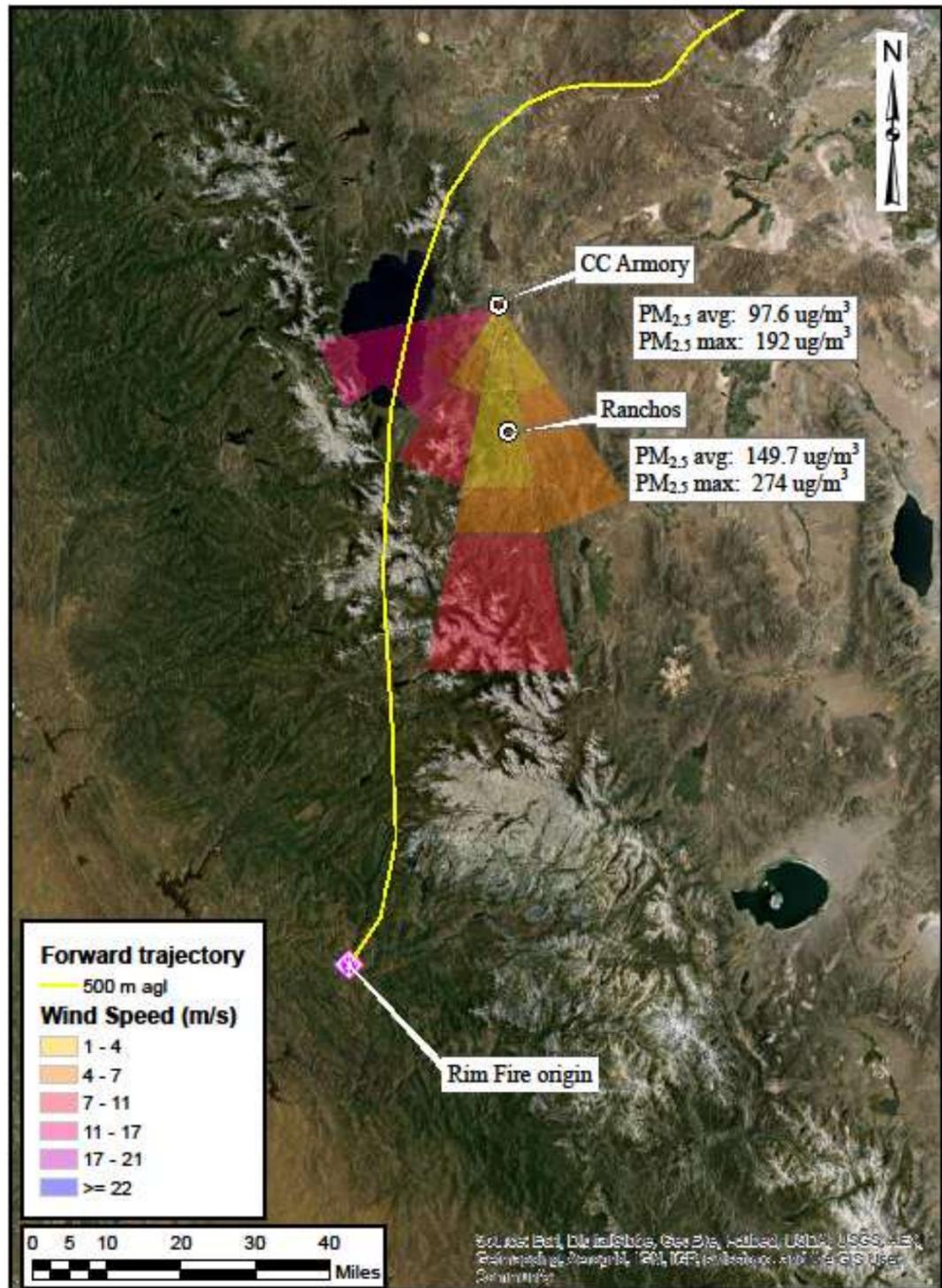


Figure 12A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for August 29, 2013

Figure 12B (right) Smoke Plume from the Rim Fire on August 29, 2013

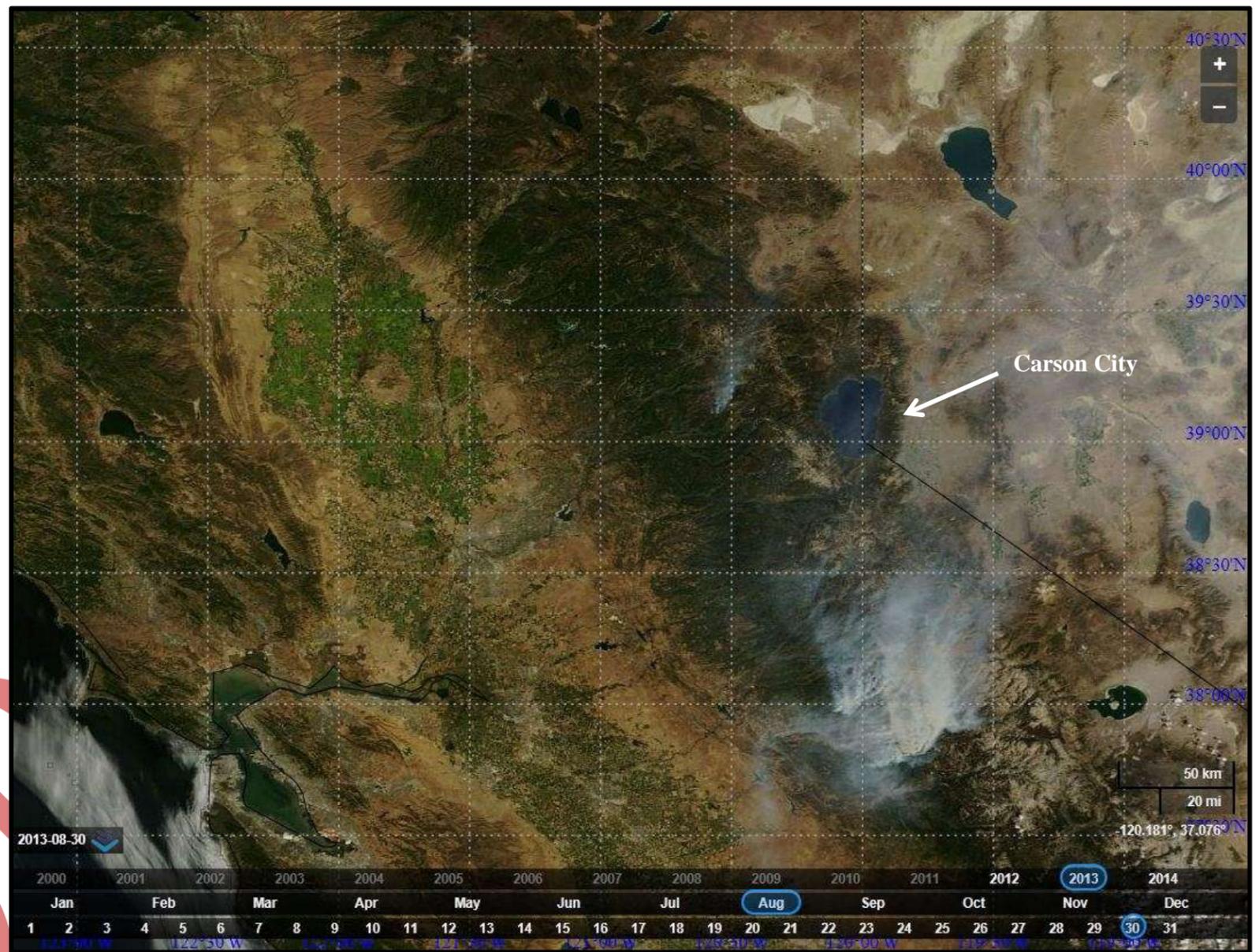
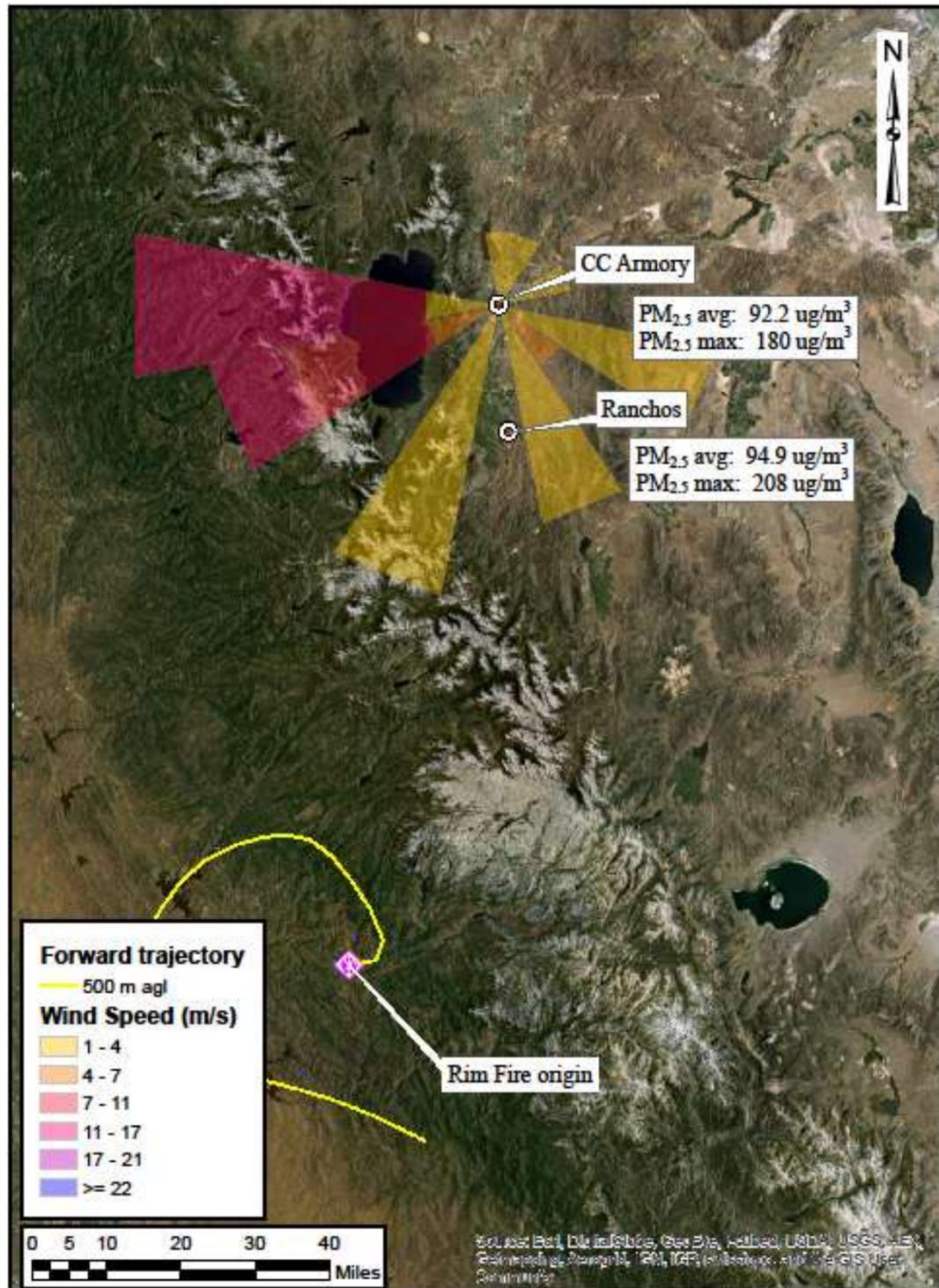


Figure 13A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for August 30, 2013

Figure 13B (right) Smoke Plume from the Rim Fire on August 30, 2013

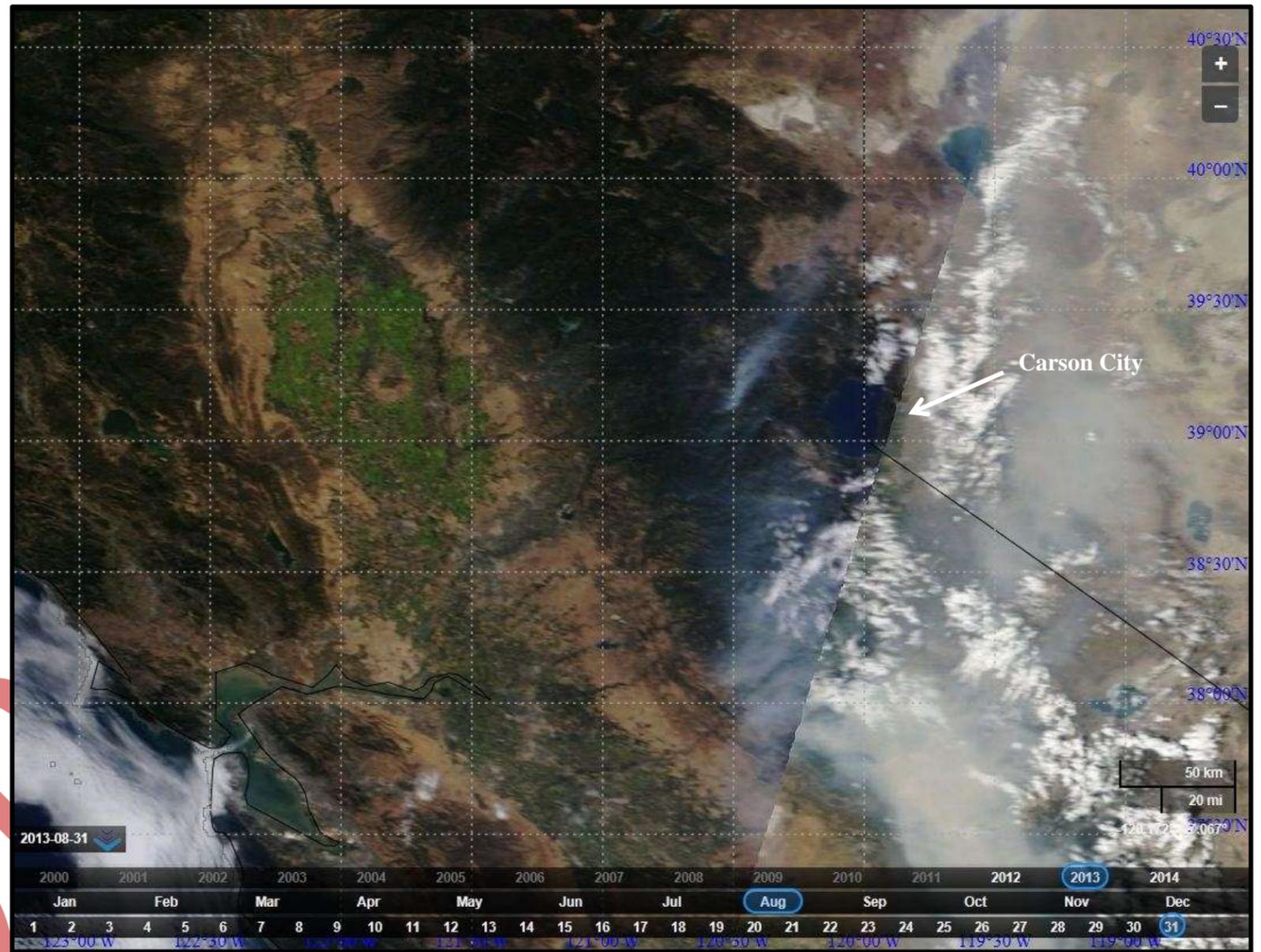
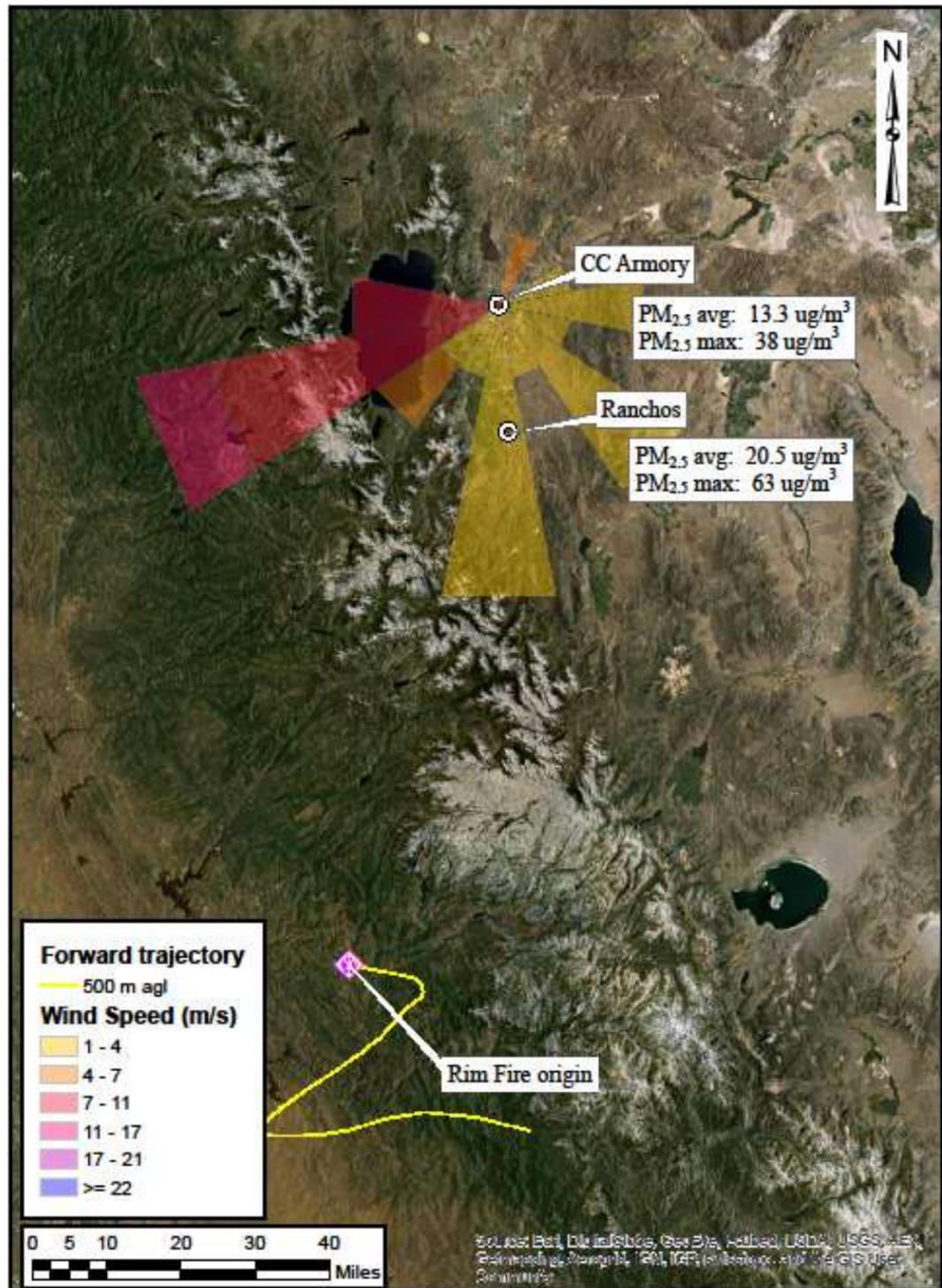


Figure 14A (left) Wind Rose, Average and Maximum $PM_{2.5}$ Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for August 31, 2013

Figure 14B (right) Smoke Plume from the Rim Fire on August 31, 2013

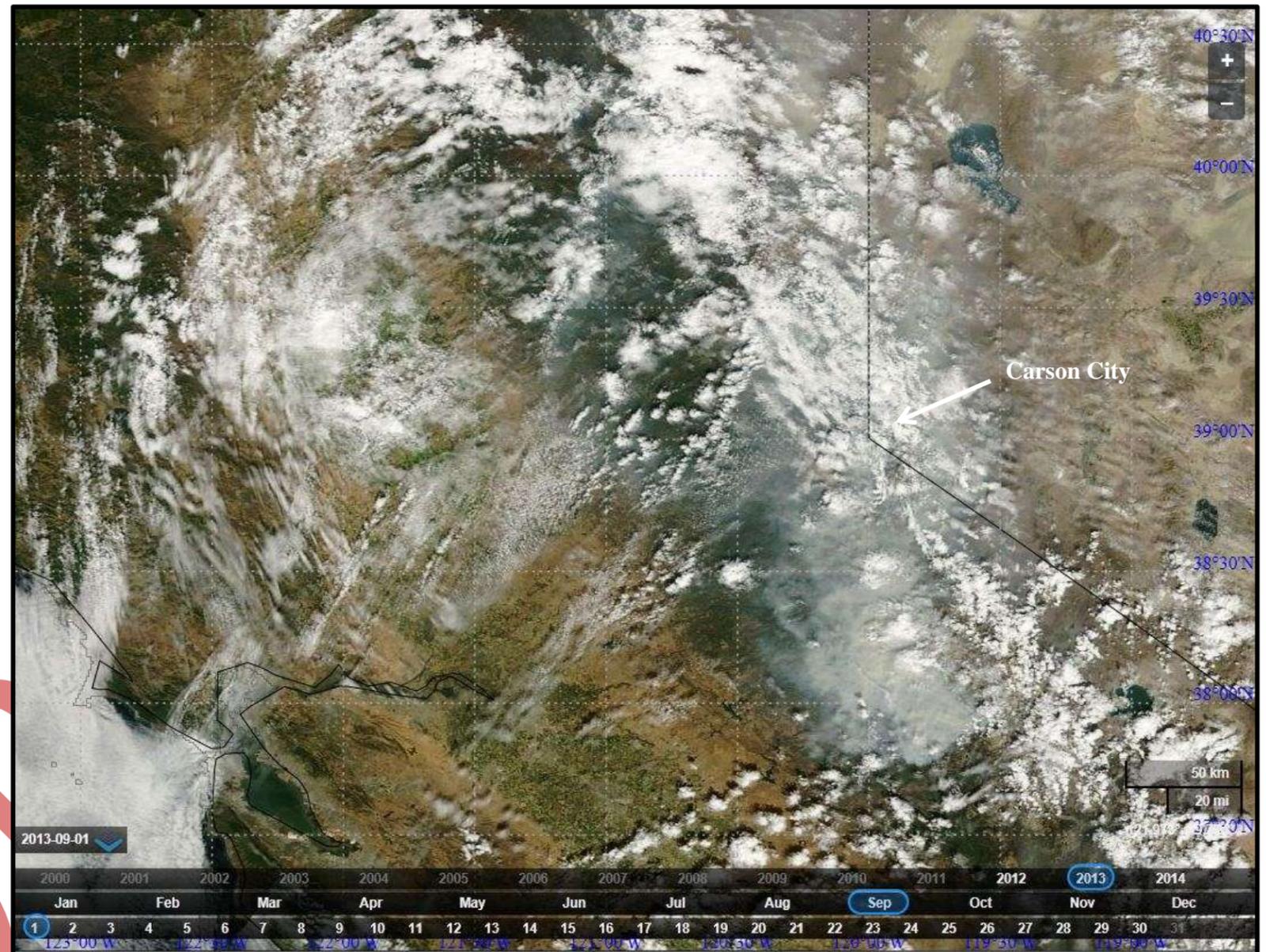
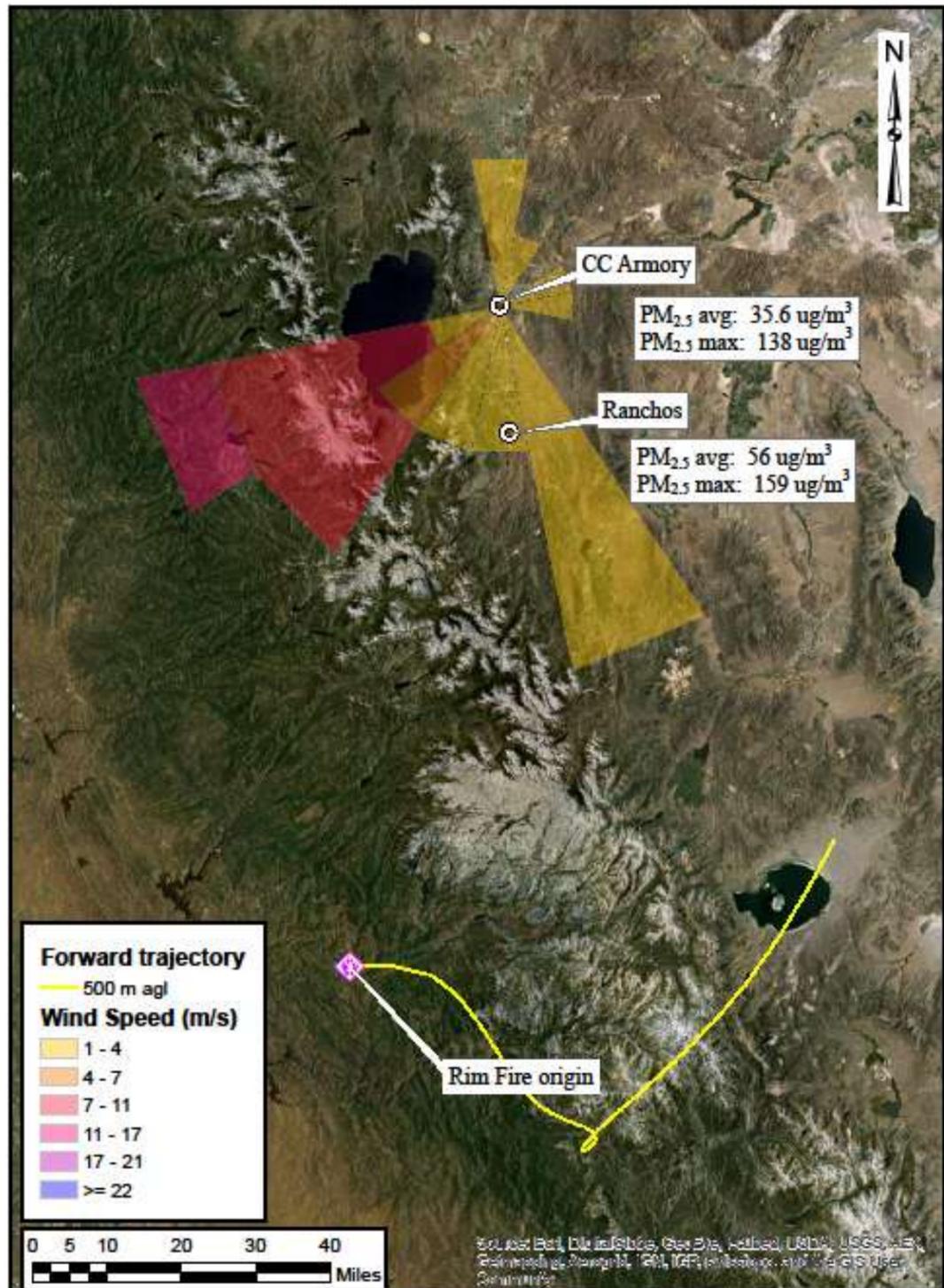


Figure 15A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for September 1, 2013

Figure 15B (right) Smoke Plume from the Rim Fire on September 1, 2013

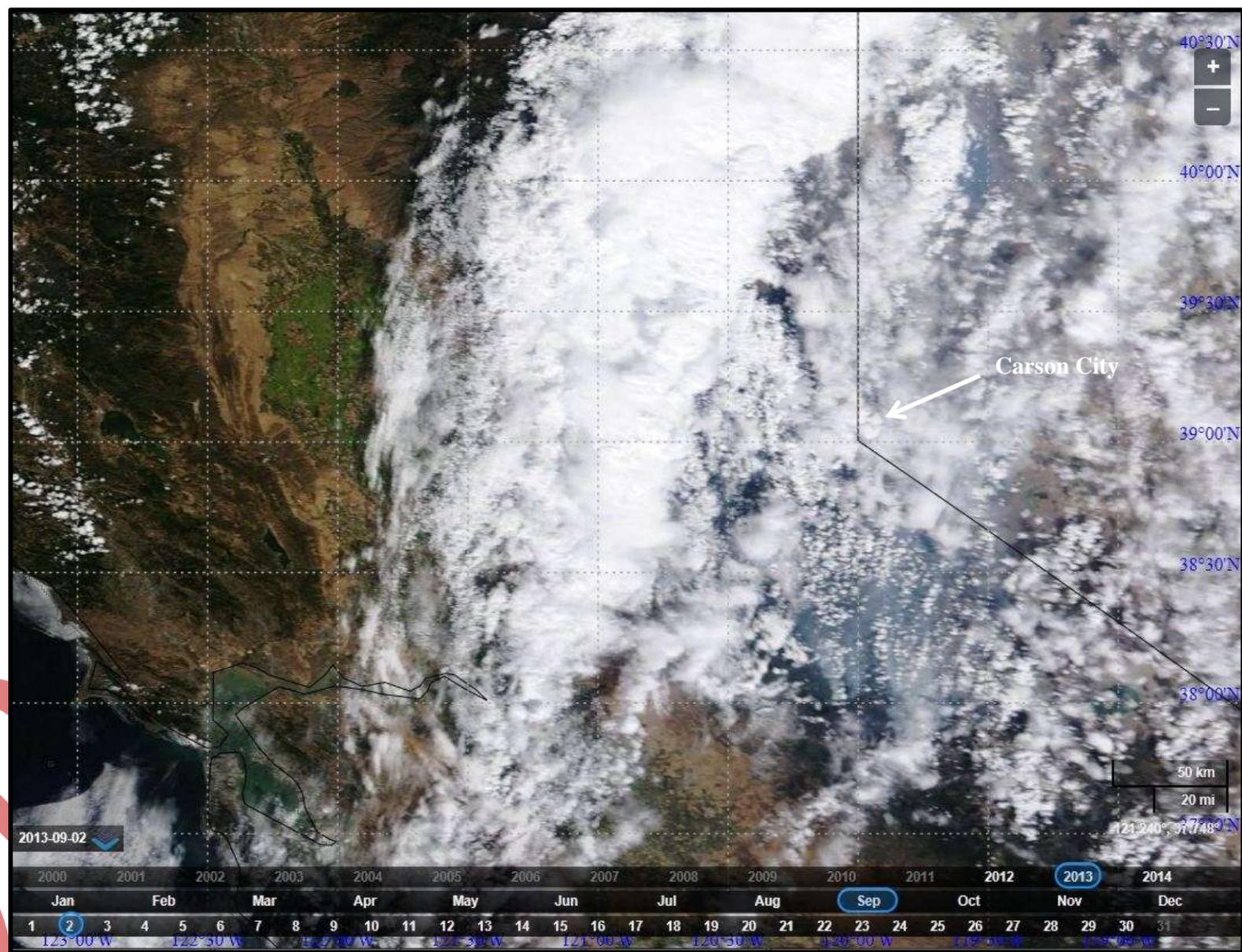
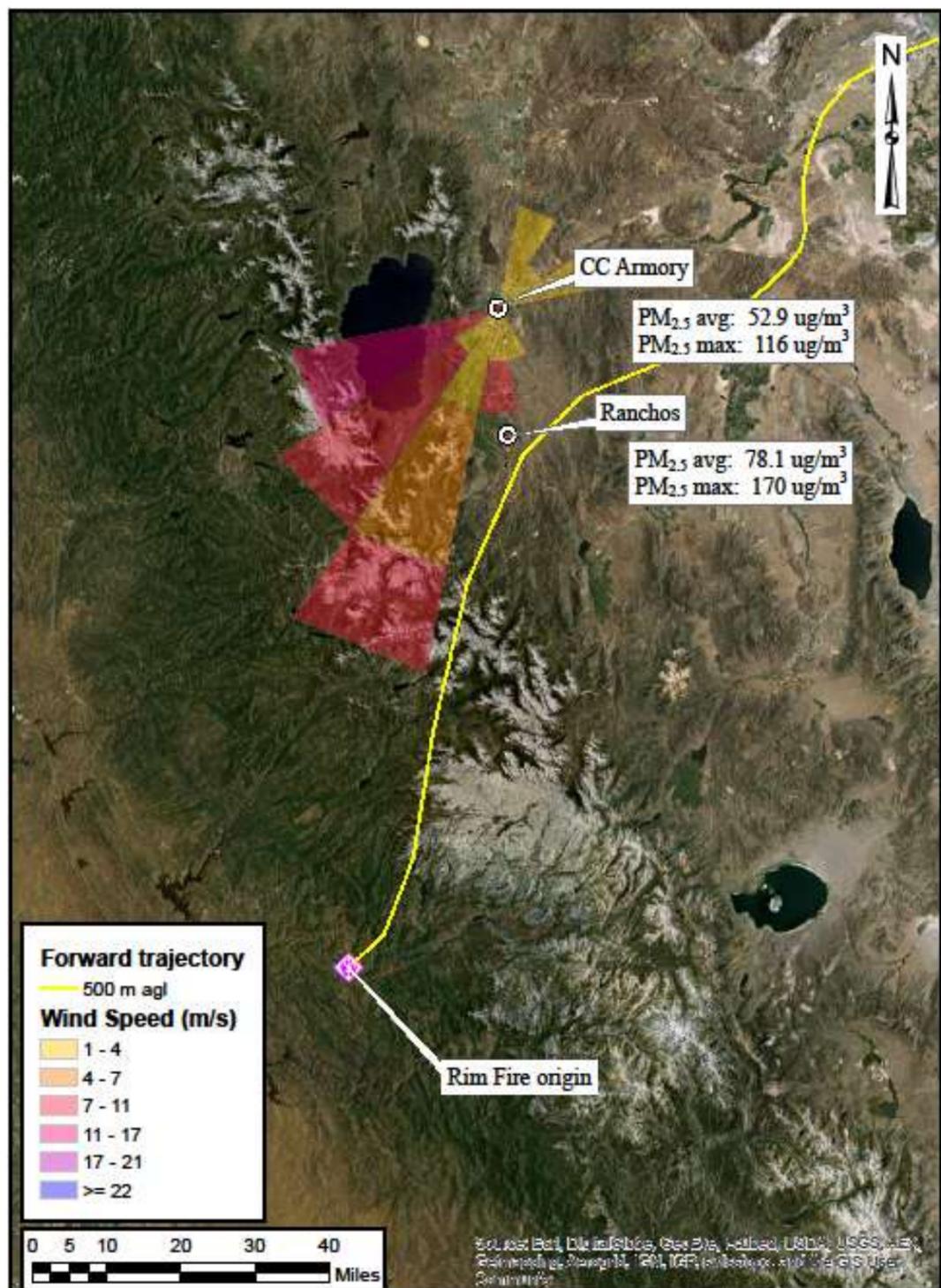


Figure 16A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for September 2, 2013

Figure 16B (right) Smoke Plume from the Rim Fire on September 2, 2013

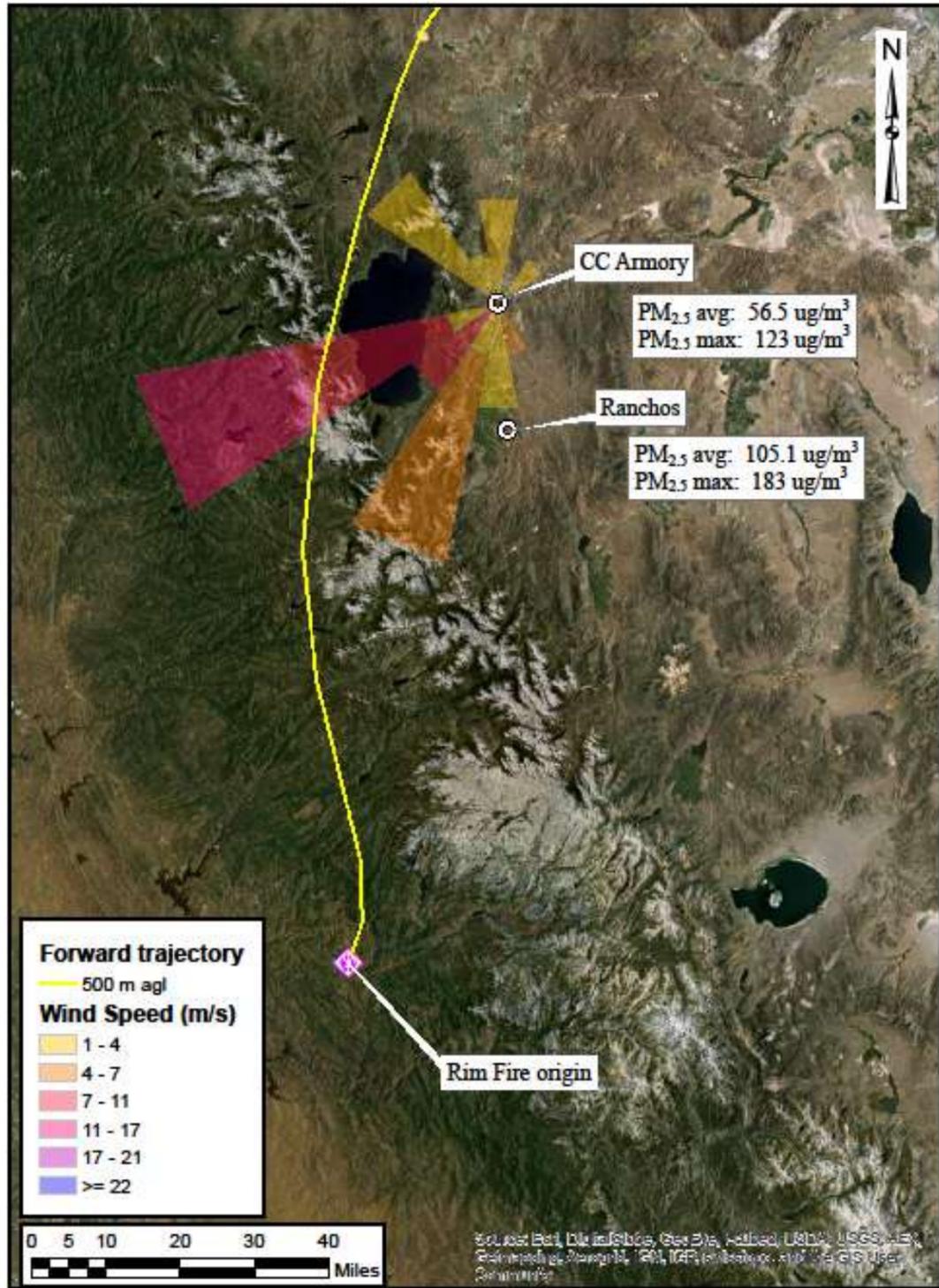


Figure 17A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for September 3, 2013

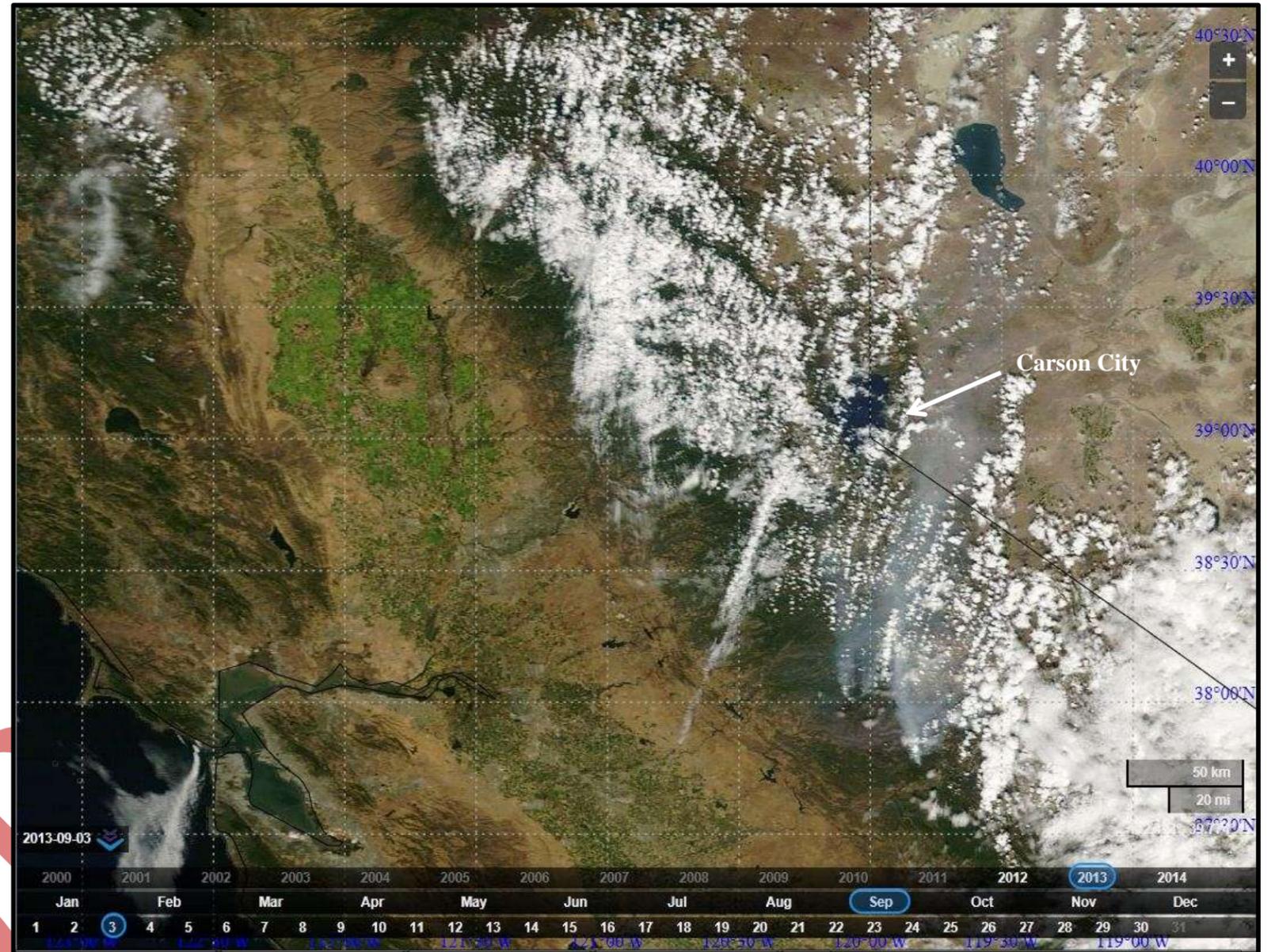


Figure 17B (right) Smoke Plume from the Rim Fire on September 3, 2013

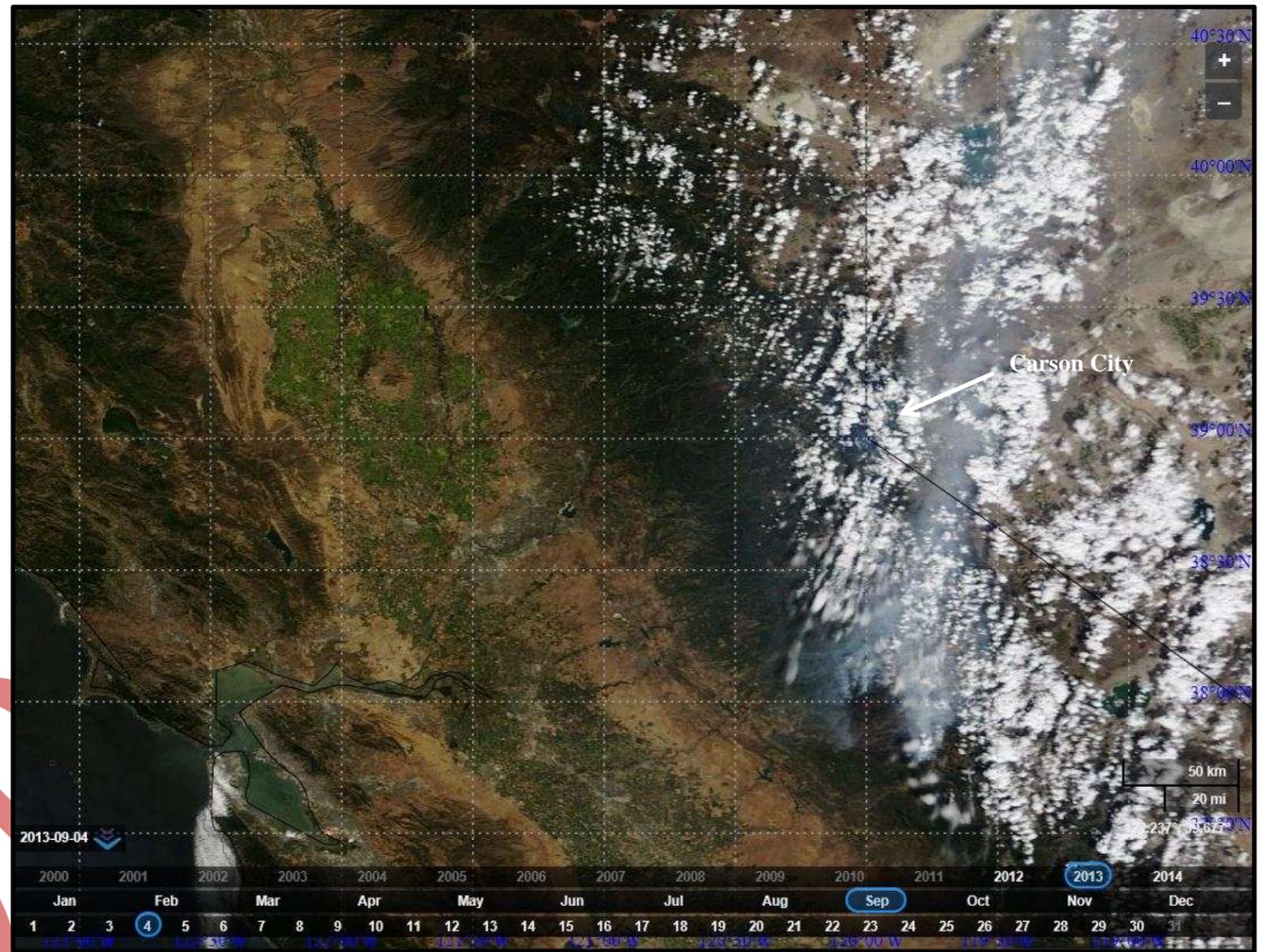
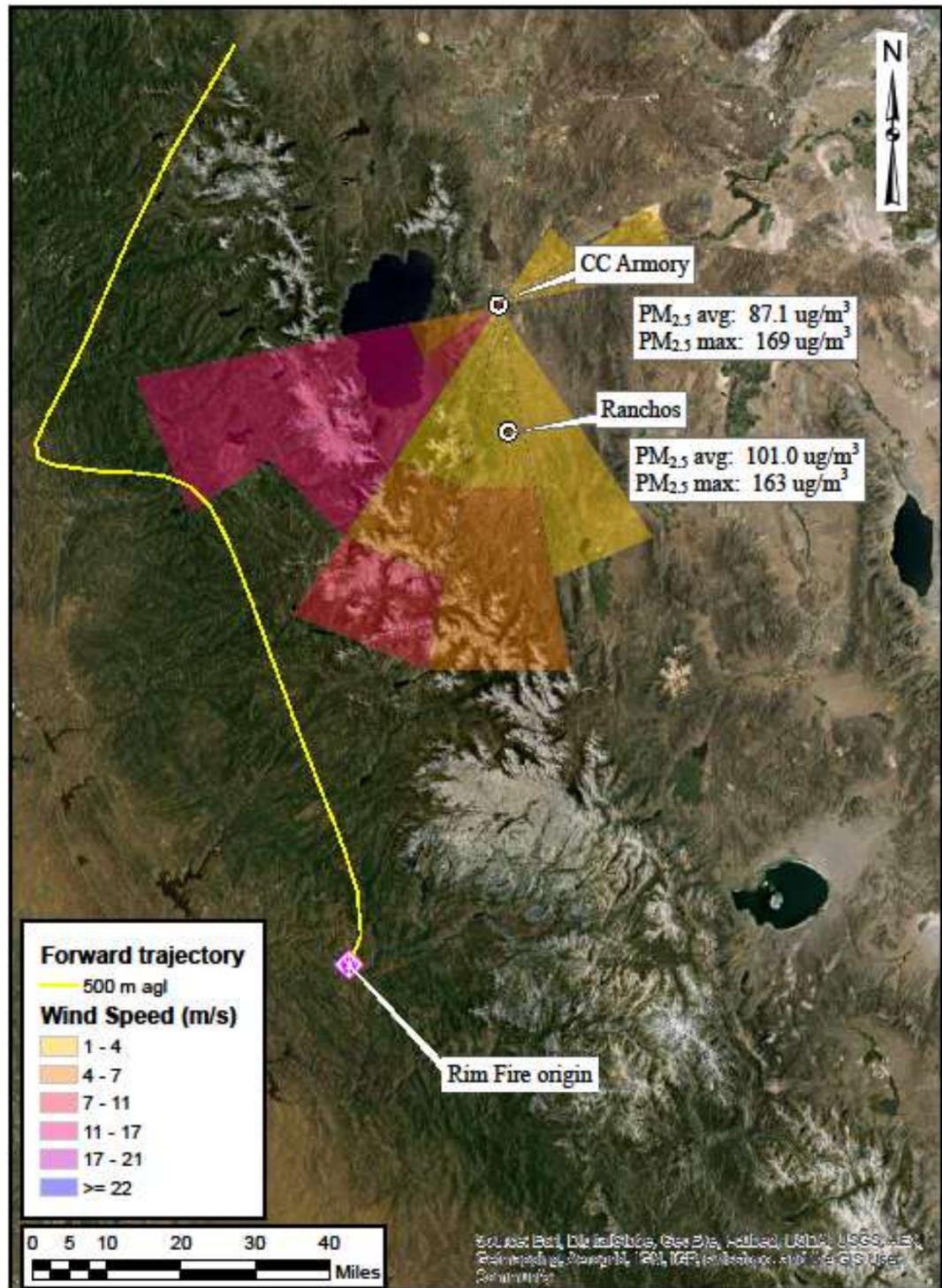


Figure 18A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for September 4, 2013

Figure 18B (right) Smoke Plume from the Rim Fire on September 4, 2013

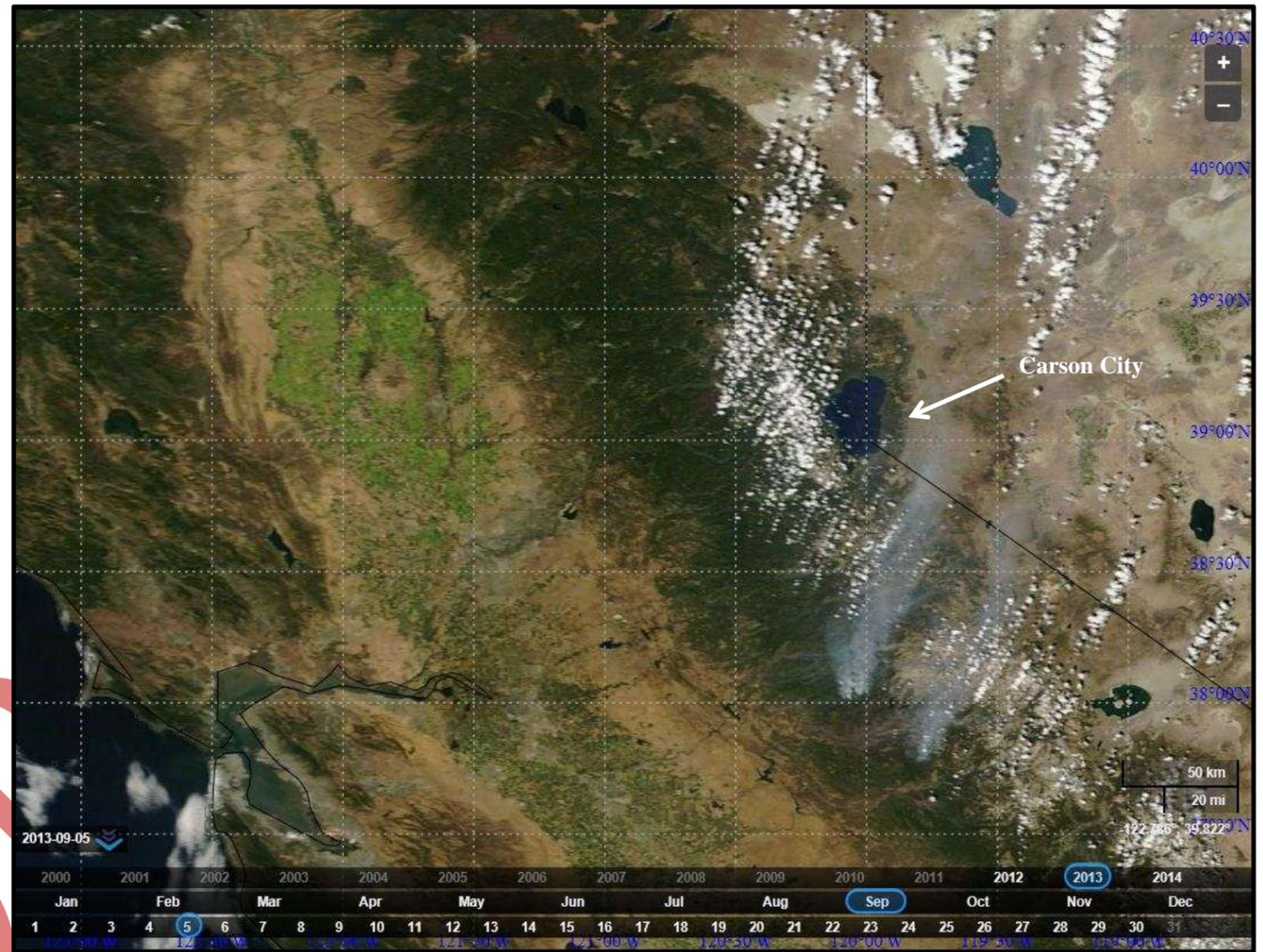
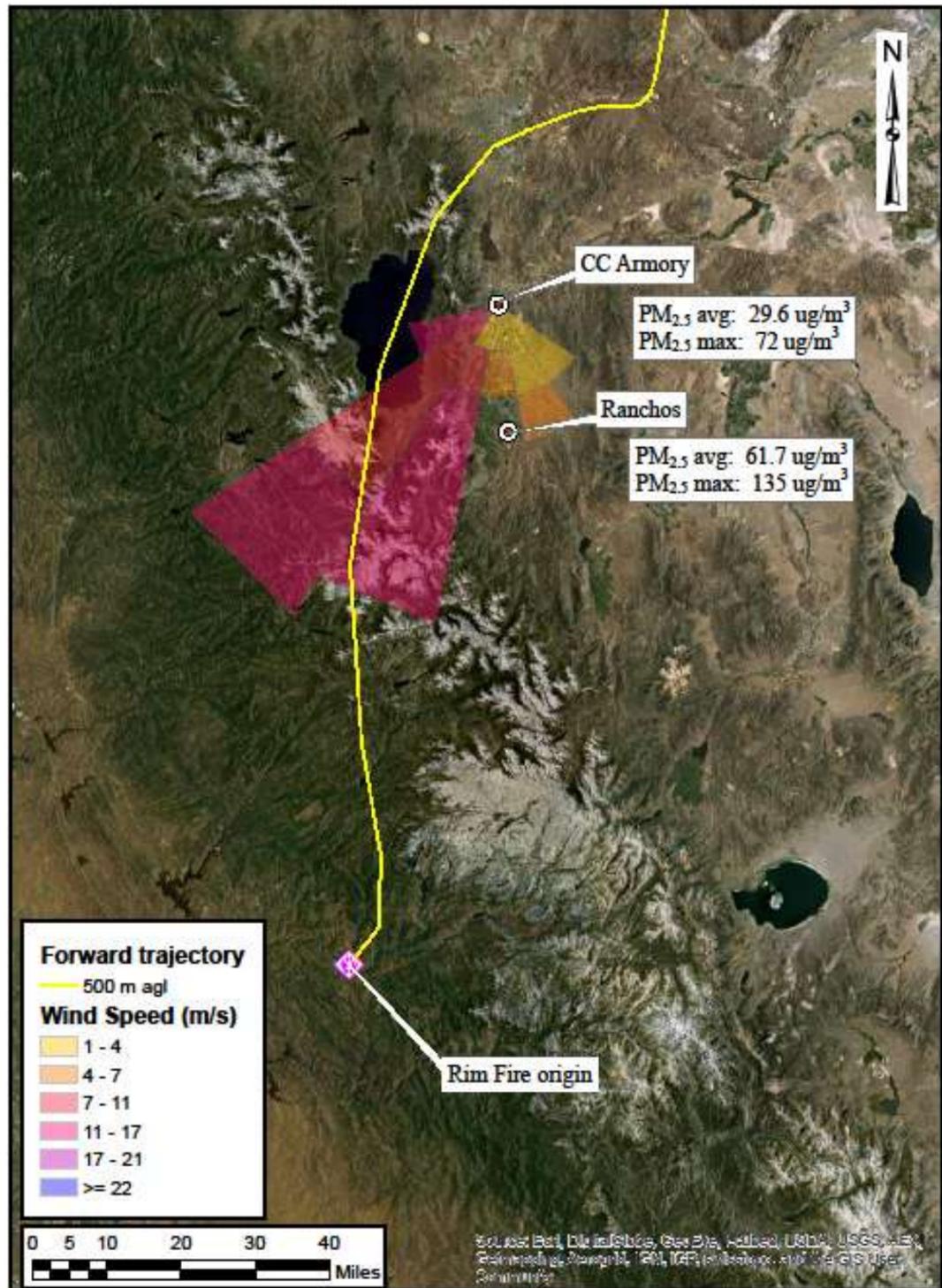


Figure 19A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for September 5, 2013

Figure 19B (right) Smoke Plume from the Rim Fire on September 5, 2013

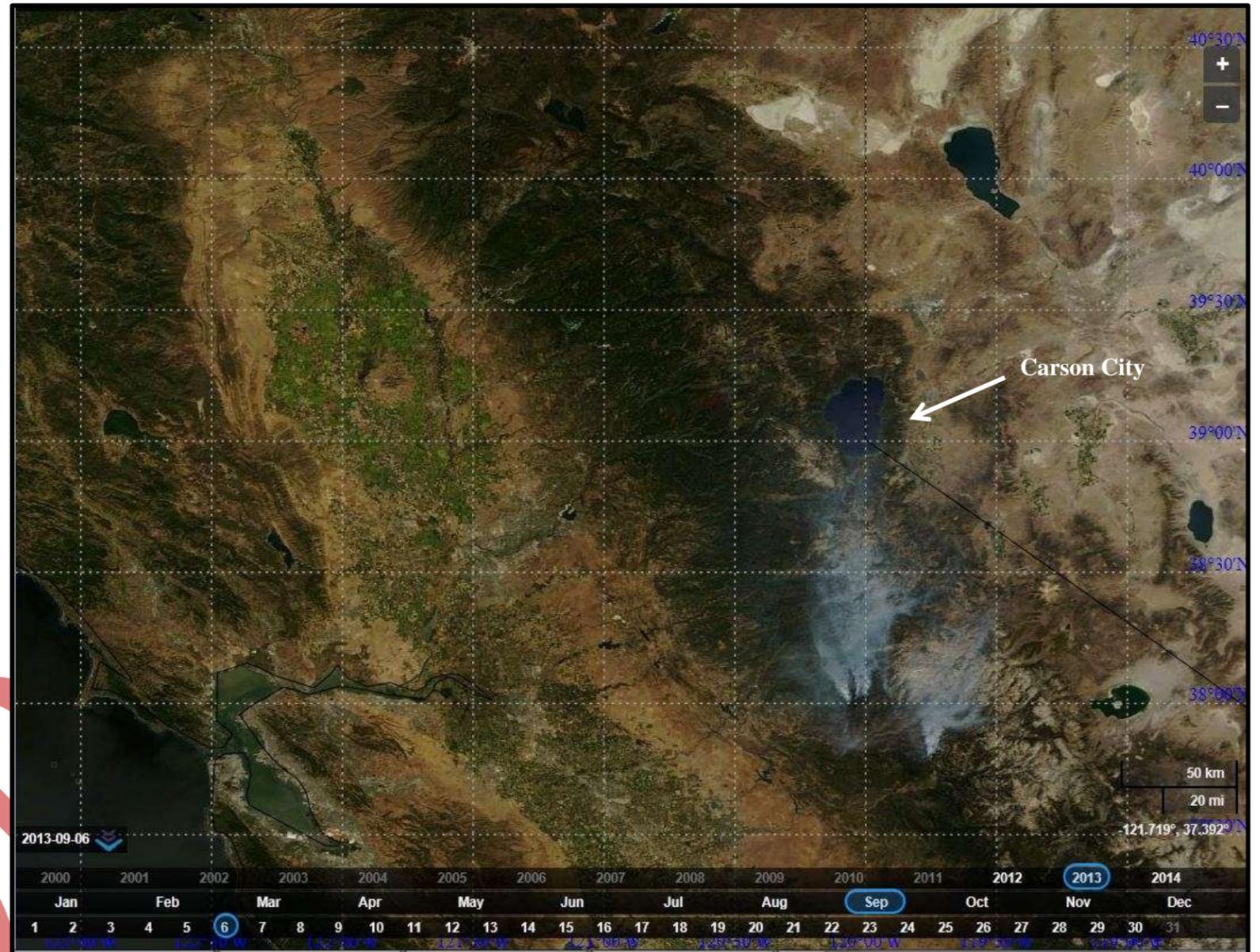
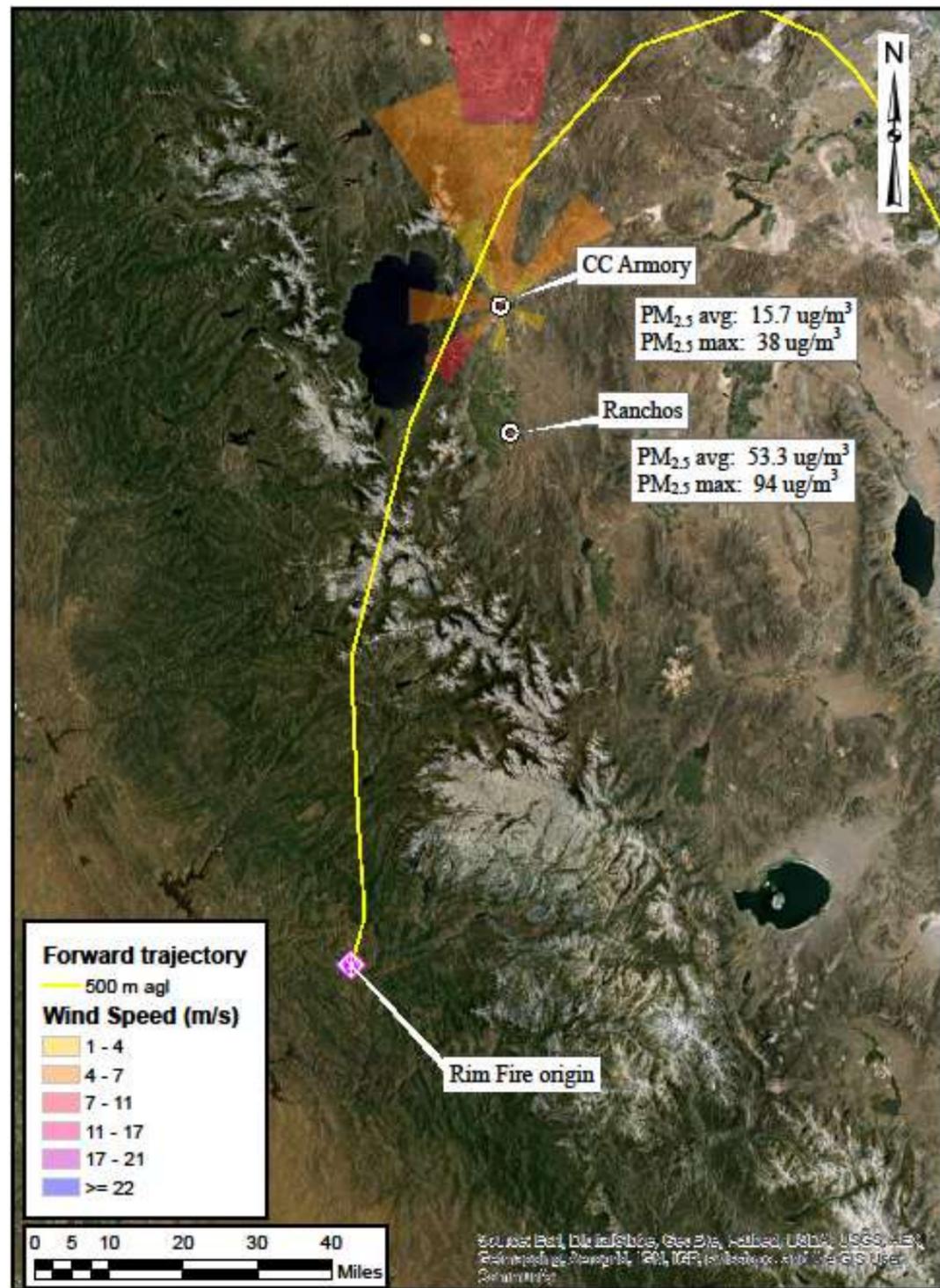


Figure 20A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for September 6, 2013

Figure 20B (right) Smoke Plume from the Rim Fire on September 6, 2013

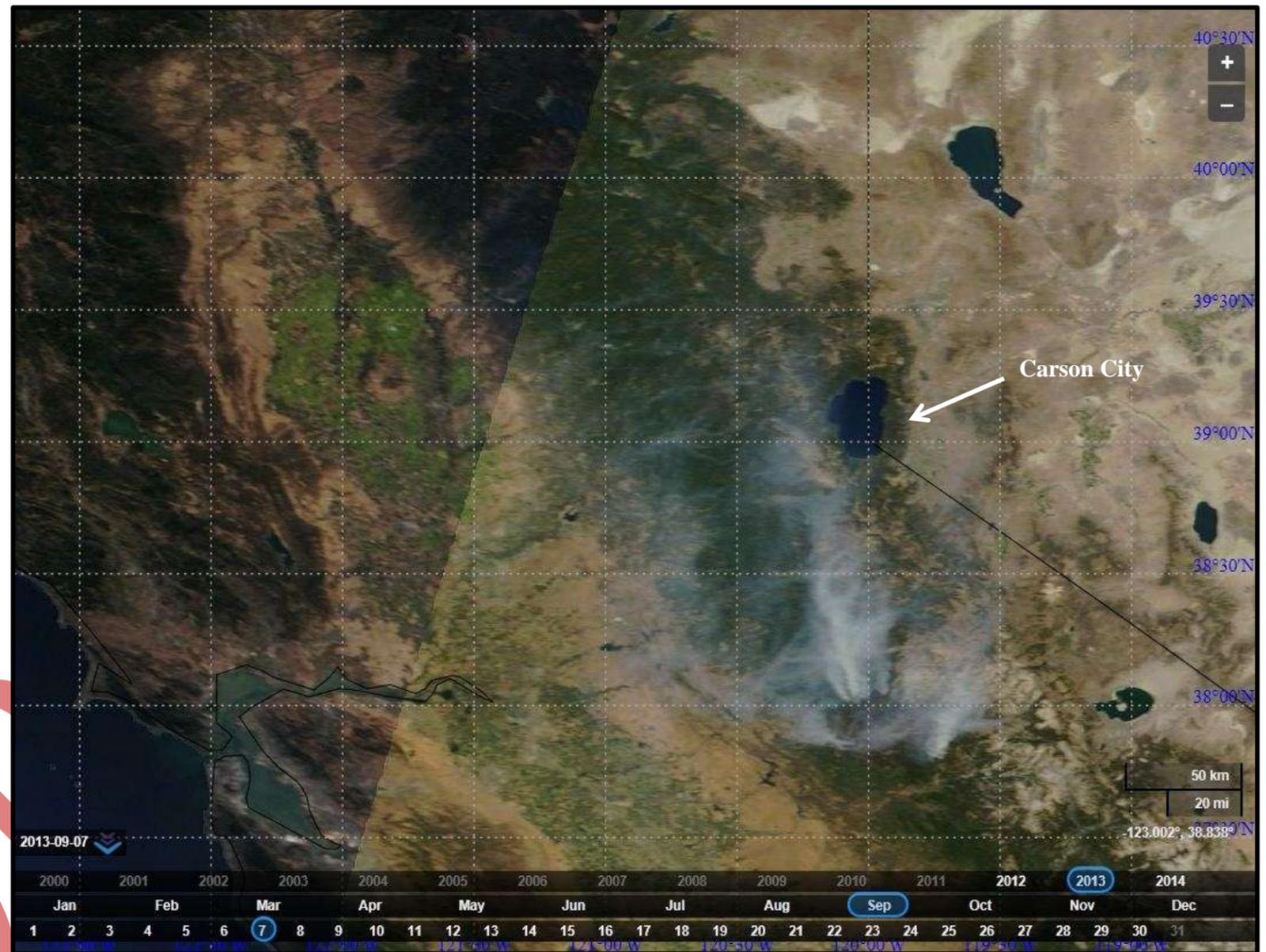
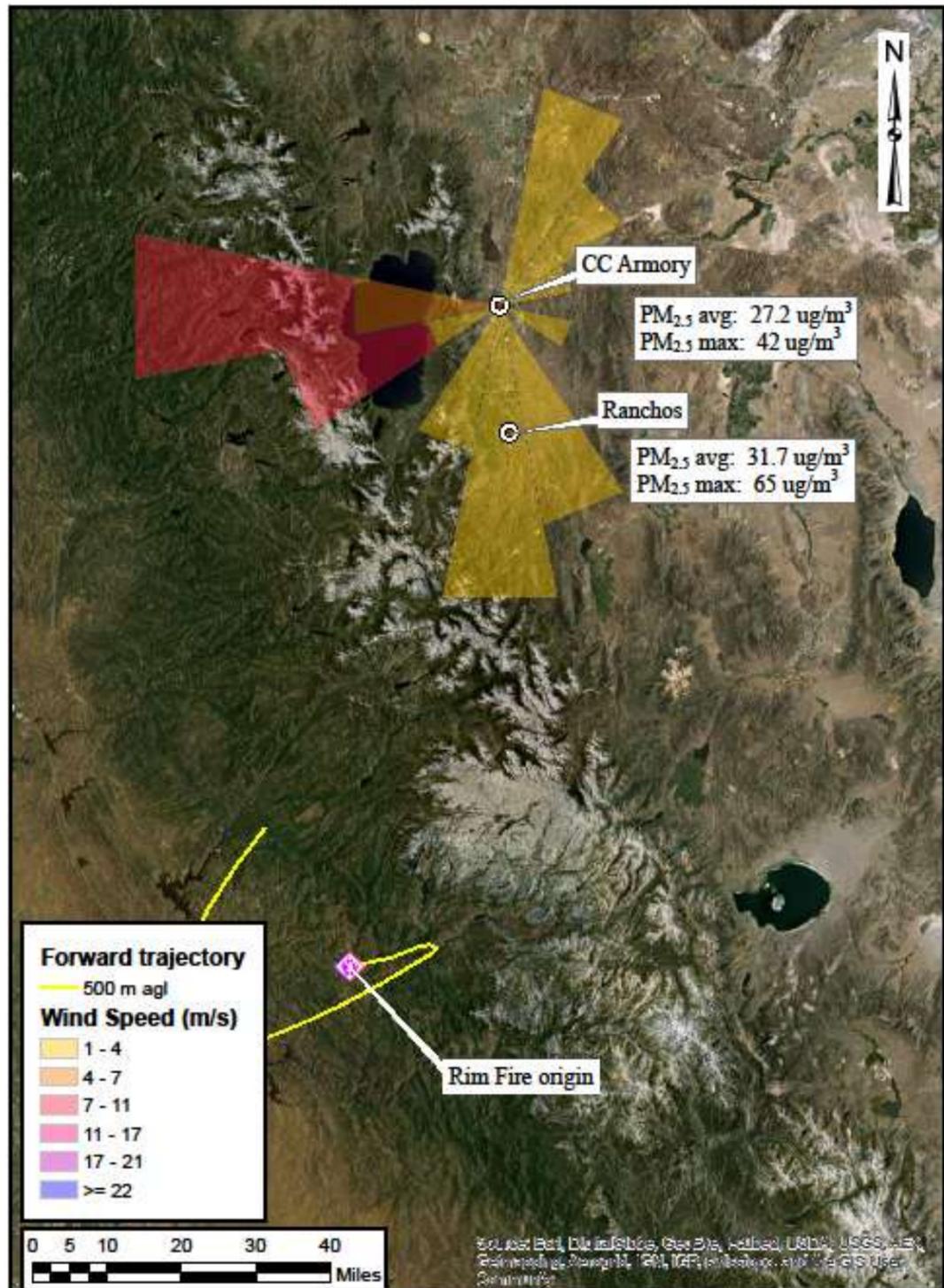


Figure 21A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for September 7, 2013

Figure 21B (right) Smoke Plume from the Rim Fire on September 7, 2013

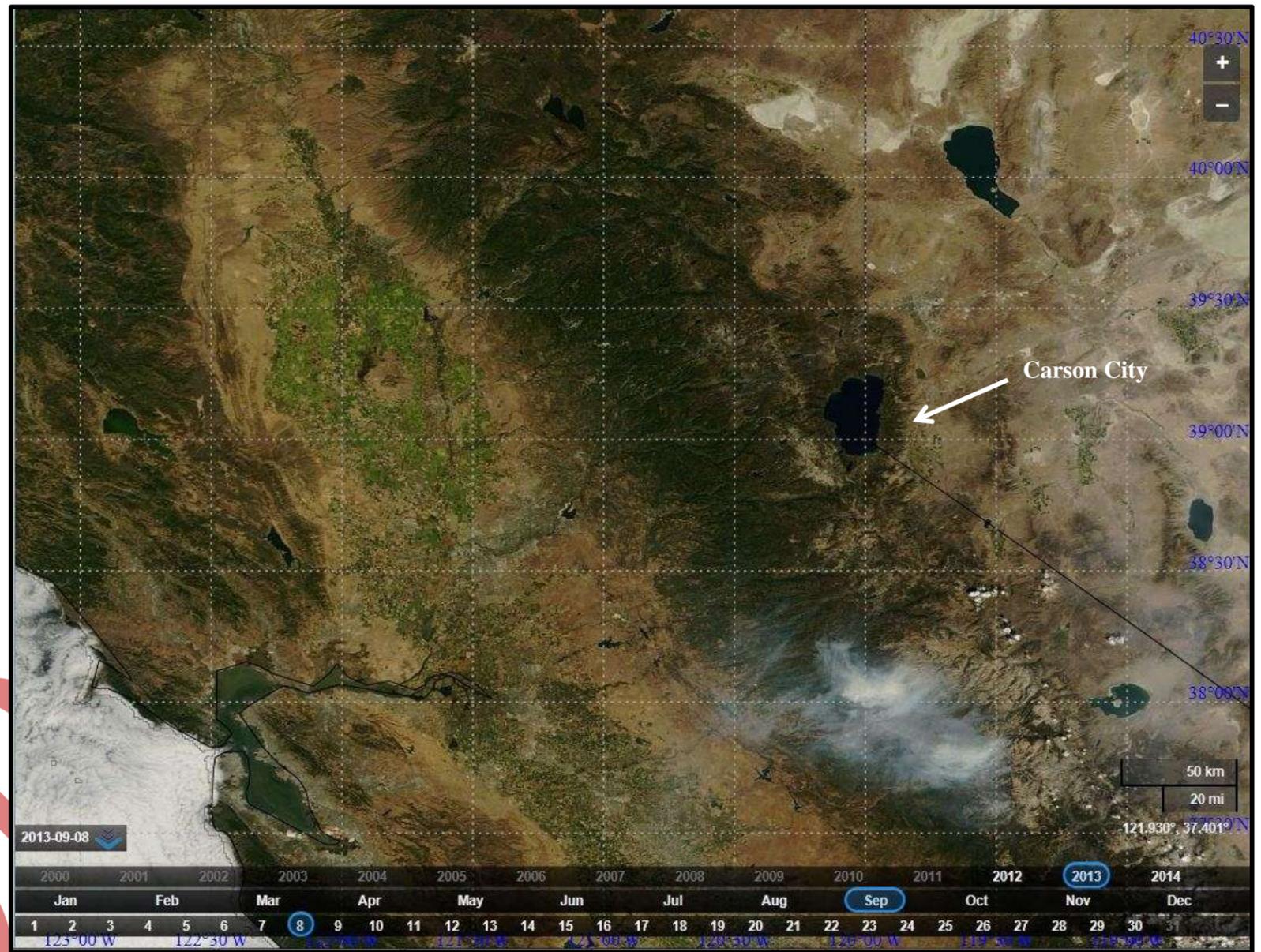
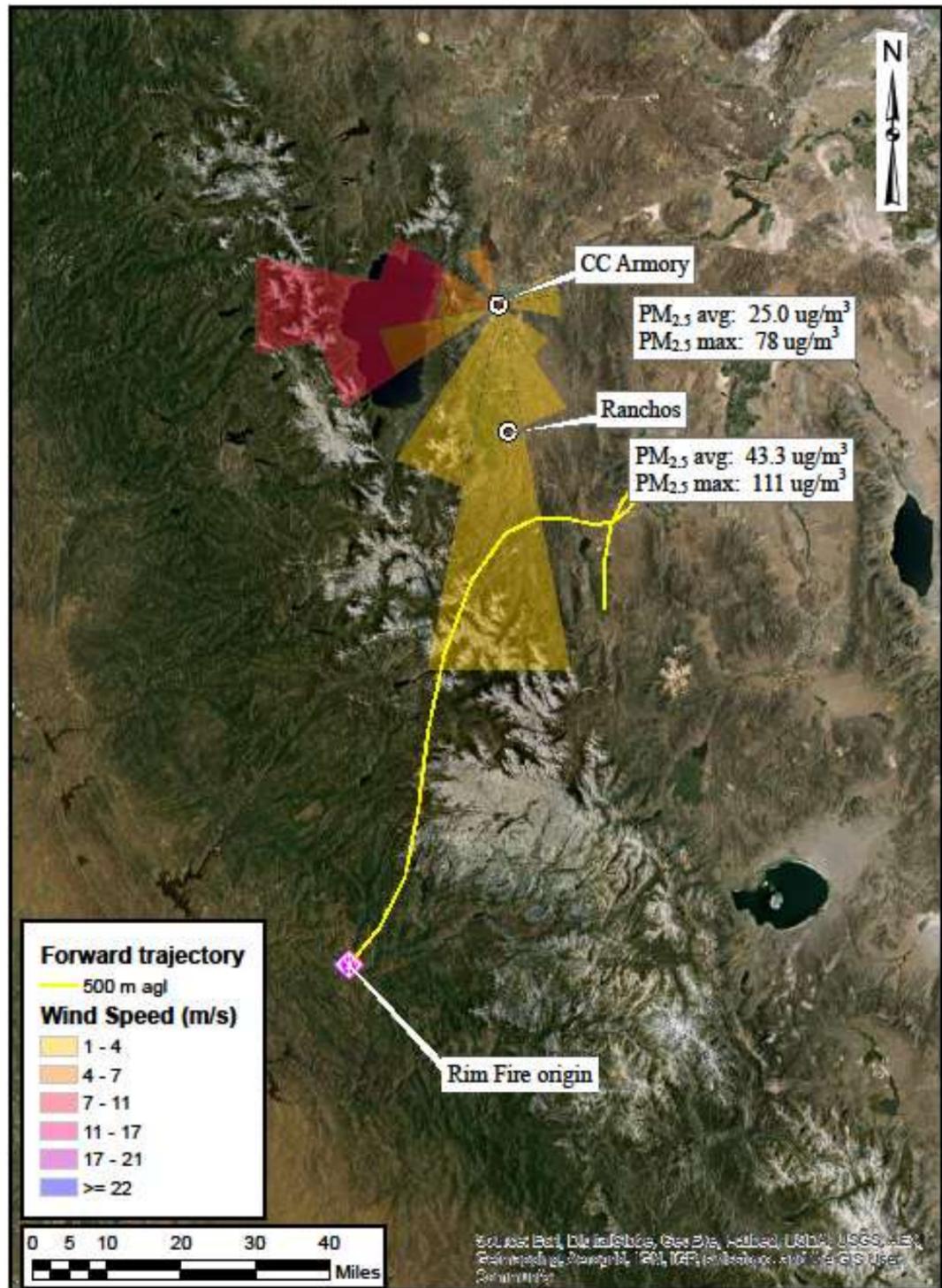


Figure 22A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for September 8, 2013

Figure 22B (right) Smoke Plume from the Rim Fire on September 8, 2013

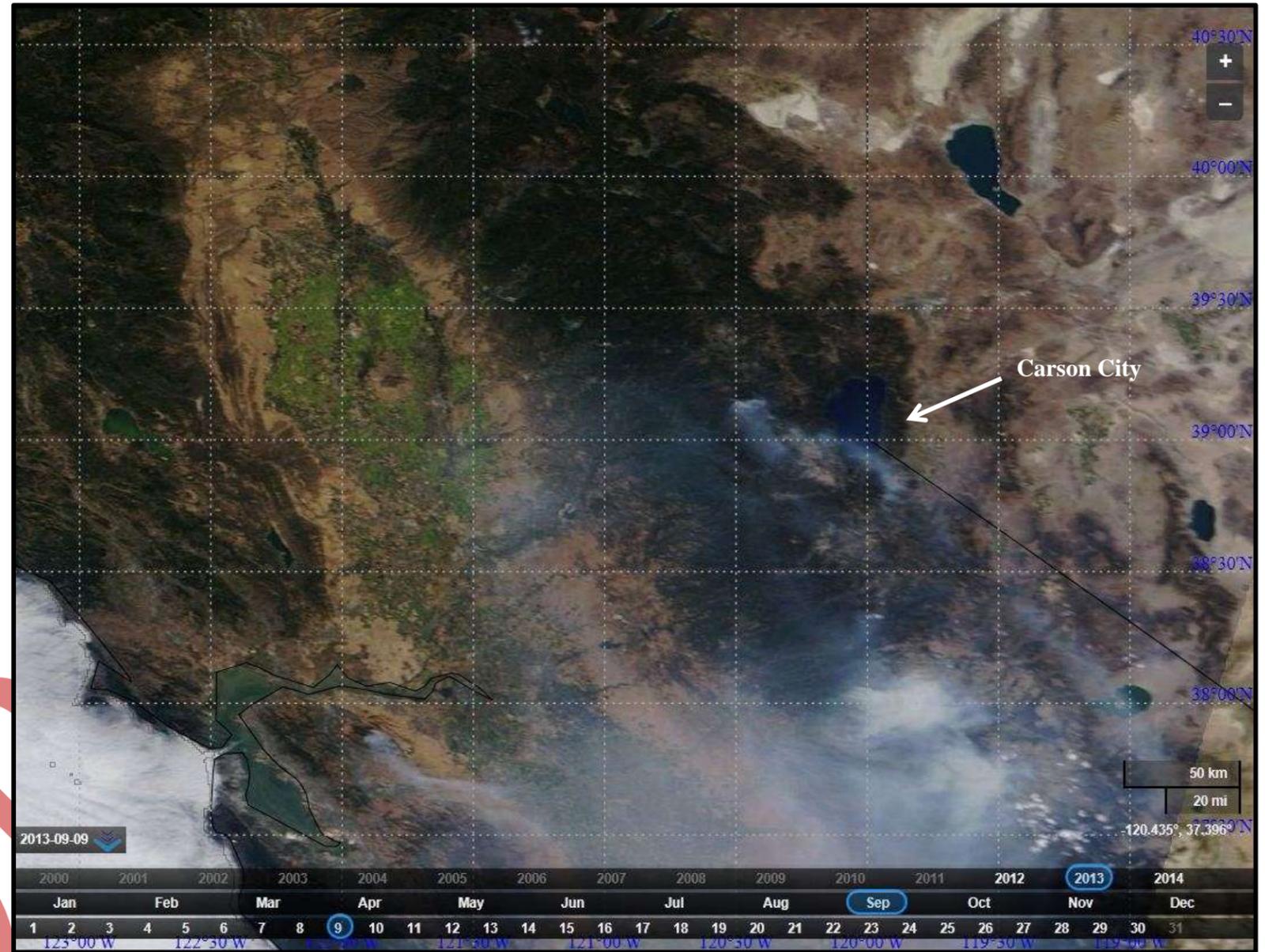
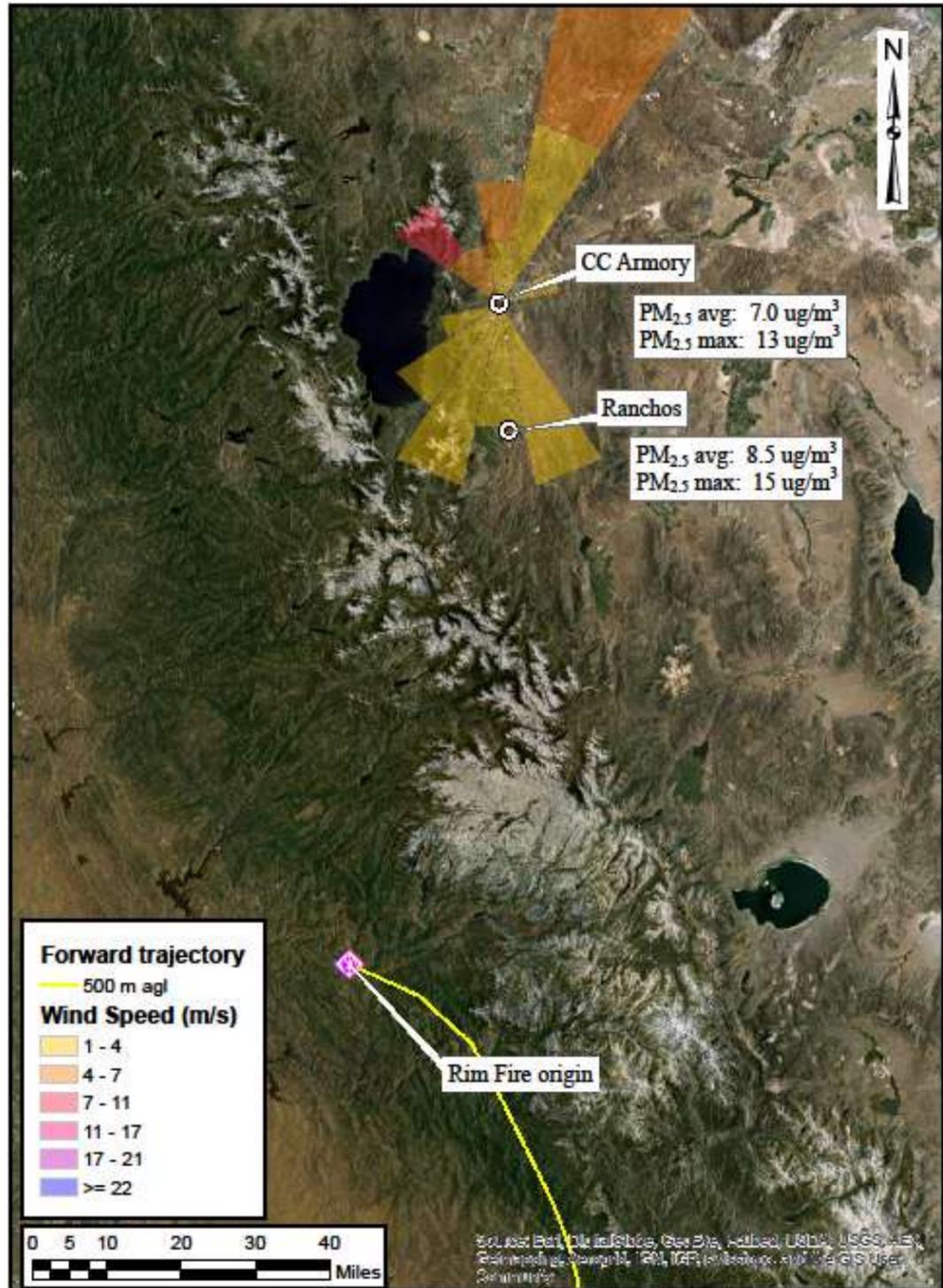


Figure 23A (left) Wind Rose, Average and Maximum PM_{2.5} Concentrations for the CC Armory and Ranchos Monitoring Sites, and HYSPLIT Forward Trajectory (500 m agl) from the Rim Fire for September 9, 2013

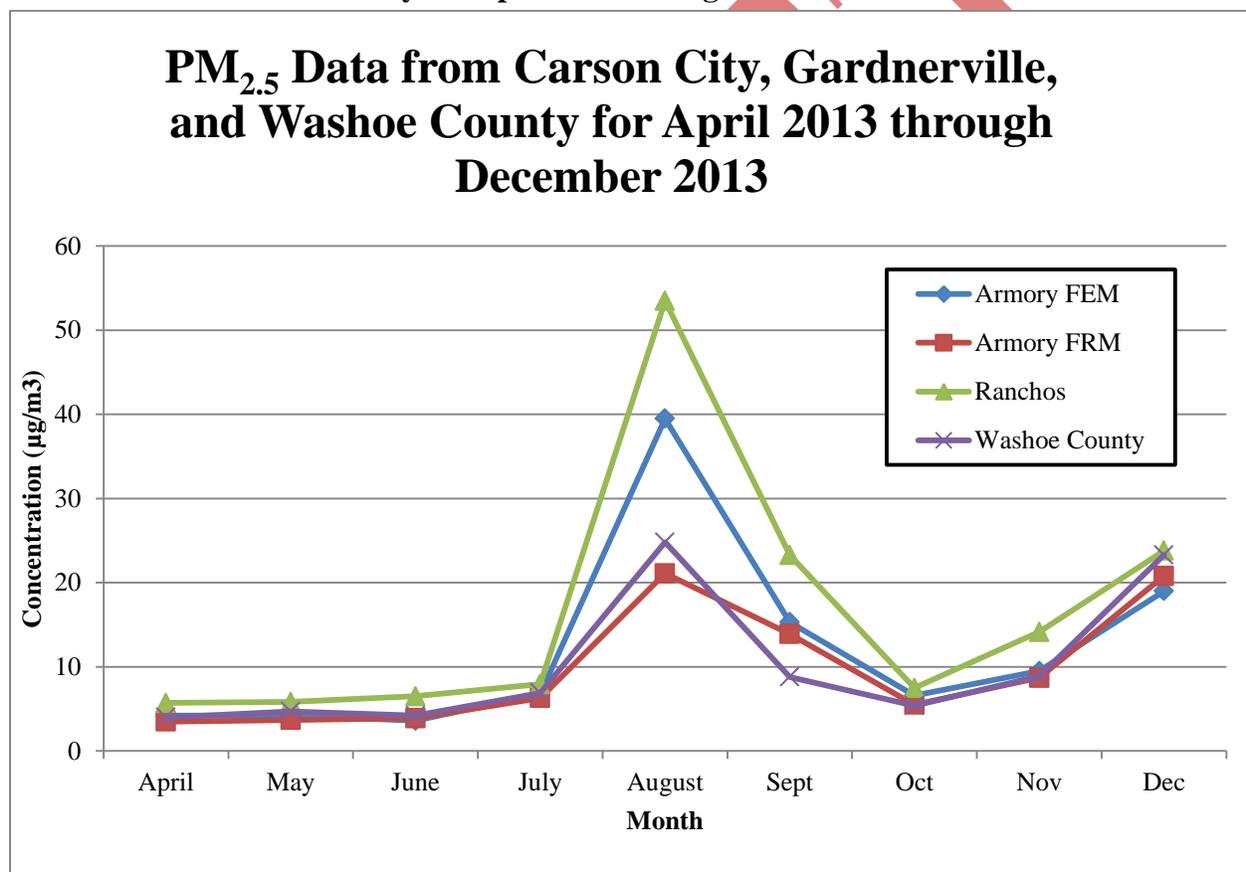
Figure 23B (right) Smoke Plume from the Rim Fire on September 9, 2013

Figures 5A through 23B show a strong correlation between PM_{2.5} concentration, wind speed and direction, particle trajectories, and the smoke plume from the Rim Fire.

2.6 BEYOND HISTORICAL AND BACKGROUND CONCENTRATIONS

PM_{2.5} concentrations in western Nevada have historically been low during the summer months. Both the Ranchos and the CC Armory FEM PM_{2.5} monitoring sites were installed in April 2013. As such, historical data is not available for either site. Existing data for both sites was compared to data from Washoe County FRM PM_{2.5} monitoring sites approximately 30 miles to the north, and the data are similar (Figure 24).

Figure 24 Comparison of PM_{2.5} Values Between Carson City, Gardnerville, and Washoe County for April 2013 through December 2013

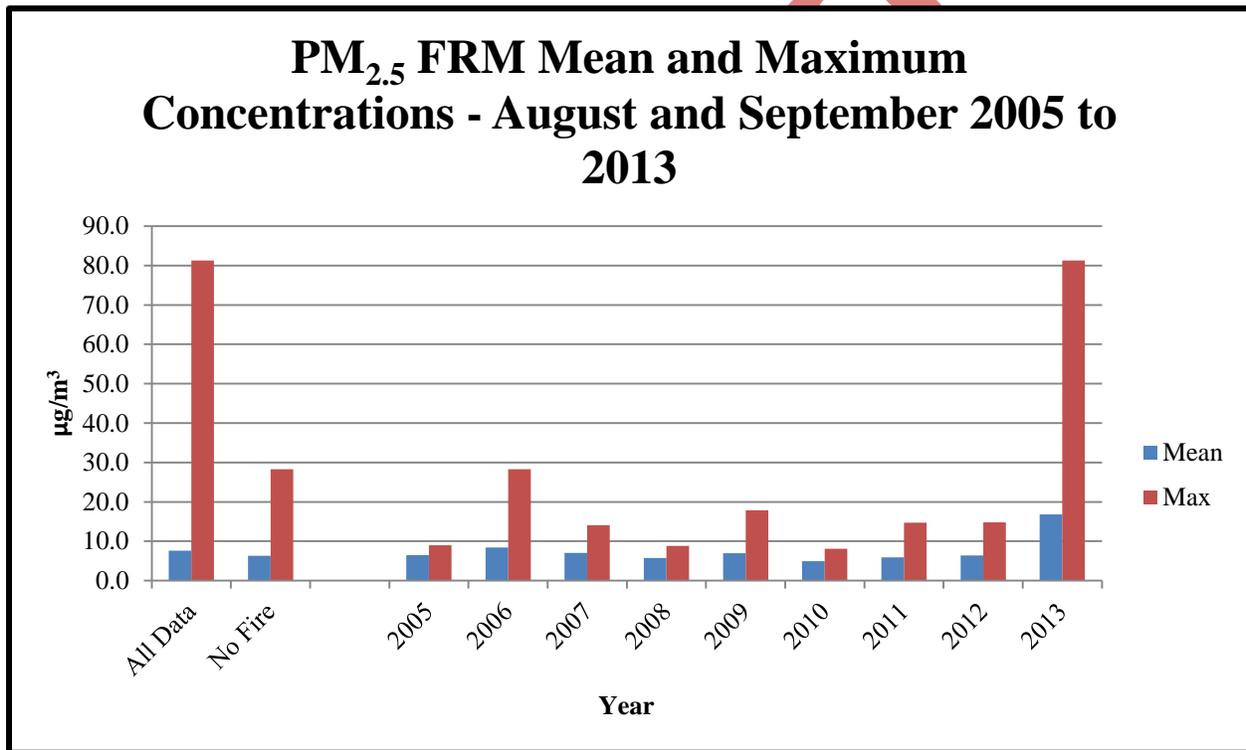


Historical data from Washoe County, approximately 30 miles to the north of Carson City, show that the average PM_{2.5} concentration for August and September (combined) from 2005 through 2013, (excluding dates that were affected by smoke from the Rim Fire) is 6.2 µg/m³. When the data from the Rim Fire are included, the average for August and September (combined) increases to 7.6 µg/m³. This data is summarized in Table 3 and shown graphically in Figure 25.

Table 3 August-September PM_{2.5} Statistics for Washoe County

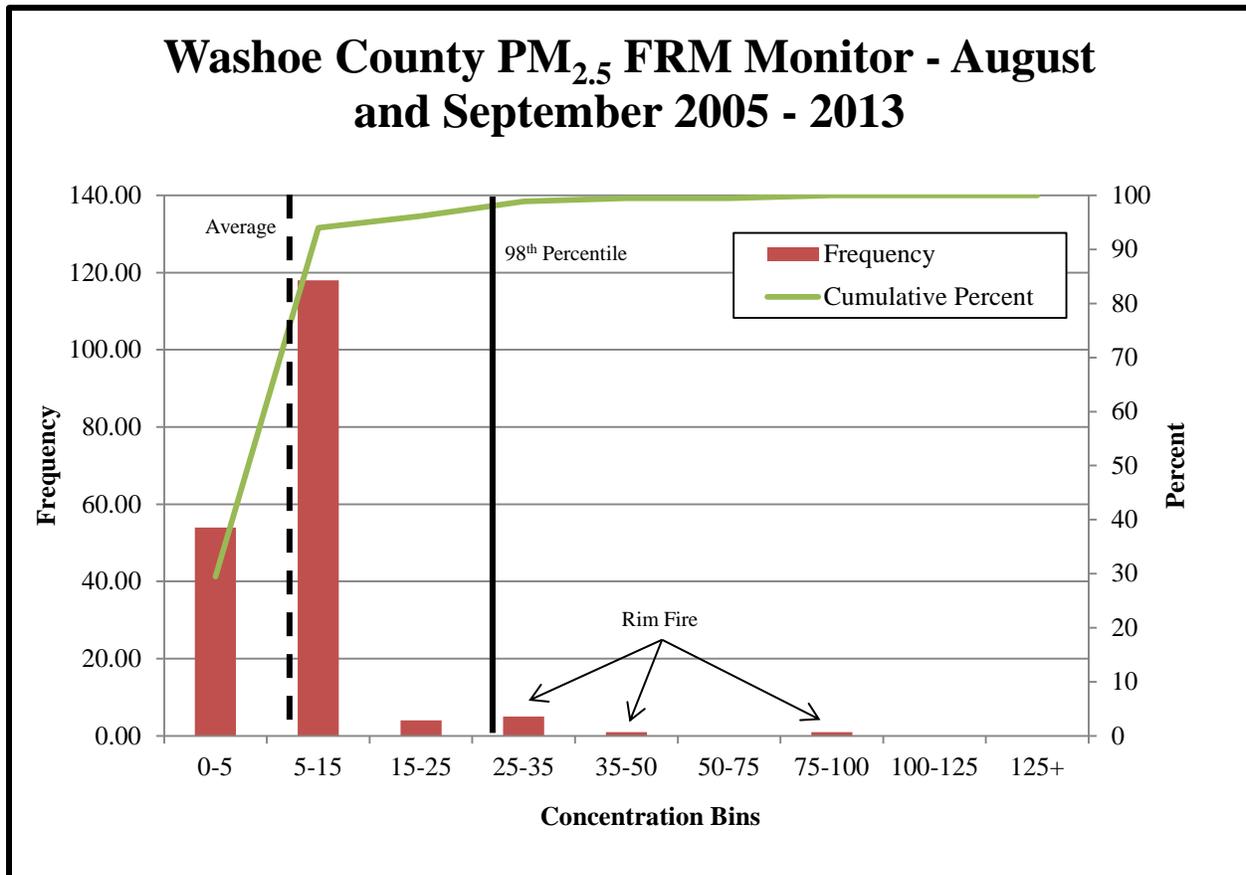
	2005-2013		2005	2006	2007	2008	2009	2010	2011	2012	2013	
	All Data	No Fire									All Data	No Fire
Mean	7.6	6.2	6.5	8.4	7.1	5.7	7.0	4.9	5.9	6.4	16.8	4.1
Median	6.0	5.8	6.4	7.3	6.4	5.6	5.9	4.8	5.5	5.9	9.1	4.2
Mode	5.5	5.5	5.7	8.7	3.7	3.5	5.9	4.4	4.1	4.5	5.4	5.4
Std Dev	7.4	3.0	1.4	4.9	3.3	1.9	3.9	1.5	2.6	2.7	18.7	1.4

Figure 25 Historical Data – August and September PM_{2.5} FRM Mean and Maximum Concentrations for Washoe County



Since 2005, exceedances of the NAAQS at the Washoe County FRM monitoring site have occurred twice during August and September; both of these exceedances occurred during the Rim Fire in August and September 2013 (Figure 26).

Figure 26 Historical August and September PM_{2.5} Concentrations in Washoe County



2.7 NO EXCEEDANCE BUT FOR THE EVENT

Smoke from the Rim Fire contributed to the PM_{2.5} concentration in Carson City and Gardnerville from August 22, 2013 through September 9, 2013. An estimate of the PM_{2.5} mass contributed by the fire at both sites is shown in Table 4. Based on historical data from 2005 through 2012, normal PM_{2.5} concentrations in western Nevada during August and September range from 4.9 to 9.2 µg/m³. Following U.S. EPA methodology (EPA, 2009), NDEP estimates that the Rim Fire contributed an additional 40.5 to 93.8 µg/m³ of PM_{2.5} to the Carson City and Gardnerville monitoring sites.

Table 4 Estimate of PM_{2.5} Concentration But For the Event

Site	Average Event Day Concentration	August-September Average (2005-2012)*	August-September 98 th Percentile (2005-2012)*	Estimated Contribution of Event
Ranchos	101.4 µg/m ³	7.6 µg/m ³	27.9 µg/m ³	73.5 - 93.8 µg/m ³
CC Armory	68.4 µg/m ³			40.5 - 60.8 µg/m ³

* Washoe County PM_{2.5} FRM data

To NDEP's knowledge, there were no other unusual local PM_{2.5} emissions before or during the Rim Fire. There were no significant fireworks activities and no prescribed burning in the region. But for the PM_{2.5} contribution from the smoke from the Rim Fire, there would not have been an exceedance of PM_{2.5} NAAQS for either site.

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3.0 CONCLUSIONS

This report documents and provides analysis demonstrating that the Rim Fire meets the criteria for an exceptional event.

The Rim Fire was not reasonably controllable or preventable because the fire (and associated smoke) was caused by an illegal campfire. Due in part to an unusual weather pattern, smoke from the fire extended to the north-northeast and impacted western Nevada from August 22, 2013 through much of September 2013. Details of the smoke impacts are shown in examples of news releases and NOAA Smoke Text Products, included in Appendix E.

There is a clear causal connection between the smoke from the Rim Fire and the PM_{2.5} exceedances in Carson City and Gardnerville. Air particle trajectories, wind roses, and satellite imagery of the smoke plume for each exceedance day from August 22, 2013 through September 9, 2013 show a clear relationship between the smoke and the PM_{2.5} concentrations at the Ranchos and CC Armory monitoring sites.

The average PM_{2.5} concentration in western Nevada without fire data is 6.4 µg/m³ in August and 6.5 µg/m³ in September. The average of the 24-hour averages in Carson City and Gardnerville during the Rim Fire were 68.4 and 101.4 µg/m³, respectively; this is 10 to 15 times the normal level for the region, and well beyond normal historical background levels.

Concentrations of PM_{2.5} at both monitoring sites for the weeks before and after the smoke impacts from the Rim Fire were close to historical averages for western Nevada. Smoke from the Rim Fire contributed an estimated 40 to 94 µg/m³ to PM_{2.5} concentrations in Carson City and Gardnerville. But for the smoke from the Rim Fire, PM_{2.5} levels at the Ranchos and CC Armory monitoring sites would have been below the NAAQS.

4.0 PROCEDURAL REQUIREMENTS

4.1 FLAGGING OF DATA

The NDEP BAQP has submitted the PM_{2.5} data from the Carson City and Gardnerville monitors to the U.S. EPA AQS database and has placed the appropriate flags on the data indicating that the data was affected by exceptional events due to wild fires (Flag RT, requesting exclusion due to wildland fires). Informational flags (IT) were also included for other monitored criteria pollutants at each site. Such flagging ensures that the air quality data is properly represented in the overall air quality planning process.

4.2 PUBLIC OUTREACH DURING EVENT

A state requesting exclusion of air quality data affected by an exceptional event must take appropriate and reasonable actions to protect public health from exceedances or violations of the national ambient air quality standards. At a minimum, the state must:

- Provide for prompt public notification whenever air quality concentrations exceed or are expected to exceed an applicable ambient air quality standard;
- Provide for public education concerning actions that individuals may take to reduce exposures to unhealthy levels of air quality during and following an exceptional event; and
- Provide for the implementation of appropriate measures to protect public health from exceedances or violations of ambient air quality standards caused by exceptional events.

The public was notified of air quality being affected by smoke from the Rim Fire via Air Quality Index (AQI) updates and National Weather Service Smoke Text Products (Appendix E). A health advisory was issued through cooperation between the NDEP and the Nevada Division of Public and Behavioral Health. Douglas County and Carson City citizens, visitors, and school district and county personnel were directed to the NDEP website to monitor particulate matter and to check correlating health advisories. Individuals were advised to call their health care professional if they had any health questions or concerns.

The health advisory as well as sample public notifications for smoke impacts are provided in Appendix E.

4.3 PUBLIC COMMENT PERIOD

The NDEP BAQP has prepared this documentation to demonstrate that these exceedances were due to wildland fire natural events, in accordance with the U.S. EPA Exceptional Event Rule. The documentation in support of this demonstration and request for the treatment of the data

associated with these exceedances as exceptional events has been posted on the NDEP website at <http://ndep.nv.gov/admin/public.htm> requesting review and comment by the public for a minimum of 30 days. Public comments should be directed to:

Sheryl Fontaine, Ambient Air Monitoring Branch
Nevada Division of Environmental Protection
Bureau of Air Quality Planning
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701
Email: sfontaine@ndep.nv.gov

DRAFT

5.0 REFERENCES

United States Environmental Protection Agency. 2009. Presenting Evidence to Justify Data Exclusion as an Exceptional Event. Presentation at WESTAR State/EPA Exceptional Events Implementation Meeting. February 25-26, 2009. 32pp.

DRAFT

APPENDIX A

NDEP BAQP Annual Network Plan Approval Letter

DRAFT



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105-3901

DEC 11 2013

Ms. Jasmine Mehta, Chief
Bureau of Air Quality Planning
Nevada Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701

Dear Ms. Mehta:

Thank you for your submission of the Nevada Division of Environmental Protection's (NDEP's) 2013 Ambient Air Monitoring Network Plan in June, 2013. We have reviewed the submitted document based on the requirements set forth under 40 CFR 58. Based on the information provided in the plan, EPA approves all portions of the network plan except those specifically identified below.

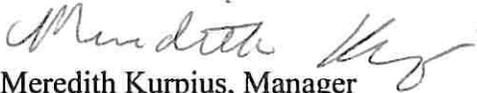
Please note that we cannot approve portions of the annual network plan for which the information in the plan is insufficient to judge whether the requirement has been met, or for which the information, as described, does not meet the requirements as specified in 40 CFR 58.10 and the associated appendices. EPA Region 9 also cannot approve portions of the plan for which the EPA Administrator has not delegated approval authority to the regional offices. Accordingly, the first enclosure (*A. Annual Monitoring Network Plan Items where EPA is Not Taking Action*) provides a listing of specific items of your agency's annual monitoring network plan where EPA is not taking action. The second enclosure (*B. Additional Items Requiring Attention*) is a listing of additional items in the plan that EPA wishes to bring to your agency's attention.

The third enclosure (*C. Annual Monitoring Network Plan Checklist*) is the checklist EPA used to review your plan for overall items that are required to be included in the annual network plan along with our assessment of whether the plan submitted by your agency addresses those requirements.

The first two enclosures highlight a subset of the more extensive list of items reviewed in the third enclosure. All comments conveyed via this letter (and enclosures) should be addressed (through corrections within the plan, additional information being included, or discussion) in next year's annual monitoring network plan.

If you have any questions regarding this letter or the enclosed comments, please feel free to contact me at (415) 947-4534 or Gwen Yoshimura at (415) 947-4134.

Sincerely,


Meredith Kurpius, Manager
Air Quality Analysis Office

Enclosures:

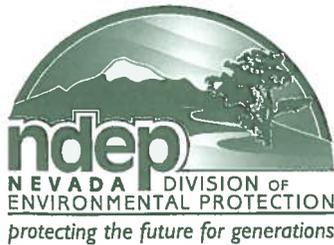
- A. Annual Monitoring Network Plan Items where EPA is Not Taking Action
- B. Additional Items Requiring Attention
- C. Annual Monitoring Network Plan Checklist

cc: Daren Winkelman, NDEP
Mike Elges, NDEP

APPENDIX B

NDEP BAQP 2013 Data Certification Letter

DRAFT



STATE OF NEVADA
Department of Conservation & Natural Resources
DIVISION OF ENVIRONMENTAL PROTECTION

Brian Sandoval, Governor
Leo M. Drozdoff, P.E., Director
Colleen Cripps, Ph.D., Administrator

April 22, 2014

Mr. Jared Blumenfeld
Regional Administrator
U.S. EPA – Region 9
75 Hawthorne Street
San Francisco, CA 94105

RE: Submittal of the State of Nevada 2013 Data Certification Package

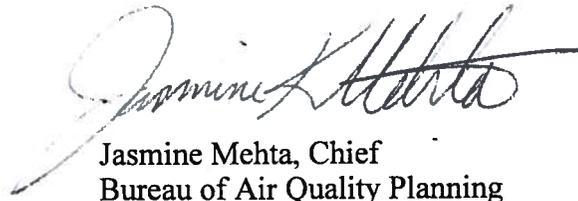
Dear Mr. Blumenfeld:

Pursuant to 40 CFR Part 58, state and local government monitoring organizations must annually certify their data. Certification for the year 2013 means that (1) the ambient concentration data and the quality assurance data from January 1, 2013 through December 31, 2013 are completely submitted to the Air Quality System (AQS) by the State of Nevada, Primary Quality Assurance Organization (PQAO) 0757, and (2) the ambient data are accurate to the best of my knowledge taking into consideration the quality assurance findings. This process has taken into account the results of periodic verification, precision and accuracy checks, and any other relevant performance assessments.

Therefore, as Chief of the Bureau of Air Quality Planning for the State of Nevada, I certify that all data from the NDEP State and Local Air Monitoring System (SLAMS) and the Special Purpose Monitor (SPM) reported to EPA Region 9, enclosed on the AMP 600 summary report, have met the data certification criteria described in 40 CFR Part 58, for the year 2013.

If you have any questions or comments, please contact Daren Winkelman of my staff, at 775-687-9342, or e: dwinkelman@ndep.nv.gov.

Sincerely,



Jasmine Mehta, Chief
Bureau of Air Quality Planning

JKM/dw
Enclosures

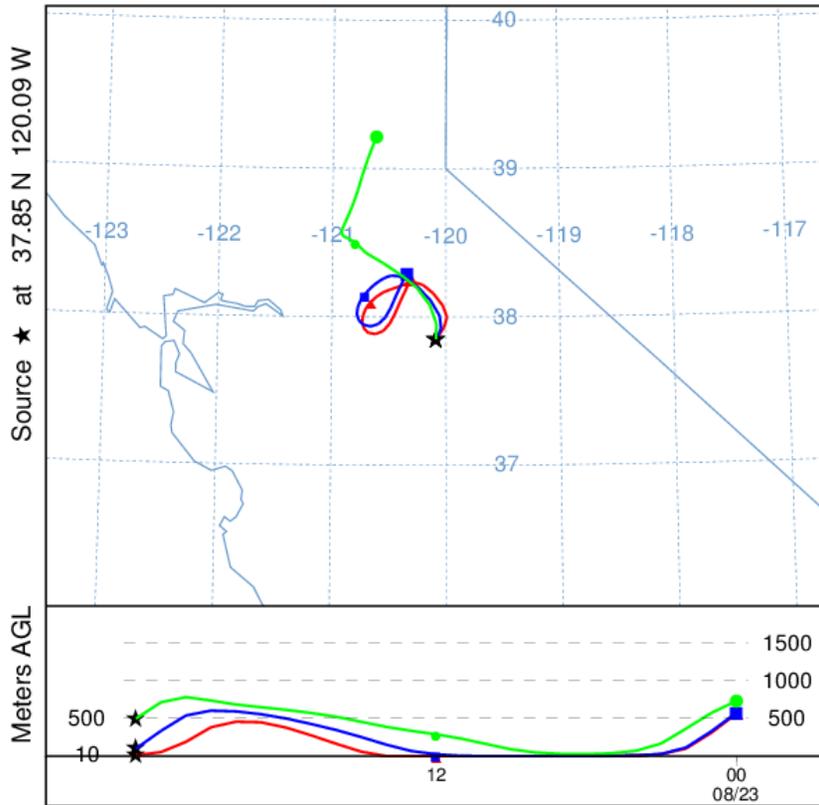


APPENDIX C

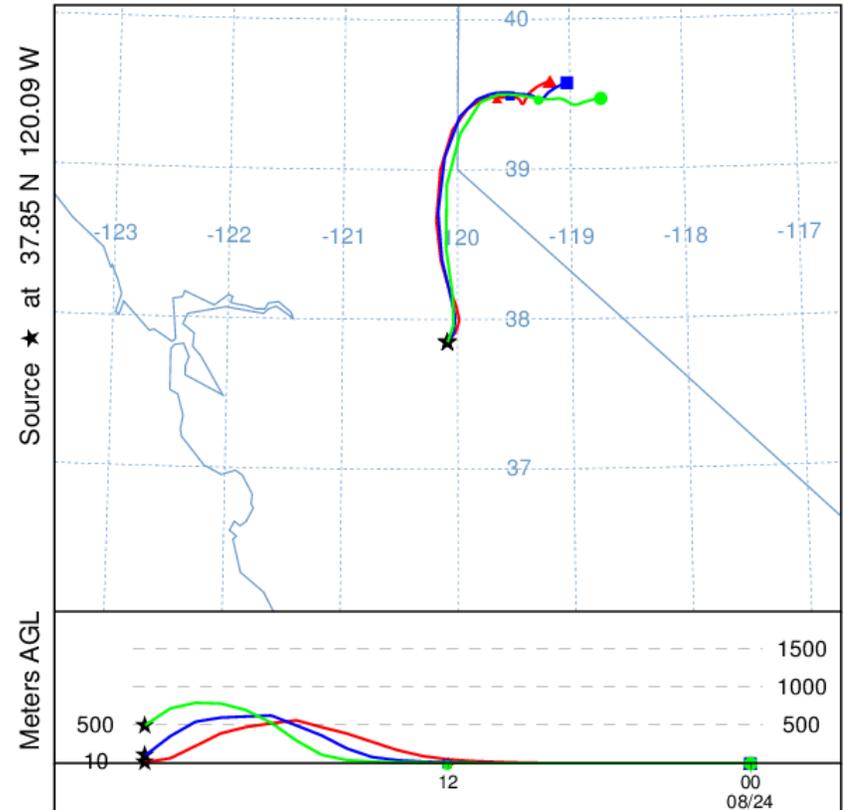
HYSPLIT Model Outputs – Forward Trajectories

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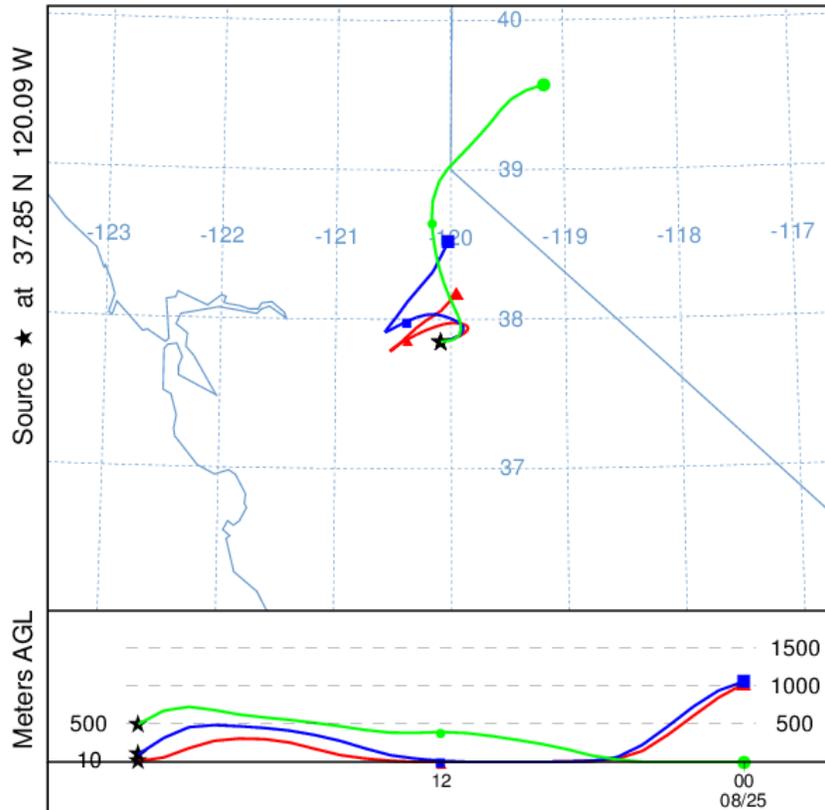
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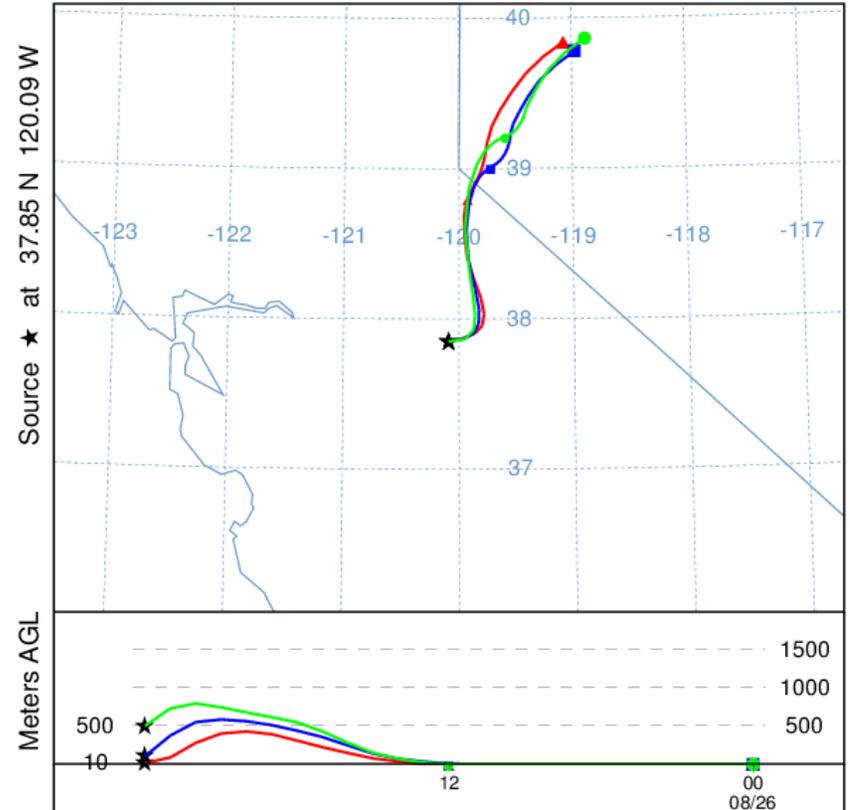
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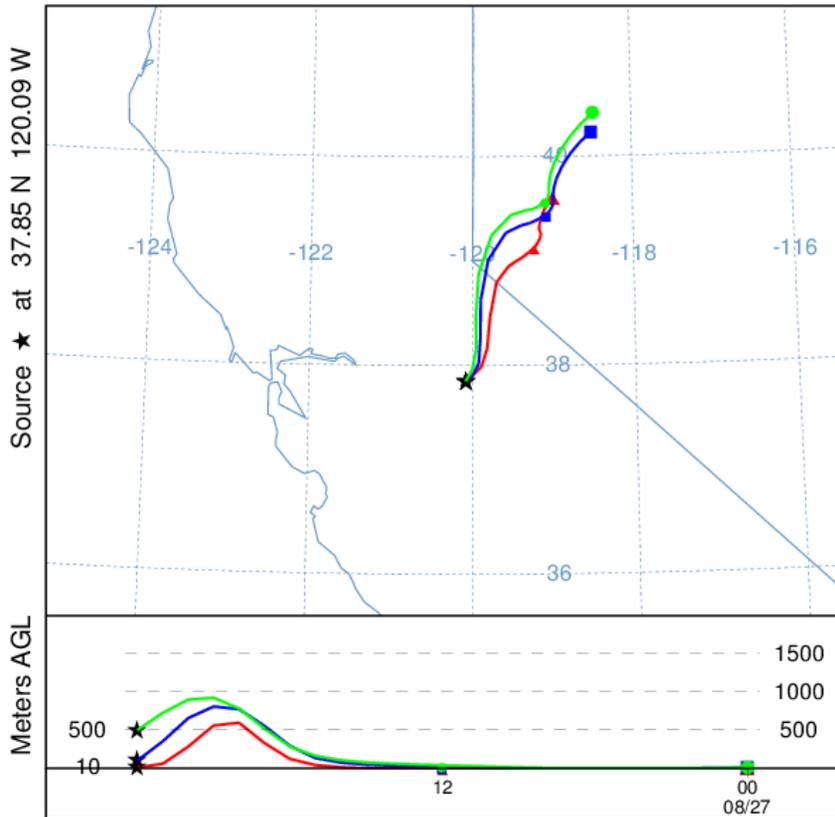
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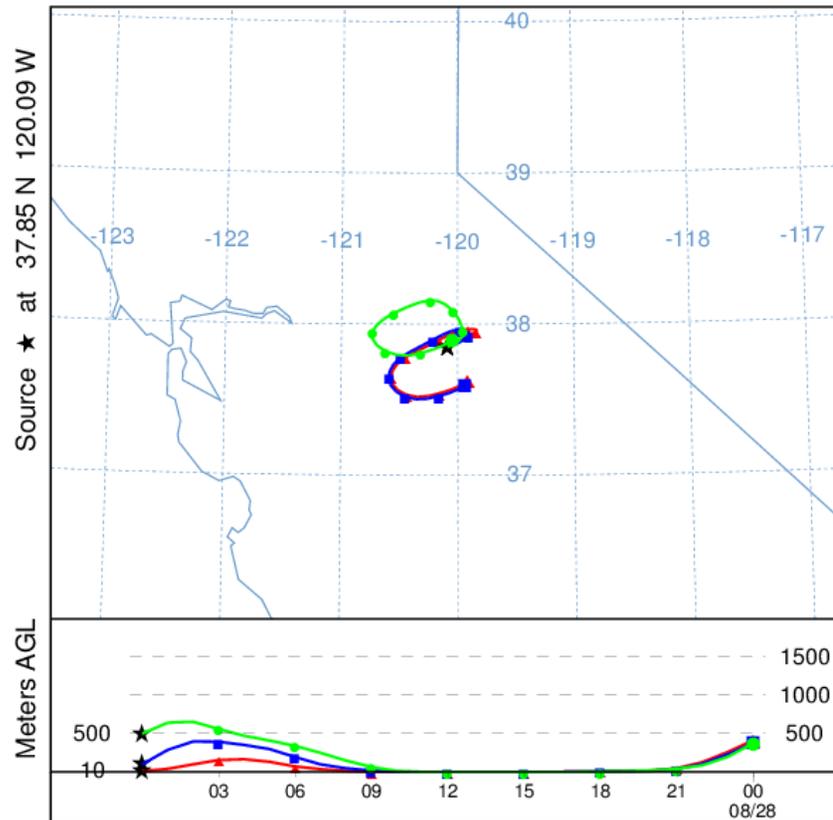
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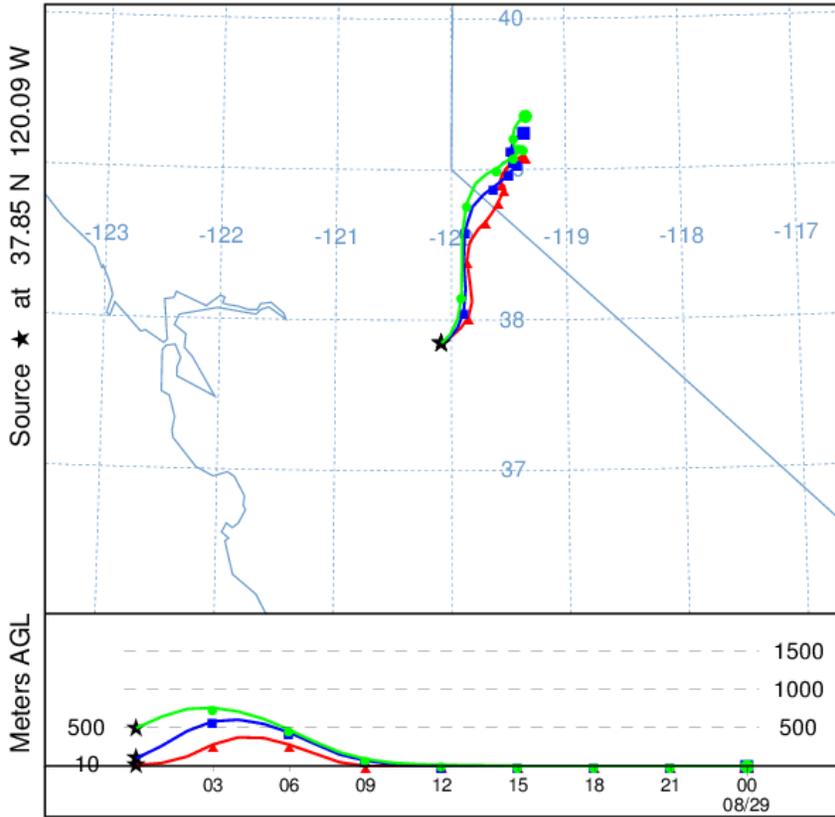
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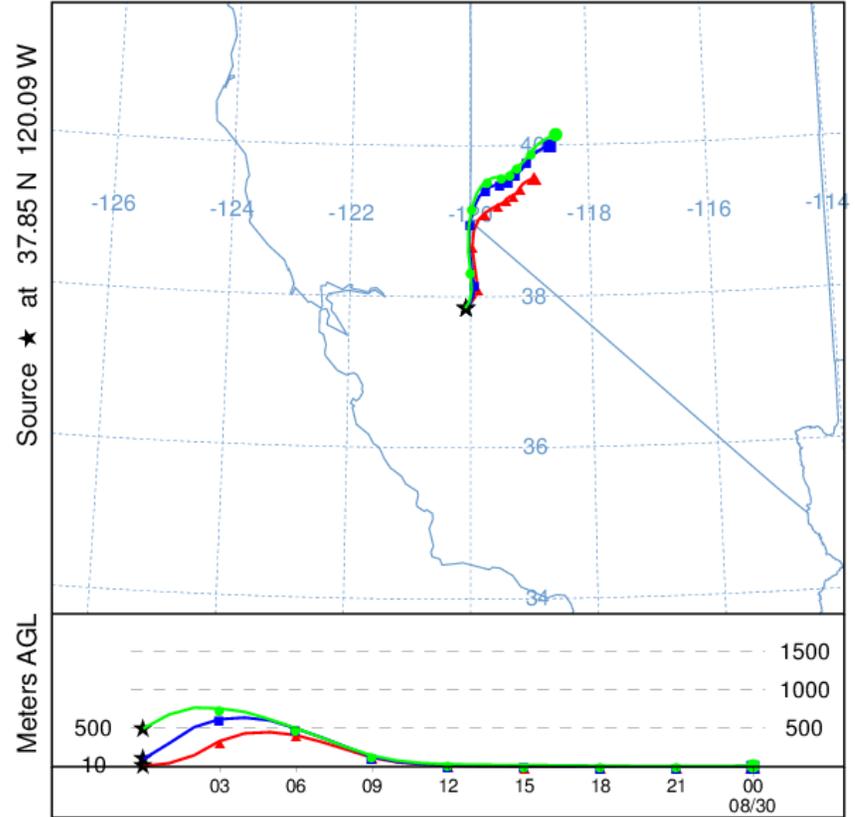
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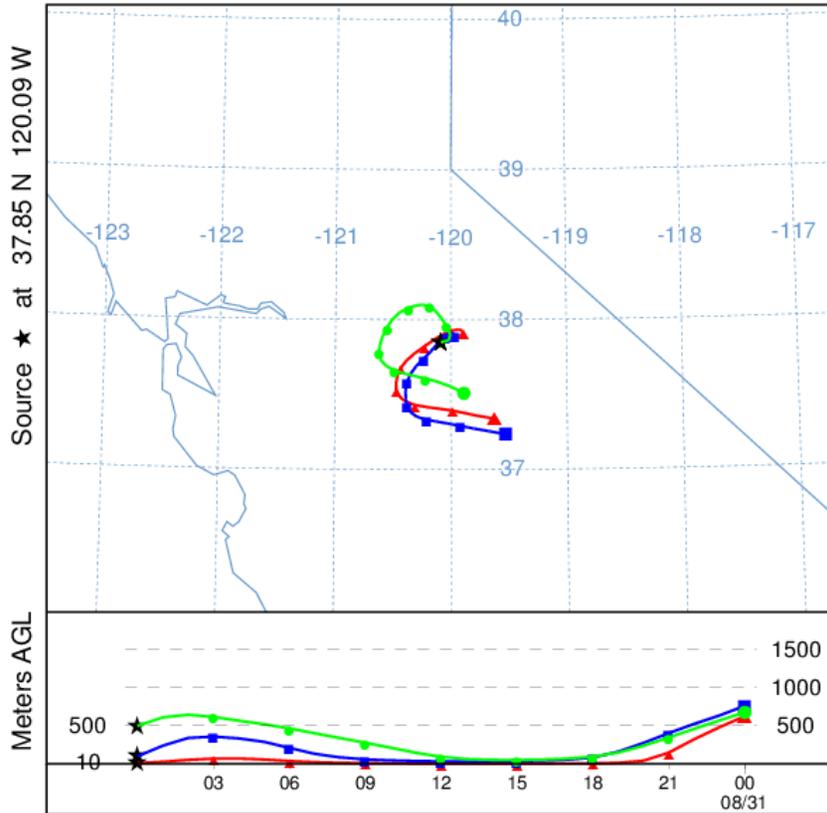
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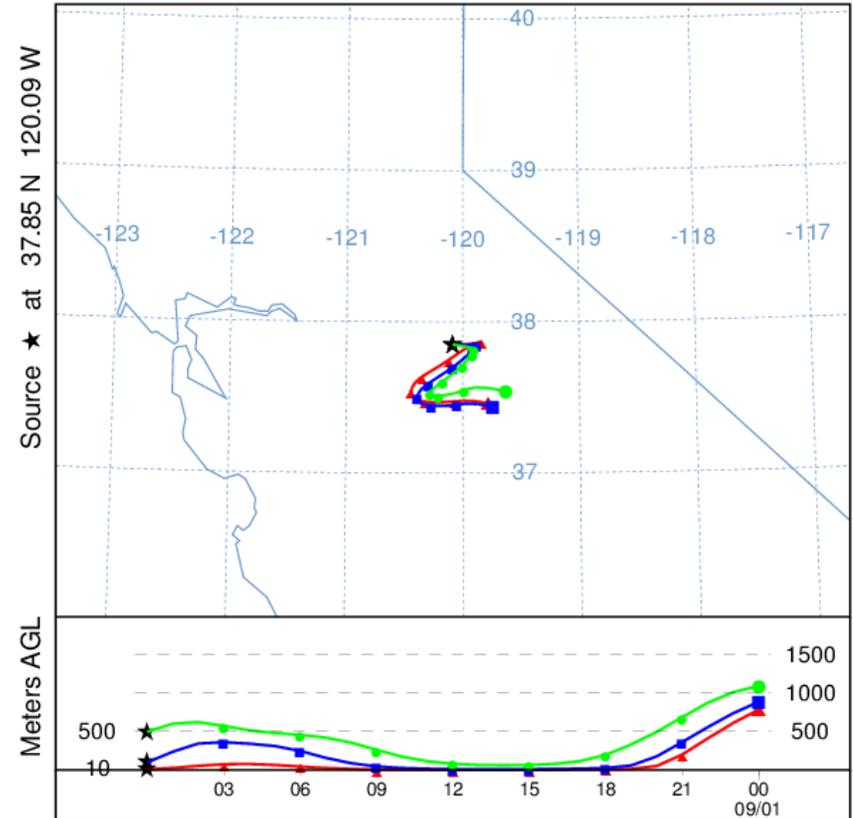
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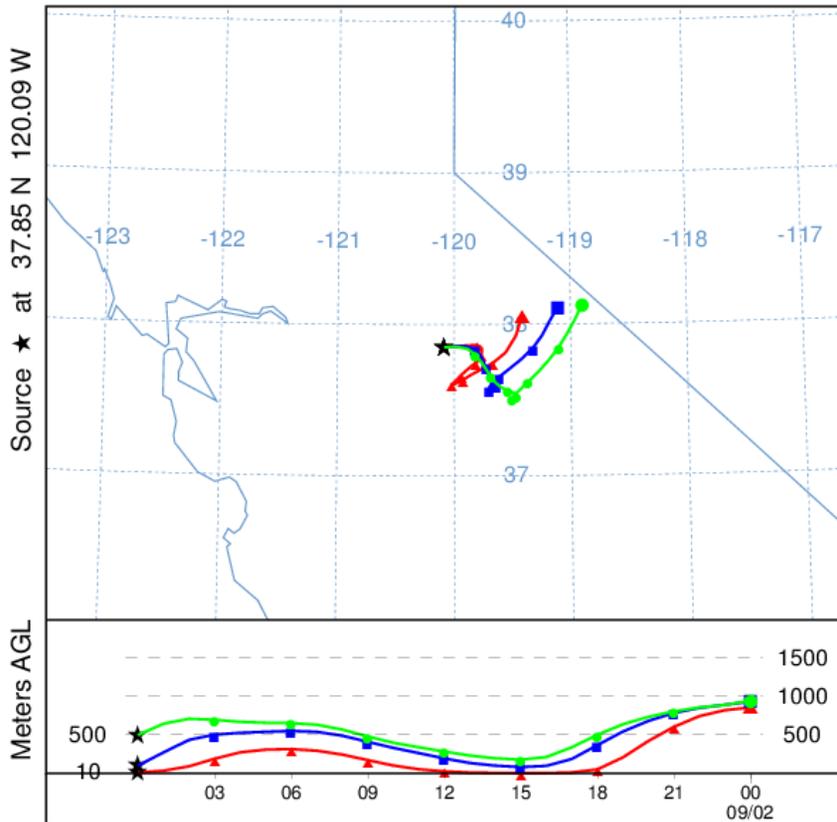
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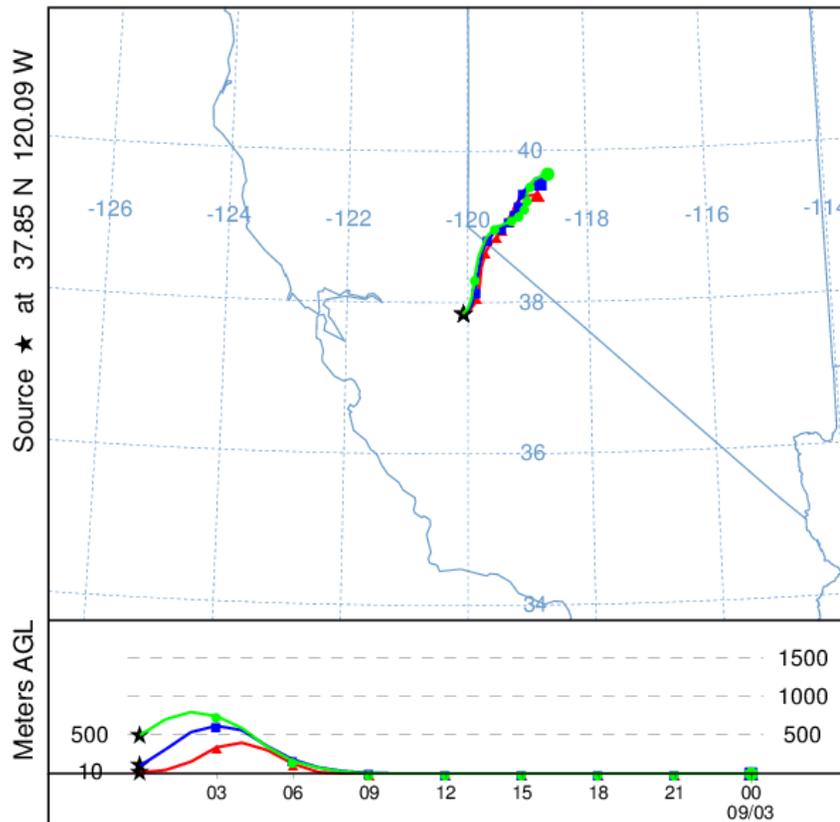
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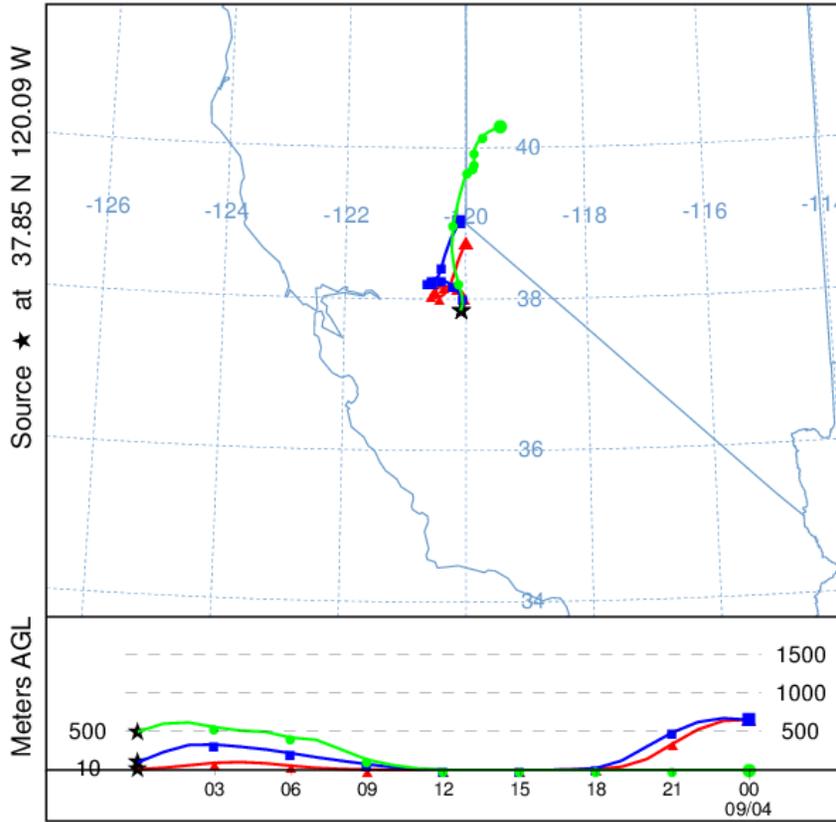
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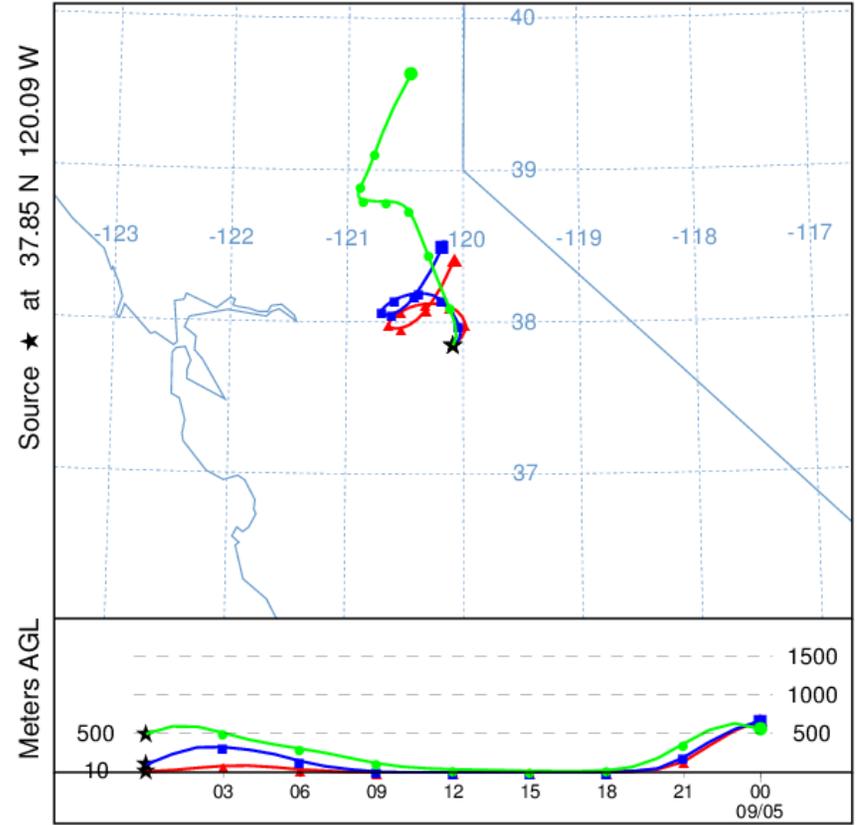
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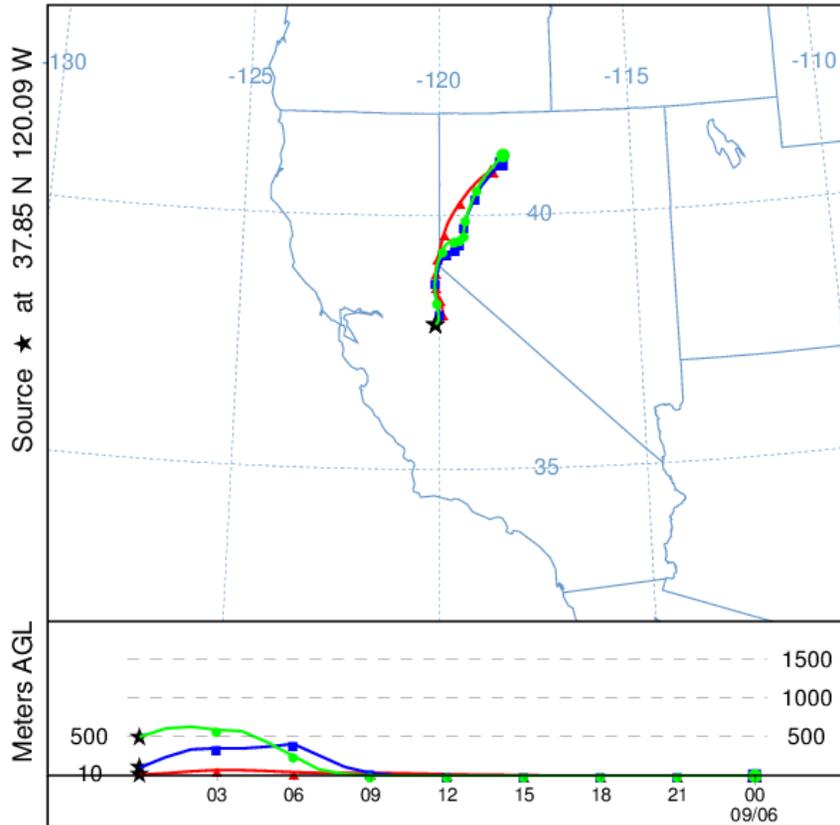
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EDAS Meteorological Data



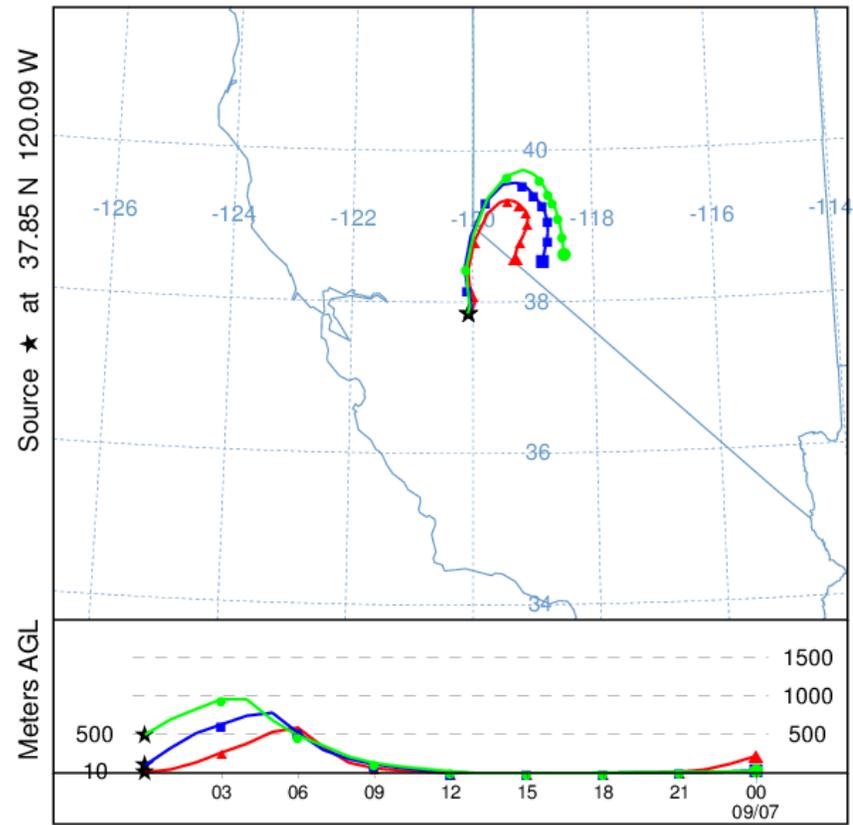
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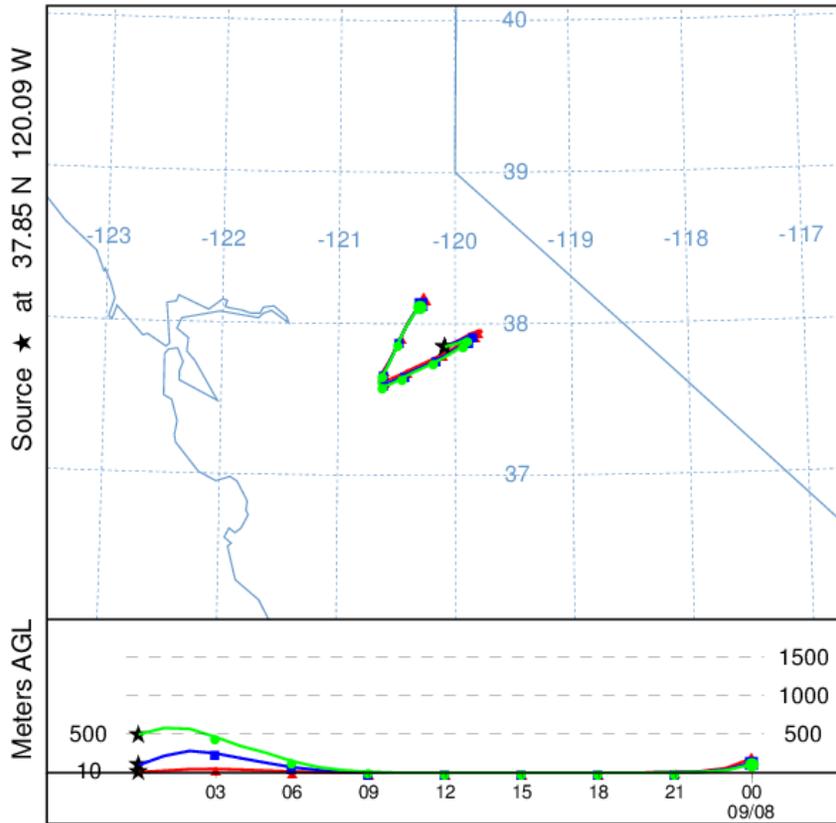
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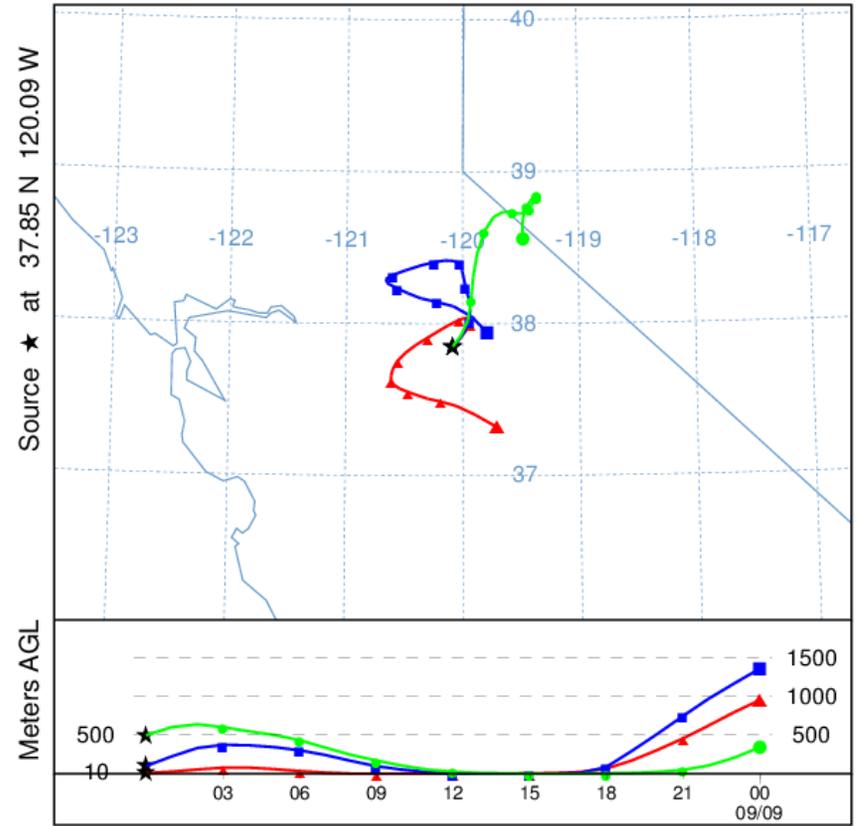
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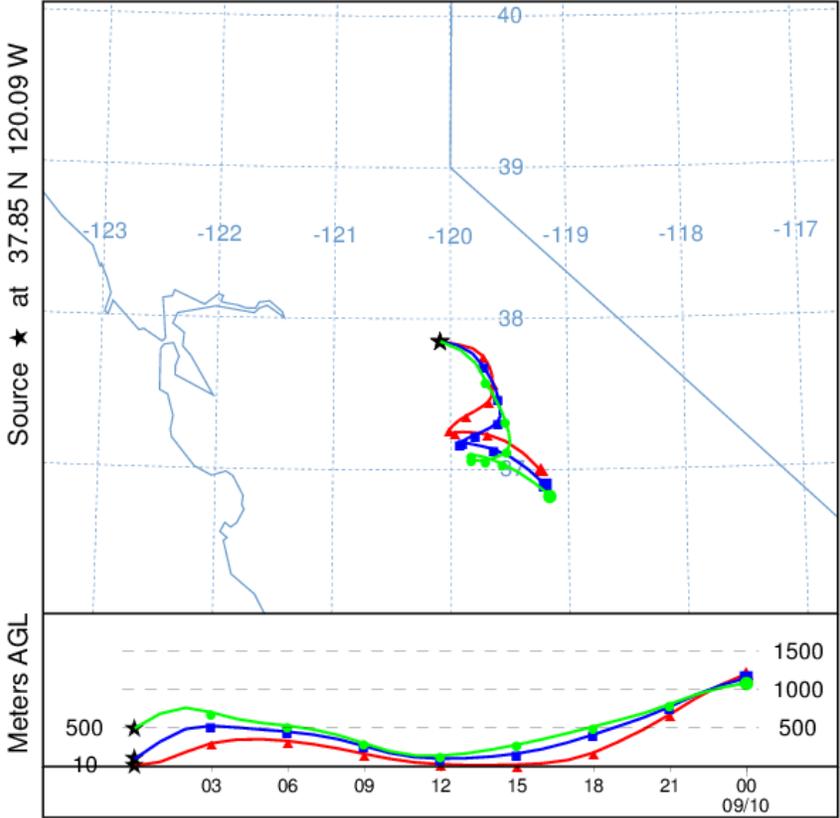
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EDAS Meteorological Data

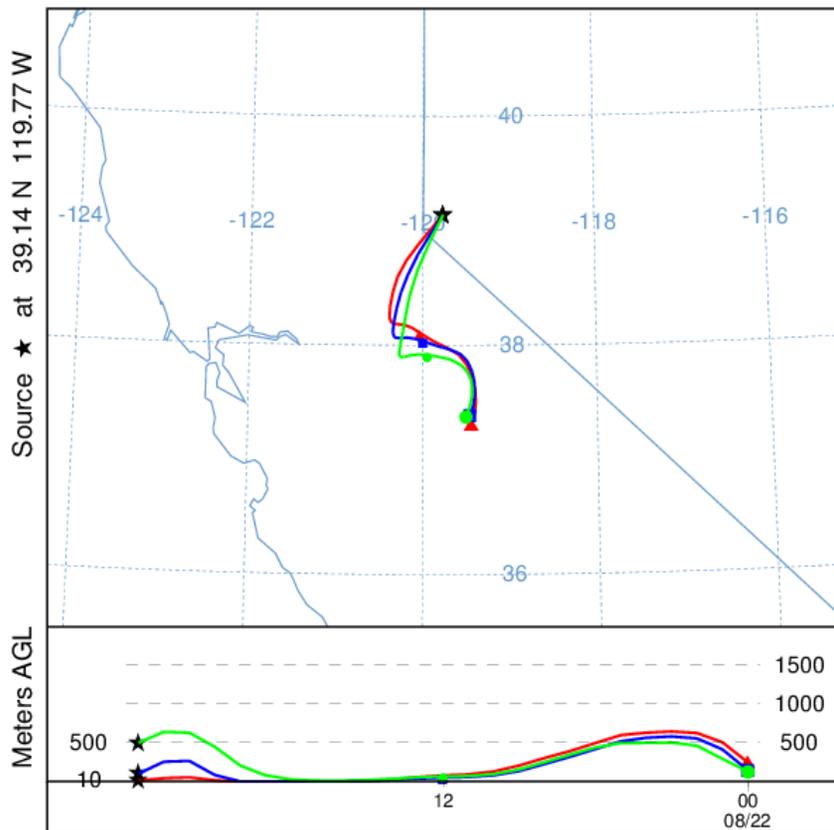


APPENDIX D

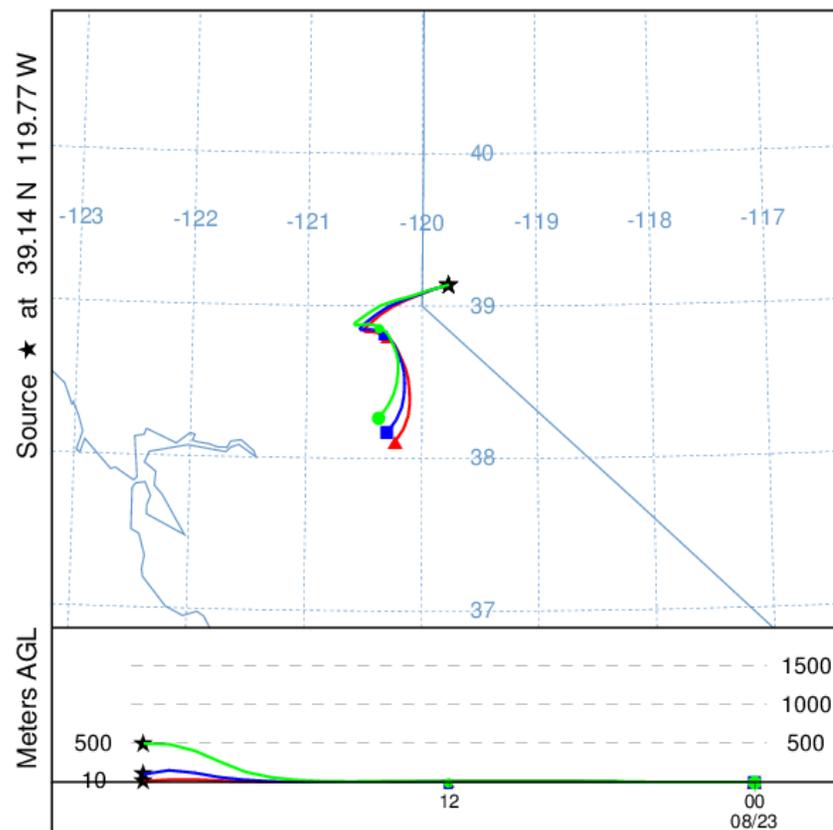
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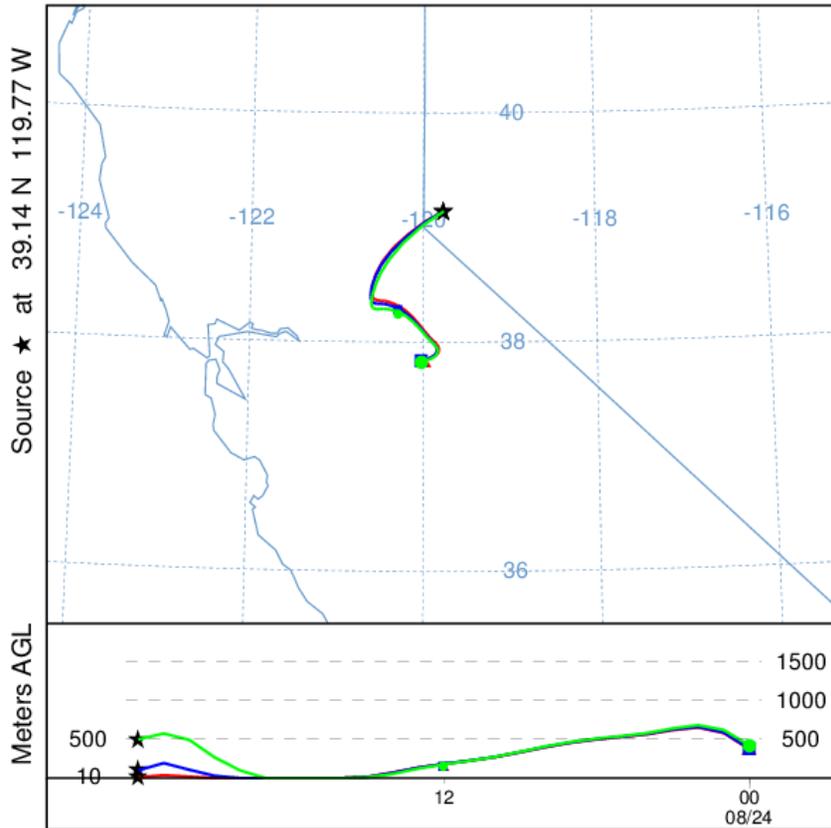
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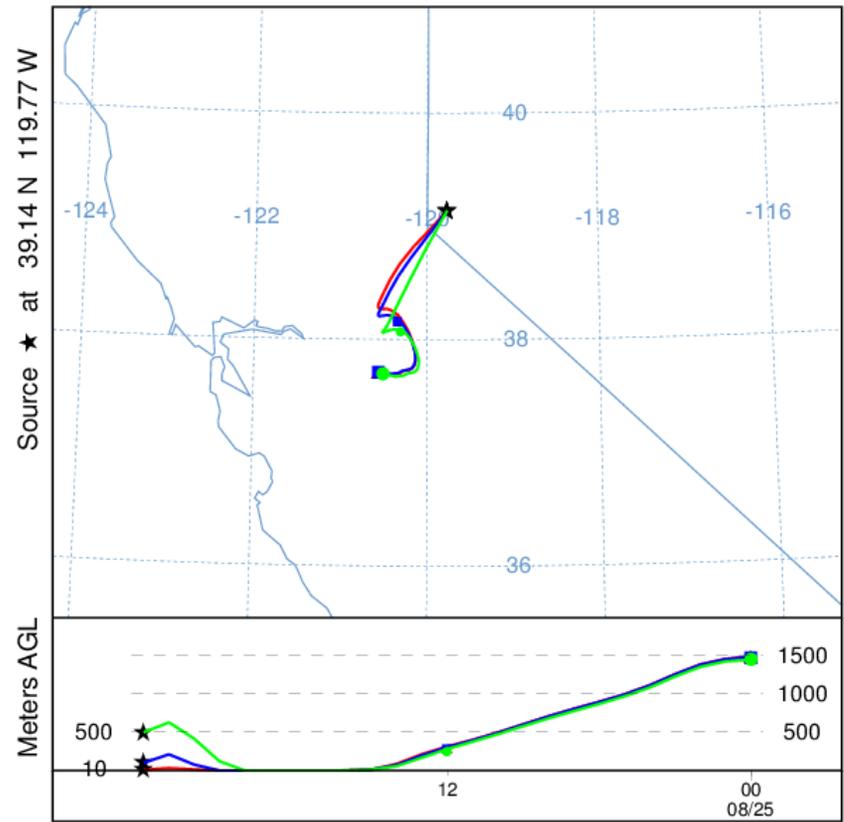
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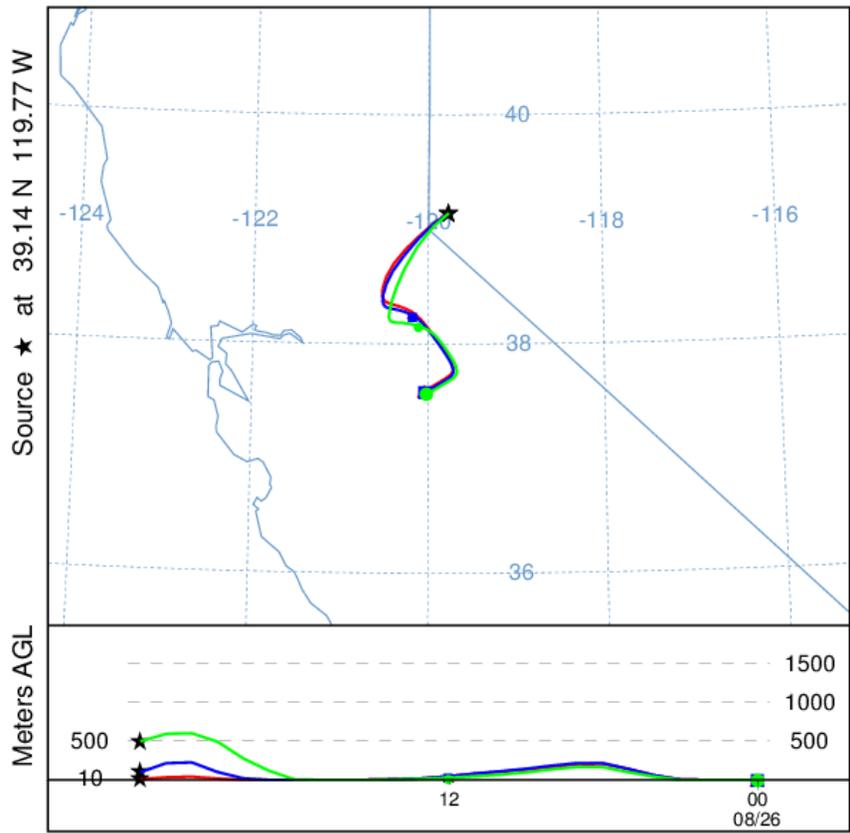
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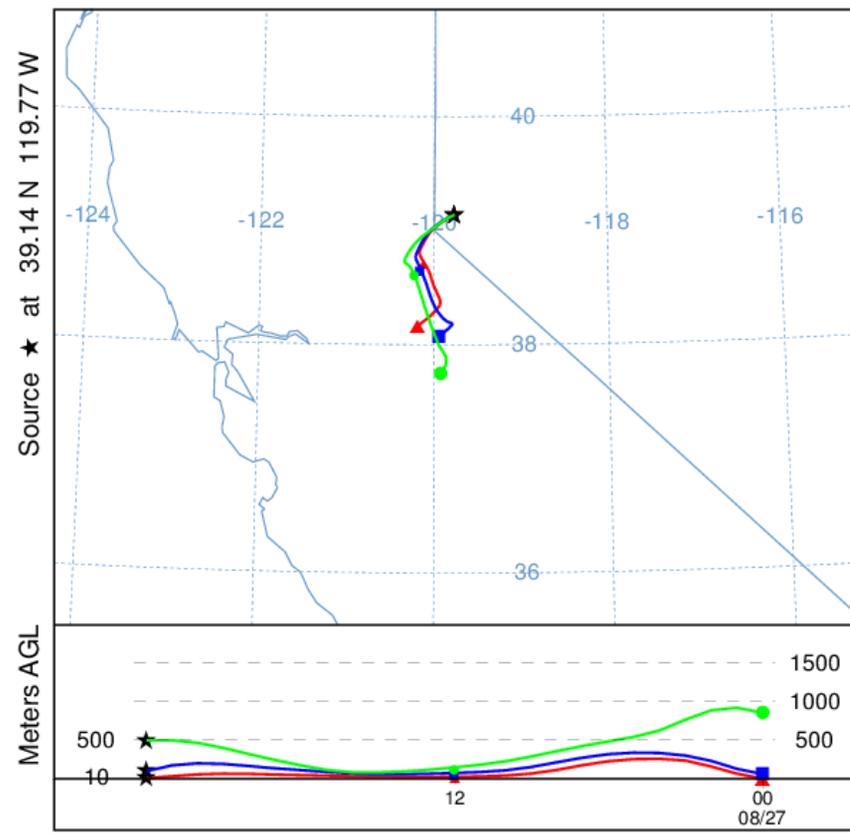
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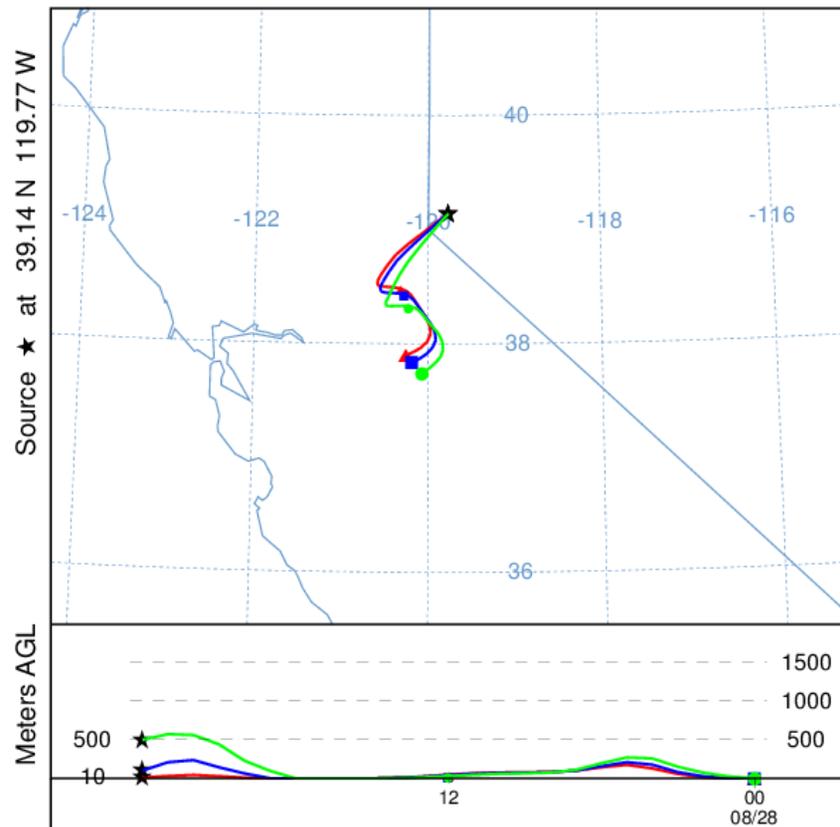
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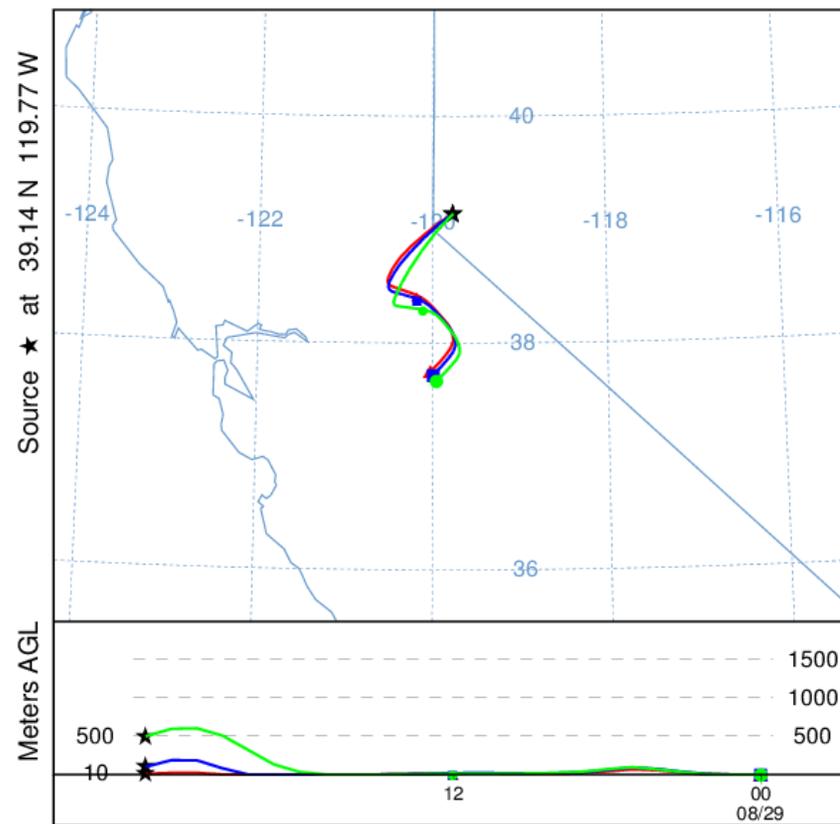
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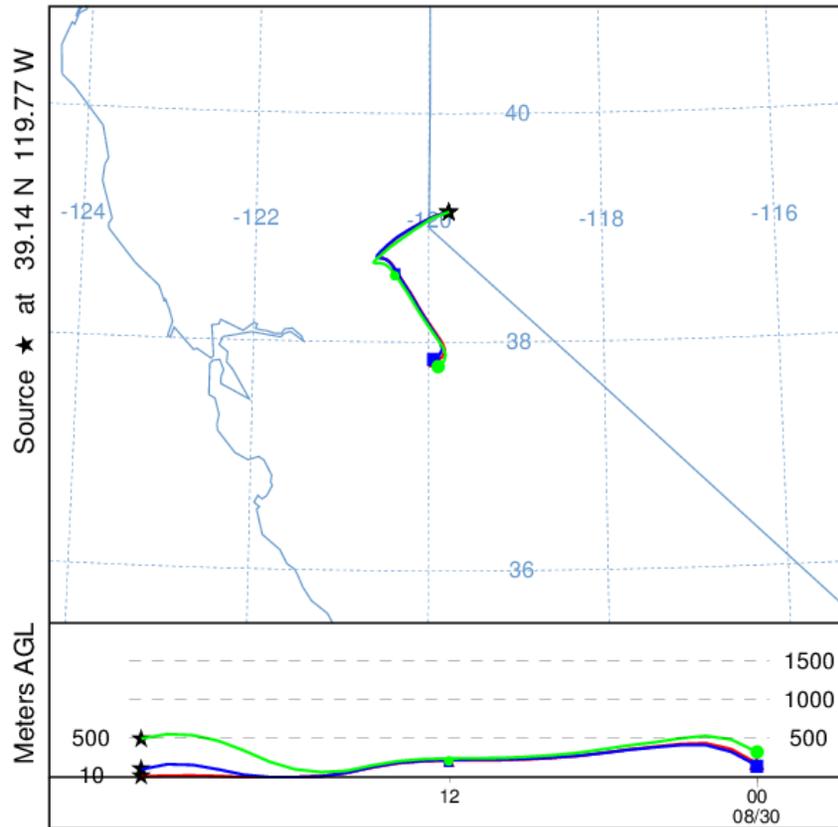
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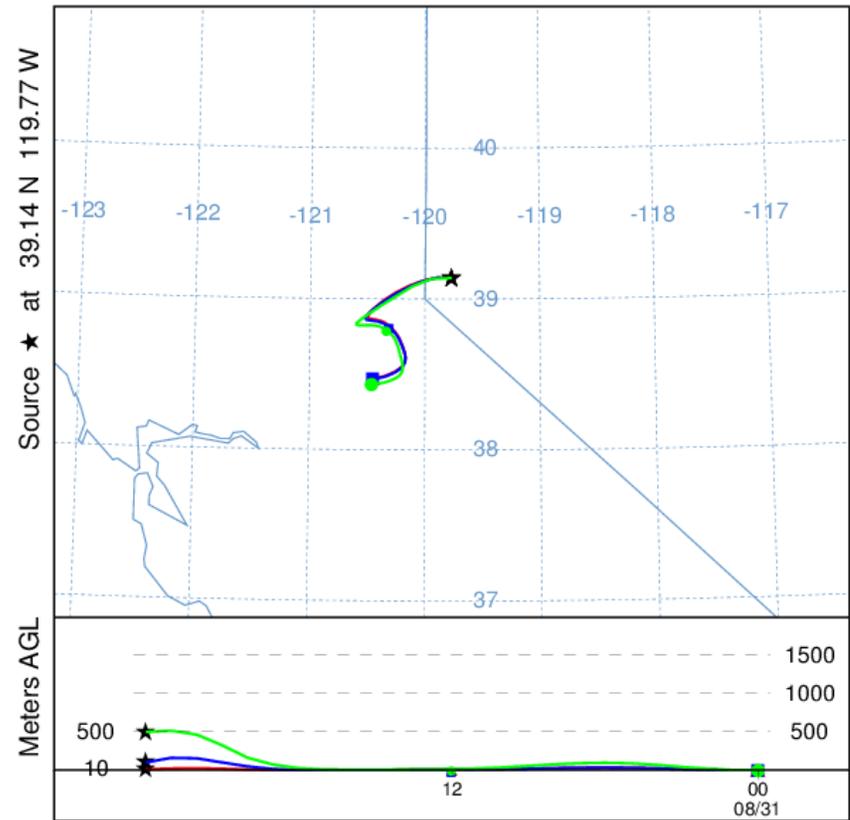
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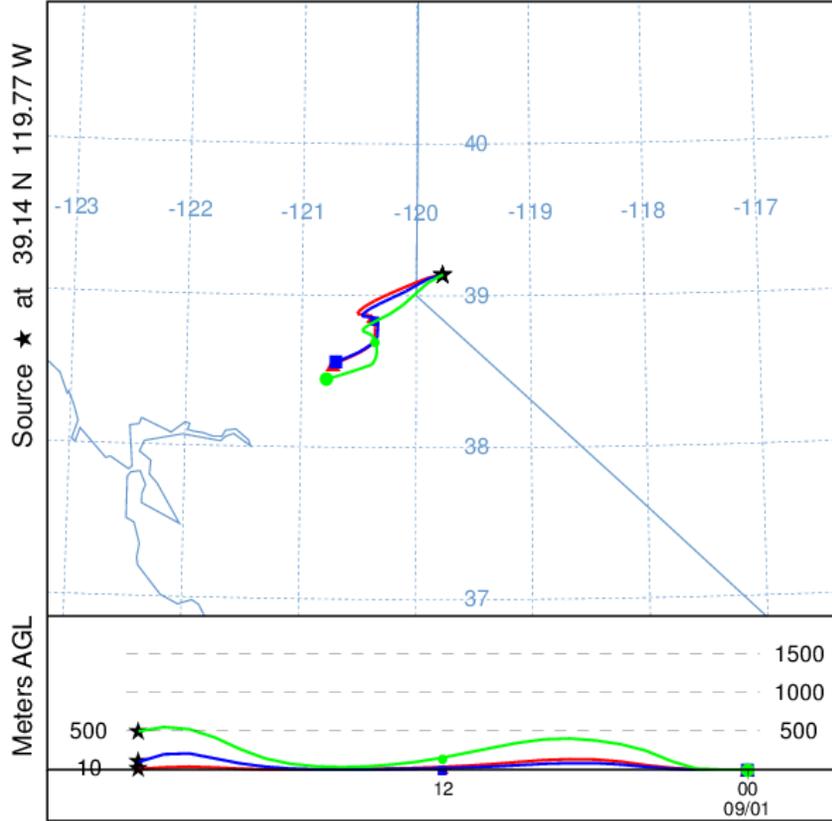
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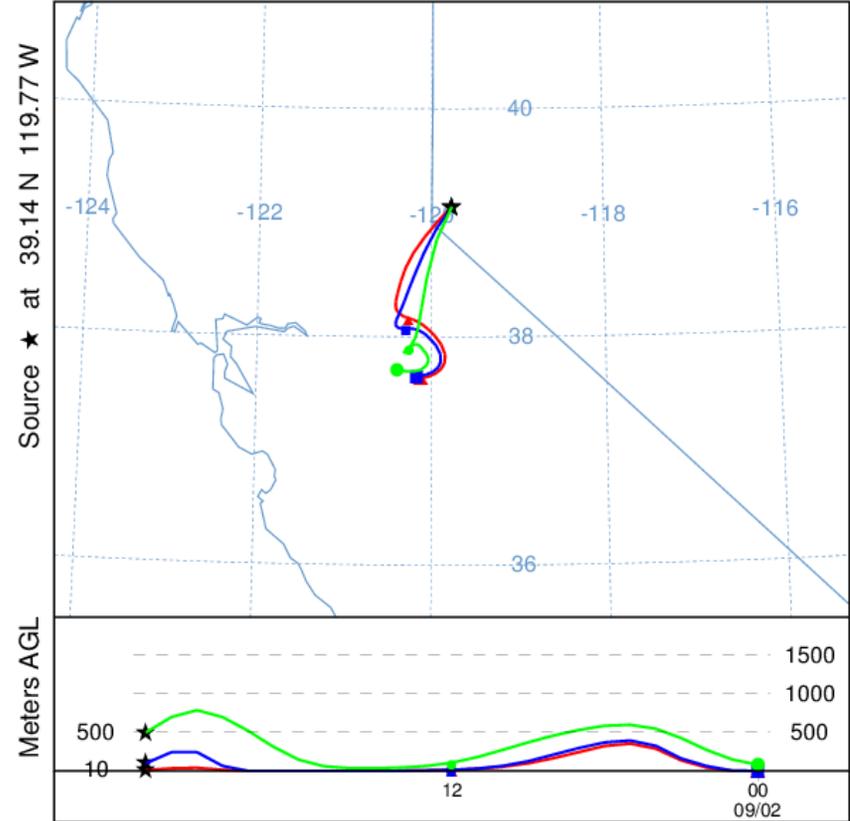
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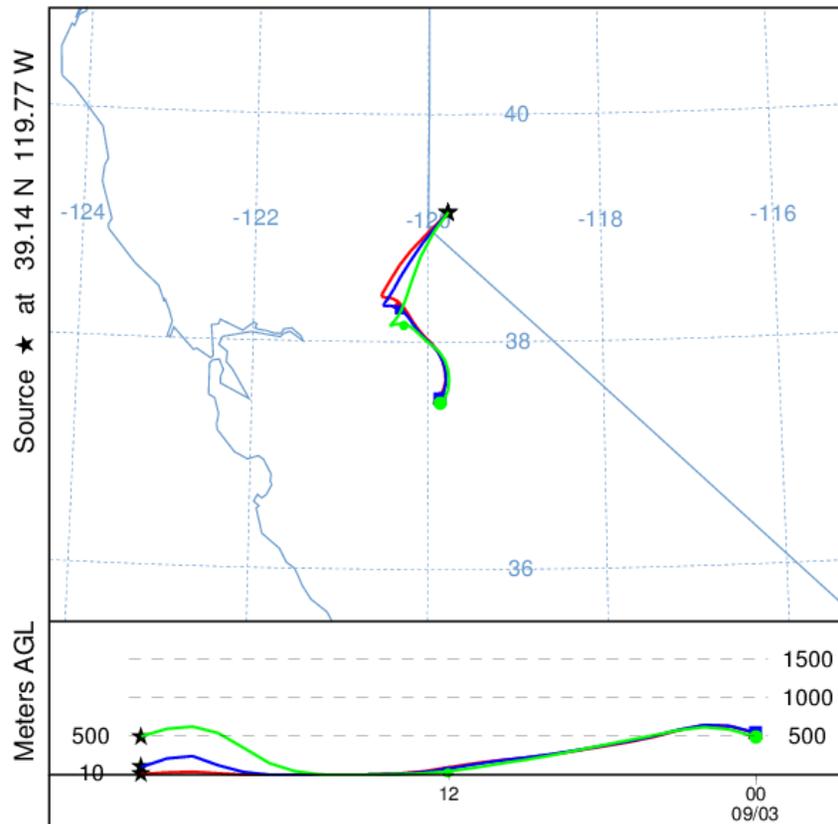
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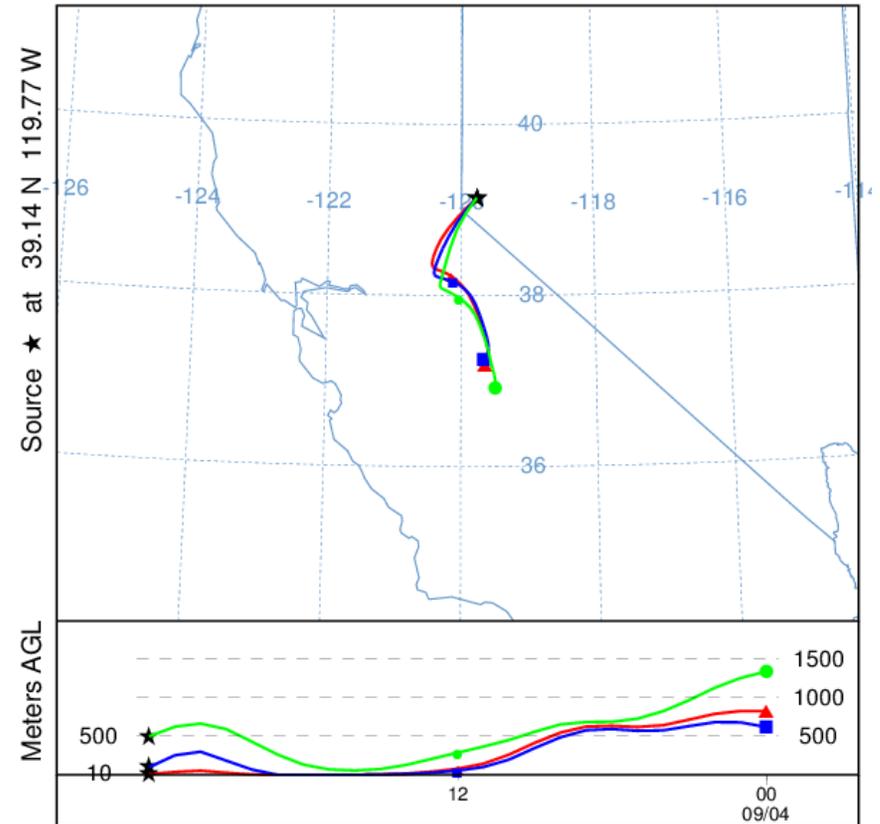
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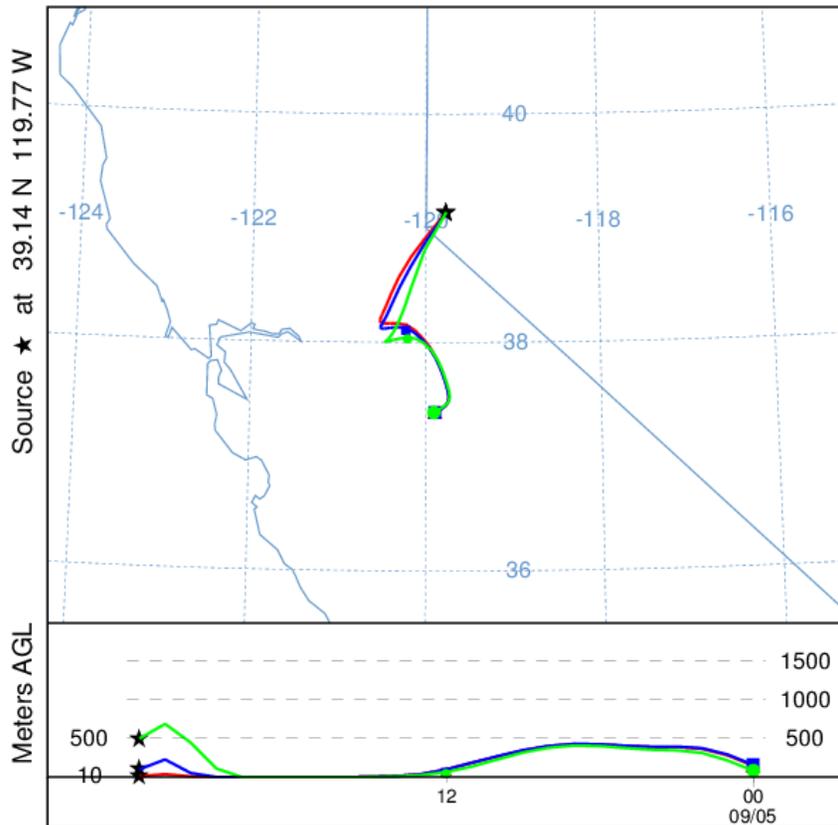
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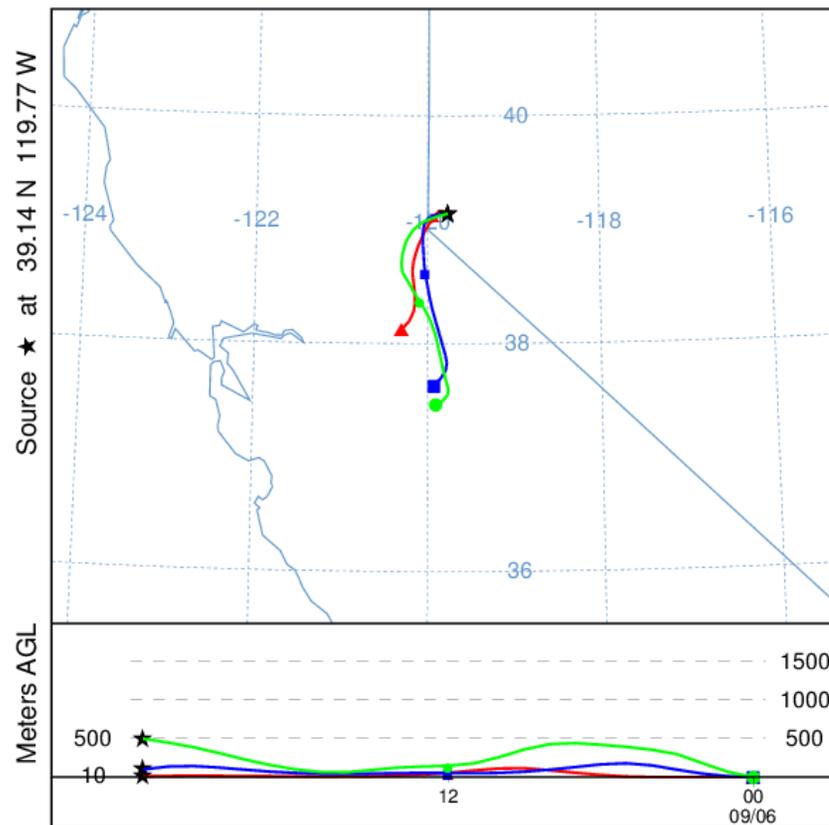
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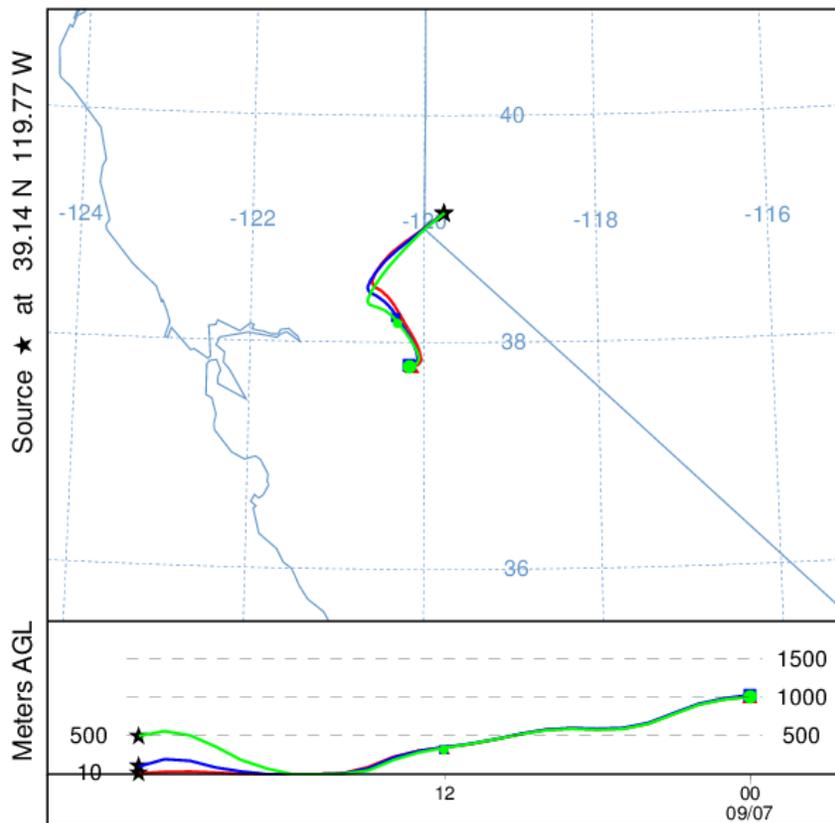
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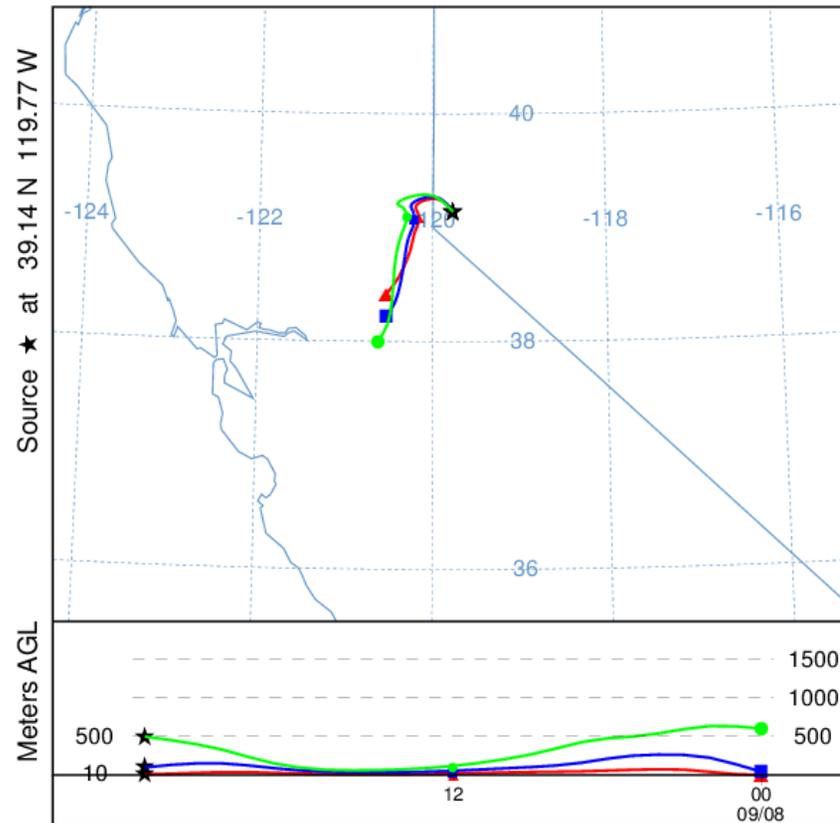
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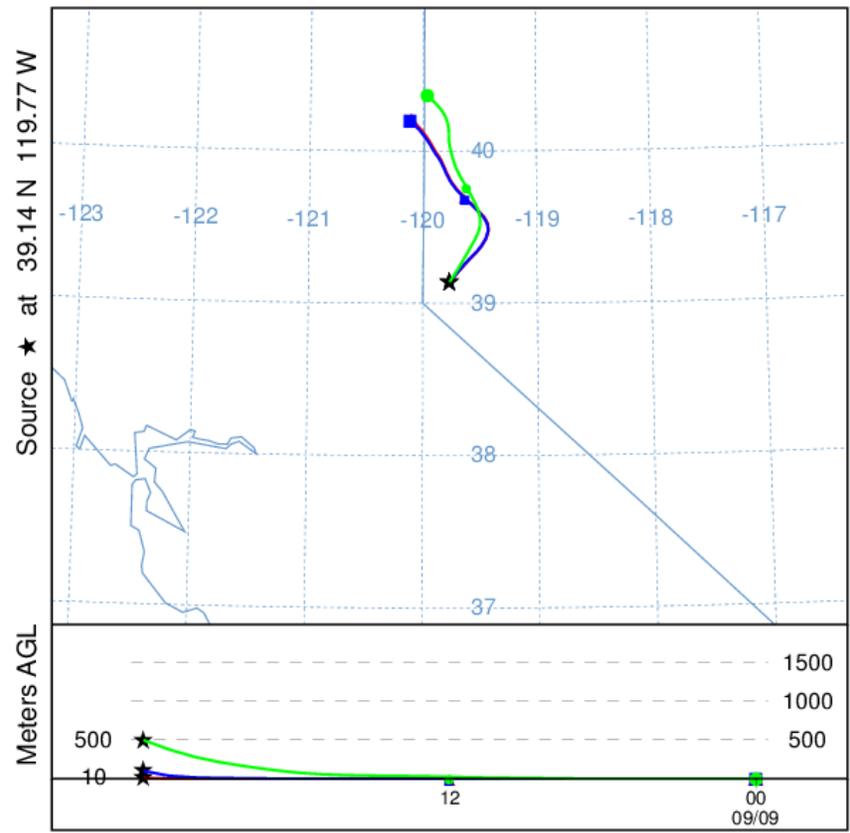
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NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 09 Sep 13
EDAS Meteorological Data



NOAA HYSPLIT MODEL
Backward trajectories ending at 0000 UTC 10 Sep 13
EDAS Meteorological Data



APPENDIX E

Sample Public Notifications

DRAFT



FEMA Provides Federal Funding to Combat Rim Fire in Tuolumne County, Calif.

Release date: AUGUST 26, 2013

Release Number: RIX-NR-13-25

OAKLAND, Calif. — The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) has authorized the use of federal funds to assist the state of California combat the Rim Fire currently burning in Tuolumne County.

On August 23, 2013, the State of California submitted a request for a fire management assistance declaration for the Rim Fire burning in Tuolumne County. The authorization makes FEMA funding available to reimburse up to 75 percent of the eligible firefighting costs under an approved grant for managing, mitigating and controlling the fire.

At the time of the request, the fire was threatening 2,434 homes in and around the communities of Buck Meadows, Groveland, Me-wuk Village, Pine Mountain Lake, Ponderosa Hills, Tuolumne City, Twain Harte, and Yosemite Vista, combined population 9,697. Approximately 1,947 of the threatened homes are primary residences and 487 are secondary homes. The fire was also threatening 2,494 buildings, the Hetch-Hetchy Reservoir, power lines, and multiple watersheds in the area. Mandatory evacuations were issued for approximately 1,050 people, and voluntary evacuations were issued for 2,846 people. The fire started on August 17, 2013, and had burned in excess of 105,620 acres of federal, state, and private land.

The President's Disaster Relief Fund provides funding for federal fire management grants made available by FEMA to assist in fighting fires that threaten to cause a major disaster. Eligible costs covered by the grant can include expenses for field camps; equipment use, repair and replacement; tools, materials and supplies; and mobilization and demobilization activities.

FEMA's mission is to support our citizens and first responders to ensure that as a nation we work together to build, sustain, and improve our capability to prepare for, protect against, respond to, recover from, and mitigate all hazards.

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Calif. Rim Fire Near Yosemite Prompts Unhealthy Air Warnings in Nevada

By BRIAN SKOLOFF and SCOTT SONNER Associated Press | Wednesday, Aug 28, 2013 | Updated 8:44 PM PDT

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8-1 0



Firefighters on Wednesday said they are making progress on the Rim Fire. Marianne Favro reports.

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PHOTOS AND VIDEOS



More Photos and Videos

The giant wildfire burning at the edge of Yosemite National Park has not only destroyed buildings and threatened water supplies, electricity and sequoias, it has also unleashed a smoky haze that has worsened air quality more than 100 miles away in Nevada.

As of Wednesday afternoon, Day 12 of the fire, it had burned 192,466 acres and was 30 percent contained – up 10 percent from the day before. At least 4,500 homes remained threatened, and it has become California's 6th largest wildfire to date, surpassing the Klamath Theater Complex fire of 2008.

The plume from the Rim Fire in California triggered emergency warnings in the Reno and Carson City area. Schoolchildren were kept inside for the second time in a week. people went to hospitals complaining of eye and throat irritation and officials urged people to avoid all physical activity outdoors.

"It's five hours away," said 22-year-old bartender Renee Dishman in disbelief after learning that the source of the haze was more than 150 miles away. "I can't run. I can't breathe. It makes me sneeze."



Evacuations Ordered as SoCal Brush Fire Grows to 200 Acres



Watch NBC Bay Area News at 11



Woman Intentionally Hits Lexus to Flee From Kidnapper: Cops



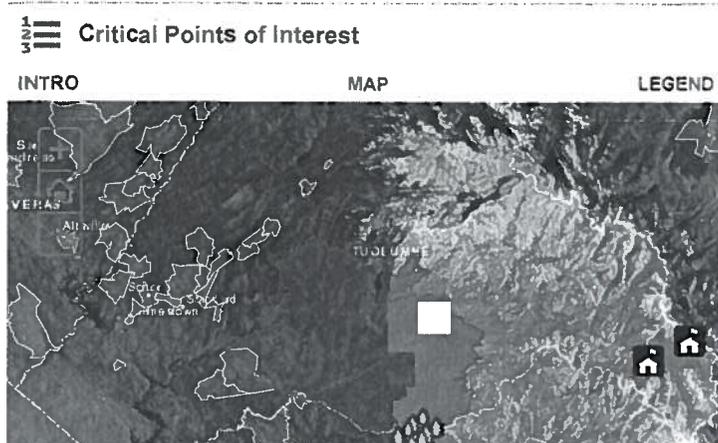
The New Faces of "Star Wars"

(Interactive map of Rim Fire by Esri.com)

Rim Fire Perspectives Map

Get a complete picture of the Rim Fire near Yosemite National Park. Click through the tabs on the left side to see which areas and infrastructure are threatened by the fire, how the fire has progressed, and where fires have ravaged the area in the past.

HIDE



The Rim Fire, so far, has burned through nearly 300 square miles, destroyed 111 structures – including 11 homes – and threatened water supplies, hydroelectric power and giant sequoias.

In Nevada, the biggest impact of the Rim Fire was on the air. The air quality index briefly surpassed the rare "hazardous" level east of Lake Tahoe before improving slightly. It hovered around the next-most serious stage of "very unhealthy" for all populations in the Reno-Sparks area 30 miles north.

Dennis Fry, a Reno auto body specialist for nearly 30 years, remembered smoke this thick when he worked on a logging crew and helped fight fires in Oregon during the 1970s.

"But never in Reno, not this bad," he said. "You could actually see the smoke inside my body shop."

Everyone should avoid all physical activity outdoors when the air quality index reaches "hazardous," considered "emergency conditions," the Nevada Division of Environmental Protection said on its website. "People with heart or lung disease, older adults and children should remain indoors and keep activity levels low."

MORE: 4,000 Fighting Rim Fire Near Yosemite

Renown Regional Medical Center in Reno has experienced a "slight increase" in emergency room visits as a result of the smoke, said Jennifer Allen, the hospital's clinical nursing supervisor.

"Patients are experiencing shortness of breath, eye and throat irritation, cough and headache due to the heavy smoke and poor air quality," she said, adding that people with asthma and other respiratory ailments were most affected.

The pollution levels are among the worst ever recorded for small particulates around Carson City in the state's air monitoring records dating to 2000, according to JoAnn Kittrell, public information manager for Nevada Division of Environmental Protection. The air quality briefly moved into the "hazardous" level in some areas on Friday as well, she said.

"It's very unusual," she said. "We just happen to be in the direct path of the plume from Yosemite."

The previous peak reading in Reno came on Friday when the air quality index closed in on the "very unhealthy" stage. Schoolchildren were kept indoors during recess, high school football practices and scrimmages were canceled through the weekend and an annual air show at Lake

Tahoe was canceled due to low visibility.

Carol Chaplin, executive director Lake Tahoe Visitors Authority, said some hotels and motels reported cancellations earlier in the week, but so far there hasn't been any major impact for the upcoming Labor Day weekend. "I could lie and say it's not affecting anything, but it is," she said. She said visibility in the scenic Tahoe Basin ebbs and flows with the shifting winds.

"I still see people out on the lake," she said. "At least we're not on fire."

The fire caused air pollution problems in California cities far away from the fire, including those in the Sacramento region.

Two dozen competitors in the 25th annual Best in the West Nugget Rib Cook-Off were taking it in stride as they prepped their grills for the barbeque festival running Wednesday through Labor Day in Sparks. The air around the event is usually filled with smoke, albeit a different kind when the barbeque festival's in town.

"You can't have too much smoke at a barbeque," said Mike Peters of Springfield, Mo., a member of the Kansas City Barbeque Society's Great American Barbeque Tour Team. "We're just going to add a little hickory smell to it."

Associated Press Carson City correspondent Sandra Chereb and NBC Bay Area's Lisa Fernandez contributed to this report.

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bullies,
is
convicted
of
wiretapping
felony**
(Vocativ)

**80
-
Foot
Wall
of
Water**
(olive)

Richard Whitley, M.S.
Administrator

Tracey D. Green, M.D.
Chief Medical Officer



Contact Name: Pam Graber
Phone Number: 775 684 5987
Release Date: August 27, 2013
Page 1 of 1

Division of Public and Behavioral Health NEWS RELEASE

State Agencies Warn Nevadans about Rim Fire Smoke

The message is clear: when outside air quality is poor, protect your health

Carson City – The Public Health Preparedness Program of the Nevada Division of Public and Behavioral Health and the Nevada Division of Environmental Protection urge northern Nevadans who reside or work in the plume of the Rim Fire to monitor outdoor air conditions, and to accordingly take health precautions while smoke is present.

- To check outdoor air quality in Gardnerville and Carson City, visit: <http://nvair.ndep.nv.gov>
- To check outdoor air quality in Washoe County, visit: <http://airnow.gov>

Since Thursday, August 22, when smoke from the Rim Fire was first noticed in the Reno-Carson-Douglas area, air quality has vacillated between the categories “unhealthy for sensitive groups,” “unhealthy,” “very unhealthy,” and “hazardous.” Regardless of your age or health status, it is wise to limit or eliminate exposure to outside air while these categories are present. Specific details and cautionary statements are found in near real time (hourly updates) on the websites.

Wildfire smoke contains gasses and fine particles from burning trees and other plant materials. Smoke may hurt your eyes, irritate your respiratory system, or worsen chronic heart and lung diseases.

For answers to health-related questions, please contact your health care professional, or call the Public Health Preparedness Program at: 775-684-5987.

###

For information about the Division of Public and Behavioral Health, visit www.health.nv.gov.



A handwritten signature in blue ink that reads "Richard Whitley".

Richard Whitley, Administrator

NATIONAL

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NBA exile leaves Sterling few options



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Smoke from Rim Fire at Yosemite reaches Carson City, Reno

11

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Fire crew members stand watch near a burn area as they fight the Rim Fire near Yosemite National Park in California. The massive wildfire is now 80 percent contained, according to officials.
Mike McMillan/AP, Forest Service/AP

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WRITTEN BY

Max Ehrenfreund

PUBLISHED: AUGUST 28, 2013

E-mail the writer

The wildfire burning in and near Yosemite National Park in California has charred 293 square miles, destroying at least 11 houses and endangering several mountain communities. Containment was estimated at 23 percent on Tuesday. The Rim Fire, as it is known, threatens several ancient sequoias, and the smoke has reached Carson City and Reno, more than 100 miles distant:

Schoolchildren were kept inside for the second time in a week, people went to hospitals complaining of eye and throat irritation and officials urged people to avoid all physical activity outdoors.

"It's five hours away," said 22-year-old bartender Renee Dishman in disbelief after learning that the source of the

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haze was more than 150 miles away. "I can't run. I can't breathe. It makes me sneeze." . . .

Everyone should avoid all physical activity outdoors when the air quality index reaches "hazardous," considered "emergency conditions," the Nevada Division of Environmental Protection said on its website. "People with heart or lung disease, older adults and children should remain indoors and keep activity levels low."

Renown Regional Medical Center in Reno has experienced a "slight increase" in emergency room visits as a result of the smoke, said Jennifer Allen, the hospital's clinical nursing supervisor.

"Patients are experiencing shortness of breath, eye and throat irritation, cough and headache due to the heavy smoke and poor air quality," she said, adding that people with asthma and other respiratory ailments were most affected.

[Associated Press](#)

Despite difficult terrain, firefighters are doing what they can to contain the flames:

The U.S. Forest Service said Tuesday that ground crews planned to work through the night to build containment lines on the northern flank of the fire. Communities north of the blaze, along the Highway 108 corridor from Tuolumne City to Pinecrest, also remained under evacuation orders.

Officials said crews on the southeast flank in Yosemite were planning to conduct extensive backfires, a dangerous tactic in which firefighters burn vegetation inside a fire line to help contain a rapidly spreading blaze.

Nearly 4,100 firefighters are taking part in the effort. . . .

While firefighters have used the Tuolumne River and granite formations on the fire's northern edges to set up defenses, crews have found little to work with on the blaze's eastern front south of the Hetch Hetchy reservoir.

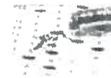
"They're in scouting mode," Dick Fleishman of the U.S. Forest Service said of fire crews. "There's not a lot of real good areas to get out in there and do a lot of work."

[Los Angeles Times](#)

A number of factors have contributed to the unusual intensity of the wildfire, one of the largest in California since record-keeping began in 1932:

Unnaturally long intervals between wildfires and years of drought primed the Sierra Nevada for the explosive conflagration chewing up the rugged landscape on the edge of Yosemite National Park, forestry experts say. . . .

Live Discussions



The Answer Sheet: Education chat

Live chat, 1 p.m. ET
Valerie Strauss takes questions on the latest in education policy and how it impacts you.

11:00 AM **Ask Tom: Rants, raves and questions on the DC dining scene** [LIVE NOW](#)

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Federal forest ecologists say that historic policies of fire suppression to protect Sierra timber interests left a century's worth of fuel in the fire's path.

"That's called making the woodpile bigger," said Hugh Safford, an ecologist with the U.S. Forest Service in California.

Two years of drought and a constant slow warming across the Sierra Nevada also worked to turn the Rim Fire into an inferno. For years forest ecologists have warned that Western wildfires will only get worse.

"Every year the summer temperatures are a little warmer, hence the conditions for burning are a little more auspicious," said Safford. "People can deny it all they want but it's happening. Every year the fuels are a little bit drier."

The Rim Fire's exponential growth slowed only after hitting areas that had burned in the past two decades, and Safford says that shows the utility of prescribed and natural burns that clear brush and allow wildfires to move rapidly without killing trees.

"If you look at the Sierra Nevada as a whole, by far the largest portion hasn't seen a fire since the 1910s and 1920s, which is very unnatural," said Safford, who has authored several papers on the increasing wildlife severity across California's mountain ranges. "This one isn't stopping for a while."

Since a 1988 fire impacted nearly one third of Yellowstone National Park, forestry officials have begun rethinking suppression policies. Yosemite has adopted an aggressive plan of prescribed burns while allowing backcountry fires caused by lightning strikes to burn unimpeded as long as they don't threaten park facilities.

"Yosemite is one of the biggest experimental landscapes for prescribed fire and it's going to pay off," Safford said. "The Rim Fire is starting to hit all those old fire scars."

Associated Press

The cause of the fire, which began a week and a half ago, remains under investigation. For current official information on the fire, visit [this page](#).

Fire crews in California are gaining ground on a giant wildfire by Yosemite National Park, but flames are still spreading fast.

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Reprints

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edbyronadams wrote:
8/28/2013 2:16 PM PDT

We've had two years of mild drought in California after years of good rainfall. To the east the Rim fire slowed down because it ran into bare granite. The satellite pictures make that clear.



pontneuf responds:
8/28/2013 7:56 AM PDT

Yes. The interaction of rain and drought. Rain grows the fuel and drought converts it into fuel.



rmenicoll wrote:
8/28/2013 12:36 PM PDT

Send Reno, Carson City and other Nevada Residents Emergency Medical Bills....

To John Boehner, Eric Cantor, Paul Ryan and Republican Senate "Global Warming Deniers" !

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Severe Weather Possible for Parts of Great Lakes and Ohio Valley

The NWS Storm Prediction Center is forecasting a risk of severe thunderstorms Tuesday afternoon and evening across parts of the Great Lakes and Ohio Valley, from northern Wisconsin across lower Michigan and into the upper Ohio Valley. Large hail and damaging wind gusts will be the main threats.

[Read More...](#)

HAZARDOUS WEATHER CONDITIONS

Dense Smoke Advisory is in effect until August 27, 05:00 PM PDT

Current Conditions

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NA

62°F

17°C

Humidity 49%
Wind Speed calm
Barometer 30.11 in
Dewpoint 43°F (6°C)
Visibility NA

Last Update on 26 Aug 11:41 pm PDT

Current conditions at

CW5091 Carson City (C5091)

Lat: 39.16583 Lon: -119.77417 Elev: 4710ft.

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4 Miles ESE Carson City NV

[Reno, NV](#)

7 Day Forecast

NWS Weather Forecast Office

TODAY	TONIGHT	WEDNESDAY	WEDNESDAY NIGHT	THURSDAY	THURSDAY NIGHT	FRIDAY	FRIDAY NIGHT	SATURDAY
Areas Smoke High: 80 °F	Areas Smoke Low: 57 °F	Areas Smoke High: 84 °F	Areas Smoke Low: 58 °F	Areas Smoke High: 87 °F	Mostly Clear Low: 58 °F	Sunny High: 87 °F	Mostly Clear Low: 58 °F	Sunny High: 86 °F



National Weather Service

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Dense Smoke Advisory

URGENT - WEATHER MESSAGE
NATIONAL WEATHER SERVICE RENO NV
1247 PM PDT TUE AUG 27 2013

...SMOKE FROM RIM FIRE IMPACTING AIR QUALITY...

.DENSE SMOKE FROM THE RIM FIRE WILL CONTINUE TO SPREAD INTO THE LAKE TAHOE BASIN...AND PORTIONS OF ALPINE...DOUGLAS...CARSON CITY AND NORTHERN MONO COUNTIES. OUTDOOR ACTIVITIES ARE STRONGLY DISCOURAGED DUE TO THE POOR AIR QUALITY.

VISIBILITY IS LIKELY TO REMAIN BELOW 5 MILES IN THE RENO AREA AND REMAIN BELOW 3 MILES IN CARSON CITY...SOUTH LAKE TAHOE...MINDEN AND MARKLEEVILLE INTO WEDNESDAY. WHILE SOME IMPROVEMENT IN AIR QUALITY AND VISIBILITY MAY OCCUR...WINDS ARE FAVORABLE FOR SMOKE TO PERSIST INTO FRIDAY.

CAZ072-073-NVZ002-281200-
/O.EXT.KREV.SM.Y.0002.000000T00000Z-130829T1200Z/
GREATER LAKE TAHOE AREA-MONO-
INCLUDING THE CITY OF...SOUTH LAKE TAHOE
1247 PM PDT TUE AUG 27 2013

...DENSE SMOKE ADVISORY NOW IN EFFECT UNTIL 5 AM PDT THURSDAY...

THE DENSE SMOKE ADVISORY IS NOW IN EFFECT UNTIL 5 AM PDT THURSDAY.

- * LOCATIONS: EASTERN ALPINE COUNTY INCLUDING MARKLEEVILLE...THE SOUTH LAKE TAHOE AREA...AND NORTHERN MONO COUNTY INCLUDING TOPAZ LAKE...WALKER AND COLEVILLE.
- * VISIBILITY: 1/4 MILE OR LESS AT TIMES...WITH VISIBILITY BRIEFLY IMPROVING TO AS HIGH AS 3 MILES.
- * IMPACTS: DENSE SMOKE WILL RESULT IN VERY UNHEALTHY AIR QUALITY WITH OUTDOOR ACTIVITIES STRONGLY DISCOURAGED. TRAVEL MAY BE DIFFICULT DUE TO LOW VISIBILITY ON HIGHWAYS 4...50...88...89 AND 108 NEAR SONORA PASS.

PRECAUTIONARY/PREPAREDNESS ACTIONS...

A DENSE SMOKE ADVISORY IS ISSUED WHEN SMOKE FROM WILDFIRES SIGNIFICANTLY REDUCES VISIBILITY...MAKING IT DIFFICULT TO SEE AND BREATHE. THE SMOKE WILL CONTINUE TO BE A PROBLEM UNTIL THE RIM FIRE IS EXTINGUISHED...OR A MORE FAVORABLE WEATHER PATTERN TO DISPERSE THE SMOKE.



National Weather Service

weather.gov



Watches, Warnings & Advisories

Local weather forecast by "City, St" or zip code

2 products issued by NWS for:



Special Weather Statement

SPECIAL WEATHER STATEMENT
NATIONAL WEATHER SERVICE RENO NV
109 PM PDT WED AUG 28 2013

CAZ071-073-NVZ001-003>005-292015-
LASSEN-EASTERN PLUMAS-EASTERN SIERRA COUNTIES-MONO-
MINERAL AND SOUTHERN LYON COUNTIES-GREATER RENO-CARSON CITY-
MINDEN AREA-WESTERN NEVADA BASIN AND RANGE INCLUDING PYRAMID LAKE-
NORTHERN WASHOE COUNTY-
INCLUDING THE CITIES OF...PORTOLA...SUSANVILLE...WESTWOOD...
SIERRAVILLE...LOYALTON...BRIDGEPORT...COLEVILLE...LEE VINING...
MAMMOTH LAKES...HAWTHORNE...YERINGTON...SMITH VALLEY...MINA...
SCHURZ...SPARKS...VERDI...GARDNERVILLE...VIRGINIA CITY...
FERNLEY...FALLON...LOVELOCK...SILVER SPRINGS...NIXON...IMLAY...
EMPIRE...GERLACH
109 PM PDT WED AUG 28 2013

...SMOKE THIS WEEK COULD PERSIST INTO LABOR DAY WEEKEND...

WILDFIRE SMOKE WILL CONTINUE TO IMPACT THE SIERRA, NORTHEAST CALIFORNIA, AND NORTHWEST NEVADA THIS WEEK AND POSSIBLY THROUGH LABOR DAY WEEKEND. THE RIM FIRE BURNING NEAR YOSEMITE IS THE MAIN SMOKE PRODUCER, BUT OTHER SMALLER FIRES LIKE THE AMERICAN FIRE ARE ALSO CONTRIBUTING.

DENSE SMOKE ADVISORIES HAVE BEEN ISSUED IN THE SIERRA FOR THE SOUTHERN HALF OF THE TAHOE BASIN TO AS FAR SOUTH AS NORTHERN MONO COUNTY. DENSE SMOKE ADVISORIES ARE ALSO IN PLACE FOR CARSON CITY AND DOUGLAS COUNTIES IN WESTERN NEVADA. FOR THE VERY LATEST ON CURRENT AIR QUALITY INDEX (AQI) VALUES AND FORECAST AQI VALUES, PLEASE VISIT [AIRNOW.GOV](http://airnow.gov) OR CHECK WITH YOUR COUNTY AIR QUALITY DEPARTMENT. SOUTHWEST FLOW WILL CONTINUE THIS WEEK WITH ONLY SMALL DAY-TO-DAY CHANGES...AND THUS AREAS DOWNWIND OF THE FIRES WILL CONTINUE TO BE IMPACTED BY SMOKE THROUGH THE WORKWEEK.

FORECAST CONFIDENCE IS LOWER GOING INTO THE WEEKEND DUE TO POTENTIAL CHANGES IN THE ACTIVITY OF THE RIM FIRE. SMOKY CONDITIONS COULD ALSO IMPROVE THIS WEEKEND DUE TO A CHANGING WEATHER PATTERN...ESPECIALLY FOR AREAS NORTH OF I-80. HOWEVER, SOUTH OF I-80 THERE IS A 60% CHANCE IMPACTS FROM THE FIRE WILL CONTINUE THROUGH LABOR DAY.