Wildfire Smoke Particulate Matter Exceptional Event Demonstration

North Dakota May – October, 2024

DRAFT July 2025

Prepared by
North Dakota Department of Environmental Quality
Division of Air Quality

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EXECUTIVE SUMMARY

From early-May through early-October of 2024, smoke from wildfires across Canada, the western United States, and North Dakota directly affected the air quality in North Dakota. The 2024 wildfires produced particulate matter ($PM_{2.5}$) emissions that are outside the regulatory control of the North Dakota Department of Environmental Quality, which regulates air pollution on state land within the State of North Dakota. In addition, the wildfires across Canada and the western United States are outside the jurisdictional borders of the State of North Dakota.

The U.S. Environmental Protection Agency's Treatment of Data Influenced by Exceptional Events (Exceptional Event Rule) (40 CFR § 50.14) details what air regulatory agencies are required to demonstrate to exclude exceptional event-related concentrations from regulatory determinations. The following components must be included in a demonstration:

A. A narrative conceptual model that describes the event causing the exceedance or violation and a discussion of how emissions from the event led to the exceedance or violation at the affected monitor(s). (See Section III.)
B. 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 or violation. (See Section IV.)
C. Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times. (See Section IV.)
D. A demonstration that the event was a human activity that is unlikely to recur at a location or was a natural event. (See Section V.)
E. A demonstration that the event was both not reasonably controllable and not reasonably preventable. (See Section VI.)
F. Documentation that the submitting air regulatory agency followed the public comment process. (See Section VII.)

This demonstration addresses all required components of a request to exclude exceptional event-related data, as detailed in 40 CFR § 50.14.

The North Dakota Department of Environmental Quality – Division of Air Quality is requesting exclusion of exceptional event concurred particulate matter ($PM_{2.5}$) data, recorded by various monitoring sites, from the data record due to a wildfire smoke exceptional event (Event) from early-May through early-October 2024.

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I.1 Overview

The Exceptional Event Demonstration shows that all nine North Dakota air monitoring sites were impacted by smoke from wildfires across Canada, the western United States, and North Dakota from early-May through early-October 2024, causing daily particulate matter ($PM_{2.5}$) concentrations to exceed the level of the 24-hour $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS) of 35 $\mu g/m^3$ and new 2024 $PM_{2.5}$ Annual NAAQS of 9.0 $\mu g/m^3$. The 2024 wildfires produced $PM_{2.5}$ emissions that are outside the regulatory control of the North Dakota Department of Environmental Quality (NDDEQ), which regulates air pollution on state land within the State of North Dakota. In addition, the wildfires across Canada and the western United States are outside the jurisdictional borders of the State of North Dakota.

This demonstration includes 31 dates at nine $PM_{2.5}$ monitoring sites for a total of 205 $PM_{2.5}$ monitor Event days, inclusive of the primary and collocated monitors. The daily $PM_{2.5}$ event concentrations included in this demonstration are for the following timeframes and were the result of smoke impacts from the 2024 wildfires, as described in this document.

May 12-14	August 10	September 9-11
July 8-10	August 15-20	October 5
July 20-30	September 4	October 8-9

All North Dakota monitors have design values for 2020-2022 that are meeting the existing and new 2024 $PM_{2.5}$ annual NAAQS as well as the existing 24-hour $PM_{2.5}$ and 24-hour PM_{10} NAAQSs. Monitored data directly affected by Canadian wildfire smoke in 2023 exceeded the levels of the 24-hour $PM_{2.5}$ NAAQS, new 2024 $PM_{2.5}$ annual NAAQS, as well as the 24-hour PM_{10} NAAQS. More specifically in 2023, three of three PM_{10} monitors have 24-hour concentrations that are above the level of the 24-hour PM_{10} NAAQS; six of nine $PM_{2.5}$ monitors have annual mean concentrations that are above the level of the new 2024 $PM_{2.5}$ annual NAAQS; and nine of nine $PM_{2.5}$ monitors have 98th percentile 24-hour concentrations that are equal to or above the level of the 24-hour $PM_{2.5}$ NAAQS. Furthermore, the 2023 monitored data impacted by Canadian wildfire smoke significantly increased the 2021-2023 design values for the $PM_{2.5}$ 24-hour NAAQS, $PM_{2.5}$ annual NAAQS, and PM_{10} 24-hour NAAQS.

Monitored data in 2024 exceeded the levels of the 24-hour $PM_{2.5}$ NAAQS and new 2024 $PM_{2.5}$ annual NAAQS and six of nine $PM_{2.5}$ monitors have 98th percentile 24-hour concentrations that are above the level of the 24-hour $PM_{2.5}$ NAAQS. Additionally, the 2024 monitored data impacted by wildfire smoke, in addition to the 2023 monitored data impacted by Canadian wildfire smoke, significantly increased the 2022-2024 design values for the $PM_{2.5}$ 24-hour NAAQS and $PM_{2.5}$ annual NAAQS. See Appendix A, Table B for 2022-2024 design value information for all North Dakota $PM_{2.5}$ primary monitors for the $PM_{2.5}$ 24-hour NAAQS and $PM_{2.5}$ annual NAAQS.

The NDDEQ requests that the United States Environmental Protection Agency (U.S. EPA) concur with the exclusion from the data record the specified $PM_{2.5}$ (24-hour and annual) Event concentrations in Table 1 as well as in Appendix A, Initial Notification Table A. The Event concentrations were all above the level of the EPA $PM_{2.5}$ Tier 1 thresholds for each site, were all

influenced by smoke from wildfires included in this demonstration, and impact regulatory determinations concerning North Dakota's attainment of the NAAQS. The days and sites for which the NDDEQ is requesting concurrence were impacted by an Event consistent with EPA's definition of "unusual or naturally occurring events that can affect air quality but are not reasonably controllable using techniques that tribal, state, or local air agencies may implement in order to attain and maintain the [NAAQS]" (USEPA, 2020a).

I.2 Clean Air Act Requirements

The EPA 2024 $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS) has two components: an annual average standard of 9.0 $\mu g/m^3$ and a 24-hour average standard of 35 $\mu g/m^3$. The 24-hour $PM_{2.5}$ standard is met when the three-year average of the 98th percentile 24-hour concentrations is less than or equal to 35 $\mu g/m^3$ (40 CFR § 50.20). The annual $PM_{2.5}$ standard is met when the three-year annual arithmetic mean is less than or equal to 9.0 $\mu g/m^3$ (40 CFR § 50.20).

Promulgation of the new 2024 $PM_{2.5}$ annual NAAQS has triggered the state recommendation process to be followed by the EPA designation process. As part of these regulatory processes, the three-year design values to be relied upon for the $PM_{2.5}$ annual NAAQS state attainment recommendations (2021-2023) as well as the EPA attainment designations (2022-2024), will be significantly increased as a result of monitored data directly affected by wildfire smoke in 2023 as well as 2024. As such, the NDDEQ considers this Event to be of regulatory significance.

By the regulatory deadline of February 7, 2025, North Dakota submitted the *Canadian Wildfire Smoke Particulate Matter Exceptional Event Demonstration – North Dakota – May-September 2023* to exclude Event concentration data from the 2021-2023 and 2022-2024 design value calculations. In addition, North Dakota is submitting this exceptional event demonstration to exclude Event concentration data from the 2022-2024 design value calculations that will be relied upon by the EPA in making its attainment designations.

It is important to note the Event concentrations will affect future year's design values, with the potential of future NAAQSs violations, which is also of regulatory significance because of the NDDEQ's reliance on ambient data to determine compliance with the NAAQS at state run air monitoring stations. Additionally, the concentration data is used in NDDEQ's air pollution control permitting process as well as by the U.S. EPA and third parties in evaluating North Dakota's air quality. These reasons demonstrate the need to accurately portray anthropogenic versus non-anthropogenic, or "exceptional" air quality issues outside the regulatory control and jurisdictional borders of the NDDEQ, to the public by means of excluding exceptional event concurred data from the data record.

North Dakota is submitting this exceptional event demonstration to exclude Event concentration data from the data record for the specified $PM_{2.5}$ (24-hour and annual) Event concentrations in Table 1 (as well as Appendix A, Initial Notification Table A), which impact regulatory decisions about North Dakota's attainment of the NAAQS.

Table 1. $PM_{2.5}$ (24-hour) Event Concentrations

DATE	MONITOR NAME	$PM_{2.5}$ ($\mu g/m^3$)
5/12/2024	Painted Canyon (TRNP-SU)	37.6
	Lostwood NWR	37.2
	Bismarck Residential	46.2
	Fargo NW	49.0
	Lake Ilo NWR	38.2
	TRNP-NU	33.7
	Beulah North	27.0
	Hannover	29.6
	Ryder	35.6
5/13/2024	Painted Canyon (TRNP-SU)	21.2
	Lostwood NWR	24.5
	Bismarck Residential	43.8
	Beulah North	26.7
	Hannover	28.3
	Ryder	26.9
5/14/2024	Bismarck Residential	25.1
7/8/2024	Lostwood NWR	44.4
	Bismarck Residential	30.6
	Beulah North	21.3
	Hannover	21.9
	Ryder	28.4
7/9/2024	Lostwood NWR	37.4
	Bismarck Residential	40.6
	Lake Ilo NWR	20.7
	Beulah North	27.4
	Hannover	28.0
	Ryder	34.8
7/10/2024	Lostwood NWR	28.0
	Bismarck Residential	34.4
	Lake Ilo NWR	20.5
	Beulah North	29.1
	Hannover	29.9
	Ryder	30.1
7/20/2024	Painted Canyon (TRNP-SU)	21.7
7/21/2024	Painted Canyon (TRNP-SU)	33.8
	Lostwood NWR	40.9
	Bismarck Residential	38.0
	Lake Ilo NWR	32.4
	TRNP-NU	26.7
	Beulah North	32.3
	Hannover	33.6
	Ryder	40.5
7/22/2024	Painted Canyon (TRNP-SU)	49.1
	Lostwood NWR	53.9
	Bismarck Residential	43.3
	Fargo NW	25.5
	Lake Ilo NWR	47.4
	TRNP-NU	49.3
	Beulah North	47.8
	Hannover	40.7
	Ryder	43.8
7/23/2024	Painted Canyon (TRNP-SU)	41.5
	Lostwood NWR	53.0
	Bismarck Residential	49.2
	Lake Ilo NWR	49.3
	TRNP-NU	51.4
	Beulah North	53.3
	Hannover	50.9
	Ryder	50.2
7/24/2024	Painted Canyon (TRNP-SU)	35.8
	Lostwood NWR	32.3
	Bismarck Residential	28.3
	Lake Ilo NWR	33.7
	TRNP-NU	36.5
	Beulah North	30.8
	Hannover	28.1
	Ryder	30.5
7/25/2024	Painted Canyon (TRNP-SU)	24.4
	Lostwood NWR	28.3
	Bismarck Residential	28.8
	Lake Ilo NWR	27.4
	TRNP-NU	24.3
	Beulah North	31.8
	Hannover	30.0
	Ryder	29.8
7/26/2024	Painted Canyon (TRNP-SU)	21.4
	Lostwood NWR	23.9
	Bismarck Residential	34.1
	Lake Ilo NWR	23.0
	Beulah North	32.9
	Hannover	31.7
	Ryder	24.6
7/27/2024	Painted Canyon (TRNP-SU)	23.4
	Bismarck Residential	24.4
	Fargo NW	22.1
	Lake Ilo NWR	22.3
	TRNP-NU	21.0
	Beulah North	25.8
	Hannover	21.2
7/28/2024	Lostwood NWR	27.2

DATE	MONITOR NAME	$PM_{2.5}$ ($\mu g/m^3$)
7/29/2024	Lostwood NWR	21.8
	TRNP-NU	20.6
7/30/2024	Painted Canyon (TRNP-SU)	27.8
	Lake Ilo NWR	25.6
	TRNP-NU	22.4
	Beulah North	29.2
	Hannover	22.6
	Ryder	23.1
8/10/2024	Lostwood NWR	27.8
	Bismarck Residential	20.8
	Lake Ilo NWR	20.4
	Ryder	26.7
8/15/2024	Painted Canyon (TRNP-SU)	37.6
	Lake Ilo NWR	25.9
	TRNP-NU	29.0
8/16/2024	Painted Canyon (TRNP-SU)	42.5
	Bismarck Residential	33.1
	Lake Ilo NWR	44.5
	TRNP-NU	42.5
	Hannover	37.2
	Ryder	53.0
8/17/2024	Painted Canyon (TRNP-SU)	28.2
	Bismarck Residential	43.3
	Fargo NW	28.3
	Lake Ilo NWR	37.4
	TRNP-NU	36.0
	Hannover	37.6
	Ryder	45.6
8/18/2024	Fargo NW	23.8
	Lake Ilo NWR	22.0
	Ryder	22.1
8/19/2024	Fargo NW	25.6
8/20/2024	Fargo NW	23.1

DATE	MONITOR NAME	$PM_{2.5}$ ($\mu g/m^3$)
9/4/2024	Painted Canyon (TRNP-SU)	54.9
	Lostwood NWR	94.7
	Bismarck Residential	47.2
	Lake Ilo NWR	60.9
	TRNP-NU	85.2
	Beulah North	49.7
	Hannover	49.7
	Ryder	57.0
9/9/2024	Painted Canyon (TRNP-SU)	48.3
	TRNP-NU	22.0
9/10/2024	Painted Canyon (TRNP-SU)	85.1
	Lostwood NWR	40.4
	Bismarck Residential	46.9
	Lake Ilo NWR	62.3
	TRNP-NU	40.2
	Beulah North	76.0
	Hannover	65.2
	Ryder	50.2
9/11/2024	Painted Canyon (TRNP-SU)	51.1
	Lostwood NWR	36.0
	Bismarck Residential	83.9
	Fargo NW	65.0
	Lake Ilo NWR	64.6
	TRNP-NU	62.0
	Beulah North	78.9
	Hannover	71.3
	Ryder	57.3
10/5/2024	Beulah North	21.2
10/8/2024	Painted Canyon (TRNP-SU)	21.0
	TRNP-NU	21.4
10/9/2024	Painted Canyon (TRNP-SU)	22.8
	TRNP-NU	20.7
	Beulah North	20.5

I.3 Exceptional Event Rule Requirements

EPA's Treatment of Data Influenced by Exceptional Events (Exceptional Event Rule) (81 Fed. Reg. 68,216) details what air agencies must demonstrate in order to exclude exceptional event-related concentrations from regulatory determinations. The following are requirements under 40 CFR § 50.14(c)(3)(iv)(A–E) and (c)(3)(v)(A):

A. A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s). (See Section III.)
B. 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 or violation. (See Section IV.)

C. Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site at other times to support the requirement in paragraph (c)(3)(iv)(B) of this section. (See Section IV.)
D. A demonstration that the event was a human activity that is unlikely to recur at a location or was a natural event. (See Section V.)
E. A demonstration that the event was both not reasonably controllable and not reasonably preventable. (See Section VI.)
F. Documentation that the submitting air regulatory agency followed the public comment process. (See Section VII.)

The Exceptional Events Rule further provides that for wildfire exceptional events; the wildfire must occur predominantly on wildland.

> 40 CFR § 50.14(b)(4): Wildfires. 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.

The definition for "wildland" is provided in 40 CFR § 50.1(o). The term "wildland" issued in this document is consistent with this definition.

> 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.

This demonstration addresses the above requirements in showing that the smoke from the 2024 wildfires caused the $PM_{2.5}$ Event concentrations throughout North Dakota. In addition, the NDDEQ will provide a 30-day public comment period on this Exceptional Event Demonstration.

I.4 Wildfire Impacts on $PM_{2.5}$ Design Values in North Dakota

The annual $PM_{2.5}$ design value (DV) is calculated using the 3-year average. More specifically, the annual $PM_{2.5}$ standard is met when the three-year annual arithmetic mean is less than or equal to 9.0 $\mu g/m^3$ (40 CFR § 50.20). North Dakota is submitting this exceptional event demonstration to exclude Event concentration data that cumulatively will be regulatorily significant to the new 2024 $PM_{2.5}$ annual NAAQS of 9.0 $\mu g/m^3$.

The 24-hour $PM_{2.5}$ design value (DV) is calculated using the 3-year average. More specifically, the 24-hour $PM_{2.5}$ standard is met when the three-year average of the 98th percentile 24-hour concentrations is less than or equal to 35 µg/m^3 (40 CFR § 50.20). North Dakota is submitting this exceptional event demonstration to exclude Event concentration data that cumulatively will be regulatorily significant to the $PM_{2.5}$ 24-hour NAAQS of 35 µg/m^3.

I.5 Action Requested

This report meets all EPA documentation standards for Exceptional Events (see Section I.3). The NDDEQ considers these exceedances of the level of the $PM_{2.5}$ NAAQSs to meet the criteria of regulatory significance. Pursuant to federal regulations, the NDDEQ requests EPA concurrence that the $PM_{2.5}$ Event concentrations in Table 1 (as well as Appendix A, Initial Notification Table A) were caused by an exceptional event and should be excluded from the data record for the $PM_{2.5}$ NAAQS (annual and 24-hour) and any other applicable regulatory purposes (40 CFR § 50.14(b)).

The NDDEQ applied data qualifiers in EPA's Air Quality System[1] (AQS) as per 40 CFR § 50.14(c)(2)(i). A copy of the Raw Data Reports (AMP 350) from EPA's AQS system are included in Appendix F. The AQS reports show the data included in this demonstration has the "rf" qualifier applied for "Fire-Canadian" and the "rt" qualifier applied for "Wildfire-United States" where NDDEQ is requesting data exclusion. Due to AQS limitations, only one Request Exclusion qualifier ("rf") was able to be applied in AQS rather than both "rf" and "rt" qualifiers, on Event dates with smoke impacts from both Canadian and United States wildfires. Note that without EPA concurrence, the data qualifier code is shown in lower case.

SECTION II. OVERVIEW OF NORTH DAKOTA AMBIENT AIR QUALITY MONITORING NETWORK

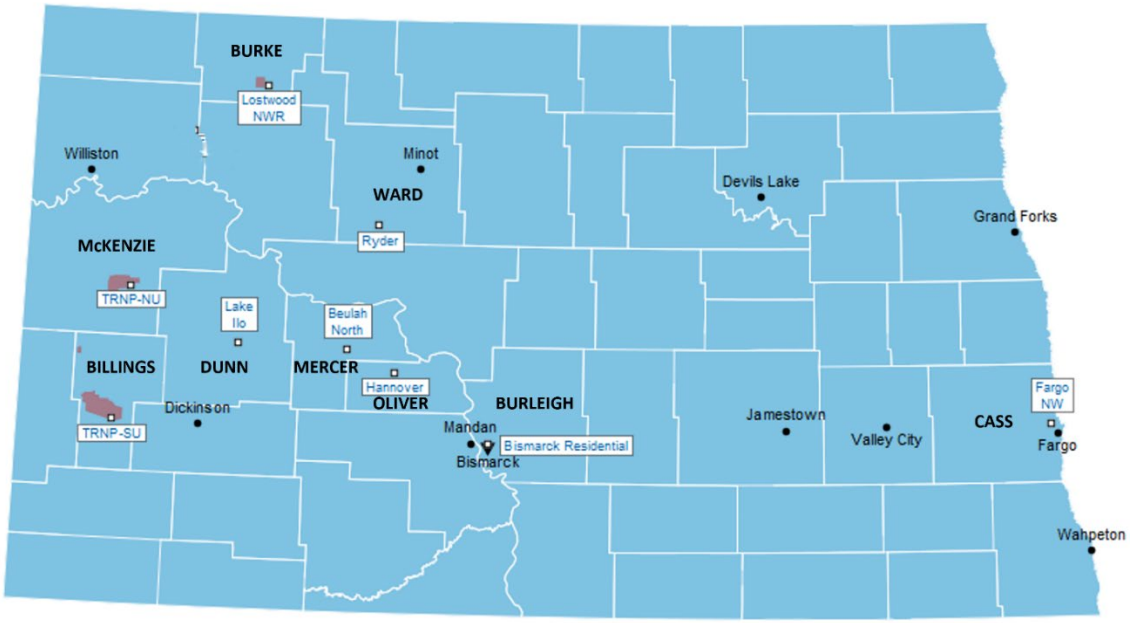
II.1 North Dakota Particulate Matter Ambient Air Quality Monitoring

The NDDEQ ambient particulate matter monitoring network is more robust than the minimum federal requirements. The NDDEQ operates eight continuous PM_{10} analyzer sites and nine Federal Equivalent Method (FEM) continuous $PM_{2.5}$ analyzer sites. At the Bismarck site, the NDDEQ also operates a Federal Reference Method (FRM) manual $PM_{2.5}$ sampler and a speciation sampler. In addition, two collocated FEM continuous $PM_{2.5}$ analyzers are operated by the NDDEQ at the Bismarck and Beulah sites. Three of the eight PM_{10} analyzers (Bismarck, Lake Ilo National Wildlife Refuge (NWR), and Lostwood NWR) are operated at standard temperature and pressure to be directly comparable to the PM_{10} NAAQS. The monitoring site locations appear as white labels in Figure 1.

[1] U.S. EPA's computer database and information system of ambient air quality data.

More information about North Dakota's ambient monitoring network is available in the Annual Ambient Monitoring Report[2], which summarizes the ambient air quality data obtained from the network of air quality monitoring sites in North Dakota during the previous calendar year.

Figure 1. North Dakota's Particulate Matter Ambient Air Monitoring 2024



II.2 $PM_{2.5}$ T640/T640X Federal Equivalent Method Monitor Data

A technical challenge is that despite receiving EPA's approval as a Federal Equivalent Method (FEM), the Teledyne T640/T640X continuous monitors consistently measure $PM_{2.5}$ levels approximately 20% higher than collocated filter-based Federal Reference Method (FRM) monitors.[3] In the 2023 Annual Ambient Air Monitoring Data Certification letter[4] to U.S. EPA, North Dakota acknowledged EPA's implementation of an alignment algorithm to update previously collected $PM_{2.5}$ T640/T640X FEM monitor data in EPA's AQS. Within this demonstration, the $PM_{2.5}$ data reflects the alignment algorithm developed by Teledyne and implemented in the Teledyne firmware update.

[2] North Dakota Department of Environmental Quality, Division of Air Quality, Ambient Air Monitoring Program, Annual Report – North Dakota Ambient Monitoring Network Plan/Assessment with Data Summary, available at https://deq.nd.gov/AQ/monitoring/

[3] https://cleanairact.org/wp-content/uploads/2024/06/AAPCA-Article-EM-June-2024-Final_updated.pdf

[4] See Appendix B.

While the alignment algorithm resulted in an improvement in the T640/T640X FEM monitor bias compared to FRM monitors, it did not sufficiently correct the bias in the $PM_{2.5}$ concentrations. Unfortunately, the bias is so significant that, for the new 2024 $PM_{2.5}$ Annual NAAQS, the ongoing bias could lead to an area being improperly designated nonattainment based on T640/T640X FEM monitored data while the area would have been designated attainment based on FRM monitored concentrations.[5]

Notwithstanding NDDEQ's ongoing concern regarding the T640/T640X FEM monitor bias, the NDDEQ requests that the EPA concur with the exclusion of $PM_{2.5}$ Event concentrations from the data record such that all sites in North Dakota will demonstrate attainment of both the $PM_{2.5}$ 24-hour and annual NAAQS.

SECTION III. NARRATIVE CONCEPTUAL MODEL

> **This section satisfies the following federal requirement:**
> A narrative conceptual model that describes the event(s) causing the exceedance or violation and a discussion of how emissions from the event(s) led to the exceedance or violation at the affected monitor(s).
> 40 CFR § 50.14(c)(3)(iv)(A)

The Exceptional Event Rule requires that demonstrations include a narrative conceptual model describing the event. This section describes the 2024 wildfires across Canada, the western United States, and North Dakota that directly affected public health and impacted air quality across North Dakota. It also describes the general meteorological conditions that supported the transport of the wildfire smoke and its dispersion across the state. Particulate matter emissions from the wildfire smoke impacted all nine North Dakota air monitoring sites, causing daily air quality concentrations to exceed the level of the 24-hour $PM_{2.5}$ NAAQS and new 2024 $PM_{2.5}$ Annual NAAQS. The daily concentrations were distinct high levels of monitored 24-hour concentrations when compared to historical 24-hour concentrations, which are demonstrably higher than normal (i.e., non-event) concentrations across the state.

III.1 2024 Canadian Wildfires and Smoke

Although the 2024 fire season began early with dry spring conditions and high fire danger ratings in the prairies, Canada did not face as widespread intense fire activity as during 2023. In 2024, 5,374 fires were recorded burning a total of 5.4 million hectares[6,7] (20,549 square miles), which is the fourth highest recorded wildland area burned. For comparative purposes, the 10-year average is 5,736 fires with an area burned of 3.5 million hectares (13,563 square miles) and in the record-breaking year of 2023, 17.3 million hectares (66,980 square miles) were burned by 5,475 fires.[8]

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[5] https://cleanairact.org/wp-content/uploads/2024/12/AAPCA-Letter-Regarding-Teledyne-Bias-FINAL-12-20-24.pdf
[6] Canadian Interagency Forest Fire Centre https://ciffc.net/statistics, accessed 5/7/25.
[7] Canadian wildland area burned is reported as hectares, with 1 hectare equal to 2.47 acres.
[8] Canadian Wildland Fire Information System, *November 20, 2024 National Wildland Fire Situational Report*, 2024 Seasonal Summary https://cwfis.cfs.nrcan.gc.ca/report, accessed 4/22/25.

The Canadian Interagency Forest Fire Centre (CIFFC) establishes a National Preparedness Level[9] to describe the wildland fire situation and availability of firefighting resources in Canada. Fire activity in the spring started early in Canada, with the National Preparedness Level briefly going to level 3 by May 15 before dropping back down to level 2 by May 21. Throughout the remainder of May, June and into July, the National Preparedness Level remained at level 2 or 1, indicating minimal wildland fire activity and the demand for firefighters and equipment from other jurisdictions is light. The National Preparedness Level increased to level 3 on July 6 before quickly rising to level 4 by July 10 and eventually level 5 by July 15, indicating wildland fire activity is significant within one or more jurisdictions, firefighters and equipment in every jurisdiction in Canada is put to use, and international help has been requested. The National Preparedness Level was lowered to level 4 on August 22 and continued to lower to level 3 on August 30 where it remained until mid-September, eventually dropping to level 1 by the end of September.

The map[10] in Figure 2 illustrates the total wildland area burned in 2024. The area burned was above the 10-year average in the western Canadian Provinces of British Columbia, Yukon, Alberta, Northwest Territories, and Saskatchewan.[11] Based on data in the Canada National Forestry Database, lightning causes about 50% of all wildfires but accounts for about 85% of the annual area burned.[12] Canada is a vast country with diverse landscapes and many of these inland areas can be considered wildland where little human activity and development exist: treed areas (36.9%), grassland and shrubland (19.1%), non-treed wetlands (12.7%), and inland water bodies (12.6%).[13] Many of Canada's 2024 wildfires burned in remote areas with larger fires having burned uncontrolled for several weeks, contributing to smoke that was transported across Canada and into regions of the United States, including North Dakota.[14]

The 2024 wildfires that burned across Canada are documented in Canadian Wildland Fire Information System (CWFIS) National Wildland Fire Situation Reports[15] and summarized in the 2024 Seasonal Summary[16]. The Natural Resources Canada Interactive Maps[17] in Figures 3-6 and the accompanying text illustrate and describe the many wildfires that burned across Canada in 2024. For much of early-May through mid-September, remote wildfires across Canada contributed to dense smoke and particulate matter emissions that were transported into the Central United States, including North Dakota. These wildfires had a significant impact on air quality and elevated $PM_{2.5}$ monitored concentrations to levels significantly higher than normal across North Dakota.

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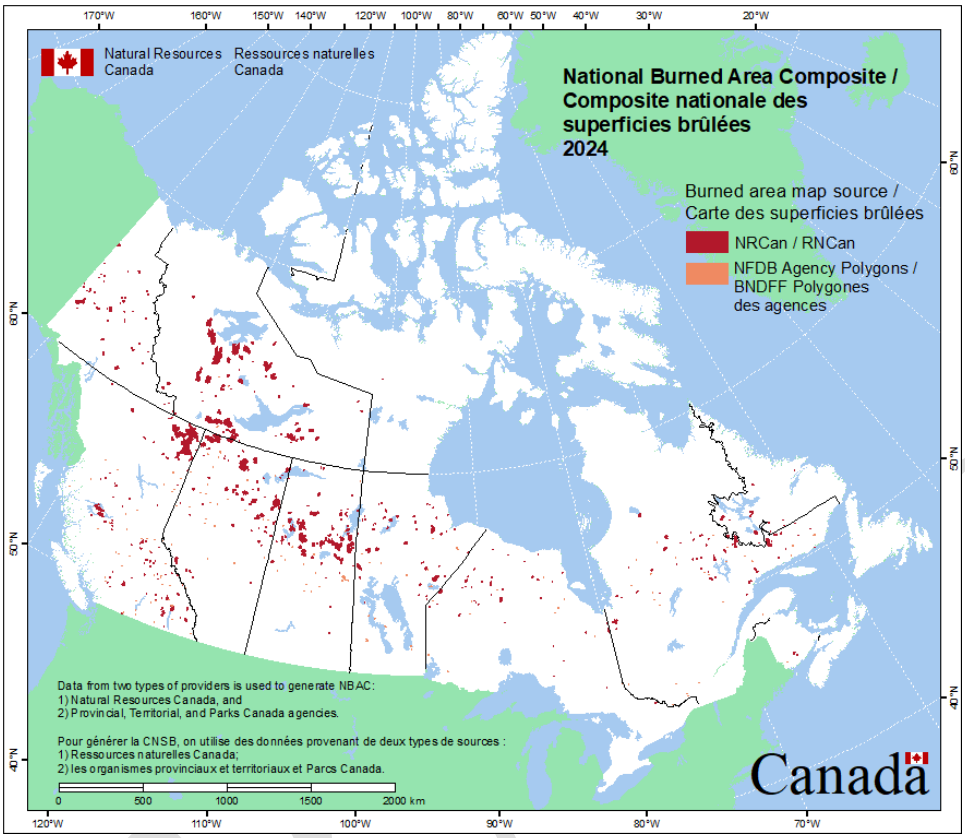
[9] https://ciffc.net/pdfs/nationalpreparedness-levels.pdf
[10] Canadian Wildland Fire Information System, Natural Resources Canada, Canadian National Fire Database, National Burned Area Composite, https://cwfis.cfs.nrcan.gc.ca/ha/nfdb?type=nbac&year=2024, accessed 6/20/25.
[11] CWFIS, 2024 Seasonal Summary.
[12] https://cwfis.cfs.nrcan.gc.ca/ha/nfdb?type=poly&year=2024
[13] https://www150.statcan.gc.ca/n1/daily-quotidien/250327/dq250327d-eng.htm
[14] https://www.cnn.com/2024/05/12/us/wildfire-smoke-from-british-columbia-causing-dangerous-air-quality/index.html
[15] https://cwfis.cfs.nrcan.gc.ca/report/archives
[16] CWFIS, 2024 Seasonal Summary.
[17] https://cwfis.cfs.nrcan.gc.ca/interactive-map

Figure 2. Canada Total Area Burned 2024

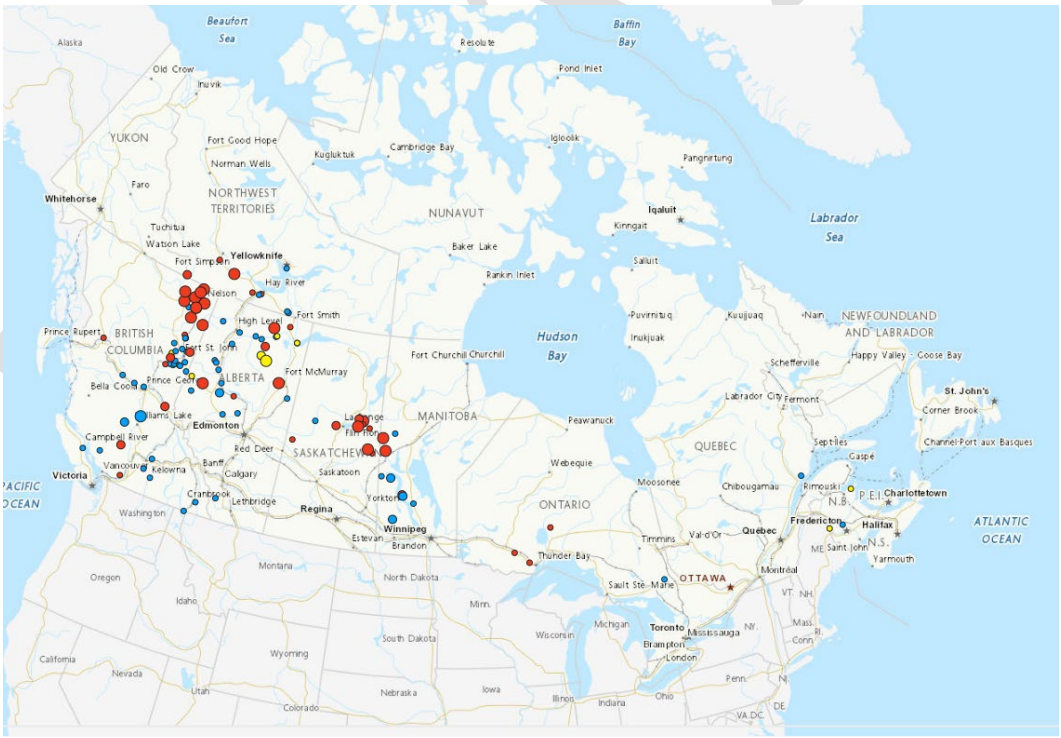


Drought and active fire, some holdover fires[18], and some new blazes continued in the juncture of the British Columbia, Alberta, and Northwest Territories borders as well as in central Saskatchewan and Manitoba, becoming very active prior to mid-May during a brief hot and windy period. Winds funneled smoke from several uncontrolled wildfires in western Canada into North Dakota on May 12 impacting air quality statewide. See Image 1. As of May 15, 2024, the number of fires (1,019) was about average at 104% for the time of year while the area burned (336,779 hectares) was 2.5 times the 10-year average for the time of year at 254%. Priority fires were identified in British Columbia, Alberta, and Manitoba. Active fires as of May 15, 2024, included 26 Uncontrolled, nine Being Held, 76 Controlled, and 14 with Modified Response. See Figure 3. By the end of May, the number of fires (1,295) was below average at 85% and area burned (425,539 hectares) was very close to the 10-year average for the time of year at 99%.

[18] Last season's blazes unique to the boreal forest that smolder deep in the ground beneath the snow through the winter months before reigniting when exposed to warmer temperatures in the spring.

Image 1. Canadian Active Large Wildfires, May 12, 2024[19]

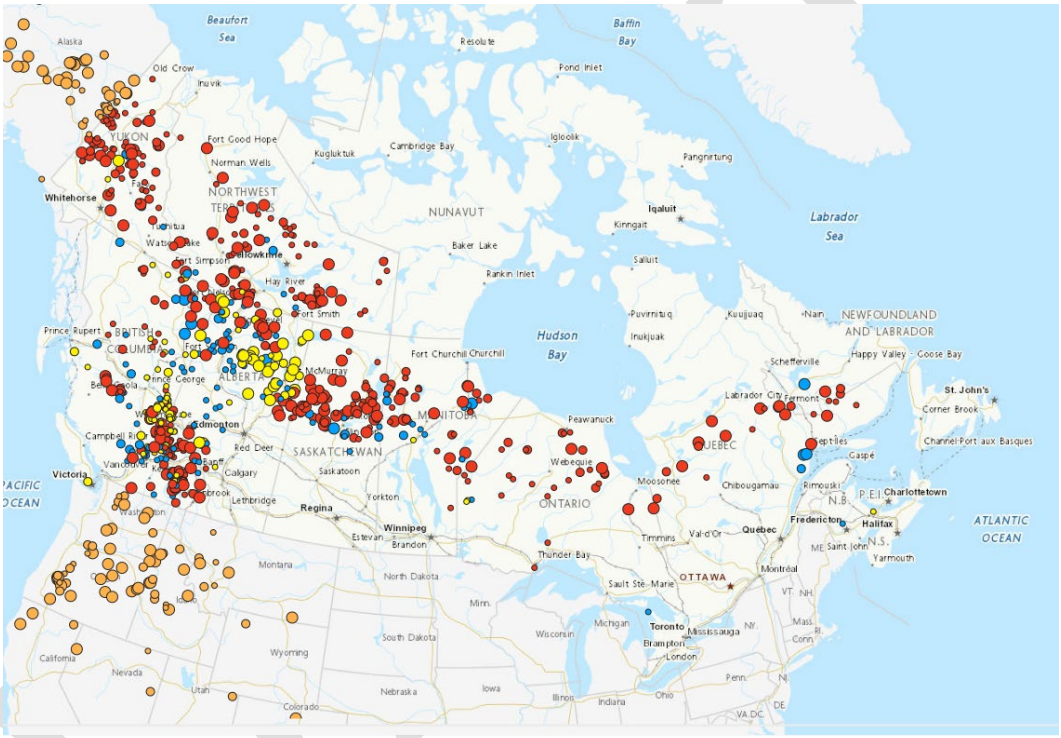
Figure 3. Canada Wildfire Location and Size as of May 15, 2024



[19] Fox Weather, May 12, 2024.

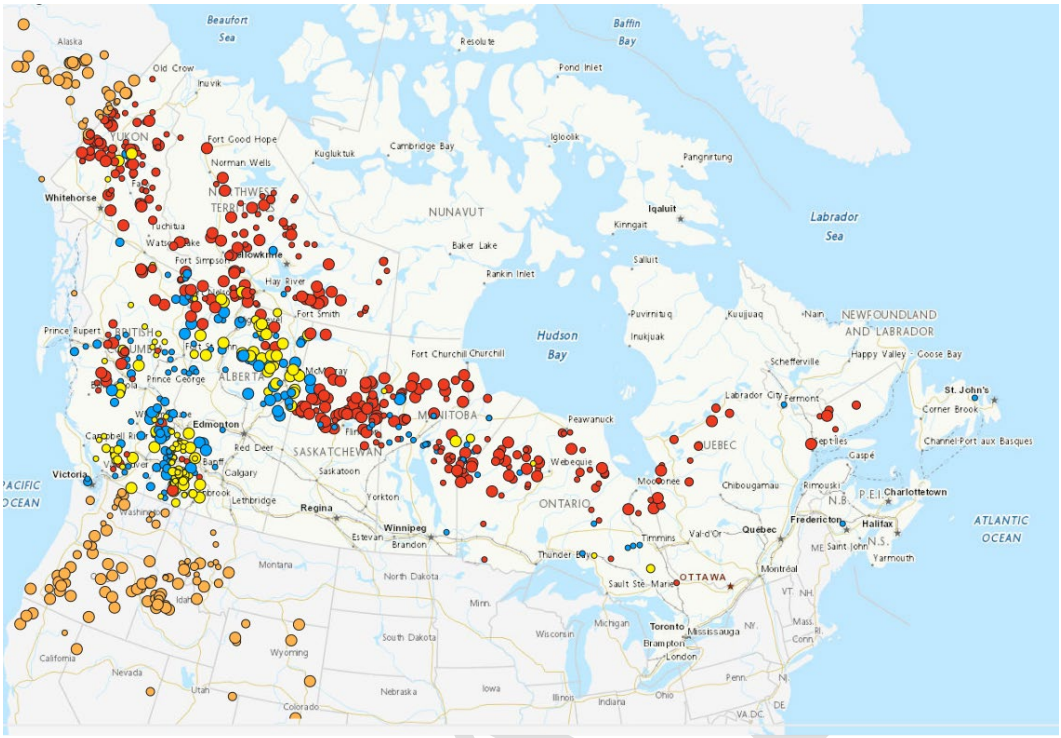
Near the end of June, conditions in western Canada began to dry continuing into July, with July being the hottest month on record in some eastern and western Canadian locations. At the beginning of July, the number of fires (2,035) and area burned (831,689 hectares) were both well below the 10-year average for the time of year. During July, thunderstorms occurred in western and central Canada, with lightning strikes increasing fire activity to the 10-year average for the time of year at 100% and boosting the area burned past the 10-year average at 103%. Close to 50% of the new fire starts in July were caused by lightning. As of July 31, 2024, the number of fires to date was 3,917, having burned 2,713,445 hectares, and priority fires were identified in Alberta and British Columbia. Active fires as of July 31, 2024, included 163 Uncontrolled, 113 Being Held, 150 Controlled, and 426 with Modified Response. See Figure 4.

Figure 4. Canada Wildfire Location and Size as of July 31, 2024



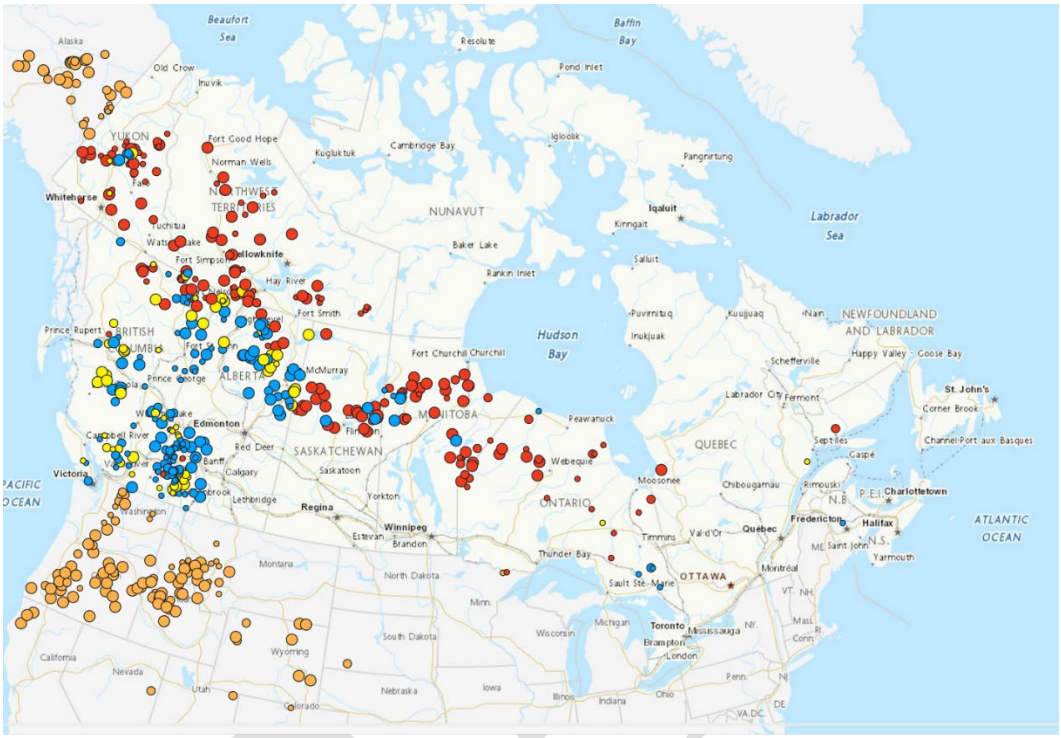
Hot weather continued in August in many Canadian regions and much of Canada remained dry. August saw increased fire activity in Saskatchewan and Manitoba as the number of active fires continued to rise. In August, 65% of the new fire starts were attributed to lightning. As of August 28, 2024, the number of fires (4,989) was very close to average for the time of year at 98% while the area burned (4,951,922 hectares) was well above the 10-year average for the time of year at 141%. Priority fires were identified in Saskatchewan and Manitoba. Active fires as of August 28, 2024, included 50 Uncontrolled, 123 Being Held, 157 Controlled, and 131 with Modified Response. See Figure 5.

Figure 5. Canada Wildfire Location and Size as of August 28, 2024



Lightning caused fire starts continued to decrease and for the week of August 28 to September 4 were only 36% of new fire starts. Hot weather carried into September in many Canadian regions. Sustained fire activity near the northern British Columbia, Alberta, and Northwest Territories border juncture and in northern Saskatchewan helped drive the national area burned well above the 10-year average. As of September 25, 2024, the number of fires (5,374) was a little above the 10-year average at 101% for the time of year while the area burned (5,322,087 hectares) was well above the 10-year average at 133% for the time of year. No priority fires were identified in the Canadian Wildland Fire Information System National Wildland Fire Situation Report. Active fires as of September 25, 2024, included 27 Uncontrolled, 54 Being Held, 128 Controlled, and 93 with Modified Response. See Figure 6.

Figure 6. Canada Wildfire Location and Size as of September 25, 2024



III.2 2024 Western United States Wildfires and Smoke

Nationwide in the United States (U.S.) in 2024, 64,897 wildland fires were reported having consumed a total of 8.9 million acres[20] (13,945 square miles), both noticeably higher than the 10-year averages. For comparative purposes, the 10-year average is 62,307 wildland fires with an area burned of 7.0 million acres (10,970 square miles) and in 2023, 56,580 wildland fires consumed 2.7 million acres (4,209 square miles).[21]

The National Multi-Agency Coordination Group based at the National Interagency Fire Center (NIFC) establishes wildland fire preparedness levels to ensure suppression resource availability for incidents throughout the United States.[22] A steady but modest seasonal increase in fire activity warranted elevating to National Preparedness Level 2 on May 21, yet significant fire activity remained below normal across the U.S. during May and June. A greater increase in fire activity occurred in the latter half of June, reflected in the escalation to level 3 on June 28. Significant fire activity increased rapidly during the first half of July, with activity remaining at extreme levels through the end of the month. The National Preparedness Level increased to level 4 on July 10 and then to level 5 on July 18. A very high level of fire activity continued across the West through the

[20] United States wildland area burned is reported as acres, with 1 acre equal to 0.4047 hectares.
[21] National Interagency Coordination Center, *Wildland Fire Summary and Statistics Annual Report 2024* https://www.nifc.gov/sites/default/files/NICC/2-Predictive%20Services/Intelligence/Annual%20Reports/2024/annual_report_2024.pdf, accessed 5/12/25.
[22] https://www.nifc.gov/fire-information

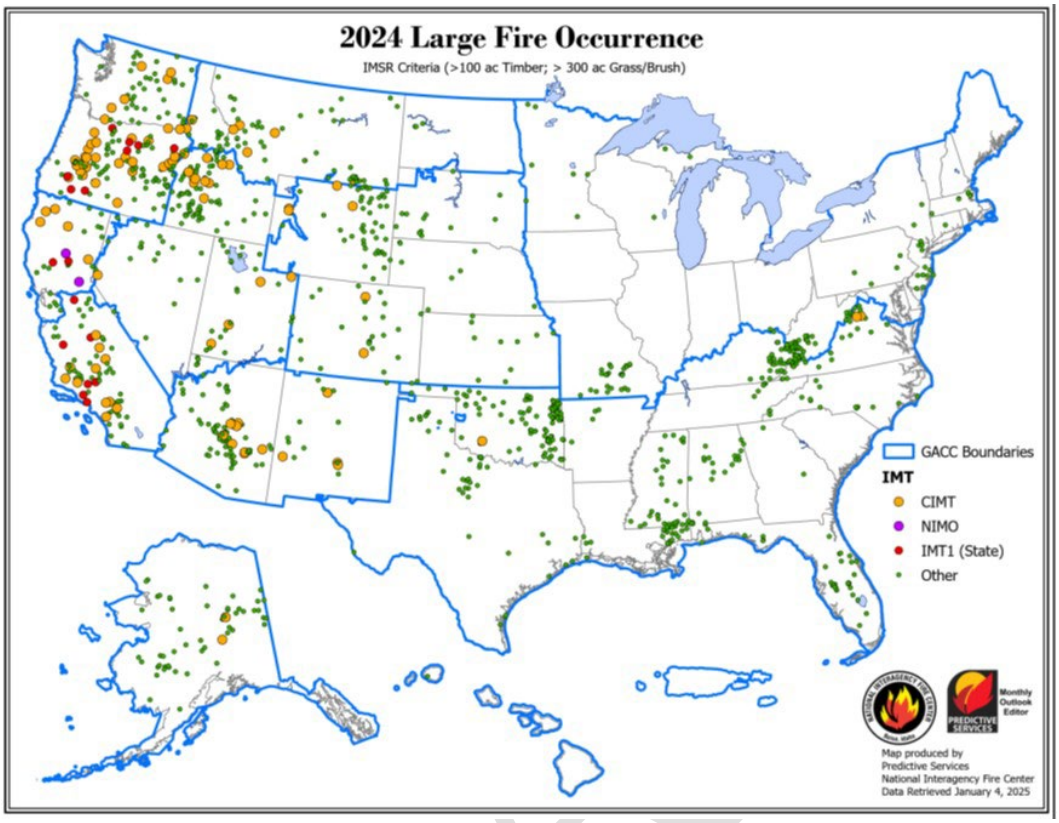
first half of August with a decrease to level 4 on August 22. As September began in the West, there was another large increase in significant fire activity across the northwestern tier of states and in southern California, which prompted the rare reescalation to level 5 on September 6. Fire activity then moderated in mid-September and fostered the return to level 4 on September 20 and then to level 3 on September 26. Anomalous heat at the end of September continued through early October with significant fire activity increasing across the West, resulting in the reescalation to level 4 on October 4 and then again to an unprecedented third seasonal level 5 on October 8. Fire activity in the West finally saw a rapid and lasting decrease in mid-October and the National Preparedness Level rapidly decreased: level 4 October 18, level 3 October 22, and level 2 October 29. In November, significant fire activity continued to slowly decline, and the National Preparedness Level reverted to the end-of-season level 1.

The map[23] in Figure 7 illustrates the large[24] wildland fires in 2024. The area burned was above the 10-year average in the western United States geographic areas of the Northwest, Northern Rockies, Southern California, Great Basin, and the Rocky Mountains. The Northwest geographic area (i.e., Oregon and Washington) had the most acres burned in 2024. Lightning caused 23% of the wildland fires and 58% of the acres burned during the 2024 season in the western U.S.[25] The federal government manages approximately 28% of the land in the U.S., with almost half of the land west of the Mississippi River managed by the federal government.[26] Many federal lands in the western U.S. can be considered wildland where little human activity and development exist. Many of the large wildland fires in the western U.S. burned in remote areas having burned uncontrolled for several weeks and months, contributing to smoke that was transported across the United States, including North Dakota.[27,28]

The 2024 wildland fire situation is documented by the National Interagency Fire Center (NIFC) in the National Fire News and Incident Management Situation Report[29], and summarized by the National Interagency Coordination Center (NICC) in the Wildland Fire Summary and Statistics Annual Report 2024.[30] The InciWeb - Incident Information System maps[31] in Figures 8-11 and the accompanying text illustrate and describe the many wildland fires that burned across the western U.S. in 2024. For much of late-July through early-October, large remote wildland fires in the western United States contributed to dense smoke and particulate matter emissions that were transported into the Central United States, including North Dakota. These wildfires had a significant impact on air quality and elevated $PM_{2.5}$ monitored concentrations to levels significantly higher than normal across North Dakota.

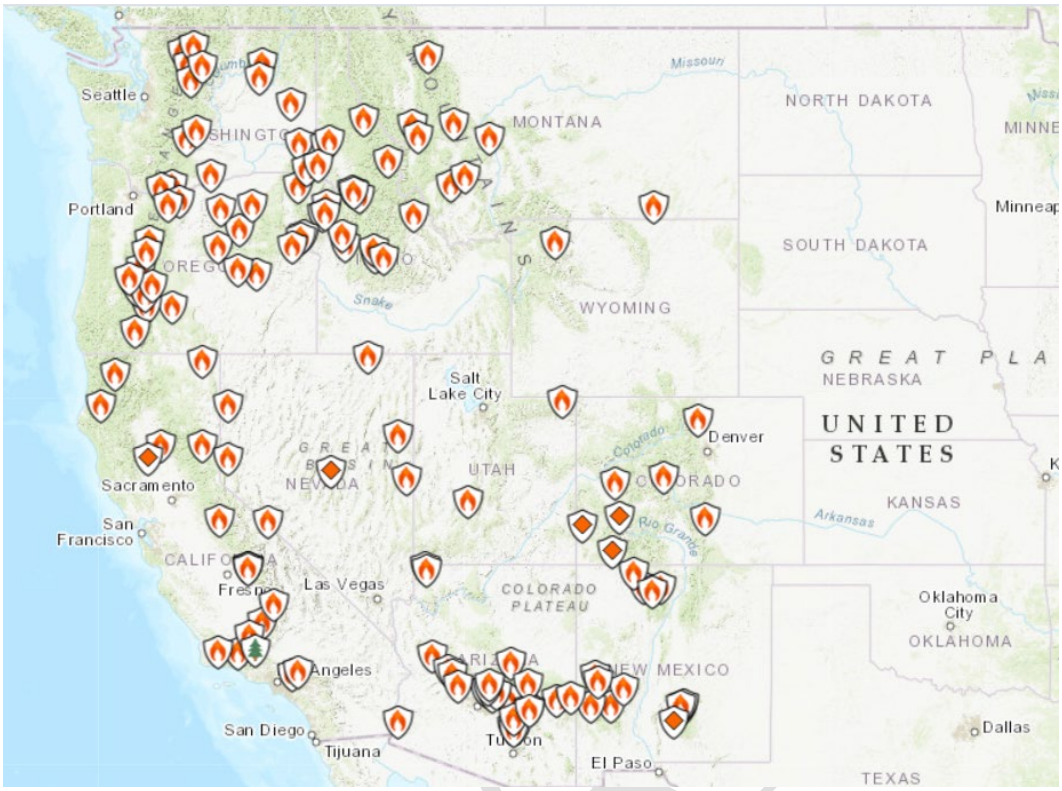
[23] NICC, *Wildland Fire Summary 2024*.
[24] Fires that burn a minimum of 100 acres in timber and 300 acres in grass/brush.
[25] NICC, *Wildland Fire Summary 2024*.
[26] https://www.arcgis.com/home/item.html?id=5e92f2e0930848faa40480bcb4fdc44e
[27] https://abcnews.go.com/US/wildfires-break-california-latest-fire-smoke-maps/story?id=112304290
[28] https://abcnews.go.com/images/US/smoke-map-abc-mo-20240726_1722002728010_hpEmbed.jpg
[29] https://www.nifc.gov/fire-information
[30] NICC, *Wildland Fire Summary 2024*.
[31] https://inciweb.wildfire.gov/

Figure 7. United States 2024 Large Wildland Fire Occurrence



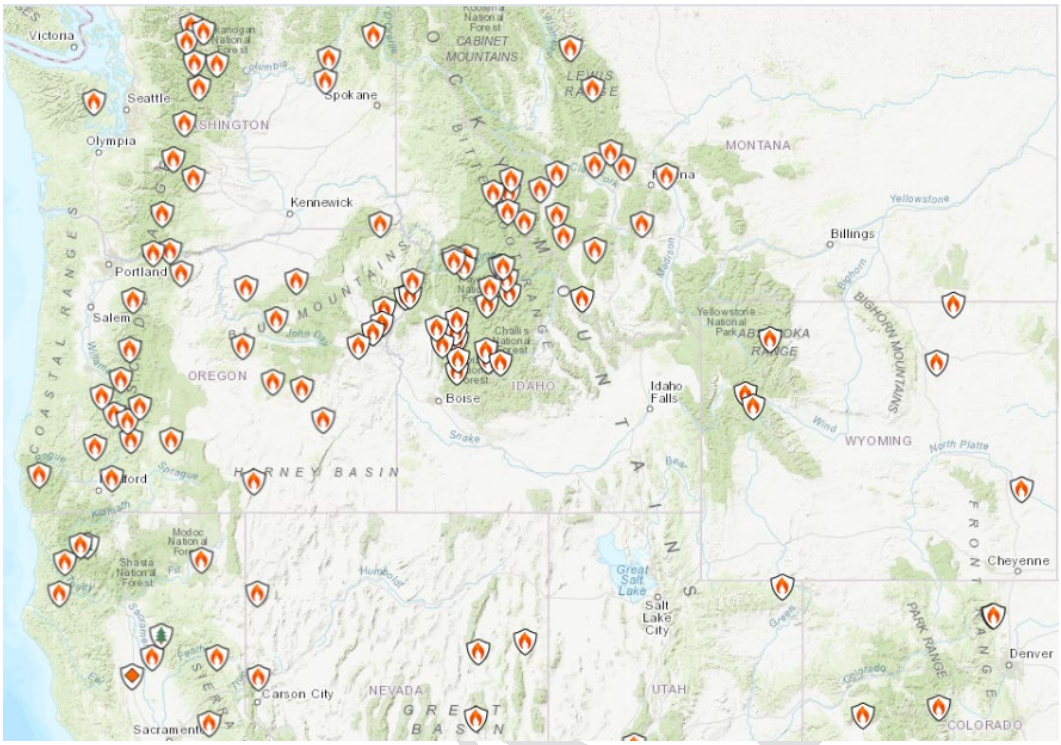
An extreme and long-lasting heat wave encompassed much of the western U.S. for the first three weeks of July. Two significant dry lightning outbreaks occurred July 13-15 and July 21-23 resulting in dozens of new large fires in the Northwest, northern Great Basin, and Northern Rockies. At the end of July, national year-to-date acres burned (4,449,282 acres) for the U.S. was above the 10-year average at 124%, with a below average number of fires (28,154) at 82%. See Figure 8. To date nationwide, lightning ignited about 2,740 wildfires and burned 1.1 million acres. As of July 31, 2024, nationally the total number of large uncontained wildfires managed under full suppression strategies was 95, and there were nine fires being managed under a strategy other than full suppression.

Figure 8. Western United States InciWeb Incident Locations as of July 31, 2024



A very high level of fire activity continued across the western U.S. through the first half of August. A third significant lightning outbreak that occurred August 3-5 across the northern half of the West resulted in numerous new fires. Ahead of the upper-level troughing that developed mid-August over the Northwest, periods of strong winds were observed in central Idaho with complex fires exhibiting significant growth. Strong winds were also observed east of the Rockies in the northern High Plains August 21-23, with numerous significant wind driven fires. As of August 31, 2024, the nationwide year-to-date number of wildfires (33,631) was below average at 81% for the year-to-date while the area burned (6,336,634 acres) was above the 10-year average at 127%. See Figure 9. Nationally, the total number of large uncontained wildfires managed under full suppression strategies was 42, and there were 21 fires being managed under a strategy other than full suppression.

Figure 9. Western United States InciWeb Incident Locations as of August 31, 2024



As September began in the western U.S., a widespread dry lightning outbreak September 1-3 resulted in another large increase in significant fire activity across the northwestern tier of states. Around the same time, a period of extreme heat in southern California resulted in significant fire activity. Fire activity then moderated in mid-September with a season-slowing storm event before another heat wave developed across the west late in the season, resulting in a slow increase in fire activity. At the end of September, national year-to-date acres burned (7,916,313 acres) for the U.S. was above the 10-year average at 131%, with a below average number of fires (38,673) near 84%. See Figure 10. As of September 30, 2024, nationally the total number of large uncontained wildfires managed under full suppression strategies was 30, and there were nine fires being managed under a strategy other than full suppression.

Across the western U.S., the abnormal heat continued, and significant fire activity increased a third time in early October. While fewer new fires arose, ongoing significant fires showed an increase in activity and several fires that had been relatively quiet for several weeks experienced significant growth. Several westerly wind events also occurred in early October increasing fire activity as well as resulting in numerous new significant fires across western North Dakota. A strong fall storm mid-October led to a rapid and lasting decrease in fire activity in the western U.S. As of October 24, 2024, the nationwide year-to-date number of wildfires (44,955) was below average at 91% for the year-to-date while the area burned (7,945,886 acres) was above the 10-year average at 124%. See Figure 11. Nationally, the total number of large uncontained wildfires managed under full suppression strategies was 22, and there were 13 fires being managed under a strategy other than full suppression.

Figure 10. Western United States InciWeb Incident Locations as of September 30, 2024

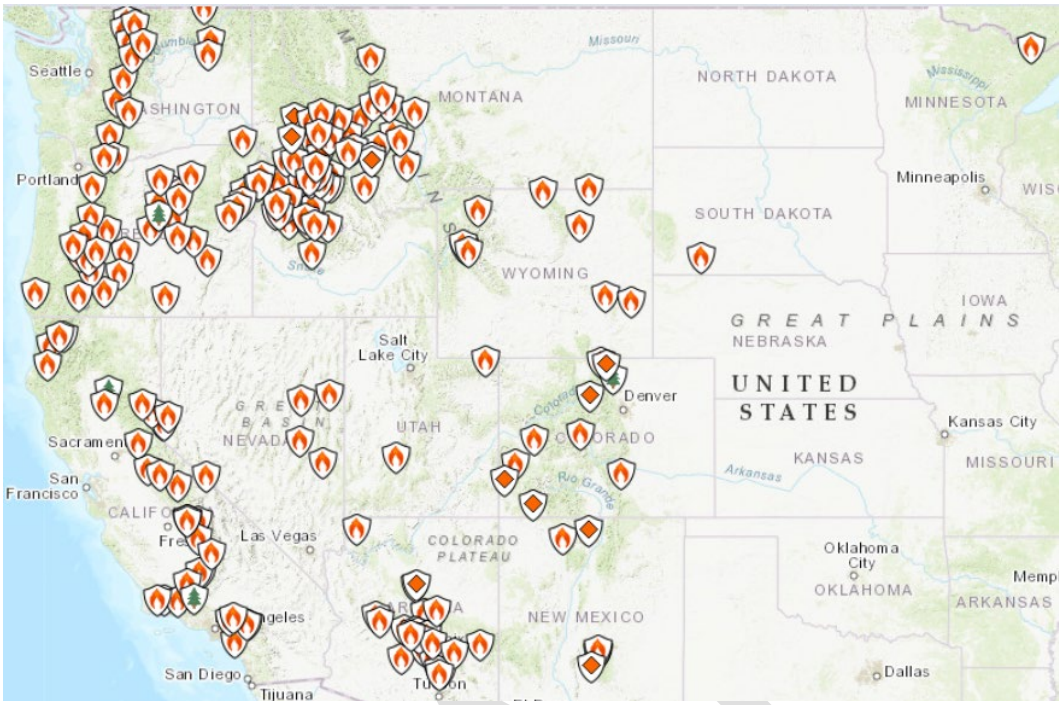
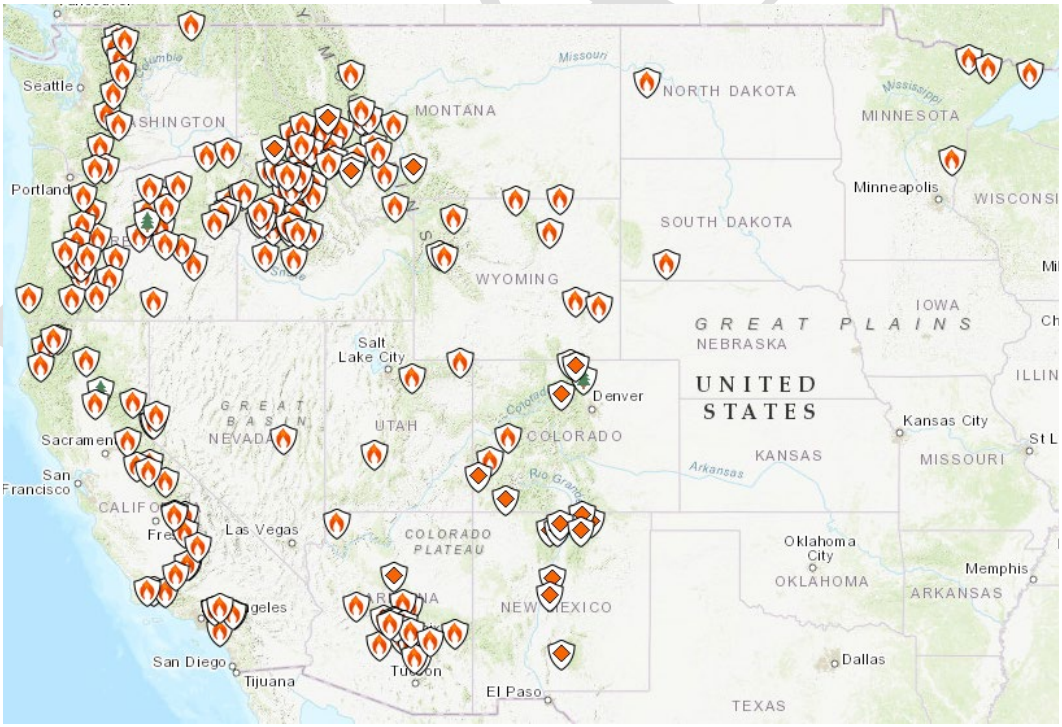


Figure 11. Western United States InciWeb Incident Locations as of October 24, 2024

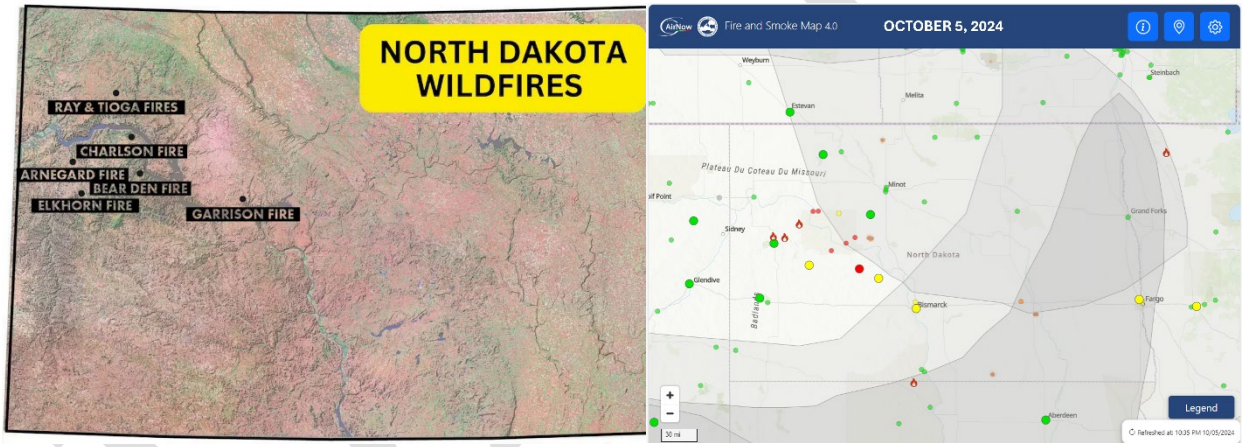


III.3 2024 North Dakota Wildfires and Smoke

In the State of North Dakota in 2024, 935 wildland fires were reported to have consumed a total of 173,237 acres (271 square miles).[32]

On October 3, 2024, Governor Doug Burgum declared a statewide emergency to prepare resources for a rapid-fire response because of high fire danger conditions (i.e., above average temperatures, gusty winds, low humidity, and significant amounts of dry vegetation).[33] A combination of drought, high temperatures, and wind gusts reaching as high as 80 miles per hour were observed in the northwest portion of North Dakota during the first weekend of October. The combination of ignition sources and these conditions resulted in the spread of multiple wildfires that officials referred to as "historic" and "record-breaking". See Figure 12. The weekend wildfires nearly quadrupled the amount of scorched acreage in North Dakota to date in 2024. In all, more than 118,000 acres of land burned in a year that saw the largest wildfires in North Dakota history.

Figure 12. Some October 5, 2024 Wildfire Locations[34,35]



The October wildfires were caused by unplanned ignitions and burned in rural areas with small rural towns in open land or fields including North Dakota's oil field, agricultural land, grassland, and rugged Badlands terrain. The wildfires threatened rural communities; prompted evacuations; shutdown portions of highways; damaged or destroyed rural homes, outbuildings, vehicles, and power poles; cut electricity to thousands of people; killed livestock; and resulted in six human injuries and two fatalities.[36,37]

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[32] Statistics gathered from the Situation Report and Incident Status Summary programs and summarized in the *Wildland Fire Summary and Statistics Annual Report 2024* by the National Interagency Coordination Center.
[33] https://www.governor.nd.gov/sites/www/files/documents/Executive%20Order%202024-06.pdf
[34] KFYR, October 7, 2024, *North Dakota battles historic wildfires; latest on status and scope of all fires*.
[35] https://fire.airnow.gov/
[36] The Bismarck Tribune, October 9, 2024, *Scope of western ND fires growing with new estimate*.
[37] The Bismarck Tribune, October 17, 2024, *Elkhorn Fire is contained*.

The majority of the wildfires were short in duration and with the rapid fire response contained in one day, while others burned uncontrolled for several days to weeks. The wildfires in northwestern North Dakota contributed to localized smoke that was transported within North Dakota. Images 2-5[38] and Table 2 illustrate and document multiple wildfires that burned in northwestern North Dakota between October 5 and October 10.

Image 2. Ray/Tioga Fire Burn Scar from Above

Image 3. North Dakota Civil Air Patrol, Burn Scars from Fires in Williams County

[38] KFYR, October 20, 2024, *UPDATE: All major fires contained across western North Dakota; new details and photos*.

Image 4. As the Smoke Clears, Damage to the Elkhorn Area is Evidenced

Image 5. Bear Den Fire October 6, 2024

Table 2. Northwestern North Dakota Wildfires October 5 – 10, 2024[39]

Wildfire Name	County	Size (acres)	Date(s)[1]	Area Descriptions		Cause
Ray/Alamo and Tioga	Williams	88,934	10/5-7/2024	Grass	Rural, including farms; Open land or field	Unplanned Ignition[2] and Undetermined
Elkhorn	McKenzie & Dunn	10,313	10/5-16/2024	Timber and Grass	Rural, including farms; Open land or field	Unplanned Ignition[3]
Bear Den	McKenzie	15,661	10/5-20/2024	Timber and Grass	Rural, including farms; Open land or field	Unplanned Ignition[3]
Charlson/ Midnight Run	McKenzie	7,000	10/5/2024	Grass	Rural, including farms; Open land or field	Unplanned Ignition[3]
Dinwoodie	McKenzie	2,048	10/5/2024	Grass	Rural, including farms; Open land or field	Unplanned Ignition[3]
Arnegard	McKenzie	561	10/5/2024	Grass	Rural, including farms; Open land or field	Unplanned Ignition[2]
Sprint Creek	McKenzie	61	10/5/2024	Brush and Grass	Rural, including farms; Open land or field	Unknown
Haystack Butte	Dunn	36	10/5/2024	Brush and Grass	Rural, including farms; Open land or field	Unknown
Garrison	McLean	830	10/5/2024	Brush and Grass	Rural, including farms; Open land or field	Unknown
Pasture 10	McKenzie	53	10/10/2024	Brush and Grass	Rural, including farms; Open land or field	Unplanned Ignition[4]

[1] Start Date – Containment Date
[2] Power line falling
[3] Heat from oil well flare meeting dry vegetation
[4] Coal seam on National Grassland

[39] North Dakota Department of Emergency Services, North Dakota Insurance Department – Office of the State Fire Marshal, InciWeb - Incident Information System, and numerous media reports.

In October, an aggregation of smoke from regionally impacting wildland fires in the western United States, as well as localized wildfires in North Dakota that added additional smoke, had a significant impact on air quality and elevated $PM_{2.5}$ monitored concentrations to levels significantly higher than normal in North Dakota.

III.4 North Dakota Smoke Impacts

While the 2024 wildfire smoke impacts from wildfires across Canada, the western United States, and North Dakota were regional in nature and observable throughout the state from early-May through early-October, it did not cause all monitors to continuously exceed the level of the $PM_{2.5}$ NAAQS throughout the duration of the Event. Local, regional, and national news stories described how the wildfire smoke from wildfires across Canada, the western United States, and North Dakota impacted air quality in North Dakota, as well as the potential negative health impacts from breathing the smoke laden air. Photographic evidence illustrating smoke impacts were also found in the news stories. Individuals, especially sensitive individuals with respiratory conditions, were advised to consider limiting prolonged outdoor exposure during smoky conditions. Select news stories are contained in Appendix C.

This demonstration includes 31 Event dates at nine $PM_{2.5}$ monitoring sites. For each Event date, the National Oceanic and Atmospheric Administration (NOAA) Surface Analysis Weather Predictive Center[40] is used to illustrate the synoptic meteorology across North Dakota, the United States, and Canada. In addition, the NOAA Hazard Mapping System[41] (HMS) depicts the smoke plume intensity across North Dakota, the United States, and Canada. To accompany the images for each Event date, are verbal descriptions of the meteorological conditions[42] as well as the significant areas of smoke observed in satellite imagery[43].

The progression of images for 31 Event dates in Figures 13 through 43 demonstrate the general meteorological conditions that supported the transport of the wildfire smoke and show the smoke across North Dakota.

The levels of $PM_{2.5}$ monitored concentrations in North Dakota are very unusual. The images in Appendix D show the distinct high levels of monitored 24-hour $PM_{2.5}$ concentrations, meaning they were 1.5 times the highest 98th percentile of data for the last five years. This demonstrates that the monitored $PM_{2.5}$ concentrations are unmistakably higher than non-event concentrations.

[40] National Oceanic and Atmospheric Administration, Surface Analysis Weather Predictive Center, accessed March 19, 2025, available at https://www.wpc.ncep.noaa.gov/archives/web_pages/sfc/sfc_archive.php
[41] National Oceanic and Atmospheric Administration, Hazard Mapping System, accessed March 13, 2025, available at https://www.ospo.noaa.gov/products/land/hms.html
[42] Area Forecast Discussions, May 12 – October 9, 2024, National Weather Service Weather Forecast Offices, Bismarck, North Dakota https://www.weather.gov/bis/ and Grand Forks, North Dakota https://www.weather.gov/fgf/
[43] Satellite Smoke Text Product, May 12 – October 9, 2024, National Oceanic and Atmospheric Administration, Office of Satellite and Product Operations, available at https://www.ospo.noaa.gov/products/land/smoke/

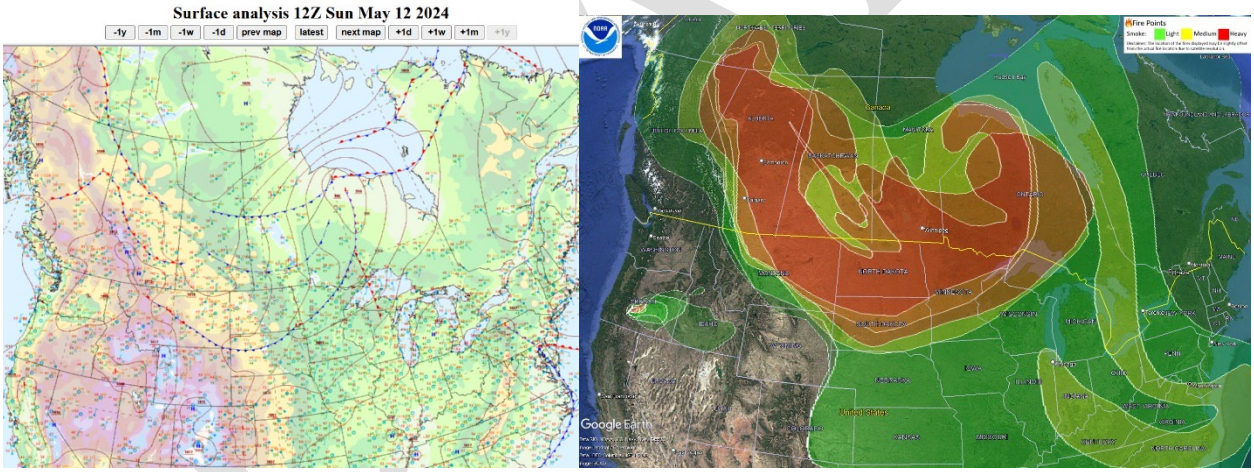
III.4.1 May 2024

Canadian wildfire smoke impacts directly affecting air quality were observed in North Dakota from May 11 through May 16 and May 20 and 21.

Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored May 12-14. Numerous large wildfires located in northeastern British Columbia and into the Northwest Territories produced large amounts of thick density smoke that extended eastward through Alberta, Saskatchewan, Manitoba, and Ontario. On May 12, the larger area of thick density smoke extended south into the northern U.S., engulfing North Dakota. On May 13 and 14, the smoke dispersed into a large area of moderate to light smoke that extended southeastward into the north-central region of the U.S.

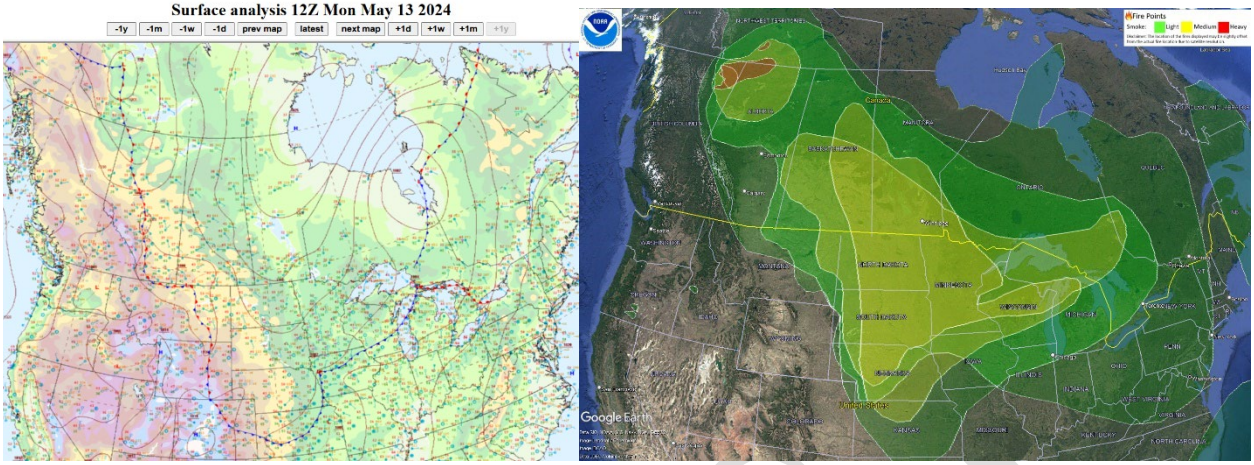
Northwest flow aloft with a surface trough moved through North Dakota from the northwest along with a weak cold front and Canadian wildfire smoke later in the day on May 11. The weak cold front and northwest flow continued to push across North Dakota on May 12 bringing a breezy northerly wind including wildfire smoke from Canada impacting air quality statewide. The wildfire smoke was brought to the surface behind the cold frontal boundary and wrapped into the mid-level low to the northwest. See Figure 13. On May 12, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke, Ward, Dunn, Billings, Burleigh, and Cass Counties and at distinct high levels for McKenzie, Mercer, and Oliver Counties.

Figure 13. May 12, 2024 Surface Analysis and Smoke Layer



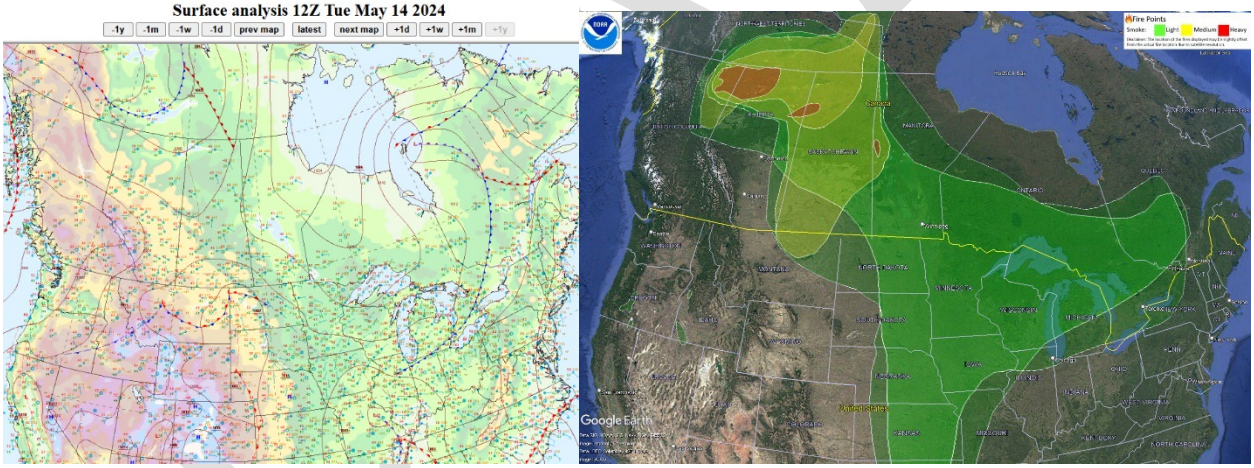
On May 13, a surface low sat across Montana while mid-level ridging was present across much of the Rocky Mountains and Northern Plains. Near-surface smoke from the Canadian wildfires lingered along with smoke aloft in the mid to upper atmosphere. See Figure 14. On May 13, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burleigh County and at distinct high levels for Burke, Ward, Mercer, Oliver, and Billings Counties.

Figure 14. May 13, 2024 Surface Analysis and Smoke Layer



Zonal flow aloft with a mid-level shortwave trough and associated surface cold front moved through on May 14 from west to east across North Dakota. Upper-level smoke from the Canadian wildfires made skies somewhat hazy in addition to smoke lingering at the surface. See Figure 15. On May 14, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burleigh County.

Figure 15. May 14, 2024 Surface Analysis and Smoke Layer



III.4.2 July 2024

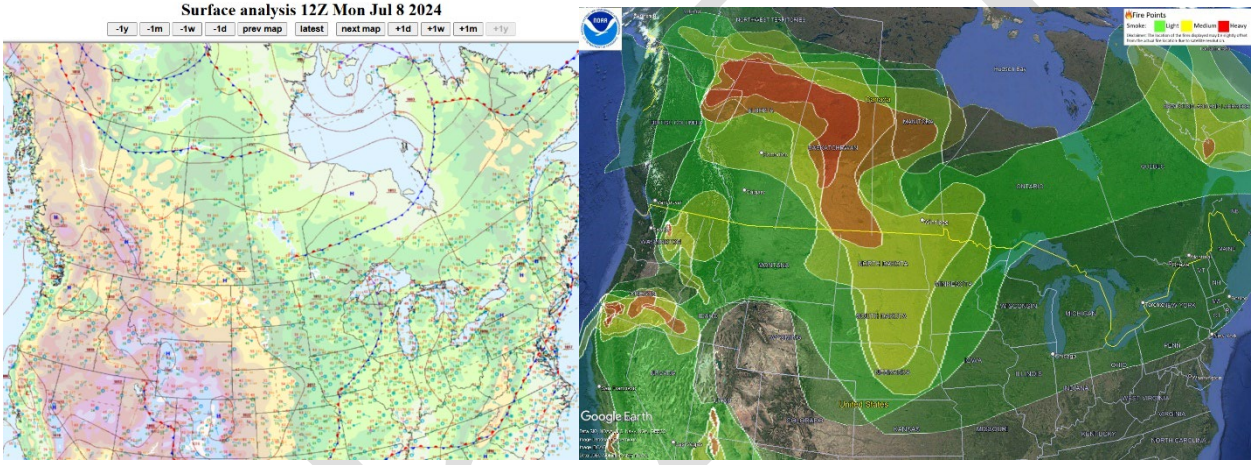
Canadian wildfire smoke impacts directly affecting air quality were observed in North Dakota from July 4 through July 14 and July 16 through July 25. Smoke from a combination of wildfires in Canada and the western U.S. directly affecting air quality in North Dakota were observed on July 26 and 27. Western U.S. wildfire smoke impacts directing affecting air quality were observed in North Dakota from July 28 through August 1.

Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored July 8-10. Smoke from wildfires throughout northwestern Canada covered most of Canada from the Northwest Territories to Newfoundland with thick smoke concentrated around the fires in northeastern British Columbia,

northern Alberta, and central Saskatchewan. On July 8 and 9, a large area of moderate density smoke was observed extending south through Saskatchewan and Manitoba into the Dakotas and Northern Plains. On July 10, an area of moderate density smoke extended south across the Canada-U.S. border and into the central U.S.

On July 8, the north-northwesterly flow aloft over the Northern Plains with a departing mid-level trough over the western Great Lakes region and a weak surface high slowly building east across the region resulted in a light westerly surface flow across western and central North Dakota. Smoke observed across North Dakota filtered down from Canada in the mid to upper-level wind field coming from the north. See Figure 16. On July 8, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke County and at distinct high levels for Ward, Mercer, Oliver, and Burleigh Counties.

Figure 16. July 8, 2024 Surface Analysis and Smoke Layer



Smoke from Canadian wildfires continued to filter in and was trapped near the surface with a nocturnal inversion before dispersing more in the afternoon and spreading further south in the evening. The Northern Plains remained in a cyclonic northwest flow pattern on July 9 with more smoke moving into North Dakota with northwesterly winds. See Figure 17. On July 9, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke and Burleigh Counties and at distinct high levels for Ward, Dunn, Mercer, and Oliver Counties.

On July 10, the synoptic pattern consisted of troughing over the Great Lakes Region while a shallow ridge continued to amplify and shift a bit further eastward over the Northern Rockies with sharp northerly flow in place across the Dakotas. Broad high-pressure was centered over North Dakota with relatively light winds. Canadian wildfire smoke continued to persist near surface as well as aloft with a large swath of smoke moving south from the Canadian Prairies into North Dakota. See Figure 18. On July 10, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke, Ward, Dunn, Mercer, Oliver, and Burleigh Counties.

Figure 17. July 9, 2024 Surface Analysis and Smoke Layer

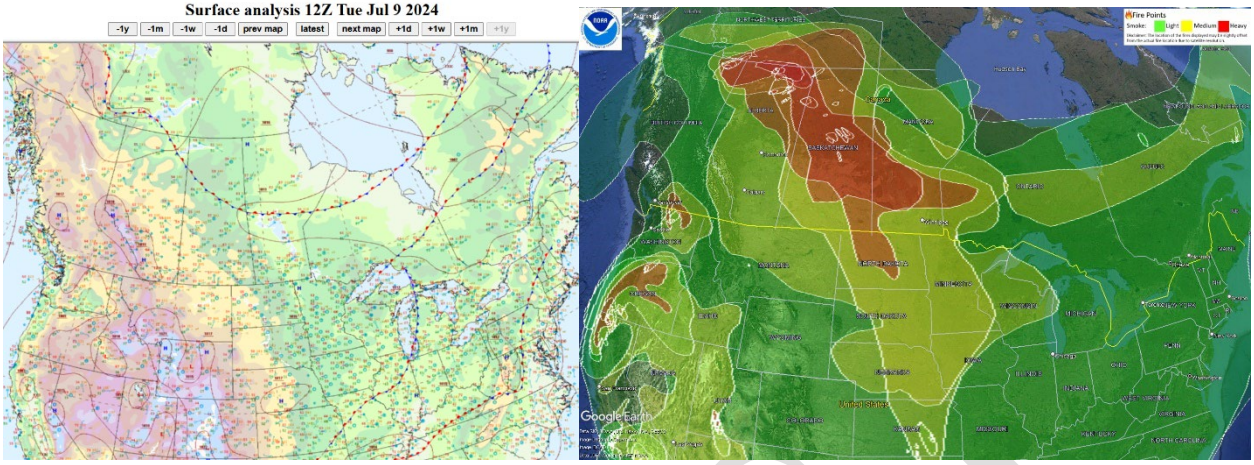
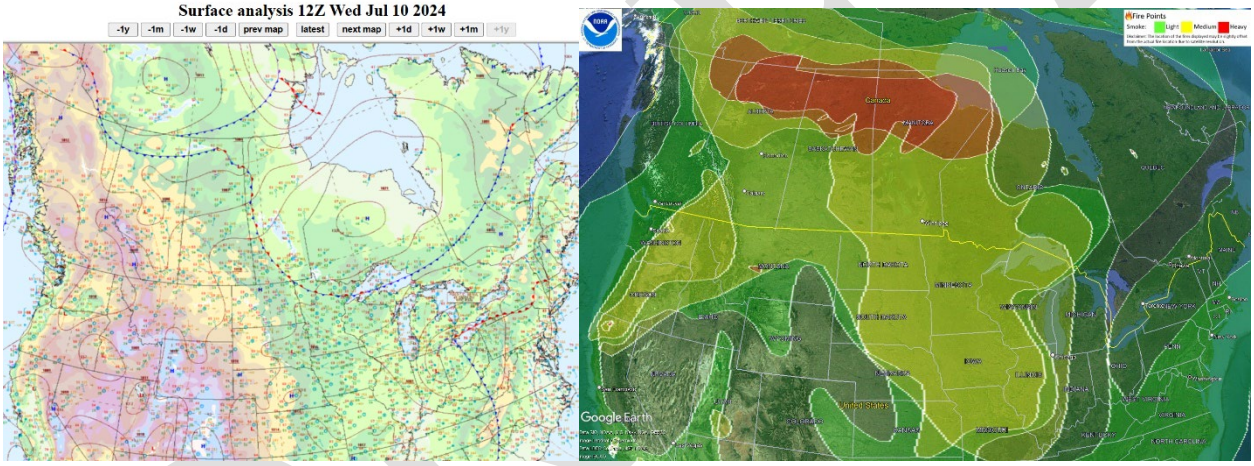


Figure 18. July 10, 2024 Surface Analysis and Smoke Layer

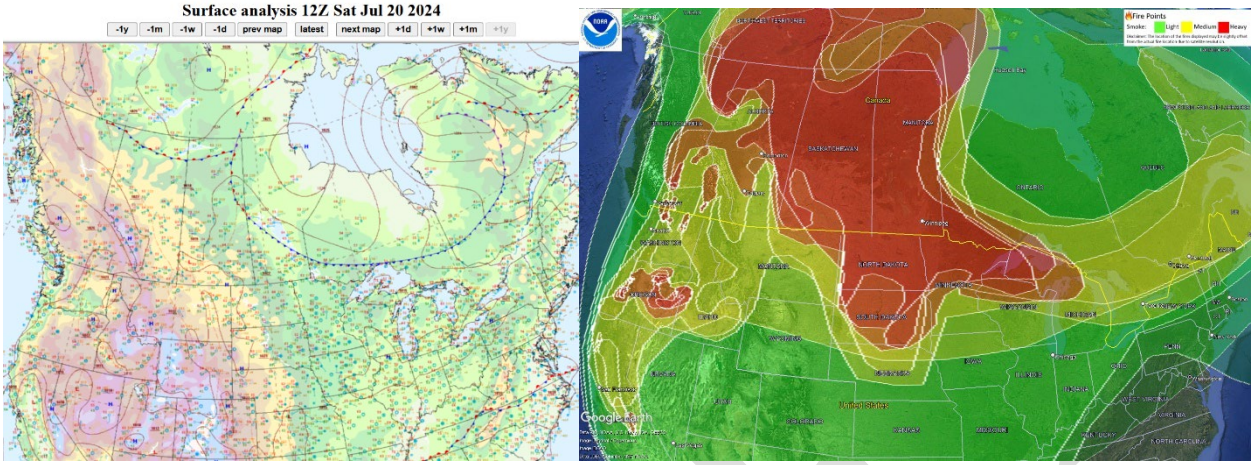


Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored July 20-30. Numerous large ongoing wildfires in northern Canada produced large plumes of moderate and thick density smoke creating a large mass of observable smoke stretching across the northern continental plain. Thick density smoke was observed engulfing parts of Canada and the north-central U.S. from July 20 through July 25. Smoke from multiple wildfires in the western U.S., ranging from midsize to large producing moderate to thick density smoke, combined with smoke from wildfires in Canada generating a large area of moderate density smoke throughout the Central and Northern Great Plains July 26 and 27. Smoke moved with westerly flow across the Rockies from western U.S. wildfires with a large area of moderate density smoke extending into the north central region of the U.S. July 28 through July 30.

Broad high-pressure was in place over the Northern Plains on July 20, with a sharp upper-level ridge extending through the Canadian Prairies to the northwest leading to weak northerly flow across North Dakota. The northerly flow brought in large amounts of Canadian wildfire smoke

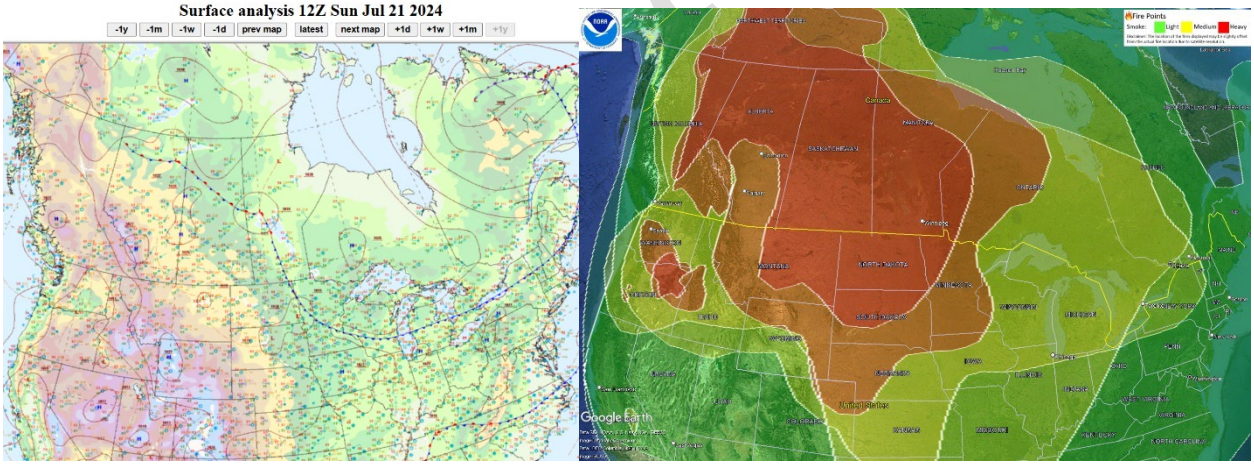
aloft from wildfires in Alberta and British Columbia to the Northern Plains. See Figure 19. On July 20, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Billings County.

Figure 19. July 20, 2024 Surface Analysis and Smoke Layer



On July 21, there was limited movement of an upper-level ridge to the west with a weak low in North Dakota and light surface winds. The northerly flow aloft continued to bring a thick swath of Canadian wildfire smoke into the region with smoke mixing down to the surface. See Figure 20. On July 21, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke, Ward, and Burleigh Counties and at distinct high levels for McKenzie, Dunn, Mercer, Oliver, and Billings Counties.

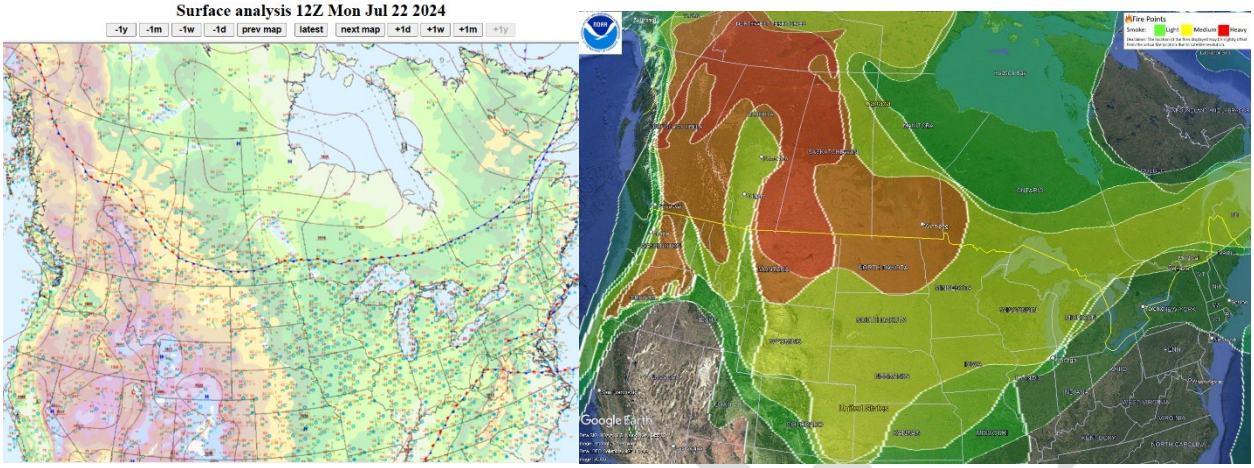
Figure 20. July 21, 2024 Surface Analysis and Smoke Layer



The upper-level ridge continued to the west across the Rocky Mountains with surface high-pressure across the Northern Plains on July 22 while winds remaining largely calm and variable. With continued northerly flow aloft, plentiful Canadian wildfire smoke persisted in the mid to upper-levels and with little to no surface winds smoke lingered at the surface impacting air quality statewide. See Figure 21. On July 22, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-

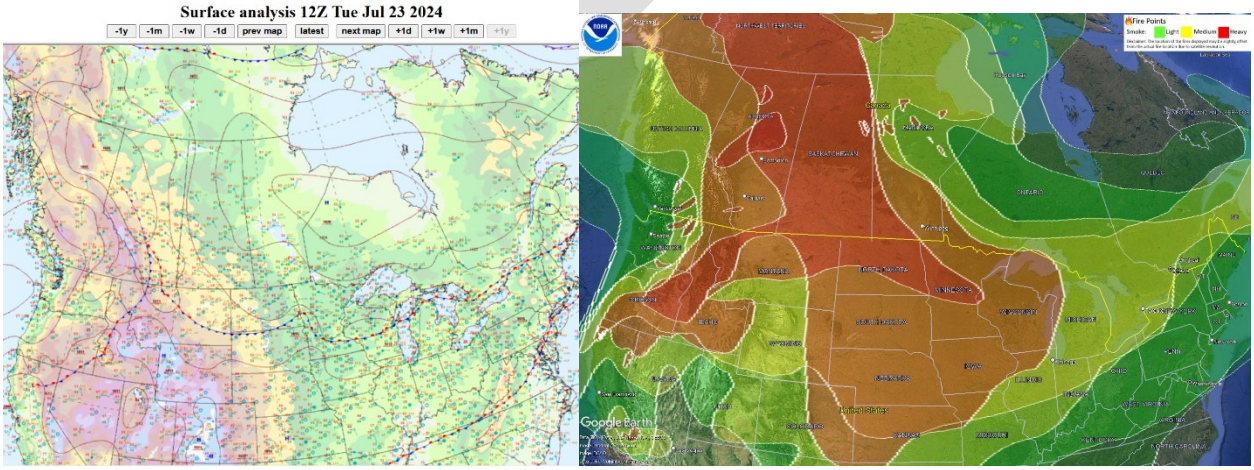
hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, and Burleigh Counties and at distinct high levels for Cass County.

Figure 21. July 22, 2024 Surface Analysis and Smoke Layer



On July 23, very light winds and a stationary front were analyzed across North Dakota. Northerly flow was the pattern aloft as a highly amplified upper-level ridge extended from an upper high over the Great Basin through the Northern Rockies into western Saskatchewan. The mid to upper-level flow remained favorable for smoke aloft to funnel in and remain thick over the entire region with high pressure trapping near-surface smoke close to the ground continuing to impact air quality throughout much of North Dakota. See Figure 22. On July 23, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, and Burleigh Counties.

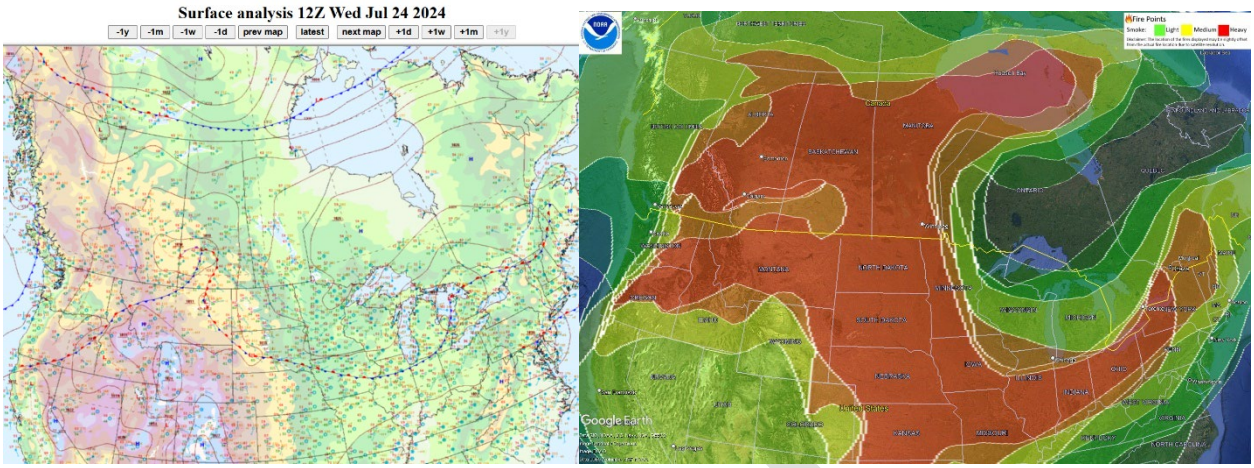
Figure 22. July 23, 2024 Surface Analysis and Smoke Layer



A surface low-pressure system was over Montana while surface high-pressure was over the Great Lakes with southeast surface flow between the two on July 24. A large ridge was analyzed aloft with the axis centered over eastern Montana and at the mid-levels a very warm thermal ridge collocated with the ridge axis. Elevated and near-surface smoke persisted across the region as

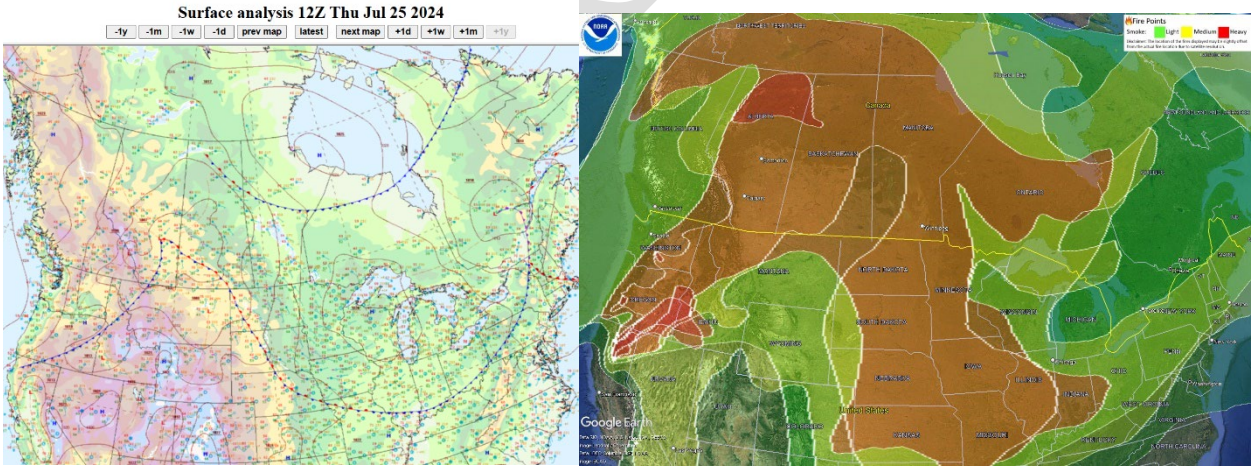
wildfires from Canada lofted smoke into the main flow of the ridge. See Figure 23. On July 24, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for McKenzie and Billings Counties and at distinct high levels for Burke, Ward, Dunn, Mercer, Oliver, and Burleigh Counties.

Figure 23. July 24, 2024 Surface Analysis and Smoke Layer



The upper-level ridge on July 25 was positioned across much of the central U.S. and extended north into Manitoba building from west to east, while a thermal ridge slowly drifted east through the Dakotas and breezy southerly winds increased throughout the area. Canadian wildfire smoke lingered across the area in the mid to upper levels with some near-surface smoke. See Figure 24. On July 25, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, and Burleigh Counties.

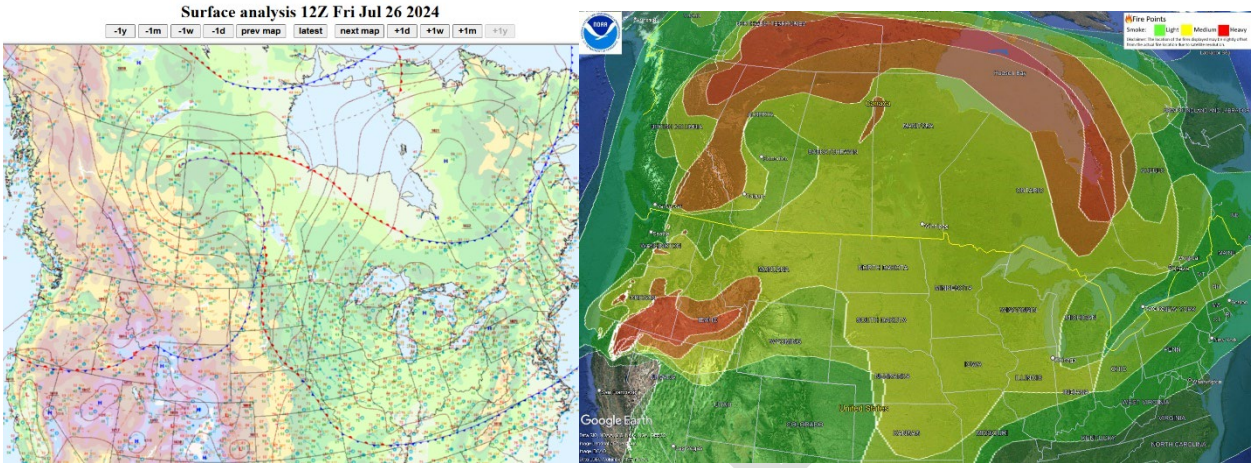
Figure 24. July 25, 2024 Surface Analysis and Smoke Layer



On July 26, an upper low tracked across southern Canada and strong ridging extended from the southwestern U.S. across the Great Lakes, which maintained broad zonal to southwest upper flow over the area on the northwest side of the ridge. Additionally, a cold front extended from northern Saskatchewan and pushed through western and much of central North Dakota. Smoke from

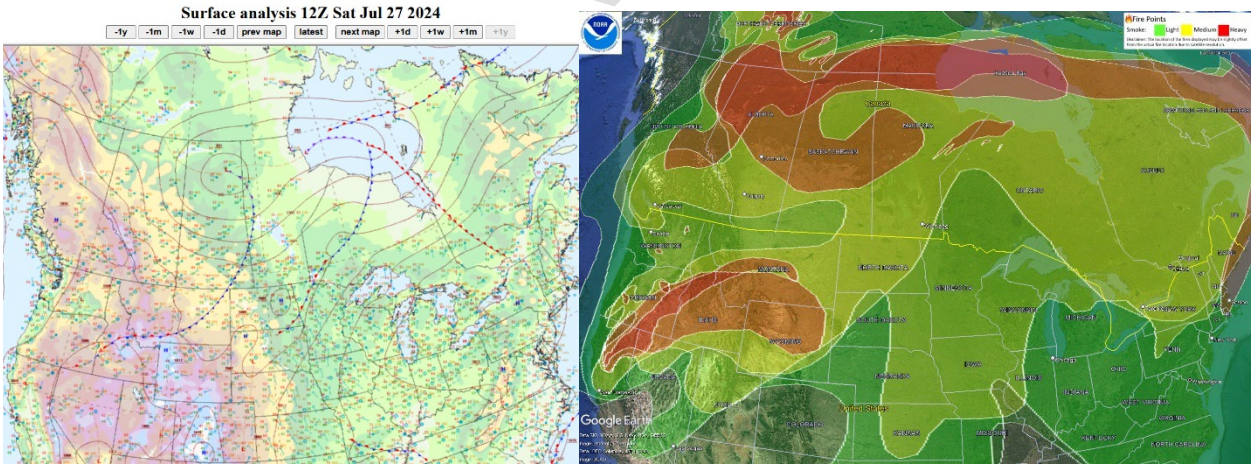
western U.S. wildfires lofted into the main flow and combined with Canadian wildfire smoke that remained over the area. See Figure 25. On July 26, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke, Ward, Dunn, Mercer, Oliver, Billings, and Burleigh Counties.

Figure 25. July 26, 2024 Surface Analysis and Smoke Layer



The large-scale meteorological pattern on July 27 continued to feature strong ridging extending from the southwestern U.S. across the Great Lakes with southwest flow aloft on the northwest side of the ridge ahead of a mid/upper low over Saskatchewan. The cold front continued to lift from south central into eastern North Dakota with another slow-moving cold front, associated with the upper-level trough that tracked across southern Canada, situated from north-central into southwest North Dakota in the afternoon. Wildfire smoke lingered from a combination of distant wildfires in the western U.S. and Canada. See Figure 26. On July 27, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for McKenzie, Dunn, Mercer, Oliver, Billings, Burleigh, and Cass Counties.

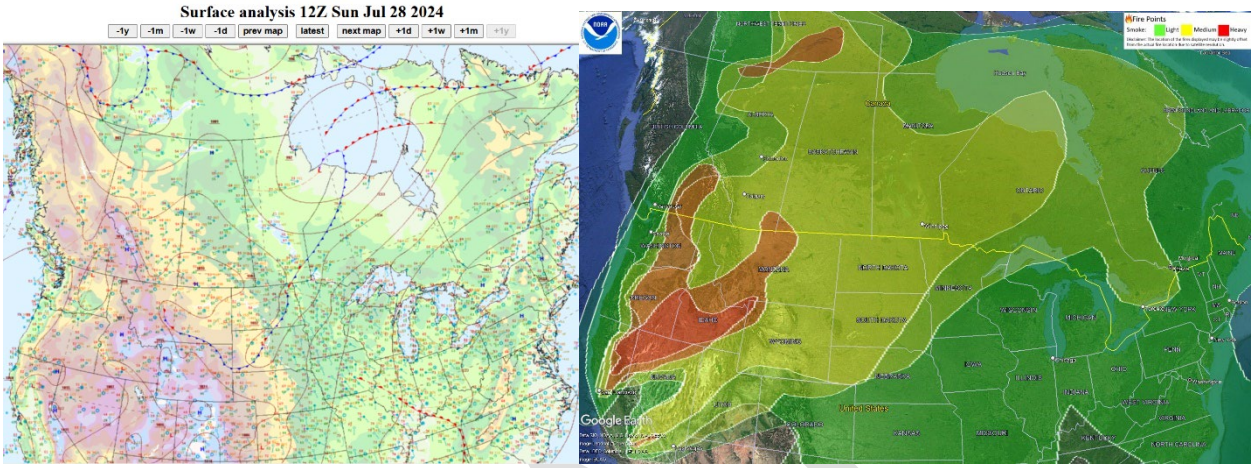
Figure 26. July 27, 2024 Surface Analysis and Smoke Layer



Early in the morning July 28, a surface low over west central South Dakota with a quasi-stationary cold front extended northeast through central North Dakota. Southwest flow dominated the synoptic pattern over the Dakotas with a gradual shift to zonal flow and multiple embedded lows

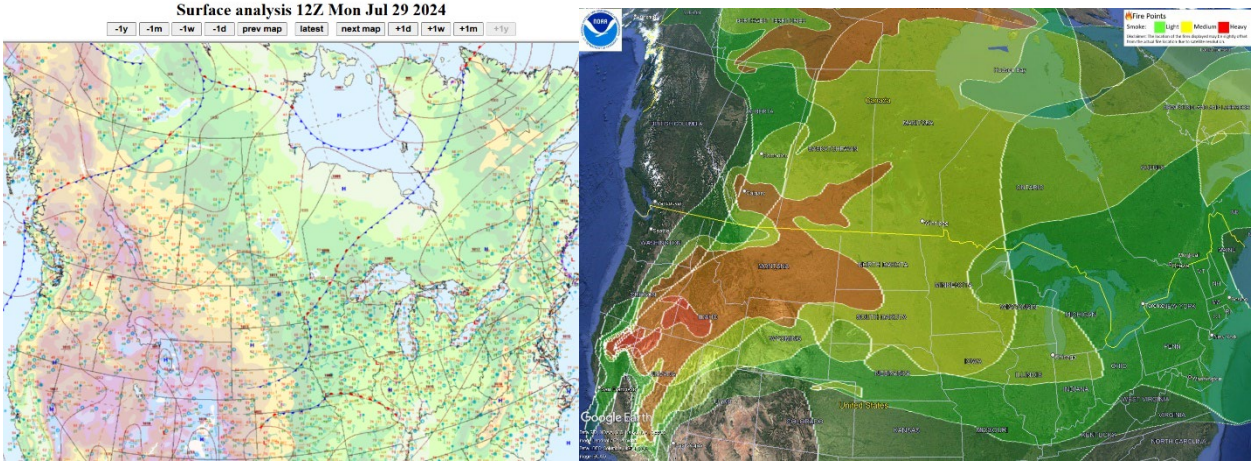
and shortwaves across the northwest and north-central U.S. as well as the Canadian Prairies. In the afternoon and through the evening hours, one of the short waves gradually pushed a frontal system across Montana and into the western portions of North Dakota. Smoke from wildfires in the western U.S. continued to come into the region in the upper levels of the atmosphere. See Figure 27. On July 28, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke County.

Figure 27. July 28, 2024 Surface Analysis and Smoke Layer



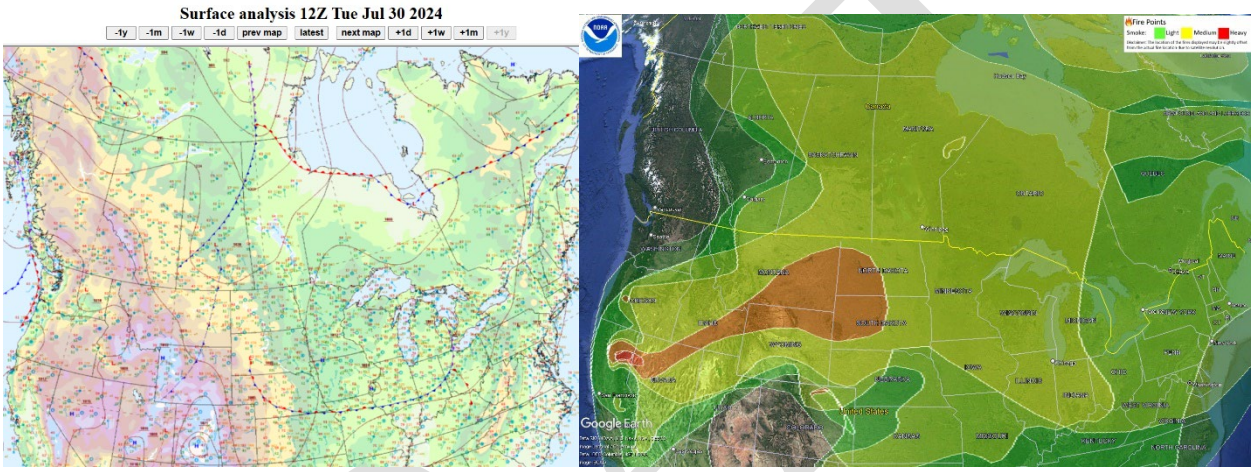
The synoptic pattern July 29 was characterized by broadly zonal flow across North Dakota from an upstream trough over the western U.S., rising heights across Manitoba and Ontario, and broad ridging across the southern U.S. The center of a surface high was analyzed over central and eastern North Dakota, with light winds across the area. A more modest mid-level shortwave moved through the Dakotas in the afternoon and evening. Smoke continued to move through westerly flow across the Rockies from western U.S. wildfires and near surface smoke lingered given the abundant smoke around the region. See Figure 28. On July 29, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke and McKenzie Counties.

Figure 28. July 29, 2024 Surface Analysis and Smoke Layer



On July 30, winds were light underneath zonal flow aloft in between a broad surface high to the east and an approaching trough over eastern Montana extending from a deeper secondary low in central Saskatchewan. A surface low was analyzed across central Saskatchewan and Manitoba with a weak surface pressure gradient present across the Dakotas and a weak high-pressure center near central Montana. A surface trough and wind shift underneath a leading shortwave aloft drifted east through the day into central North Dakota. Westerly winds aloft continued to bring in high level smoke from northern California and Pacific Northwest wildfires. See Figure 29. On July 30, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Ward, McKenzie, Dunn, Mercer, Oliver, and Billings Counties.

Figure 29. July 30, 2024 Surface Analysis and Smoke Layer

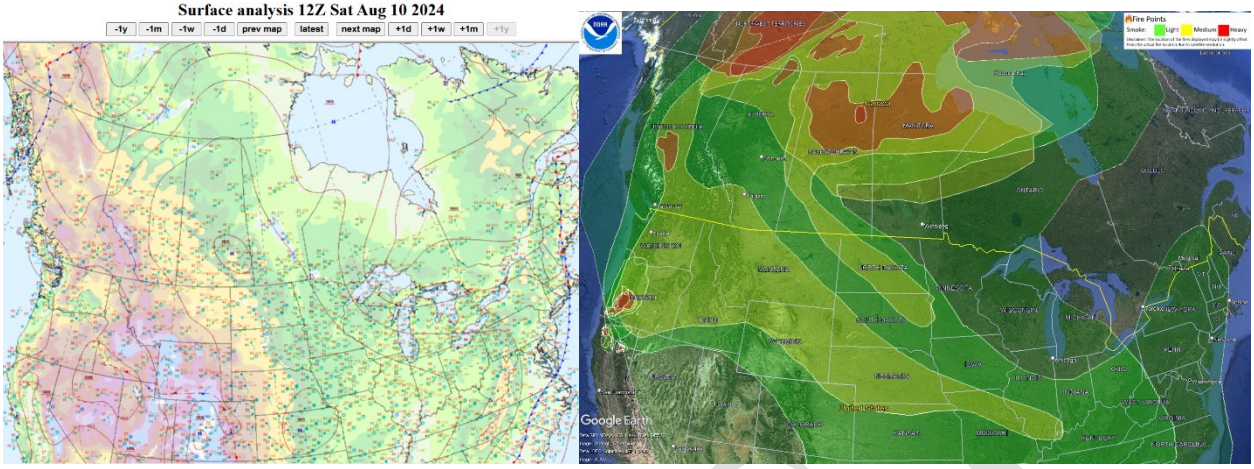


III.4.3 August 2024

Canadian wildfire smoke impacts directly affecting air quality were observed in North Dakota from August 3 through August 5 and August 7 through August 10. Smoke from a combination of wildfires in Canada and the western U.S. directly affecting air quality in North Dakota were observed on August 11 through August 23. Smoke impacts directing affecting air quality were observed in North Dakota from western U.S. wildfires on August 24 and 25 and Canadian wildfires on August 27 and 28.

Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored August 10. Smoke of varying density was observed blanketing much of Canada and portions of the U.S. Wildfires remained active across northwest Canada as well as Saskatchewan and Manitoba, with moderate wildfire smoke curling south into North Dakota. On August 10, a large area of surface high-pressure was situated over portions of central Canada and into much of central portions of the U.S. In the upper atmosphere, a deep trough was situated over the Northern Great Lakes and southeast Canada while upper-level ridging was over the Northern Plains into the central Canadian Prairie Provinces. See Figure 30. On August 10, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke, Ward, Dunn, and Burleigh Counties.

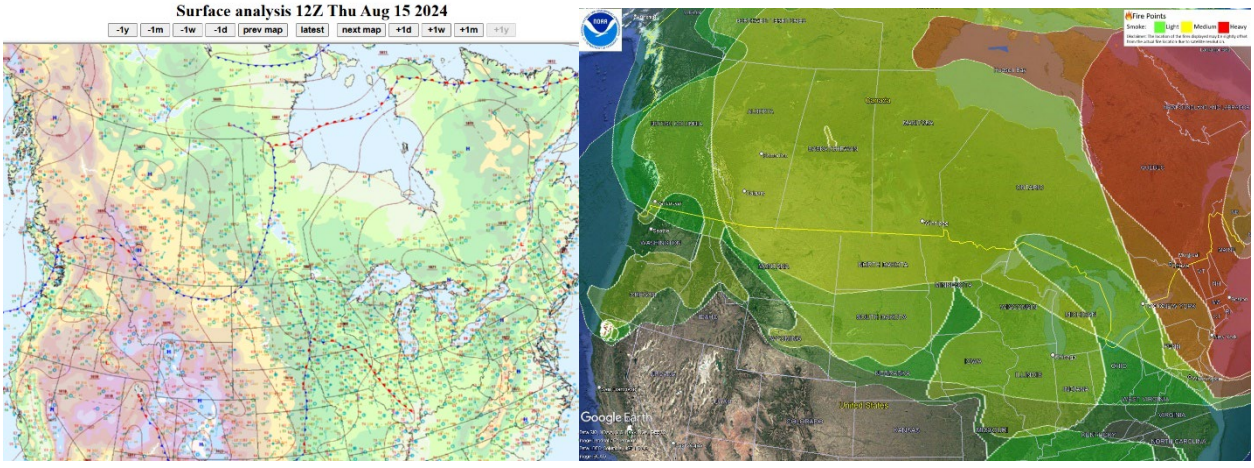
Figure 30. August 10, 2024 Surface Analysis and Smoke Layer



Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored August 15-20. Mixed density smoke attributed to a combination of ongoing significant wildfire activity across western, north-central, and central Canada as well as the northern California and the Pacific Northwest region of the U.S. continued to be observed throughout the majority of Canada and the northern U.S. August 15-20 moderate density smoke was observed throughout the north central region of the U.S.

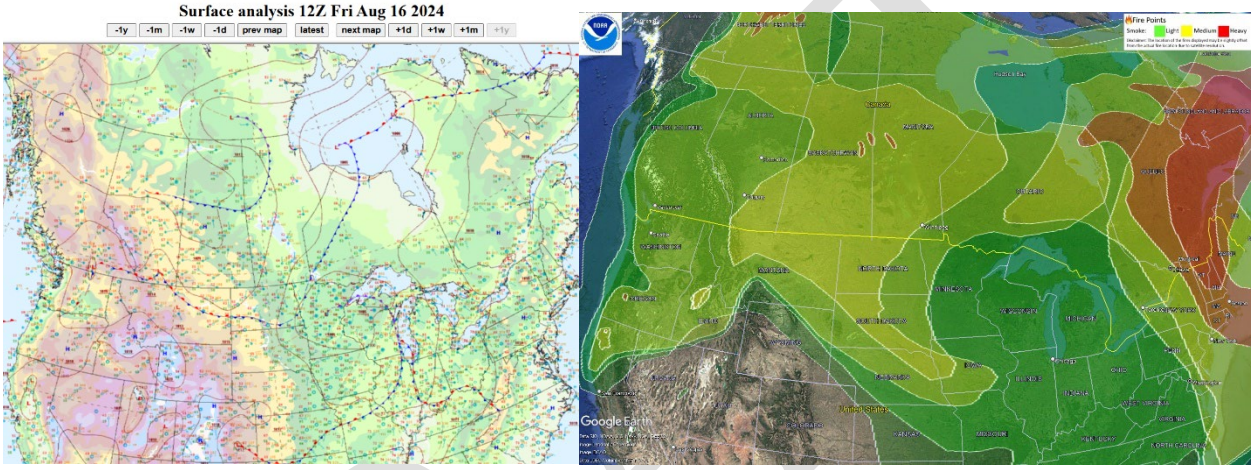
In the early morning of August 15, a closed mid-level low was drifting into the Red River Valley and stalling with a surface low deepening underneath. Western North Dakota remained under a cyclonic flow regime, with deep layer ridging over central and eastern Montana approaching from the west. As high pressure built into the area throughout the day, dense smoke from wildfires burning in the western U.S. extended into the area as well as another push of smoke with that upper-level northerly wind from the southern Canadian Prairies. See Figure 31. On August 15, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Billings County and at distinct high levels for McKenzie and Dunn Counties.

Figure 31. August 15, 2024 Surface Analysis and Smoke Layer



A nearly stacked low continued to slowly meander east-southeast from western Minnesota through the day on August 16. A weak surface front crossed North Dakota during the day, and an upper-level ridge moved in at night. North-northwesterly flow brought a plume of near surface smoke into the region expanding south and east through the day as well as another push of smoke moving in ahead of surface high-pressure in the evening. The smoke is attributed to a combination of wildfires in the western U.S. and northern Canada and resulted in air quality impacts and reduced visibility. See Figure 32. On August 16, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Ward, McKenzie, Dunn, Oliver, and Billings Counties and at distinct high levels for Burleigh County.

Figure 32. August 16, 2024 Surface Analysis and Smoke Layer



On August 17, a closed low continued to spin over the Great Lakes region with a ridge draped over the Northern Plains. Weak surface high-pressure was in place across North Dakota with winds remaining light out of the southeast. Smoke from distant wildfires in the western U.S. and north-central/central Canada remained aloft and lingered near the surface impacting air quality statewide. See Figure 33. On August 17, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Ward, McKenzie, Dunn, Oliver, and Burleigh Counties and at distinct high levels for Billings and Cass Counties.

Upper-level ridging continued to dominate the weather pattern across the Northern Plains on August 18, with the axis located near the Montana/North Dakota border. Residual near surface smoke lingered overnight into the morning and throughout the day from distant wildfires in the western U.S. and Canada. Winds remained fairly light under the surface high-pressure system keeping the smoke in place while smoke aloft continued to bring hazy sunshine to the region. See Figure 34. On August 18, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Ward, Dunn, and Cass Counties.

Figure 33. August 17, 2024 Surface Analysis and Smoke Layer

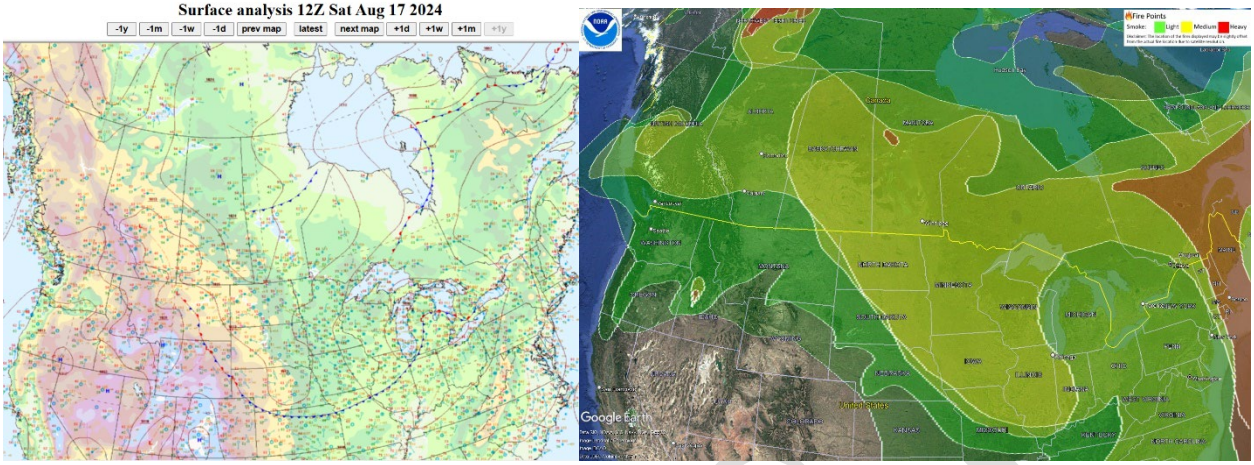
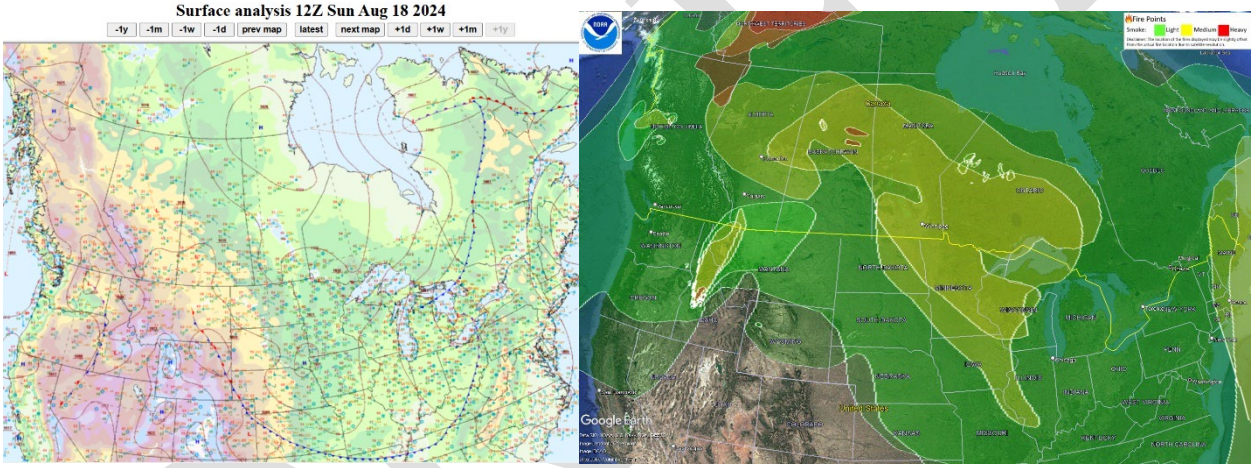


Figure 34. August 18, 2024 Surface Analysis and Smoke Layer



On August 19, an upper-level ridge remained positioned across the High Plains and slowly moved east settling across much of the Plains with the ridge axis extending north into the central Dakotas. Conditions at the surface were generally calm with light winds. With high pressure and limited air mass changes over the region, residual smoke from distant wildfires in the western U.S. and Canada lingered near the surface in some areas with thin smoke aloft. See Figure 35. On August 19, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Cass County.

Much of the U.S. remained under the influence of an omega block aloft, with prominent troughs positioned off the Pacific Northwest coastline and across the Northeastern region of the U.S. As a result, ridging remained in place August 20 across much of the interior of the U.S., with the ridge axis extending north into the Northern Plains. With broad high-pressure well to the east of the area a surface low was analyzed in central Montana. As surface high-pressure shifted east, southerly flow increased and the winds picked up out of the south, which brought the return of thicker smoke that had previously pushed to the south of North Dakota. In the upper layers of the atmosphere, another surge of wildfire smoke moved into the Dakotas. See Figure 36. On August 20, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Cass County.

Figure 35. August 19, 2024 Surface Analysis and Smoke Layer

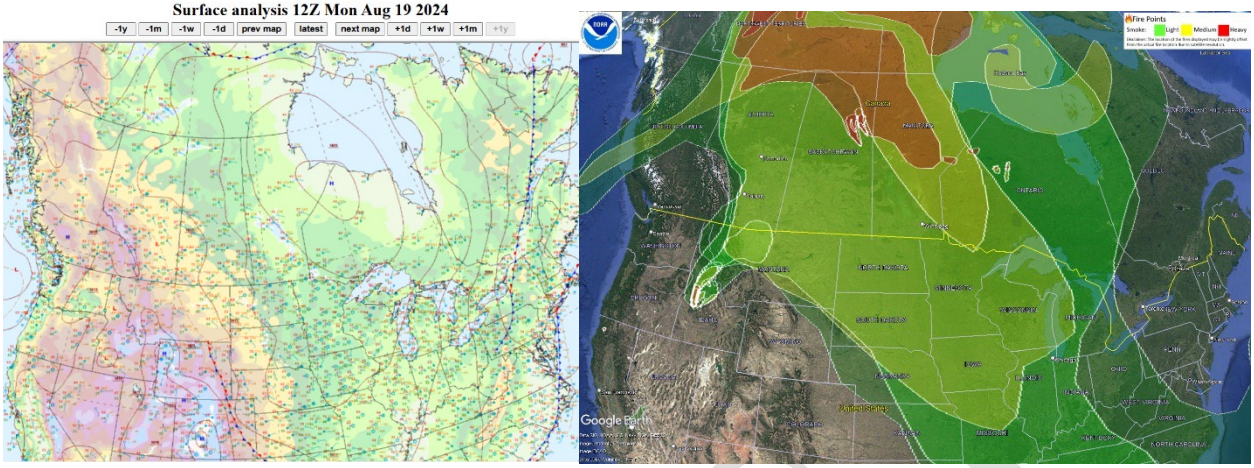
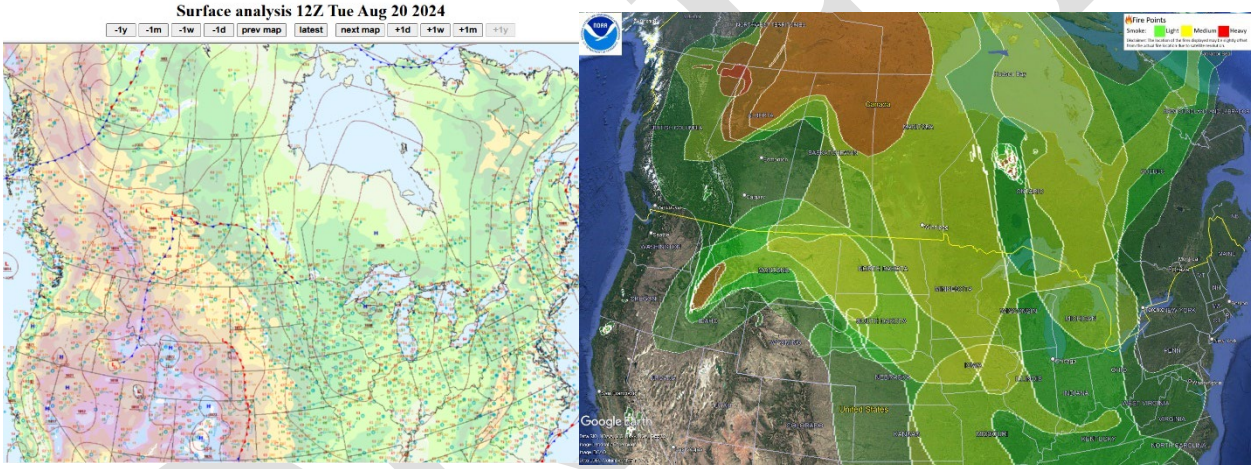


Figure 36. August 20, 2024 Surface Analysis and Smoke Layer



III.4.4 September 2024

Canadian and western U.S. wildfire smoke impacts directly affecting air quality were observed in North Dakota from September 1 through September 5, September 9 through September 14, and September 28.

On September 4, 24-hour $PM_{2.5}$ concentrations were at distinct high levels exceeding the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS, at eight of nine sites in Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, and Burleigh Counties. In addition, the 24-hour $PM_{2.5}$ concentrations were the highest Event concentrations in 2024 for Burke and McKenzie Counties. Through September 4, a cold frontal boundary continued sliding southeast from far northwestern North Dakota in the early morning until exiting to the east during the overnight hours. Northerly winds picked up behind the cold front with the trailing upper-level trough. Wildfire activity across northwestern and central Canada produced a large area of light to moderate density smoke that drifted southward into the central U.S. while moderate to thick density smoke from wildfires in Idaho and western Montana extended eastward into the Dakotas. Wildfire smoke of varying

density was observed across much of Canada and the U.S. See Figure 37. Passage of the cold frontal boundary moving southeast brought ample wildfire smoke from aloft down to the surface with air quality impacts peaking at times in the Very Unhealthy to Hazardous classifications. Image 6 depicts the Air Quality Index while Images 7 and 8 illustrate the dense smoke impacts across western and central North Dakota.[44,45] Air quality conditions improved starting in northwestern North Dakota as the near-surface and elevated smoke began to clear behind the cold front and ahead of the polar surface high-pressure moving out of Canada and into the Northern Plains.

Figure 37. September 4, 2024 Surface Analysis and Smoke Layer

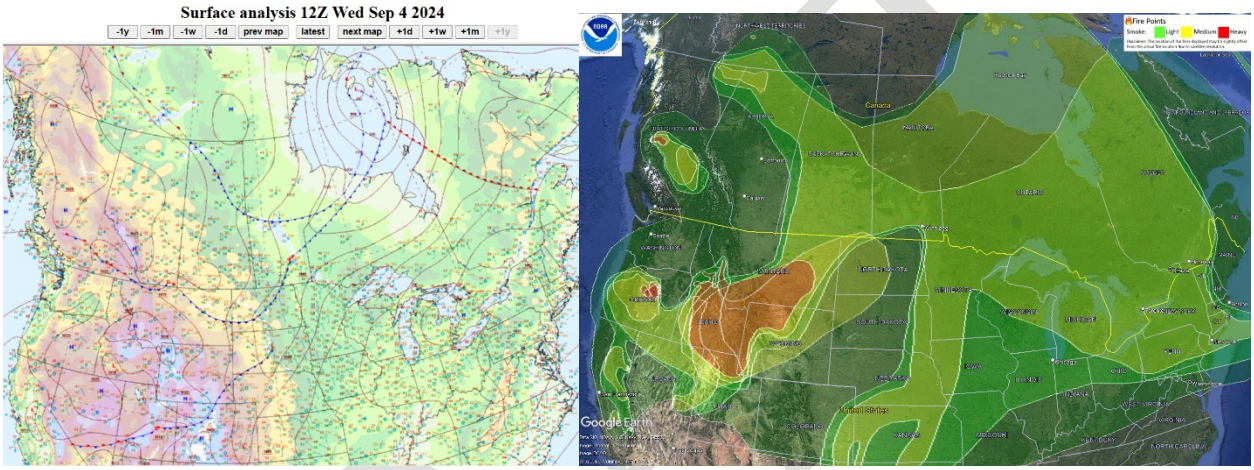
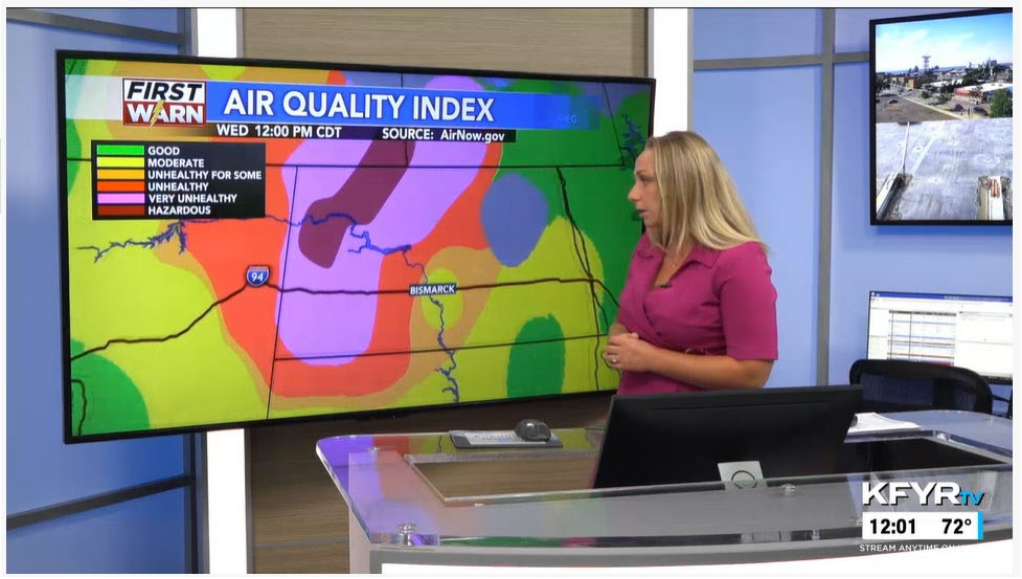


Image 6. September 4, 2024 Air Quality Index



[44] KXNews One Minute Forecast, September 4, 2024: Watford City, Williston.
[45] KFYRTV First News at Noon, September 4, 2024: Bismarck, Minot, Air Quality Index.

Image 7. September 4, 2024 Western North Dakota Smoke Impacts

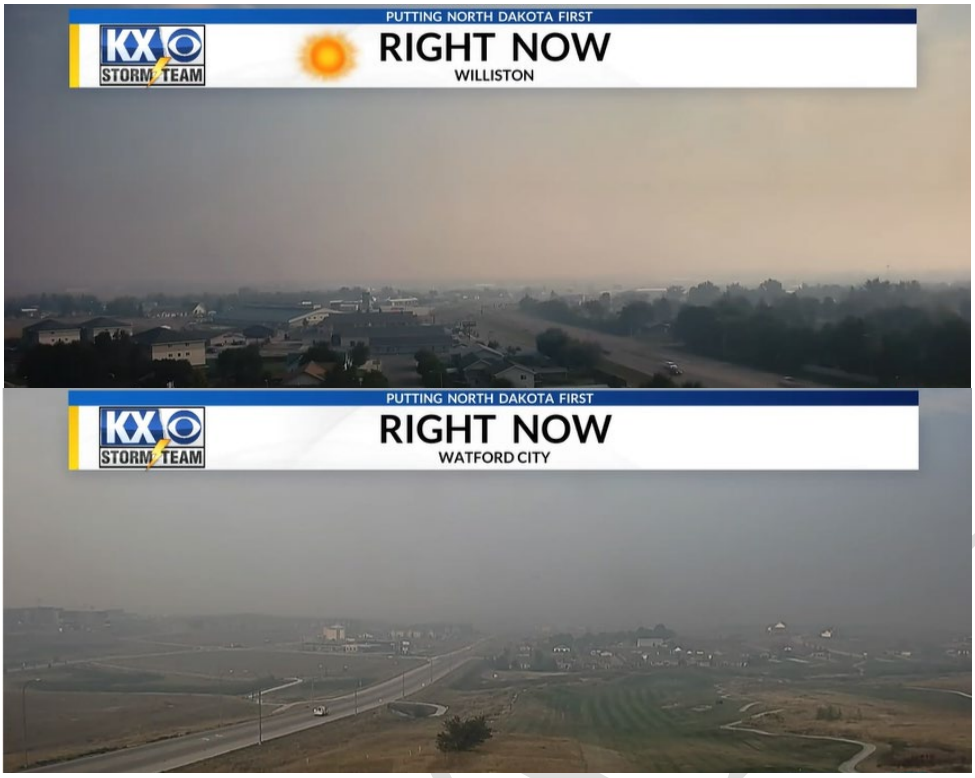
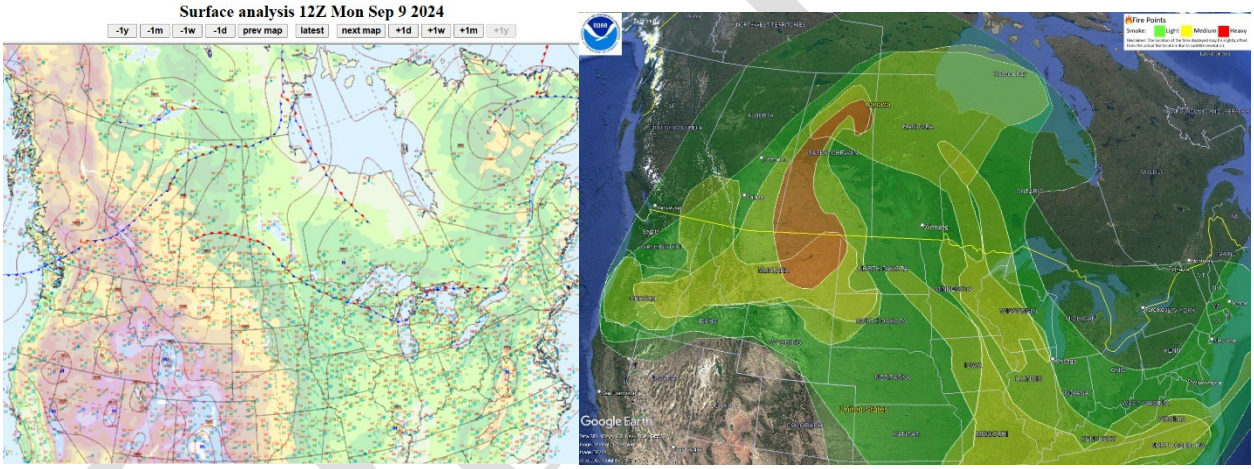


Image 8. September 4, 2024 Central North Dakota Smoke Impacts

Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored September 9-11. Mixed density smoke attributed to a combination of continuing wildfire activity in the western U.S. and Canada produced a significant mass of smoke moving across North America. On September 9, a mixture of light to medium density smoke was observed in the central U.S. A thick band of smoke was observed September 10 extending from the Oregon/Idaho region east before reaching the North Central Plains where it blew north into Canada. On September 11, a large area of moderate to light density smoke was observable over the North Central Plains.

In the morning of September 9, surface high-pressure sat across North Dakota, with an upper-level ridge across the central U.S. extending north into the area. In the afternoon and evening, a subtle shortwave trough deepened as it approached western North Dakota resulting in a subtle shift to westerly winds. Westerly flow aloft brought in wildfire smoke from western U.S. and Canadian wildfires while abundant near surface wildfire smoke in central Montana progressed eastward as the weak shortwave trough moved into North Dakota. See Figure 38. On September 9, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Billings County and at distinct high levels for McKenzie County.

Figure 38. September 9, 2024 Surface Analysis and Smoke Layer



On September 10, 24-hour $PM_{2.5}$ concentrations were at distinct high levels exceeding the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS, at eight of nine sites in Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, and Burleigh Counties. In addition, the 24-hour $PM_{2.5}$ concentration was the highest Event concentration in 2024 for Billings County. A shortwave trough continued to move through North Dakota on September 10 and areas of heavy, near surface smoke spread east across North Dakota reducing visibility with air quality impacts peaking at times in the Very Unhealthy to Hazardous classifications. Smoke aloft was also quite thick persisting from distant wildfires in Oregon and Idaho as well as Canada. See Figure 39. Image 9 depicts the Air Quality Index while Images 10 and 11 illustrate the dense smoke impacts across southwest and

central North Dakota.[46,47,48] A weak cold front moved in from the northwest and stalled overnight as it continued south and east, gradually shifting the westerly winds to the north and northeast through the night.

Figure 39. September 10, 2024 Surface Analysis and Smoke Layer

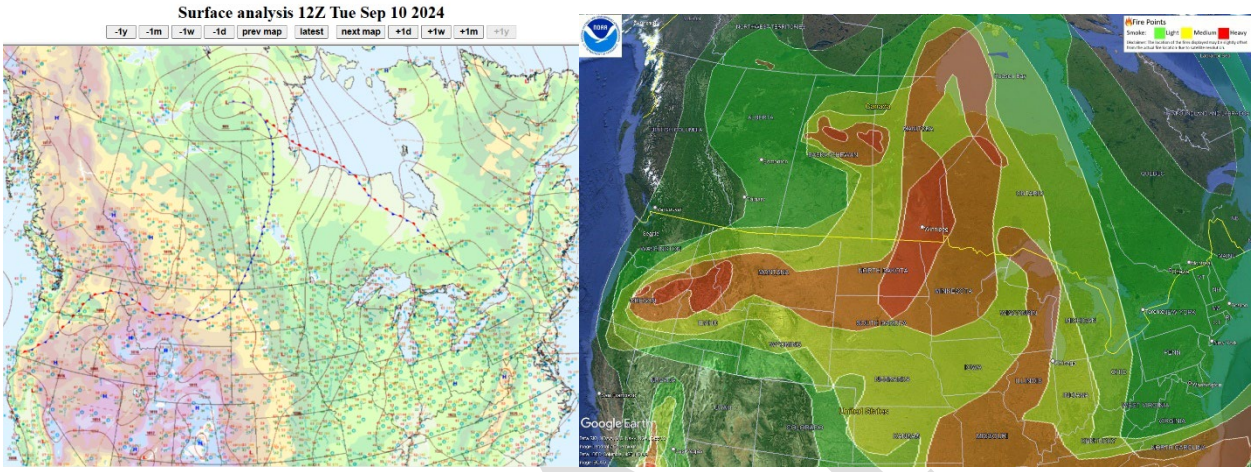
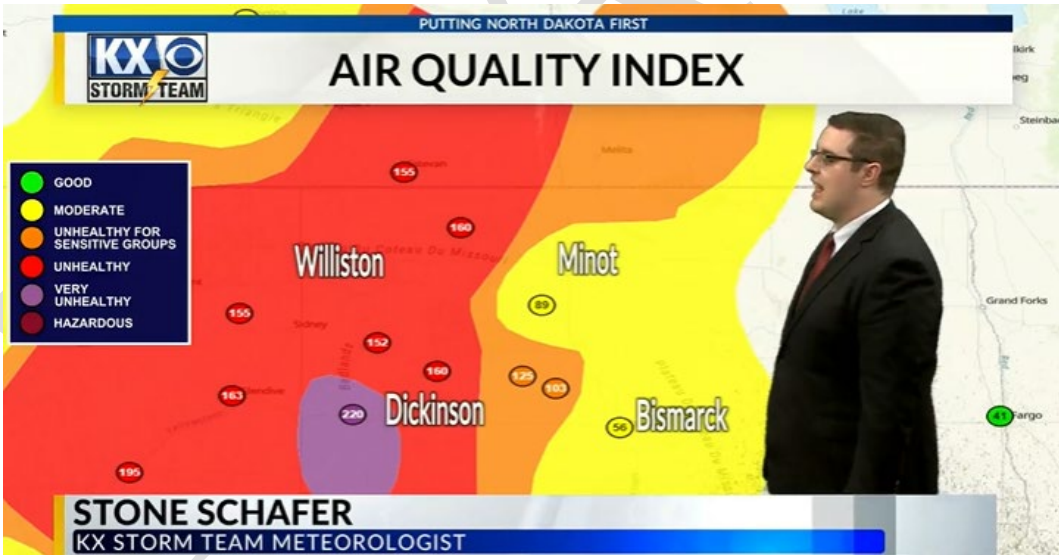


Image 9. September 10, 2024 Air Quality Index



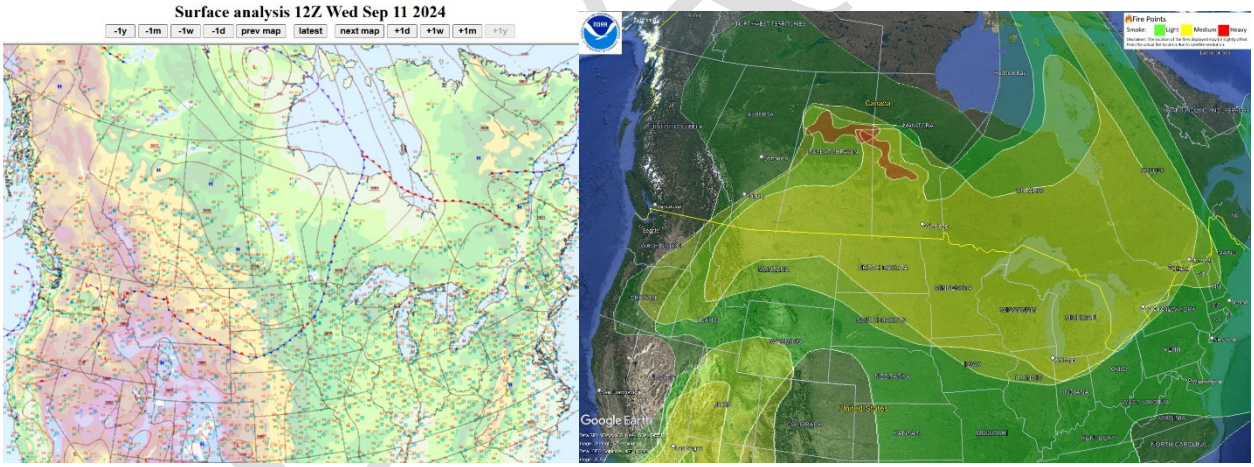
[46] KFYRTV First News at Noon, September 10, 2024: Bismarck, Minot.
[47] KXCAM, September 10, 2024: Bowman, Rugby.
[48] KXNews, September 10, 2024: Air Quality Index.

Image 10. September 10, 2024 Southwestern/Central North Dakota Smoke Impacts

Image 11. September 10, 2024 Northcentral North Dakota Smoke Impacts

On September 11, 24-hour $PM_{2.5}$ concentrations at all nine sites in Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, Burleigh, and Cass Counties were at distinct high levels exceeding the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS. Furthermore, the 24-hour $PM_{2.5}$ concentrations were the highest Event concentrations in 2024 for six of nine sites in Ward, Dunn, Mercer, Oliver, Burleigh, and Cass Counties. A trough dug into the western U.S. during the day on September 11. In the afternoon, much of western and central North Dakota sat under the influence of southwest flow aloft while at the surface, a low was centered near the southeast Montana/northeast Wyoming border with a warm front extending to its east. The low and warm front continued to lift north through the evening. Wildfires in the western U.S. along with smoke from Canada contributed to a thick plume of smoke and haze across much of the Northern Plains. See Figure 40. Near-surface and mid-level smoke prevailed over the majority of North Dakota in the early morning and impacted air quality throughout the day, resulting in 24-hour classifications statewide of Unhealthy for Sensitive Groups and Unhealthy. Images 12 and 13 illustrate the dense smoke impacts in eastern and central North Dakota while Image 14 depicts the Air Quality Index.[49,50,51] Smoke filtered back to the northwest in the late-afternoon and evening with the southeast/east wind. The smoke slowly diminished while lifting up to the north and east into Canada overnight with the passage of the low pressure system. Elevated smoke also persisted in varying thickness over most of the area maintaining a hazy sky appearance across the region.

Figure 40. September 11, 2024 Surface Analysis and Smoke Layer



[49] Valley News Live at Noon, September 11, 2024: Fargo.
[50] KXCAM, September 11, 2024: Bismarck.
[51] KFYRTV First News at Noon, September 11, 2024: Bismarck, Air Quality Index.

Image 12. September 11, 2024 Eastern North Dakota Smoke Impacts

Image 13. September 11, 2024 Central North Dakota Smoke Impacts

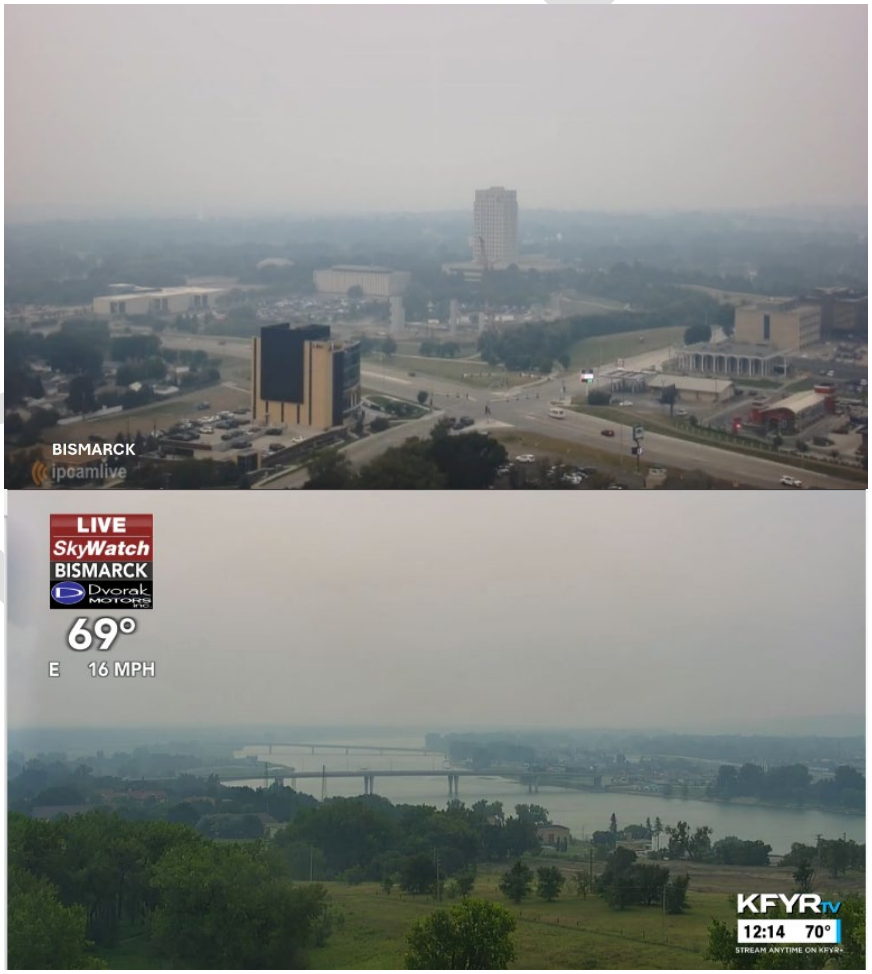
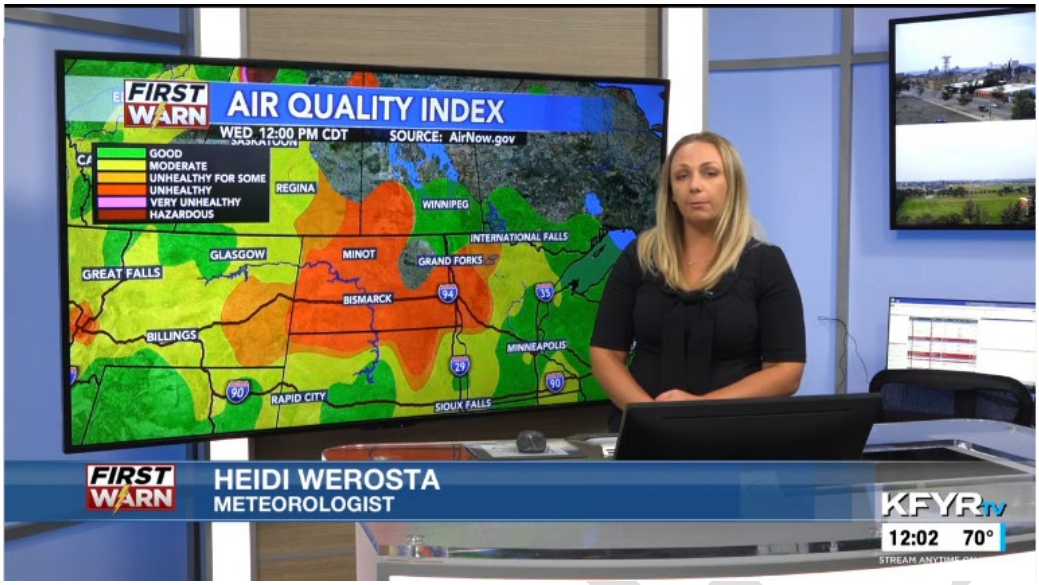


Image 14. September 11, 2024 Air Quality Index



III.4.5 October 2024

U.S. wildfire smoke impacts directly affecting air quality were observed in North Dakota from October 5 and 6, October 8 through October 11, October 16 through October 18, October 28, and October 31.

Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored October 5. Wildfires in western Oregon, central Idaho, southwestern Montana, western/northern Wyoming, and northeastern Utah continued to produce light to moderate density smoke, which moved eastward toward the Central Plains. The cold front pushed into western North Dakota in the early morning October 5 and moved into western Minnesota in the early afternoon. Upper-level troughing moved through western and central North Dakota with a closed upper low centered over western Manitoba. The strong dynamics associated with this system brought strong west/northwest winds across the area and stronger winds aloft mixed down to the surface in the early afternoon before diminishing overnight. An area of wildfire smoke from distant western U.S. wildfires became trapped near the immediate frontal zone. See Figure 41. Due to the very strong and gusty winds as well as dry conditions, critical fire weather conditions were a concern across much of North Dakota and Red Flag Warnings were issued. In the afternoon, several thermal signatures associated with multiple wildfires were viewable via satellite within portions of central and western North Dakota with smoke plumes impacting parts of North Dakota. See Image 15. On October 5, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Mercer County.

Figure 41. October 5, 2024 Surface Analysis and Smoke Layer

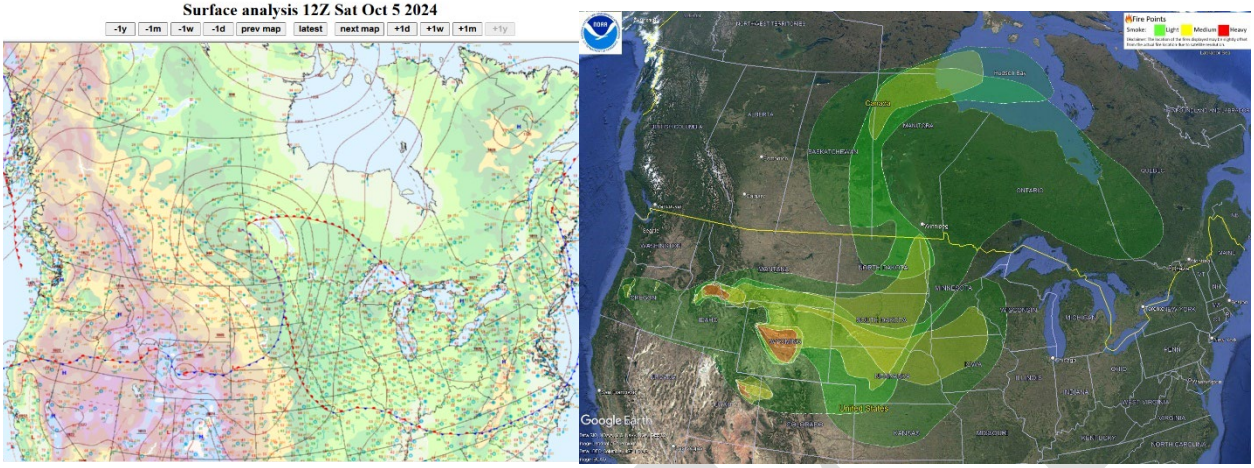
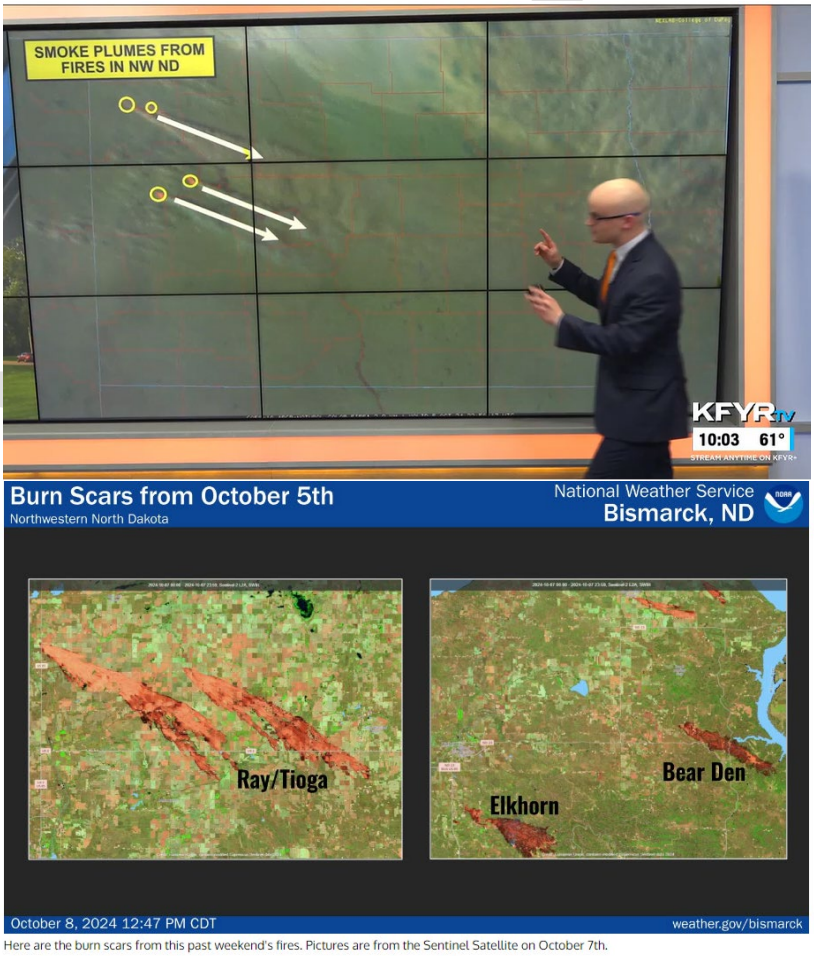


Image 15. North Dakota Wildfires Satellite Smoke Plumes and Burn Scars[52,53]

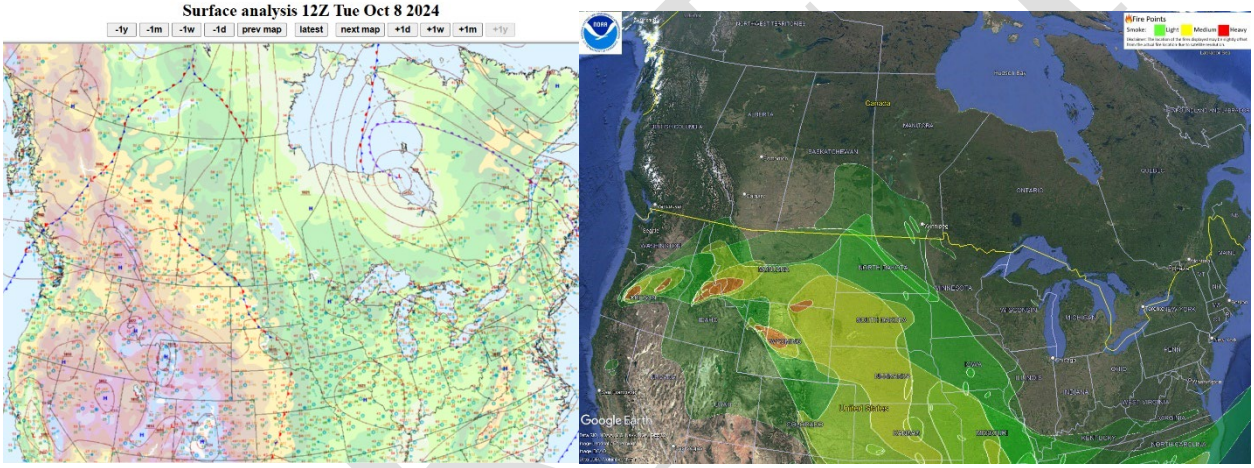


[52] KFYRTV First News at Ten, October 5, 2024: Satellite Smoke Plumes.
[53] National Weather Service Bismarck, North Dakota, October 8, 2024: Burn Scars from October 5th.

Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored October 8-9. A large area of mixed density smoke attributed to large wildfires in western Oregon, central Idaho, southwestern Montana, western/northern Wyoming, and northeastern Utah continued to be observed stretching eastward through the Central Plains and Dakotas. Multiple wildfires continuing in central and western North Dakota produced localized smoke impacts.

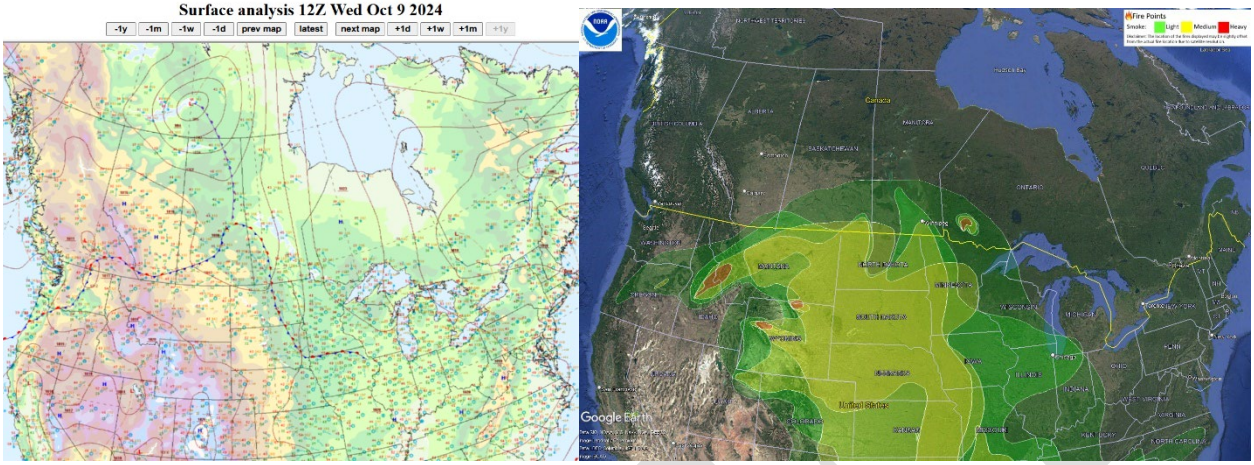
In the early morning of October 8, a weak surface pressure gradient covered much of North Dakota with a mid-level ridge to the west slowly building into North Dakota. By mid-day, a weak stationary frontal boundary was oriented northwest-southeast, with generally light winds southerly on the east side of the front and west-southwesterly on the west side of the front. Smoke aloft from western U.S. wildfires made the sky hazy at times and reached the surface in addition to the western North Dakota wildfires' smoke impacts. See Figure 42. On October 8, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for McKenzie and Billings Counties.

Figure 42. October 8, 2024 Surface Analysis and Smoke Layer



Mid-level ridging dominated the Northern Plains in the morning October 9 with two deep troughs and associated cutoff lows off the coast of British Columbia and to the northeast of the Great Lakes. Calm to light winds dominated beneath the ridge as the ridge axis slowly moved east. In the afternoon, a surface low was analyzed in central Saskatchewan and Manitoba, with a trailing cold front extending to the southwest. Smoke aloft continued to funnel in and linger from western U.S. wildfires in addition to smoke from the wildfires across western North Dakota. See Figure 43. On October 9, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for McKenzie, Mercer, and Billings Counties.

Figure 43. October 9, 2024 Surface Analysis and Smoke Layer



SECTION IV. CLEAR CAUSAL RELATIONSHIP

> **This section satisfies the following federal requirements:**
> The event affected air quality in such a way that there exists a clear causal relationship between the specific event and the monitored exceedance(s) or violation(s).
> 40 CFR § 50.14(c)(3)(iv)(B)
>
> Analyses comparing the claimed event-influenced concentration(s) to concentrations at the same monitoring site(s) at other times.
> 40 CFR § 50.14(c)(3)(iv)(c)

The Exceptional Event Rule requires that a clear causal relationship exists between the measured exceedances and the exceptional event to demonstrate that the exceptional event caused a specific air pollution concentration at a particular air quality monitoring location. The analysis provided in this section is consistent with the clear causal relationship examples provided in the Exceptional Event Rule.

For $PM_{2.5}$ Event concentrations, this demonstration follows the process described in the U.S. EPA *$PM_{2.5}$ Wildland Fire Exceptional Events Tiering Document* [54]. It states:

> This document outlines a tiered approach for addressing the clear causal relationship element within a wildland fire $PM_{2.5}$ demonstration, recognizing that some causal relationships may be clearer and, therefore, require relatively fewer pieces of evidence to satisfy the rule requirements.

[54] U.S. EPA, *$PM_{2.5}$ Wildland Fire Exceptional Events Tiering Document*, April 2024, https://www.epa.gov/system/files/documents/2024-04/final-pm-fire-tiering-4-30-24.pdf

Tier 1 clear causal analyses are intended for wildland fire events with distinct high levels of monitored 24-hour $PM_{2.5}$ concentrations, when compared to historical 24-hour concentrations, that are substantially higher than non-event concentrations, thus requiring fewer pieces of evidence to establish a clear causal relationship. This demonstration is a Tier 1 clear causal analyses and includes clear evidence that the 2024 wildfire smoke was transported to the locations of the nine monitoring sites in North Dakota.

North Dakota has an area of approximately 68,994 square miles (44.16 million acres). Of this total, 26.5 million acres is cropland, 10.98 million acres is pasture/rangeland, and 236,000 acres is woodland/forest with the five State forests comprising 13,300 acres. NDDEQ's Air Pollution Control Rules (North Dakota Administrative Code Chapter 33.1-15-04) govern prescribed burning on forest or rangelands for the management of the land and wildlife.

In 2024, there was only 17,377 total acres of prescribed burning from 117 burns with an average of 149 acres/burn and 3.0 tons/acre fuel loading. The majority of prescribed burns are short in duration and accomplished in one burn day. During the Event timeframe of early-May through early-October there was limited prescribed burning in North Dakota, as provided below.

- May: 8,708 total acres, 48 burns, 2 to 1,371 acres/burn, 2.0 tons/acre average fuel loading
- June: 953 total acres, 11 burns, 5 to 360 acres/burn, 2.1 tons/acre average fuel loading
- July: 0 burns
- August: 0 burns
- September: 151 total acres, 3 burns, 1 to 90 acres/burn, 2.4 tons/acre average fuel loading
- October: 57 total acres, 1 burn, 2.2 tons/acre fuel loading

Regulated prescribed burns during this Event did not impact the concentrations sufficiently to change the Causal Relationship.

IV.1 $PM_{2.5}$ Tiering Tool for Exceptional Event Analysis

Historically, the NDDEQ – Division of Air Quality (Division) has not applied data qualifiers to the ambient monitoring data in EPA's AQS for instances of wildfire smoke impacts at the monitoring sites. The Division just began to apply wildfire smoke data qualifiers starting with the 2023 ambient monitoring data in AQS. As a result, the U.S. EPA *$PM_{2.5}$ Wildland Fire Exceptional Events Tiering Document* default methodology tiering thresholds for North Dakota are conservative. The U.S. EPA Exceptional Events Analysis and Visualization Tools, $PM_{2.5}$ Tiering Tool[55], was utilized by the Division for the tier threshold calculations to determine the site-level tiering thresholds at all nine $PM_{2.5}$ monitoring sites for the months of May, June, July, August, September, and October. See Appendix D for $PM_{2.5}$ Tiering Tool Analyses.

[55] U.S. EPA, $PM_{2.5}$ Tiering Tool – for Exceptional Events Analysis, accessed May 28, 2025, available at https://www.epa.gov/air-quality-analysis/pm25-tiering-tool-exceptional-events-analysis

The Division summarized and evaluated the site-level tiering thresholds at all nine $PM_{2.5}$ monitoring sites and identified the maximum $PM_{2.5}$ Tier 1 threshold is 18.45 $\mu g/m^3$ at the Bismarck site. To ensure equity statewide and ensure additional conservatism, the Division held the Tier 1 threshold constant at 20.1 $\mu g/m^3$ for the Tier 1 clear causal analyses at all nine $PM_{2.5}$ monitoring sites, which was the Tier 1 threshold utilized in the *Canadian Wildfire Smoke Particulate Matter Exceptional Event Demonstration – North Dakota – May-September 2023*. North Dakota's equitable methodology identified distinct high levels of monitored 24-hour $PM_{2.5}$ Event concentrations that are markedly higher than non-event concentrations on 31 dates at nine $PM_{2.5}$ monitoring sites for 156 $PM_{2.5}$ monitor Event days in 2024 (see Table 1).

The collocated $PM_{2.5}$ monitors at the Bismarck (i.e., designated by POC1, POC2, or POC3) and at the Beulah (i.e., designated by POC4) monitoring sites were included only for corresponding $PM_{2.5}$ primary monitor Event days at the Bismarck (i.e., designated by POC4) and at the Beulah (i.e., designated by POC3) monitoring sites. See Appendix A, Initial Notification Table A. On the 31 Event dates in 2024, the $PM_{2.5}$ monitor Event days inclusive of the primary and collocated monitors is a total of 205 $PM_{2.5}$ monitor Event days.

IV.2 Wildfire Smoke Impacts Particulate Matter Monitors

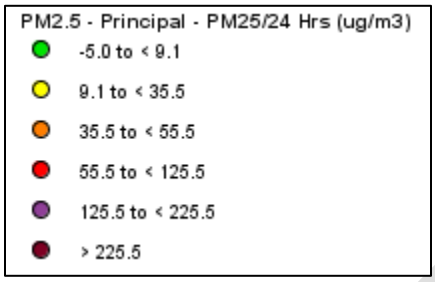
While the 2024 wildfire smoke impacts from wildfires across Canada, the western United States, and North Dakota were regional in nature and observable throughout the state from early-May through early-October, it did not cause all monitors to continuously exceed the level of the $PM_{2.5}$ NAAQS throughout the duration of the Event. This demonstration includes clear evidence that the 2024 wildfire smoke from wildfires across Canada, the western United States, and North Dakota was transported on 31 dates to North Dakota, specifically the locations of the nine $PM_{2.5}$ monitoring sites.

From May through October 2024, NDDEQ staff utilized air quality, wildland fire, and smoke resources such as the Fire and Smoke Map[56] for real time assessment of potential air quality impacts from wildland fire smoke. Fire and Smoke Map images captured during real time assessment for each Event date are contained in Appendix E. The NDDEQ website and Press Releases highlight the Fire and Smoke Map as a public resource for up-to-date information on the region's air quality to promote respiratory protection during smoky conditions.

For each Event date, the AirNow Navigator Data Fusion Tool with the Hazard Mapping System (HMS) Smoke[57] satellite overlay depicts the smoke plume as well as the 24-hour $PM_{2.5}$ average monitored concentrations. The legend for the images shows the monitor colors representing the monitored concentration ranges (see Figure 44). Note that the Bismarck $PM_{2.5}$ monitor location is not depicted on the images that depict the smoke plume. The NDDEQ speculates this to be associated with the deletion of AQS primary monitor assignments[58] by EPA during EPA's implementation of the T640/T640X alignment algorithm in AQS.

[56] https://fire.airnow.gov/
[57] U.S. EPA, AirNowTech Navigator, accessed June 10, 2025, available at https://www.airnowtech.org/
[58] See Appendix B - 2023 Annual Ambient Air Monitoring Data Certification.

Figure 44. AirNow Navigator Legend – $PM_{2.5}$



The U.S. EPA Exceptional Events Analysis and Visualization Tools, Concentration Map[59], was utilized by the Division to map daily 24-hour $PM_{2.5}$ average monitored concentrations for each Event date. The legend for the images shows the monitor colors representing the Air Quality Index (AQI) categories and monitored concentration ranges.

The progression of images for 31 Event dates in Figures 45 through 75 demonstrate that the 2024 wildfire smoke from wildfires across Canada, the western United States, and North Dakota was transported to the locations of the nine $PM_{2.5}$ monitoring sites in North Dakota.

These levels of 24-hour $PM_{2.5}$ average monitored concentrations in North Dakota are very unusual. The images show the distinct high levels of monitored 24-hour $PM_{2.5}$ concentrations, meaning they were 1.5 times the highest 98th percentile of data for the last five years. This demonstrates that the monitored $PM_{2.5}$ concentrations are unmistakably higher than non-event concentrations.

IV.2.1 May 2024

Canadian wildfire smoke impacts directly affecting air quality were observed in North Dakota from May 11 through May 16 and May 20 and 21. Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored May 12-14. See Figures 45-47.

On May 12, statewide 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke, Ward, Dunn, Billings, Burleigh, and Cass Counties and at distinct high levels for McKenzie, Mercer, and Oliver Counties. In addition, the 24-hour $PM_{2.5}$ concentration was the second highest Event concentration in 2024 for Cass County. Statewide $PM_{2.5}$ impacts ranged from Moderate in McKenzie, Mercer, and Oliver Counties to Unhealthy for Sensitive Groups in Billings, Burke, Burleigh, Cass, Dunn, and Ward Counties.

On May 13, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burleigh County and at distinct high levels for Burke, Ward, Mercer, Oliver, and Billings Counties.

On May 14, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burleigh County.

[59] U.S. EPA, Concentration Map – for Exceptional Events Analysis, accessed July 2, 2025, available at https://www.epa.gov/air-quality-analysis/concentration-map-exceptional-events-analysis

Figure 45. May 12, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

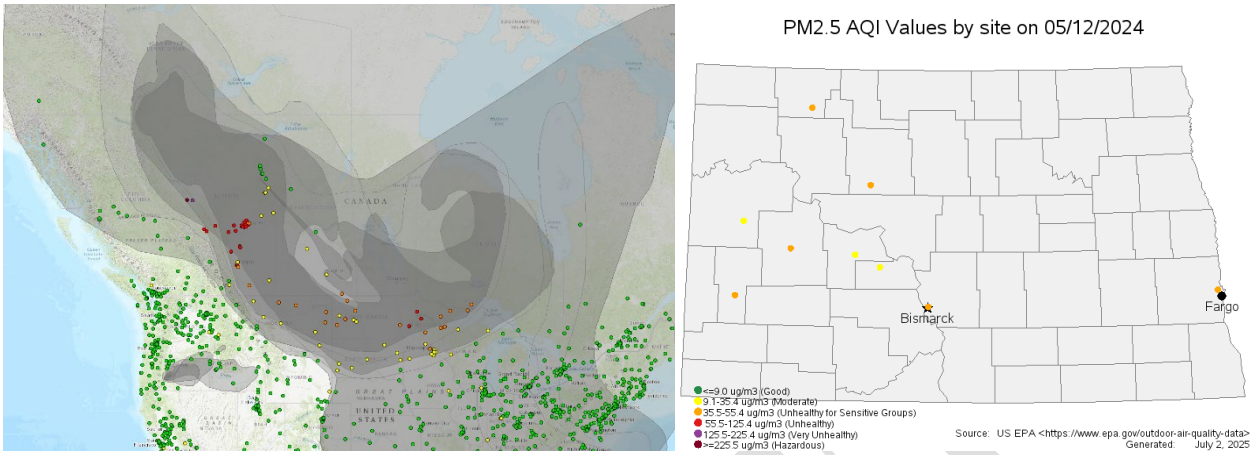


Figure 46. May 13, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

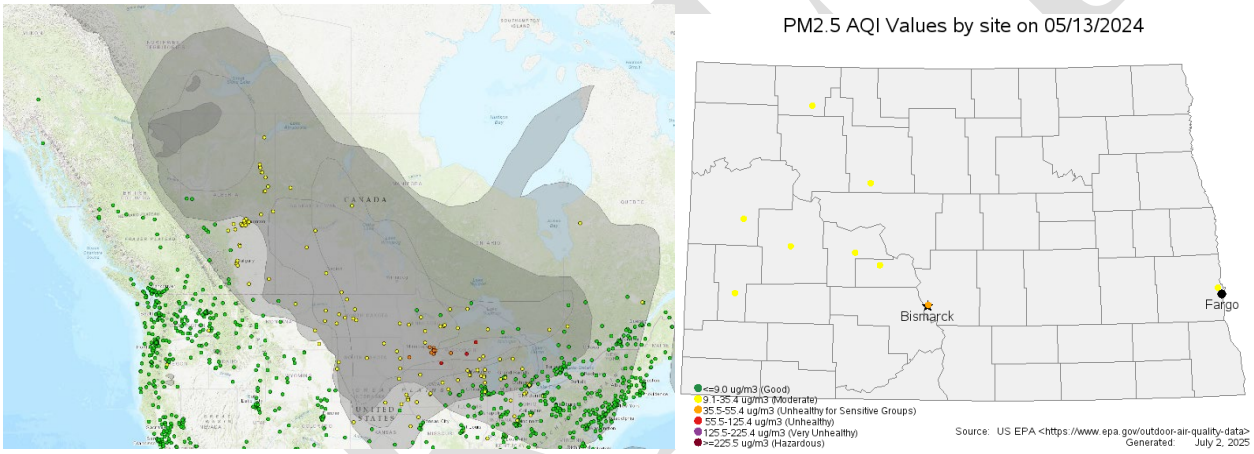
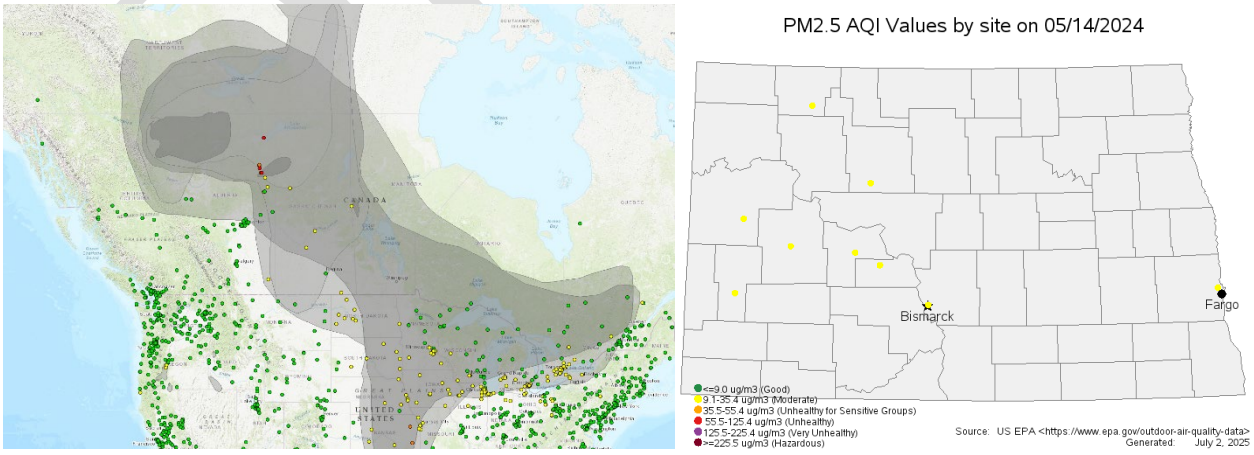


Figure 47. May 14, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

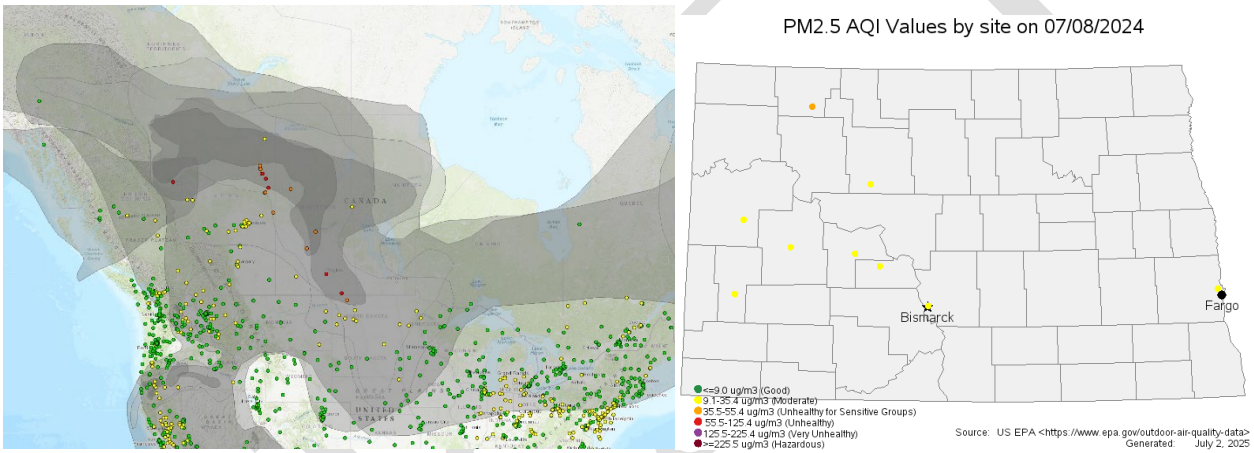


IV.2.2 July 2024

Canadian wildfire smoke impacts directly affecting air quality were observed in North Dakota from July 4 through July 14 and July 16 through July 25. Smoke from a combination of wildfires in Canada and the western U.S. directly affecting air quality in North Dakota were observed on July 26 and 27. Western U.S. wildfire smoke impacts directing affecting air quality were observed in North Dakota from July 28 through August 1. Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored July 8-10 (see Figures 48-50) as well as July 20-30 (see Figures 51-61).

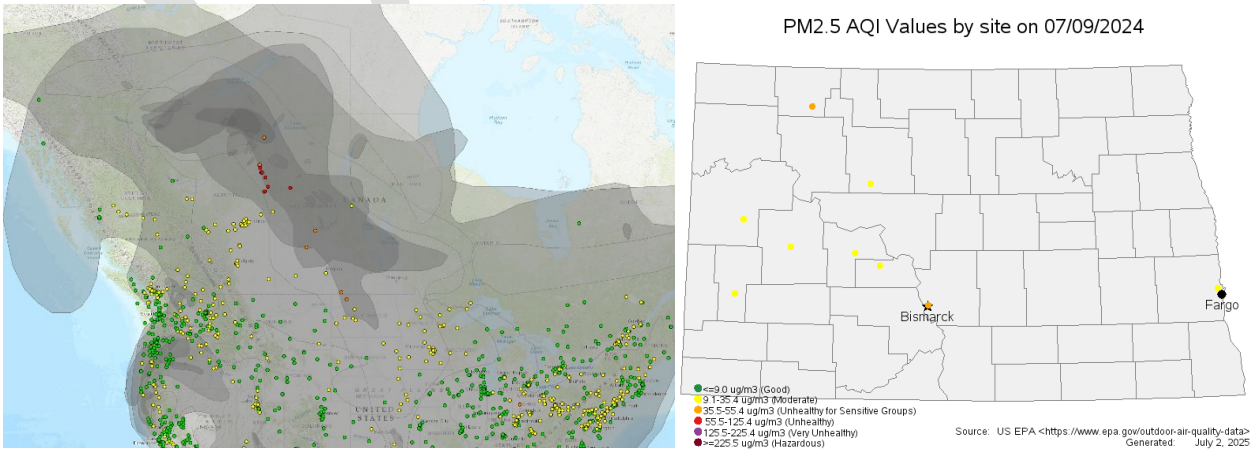
On July 8, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke County and at distinct high levels for Ward, Mercer, Oliver, and Burleigh Counties.

Figure 48. July 8, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



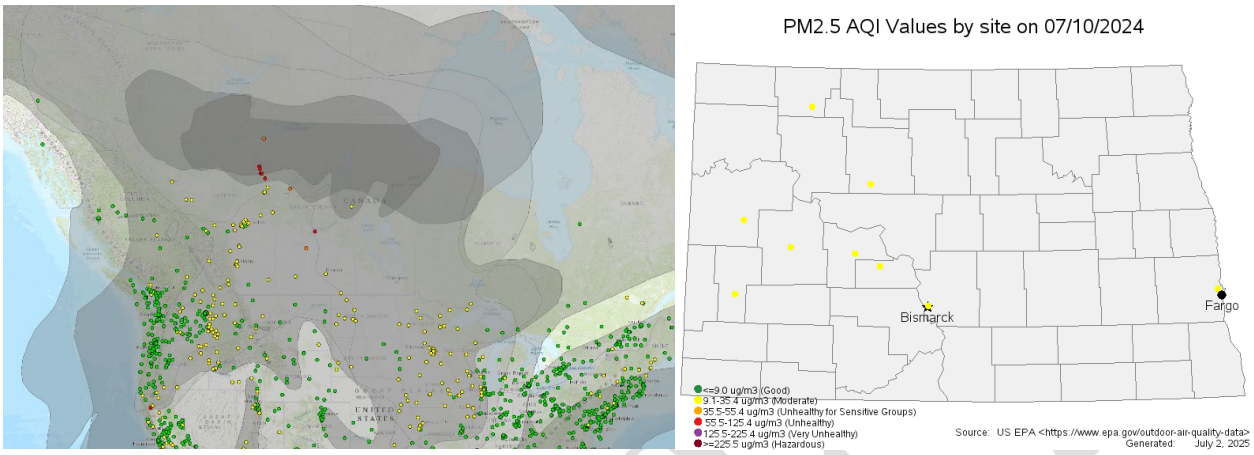
On July 9, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke and Burleigh Counties and at distinct high levels for Ward, Dunn, Mercer, and Oliver Counties.

Figure 49. July 9, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



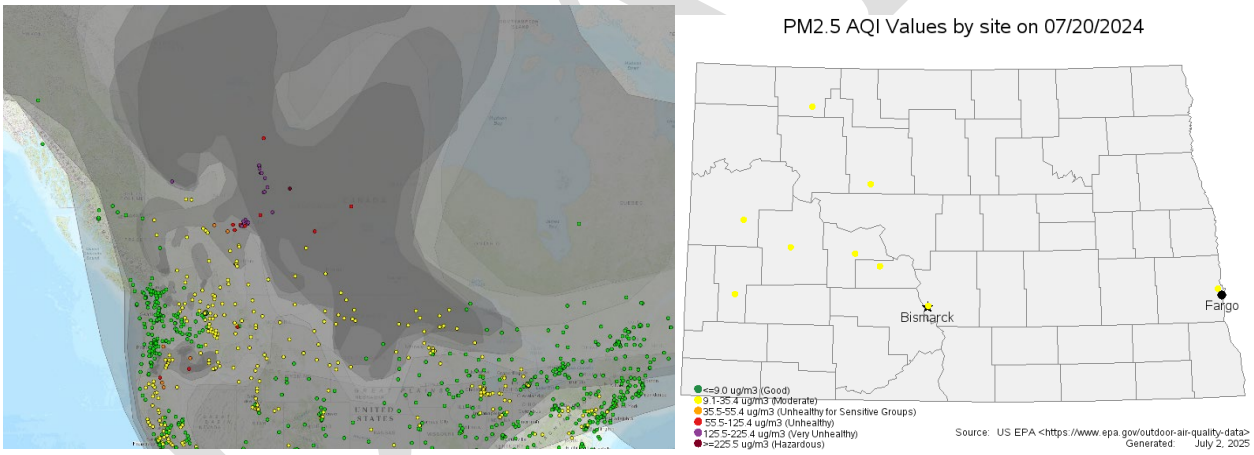
On July 10, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke, Ward, Dunn, Mercer, Oliver, and Burleigh Counties.

Figure 50. July 10, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



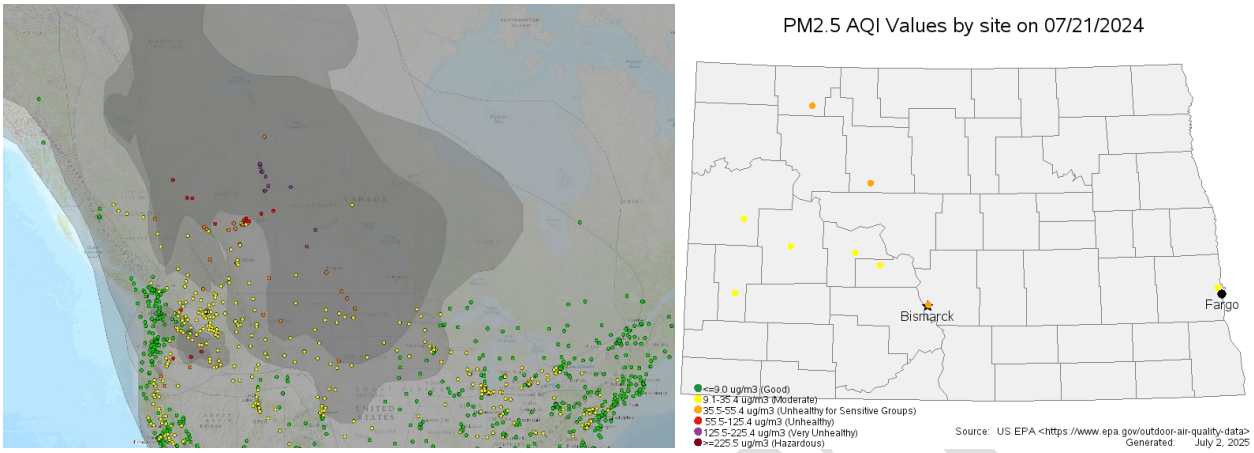
On July 20, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Billings County.

Figure 51. July 20, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



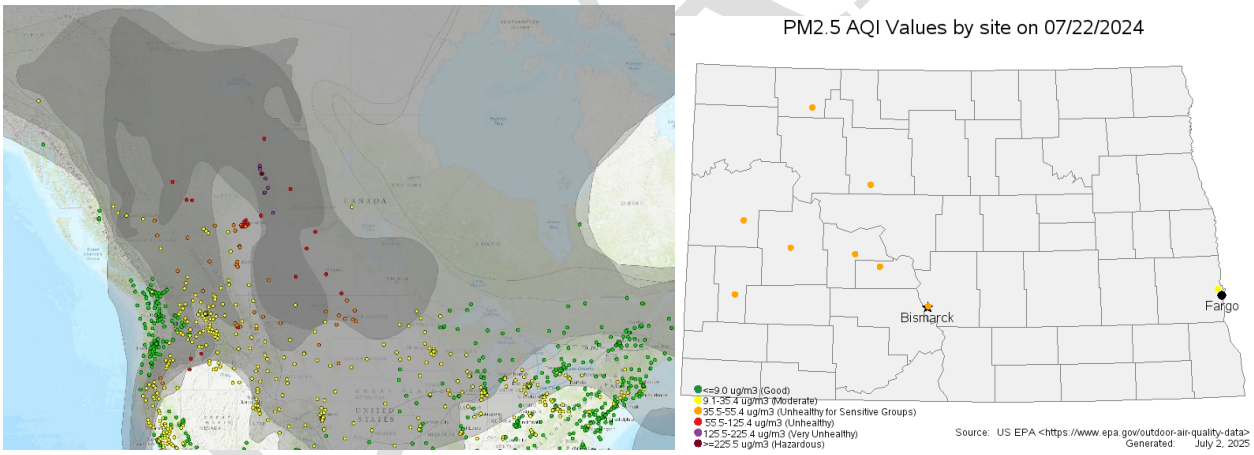
On July 21, widespread 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke, Ward, and Burleigh Counties and at distinct high levels for McKenzie, Dunn, Mercer, Oliver, and Billings Counties. Widespread $PM_{2.5}$ impacts ranged from Moderate in Billings, Cass, Dunn, McKenzie, Mercer, and Oliver Counties to Unhealthy for Sensitive Groups in Burke, Burleigh, and Ward Counties.

Figure 52. July 21, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



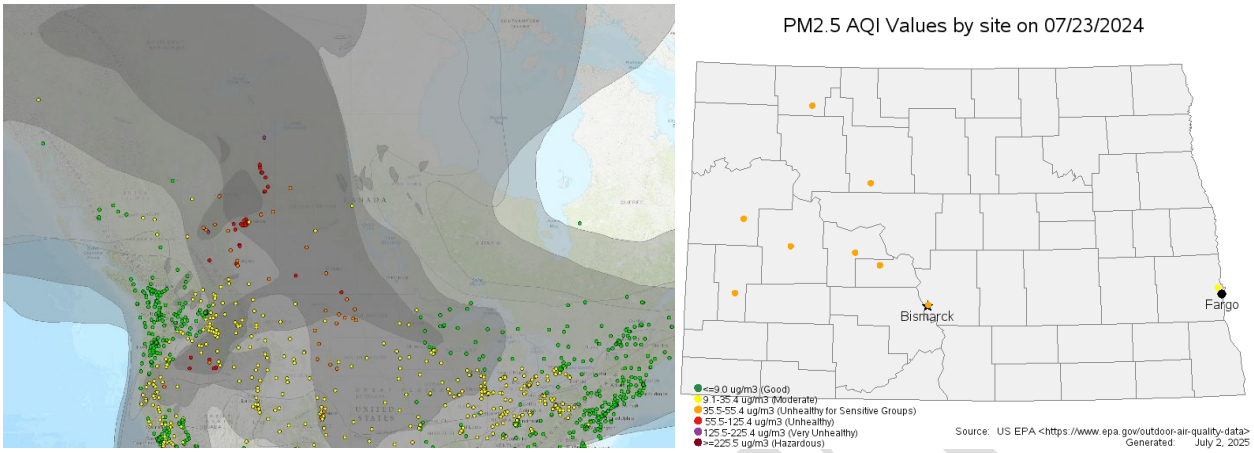
On July 22, statewide 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, and Burleigh Counties and at distinct high levels for Cass County. In addition, the 24-hour $PM_{2.5}$ concentration was the second highest Event concentration in 2024 for Burke County. Statewide $PM_{2.5}$ impacts ranged from Moderate in Cass County to Unhealthy for Sensitive Groups in Billings, Burke, Burleigh, Dunn, McKenzie, Mercer, Oliver, and Ward Counties.

Figure 53. July 22, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



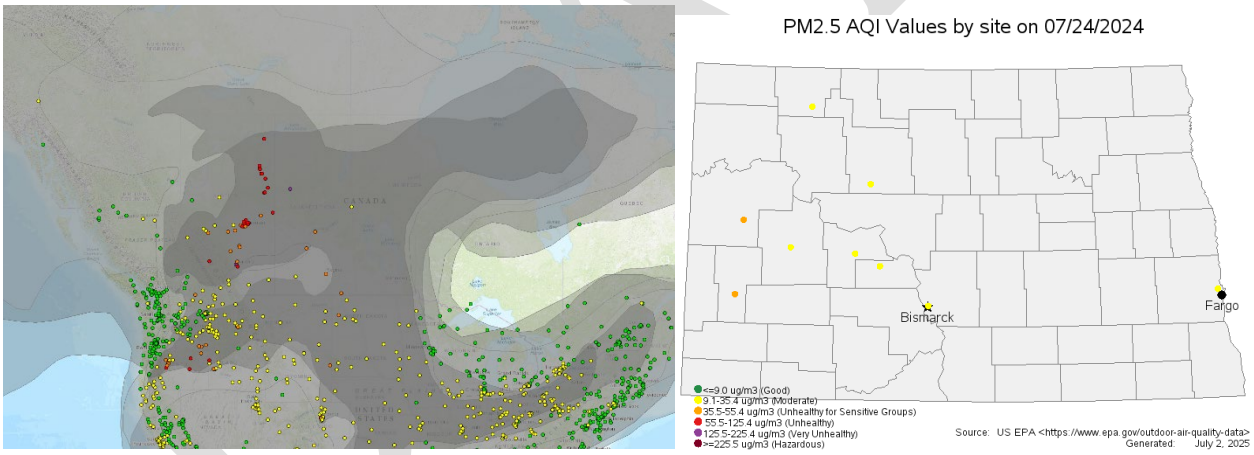
On July 23, widespread 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, and Burleigh Counties. In addition, the 24-hour $PM_{2.5}$ concentration was the second highest Event concentration in 2024 for Burleigh County. Widespread $PM_{2.5}$ impacts ranged from Moderate in Cass County to Unhealthy for Sensitive Groups in Billings, Burke, Burleigh, Dunn, McKenzie, Mercer, Oliver, and Ward Counties.

Figure 54. July 23, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



On July 24, widespread 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for McKenzie and Billings Counties and at distinct high levels for Burke, Ward, Dunn, Mercer, Oliver, and Burleigh Counties. Widespread $PM_{2.5}$ impacts ranged from Moderate in Burke, Burleigh, Cass, Dunn, Mercer, Oliver, and Ward Counties to Unhealthy for Sensitive Groups in Billings and McKenzie Counties.

Figure 55. July 24, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



On July 25, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, and Burleigh Counties.

On July 26, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke, Ward, Dunn, Mercer, Oliver, Billings, and Burleigh Counties.

On July 27, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for McKenzie, Dunn, Mercer, Oliver, Billings, Burleigh, and Cass Counties.

Figure 56. July 25, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

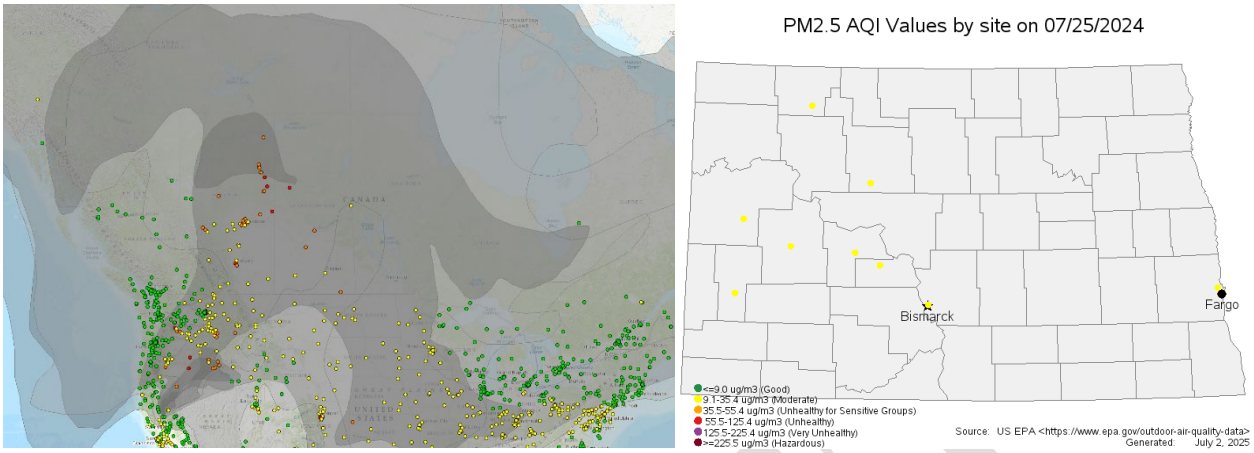


Figure 57. July 26, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

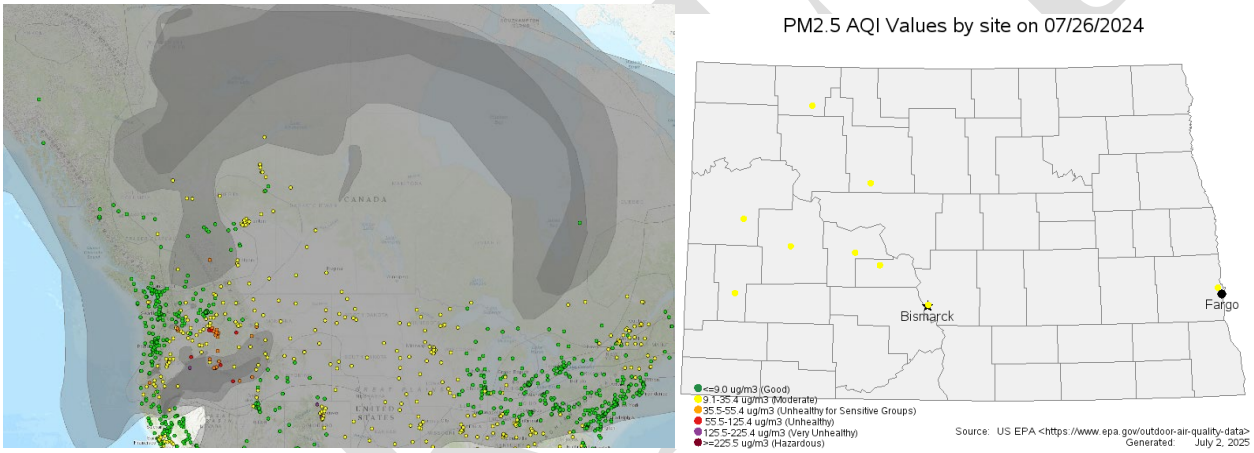
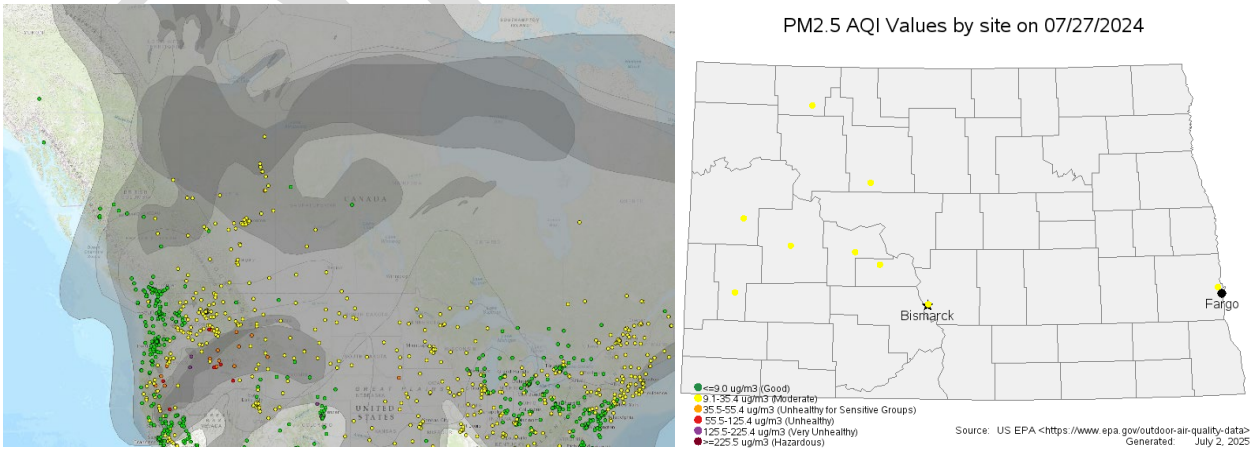


Figure 58. July 27, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



On July 28, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke County.

On July 29, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke and McKenzie Counties.

On July 30, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Ward, McKenzie, Dunn, Mercer, Oliver, and Billings Counties.

Figure 59. July 28, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

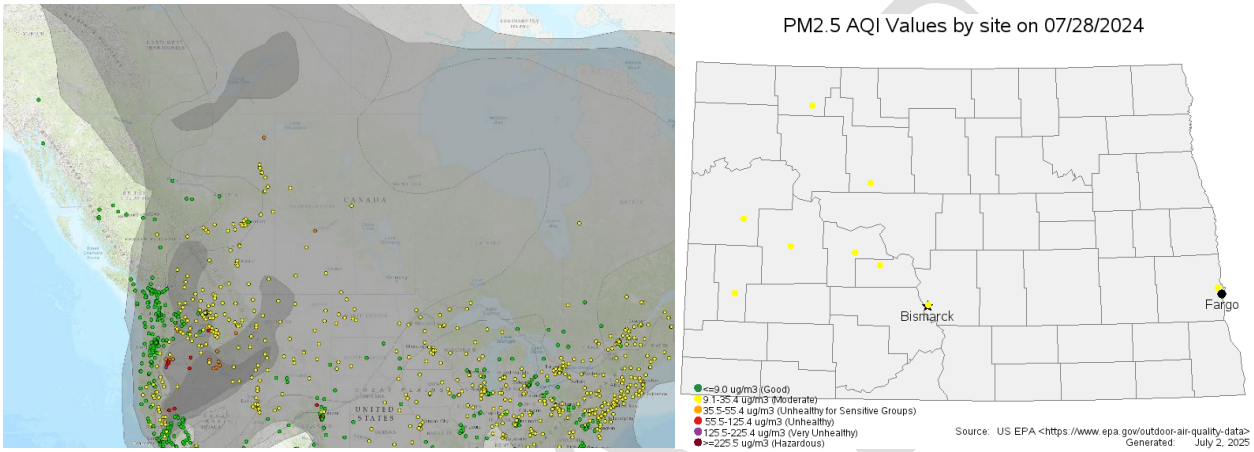


Figure 60. July 29, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

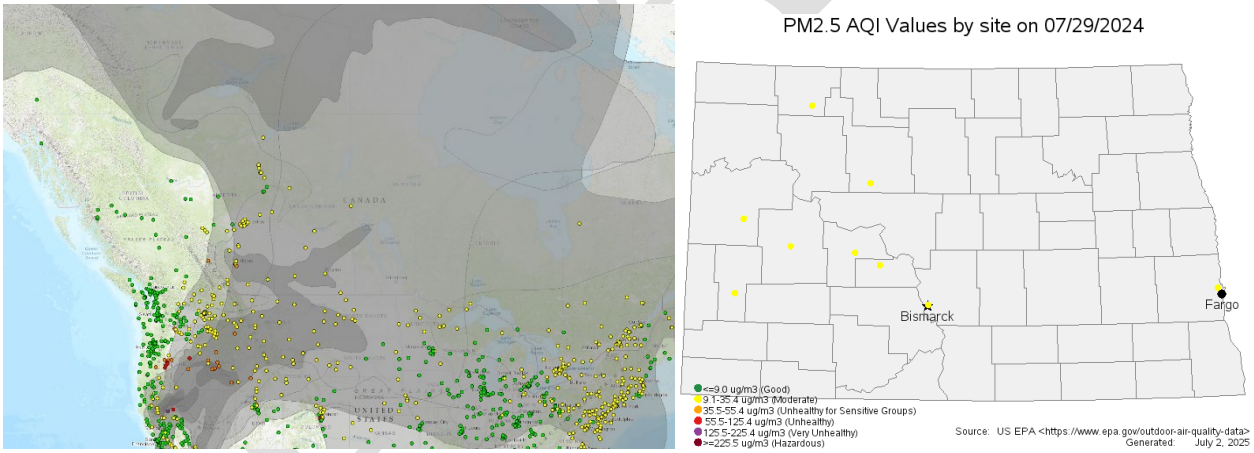
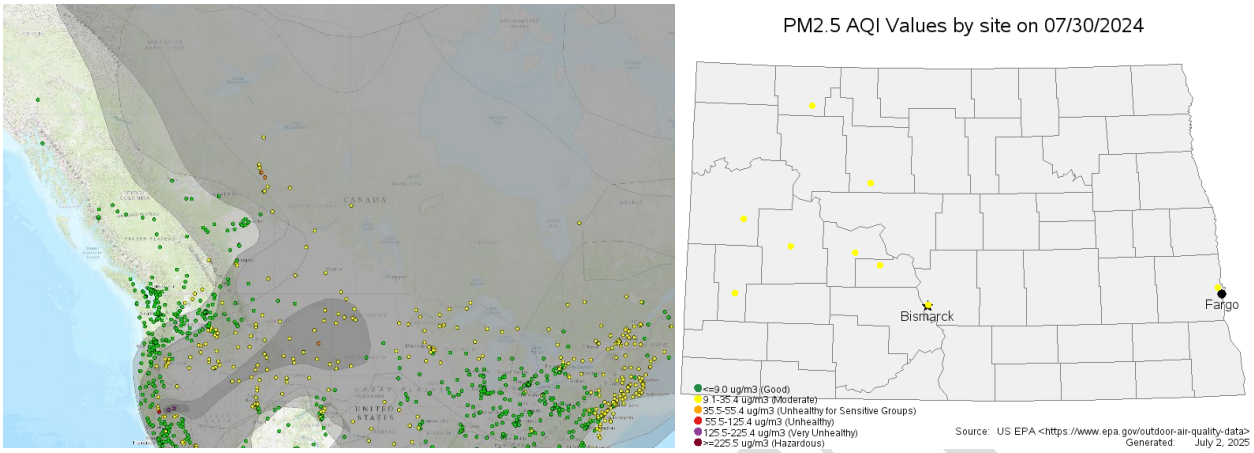


Figure 61. July 30, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

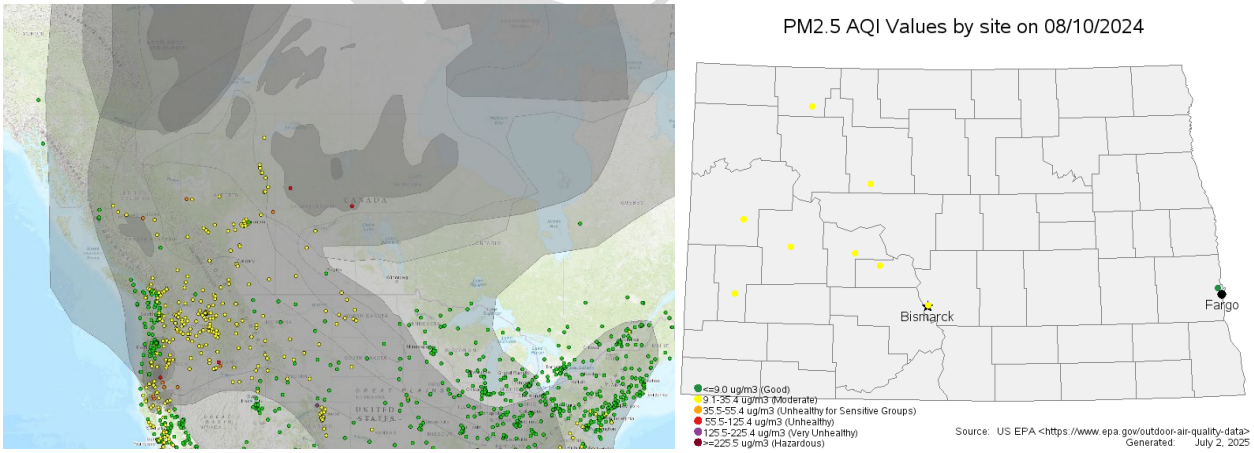


IV.2.3 August 2024

Canadian wildfire smoke impacts directly affecting air quality were observed in North Dakota from August 3 through August 5 and August 7 through August 10. Smoke from a combination of wildfires in Canada and the western U.S. directly affecting air quality in North Dakota were observed on August 11 through August 23. Smoke impacts directing affecting air quality were observed in North Dakota from western U.S. wildfires on August 24 and 25 and Canadian wildfires on August 27 and 28. Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored August 10 (see Figure 62) and August 15-20 (see Figures 63-68).

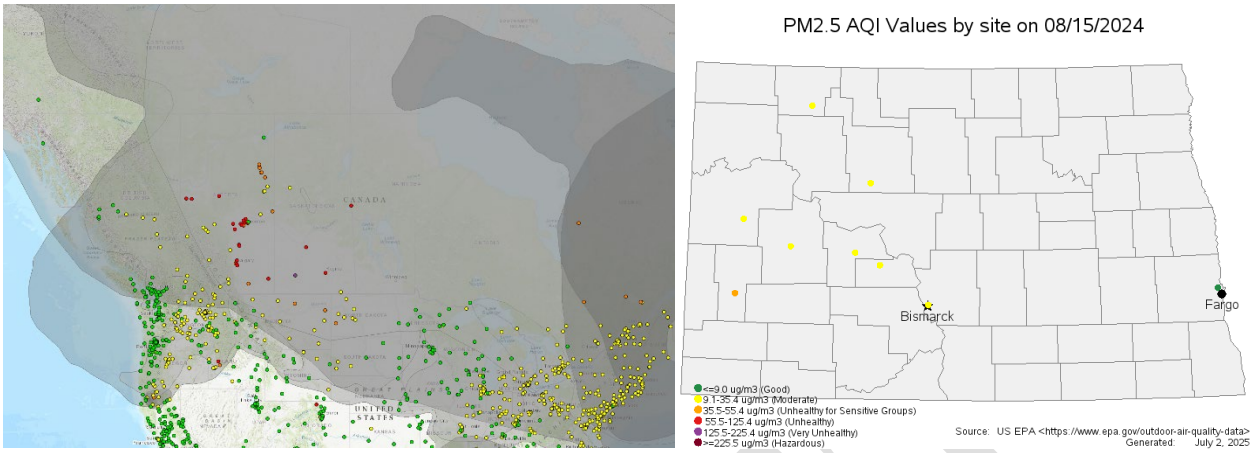
On August 10, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Burke, Ward, Dunn, and Burleigh Counties.

Figure 62. August 10, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



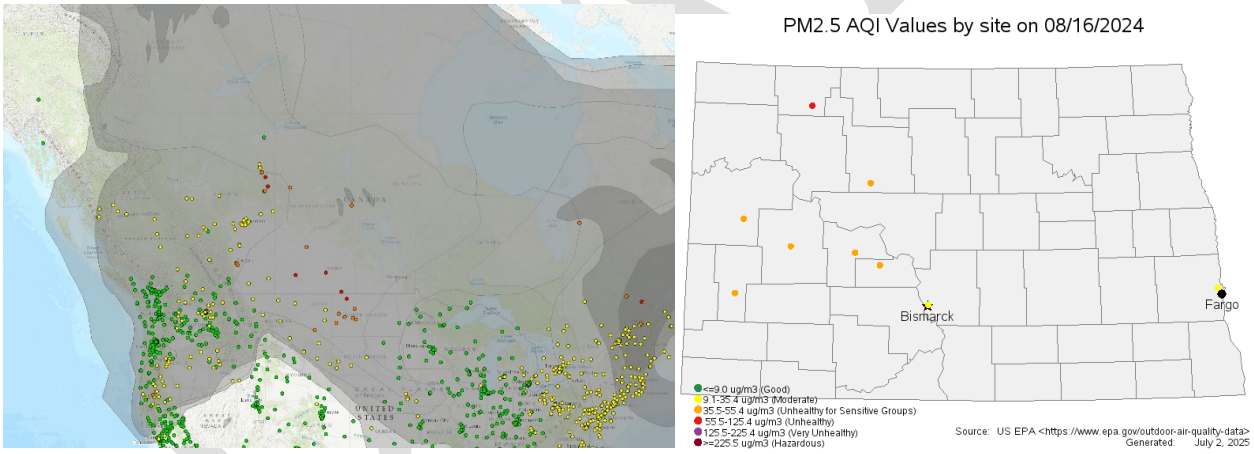
On August 15, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Billings County and at distinct high levels for McKenzie and Dunn Counties.

Figure 63. August 15, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



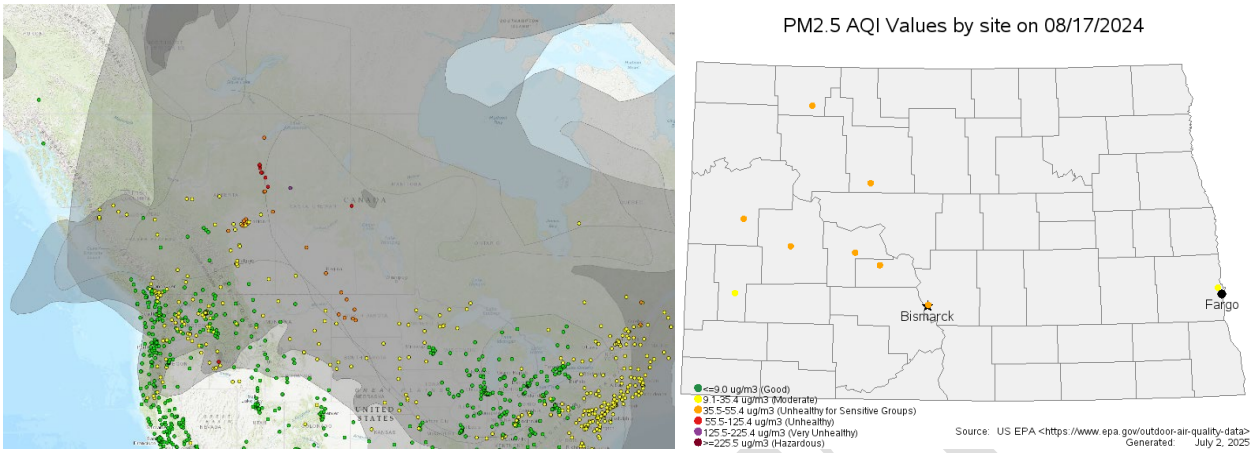
On August 16, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Ward, McKenzie, Dunn, Oliver, and Billings Counties and at distinct high levels for Burleigh County. Statewide $PM_{2.5}$ impacts ranged from Moderate in Burleigh and Cass Counties; to Unhealthy for Sensitive Groups in Billings, Dunn, McKenzie, Mercer, Oliver, and Ward Counties; and Unhealthy in Burke County.

Figure 64. August 16, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



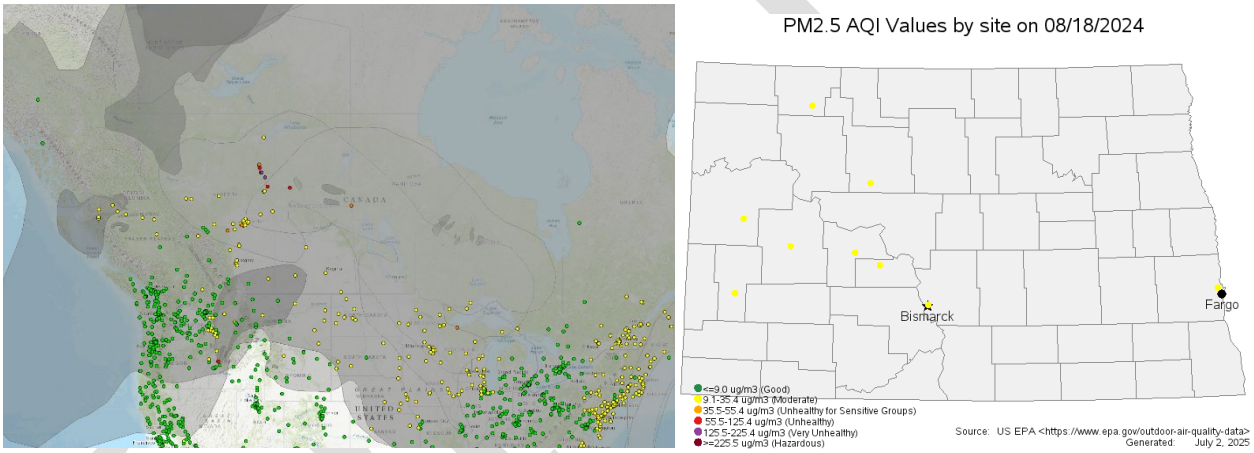
On August 17, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Ward, McKenzie, Dunn, Oliver, and Burleigh Counties and at distinct high levels for Billings and Cass Counties. Statewide $PM_{2.5}$ impacts ranged from Moderate in Billings and Cass Counties to Unhealthy for Sensitive Groups in Burke, Burleigh, Dunn, McKenzie, Mercer, Oliver, and Ward Counties.

Figure 65. August 17, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



On August 18, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Ward, Dunn, and Cass Counties.

Figure 66. August 18, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



On August 19, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Cass County.

On August 20, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Cass County.

Figure 67. August 19, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

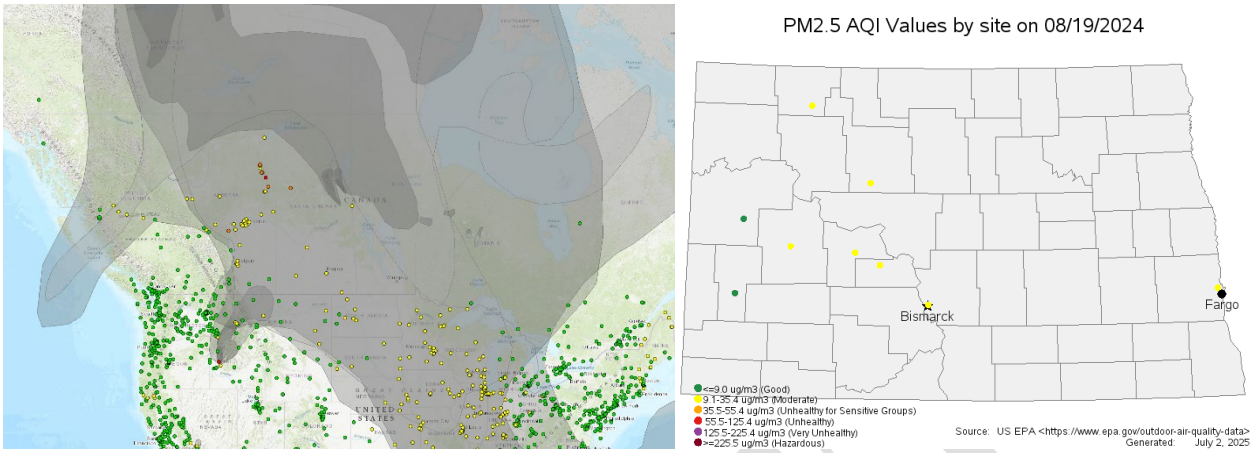
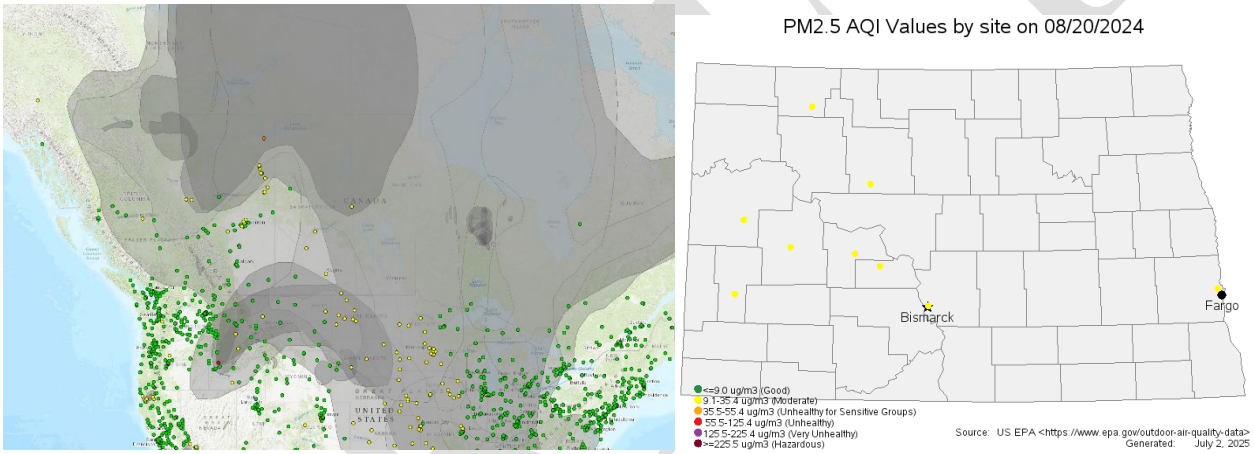


Figure 68. August 20, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

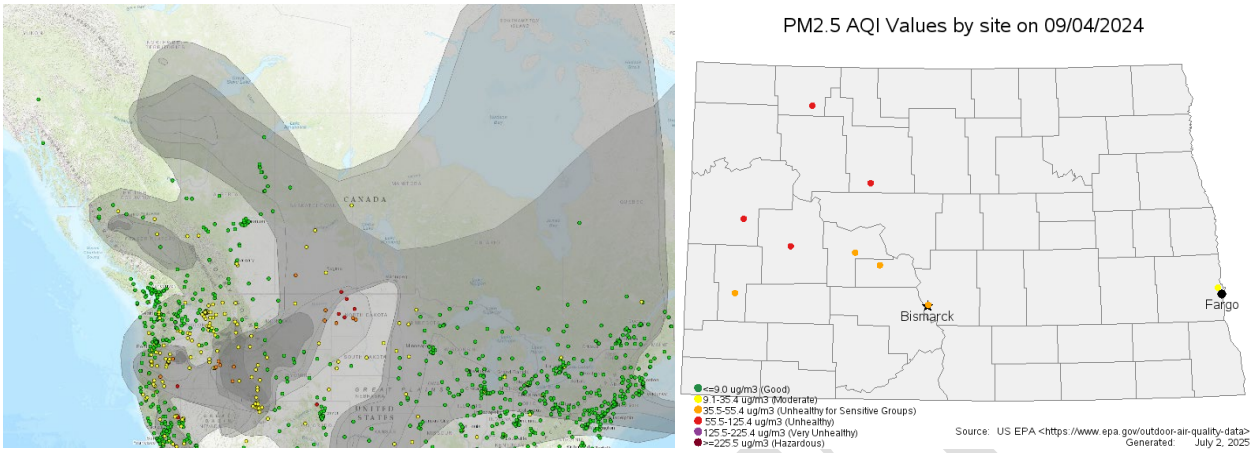


IV.2.4 September 2024

Canadian and western U.S. wildfire smoke impacts directly affecting air quality were observed in North Dakota from September 1 through September 5, September 9 through September 14, and September 28. Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored September 4 (see Figure 69) and September 9-11 (see Figures 70-72).

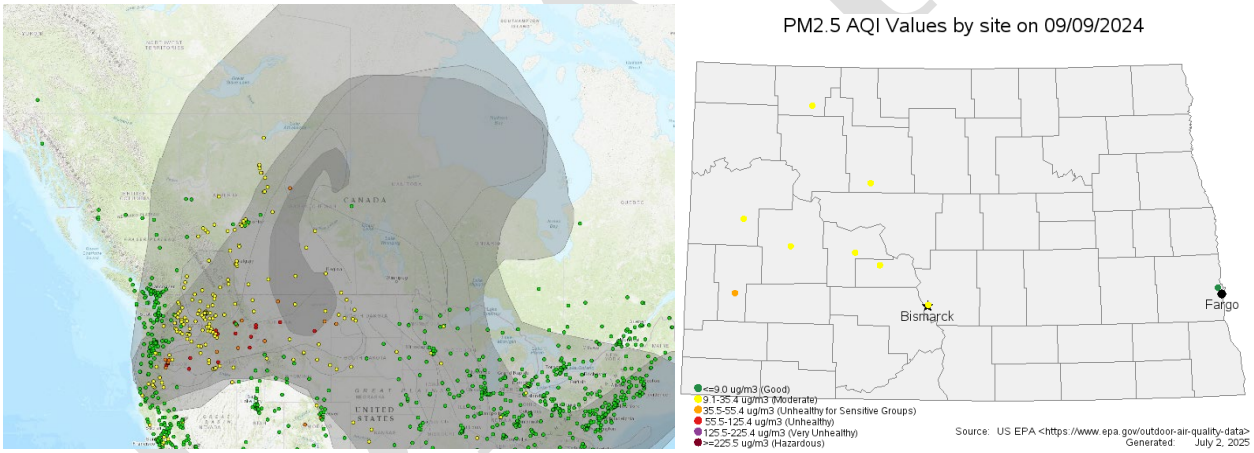
On September 4, widespread 24-hour $PM_{2.5}$ concentrations at eight of nine sites in Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, and Burleigh Counties were at distinct high levels exceeding the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS. In addition, the 24-hour $PM_{2.5}$ concentrations were the highest Event concentrations in 2024 for Burke and McKenzie Counties and the second highest Event concentrations in 2024 for Ward and Billings Counties. Statewide $PM_{2.5}$ impacts ranged from Moderate in Cass County; to Unhealthy for Sensitive Groups in Billings, Burleigh, Mercer, and Oliver Counties; and Unhealthy in Burke, Dunn, McKenzie, and Ward Counties.

Figure 69. September 4, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



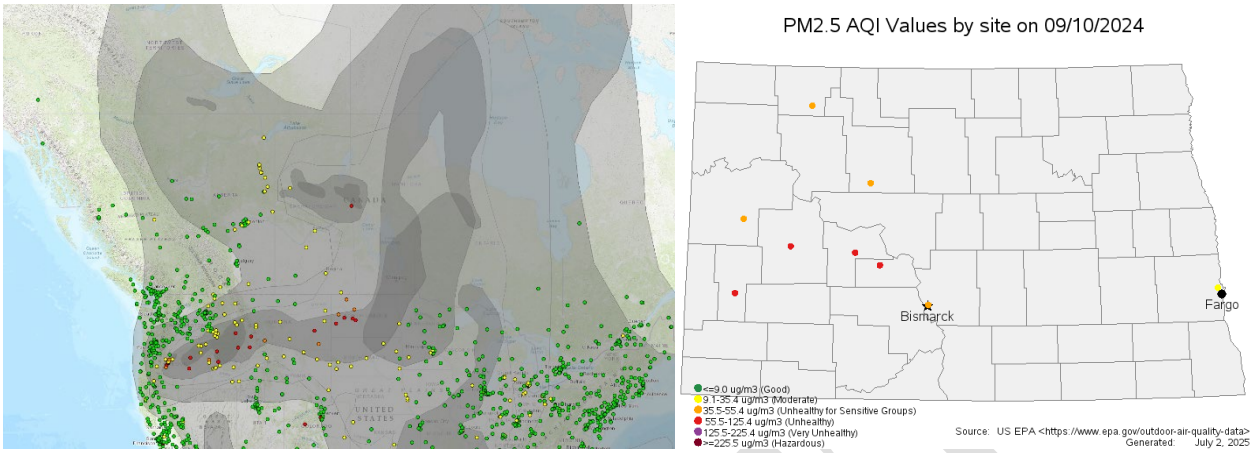
On September 9, 24-hour $PM_{2.5}$ concentrations were over the level of the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS for Billings County and at distinct high levels for McKenzie County.

Figure 70. September 9, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



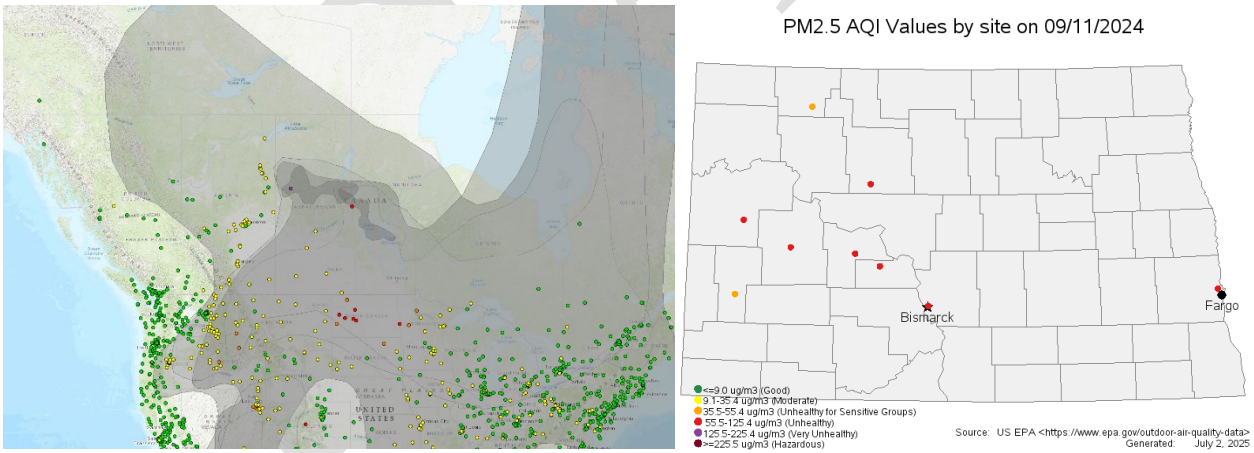
On September 10, widespread 24-hour $PM_{2.5}$ concentrations at eight of nine sites in Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, and Burleigh Counties were at distinct high levels exceeding the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS. In addition, the 24-hour $PM_{2.5}$ concentrations were the highest Event concentration in 2024 for Billings County and the second highest Event concentrations in 2024 for Dunn, Mercer, and Oliver Counties. Statewide $PM_{2.5}$ impacts ranged from Moderate in Cass County; to Unhealthy for Sensitive Groups in Burke, Burleigh, McKenzie, and Ward Counties; and Unhealthy in Billings, Dunn, Mercer, and Oliver Counties.

Figure 71. September 10, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



On September 11, statewide 24-hour $PM_{2.5}$ concentrations at all nine sites in Burke, Ward, McKenzie, Dunn, Mercer, Oliver, Billings, Burleigh, and Cass Counties were at distinct high levels exceeding the 24-hour $PM_{2.5}$ NAAQS and 2024 $PM_{2.5}$ Annual NAAQS. Furthermore, the 24-hour $PM_{2.5}$ concentrations were the highest Event concentrations in 2024 for six of nine sites in Ward, Dunn, Mercer, Oliver, Burleigh, and Cass Counties and the second highest Event concentration in 2024 for McKenzie County. Statewide $PM_{2.5}$ impacts ranged from Unhealthy for Sensitive Groups in Billings and Burke Counties to Unhealthy in Burleigh, Cass, Dunn, McKenzie, Mercer, Oliver, and Ward Counties.

Figure 72. September 11, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations

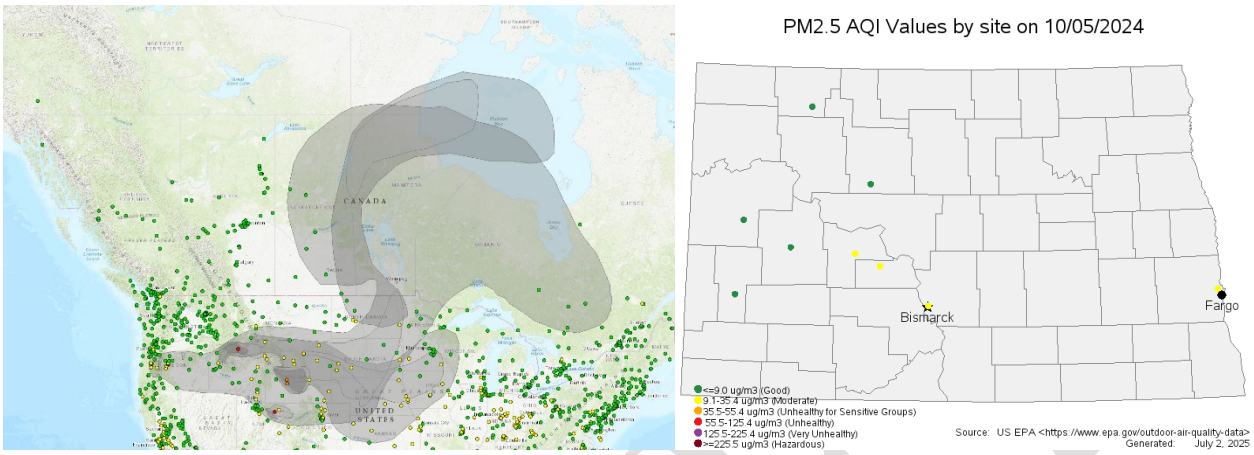


IV.2.5 October 2024

Smoke from regionally impacting wildfires in the western United States aggregated at times with additional localized smoke from wildfires in North Dakota. Wildfire smoke impacts directly affecting air quality were observed in North Dakota from October 5 and 6, October 8 through October 11, October 16 through October 18, October 28, and October 31. Distinct high levels of 24-hour $PM_{2.5}$ concentrations were monitored October 5 (see Figure 73) and October 8-9 (see Figures 74-75).

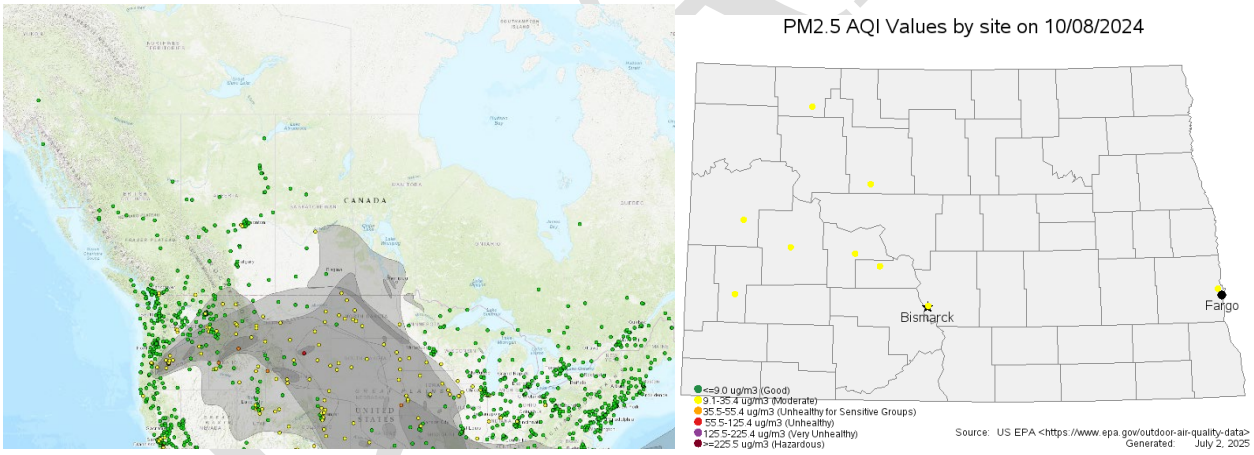
On October 5, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for Mercer County.

Figure 73. October 5, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



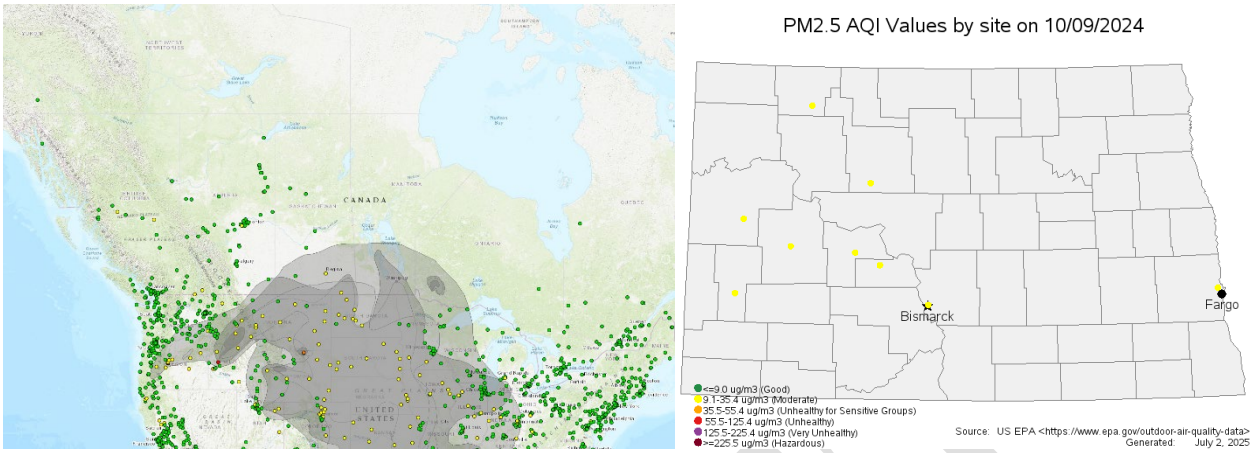
On October 8, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for McKenzie and Billings Counties.

Figure 74. October 8, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



On October 9, 24-hour $PM_{2.5}$ concentrations were at distinct high levels for McKenzie, Mercer, and Billings Counties.

Figure 75. October 9, 2024 Smoke Plume and Monitored $PM_{2.5}$ Concentrations



IV.3 Clear Causal Conclusion

From early-May through early-October of 2024, a wildfire smoke exceptional event (Event) occurred when smoke from wildfires across Canada, the western United States, and North Dakota directly affected the air quality in North Dakota. The 2024 wildfires produced particulate matter ($PM_{2.5}$) outside the regulatory control of the NDDEQ, which regulates air pollution on state land within the State of North Dakota. In addition, the wildfires across Canada and the western United States are outside the jurisdictional borders of the State of North Dakota. The resultant $PM_{2.5}$ concentrations at all nine North Dakota air monitoring sites (see Figure 1 and Table 1 as well as Appendix A, Initial Notification Table A) were at distinct high levels, observably higher than non-event concentrations, and exceeded the level of the 24-hour $PM_{2.5}$ NAAQS and new 2024 $PM_{2.5}$ Annual NAAQS. The information in Sections III and IV clearly demonstrates the meteorological conditions that supported the transport of the 2024 wildfire smoke across North Dakota and to the locations of the nine monitoring sites. See Table 1 (as well as Appendix A, Initial Notification Table A) for the $PM_{2.5}$ Event concentrations on 31 dates at nine $PM_{2.5}$ monitoring sites for a total of 205 $PM_{2.5}$ monitor Event days, inclusive of the primary and collocated monitors. The comparisons and analyses, provided in Section IV and Appendix D, support the NDDEQ's conclusion that the 2024 wildfire smoke affected air quality in such a way that there exists a clear causal relationship between the Event and the monitored $PM_{2.5}$ Event concentrations in Table 1 (as well as Appendix A, Initial Notification Table A) and thus satisfies the clear causal relationship criterion for treatment as an exceptional event.

Section V. Natural Event or Human Activity Unlikely to Recur at a Particular Location

This section satisfies the following federal requirement:
A demonstration that the event was a human activity that is unlikely to recur at a location or was a natural event.
40 CFR § 50.14(c)(3)(iv)(E)

The Exceptional Event Rule requires a demonstration that the event was a human activity that is unlikely to recur at a particular location or was a natural event.

The definition for natural event is provided in 40 CFR § 50.1(k).

> 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.

The definition for wildfire is provided in 40 CFR § 50.1(n).

> 40 CFR § 50.1(n): Wildfire is any fire started by an unplanned ignition caused by lightning; volcanoes; other acts of nature; unauthorized activity; or accidental, human-caused actions, or a prescribed fire that has developed into a wildfire. A wildfire that predominantly occurs on wildland is a natural event.

The definition for wildland is provided in 40 CFR § 50.1(o).

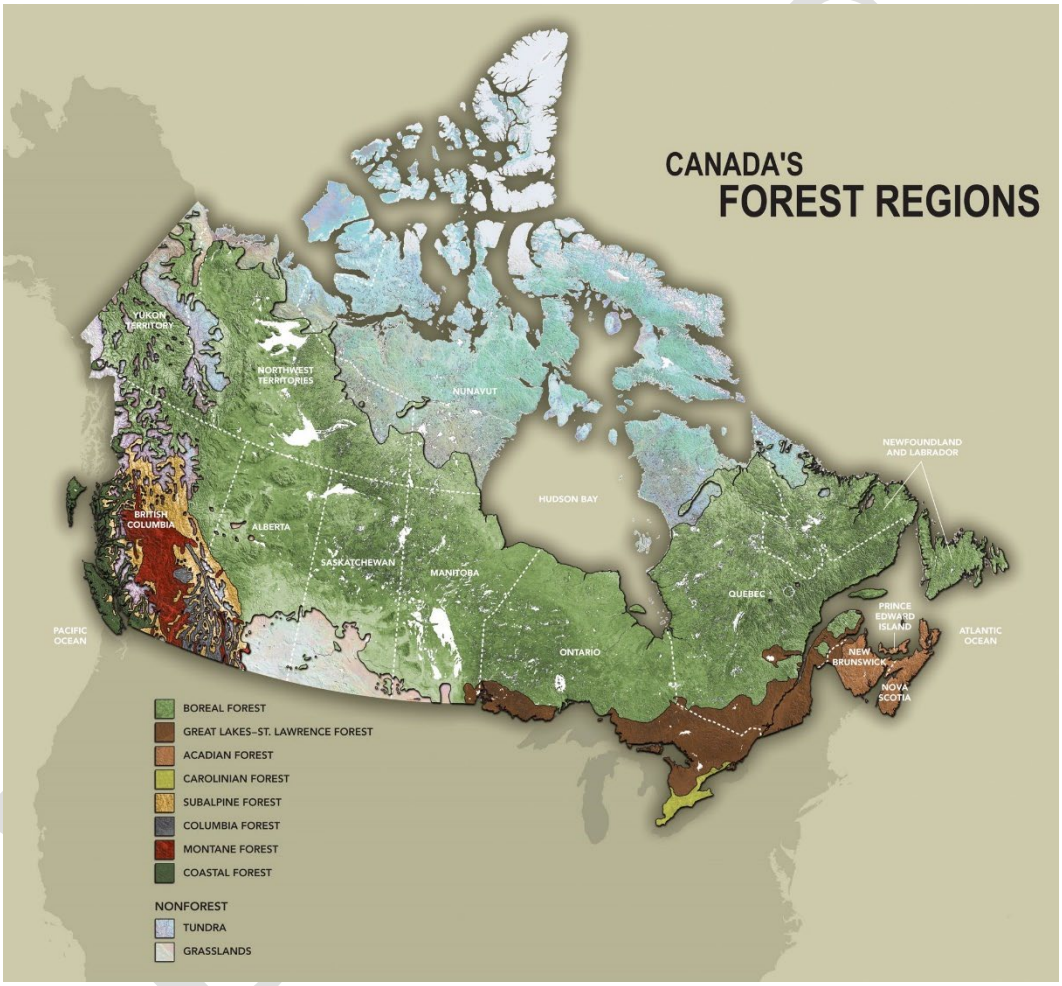
> 40 CFR § 50.1(o): Wildland means an area in which human activity and development are essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered.

The interrelated nature of the definitions above makes clear that wildfire "is any fire started by an unplanned ignition" that "predominately occurs on wildland is a natural event". In the Exceptional Event Rule, EPA clarifies that an event could be considered a natural event by applying the reasonable interpretation that the anthropogenic source had "little" direct causal role.

The origin and evolution of the 2024 wildfires in Canada, the western United States, and North Dakota are documented in Sections III and IV of this demonstration. No single wildfire was responsible for the smoke that was present in North Dakota during the Event timeframe of early-May through early-October. Rather, regionally impacting wildfire smoke originated from remote wildfires across Canada as well as the western United States and were transported into the Central United States, including North Dakota, for much of early-May through mid-September and late-July through early-October, respectively. At times in July, August, and September, the regionally impacting wildfire smoke combined in North Dakota from the distant wildfires across Canada and the western United States. In October, smoke from regionally impacting wildfires in the western United States aggregated with additional localized smoke from wildfires in North Dakota.

The 2024 wildfires occurred across Canada and burned in remote areas, see Figure 2. Canada's forest regions are illustrated in Figure 76 and much of these areas can be considered wildland where little human activity and development exist. Based on the documentation provided, unplanned ignitions such as lightning caused the majority of the unintended areas burned by wildfires on wildland.

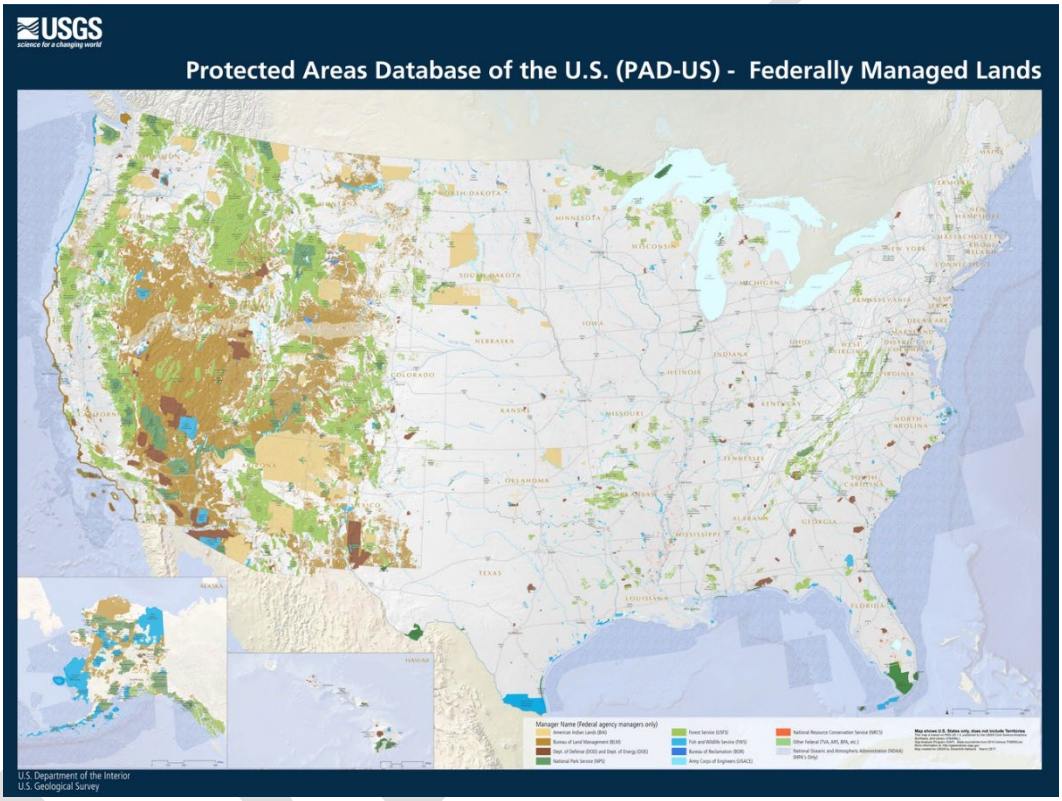
Figure 76. Canada Forest Regions[60]



[60] Natural Resources Canada, https://natural-resources.canada.ca/forest-forestry/sustainable-forest-management/forest-classification, accessed 6/19/2025.

Many of the large 2024 wildfires in the western United States burned in remote areas, see Figure 7. Land within national parks, national forests, wilderness areas, state forests, state parks, and state wilderness areas are generally considered wildland by the EPA. The map of federal lands in the United States in Figure 77 displays that much of the western United Stated can be considered wildland. Based on the documentation provided, unplanned ignitions such as lightning caused the majority of the unintended area burned by wildfires on wildland in the western United States.

Figure 77. United States Federal Lands[61]



In October 2024, multiple wildfires in northwestern North Dakota were caused by unplanned ignitions and burned in rural areas. These rural areas consist of small rural towns, open land and fields including North Dakota's oil field, agricultural land, grassland, and rugged Badlands. The rural areas burned in North Dakota were identified as wildland by the North Dakota Insurance Department – Office of the State Fire Marshal. The burned area is also wildland according to the Exceptional Event Rule definition, where little human activity and development exists except for widely scattered roads, power lines, and structures. Based on the documentation provided, unplanned ignitions caused the unintended area burned by wildfires on wildland in northwestern North Dakota.

[61] https://www.usgs.gov/media/images/pad-us-14-map-federal-lands

Based on the documentation provided in Sections III, IV, and V of this demonstration, the event qualifies as a wildfire because unplanned ignitions caused the majority of the unintended wildfires and area burned on wildland across Canada, the western United States, and northwestern North Dakota. The EPA generally considers the particulate matter emissions ($PM_{2.5}$) from wildfires on wildland to meet the regulatory definition of a natural event at 40 CFR § 50.1(k), defined as one "in which human activity plays little or no direct causal role." The NDDEQ has shown that the wildfire event is a natural event and thus satisfies the criterion for treatment as an exceptional event.

SECTION VI. NOT REASONABLY CONTROLLABLE AND NOT REASONABLY PREVENTABLE

This section satisfies the following federal requirements:
The event was both not reasonably controllable and not reasonably preventable.
40 CFR § 50.14(c)(3)(iv)(D)

The event was caused by a natural event.
40 CFR § 50.14(c)(3)(iv)(A) and 40 CFR § 50.1(j)

An exceptional event is one that is both not reasonably controllable and not reasonably preventable.
40 CFR § 50.14(b)(8)(vii) and 40 CFR § 50.14(b)(4)

VI.1 2024 Canadian and Western United States Wildfires

The Exceptional Events Rule 40 CFR § 50.14(b)(8)(vii) provides that a state would not be required to provide case-specific justification to support the not reasonably controllable or preventable criterion when the emissions-generating event was outside the State, as was the case with the wildfires across Canada as well as the western United States. Specifically, 40 CFR § 50.14(b)(8)(vii) states:

> The Administrator shall not require a State to provide case-specific justification to support the not reasonably controllable or preventable criterion for emissions-generating activity that occurs outside of the State's jurisdictional boundaries within which the concentration at issue was monitored.

Therefore, it is NDDEQ's conclusion that emissions from the 2024 wildfires across Canada as well as the western United States were not reasonably controllable or preventable by North Dakota and thus satisfies the criterion for treatment as an exceptional event.

VI.2 2024 North Dakota Wildfires

Exceptional Events Rule 40 CFR § 50.14(b)(4) explains that wildfires occurring predominantly on wildland will meet the requirements of the not reasonably controllable or preventable criterion. Specifically, 40 CFR § 50.14(b)(4) states:

> 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.

The origin and evolution of the 2024 wildfires in North Dakota are documented in Sections III and IV of this demonstration while Section V documents how the burned area is wildland according to the Exceptional Event Rule definition. Based on the documentation provided, unplanned ignitions caused the unintended area burned by wildfires on wildland in northwestern North Dakota.

No single wildfire was responsible for the smoke that was present in North Dakota during the Event timeframe of early-May through early-October. The State of North Dakota could not have prevented the wildfires, or the smoke caused, that had a significant impact on air quality and elevated $PM_{2.5}$ monitored concentrations to levels significantly higher than normal in North Dakota. The NDDEQ is not aware of any evidence clearly demonstrating that prevention or control efforts beyond those actually made would have been reasonable. Therefore, it is NDDEQ's conclusion that emissions from the 2024 North Dakota wildfires were not reasonably controllable or preventable and thus satisfies the criterion for treatment as an exceptional event.

SECTION VII. PUBLIC NOTIFICATION

This section satisfies the following federal requirements:

State public notification when an event occurs or is reasonably anticipated to occur, which may result in the exceedance of an applicable air quality standard.
40 CFR § 50.14(c)(1)(i)

Documentation that the State air regulatory agency followed the public comment process.
40 CFR § 50.14(c)(3)(v)(A)

Submit the public comments it received, as well as comment responses, along with the demonstration to the Administrator.
40 CFR § 50.14(c)(3)(v)(B-C)

VII.1 Public Outreach

The NDDEQ website homepage[62] displays current air quality conditions by providing the EPA AirNow animation of the Air Quality Index as well as links to learn more information. The NDDEQ website Air Quality Monitoring page[63] also displays current air quality conditions and a video prepared by KFYR-TV to explain the Air Quality Index, Wildfire Smoke Impacts, and Forecasting[64], as well as providing monitoring network information. Additionally, the NDDEQ website Wildfires and Air Quality page[65] provides further information specific to wildfire effects and North Dakota's air quality.

During the 2024 wildfire smoke event that impaired air quality in North Dakota, the NDDEQ and other federal government agencies notified the public of the dangers and potential health impacts of excessive smoke from the wildfires across Canada, the western United States, and North Dakota. Website publications included the NDDEQ issued Press Releases, National Weather Service forecasts, and the display of the Air Quality Index (AQI) by many weather websites. Many local news providers produced, broadcast, and published meteorological and smoke forecasts in addition to news stories related to the 2024 wildfire smoke. NDDEQ staff were also interviewed and featured in news stories related to the air quality impacts experienced in North Dakota as a result of the 2024 wildfire smoke. Individuals, especially sensitive individuals with respiratory conditions, were advised to consider limiting prolonged outdoor exposure during smoky conditions. NDDEQ Press Releases and select news stories are contained in Appendix C.

VII.2 Notice and Opportunity for Comment

Before making final the Exceptional Event Demonstration, the NDDEQ must solicit public comment. The Exceptional Event Rule 40 CFR § 50.14(c)(3)(v)(A) provides for a 30-day comment period for the public as well as initial EPA review of the Exceptional Event Demonstration.

The NDDEQ's public notice of intent (NOI) and the Exceptional Event Demonstration will be available for review at NDDEQ's office and will be posted on the NDDEQ's Division of Air Quality website at https://deq.nd.gov/AQ/PublicCom.aspx. All comments submitted following the NOI instructions will be considered and included in the final Exceptional Event Demonstration, along with NDDEQ's comment responses.

[62] https://deq.nd.gov/
[63] https://deq.nd.gov/AQ/monitoring/
[64] https://youtu.be/mVcrWFONERc
[65] https://deq.nd.gov/AQ/monitoring/Wildfire.aspx

SECTION VIII. CONCLUSION

This demonstration addresses all required components of a request to exclude exceptional event-related data, as detailed in 40 CFR § 50.14. From early-May through early-October of 2024, smoke from wildfires across Canada, the western United States, and North Dakota directly affected the air quality in North Dakota. The Event concentrations were all above the level of the EPA $PM_{2.5}$ Tier 1 thresholds for each site and were all influenced by smoke from the 2024 wildfires. The NDDEQ considers these exceedances of the level of the $PM_{2.5}$ NAAQSs to meet the criteria of regulatory significance as they impact regulatory determinations about North Dakota's attainment of the NAAQS. Pursuant to federal regulations, the NDDEQ requests EPA concurrence that the $PM_{2.5}$ Event concentrations in Table 1 (as well as Appendix A, Initial Notification Table A) were caused by an exceptional event and should be excluded from the data record for the $PM_{2.5}$ NAAQS (annual and 24-hour) and any other applicable regulatory purposes (40 CFR § 50.14(b)). The days and sites for which the NDDEQ is requesting concurrence were impacted by an Event consistent with EPA's definition of "unusual or naturally occurring events that can affect air quality but are not reasonably controllable using techniques that tribal, state, or local air agencies may implement in order to attain and maintain the [NAAQS]" (USEPA, 2020a).

APPENDICES

Appendix A Initial Notification of North Dakota 2024 $PM_{2.5}$ Wildfire Exceptional Event

Appendix B 2023 Annual Ambient Air Monitoring Data Certification (without attachments)

Appendix C NDDEQ Press Releases and News Stories

Appendix D $PM_{2.5}$ Tiering Tool Analyses

Appendix E Fire and Smoke Maps

Appendix F AMP350 Reports

Appendix G Public Comments

APPENDIX A INITIAL NOTIFICATION OF NORTH DAKOTA 2024 $PM_{2.5}$ WILDFIRE EXCEPTIONAL EVENT

On July 22, 2025, NDDEQ submitted an "Initial Notification of Exceptional Event" to U.S. EPA Region 8.

NORTH Dakota | Environmental Quality
Be Legendary.

July 22, 2025

Via EPA CDX S4EE: SPeCS for Exceptional Events

Ms. Adrienne Sandoval
Director Air and Radiation Division
U.S. EPA Region 8
1595 Wynkoop Street
Denver, Colorado 80202-1129

Re: Initial Notification of North Dakota 2024 $PM_{2.5}$ Wildfire Exceptional Event

Dear Ms. Sandoval,

The North Dakota Department of Environmental Quality (NDDEQ) is submitting an initial notification of a wildfire smoke exceptional event (Event). The Event occurred from early-May through early-October 2024 with smoke from wildfires across Canada, the western United States, and North Dakota having directly affected the air quality in North Dakota. The 2024 wildfires produced impacts that are outside the regulatory control of the NDDEQ, which regulates air pollution on state land within the State of North Dakota. While the wildfire smoke impacts were regional in nature and observable throughout the state during the Event, it did not cause all monitors to continuously exceed the particulate matter ($PM_{2.5}$) National Ambient Air Quality Standard (NAAQS) throughout the duration of the Event.

Smoke from the 2024 wildfires impacted and resulted in recorded exceedances of the level of the 24-hour $PM_{2.5}$ NAAQS (35 $\mu g/m^3$) and annual $PM_{2.5}$ NAAQS (9.0 $\mu g/m^3$). The initial notification conservatively includes 31 Event dates at nine (9) $PM_{2.5}$ monitoring sites for a total of 205 $PM_{2.5}$ monitor event days, inclusive of the primary and collocated monitors. The Event concentrations for each primary monitor were all above the level of the EPA $PM_{2.5}$ Tier 1 thresholds. The NDDEQ – Division of Air Quality (Division) has evaluated the initial notification and circumstances surrounding the Event and represents that the Event should be considered by the US EPA Region 8 as a wildfire smoke exceptional event.

The NDDEQ is submitting an "Initial Notification of Exceptional Event" and applying the data qualifiers in EPA's Air Quality System (AQS) as per 40 CFR 50.14(c)(2)(i) as a result of elevated $PM_{2.5}$ concentrations, which were all influenced by smoke from wildfires and impact regulatory decisions about North Dakota's attainment of the NAAQS. The NDDEQ requests that the Administrator determines this Event meets the provisions outlined in 40 CFR 50.14(a)(1)(i)(A) as

4201 Normandy Street | Bismarck ND 58503-1324 | Fax 701-328-5200 | deq.nd.gov

Director's Office	Division of Air Quality	Division of Municipal Facilities	Division of Waste Management	Division of Water Quality	Division of Chemistry
701-328-5150	701-328-5188	701-328-5211	701-328-5166	701-328-5210	701-328-6140 2635 East Main Ave Bismarck ND 58501

a regulatory determination to designate an area for the new 2024 $PM_{2.5}$ Annual NAAQS of 9.0 $\mu g/m^3$ as well as 40 CFR 50.14(a)(1)(i)(F) as a regulatory determination made on a case-by-case basis.

Promulgation of the new 2024 $PM_{2.5}$ annual NAAQS has triggered the state recommendation process to be followed by the EPA designation process. As part of these regulatory processes, the three-year design values to be relied upon for the $PM_{2.5}$ annual NAAQS state attainment recommendations (2021-2023) and EPA attainment designations (2022-2024), will be significantly increased as a result of monitored data directly affected by wildfire smoke in 2023 as well as 2024. As such, the NDDEQ considers this exceptional event to be of regulatory significance.

It's important to note, the elevated $PM_{2.5}$ concentrations will affect future year's design values, with the potential of future NAAQSs violations, which is also of regulatory significance because of the NDDEQ's reliance on ambient data to determine compliance with the NAAQS at state run air monitoring stations. Additionally, these data are used in NDDEQ's air pollution control permitting process as well as by the US EPA and third parties in evaluating North Dakota's air quality. These reasons demonstrate the need to accurately portray anthropogenic versus non-anthropogenic or "exceptional" air quality issues to the public by means of excluding exceptional event concurred data from the data record.

The NDDEQ considers these exceedances of the level of the $PM_{2.5}$ NAAQS to meet the criteria of regulatory significance and requests that the Administrator determines this Event meets the provisions outlined in 40 CFR 50.14(a)(1)(i)(A) as well as 50.14(a)(1)(i)(F) and agrees that the US EPA Region 8 will review a demonstration for this wildfire smoke exceptional event.

Please contact my staff with questions: Darla Potter, Environmental Engineer (701-328-5101, dpotter@nd.gov) or Ryan Mills, Ambient Air Monitoring Program Manager (701-328-5254, rmills@nd.gov).

Sincerely,

James L. Semerad
Director
Division of Air Quality

JLS/DJP:er
Enc:

Exceptional Event Initial Notification Summary Information Update

Submitting Agency: North Dakota Department of Environmental Quality – Division of Air Quality
Agency Contacts: Jim Semerad / Ryan Mills / Darla Potter
Date Submitted: 07/22/2025
Applicable NAAQS: $PM_{2.5}$ Annual (9 µg/m³); $PM_{2.5}$ 24-Hr (35 µg/m³)
Affected Regulatory Decision[1]: 50.14(a)(1)(i) Options A and F – see cover letter
(for classification decisions, specify level of the classification with/without EE concurrence)
Area Name/Designation Status: North Dakota - Attainment/Unclassifiable
Design Value Period (list three-year period): 2022-2024
(where there are multiple relevant design value periods, summarize separately)
[1] designation, classification, attainment determination, attainment date extension, or finding of SIP inadequacy leading to SIP call

Note: The U.S. EPA Exceptional Events Analysis and Visualization Tools accessed at https://www.epa.gov/air-quality-analysis/exceptional-events-analysis-and-visualization-tools are the primary source of the following summary information.

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

Date of Event	Type of Event (high wind, volcano, wildfires, prescribed fire, other[2])	AQS Flag[3]	Monitor (AQS ID and POC)[4]	Monitor Name	$PM_{2.5}$ Concentration[5] (µg/m³)	Notes (e.g. event name; links to other events)
5/12/2024	Wildfires	rf	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	37.6	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	37.2	
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	46.2	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	32.3	
	Wildfires	rf	38-015-0003 - POC2	Bismarck Residential	22.7	
	Wildfires	rf	38-015-0003 - POC1	Bismarck Residential	22.6	
	Wildfires	rf	38-017-1004 - POC3	Fargo NW	49.0	
	Wildfires	rf	38-025-0004 - POC3	Lake Ilo NWR	38.2	
	Wildfires	rf	38-053-0002 - POC3	TRNP-NU	33.7	
	Wildfires	rf	38-057-0004 - POC3	Beulah North	27.0	
	Wildfires	rf	38-057-0004 - POC4	Beulah North	26.2	
	Wildfires	rf	38-065-0002 - POC3	Hannover	29.6	
	Wildfires	rf	38-101-0003 - POC3	Ryder	35.6	

Date of Event	Type of Event (high wind, volcano, wildfires, prescribed fire, other[2])	AQS Flag[3]	Monitor (AQS ID and POC)[4]	Monitor Name	$PM_{2.5}$ Concentration[5] ($\mu g/m^3$)	Notes (e.g. event name; links to other events)
5/13/2024	Wildfires	rf	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	21.2	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	24.5	
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	43.8	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	29.8	
	Wildfires	rf	38-057-0004 - POC3	Beulah North	26.7	
	Wildfires	rf	38-057-0004 - POC4	Beulah North	25.6	
	Wildfires	rf	38-065-0002 - POC3	Hannover	28.3	
	Wildfires	rf	38-101-0003 - POC3	Ryder	26.9	
5/14/2024	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	25.1	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	17.1	
7/8/2024	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	44.4	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	30.6	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	20.8	
	Wildfires	rf	38-015-0003 - POC2	Bismarck Residential	16.7	
	Wildfires	rf	38-015-0003 - POC1	Bismarck Residential	16.3	
	Wildfires	rf	38-057-0004 - POC3	Beulah North	21.3	
	Wildfires	rf	38-057-0004 - POC4	Beulah North	20.2	
	Wildfires	rf	38-065-0002 - POC3	Hannover	21.9	
	Wildfires	rf	38-101-0003 - POC3	Ryder	28.4	
7/9/2024	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	37.4	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	40.6	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	28.5	
	Wildfires	rf	38-025-0004 - POC3	Lake Ilo NWR	20.7	
	Wildfires	rf	38-057-0004 - POC3	Beulah North	27.4	
	Wildfires	rf	38-057-0004 - POC4	Beulah North	26.1	
	Wildfires	rf	38-065-0002 - POC3	Hannover	28.0	
	Wildfires	rf	38-101-0003 - POC3	Ryder	34.8	
7/10/2024	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	28.0	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	34.4	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	27.5	
	Wildfires	rf	38-025-0004 - POC3	Lake Ilo NWR	20.5	
	Wildfires	rf	38-057-0004 - POC3	Beulah North	29.1	
	Wildfires	rf	38-057-0004 - POC4	Beulah North	28.0	
	Wildfires	rf	38-065-0002 - POC3	Hannover	29.9	
	Wildfires	rf	38-101-0003 - POC3	Ryder	30.1	

Date of Event	Type of Event (high wind, volcano, wildfires, prescribed fire, other[2])	AQS Flag[3]	Monitor (AQS ID and POC)[4]	Monitor Name	$PM_{2.5}$ Concentration[5] ($\mu g/m^3$)	Notes (e.g. event name; links to other events)
7/20/2024	Wildfires	rf	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	21.7	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
7/21/2024	Wildfires	rf	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	33.8	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	40.9	
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	38.0	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	35.5	
	Wildfires	rf	38-025-0004 - POC3	Lake Ilo NWR	32.4	
	Wildfires	rf	38-053-0002 - POC3	TRNP-NU	26.7	
	Wildfires	rf	38-057-0004 - POC3	Beulah North	32.3	
	Wildfires	rf	38-057-0004 - POC4	Beulah North	31.4	
	Wildfires	rf	38-065-0002 - POC3	Hannover	33.6	
	Wildfires	rf	38-101-0003 - POC3	Ryder	40.5	
7/22/2024	Wildfires	rf	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	49.1	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	53.9	
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	43.3	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	40.7	
	Wildfires	rf	38-017-1004 - POC3	Fargo NW	25.5	
	Wildfires	rf	38-025-0004 - POC3	Lake Ilo NWR	47.4	
	Wildfires	rf	38-053-0002 - POC3	TRNP-NU	49.3	
	Wildfires	rf	38-057-0004 - POC3	Beulah North	47.8	
	Wildfires	rf	38-057-0004 - POC4	Beulah North	43.3	
	Wildfires	rf	38-065-0002 - POC3	Hannover	40.7	
	Wildfires	rf	38-101-0003 - POC3	Ryder	43.8	
7/23/2024	Wildfires	rf	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	41.5	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	53.0	
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	49.2	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	46.7	
	Wildfires	rf	38-015-0003 - POC2	Bismarck Residential	39.0	
	Wildfires	rf	38-015-0003 - POC1	Bismarck Residential	38.6	
	Wildfires	rf	38-025-0004 - POC3	Lake Ilo NWR	49.3	
	Wildfires	rf	38-053-0002 - POC3	TRNP-NU	51.4	
	Wildfires	rf	38-057-0004 - POC3	Beulah North	53.3	
	Wildfires	rf	38-057-0004 - POC4	Beulah North	48.2	
	Wildfires	rf	38-065-0002 - POC3	Hannover	50.9	
	Wildfires	rf	38-101-0003 - POC3	Ryder	50.2	

Date of Event	Type of Event (high wind, volcano, wildfires, prescribed fire, other[2])	AQS Flag[3]	Monitor (AQS ID and POC)[4]	Monitor Name	$PM_{2.5}$ Concentration[5] ($\mu g/m^3$)	Notes (e.g. event name; links to other events)
7/24/2024	Wildfires	rf	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	35.8	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	32.3	
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	28.3	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	27.4	
	Wildfires	rf	38-025-0004 - POC3	Lake Ilo NWR	33.7	
	Wildfires	rf	38-053-0002 - POC3	TRNP-NU	36.5	
	Wildfires	rf	38-057-0004 - POC3	Beulah North	30.8	
	Wildfires	rf	38-057-0004 - POC4	Beulah North	27.6	
	Wildfires	rf	38-065-0002 - POC3	Hannover	28.1	
	Wildfires	rf	38-101-0003 - POC3	Ryder	30.5	
7/25/2024	Wildfires	rf	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	24.4	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	28.3	
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	28.8	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	28.1	
	Wildfires	rf	38-025-0004 - POC3	Lake Ilo NWR	27.4	
	Wildfires	rf	38-053-0002 - POC3	TRNP-NU	24.3	
	Wildfires	rf	38-057-0004 - POC3	Beulah North	31.8	
	Wildfires	rf	38-057-0004 - POC4	Beulah North	28.1	
	Wildfires	rf	38-065-0002 - POC3	Hannover	30.0	
	Wildfires	rf	38-101-0003 - POC3	Ryder	29.8	
7/26/2024	Wildfires	rf, rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	21.4	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf, rt	38-013-0004 - POC3	Lostwood NWR	23.9	
	Wildfires	rf, rt	38-015-0003 - POC4	Bismarck Residential	34.1	
	Wildfires	rf, rt	38-015-0003 - POC3	Bismarck Residential	32.1	
	Wildfires	rf, rt	38-015-0003 - POC2	Bismarck Residential	24.5	
	Wildfires	rf, rt	38-015-0003 - POC1	Bismarck Residential	24.3	
	Wildfires	rf, rt	38-025-0004 - POC3	Lake Ilo NWR	23.0	
	Wildfires	rf, rt	38-057-0004 - POC3	Beulah North	32.9	
	Wildfires	rf, rt	38-057-0004 - POC4	Beulah North	28.3	
	Wildfires	rf, rt	38-065-0002 - POC3	Hannover	31.7	
	Wildfires	rf, rt	38-101-0003 - POC3	Ryder	24.6	

Date of Event	Type of Event (high wind, volcano, wildfires, prescribed fire, other[2])	AQS Flag[3]	Monitor (AQS ID and POC)[4]	Monitor Name	$PM_{2.5}$ Concentration[5] ($\mu g/m^3$)	Notes (e.g. event name; links to other events)
7/27/2024	Wildfires	rf, rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	23.4	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf, rt	38-015-0003 - POC4	Bismarck Residential	24.4	
	Wildfires	rf, rt	38-015-0003 - POC3	Bismarck Residential	22.5	
	Wildfires	rf, rt	38-017-1004 - POC3	Fargo NW	22.1	
	Wildfires	rf, rt	38-025-0004 - POC3	Lake Ilo NWR	22.3	
	Wildfires	rf, rt	38-053-0002 - POC3	TRNP-NU	21.0	
	Wildfires	rf, rt	38-057-0004 - POC3	Beulah North	25.8	
	Wildfires	rf, rt	38-057-0004 - POC4	Beulah North	21.7	
	Wildfires	rf, rt	38-065-0002 - POC3	Hannover	21.2	
7/28/2024	Wildfires	rt	38-013-0004 - POC3	Lostwood NWR	27.2	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
7/29/2024	Wildfires	rt	38-013-0004 - POC3	Lostwood NWR	21.8	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rt	38-053-0002 - POC3	TRNP-NU	20.6	
7/30/2024	Wildfires	rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	27.8	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rt	38-025-0004 - POC3	Lake Ilo NWR	25.6	
	Wildfires	rt	38-053-0002 - POC3	TRNP-NU	22.4	
	Wildfires	rt	38-057-0004 - POC3	Beulah North	29.2	
	Wildfires	rt	38-057-0004 - POC4	Beulah North	25.1	
	Wildfires	rt	38-065-0002 - POC3	Hannover	22.6	
	Wildfires	rt	38-101-0003 - POC3	Ryder	23.1	
8/10/2024	Wildfires	rf	38-013-0004 - POC3	Lostwood NWR	27.8	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf	38-015-0003 - POC4	Bismarck Residential	20.8	
	Wildfires	rf	38-015-0003 - POC3	Bismarck Residential	19.2	
	Wildfires	rf	38-015-0003 - POC2	Bismarck Residential	14.0	
	Wildfires	rf	38-015-0003 - POC1	Bismarck Residential	14.0	
	Wildfires	rf	38-025-0004 - POC3	Lake Ilo NWR	20.4	
	Wildfires	rf	38-101-0003 - POC3	Ryder	26.7	
8/15/2024	Wildfires	rf, rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	37.6	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf, rt	38-025-0004 - POC3	Lake Ilo NWR	25.9	
	Wildfires	rf, rt	38-053-0002 - POC3	TRNP-NU	29.0	

Date of Event	Type of Event (high wind, volcano, wildfires, prescribed fire, other[2])	AQS Flag[3]	Monitor (AQS ID and POC)[4]	Monitor Name	$PM_{2.5}$ Concentration[5] ($\mu g/m^3$)	Notes (e.g. event name; links to other events)
8/16/2024	Wildfires	rf, rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	42.5	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf, rt	38-015-0003 - POC4	Bismarck Residential	33.1	
	Wildfires	rf, rt	38-015-0003 - POC3	Bismarck Residential	30.7	
	Wildfires	rf, rt	38-015-0003 - POC2	Bismarck Residential	25.4	
	Wildfires	rf, rt	38-015-0003 - POC1	Bismarck Residential	24.9	
	Wildfires	rf, rt	38-025-0004 - POC3	Lake Ilo NWR	44.5	
	Wildfires	rf, rt	38-053-0002 - POC3	TRNP-NU	42.5	
	Wildfires	rf, rt	38-065-0002 - POC3	Hannover	37.2	
	Wildfires	rf, rt	38-101-0003 - POC3	Ryder	53.0	
8/17/2024	Wildfires	rf, rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	28.2	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf, rt	38-015-0003 - POC4	Bismarck Residential	43.3	
	Wildfires	rf, rt	38-015-0003 - POC3	Bismarck Residential	39.4	
	Wildfires	rf, rt	38-017-1004 - POC3	Fargo NW	28.3	
	Wildfires	rf, rt	38-025-0004 - POC3	Lake Ilo NWR	37.4	
	Wildfires	rf, rt	38-053-0002 - POC3	TRNP-NU	36.0	
	Wildfires	rf, rt	38-065-0002 - POC3	Hannover	37.6	
	Wildfires	rf, rt	38-101-0003 - POC3	Ryder	45.6	
8/18/2024	Wildfires	rf, rt	38-017-1004 - POC3	Fargo NW	23.8	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf, rt	38-025-0004 - POC3	Lake Ilo NWR	22.0	
	Wildfires	rf, rt	38-101-0003 - POC3	Ryder	22.1	
8/19/2024	Wildfires	rf, rt	38-017-1004 - POC3	Fargo NW	25.6	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
8/20/2024	Wildfires	rf, rt	38-017-1004 - POC3	Fargo NW	23.1	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
9/4/2024	Wildfires	rf, rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	54.9	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf, rt	38-013-0004 - POC3	Lostwood NWR	94.7	
	Wildfires	rf, rt	38-015-0003 - POC4	Bismarck Residential	47.2	
	Wildfires	rf, rt	38-015-0003 - POC3	Bismarck Residential	45.1	
	Wildfires	rf, rt	38-025-0004 - POC3	Lake Ilo NWR	60.9	
	Wildfires	rf, rt	38-053-0002 - POC3	TRNP-NU	85.2	
	Wildfires	rf, rt	38-057-0004 - POC3	Beulah North	49.7	
	Wildfires	rf, rt	38-057-0004 - POC4	Beulah North	43.5	
	Wildfires	rf, rt	38-065-0002 - POC3	Hannover	49.7	
	Wildfires	rf, rt	38-101-0003 - POC3	Ryder	57.0	
9/9/2024	Wildfires	rf, rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	48.3	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf, rt	38-053-0002 - POC3	TRNP-NU	22.0	

Date of Event	Type of Event (high wind, volcano, wildfires, prescribed fire, other[2])	AQS Flag[3]	Monitor (AQS ID and POC)[4]	Monitor Name	$PM_{2.5}$ Concentration[5] ($\mu g/m^3$)	Notes (e.g. event name; links to other events)
9/10/2024	Wildfires	rf, rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	85.1	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf, rt	38-013-0004 - POC3	Lostwood NWR	40.4	
	Wildfires	rf, rt	38-015-0003 - POC4	Bismarck Residential	46.9	
	Wildfires	rf, rt	38-015-0003 - POC3	Bismarck Residential	49.5	
	Wildfires	rf, rt	38-025-0004 - POC3	Lake Ilo NWR	62.3	
	Wildfires	rf, rt	38-053-0002 - POC3	TRNP-NU	40.2	
	Wildfires	rf, rt	38-057-0004 - POC3	Beulah North	76.0	
	Wildfires	rf, rt	38-057-0004 - POC4	Beulah North	66.0	
	Wildfires	rf, rt	38-065-0002 - POC3	Hannover	65.2	
	Wildfires	rf, rt	38-101-0003 - POC3	Ryder	50.2	
9/11/2024	Wildfires	rf, rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	51.1	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rf, rt	38-013-0004 - POC3	Lostwood NWR	36.0	
	Wildfires	rf, rt	38-015-0003 - POC4	Bismarck Residential	83.9	
	Wildfires	rf, rt	38-015-0003 - POC3	Bismarck Residential	88.1	
	Wildfires	rf, rt	38-017-1004 - POC3	Fargo NW	65.0	
	Wildfires	rf, rt	38-025-0004 - POC3	Lake Ilo NWR	64.6	
	Wildfires	rf, rt	38-053-0002 - POC3	TRNP-NU	62.0	
	Wildfires	rf, rt	38-057-0004 - POC3	Beulah North	78.9	
	Wildfires	rf, rt	38-057-0004 - POC4	Beulah North	69.1	
	Wildfires	rf, rt	38-065-0002 - POC3	Hannover	71.3	
	Wildfires	rf, rt	38-101-0003 - POC3	Ryder	57.3	
10/5/2024	Wildfires	rt	38-057-0004 - POC3	Beulah North	21.2	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rt	38-057-0004 - POC4	Beulah North	20.6	
10/8/2024	Wildfires	rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	21.0	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rt	38-053-0002 - POC3	TRNP-NU	21.4	
10/9/2024	Wildfires	rt	38-007-0002 - POC3	Painted Canyon (TRNP-SU)	22.8	2024 Wildfire Smoke Exceptional Event; 2023 Canadian Wildfire Smoke PM EE Demonstration
	Wildfires	rt	38-053-0002 - POC3	TRNP-NU	20.7	
	Wildfires	rt	38-057-0004 - POC3	Beulah North	20.5	
	Wildfires	rt	38-057-0004 - POC4	Beulah North	19.5	

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

[3] Due to AQS limitations, the "rf, it" flags are applied in AQS on event days with "rf, rt" flags

[4] Collocated $PM_{2.5}$ monitors only on corresponding $PM_{2.5}$ primary monitor event days: Bismarck Residential (POC1, POC2, POC3), Beulah North (POC4)

[5] $PM_{2.5}$ Concentrations at $PM_{2.5}$ primary monitors are all above the level of the $PM_{2.5}$ Tier 1 Thresholds

B) Monitor Design Value Information

(listing of all monitors in the planning area, regardless of operating agency, and regardless of whether or not they are impacted by EEs)

Monitor (AQS ID)	**Design Value (<u>without</u> EPA concurrence on any of the events listed in table A above)**	**Design Value (<u>with</u> EPA concurrence on all events listed in table A above)**
Painted Canyon (TRNP-SU) (38-007-0002)	$PM_{2.5}$ Annual: 6.4 µg/m^3 $PM_{2.5}$ 24-Hour: 29 µg/m^3	$PM_{2.5}$ Annual: 5.9 µg/m^3 $PM_{2.5}$ 24-Hour: 21 µg/m^3
Lostwood NWR (38-013-0004)	$PM_{2.5}$ Annual: 7.7 µg/m^3 $PM_{2.5}$ 24-Hour: 40 µg/m^3	$PM_{2.5}$ Annual: 7.1 µg/m^3 $PM_{2.5}$ 24-Hour: 33 µg/m^3
Bismarck Residential (38-015-0003)	$PM_{2.5}$ Annual: 8.5 µg/m^3 $PM_{2.5}$ 24-Hour: 38 µg/m^3	$PM_{2.5}$ Annual: 8.0 µg/m^3 $PM_{2.5}$ 24-Hour: 30 µg/m^3
Fargo NW (38-017-1004)	$PM_{2.5}$ Annual: 8.2 µg/m^3 $PM_{2.5}$ 24-Hour: 27 µg/m^3	$PM_{2.5}$ Annual: 8.0 µg/m^3 $PM_{2.5}$ 24-Hour: 25 µg/m^3
Lake Ilo NWR (38-025-0004)	$PM_{2.5}$ Annual: 7.0 µg/m^3 $PM_{2.5}$ 24-Hour: 35 µg/m^3	$PM_{2.5}$ Annual: 6.5 µg/m^3 $PM_{2.5}$ 24-Hour: 29 µg/m^3
TRNP-NU (38-053-0002)	$PM_{2.5}$ Annual: 6.1 µg/m^3 $PM_{2.5}$ 24-Hour: 33 µg/m^3	$PM_{2.5}$ Annual: 5.6 µg/m^3 $PM_{2.5}$ 24-Hour: 26 µg/m^3
Beulah North (38-057-0004)	$PM_{2.5}$ Annual: 6.7 µg/m^3 $PM_{2.5}$ 24-Hour: 30 µg/m^3	$PM_{2.5}$ Annual: 6.2 µg/m^3 $PM_{2.5}$ 24-Hour: 24 µg/m^3
Hannover (38-065-0002)	$PM_{2.5}$ Annual: 7.5 µg/m^3 $PM_{2.5}$ 24-Hour: 36 µg/m^3	$PM_{2.5}$ Annual: 7.1 µg/m^3 $PM_{2.5}$ 24-Hour: 30 µg/m^3
Ryder (38-101-0003)	$PM_{2.5}$ Annual: 7.1 µg/m^3 $PM_{2.5}$ 24-Hour: 35 µg/m^3	$PM_{2.5}$ Annual: 6.6 µg/m^3 $PM_{2.5}$ 24-Hour: 27 µg/m^3

C) Summary of Maximum Design Value (DV) Monitor Information (Effect of EPA Concurrence on Maximum Design Value Monitor Determination)
(Two highest values from Table B)

	Design Value	Monitor (AQS ID)	Comment
Maximum DV monitor without EPA concurrence on any of the events listed in table A above	8.5 µg/m^3	Bismarck Residential (38-015-0003)	$PM_{2.5}$ Annual
	8.2 µg/m^3	Fargo NW (38-017-1004)	
	40 µg/m^3	Lostwood NWR (38-013-0004)	$PM_{2.5}$ 24-Hour
	38 µg/m^3	Bismarck Residential (38-015-0003)	
	Design Value	**Monitor (AQS ID)**	**Comment**
Maximum DV monitor with EPA concurrence on all events listed in table A above	8.0 µg/m^3	Bismarck Residential (38-015-0003)	$PM_{2.5}$ Annual
	8.0 µg/m^3	Fargo NW (38-017-1004)	
	33 µg/m^3	Lostwood NWR (38-013-0004)	$PM_{2.5}$ 24-Hour
	30 µg/m^3	Bismarck Residential (38-015-0003)	

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

TRNP-NU (38-053-0002) $PM_{2.5}$, 2022 Q2

APPENDIX B 2023 ANNUAL AMBIENT AIR MONITORING DATA CERTIFICATION (WITHOUT ATTACHMENTS)

NORTH Dakota | Environmental Quality
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September 9, 2024

Adrienne Sandoval
Air and Radiation Division Director
U.S. EPA Region 8
1595 Wynkoop Street, Mail Code 8ARD
Denver, CO 80202-1129

Re: 2023 Annual Ambient Air Monitoring Data Certification

Dear Adrienne Sandoval:

EPA, Region 8 has requested that North Dakota (Primary Quality Assurance Organization 0782) verify all ambient air monitoring data collected at State and Local Air Monitoring Stations (SLAMS) submitted to Air Quality System (AQS) by North Dakota, or for North Dakota.

I hereby certify that the ambient concentration and quality assurance data for the state are completely submitted to AQS, and the data are accurate to the best of my knowledge taking into consideration the required quality assurance findings. This is in accordance with 40 CFR 58 for the period of January 01, 2023, to December 31, 2023. Please find attached to this letter the AMP600 Certification Evaluation and Concurrence Report for 2023.

List of parameters to be certified for calendar year 2023.

Site	Site ID	SO_2	SO_2 5 min	NO_2	CO	Ozone	$PM_{2.5}$	PM_{10} STP	PM Coarse
Painted Canyon	38-007-0002	X	X	-	-	X	X	-	-
Lostwood NWR	38-013-0004	X	X	X	-	X	X*	X	-
Bismarck NCORE	38-015-0003	X	X	X	X	X	X*	X	X
Fargo NW	38-017-1004	X	X	X	-	X	X*	-	-
Lake Ilo	38-025-0004	X	X	X	-	X	X*	X	-
TRNP-NU	38-053-0002	X	X	X	-	X	X*	-	-
Beulah North	38-057-0004	X	X	X	-	X	X*	-	-
Hannover	38-065-0002	X	X	X	-	X	X*	-	-
Ryder	38-101-0003	X	X	X	-	X	X*	-	-
Hess NE	38-105-0106	X	X	-	-	-	-	-	-

* Certification is limited to $PM_{2.5}$ data collected and submitted to AQS by North Dakota.

4201 Normandy Street | Bismarck ND 58503-1324 | Fax 701-328-5200 | deq.nd.gov

Director's Office 701-328-5150
Division of Air Quality 701-328-5188
Division of Municipal Facilities 701-328-5211
Division of Waste Management 701-328-5166
Division of Water Quality 701-328-5210
Division of Chemistry 701-328-6140 2635 East Main Ave Bismarck ND 58501

Please note that North Dakota's 2023 Data Certification for $PM_{2.5}$ is limited to the data collected and submitted to AQS by North Dakota. North Dakota acknowledges, but does not certify, EPA's subsequent application of an equation developed by Teledyne to update previously collected $PM_{2.5}$ T640/T640X Federal Equivalent Method monitor data in EPA's AQS.

With EPA's finalization of the $PM_{2.5}$ Design Values through 2023 as of August 9, 2023, North Dakota's AQS review revealed critical issues for the 2023 Data Certification for $PM_{2.5}$ resulting from EPA's implementation of the T640/T640X alignment algorithm in AQS. Data collected and submitted to AQS by North Dakota for the T640/T640X source monitors in AQS has been deleted by EPA including, but not limited to, primary monitor assignments and quality assurance (QA) collocation data entries. Consequently, the attached AMP600 Data Certification Report generated in AQS, requires the following explanation for $PM_{2.5}$ Requirements not met for certification as a direct result of EPA's data manipulation in AQS.

1. Collocation designations in AQS for North Dakota's NCORE site at Bismarck (AQS Site ID 38-015-0003) were removed. Collocation requirements in AQS also affect all other $PM_{2.5}$ sites in the network.
2. QA/QC flow checks uploaded to AQS for $PM_{2.5}$ Method codes 2xx, and 6xx, were not transferred to the alignment 700 series dataset EPA created in AQS.
3. Changes in AQS to the Collocation and Primary monitor designations across multiple Monitoring Methods.
4. EPA's deletions within AQS have also affected calculated Design Values at collocated $PM_{2.5}$ sites (e.g., the NCORE site at Bismarck), due to the deletion of North Dakota submitted collocation dates within AQS.

Submittal of North Dakota's 2023 Annual Ambient Air Monitoring Data Certification was significantly delayed as a direct result of awaiting EPA's finalized $PM_{2.5}$ T640/T640X data alignment in addition to the directly related critical issues in AQS.

After detailed review of the alignment algorithm developed by Teledyne and implemented in the Teledyne firmware update, as well as implemented by EPA in AQS, North Dakota finds that the FEM bias compared to FRM still exists in the measured concentrations in North Dakota. Based on the poor performance of the Teledyne alignment algorithm (before and after the Teledyne firmware update), North Dakota believes that EPA needs to reanalyze the FEM/FRM co-located data and develop a new algorithm that better reduces the bias in the FEM concentrations compared to the co-located FRM concentrations, thereby ensuring more accurate and reliable $PM_{2.5}$ measurements.

North Dakota is making every effort to maintain air quality standards and stay in attainment for all pollutants. Ensuring the accuracy of $PM_{2.5}$ measurements is crucial for air quality management and protecting public health and North Dakota expects the same level of diligence from the EPA in ensuring that the $PM_{2.5}$ data is accurate and reliable.

If you have any questions concerning the materials provided or require additional information or clarification, please contact Ryan Mills of my staff at (701)328-5188.

Sincerely,

Jim Semerad
Director
Division of Air Quality

JLS/RDM:er
Enc:

APPENDIX C NDDEQ PRESS RELEASES AND NEWS STORIES

NORTH Dakota | Environmental Quality
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NEWS | **FOR IMMEDIATE RELEASE** | July 22, 2024

Department of Environmental Quality urges caution during smoky conditions

BISMARCK, N.D. – Smoke originating from wildfires in the Western United States and Canada continues to affect air quality across North Dakota. The North Dakota Department of Environmental Quality advises residents, particularly those with respiratory conditions, to consider limiting prolonged outdoor activities. Environmental Quality recommends monitoring the Air Quality Index (AQI) with the AirNow phone app and tuning into local media stations.

Environmental Quality closely monitors its statewide air sampling network, which contributes data into AirNow, ensuring the public is well-informed and can take necessary precautions. For up-to-date information on the region's air quality and respiratory protection during smoky conditions, visit fire.airnow.gov.

Revised in May 2024, the AQI color designations now include updated ranges for indicators:

- Yellow – Moderate
- Orange – Unhealthy for Sensitive Groups
- Red – Unhealthy
- Purple – Very Unhealthy
- Maroon – Hazardous

Given air quality variability due to active wildfires and changing wind patterns, Environmental Quality advises using common sense when smoke levels are high. Individuals experiencing significant breathing difficulties due to smoke should seek immediate medical attention. General health-related smoke inquiries can be directed to the North Dakota Department of Health and Human Services Operations Center at (701) 328-0707.

To protect your health when smoke is present:

- Stay inside with windows and doors closed until smoke levels decrease.
- Reduce outside physical activity.
- Use air conditioning units and car vent systems set to recirculate to prevent drawing in outside air.

Decisions regarding outdoor activities should be based on AQI levels and individual health. Due to the active wildfires and changing wind patterns, air quality can be variable and unpredictable. Air quality fluctuates unexpectedly, improving or deteriorating rapidly.

Additional Resources

- Air Quality Index: www.airnow.gov (including AirNow Fire and Smoke Map)
- Air Quality Monitoring Information: deq.nd.gov/AQ/monitoring/
- General Smoke-related Health Questions: (701) 328-0707
- Weather Forecasting: graphical.weather.gov/sectors/northdakota.php
- Wildfire Smoke Prediction Patterns: https://firesmoke.ca/forecasts/current/
- Local media for area-specific updates
- *Questions about continuing outdoor activities, events, and sports practice should be directed to the local administrators in charge.*

For more information, contact:
Ryan Mills
Division of Air Quality
PHONE: 701-328-5188 | EMAIL: rmills@nd.gov | www.deq.nd.gov

NORTH Dakota | Environmental Quality
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NEWS | **FOR IMMEDIATE RELEASE** | August 16, 2024

Department of Environmental Quality urges caution during smoky conditions

BISMARCK, N.D. – The North Dakota Department of Environmental Quality advises residents, especially those with respiratory conditions, to consider limiting prolonged outdoor activities due to smoky conditions affecting much of the state. Wildfires in the western United States and Canada are sending smoke across the state.

Environmental Quality closely monitors its statewide air sampling network, which contributes data into AirNow, the national Air Quality monitoring system, ensuring the public is well-informed and can take necessary precautions. For up-to-date information on the region's air quality and respiratory protection during smoky conditions, visit fire.airnow.gov.

Revised in May 2024, the AQI color designations now include updated ranges:

- **Yellow** – Moderate
- **Orange** – Unhealthy for Sensitive Groups
- **Red** – Unhealthy
- **Purple** – Very Unhealthy
- **Maroon** – Hazardous

Environmental Quality advises everyone to use common sense when wildfire smoke adversely impacts air quality. When air quality is in the "unhealthy for sensitive groups" to "unhealthy" range, people who are in sensitive groups (including those with respiratory conditions, the elderly and young children) may experience health effects during outdoor activities. To decrease the potential for health issues, sensitive groups of people should limit prolonged or strenuous outdoor activity. People reacting to smoke to the extent that it affects breathing should seek immediate help from a medical provider. What you should do depends on the air quality index and your personal health status.

If you see or smell smoke, ways to protect your health include:

- Staying indoors with windows and doors closed until smoke levels decrease.
- Reducing outdoor physical activity.
- Setting air conditioning units and car vents to re-circulate to prevent outdoor air from entering.

For real-time information on air quality and respiratory protection during smoke events, visit fire.airnow.gov. The AirNow mobile app and many weather apps also provide air quality updates.

Additional Resources

- Air Quality Index: https://www.airnow.gov (including the AirNow Fire and Smoke Map)
- Air Quality Monitoring Information: https://deq.nd.gov/AQ/monitoring/
- Weather Forecasting: https://graphical.weather.gov/sectors/northdakota.php
- Wildfire Smoke Prediction Patterns: https://firesmoke.ca/forecasts/current/
- *Questions about outdoor activities, events, and sports practice, contact the local administrators in charge.*

For more information, contact:
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NORTH Dakota | Environmental Quality
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NEWS | **FOR IMMEDIATE RELEASE** | September 4, 2024

Department of Environmental Quality urges caution during smoky conditions

BISMARCK, N.D. – The North Dakota Department of Environmental Quality advises residents, especially those with respiratory conditions, to consider limiting prolonged outdoor activities due to smoky conditions. Wildfires in the western United States and Canada are sending smoke across parts of North Dakota.

Environmental Quality closely monitors its statewide air sampling network, which contributes data into AirNow, the national Air Quality monitoring system, ensuring the public is well-informed and can take necessary precautions. For up-to-date information on the region's air quality, visit fire.airnow.gov.

Revised in May 2024, the AQI color designations now include updated ranges:

- **Yellow** – Moderate
- **Orange** – Unhealthy for Sensitive Groups
- **Red** – Unhealthy
- **Purple** – Very Unhealthy
- **Maroon** – Hazardous

Environmental Quality advises everyone to use common sense when wildfire smoke adversely impacts air quality. When air quality is in the "unhealthy for sensitive groups" to "unhealthy" range, people who are in sensitive groups (including those with respiratory conditions, the elderly and young children) may experience health effects during outdoor activities. To decrease the potential for health issues, sensitive groups of people should limit prolonged or strenuous outdoor activity. People reacting to smoke to the extent that it affects breathing should seek immediate help from a medical provider. What you should do depends on the air quality index and your personal health status.

If you see or smell smoke, ways to protect your health include:

- Staying indoors with windows and doors closed until smoke levels decrease.
- Reducing outdoor physical activity.
- Setting air conditioning units and car vents to re-circulate to prevent outdoor air from entering.

For real-time information on air quality and respiratory protection during smoke events, visit fire.airnow.gov. The AirNow mobile app and many weather apps also provide air quality updates.

Additional Resources

- Air Quality Index: https://www.airnow.gov (including the AirNow Fire and Smoke Map)
- Air Quality Monitoring Information: https://deq.nd.gov/AQ/monitoring/
- Weather Forecasting: https://graphical.weather.gov/sectors/northdakota.php
- Wildfire Smoke Prediction Patterns: https://firesmoke.ca/forecasts/current/
- *Questions about outdoor activities, events, and sports practice, contact the local administrators in charge.*

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NEWS | **FOR IMMEDIATE RELEASE** | September 9, 2024

Department of Environmental Quality urges caution during smoky conditions

BISMARCK, N.D. – The North Dakota Department of Environmental Quality is actively monitoring wildfires in the western United States and Canada. Based on current weather patterns, residents across the state may experience intermittent smoke over the next few days. Environmental Quality advises residents, especially those with respiratory conditions, to consider limiting prolonged outdoor activities when smoky conditions exist at their location.

Environmental Quality closely monitors its statewide air sampling network, which contributes data into AirNow, the national Air Quality monitoring system, ensuring the public is well-informed and can take necessary precautions. For up-to-date information on the region's air quality, visit fire.airnow.gov.

Revised in May 2024, the AQI color designations now include updated ranges:

- **Yellow** – Moderate
- **Orange** – Unhealthy for Sensitive Groups
- **Red** – Unhealthy
- **Purple** – Very Unhealthy
- **Maroon** – Hazardous

Environmental Quality advises everyone to use common sense when wildfire smoke adversely impacts air quality. When air quality is in the "unhealthy for sensitive groups" to "unhealthy" range, people who are in sensitive groups (including those with respiratory conditions, the elderly and young children) may experience health effects during outdoor activities. To decrease the potential for health issues, sensitive groups of people should limit prolonged or strenuous outdoor activity. People reacting to smoke to the extent that it affects breathing should seek immediate help from a medical provider. What you should do depends on the air quality index and your personal health status.

If you see or smell smoke, ways to protect your health include:

- Staying indoors with windows and doors closed until smoke levels decrease.
- Reducing outdoor physical activity.
- Setting air conditioning units and car vents to re-circulate to prevent outdoor air from entering.

For real-time information on air quality and respiratory protection during smoke events, visit fire.airnow.gov. The AirNow mobile app and many weather apps also provide air quality updates.

Additional Resources

- Air Quality Index: https://www.airnow.gov (including the AirNow Fire and Smoke Map)
- Air Quality Monitoring Information: https://deq.nd.gov/AQ/monitoring/
- Weather Forecasting: https://graphical.weather.gov/sectors/northdakota.php
- Wildfire Smoke Prediction Patterns: https://firesmoke.ca/forecasts/current/
- *Questions about outdoor activities, events, and sports practice, contact the local administrators in charge.*

For more information, contact:
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NORTH Dakota | Environmental Quality
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NEWS | **FOR IMMEDIATE RELEASE** | October 8, 2024

Department of Environmental Quality urges caution during smoky conditions

BISMARCK, N.D. – The North Dakota Department of Environmental Quality is closely monitoring wildfire smoke from both local fires and wildfires in the western U.S. as it moves through the state. Due to current weather patterns, residents may experience intermittent smoke over the next few days. Environmental Quality advises residents, especially those with respiratory conditions, to consider limiting prolonged outdoor activities when smoke is present.

Environmental Quality operates the statewide air sampling network, which provides real-time data to the national Air Quality monitoring system, AirNow. This ensures the public receives timely updates and can take necessary precautions. For the latest air quality information, visit fire.airnow.gov.

The 2024 Updated Air Quality Index (AQI) color designations are:

- **Yellow** – Moderate
- **Orange** – Unhealthy for Sensitive Groups
- **Red** – Unhealthy
- **Purple** – Very Unhealthy
- **Maroon** – Hazardous

When air quality is in the "Unhealthy for Sensitive Groups" to "Unhealthy" range, individuals with respiratory conditions, children, and seniors may experience health effects during outdoor activities. To reduce health issues, sensitive groups should limit prolonged or strenuous outdoor activity. Anyone experiencing difficulty breathing should seek medical attention immediately.

For health-related smoke inquiries, contact the North Dakota Department of Health and Human Services Operations Center at (866) 207-2880.

How to Protect Yourself:

- Stay indoors with doors and windows closed until smoke levels decrease.
- Reduce outdoor physical activity.
- Set air conditioning units and car vents to re-circulate to keep outdoor air from entering.

For real-time air quality updates and advice on respiratory protection during smoke events, visit fire.airnow.gov. The AirNow mobile app and many weather apps also provide air quality updates.

Additional Resources

- Air Quality Index: https://www.airnow.gov (including the AirNow Fire and Smoke Map)
- Air Quality Monitoring Information: https://deq.nd.gov/AQ/monitoring/
- Weather Forecasting: https://graphical.weather.gov/sectors/northdakota.php
- Wildfire Smoke Prediction Patterns: https://firesmoke.ca/forecasts/current/
- *Questions about outdoor activities, events, and sports practice, contact the local administrators in charge.*

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Canadian wildfire smoke returns; could this summer be worse than 2023 for our air quality?

Close

Similar to last May, wildfire smoke abruptly entered our region over the weekend and has lingered.

By Jacob Morse

Published: May. 13, 2024 at 9:32 PM CDT | Updated: 12 hours ago

BISMARCK, N.D. (KFYR) - Several uncontrolled wildfires in western Canada are threatening communities, while their smoke impacted air quality in Montana and the Dakotas on Sunday and Monday.

Similar to last May, wildfire smoke abruptly entered our region over the weekend and has lingered.

More than 100 fires are burning in Canada, especially in British Columbia and Alberta, forcing thousands to evacuate Fort Nelson and other towns.

The view from one of BC Emergency Health Services' flight crews as they worked to evacuate patients from Fort Nelson in northeast British Columbia. A wildfire could reach the town this week. (BC Emergency Health Services)

Winds funneled the smoke into our region, making our air quality unhealthy.

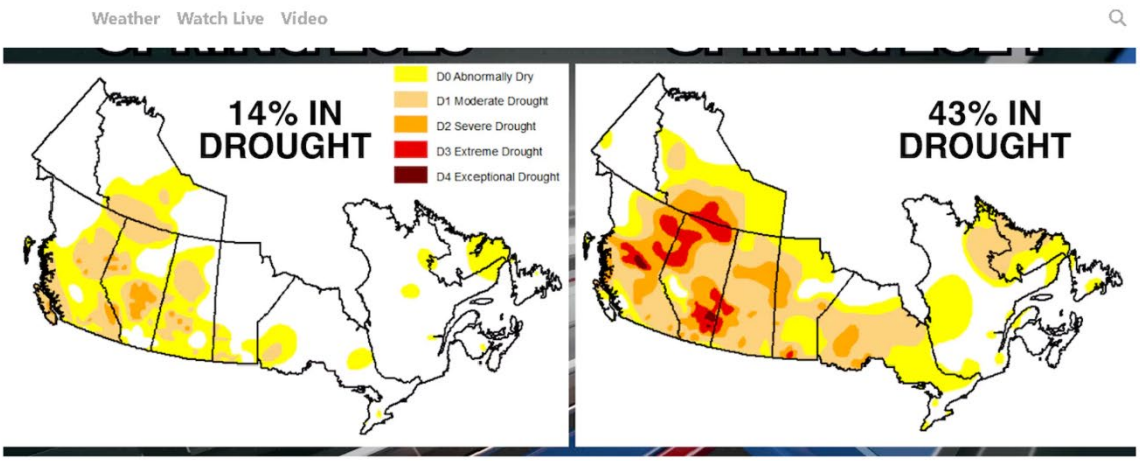
Since we're more than a thousand miles away from some of the fires, the smoke can arrive in waves.

"Just knowing how hard it is to predict exactly where this smoke is going to be pulled and pushed by wind currents," said Jim Semerad, director of the North Dakota Division of Air Quality.

In the near term, the smoke looks to be gradually clearing.

"And even in the upper levels, we're seeing smoke up there, but it actually looks like the way the pattern's shifting that should push mainly to the east of our area," said Jeff Schild, a meteorologist at the Bismarck National Weather Service.

Canada witnessed a record number of wildfires in 2023 and chances are high for more this summer as lightning strikes could trigger fires that quickly spread in forests suffering intense drought worse than last year.

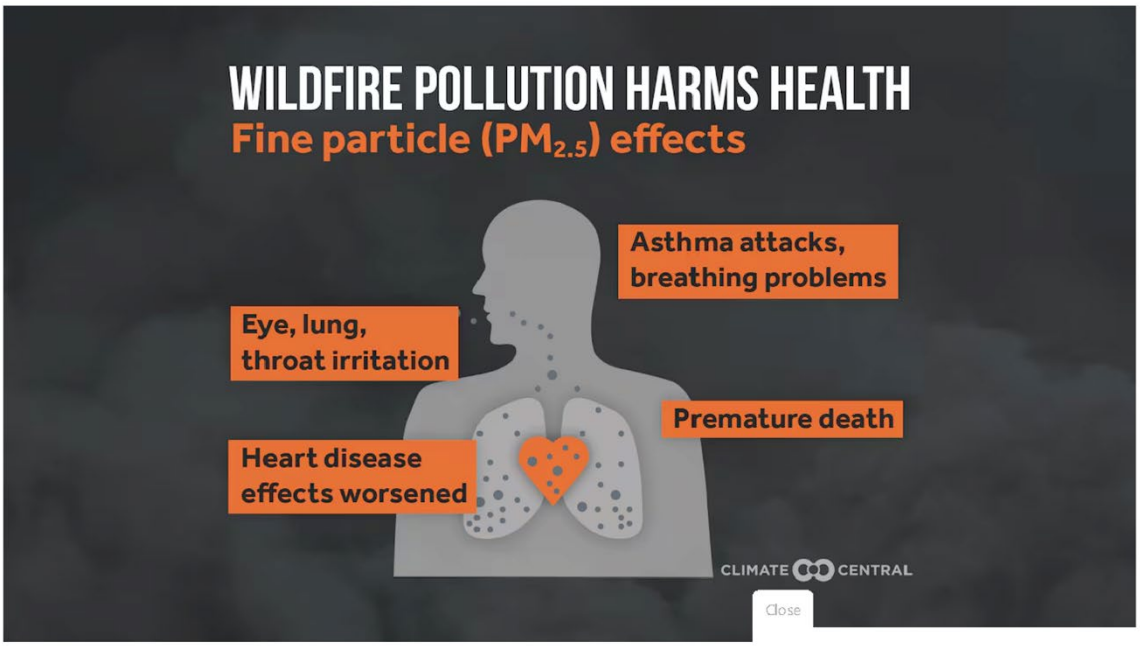


More of Canada is in drought this spring (43%) than last year at this time (14%) (Drought Monitor/KFYR)

"I sure hope we don't have another year like last year. I've been here 40 years, and last year was easily the worst I can remember," said Semerad.

Current air quality can be monitored at airnow.gov.

Wildfire smoke impacts those with respiratory illnesses the most, but it can also affect our heart health and lead to eye and throat irritation.



Wildfire smoke harms health (Climate Central)

NEWS

Smoky summer skies due to Canadian wildfires

by: Taylor Aasen
Posted: Jul 9, 2024 / 08:46 PM CDT
Updated: Jul 9, 2024 / 08:46 PM CDT

SHARE

BISMARCK, N.D. (KXNET) — If you look outside, you may notice a haze or maybe even a smell of smoke in the air. An upper northwest flow is bringing in more smoke from wildfires out in Alberta, Canada. There are also fires around Alaska and Washington state.

With this hot week ahead of us, some of the smoke can actually be good, and act as a small cloud between the sun's heat and us. It's also the reason for the red sun you see in the evening hours of the day.

Right now, smoke forecasters say that the smoke shouldn't affect us too much because the winds are helping to keep the smoke away from the surface.

"Because of the northwest flow pattern that's aloft, that's directing the smoke directly into North Dakota. Most of it is staying aloft right now," explained Megan Jones, a Meteorologist at the National Weather Service in Bismarck. "But, there is always that potential for that smoke to mix down to the surface. That's something we're always keeping an eye on because it will start to impact visibilities as well as the air quality impacts at the surface," said Jones.

Jim Semerad, the Air Quality Director with the state's Department of Air Quality, said that if you do look up the air quality map this year, it will look a lot worse than it actually is. That's because, Jones said that they changed the map colors and how they coordinate with the amount of smoke in the air. He suggests for everyone to read up on the colors and what they mean because the health effects are still the same on people's bodies.

"You have to know how those emissions affect you directly. Maybe on a hot day, if you're exercising extensively, they're going to affect you. Maybe if you have a preexisting condition, they're going to affect you differently. So, know your own body and listen to it listen to the signals it's giving you," said Semerad.

Semerad and Jones both said that these fires are large, and we could see the haze linger into the next few weeks. If you would like to learn how to keep up to date with the air quality conditions, you can look at the Air Quality website, and here's the direct link to the interactive air quality map for North Dakota: AirNow Interactive Map (epa.gov).

Minot Daily News July 24, 2024

Public advised to prepare for another 'summer of smoke'

Air quality in the Minot area and throughout the state is bordering on unhealthy due to smoke originating from wildfires in Canada and the western United States.

The North Dakota Department of Environmental Quality issued a release on Monday, cautioning the public to be mindful of the day to day Air Quality Index (AQI), and in particular, warning those with respiratory conditions to limit prolonged outdoor activities. The public is advised to monitor the AQI with the Environmental Protection Agency.

Ryan Mills with the DEQ said it can be difficult to predict exactly when the smoke will clear.

"Until we get an upper level change here, it's just going to keep pumping it down. We've actually got the stuff coming in too from the West Coast, and it soups together. It comes in and comes out. Unfortunately, I don't think we're going to get much change here for the next two to three days," Mills said. *"We have the heat coming in too, which just adds to the issues. Summer has finally heated up, unfortunately. I was hoping the smoke would stay away this year. July has once again reared its head, and we're going to have another summer of smoke."*

Mills said the models are built from data collected from purple air sensors and satellite tracking of smoke plumes. Direct data comes from a scattering of air monitoring sites around the state, where on ground observers can determine if the smoke has descended low enough to be an issue.

"I always tell folks, zoom out so you get a bigger picture of how big this is, because it's huge. It's coming from Canada, Washington, Oregon, Montana, California, even Alaska. Alaska's got a bunch of fires up there now too," Mills said. *"I've seen this uptick since 2014. I hate to say, it's become the norm. I've lived here my whole life and we've never been impacted like this."*

The AQI range has crept up from moderate this week for the region, with the data collected from the ambient air quality monitoring site at Ryder in southwest Ward County for fine particulate matter (PM2.5) at ground level nearing the 150 threshold on Tuesday. Unhealthy AQI has been reported in the northwest corner of the state and in the Beulah area as of Tuesday morning.

The PM2.5 designation is for microscopic particles such as smoke, soot or biological matter in the air that are 2.5 micrometers or less in diameter, or 30 times smaller than a human hair. The concentration for PM2.5 in Ward County was 53.9 micrograms per cubic meter.

Mills said the mix of smoke from the various plumes in the upper atmosphere is carried by winds and weather fronts, which eventually can drive the particulate matter down. Mills said the forecast models can be changed quickly by the appearance of new fires upstream, making it essential for the public to stay up to date.

*"I wish I had that crystal that could say, "*Yes, tomorrow at this time, we'll all be good.' All I can say is that in the next few days there may be some improvement, but, hopefully, by Friday it will clear out again,*" Mills said.* "We do have those resources now that never used to be there, where you can actually have hourly updates. The data is available now so you can take a look and see what's happening."

Millions under air quality alerts

Smoke from wildfires in US western states

NIC COURY, EUGENE GARCIA AND OLGA R. RODRIGUEZ
Associated Press

FOREST RANCH, Calif. — Wildfires across the western United States and Canada put millions of people under air quality alerts on Sunday as thousands of firefighters battled the flames, including the largest wildfire in California this year.

The so-called Park Fire had scorched more than 550 square miles of inland Northern California as of Sunday morning, darkening the sky with smoke and haze and contributing to poor air quality in a large swath of the Northwestern U.S. and western Canada.

Although the sprawling blaze was only 12% contained, cooler temperatures and increased humidity could help crews battle the fire, which drew comparisons to the 2018 Camp Fire that tore through the nearby community of Paradise, killing 85 people and torching 11,000 homes.

Paradise and several other Butte County communities were under an evacuation warning Sunday. However, Cal Fire operations section chief Jeremy Pierce had some good news for

Please see AIR QUALITY, Page A2

Air quality

From A1

the area, saying around midday that the Park Fire's southernmost front, which is closest to Paradise, was "looking really good," with crews focusing on mopping up the area over the next three days. He also said they don't expect it to move farther into Chico, a city of about 100,000 people just west of Paradise.

First responders initially focused on saving lives and property endangered by the Park Fire, but that has has shifted to confronting the blaze head-on, Jay Tracy, a spokesperson at the Park Fire headquarters, told The Associated Press by phone Sunday. About 3,400 firefighters are battling the blaze, aided by numerous helicopters and air tankers, and Tracy said reinforcements would give much-needed rest to local firefighters, some of whom have been working nonstop since the fire started Wednesday.

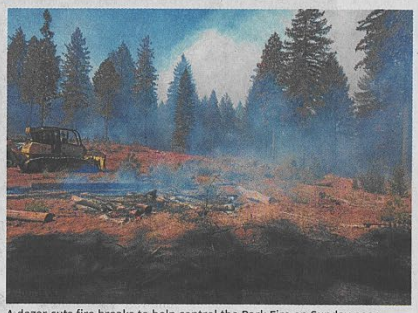
"This fire is surprising a lot of people with its explosive growth," he said. "It is kind of unparalleled."

Although the area expects cooler-than-average temperatures through the middle of this week, that doesn't mean "that fires that are existing will go away," said Marc Chenard, a meteorologist at the National Weather Service's Weather Prediction Center in College Park, Maryland.

The fire has destroyed at least 66 structures and damaged five others, Tracy said. Authorities initially believed 134 structures had been lost, based on drone footage, but they lowered the number after teams assessed the damage in-person.

"Unfortunately, that number will probably go up," Tracy said. "Each day that number has potential to grow — our teams obviously don't do damage inspections when there is active fire in an area."

NIC COURY PHOTOS, ASSOCIATED PRESS
The Park Fire burns along Highway 32 on Sunday near Forest Ranch, Calif.



A dozer cuts fire breaks to help control the Park Fire on Sunday near Forest Ranch, Calif.

The Park Fire started Wednesday, when authorities say a man pushed a burning car into a gully in Chico and then fled. A Chico man accused of setting the fire was arrested Thursday and is due in court Monday.

The northern half of the fire still posed a challenge on Sunday, Pierce said, with crews using bulldozers and other equipment to build fire lines across rocky, difficult terrain and to try to stop the flames from spreading.

The Park Fire was one of more than 100 blazes burning in the U.S. on Sunday, according to the National Interagency Fire Center. Some were sparked by the weather, with climate change increasing the frequency of lightning strikes as the Western U.S. endures blistering heat and bone-dry conditions.

Despite the improved fire weather in Northern California, conditions remained ripe for even more blazes to ignite, with the National Weather Service warning of "red flag" conditions on Sunday across wide swaths of Utah, Colorado and Wyoming, in addition to parts of California.

NOAH BERGER, ASSOCIATED PRESS
Grant Douglas pauses while evacuating as the Park Fire jumps Highway 36 near Paynes Creek on Friday in Tehama County, Calif.

In Southern California, a fire in the Sequoia National Forest swept through the community of Havilah after burning more than 48 square miles in less than three days. The town of roughly 250 people had been under an evacuation order.

Fires were also burning across eastern Oregon and eastern Idaho, where officials were assessing damage from a group of blazes referred to as the Gwen Fire, which was estimated at 41 square miles as of Sunday.

BISMARCK TRIBUNE

THURSDAY, SEPTEMBER 5, 2024 | A3

Smoky skies hover over ND again

Conditions impact schools in Bismarck and Mandan

BISMARCK TRIBUNE STAFF

Smoke from wildfires in Canada is once again drifting south through the Upper Midwest.

Air quality in much of the western half of North Dakota on Wednesday was rated "unhealthy" or "very unhealthy." In the area between Watford City and Dickinson it was rated "hazardous." Conditions were better in eastern North Dakota, where there were mostly "moderate" ratings.

Both the Bismarck and Mandan public school districts moved outdoor activities including recesses and sports practices indoors for the day or canceled them due to the conditions.

Smoky skies have been an off-and-on issue in the Northern Plains the past two summers, as wildfires have scorched more than 50 million acres. Climate change is a major factor, according to the Canadian Climate Institute.

Wildfire smoke is particularly dangerous because it contains tiny pollutants that when inhaled can move deep into lung tissue and enter the bloodstream. Such smoke has been linked to health complications including asthma, heart disease and other respiratory illnesses.

The North Dakota Department of Environmental Quality is advising residents, particularly those with respiratory conditions, to consider limiting prolonged outdoor activities. Another tip is to set air conditioning units and car ventilation systems to recirculate to prevent drawing in outside air.

Information on wildfires and air quality is on the state DEQ website, at bit.ly/3OhrD7E. Wildfire smoke patterns can be found at bit.ly/3Wjcd5f.

THE Jamestown Sun

NEWS NORTH DAKOTA

More hazy skies ahead for North Dakota from Canadian, western U.S. wildfires

The North Dakota Department of Environmental Quality warned the public Monday to take caution during smoky conditions that are predicted to hover over the state in the next few days.

The North Dakota Department of Environmental Quality is warning the public about smoky conditions that are predicted to hover over the state in the next few days. Forum file photo

By **Forum staff**
September 09, 2024 at 3:35 PM

BISMARCK — Over the next few days, North Dakota will again see smoky conditions from wildfires in the western United States and Canada, according to a Monday release from the state Department of Environmental Quality.

The department urged residents, especially those with respiratory conditions, to consider limiting outdoor activities when smoky conditions occur and directed the public to visit fire.airnow.gov(https://fire.airnow.gov/?utm_medium=email&utm_source=govdelivery) to find up-to-date air quality conditions.

Sensitive groups, including those with respiratory conditions, the elderly and young children, may experience health effects during outdoor activities in smoky conditions, according to the release.

The Air Quality Index (AQI) range was updated by the Environmental Protection Agency(https://www.epa.gov/system/files/documents/2024-02/pm-naaqs-air-quality-index-fact-sheet.pdf) in May 2024 with lower thresholds for what conditions are considered unhealthy. When air quality is in the "unhealthy for sensitive groups" to the "unhealthy" range, sensitive groups are encouraged to limit prolonged exposure and seek medical attention upon any difficulty breathing.

The updated, color-coded AQI range is as follows:

- Yellow — Moderate
- Orange — Unhealthy for sensitive groups
- Red — Unhealthy
- Purple — Very unhealthy
- Maroon — Hazardous

Hazy skies persist across North Dakota

Prairie Public Broadcasting | By Danielle Webster

Published September 11, 2024 at 3:22 PM CDT

National Weather Service, Bismarck

Smoke from western wildfires is passing through the area.

Wildfire smoke continues to drift through the state, with higher concentrations contributing to very poor air quality you can see and smell.

Jason Anglin is a meteorologist with the National Weather Service in Bismarck. He says wildfires to the west in states like Idaho, Oregon and Wyoming are contributing to the smoke riding in. Current conditions are putting air quality readings in the "red" or "unhealthy" zone. Anglin says today could be the worst of it for this week.

"We'll have an increase southerly wind today, and especially tomorrow so that should push the surface smoke north and eastward, getting the initial smoke out of here. We are monitoring a cold front passage Thursday through Friday, and what that could do is bring more smoke aloft, but a cold front prevents it from getting to the surface. So it's kind of a hazy end of the week, but this looks to be the worst day of the week."

Anglin says there could be an isolated strong to severe storm with hail in western North Dakota tonight, with another possible round tomorrow in central North Dakota. He also says southwestern North Dakota is also close to fire danger conditions – with low humidity and high winds persisting in that area tomorrow.

Anglin says AirNow.gov has up-to-date information on air quality conditions in the state.

KXMA Bismarck + Follow 2.2K Followers

Burgum declares statewide fire emergency

Story by Keith Darnay • 1h • 1 min read
October 3, 2024

Burgum declares statewide fire emergency

BISMARCK, ND (KXNET) — Governor Doug Burgum Thursday afternoon declared a statewide fire emergency and activated the State Emergency Operations Plan.

The action is in response to the extremely dry and windy conditions across the state. In the past week, nearly 3,500 acres have burned in 67 reported fires.

All state agencies, including the North Dakota Department of Emergency Services, the North Dakota Forest Service and the North Dakota National Guard, are on orders to maintain high levels of readiness to combat fires.

"Above average temperatures, gusty winds, low humidity and significant amounts of dry vegetation have combined to create high fire danger conditions in parts of North Dakota," Burgum said. "Fires can spread rapidly under these conditions, and the state is ready to respond quickly with resources as needed to help local firefighters and first responders protect lives, homes and communities."

The declaration allows the state's adjutant general to activate North Dakota National Guard members, including helicopter pilots and those trained in fighting wildfires, to be prepositioned to fly as needed.

For more information about current burn restrictions and fire danger maps, visit ndresponse.gov/burn.

The governor's executive order is below.

Executive-Order-2024-06Download

NORTH Dakota | Office of the Governor

Be Legendary.™

EXECUTIVE ORDER 2024-06

WHEREAS, North Dakota has experienced above average temperatures, gusty winds, low humidity and dry vegetation, which has contributed to a strong likelihood of rapidly developing wildland fires this fall; and

WHEREAS, on September 29-30 the state was under a wind advisory and red flag warning with wind speeds at 30-35 mph and gusts up to 55 mph, which generated an extremely high risk of wildland fires and contributed to dry conditions; and

WHEREAS, in 2024, the state has experienced more than 1,000 reported fires; and

WHEREAS, the National Oceanic and Atmospheric Administration's (NOAA) fire weather outlook has been classified as "elevated" on multiple occasions due to dry, windy conditions with ample fuel, resulting in an active fire season; and

WHEREAS, based on the most current National Weather Service (NWS) Climate Prediction Center outlook, temperatures will trend above normal with precipitation leaning below normal for the fall of 2024; and

WHEREAS, the potential exists for rapidly moving wildland fires that threaten the safety of North Dakotans, their communities and farmsteads, and may result in infrastructure, wildlife, livestock, feed and crop losses, as well as damage to structures and miles of fencing; and

WHEREAS, state resources have been, and continue to be, needed to fight wildland fires in North Dakota; and

WHEREAS, it is the responsibility of the State of North Dakota to assist its citizens in addressing emergencies, disasters and other hardships.

NOW THEREFORE, Doug Burgum, as Governor of North Dakota, by virtue of the authority vested under Article V, Section 1, North Dakota Constitution and Chapter 37-17.1, North Dakota Century Code, hereby declares a statewide fire emergency and orders activation of the State Emergency Operations Plan (SEOP) in order to assist local and tribal officials, to prevent injuries and save lives, alleviate hardships, implement appropriate response and recovery actions and future mitigation measures, and facilitate restoration of services and infrastructure. All state agencies, to include the North Dakota Department of Emergency Services, the North Dakota Forest Service and

the North Dakota National Guard, are ordered to maintain high readiness levels of fire-related resources and capabilities in preparation for timely execution of their respective responsibilities pursuant to the SEOP. The Adjutant General is authorized to activate and make available North Dakota National Guard resources to support state agencies and local and tribal governments based upon normal cost shares.

This order is issued pursuant to the following authority and for the following reasons:

1. The Governor is vested with the executive authority pursuant to Article V, Section 1 of the North Dakota Constitution; and,
2. The Governor is vested with statutory authority to issue executive orders to minimize or avert the effects of a disaster or emergency pursuant to Chapter 37-17.1 of the North Dakota Century Code; and,
3. A coordinated and effective effort of all state agencies is required to minimize the impact of disasters and emergencies in this state.

This order is in effect immediately and shall remain in effect until December 1, 2024, or until it is rescinded.

Executed at Bismarck, North Dakota, this 3 day of October 2024.

Doug Burgum
Governor

Attest:

Michael Howe
Secretary of State

Deputy

North Dakota Battles Historic Wildfires

<< All News

Sunday, October 6, 2024 - 03:00 pm

BISMARCK, N.D. – Local, state, tribal, and federal fire response continues through a historic fire situation in North Dakota, where damage includes one loss of life and another serious injury.

"We extend our deepest sympathies to the loved ones of the deceased and offer our prayers and support for the critically injured individual as well as those who have lost their homes and property to these tragic fires," Gov. Doug Burgum said. "The state continues to utilize all resources at our disposal to assist local, tribal and federal agencies in safeguarding people, property and communities."

Johannes Nicolaas Van Eeden, 26, of South Africa, succumbed to critical injuries from fire in the Ray area. An additional individual with a critical injury has been transported for medical care, according to Williams County Emergency Management.

Crews on the ground saved the town of Mandaree as they fought through the night to contain the Bear Den fire, estimated to have burned over 25,000 acres.

As daylight broke, two National Guard Black Hawk helicopters took flight to join the firefighting teams on the ground at both the Bear Den fire near Mandaree and the Elkhorn fire near Grassy Butte.

 'ought fires for 27 years across the nation, including international, and can honestly say I've never seen anything like this," said Fire Manager Ryan Melin of the North Dakota Forest Service.

The State Emergency Operations Center has been running 24-hour operations since Friday to coordinate response efforts and fulfill requests in assisting the heroic work on the ground by county and tribal emergency managers, first responders, and fire fighters.

Yesterday crews struggled to control the size and scope of the flames through the wind and smoke. "This may go down in history as one of the worst combined fire situation in North Dakota history," said North Dakota Adjutant General Mitch Johnson. "Yesterday we were on defense, but today we're on offense."

Assessment flights are ongoing today to better understand the status and scope of all wildfires. As of 3:00 p.m. today:

Elkhorn Fire near Grassy Butte:
Size: estimated 12 miles long and 5 miles wide
Contained: 0% contained
Response: McKenzie County, Dunn County, North Dakota Forest Service, U.S. Forest Service, North Dakota National Guard Black Hawks, U.S. Bureau of Land Management, New Mexico Initial Attack, North Dakota Highway Patrol
Injuries: None reported
Damage: Outbuilding lost, no primary structures reported lost

Bear Den Fire near Mandaree
Size: estimated 25,000 acres
Contained: 0% contained
Response: Three Affiliated Tribes, U.S. Bureau of Indian Affairs, North Dakota Forest Service, Department of Emergency Services engine and two firefighters, Large Airtankers from Montana, North Dakota National Guard Red Card, North Dakota Highway Patrol
Injuries: none reported
Damage: reported two primary residences lost and numerous outbuildings lost

Ray / Alamo & Tioga Fires in Williams County
 Began as two fires merged into one, size unknown

Contained: 90% contained, actively fighting flare-ups
Response: Williams County, Ward County, Divide County, Burke County, North Dakota Highway Patrol flight
Injuries: One fatality and one individual in critical condition
Damage: Downed power lines, damages being assessed

Arnegard Fire near Arnegard
Size: estimated 561 acres
Contained: 100% contained, determined extinguished at 7 a.m.
Response: McKenzie County, Williams County, Highway Patrol
Injuries: none reported
Damage: outbuildings and vehicles

Garrison Fire near Emmit
Size: Estimated 830 acres
Contained: 100% contained, watching for hotspots. Was stopped 1 mile from Garrison
Response: Fort Berthold, McLean County, Mountrail County, North Dakota Forest Service
Injuries: none reported
Damage: none reported

Charlson
Size: estimated 2 miles wide
Contained: 100% contained, determined extinguished 2 a.m. today
Response: Three Affiliated Tribes, McKenzie County, North Dakota Forest Service, Highway Patrol
Injuries: none reported
Damage: power lines down, no additional damages reported

The Governor and General Johnson plan to tour the fire damaged areas Monday, October 7th. Further details will be forthcoming.

Safety of citizens and first responders continues to be first priority, along with protecting communities, homes, and property. This is an evolving situation, and more information will be published as it becomes available.

If you see smoke, call 911 right away.

lost or found cattle can be reported to the North Dakota Stockmen's Association to cward@ndstockman.org or jellingson@ndstockmen.org or by calling 701-223-2522.

Further Safety Information:
Unfortunately, dry conditions are expected to continue into the fall months and will provide ample fuel for wildfire. That means we all must continue to be vigilant, especially in our rural communities.

- Remember to follow burn restrictions. Additionally, fires should not be started on days with a Red Flag Warning, which is when warm temperatures, low humidity and stronger winds are forecasted to combine to produce an increased risk of fire danger. Current conditions and information can be found at https://NDResponse.gov/burn.
- Use caution with outdoor equipment of any kind. While pulling a camper, boat or trailer, remember to cross your tow chains. Never park on tall, dry grass.
- Make sure to dispose of cigarettes properly.
- If you are in an area that allows recreational fires, never leave them unattended and be sure to put them out completely.

Here is a link to the media kit for this press release.

For More Information, Contact :
Alison Vetter, Strategic Communications Chief
North Dakota Department of Emergency Services 701-328-8154 | alvetter@nd.gov

Nathan Rivard, Public Affairs Officer
North Dakota National Guard (701) 220-7277 | Nathan.r.rivard.cov@army.mil

<< All News

The Bismarck Tribune

WHERE YOUR STORY LIVES

Wednesday, October 9, 2024

Scope of western ND fires growing with new estimate

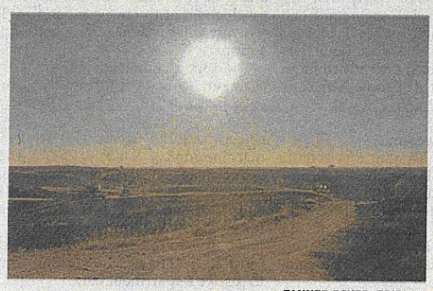
2 big wildfires are still going

BLAKE NICHOLSON
Bismarck Tribune

A second person has died due to recent wildfires in western North Dakota, and six others have been injured, authorities said Tuesday.

Williams County/Williston Emergency Management confirmed the death of Edgar Coppersmith, 47, of Tioga, but did not immediately provide further details. Williams County Sheriff's Office Detective Daniel Ward told the Tribune that Coppersmith died in a Denver hospital, where he had been flown after being injured in a fire near

Please see ND WILDFIRES, Page A2



TANNER ECKER, TRIBUNE

Scorched land stretches for miles outside of Tioga on Monday.

ND wildfires

From A1

Ray.

Major wildfires in western North Dakota since last Friday have burned as much as 200 square miles, a total area nearly six times the size of Bismarck, according to new estimates released Tuesday. State officials have deemed the scope of the wildfires "historic."

Meanwhile, North Dakota's Department of Emergency Services has set up an online resource hub to aid victims of the devastating wildfires, some of which continued to burn on Tuesday.

The online resource site can be accessed at https://bit.ly/4eBfRiB. It provides a centralized list of financial assistance programs, supportive resources particularly geared to agricultural producers and residents, as well as resources to support the mental, physical and financial well-being of victims. It lists resources for both immediate and long-term recovery needs.

Partners with DES in the effort are NDSU Extension, the North Dakota Stockmen's Association, the U.S. Department of Agriculture's Farm Service Agency, the state Agriculture and Insurance departments, the Farm Rescue nonprofit, the American Red Cross, FirstLink and the Mental Health Crisis Line.

Fires update

The Bear Den Fire near Mandaree and the Elkhorn Fire near Grassy Butte that began over the weekend were 30% and 50% contained, respectively, on Tuesday afternoon, according to the state Department of Emergency Services. Those two fires have burned a total of about 40,000 acres.

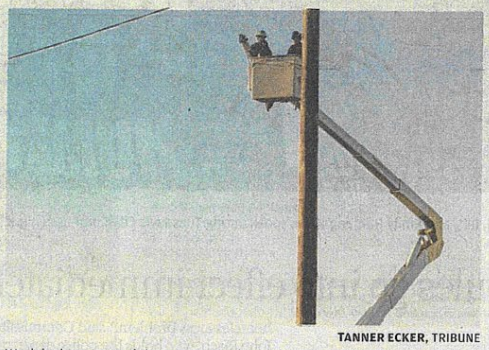
The Ray/Alamo/Tioga fire — two fires which merged into one big one in Williams County — was 99% contained. The size previously had been undetermined. DES on Tuesday estimated the fire's size at a maximum of 88,934 acres, with uncertainty about whether some pockets of land within the perimeter escaped the flames.

Three other smaller fires — the Arnegard, Garrison and Charlson fires — all are fully contained.

Those six fires have burned as much as 130,000 acres, according to the updated estimates.

The fires over the weekend prompted evacuations, shut down portions of highways, damaged or destroyed homes, rural outbuildings and vehicles, damaged more than 500 power poles and cut electricity to thousands of people. About 330 people in Williams County remained without power Tuesday morning, according to poweroutage.us, which tracks outages around the country. The number had been whittled to 170 by late afternoon. Mountrail-Williams Electric Cooperative said it hoped to restore power to most members by the end of the week.

The Williams County fire killed Johannes Nicolaas Van Eeden, 26, of South Africa, and critically injured Coppersmith. Authorities on Tuesday said Coppersmith had died of his injuries, but did not say when. Authorities also did not provide details on the extent of injuries of the other six people. The Bank of Tioga is accepting donations for the Van Eeden family.



TANNER ECKER, TRIBUNE

Work is done to straighten power poles and restore power outside of Tioga on Monday.

Williams County has declared a state of emergency. Gov. Doug Burgum declared a statewide fire emergency last Thursday in advance of expected critical fire weather conditions over the weekend. He said on Monday that the state will move forward with a disaster declaration if damage from the wildfires meets the $1.5 million threshold to request a presidential disaster declaration. It likely will take a few weeks to determine that.

The impact of the fires to livestock, wildlife and crops is still being determined. Burgum after a tour of the region on Monday cautioned that the response and recovery will be "a marathon, not a sprint."

The Federal Emergency Management Agency authorized the use of money through the Fire Management Assistance Grant program to help with the firefighting costs for the Bear Den and Elk Horn fires. Costs haven't been determined. The federal share is 75%. Firefighting crews from Montana, South Dakota and New Mexico have been helping with the battle, which has been fought both on the ground and from the air, with the help of air tankers dropping fire retardant and North Dakota National Guard Black Hawk helicopters dropping water lifted from Lake Sakakawea and other area water sources.

Looking ahead

The fires were driven by dry conditions and strong winds. Much of western North Dakota is in severe or moderate drought or considered abnormally dry, according to the latest U.S. Drought Monitor map, a partnership of the National Oceanic and Atmospheric Administration, the National Drought Mitigation Center and USDA.

Winds on Saturday in the region gusted to near 80 mph, due in part to weather conditions similar to Alberta clipper snowstorms in the winter, according to the National Weather Service. Winds this week are forecast to be mostly light, with the exception of Thursday, when they could pick up to around 20 mph with gusts up to 30 mph as another cold front pushes through, forecasters said.

No rain is in the forecast through the end of the workweek. There's a slight chance for showers in northern North Dakota on Saturday.

Air quality in the area of the fires still burning in the northwest was rated "unhealthy for sensitive groups" on Tuesday morning, according to fire.airnow.gov. That means children, seniors and people with respiratory conditions might experience health effects and should limit prolonged or strenuous outdoor activity, according to the state Department of Environmental Quality.

Conditions had improved to "moderate" by the afternoon, with "unusually sensitive people" urged to limit time outdoors. Much of western North Dakota was in the "moderate" category; Bismarck's air quality was rated "good."

Smoke from the North Dakota fires and from fires in the western U.S. passing through the state could lead to intermittent air quality issues in parts of North Dakota over the next few days, DEQ said.

Thursday, October 17, 2024

bismarcktribune.com • $3

Elkhorn Fire is contained

Conditions remain ripe for more wildfires in ND

BLAKE NICHOLSON
Bismarck Tribune

The Elkhorn Fire that's been burning in northwestern North Dakota for 1 ½ weeks was deemed fully contained on Wednesday.

The wildfire started in the Grassy Butte area on Saturday, Oct. 5, fueled by drought and driven by winds that day gusting to near 80 mph in the region.

"We had to quickly evaluate the situation and identify structures at risk and start suppression efforts in areas where it was safe to place firefighters for an initial attack," Watford City Fire Chief Dave Uhlich said.

The fire burned 10,313 acres. No injuries to people were reported, and only one rural outbuilding burned. The impact to livestock isn't known. The cause is still under investigation.

The U.S. Forest Service's Dakota Prairie Grasslands office and the Watford City Volunteer Fire Department announced Wednesday that the fire was 100% contained. It had been at 75% on Tuesday.

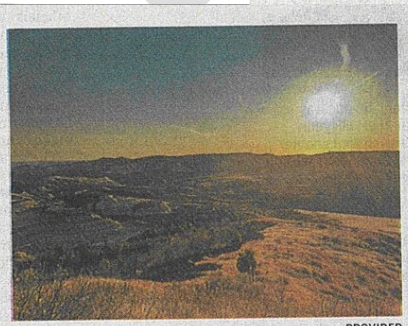
Crews will now begin fire suppression repair work. That entails repairing damages and minimizing potential soil erosion and impacts resulting from fire suppression work. The actions are usually started in the burned area as soon as it is safe, especially for large fires, according to the Forest Service. Examples include repairing roads damaged by heavy equipment, clearing debris from stream channels, and spreading mulch to protect bare soils and boost moisture retention.

Please see **FIRE**, Page A2

Fire

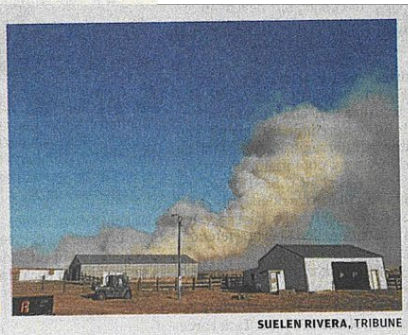
From A1

The Elkhorn was one of six major fires that broke out in the region the first weekend of October; together they burned as much as 118,000 acres, or about 185 square miles — devastation that state officials deemed "historic." The only one still active on Wednesday was the Bear Den Fire near Mandaree on the Fort Berthold Reservation, which was considered 85% contained. That fire burned 11,746 acres.



PROVIDED

The Elkhorn Fire in northwestern North Dakota burned for 12 days before it was 100% contained.



SUELEN RIVERA, TRIBUNE

Weekend grass fires north of Bismarck threatened structures, but none burned.

The fires threatened communities, prompted evacuations, shut down portions of highways, damaged or destroyed homes, rural outbuildings and vehicles, killed livestock, damaged more than 500 power poles and cut electricity to thousands of people. Two people died — ranchhand Nicolaas van Eeden, 26, of South Africa, and Edgar Coppersmith, 47, of Tioga — and six others were injured. The response involved crews from multiple states fighting the flames from the ground and from the air. The causes of the fires are under investigation.

Conditions in much of North Dakota are ripe for more wildfires, with breezy conditions and no rain in the forecast. Winds on Wednesday were gusting in excess of 20 mph in many western areas, and in excess of 30 mph in the far south central and southeastern regions, according to National Weather Service data. The agency issued a red flag warning for the latter two regions due to the critical fire weather conditions. It also issued a red flag warning for Thursday for the southern James River Valley and much of the Red River Valley in the east.

The fire danger on Wednesday was rated as "high" in northeastern North Dakota, "extreme" in the northwestern corner, and "very high" everywhere else, according to the state Department of Emergency Services.

Several small fires have popped up in western and southern North Dakota over the past couple of days, including a couple in Morton County, and one in Golden Valley County that burned about 1,000 acres. None of those fires grew out of control. The Double Ditch Fire north of Bismarck this past weekend burned 1,100 acres before being contained.

Halfway through the fall season, Bismarck and Jamestown are on pace for their warmest fall on record, and Dickinson and Minot are potentially looking at their second- and third-warmest, respectively, the Weather Service said Wednesday. Bismarck is on pace for its second-driest fall season, Dickinson its third-driest and Jamestown its ninth-driest.

A DES map that tracks active wildfires across the state is at NDResponse.gov/firemonitor. An online resource hub set up by DES to aid wildfire victims can be accessed at https://bit.ly/4eBfRiB. More information about burn restrictions and fire danger is at ndresponse.gov/burn.

APPENDIX D PM2.5 TIERING TOOL ANALYSES

This $PM_{2.5}$ Tiering Tool Analyses follows the process described in the U.S. EPA *$PM_{2.5}$ Wildland Fire Exceptional Events Tiering Document* [66]. It states:

> This document outlines a tiered approach for addressing the clear causal relationship element within a wildland fire $PM_{2.5}$ demonstration, recognizing that some causal relationships may be clearer and, therefore, require relatively fewer pieces of evidence to satisfy the rule requirements.

Tier 1 clear causal analyses are intended for wildland fire events with distinct high levels of monitored 24-hour $PM_{2.5}$ concentrations, when compared to historical 24-hour concentrations. More specifically, the event concentrations were 1.5 times the highest 98th percentile of data for the last five years. This demonstrates that the monitored event concentrations are undeniably higher than non-event concentrations, thus requiring fewer pieces of evidence to establish a clear causal relationship.

Historically, the Division has not applied data qualifiers to the ambient monitoring data in EPA's AQS for instances of wildfire smoke impacts at the monitoring sites. The Division just began to apply wildfire smoke data qualifiers starting with the 2023 ambient monitoring data in AQS. As a result, the U.S. EPA *$PM_{2.5}$ Wildland Fire Exceptional Events Tiering Document* default methodology tiering thresholds for North Dakota are conservative.

The U.S. EPA Exceptional Events Analysis and Visualization Tools, $PM_{2.5}$ Tiering Tool[67], was utilized by the Division for the tier threshold calculations to determine the site-level tiering thresholds at all nine $PM_{2.5}$ monitoring sites. Tier Thresholds in the $PM_{2.5}$ Tiering Tool are:

- Based on the most recent, complete 5-year period 2020-2024.
- Calculated at the site level. For identifying site-days to exclude from the tier threshold calculations, the tool considers the raw data record for all monitors at a site. If any hour of the day at any monitor at the site has an R (Request Exclusion) flag or a fire-related I (Informational) flag[68], then the tool excludes the site-level aggregated daily value from the tier threshold calculations. Fire-related I flags include IT (Wildfire - U.S.), IF (Fire - Canadian), IG (Fire - Mexico/Central America), IM (Prescribed Fire), and IP (Structural Fire). Fire-related R flags include RT (Wildfire - U.S.), RF (Fire - Canadian), RG (Fire - Mexico/Central America), RM (Prescribed Fire), and RP (Structural Fire).

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[66] U.S. EPA, *$PM_{2.5}$ Wildland Fire Exceptional Events Tiering Document*, April 2024, available at https://www.epa.gov/system/files/documents/2024-04/final-pm-fire-tiering-4-30-24.pdf

[67] U.S. EPA, $PM_{2.5}$ Tiering Tool – for Exceptional Events Analysis, accessed May 28, 2025, available at https://www.epa.gov/air-quality-analysis/pm25-tiering-tool-exceptional-events-analysis

[68] In the context of the $PM_{2.5}$ Tiering Tool, "flagged data" are data in AQS that have been flagged by the State or local agency as having been impacted by any of the wildfire event types in AQS (e.g., IF, IG , IM , IT, RF, RG, RM, RT).

- The tier thresholds are based on the lesser value of either (a) the most recent 5-year month-specific 98th percentile for 24-hour $PM_{2.5}$ data, or (b) the minimum annual 98th percentile for 24-hour $PM_{2.5}$ data for the most recent 5-year period with all R flagged and fire-related I flagged days excluded.
- Tier 1 demonstrations are appropriate for 24-hour $PM_{2.5}$ greater than or equal to 1.5 times the threshold.
- Tier 2 demonstrations are appropriate for 24-hour $PM_{2.5}$ greater than or equal to the threshold but less than 1.5 times the threshold.
- Tier 3 demonstrations are appropriate for 24-hour $PM_{2.5}$ less than the threshold.

The images at the end of this Appendix are the monitor site-level tiering graphs produced by the EPA $PM_{2.5}$ Tiering Tool, which display the daily $PM_{2.5}$ concentrations along with tier levels. As smoke from wildfires across Canada, the western United States, and North Dakota directly affected the air quality in North Dakota from early-May through early-October of 2024, the $PM_{2.5}$ Tiering Tool was run at each monitor site for the months of May, June, July, August, September, and October.

The Division summarized the site-level tiering thresholds at all nine monitoring sites for the months of May, June, July, August, September, and October. The Division evaluated the site-level tiering thresholds and identified the maximum $PM_{2.5}$ Tier 1 threshold is 18.45 $\mu g/m^3$ at the Bismarck site.

Monitor	**County**	**$PM_{2.5}$ Tier 1 Threshold ($\mu g/m^3$)**					
		May	**June**	**July**	**August**	**September**	**October**
Painted Canyon (TRNP-SU)	Billings	12.9	12.45	12.9	12.9	12.9	12.9
Lostwood NWR	Burke	12.9	15	15	15	15	15
Bismarck Residential	Burleigh	13.8	18.45	18.45	18.45	18.45	18.45
Fargo NW	Cass	17.85	16.35	17.85	17.85	17.85	17.85
Lake Ilo NWR	Dunn	13.5	13.5	13.5	13.5	13.5	13.5
TRNP-NU	McKenzie	10.5	12.9	12.9	12.9	12.9	12.9
Beulah North	Mercer	11.55	14.85	14.85	14.85	14.85	14.85
Hannover	Oliver	14.25	14.55	14.55	14.55	14.55	14.55
Ryder	Ward	10.5	13.65	13.65	13.65	13.65	13.65
North Dakota Maximum Tier 1 Threshold		**17.85**	**18.45**	**18.45**	**18.45**	**18.45**	**18.45**

To ensure equity statewide and ensure additional conservatism, the Division held the Tier 1 threshold constant at 20.1 $\mu g/m^3$ for the Tier 1 clear causal analyses at all nine $PM_{2.5}$ monitoring sites, which was the Tier 1 threshold utilized in the *Canadian Wildfire Smoke Particulate Matter Exceptional Event Demonstration – North Dakota – May-September 2023*. North Dakota's equitable methodology identified distinct high levels of monitored 24-hour $PM_{2.5}$ Event concentrations that are markedly higher than non-event concentrations on 31 dates at nine $PM_{2.5}$ monitoring sites for 156 $PM_{2.5}$ monitor Event days in 2024.

The collocated $PM_{2.5}$ monitors at the Bismarck (i.e., designated by POC1, POC2, or POC3) and at the Beulah (i.e., designated by POC4) monitoring sites were included only for corresponding $PM_{2.5}$ primary monitor Event days at the Bismarck (i.e., designated by POC4) and at the Beulah (i.e., designated by POC3) monitoring sites. See Appendix A, Initial Notification Table A. On the 31 Event dates in 2024 there is a total of 205 $PM_{2.5}$ monitor Event days, inclusive of the primary and collocated monitors.

AQS ID 38-007-0002, Painted Canyon (TRNP-SU), Billings County


SITE_ID
380070002
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
12.9
Tier 2
8.6
5 year month-specific 98th percentile
27.6
Annual(2020-2024) 98th percentile
8.60
Year of 98th minimum
2024
Month of EE
Aug
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
4.8
2022 24hr DV
17
2023 Annual DV
6
2023 24hr DV
27
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380070002
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24-hour µg/m³
200
150
100
50
0
-50
Tier 1 (12.9)
Tier 2 (8.6)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380070002
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
12.9
Tier 2
8.6
5 year month-specific 98th percentile
22.7
Annual(2020-2024) 98th percentile
8.60
Year of 98th minimum
2024
Month of EE
Sep
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
4.8
2022 24hr DV
17
2023 Annual DV
6
2023 24hr DV
27
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380070002
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24-hour µg/m³
200
150
100
50
0
-50
Tier 1 (12.9)
Tier 2 (8.6)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380070002
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
12.9
Tier 2
8.6
5 year month-specific 98th percentile
13.7
Annual(2020-2024) 98th percentile
8.60
Year of 98th minimum
2024
Month of EE
Oct
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
4.8
2022 24hr DV
17
2023 Annual DV
6
2023 24hr DV
27
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380070002
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24-hour µg/m³
200
150
100
50
0
-50
Tier 1 (12.9)
Tier 2 (8.6)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025

AQS ID 38-013-0004, Lostwood NWR, Burke County


SITE_ID
380130004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
15
Tier 2
10
5 year month-specific 98th percentile
33.5
Annual(2020-2024) 98th percentile
10.00
Year of 98th minimum
2024
Month of EE
Aug
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5.3
2022 24hr DV
18
2023 Annual DV
6.9
2023 24hr DV
34
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380130004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
Tier 1 (15)
Tier 2 (10)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380130004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
15
Tier 2
10
5 year month-specific 98th percentile
19.1
Annual(2020-2024) 98th percentile
10.00
Year of 98th minimum
2024
Month of EE
Sep
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5.3
2022 24hr DV
18
2023 Annual DV
6.9
2023 24hr DV
34
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380130004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
Tier 1 (15)
Tier 2 (10)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380130004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
15
Tier 2
10
5 year month-specific 98th percentile
16
Annual(2020-2024) 98th percentile
10.00
Year of 98th minimum
2024
Month of EE
Oct
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5.3
2022 24hr DV
18
2023 Annual DV
6.9
2023 24hr DV
34
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380130004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
Tier 1 (15)
Tier 2 (10)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025

AQS ID 38-015-0003, Bismarck Residential, Burleigh County


SITE_ID
380150003
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
18.45
Tier 2
12.3
5 year month-specific 98th percentile
22.1
Annual(2020-2024) 98th percentile
12.30
Year of 98th minimum
2024
Month of EE
Aug
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
6.4
2022 24hr DV
19
2023 Annual DV
7.6
2023 24hr DV
30
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380150003
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
Tier 1 (18.45)
Tier 2 (12.3)
AQS data last updated 5/12/2025
SITE_ID
380150003
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
18.45
Tier 2
12.3
5 year month-specific 98th percentile
18.4
Annual(2020-2024) 98th percentile
12.30
Year of 98th minimum
2024
Month of EE
Sep
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
6.4
2022 24hr DV
19
2023 Annual DV
7.6
2023 24hr DV
30
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380150003
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
Tier 1 (18.45)
Tier 2 (12.3)
AQS data last updated 5/12/2025
SITE_ID
380150003
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
18.45
Tier 2
12.3
5 year month-specific 98th percentile
20.9
Annual(2020-2024) 98th percentile
12.30
Year of 98th minimum
2024
Month of EE
Oct
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
6.4
2022 24hr DV
19
2023 Annual DV
7.6
2023 24hr DV
30
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380150003
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
Tier 1 (18.45)
Tier 2 (12.3)
AQS data last updated 5/12/2025

AQS ID 38-017-1004, Fargo NW, Cass County


SITE_ID
380171004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
17.85
Tier 2
11.9
5 year month-specific 98th percentile
21.9
Annual(2020-2024) 98th percentile
11.90
Year of 98th minimum
2024
Month of EE
Aug
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
6.5
2022 24hr DV
19
2023 Annual DV
7.9
2023 24hr DV
26
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380171004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24-hour µg/m³
Tier 1 (17.85)
Tier 2 (11.9)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380171004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
17.85
Tier 2
11.9
5 year month-specific 98th percentile
14.6
Annual(2020-2024) 98th percentile
11.90
Year of 98th minimum
2024
Month of EE
Sep
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
6.5
2022 24hr DV
19
2023 Annual DV
7.9
2023 24hr DV
26
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380171004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24-hour µg/m³
Tier 1 (17.85)
Tier 2 (11.9)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380171004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
17.85
Tier 2
11.9
5 year month-specific 98th percentile
20.5
Annual(2020-2024) 98th percentile
11.90
Year of 98th minimum
2024
Month of EE
Oct
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
6.5
2022 24hr DV
19
2023 Annual DV
7.9
2023 24hr DV
26
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380171004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24-hour µg/m³
Tier 1 (17.85)
Tier 2 (11.9)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025

AQS ID 38-025-0004, Lake Ilo NWR, Dunn County


SITE_ID
380250004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
13.5
Tier 2
9
5 year month-specific 98th percentile
14.3
Annual(2020-2024) 98th percentile
9.00
Year of 98th minimum
2024
Month of EE
Aug
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
4.7
2022 24hr DV
16
2023 Annual DV
6.3
2023 24hr DV
31
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380250004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
Tier 1 (13.5)
Tier 2 (9)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380250004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
13.5
Tier 2
9
5 year month-specific 98th percentile
19.8
Annual(2020-2024) 98th percentile
9.00
Year of 98th minimum
2024
Month of EE
Sep
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
4.7
2022 24hr DV
16
2023 Annual DV
6.3
2023 24hr DV
31
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380250004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
Tier 1 (13.5)
Tier 2 (9)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380250004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
13.5
Tier 2
9
5 year month-specific 98th percentile
19.3
Annual(2020-2024) 98th percentile
9.00
Year of 98th minimum
2024
Month of EE
Oct
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
4.7
2022 24hr DV
16
2023 Annual DV
6.3
2023 24hr DV
31
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380250004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
Tier 1 (13.5)
Tier 2 (9)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025

AQS ID 38-053-0002, TRNP-NU, McKenzie County


SITE_ID
380530002
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
12.9
Tier 2
8.6
5 year month-specific 98th percentile
27.1
Annual(2020-2024) 98th percentile
8.60
Year of 98th minimum
2024
Month of EE
Aug
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
4.6
2022 24hr DV
18
2023 Annual DV
5.4
2023 24hr DV
27
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380530002
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
Tier 1 (12.9)
Tier 2 (8.6)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380530002
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
12.9
Tier 2
8.6
5 year month-specific 98th percentile
19.1
Annual(2020-2024) 98th percentile
8.60
Year of 98th minimum
2024
Month of EE
Sep
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
4.6
2022 24hr DV
18
2023 Annual DV
5.4
2023 24hr DV
27
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380530002
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
Tier 1 (12.9)
Tier 2 (8.6)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380530002
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
12.9
Tier 2
8.6
5 year month-specific 98th percentile
18.4
Annual(2020-2024) 98th percentile
8.60
Year of 98th minimum
2024
Month of EE
Oct
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
4.6
2022 24hr DV
18
2023 Annual DV
5.4
2023 24hr DV
27
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380530002
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
Tier 1 (12.9)
Tier 2 (8.6)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025

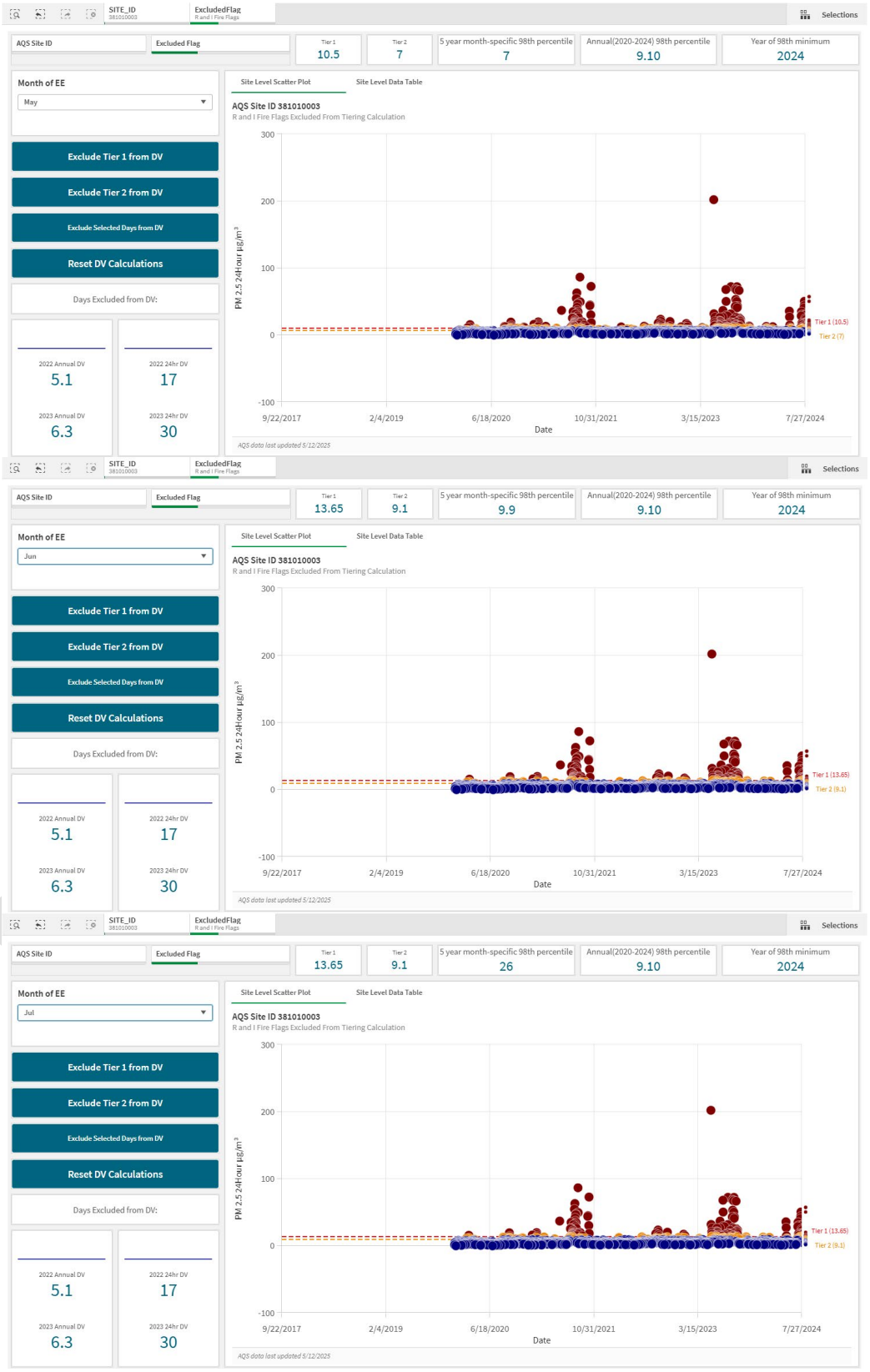
AQS ID 38-057-0004, Beulah North, Mercer County


SITE_ID
380570004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
14.85
Tier 2
9.9
5 year month-specific 98th percentile
28.2
Annual(2020-2024) 98th percentile
9.90
Year of 98th minimum
2024
Month of EE
Aug
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5
2022 24hr DV
16
2023 Annual DV
5.9
2023 24hr DV
26
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380570004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
Tier 1 (14.85)
Tier 2 (9.9)
AQS data last updated 5/12/2025
SITE_ID
380570004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
14.85
Tier 2
9.9
5 year month-specific 98th percentile
17.2
Annual(2020-2024) 98th percentile
9.90
Year of 98th minimum
2024
Month of EE
Sep
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5
2022 24hr DV
16
2023 Annual DV
5.9
2023 24hr DV
26
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380570004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
Tier 1 (14.85)
Tier 2 (9.9)
AQS data last updated 5/12/2025
SITE_ID
380570004
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
14.85
Tier 2
9.9
5 year month-specific 98th percentile
17
Annual(2020-2024) 98th percentile
9.90
Year of 98th minimum
2024
Month of EE
Oct
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5
2022 24hr DV
16
2023 Annual DV
5.9
2023 24hr DV
26
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380570004
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
Tier 1 (14.85)
Tier 2 (9.9)
AQS data last updated 5/12/2025

AQS ID 38-065-0002, Hannover, Oliver County


SITE_ID
380650002
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
14.55
Tier 2
9.7
5 year month-specific 98th percentile
18.4
Annual(2020-2024) 98th percentile
9.70
Year of 98th minimum
2024
Month of EE
Aug
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5.8
2022 24hr DV
18
2023 Annual DV
6.9
2023 24hr DV
30
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380650002
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
Tier 1 (14.55)
Tier 2 (9.7)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380650002
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
14.55
Tier 2
9.7
5 year month-specific 98th percentile
26.8
Annual(2020-2024) 98th percentile
9.70
Year of 98th minimum
2024
Month of EE
Sep
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5.8
2022 24hr DV
18
2023 Annual DV
6.9
2023 24hr DV
30
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380650002
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
Tier 1 (14.55)
Tier 2 (9.7)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
380650002
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
14.55
Tier 2
9.7
5 year month-specific 98th percentile
18.2
Annual(2020-2024) 98th percentile
9.70
Year of 98th minimum
2024
Month of EE
Oct
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5.8
2022 24hr DV
18
2023 Annual DV
6.9
2023 24hr DV
30
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 380650002
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24Hour µg/m³
300
200
100
0
-100
Tier 1 (14.55)
Tier 2 (9.7)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025

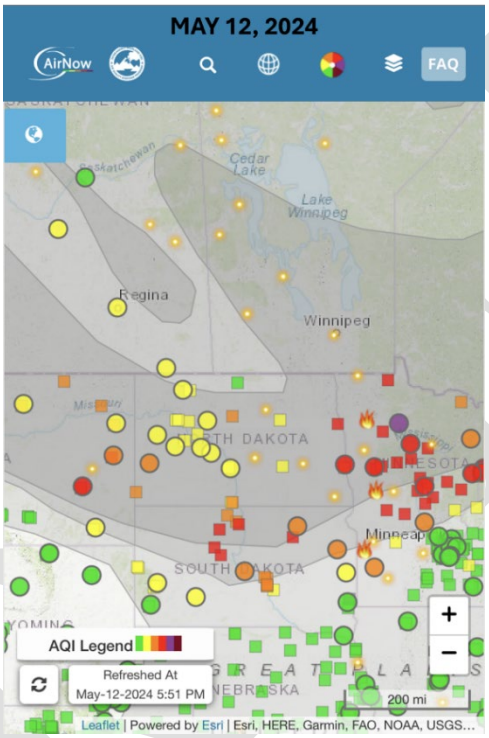
AQS ID 38-101-0003, Ryder, Ward County

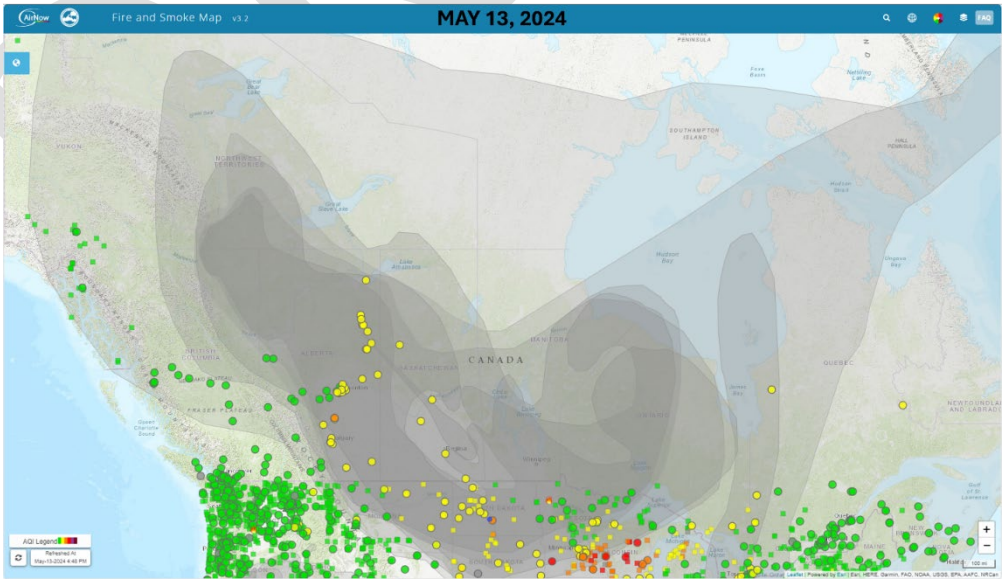



SITE_ID
381010003
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
13.65
Tier 2
9.1
5 year month-specific 98th percentile
19.6
Annual(2020-2024) 98th percentile
9.10
Year of 98th minimum
2024
Month of EE
Aug
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5.1
2022 24hr DV
17
2023 Annual DV
6.3
2023 24hr DV
30
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 381010003
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24-Hour µg/m³
300
200
100
0
-100
Tier 1 (13.65)
Tier 2 (9.1)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
381010003
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
13.65
Tier 2
9.1
5 year month-specific 98th percentile
19.2
Annual(2020-2024) 98th percentile
9.10
Year of 98th minimum
2024
Month of EE
Sep
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5.1
2022 24hr DV
17
2023 Annual DV
6.3
2023 24hr DV
30
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 381010003
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24-Hour µg/m³
300
200
100
0
-100
Tier 1 (13.65)
Tier 2 (9.1)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025
SITE_ID
381010003
ExcludedFlag
R and I Fire Flags
Selections
AQS Site ID
Excluded Flag
Tier 1
13.65
Tier 2
9.1
5 year month-specific 98th percentile
12.9
Annual(2020-2024) 98th percentile
9.10
Year of 98th minimum
2024
Month of EE
Oct
Exclude Tier 1 from DV
Exclude Tier 2 from DV
Exclude Selected Days from DV
Reset DV Calculations
Days Excluded from DV:
2022 Annual DV
5.1
2022 24hr DV
17
2023 Annual DV
6.3
2023 24hr DV
30
Site Level Scatter Plot
Site Level Data Table
AQS Site ID 381010003
R and I Fire Flags Excluded From Tiering Calculation
PM 2.5 24-Hour µg/m³
300
200
100
0
-100
Tier 1 (13.65)
Tier 2 (9.1)
9/22/2017
2/4/2019
6/18/2020
10/31/2021
3/15/2023
7/27/2024
Date
AQS data last updated 5/12/2025

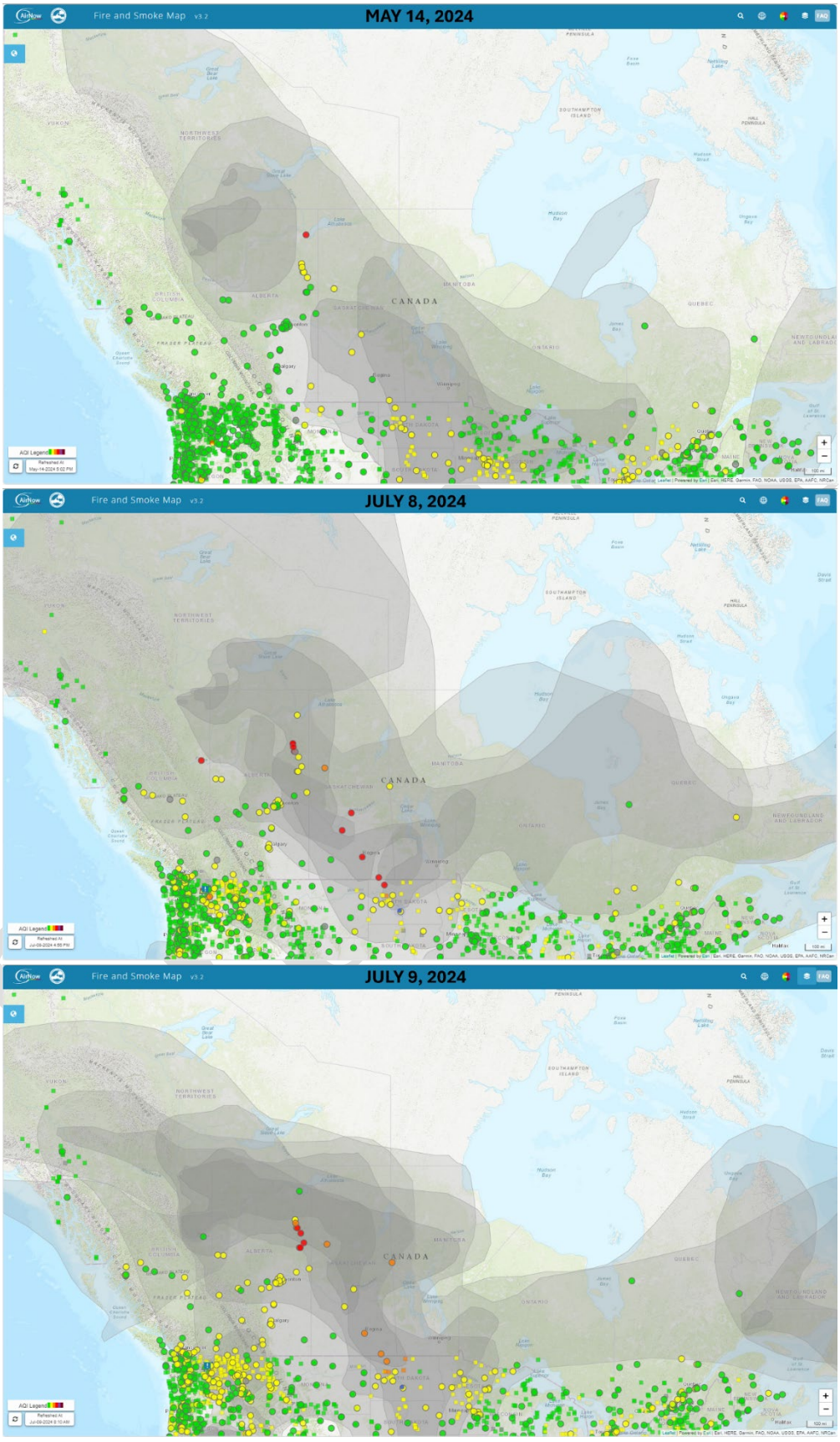
APPENDIX E FIRE AND SMOKE MAPS

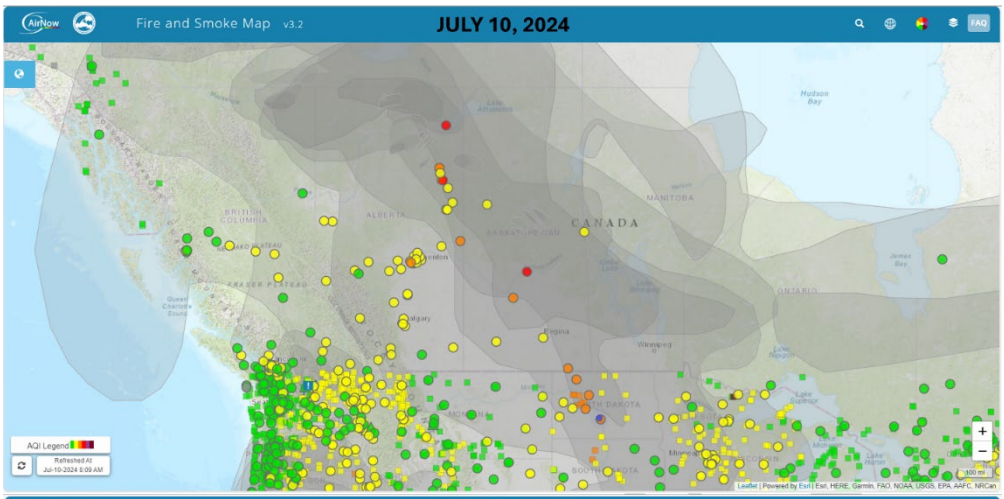
Fire and Smoke Map[69] images for each Event date were captured during the NDDEQ 2024 real time assessment of potential air quality impacts from wildland fire smoke. The images provide the current particle pollution air quality information, color coded to the Air Quality Index (AQI), for permanent monitors (i.e., circles) and sensors (i.e., squares) as well as smoke plumes.

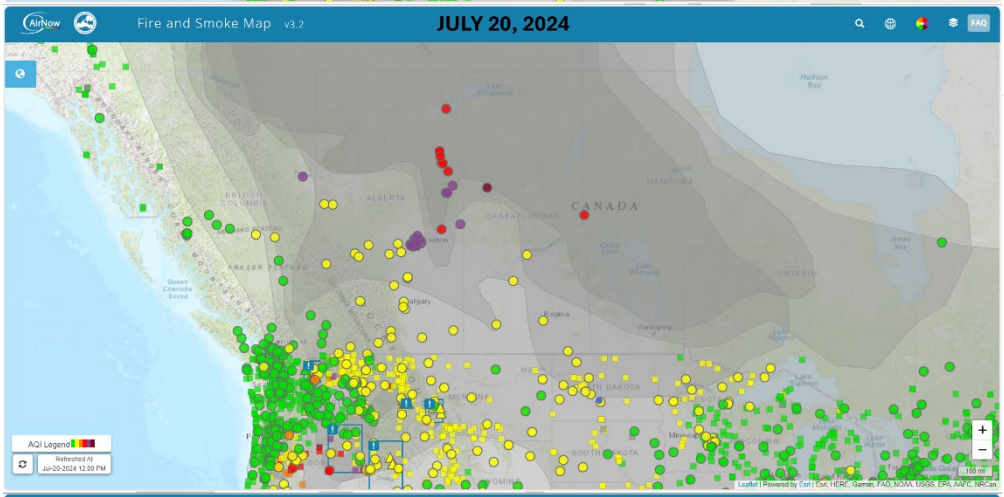


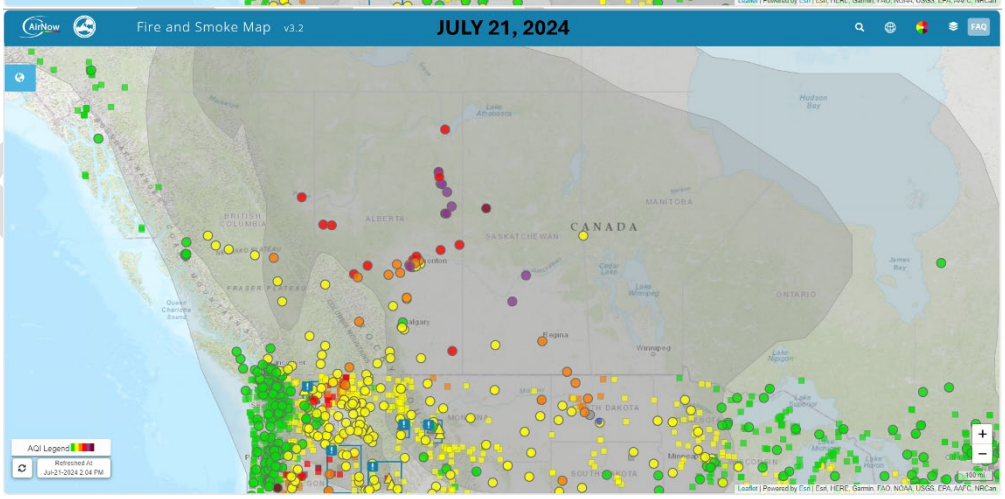


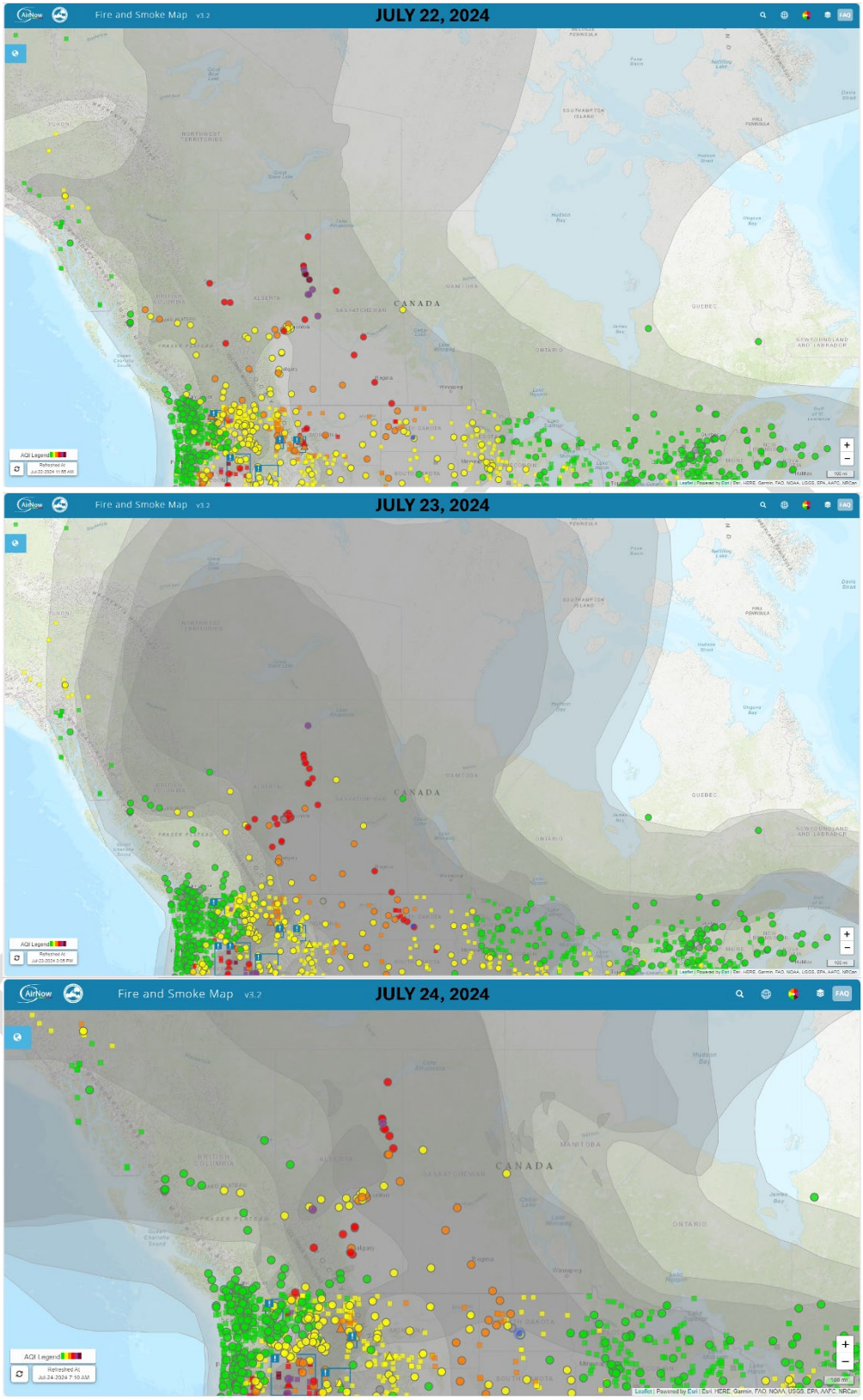
[69] https://fire.airnow.gov/

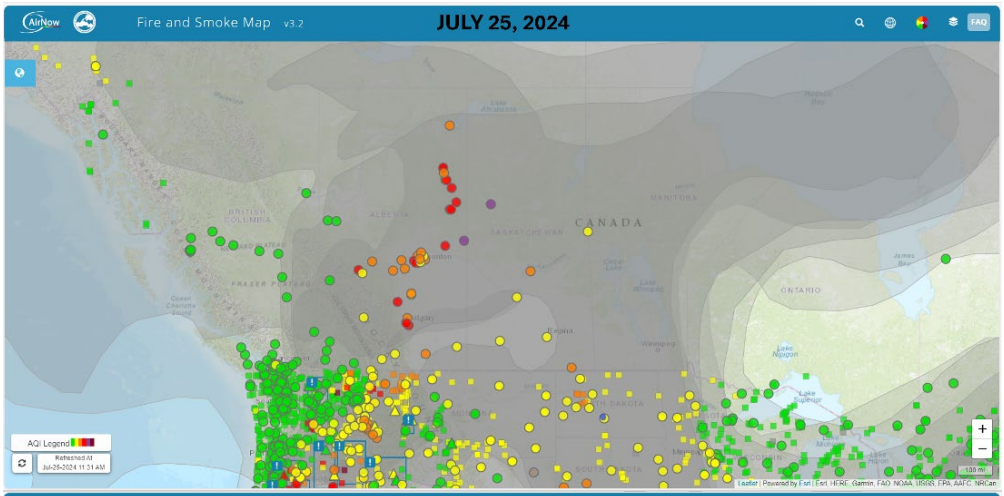

Fire and Smoke Map v3.2
MAY 14, 2024
CANADA
Fire and Smoke Map v3.2
JULY 8, 2024
CANADA
Fire and Smoke Map v3.2
JULY 9, 2024
CANADA

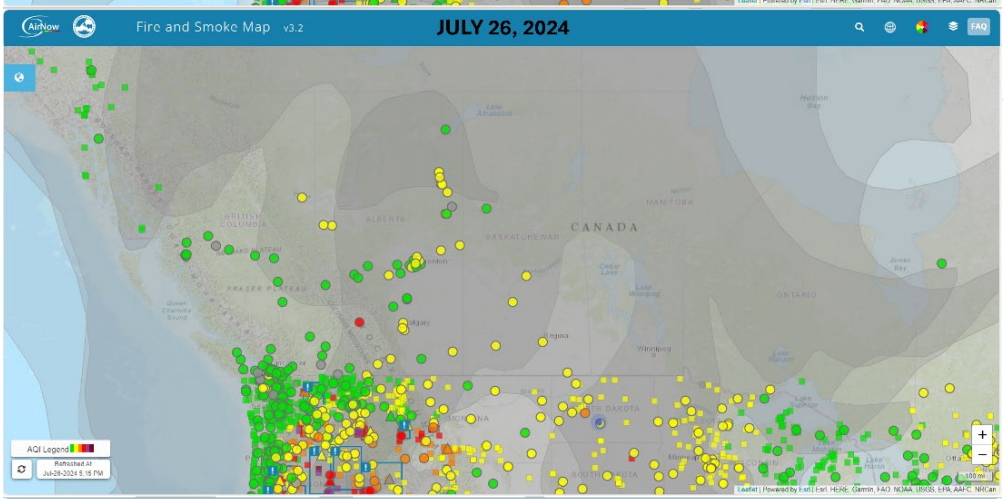

Fire and Smoke Map v3.2
JULY 10, 2024
CANADA
AQI Legend

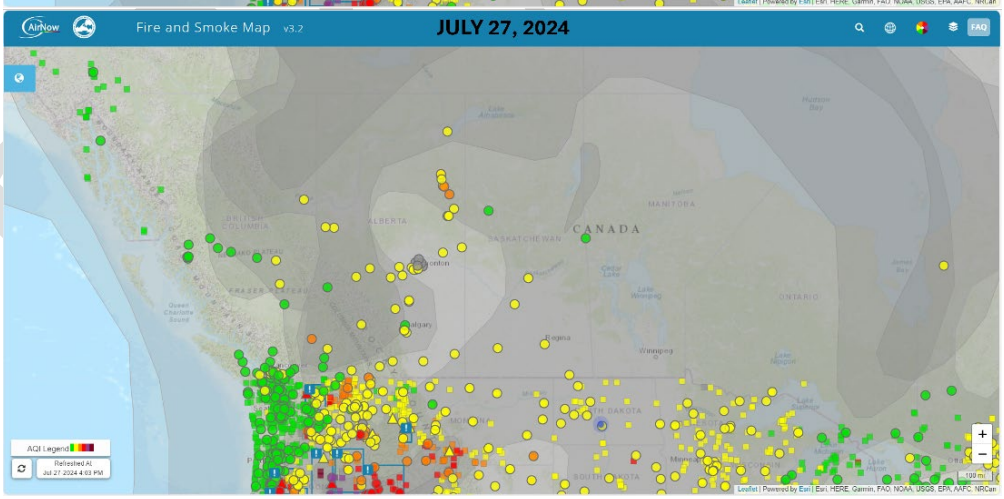

Fire and Smoke Map v3.2
JULY 20, 2024
CANADA
AQI Legend

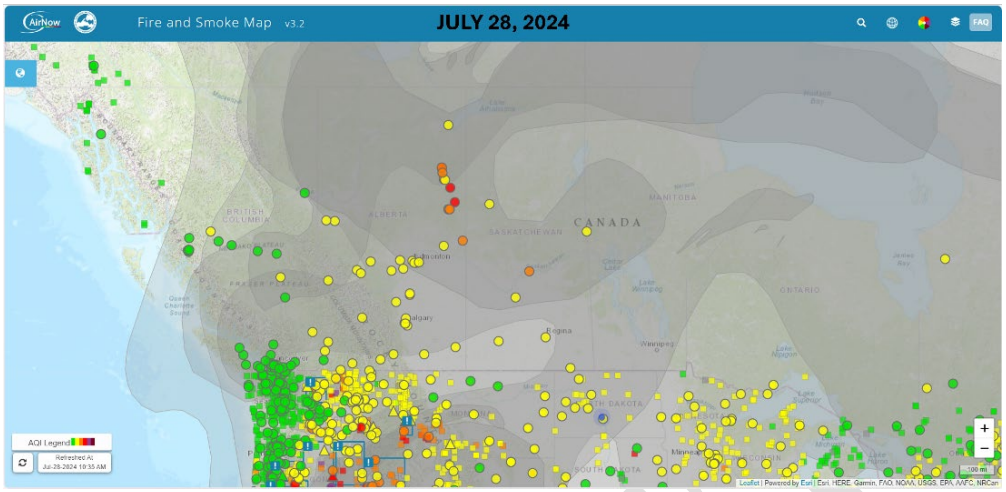

Fire and Smoke Map v3.2
JULY 21, 2024
CANADA
AQI Legend

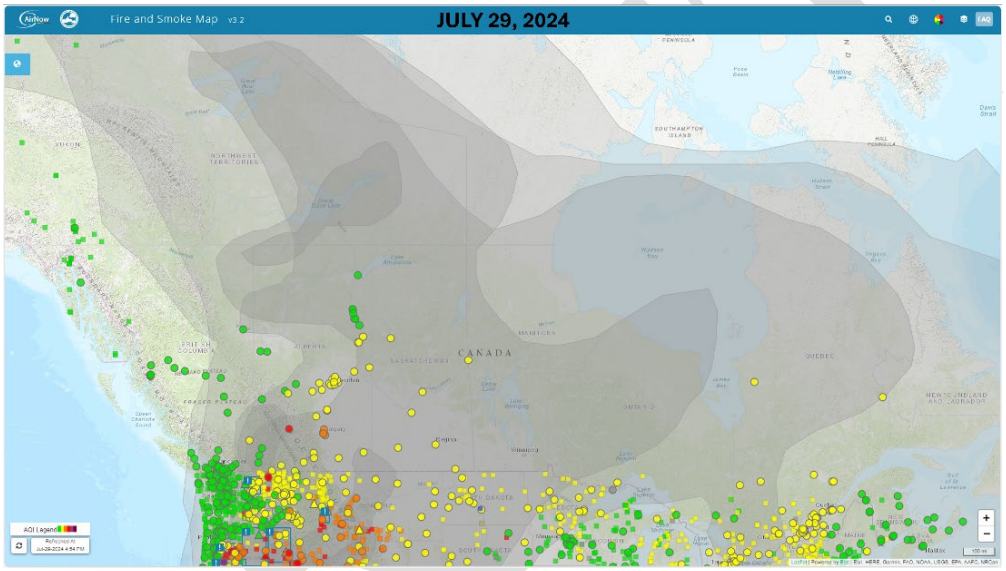

Fire and Smoke Map v3.2
JULY 22, 2024
CANADA
Fire and Smoke Map v3.2
JULY 23, 2024
CANADA
Fire and Smoke Map v3.2
JULY 24, 2024
CANADA

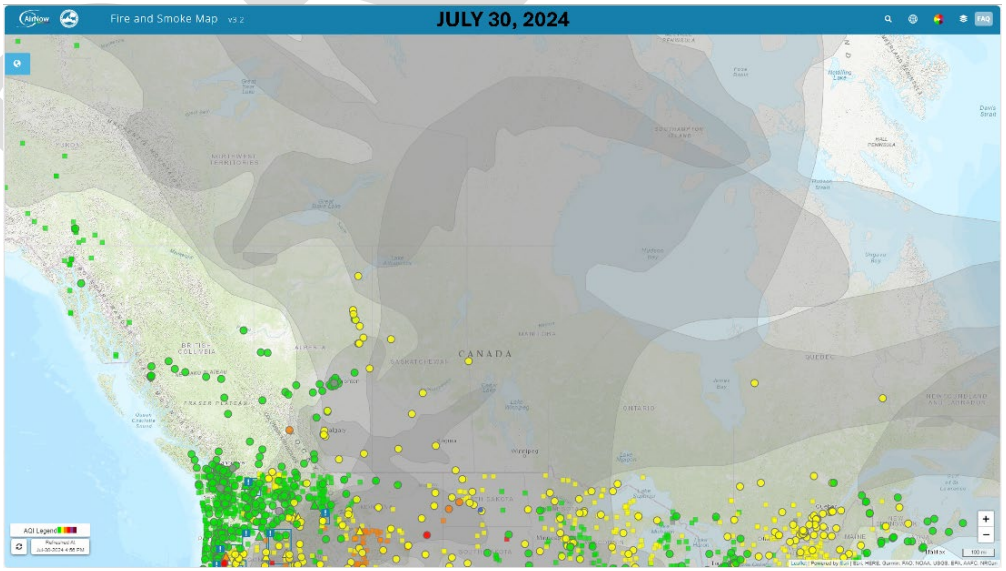

Fire and Smoke Map v3.2
JULY 25, 2024
CANADA
AQI Legend

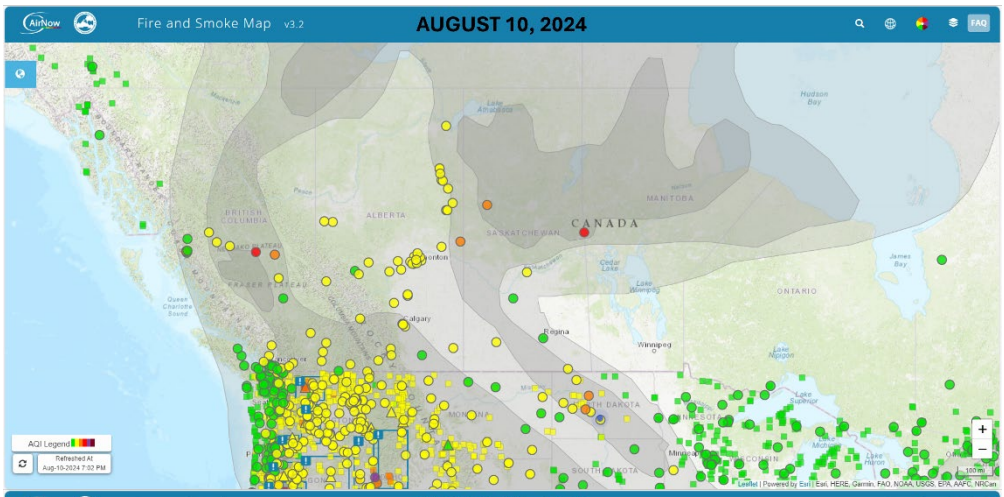

Fire and Smoke Map v3.2
JULY 26, 2024
CANADA
AQI Legend

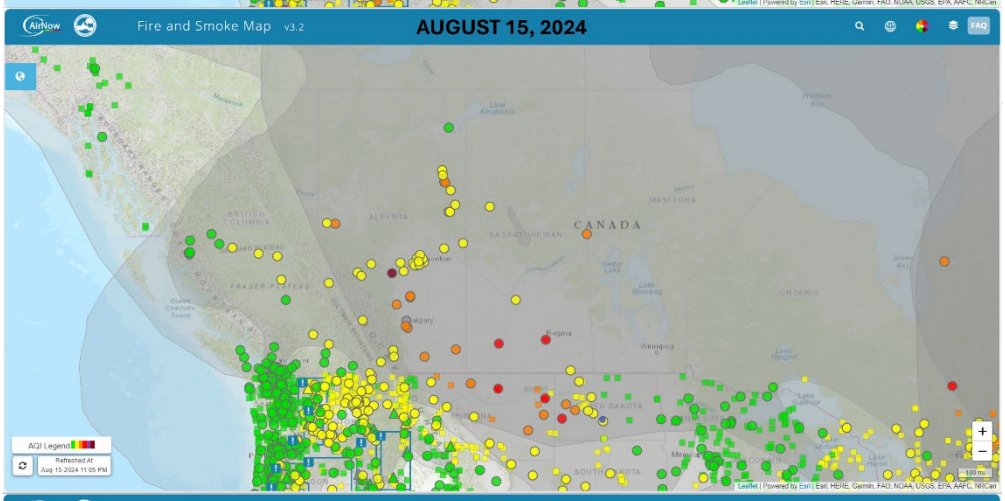

Fire and Smoke Map v3.2
JULY 27, 2024
CANADA
AQI Legend

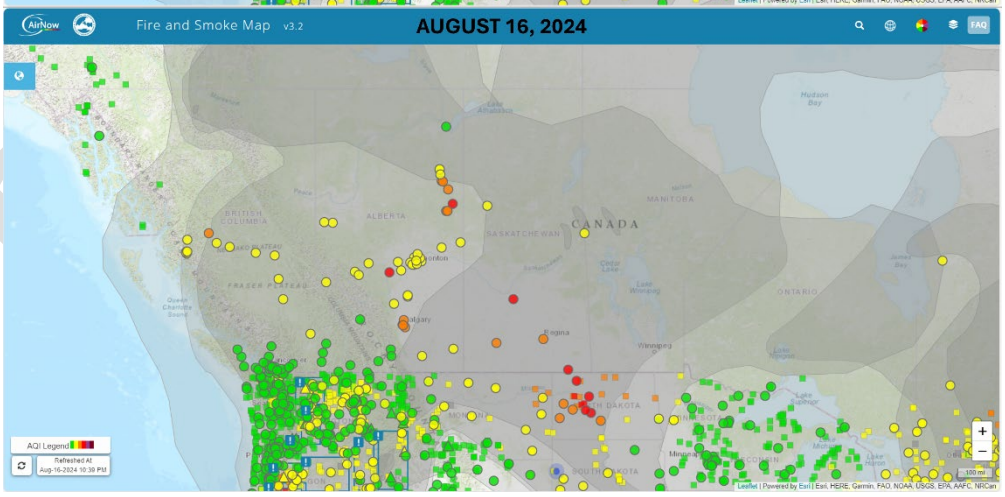

Fire and Smoke Map v3.2
JULY 28, 2024
CANADA

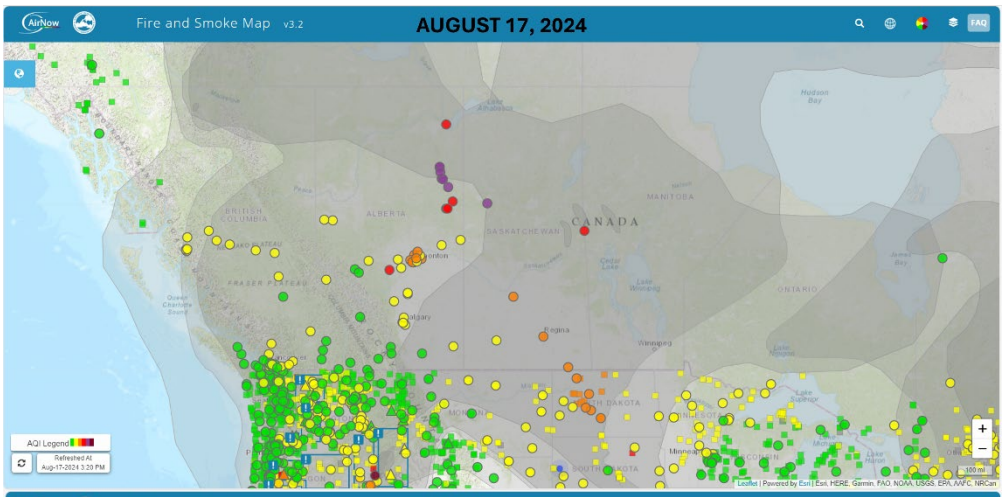

Fire and Smoke Map v3.2
JULY 29, 2024
CANADA

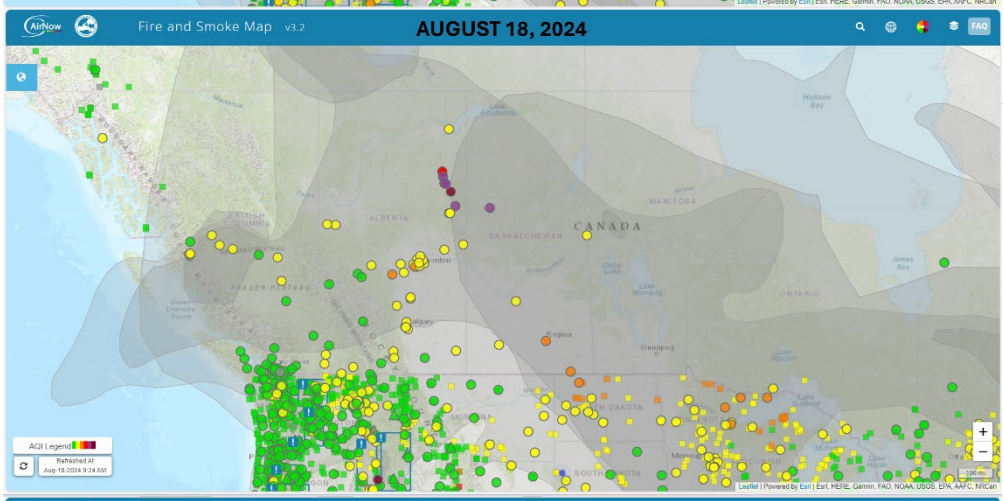

Fire and Smoke Map v3.2
JULY 30, 2024
CANADA

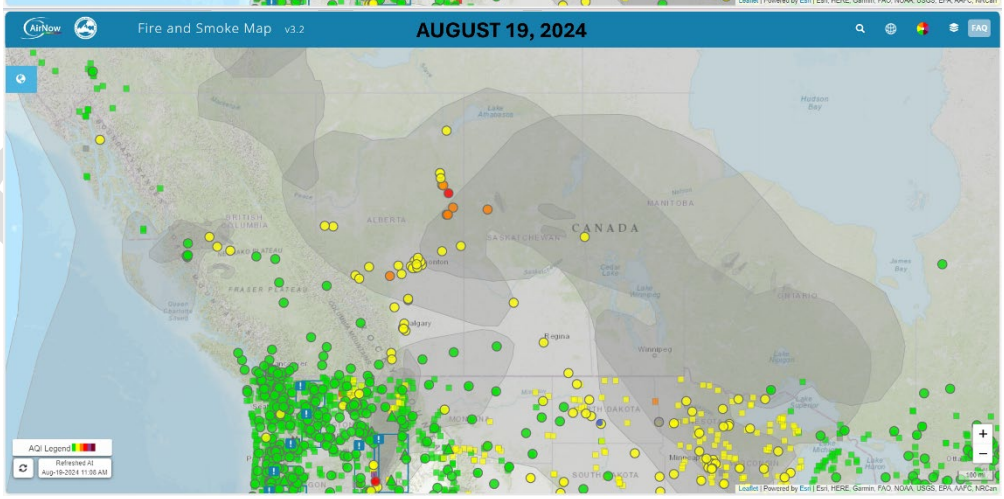

Fire and Smoke Map v3.2
AUGUST 10, 2024
CANADA
AQI Legend

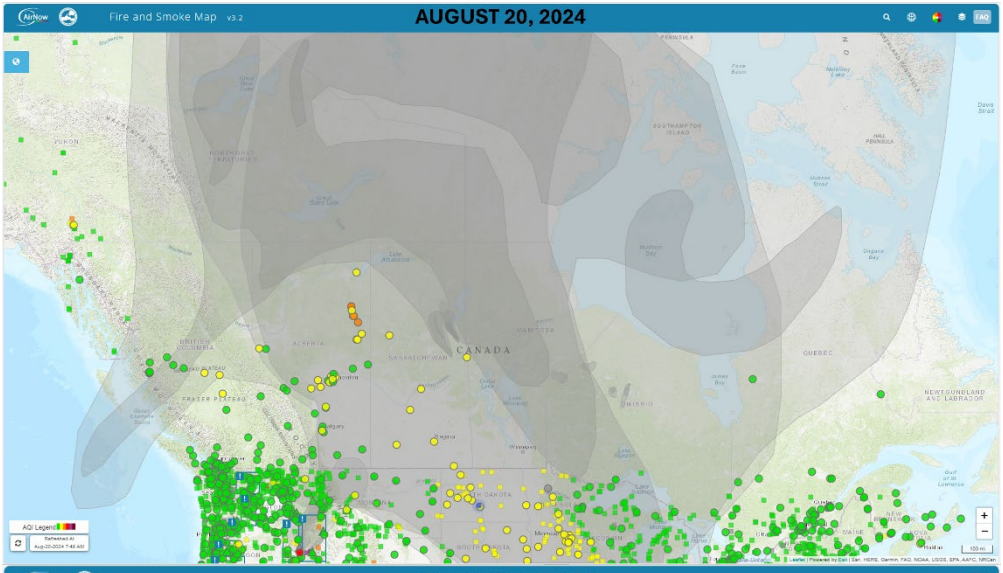

Fire and Smoke Map v3.2
AUGUST 15, 2024
CANADA
AQI Legend

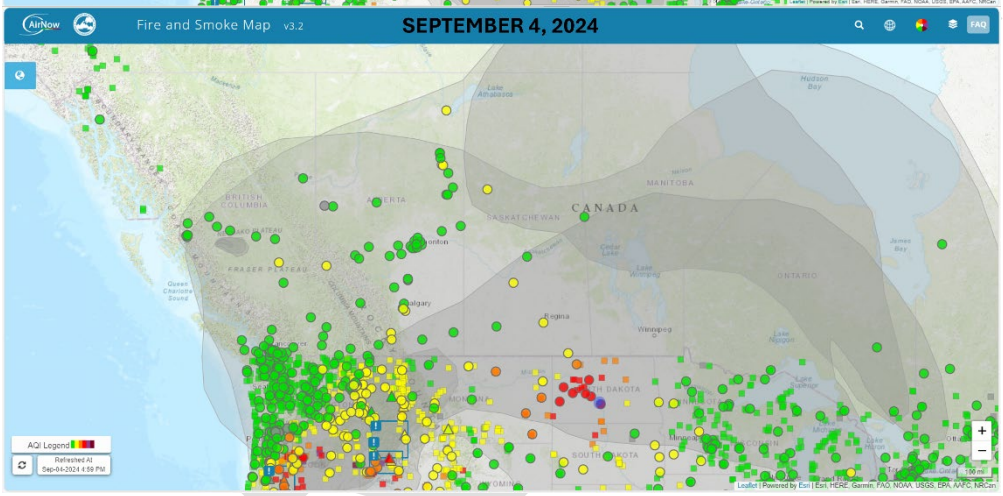

Fire and Smoke Map v3.2
AUGUST 16, 2024
CANADA
AQI Legend

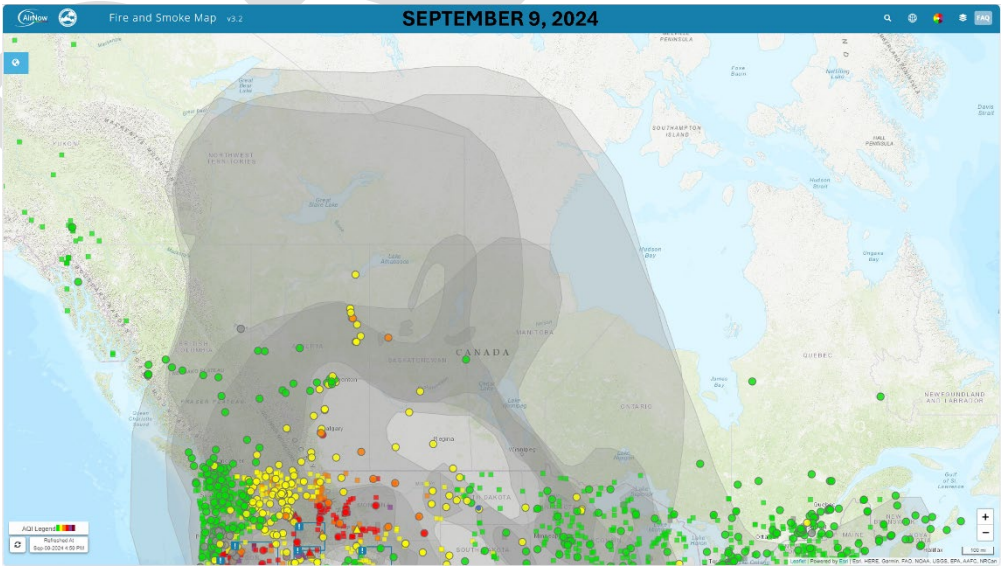

Fire and Smoke Map v3.2
AUGUST 17, 2024
CANADA
AQI Legend

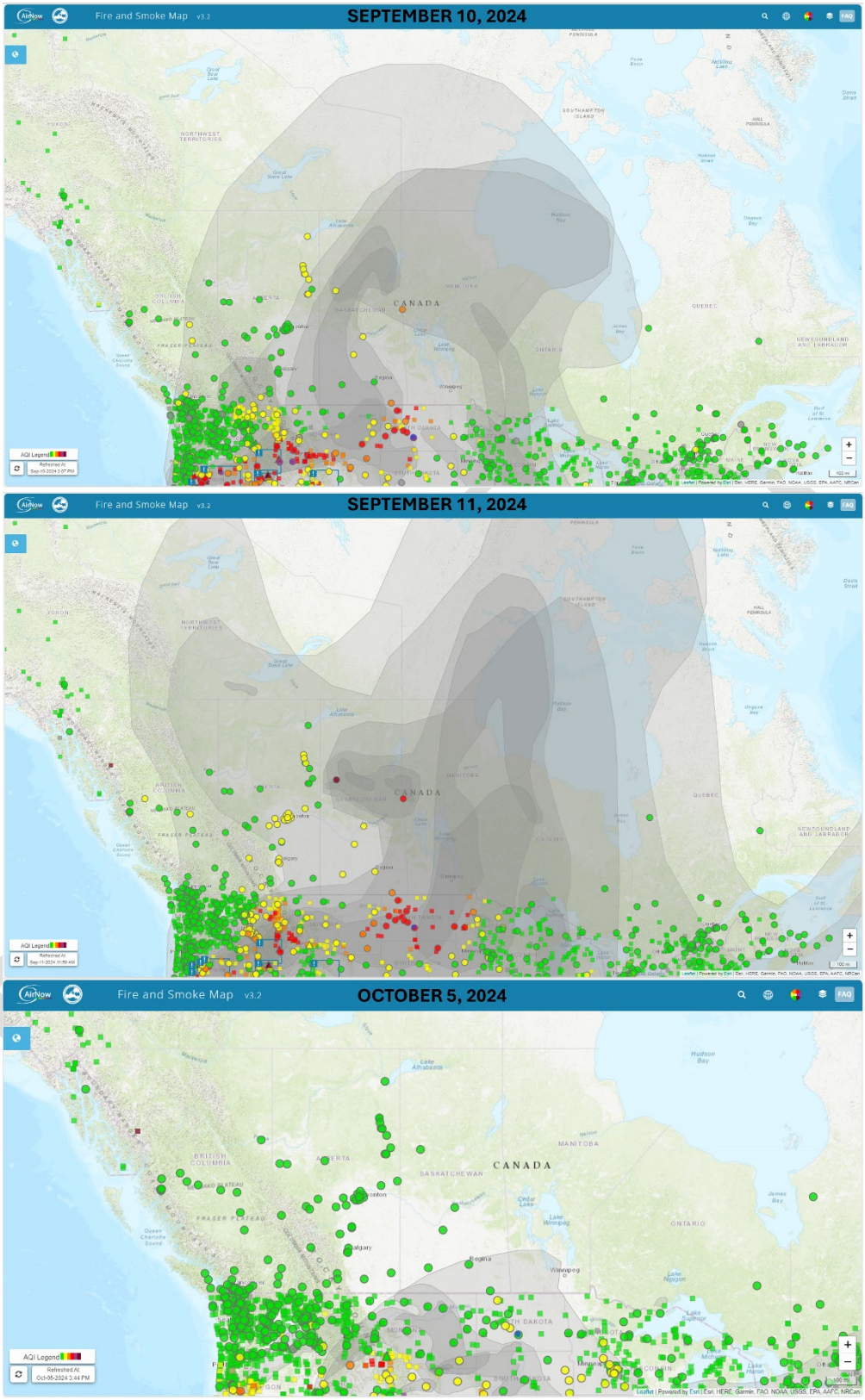

Fire and Smoke Map v3.2
AUGUST 18, 2024
CANADA
AQI Legend

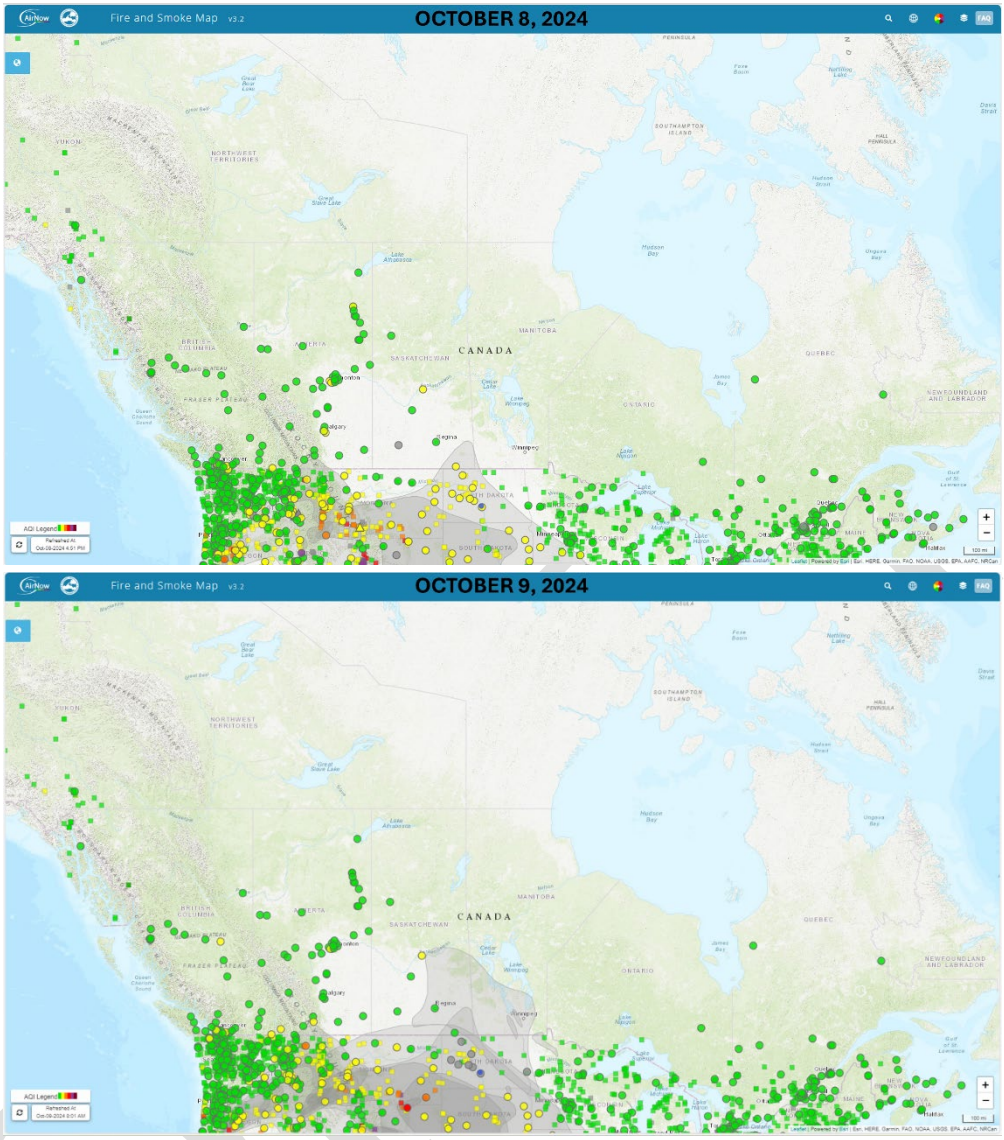

Fire and Smoke Map v3.2
AUGUST 19, 2024
CANADA
AQI Legend


Fire and Smoke Map v3.2
AUGUST 20, 2024
CANADA


Fire and Smoke Map v3.2
SEPTEMBER 4, 2024
CANADA


Fire and Smoke Map v3.2
SEPTEMBER 9, 2024
CANADA


Fire and Smoke Map v3.2
SEPTEMBER 10, 2024
CANADA
Fire and Smoke Map v3.2
SEPTEMBER 11, 2024
CANADA
Fire and Smoke Map v3.2
OCTOBER 5, 2024
CANADA


Fire and Smoke Map v3.2
OCTOBER 8, 2024
CANADA
Fire and Smoke Map v3.2
OCTOBER 9, 2024
CANADA

APPENDIX F AMP350 REPORTS

EPA's Air Quality System (AQS) Raw Data Reports (AMP350) that show the data that NDDEQ is requesting to be excluded from the data record has been flagged with Request Exclusion: Fire-Canadian, or "rf"; Wildfire-United States, or "rt". Due to AQS limitations, only one Request Exclusion qualifier ("rf") was able to be applied in AQS, rather than both "rf" and "rt" qualifiers on Event dates with smoke impacts from both Canadian and United States wildfires. As a result, on Event dates with smoke impacts from both Canadian and United States wildfires, the data qualifiers in AQS include both "rf" and "it".

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

User ID: UKX

RAW DATA REPORT

Report Request ID: 2306106 Report Code: AMP350 Jul. 14, 2025

GEOGRAPHIC SELECTIONS

Tribal Code	State	County	Site	Parameter	POC	City	AQCR	UAR	CBSA	CSA	EPA Region
	38										

PROTOCOL SELECTIONS

Parameter Classification	Parameter	Method	Duration
CRITERIA	88101		

AGENCY SELECTIONS

North Dakota DEQ

SELECTED OPTIONS

Option Type	Option Value
INCLUDE NULLS	YES
DAILY STATISTICS	MEAN
UNITS	STANDARD
RAW DATA EVENTS	INCLUDE EVENTS
MERGE PDF FILES	YES
AGENCY ROLE	PQAO

SORT ORDER

Order	Column
1	STATE_CODE
2	COUNTY_CODE
3	SITE_ID
4	PARAMETER_CODE
5	POC

DATE CRITERIA

Start Date	End Date
2024 05 12	2024 05 14
2024 07 08	2024 07 10
2024 07 20	2024 07 30
2024 08 10	2024 08 10
2024 08 15	2024 08 20
2024 09 04	2024 09 04
2024 09 09	2024 09 11
2024 10 05	2024 10 05
2024 10 08	2024 10 09

APPLICABLE STANDARDS

Standard Description

PM25 Annual 2024

Selection Criteria Page 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-007-0002 POC: 3
COUNTY: (007) Billings
CITY: (00000) Not in a city
SITE ADDRESS: 13881 I94 EAST
SITE COMMENTS: NPS REQUESTED THE MONITORING BE TERMINATED MONITORING EQUIPMENT TO BE RETURNED TO
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 46.8943000009
LONGITUDE: -103.37853
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 832
PROBE HEIGHT: 5

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	9.4rf	16.0rf	28.3rf	26.6rf	19.2rf	20.8rf	34.6rf	53.6rf	80.5rf	85.6rf	72.6rf	68.2rf	62.4rf	49.7rf	41.0rf	40.4rf	36.6rf	27.7rf	26.8rf	25.5rf	26.2rf	19.4rf	16.6rf	17.5rf	24	37.68
13	17.7rf	19.0rf	19.4rf	19.6rf	18.2rf	17.6rf	16.7rf	18.7rf	22.4rf	28.2rf	29.5rf	29.3rf	25.7rf	22.0rf	19.9rf	16.7rf	13.2rf	13.7rf	24.5rf	23.7rf	24.8rf	24.8rf	23.8rf	21.3rf	24	21.27
14	19.8IF	16.8IF	15.5IF	17.0IF	15.5IF	16.6IF	15.0IF	11.7IF	10.1IF	6.7IF	6.1IF	7.3IF	8.7IF	9.1IF	9.3IF	7.4IF	6.1IF	6.0IF	6.9IF	6.6IF	6.7IF	7.8IF	8.8IF	13.5IF	24	10.63
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
21																									0	
22																									0	
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24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	19.8	19.0	28.3	26.6	19.2	20.8	34.6	53.6	80.5	85.6	72.6	68.2	62.4	49.7	41.0	40.4	36.6	27.7	26.8	25.5	26.2	24.8	23.8	21.3		
AVG:	15.30	17.27	21.07	21.07	17.63	18.33	22.10	28.00	37.67	40.17	36.07	34.93	32.27	26.93	23.40	21.50	18.63	15.80	19.40	18.60	19.23	17.33	16.40	17.43		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 23.19 MONTHLY MAX: 85.6

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-007-0002 POC: 3
COUNTY: (007) Billings
CITY: (00000) Not in a city
SITE ADDRESS: 13881 I94 EAST
SITE COMMENTS: NPS REQUESTED THE MONITORING BE TERMINATED MONITORING EQUIPMENT TO BE RETURNED TO
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 46.8943000009
LONGITUDE: -103.37853
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 832
PROBE HEIGHT: 5

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	7.6IF	8.1IF	8.1IF	8.7IF	10.3IF	9.2IF	10.7IF	16.0IF	21.2IF	22.6IF	20.8IF	19.0IF	14.1IF	12.4IF	12.0IF	10.2IF	9.3IF	11.1IF	13.4IF	13.8IF	15.2IF	15.2IF	14.1IF	13.4IF	24	13.19
9	14.1IF	14.7IF	14.6IF	14.8IF	13.6IF	12.2IF	11.5IF	11.2IF	9.3IF	8.1IF	8.7IF	8.4IF	11.2IF	11.5IF	11.6IF	10.8IF	11.5IF	11.2IF	11.3IF	11.9IF	15.9IF	17.5IF	18.7IF	19.2IF	24	12.65
10	20.1IF	20.2IF	20.5IF	20.3IF	20.0IF	20.1IF	18.4IF	16.2IF	14.4IF	13.5IF	12.2IF	10.8IF	10.1IF	8.5IF	8.1IF	8.4IF	8.2IF	7.9IF	8.4IF	9.2IF	11.2IF	18.5IF	21.5IF	22.4IF	24	14.55
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	14.6rf	14.6rf	15.0rf	17.0rf	16.2rf	16.3rf	16.1rf	14.9rf	13.1rf	12.2rf	14.6rf	19.5rf	25.1rf	28.6rf	28.9rf	27.1rf	26.3rf	25.5rf	23.4rf	24.4rf	31.7rf	33.0rf	31.1rf	32.0rf	24	21.72
21	34.1rf	33.3rf	33.7rf	31.7rf	26.6rf	31.1rf	31.6rf	30.7rf	29.3rf	27.1rf	24.2rf	22.7rf	24.2rf	30.3rf	40.5rf	30.1rf	27.8rf	29.0rf	32.9rf	40.4rf	49.1rf	50.8rf	50.2rf	51.1rf	24	33.85
22	50.6rf	49.4rf	50.0rf	49.9rf	49.1rf	48.6rf	48.0rf	47.8rf	44.7rf	43.3rf	43.6rf	47.2rf	48.8rf	50.1rf	52.2rf	54.6rf	56.3rf	52.3rf	51.6rf	47.8rf	47.4rf	50.0rf	49.1rf	48.0rf	24	49.18
23	44.3rf	41.8rf	42.4rf	42.6rf	40.4rf	41.1rf	41.2rf	39.2rf	38.2rf	37.8rf	40.7rf	42.2rf	42.8rf	42.6rf	41.9rf	40.7rf	39.6rf	39.2rf	40.0rf	40.0rf	41.0rf	44.9rf	46.9rf	46.3rf	24	41.58
24	44.3rf	41.6rf	40.1rf	38.4rf	37.1rf	36.1rf	33.9rf	33.6rf	34.7rf	37.4rf	40.7rf	38.8rf	35.7rf	35.3rf	34.2rf	33.5rf	33.3rf	32.8rf	32.3rf	33.1rf	33.2rf	33.6rf	33.6rf	32.5rf	24	35.83
25	32.5rf	32.9rf	32.8rf	34.0rf	35.2rf	32.4rf	33.3rf	28.9rf	25.7rf	21.6rf	21.9rf	21.0rf	16.3rf	14.9rf	16.2rf	17.6rf	20.6rf	25.7rf	26.0rf	18.4rf	16.0rf	16.3rf	20.1rf	25.4rf	24	24.40
26	29.6rf	23.7rf	18.0rf	11.8rf	9.0rf	15.3rf	23.2rf	29.1rf	31.6rf	33.6rf	32.9rf	27.0rf	19.4rf	17.9rf	16.9rf	17.9rf	18.1rf	19.1rf	19.1rf	19.9rf	19.9rf	21.0rf	19.8rf	19.8rf	24	21.40
27	26.6rf	29.2rf	29.5rf	26.8rf	24.0rf	23.0rf	21.5rf	21.1rf	19.4rf	18.4rf	21.7rf	21.5rf	21.2rf	23.2rf	24.3rf	24.0rf	23.5rf	25.1rf	24.6rf	22.5rf	22.0rf	22.3rf	24.2rf	23.6rf	24	23.47
28	23.9IT	23.4IT	23.7IT	23.9IT	23.8IT	22.9IT	22.0IT	20.8IT	17.3IT	16.5IT	16.4IT	15.9IT	17.0IT	16.6IT	17.8IT	21.3IT	19.4IT	20.3IT	21.3IT	19.4IT	20.0IT	21.4IT	19.2IT	17.8IT	24	20.08
29	17.8IT	18.4IT	19.3IT	18.1IT	17.2IT	AX	BA	15.9IT	15.2IT	16.3IT	16.8IT	18.3IT	21.5IT	22.2IT	24.5IT	25.2IT	26.4IT	29.1IT	26.1IT	20.9IT	18.7IT	17.8IT	14.8IT	15.0IT	22	19.80
30	15.8rt	15.2rt	15.1rt	16.9rt	19.1rt	19.7rt	19.0rt	23.0rt	28.2rt	31.9rt	34.9rt	38.8rt	41.8rt	42.6rt	43.2rt	40.6rt	33.3rt	30.4rt	29.0rt	27.9rt	27.4rt	28.7rt	25.6rt	20.4rt	24	27.85
31																									0	
NO.:	14	14	14	14	14	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14		
MAX:	50.6	49.4	50.0	49.9	49.1	48.6	48.0	47.8	44.7	43.3	43.6	47.2	48.8	50.1	52.2	54.6	56.3	52.3	51.6	47.8	49.1	50.8	50.2	51.1		
AVG:	26.85	26.18	25.91	25.35	24.40	25.23	25.42	24.89	24.45	24.31	25.01	25.08	24.94	25.48	26.59	25.86	25.26	25.62	25.67	24.97	26.34	27.93	27.78	27.64		

MONTHLY OBSERVATIONS: 334 MONTHLY MEAN: 25.72 MONTHLY MAX: 56.3

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

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LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 46.8943000009
LONGITUDE: -103.37853
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 832
PROBE HEIGHT: 5

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	9.8IF	11.2IF	11.7IF	12.0IF	11.6IF	10.7IF	10.9IF	10.2IF	8.8IF	9.1IF	9.3IF	8.6IF	8.5IF	7.9IF	7.6IF	7.5IF	7.4IF	7.0IF	8.0IF	11.4IF	15.9IF	14.0IF	14.7IF	16.6IF	24	10.43
11																									0	
12																									0	
13																									0	
14																									0	
15	12.1rf	12.6rf	13.0rf	12.6rf	13.0rf	12.9rf	12.4rf	AZ	AX	11.2rf	12.2rf	20.3rf	31.2rf	49.3rf	70.0rf	55.3rf	55.6rf	49.4rf	58.5rf	68.6rf	69.1rf	67.2rf	61.3rf	60.2rf	22	37.64
16	60.4rf	56.0rf	53.6rf	54.9rf	54.3rf	36.2rf	14.4rf	10.9rf	14.6rf	17.0rf	21.9rf	32.1rf	39.2rf	43.1rf	44.3rf	45.7rf	45.4rf	51.2rf	60.6rf	52.4rf	52.7rf	53.4rf	54.1rf	52.5rf	24	42.54
17	55.4rf	53.6rf	51.6rf	50.5rf	49.0rf	44.2rf	39.3rf	31.6rf	27.0rf	23.1rf	19.8rf	17.0rf	15.6rf	12.9rf	11.4rf	10.1rf	12.9rf	16.2rf	18.7rf	21.8rf	23.1rf	23.8rf	25.0rf	25.3rf	24	28.29
18	25.9IF	26.4IF	27.0IF	27.5IF	27.9IF	28.6IF	25.5IF	22.3IF	21.9IF	20.1IF	15.4IF	12.0IF	10.9IF	9.3IF	10.0IF	10.9IF	11.7IF	13.7IF	14.1IF	13.6IF	16.0IF	14.4IF	12.4IF	10.7IF	24	17.84
19	9.2	9.1	8.9	8.9	9.0	8.9	8.5	8.4	8.0	8.3	7.0	6.6	6.3	5.9	5.2	4.8	5.0	5.1	7.3	8.5	10.4	10.3	10.3	11.2	24	7.96
20	11.4IF	11.5IF	12.4IF	13.9IF	14.5IF	14.7IF	13.8IF	10.9IF	9.3IF	8.6IF	7.8IF	7.5IF	6.3IF	5.7IF	5.6IF	6.3IF	7.4IF	15.0IF	18.3IF	18.4IF	19.0IF	18.6IF	18.6IF	18.6IF	24	12.25
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	7	7	7	7	7	7	7	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
MAX:	60.4	56.0	53.6	54.9	54.3	44.2	39.3	31.6	27.0	23.1	21.9	32.1	39.2	49.3	70.0	55.3	55.6	51.2	60.6	68.6	69.1	67.2	61.3	60.2		
AVG:	26.31	25.77	25.46	25.76	25.61	22.31	17.83	15.72	14.93	13.91	13.34	14.87	16.86	19.16	22.01	20.09	20.77	22.51	26.50	27.81	29.46	28.81	28.06	27.87		

MONTHLY OBSERVATIONS: 166 MONTHLY MEAN: 22.24 MONTHLY MAX: 70.0

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-007-0002 POC: 3
COUNTY: (007) Billings
CITY: (00000) Not in a city
SITE ADDRESS: 13881 I94 EAST
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MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 46.8943000009
LONGITUDE: -103.37853
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 832
PROBE HEIGHT: 5

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	24.6rf	20.7rf	18.3rf	15.9rf	20.9rf	33.5rf	63.3rf	125.2rf	171.1rf	133.9rf	127.2rf	90.9rf	71.5rf	89.1rf	85.4rf	69.8rf	52.0rf	36.4rf	36.9rf	10.5rf	6.3rf	5.1rf	5.2rf	5.9rf	24	54.98
5																									0	
6																									0	
7																									0	
8																									0	
9	7.9rf	8.0rf	7.9rf	8.1rf	8.4rf	AX	8.9rf	10.1rf	10.8rf	10.2rf	10.3rf	11.8rf	15.1rf	20.1rf	23.6rf	30.7rf	36.7rf	74.2rf	95.3rf	116.9rf	142.1rf	147.3rf	153.7rf	154.3rf	23	48.37
10	141.0rf	143.9rf	146.9rf	149.4rf	147.7rf	145.8rf	158.6rf	153.0rf	135.7rf	108.3rf	69.6rf	52.5rf	32.6rf	27.1rf	24.1rf	23.0rf	27.2rf	41.6rf	57.8rf	63.1rf	67.0rf	52.6rf	34.7rf	39.4rf	24	85.11
11	52.0rf	57.4rf	54.2rf	52.5rf	76.0rf	72.6rf	74.8rf	90.1rf	90.0rf	79.0rf	66.6rf	47.4rf	51.7rf	48.7rf	55.4rf	65.1rf	48.1rf	43.8rf	28.4rf	28.2rf	12.3rf	9.8rf	11.4rf	11.4rf	24	51.12
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
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24																									0	
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26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	141.0	143.9	146.9	149.4	147.7	145.8	158.6	153.0	171.1	133.9	127.2	90.9	71.5	89.1	85.4	69.8	52.0	74.2	95.3	116.9	142.1	147.3	153.7	154.3		
AVG:	56.38	57.50	56.83	56.48	63.25	83.97	76.40	94.60	101.90	82.85	68.43	50.65	42.73	46.25	47.13	47.15	41.00	49.00	54.60	54.68	56.93	53.70	51.25	52.75		

MONTHLY OBSERVATIONS: 95 MONTHLY MEAN: 60.02 MONTHLY MAX: 171.1

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-007-0002 POC: 3
COUNTY: (007) Billings
CITY: (00000) Not in a city
SITE ADDRESS: 13881 I94 EAST
SITE COMMENTS: NPS REQUESTED THE MONITORING BE TERMINATED MONITORING EQUIPMENT TO BE RETURNED TO
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 46.8943000009
LONGITUDE: -103.37853
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 832
PROBE HEIGHT: 5

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	10.4	12.7	11.4	7.3	4.1	3.4	2.5	1.6	2.0	2.8	2.7	3.0	3.4	3.5	2.4	2.4	2.2	1.3	1.6	1.5	1.4	2.1	3.0	2.8	24	3.81
6																									0	
7																									0	
8	15.3rt	18.5rt	20.2rt	20.4rt	20.2rt	20.4rt	21.2rt	20.9rt	21.4rt	21.5rt	22.7rt	22.2rt	22.4rt	14.8rt	17.3rt	17.4rt	19.3rt	21.2rt	22.1rt	24.8rt	23.5rt	25.5rt	26.0rt	26.0rt	24	21.05
9	27.1rt	25.7rt	25.1rt	23.9rt	24.8rt	25.1rt	24.8rt	24.3rt	30.0rt	33.3rt	34.8rt	29.0rt	26.9rt	33.5rt	18.6rt	15.7rt	14.2rt	14.5rt	14.7rt	15.7rt	16.5rt	15.7rt	15.0rt	20.1rt	24	22.88
10																									0	
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
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24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	27.1	25.7	25.1	23.9	24.8	25.1	24.8	24.3	30.0	33.3	34.8	29.0	26.9	33.5	18.6	17.4	19.3	21.2	22.1	24.8	23.5	25.5	26.0	26.0		
AVG:	17.60	18.97	18.90	17.20	16.37	16.30	16.17	15.60	17.80	19.20	20.07	18.07	17.57	17.27	12.77	11.83	11.90	12.33	12.80	14.00	13.80	14.43	14.67	16.30		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 15.91 MONTHLY MAX: 34.8

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-013-0004 POC: 3
COUNTY: (013) Burke
CITY: (00000) Not in a city
SITE ADDRESS: 8315 HIGHWAY 8, KENMARE
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 48.6419300009
LONGITUDE: -102.4018
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 696
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY / HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	82.4rf	93.7rf	94.0rf	95.1rf	96.9rf	92.6rf	72.2rf	44.3rf	32.6rf	19.9rf	7.1rf	6.5rf	14.4rf	16.8rf	11.6rf	8.9rf	8.3rf	8.8rf	10.1rf	10.3rf	11.3rf	26.2rf	16.7rf	12.4rf	24	37.21
13	14.0rf	16.9rf	25.0rf	30.3rf	31.9rf	31.9rf	27.7rf	25.9rf	25.6rf	22.9rf	22.8rf	27.6rf	28.2rf	29.8rf	28.8rf	28.4rf	26.5rf	29.0rf	29.1rf	29.0rf	19.8rf	19.1rf	13.0rf	6.8rf	24	24.58
14	6.2IF	15.1IF	18.5IF	20.8IF	22.6IF	22.8IF	22.3IF	20.6IF	20.5IF	17.6IF	18.0IF	17.4IF	16.5IF	18.2IF	16.6IF	15.9IF	14.3IF	12.7IF	11.1IF	11.1IF	11.6IF	12.6IF	10.0IF	6.3IF	24	15.80
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
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25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	82.4	93.7	94.0	95.1	96.9	92.6	72.2	44.3	32.6	22.9	22.8	27.6	28.2	29.8	28.8	28.4	26.5	29.0	29.1	29.0	19.8	26.2	16.7	12.4		
AVG:	34.20	41.90	45.83	48.73	50.47	49.10	40.73	30.27	26.23	20.13	15.97	17.17	19.70	21.60	19.00	17.73	16.37	16.83	16.77	16.80	14.23	19.30	13.23	8.50		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 25.87 MONTHLY MAX: 96.9

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-013-0004 POC: 3
COUNTY: (013) Burke
CITY: (00000) Not in a city
SITE ADDRESS: 8315 HIGHWAY 8, KENMARE
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 48.6419300009
LONGITUDE: -102.4018
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 696
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	25.6rf	30.2rf	28.9rf	28.0rf	30.5rf	31.8rf	31.4rf	32.8rf	37.3rf	45.4rf	62.0rf	73.4rf	70.0rf	59.5rf	55.2rf	44.8rf	39.4rf	36.8rf	39.8rf	43.5rf	47.0rf	60.1rf	57.2rf	55.0rf	24	44.40
9	56.1rf	54.5rf	53.0rf	50.9rf	48.9rf	42.0rf	34.2rf	30.3rf	28.3rf	28.1rf	33.2rf	33.7rf	34.6rf	35.3rf	35.5rf	32.1rf	31.4rf	30.5rf	30.3rf	31.8rf	37.6rf	37.6rf	33.7rf	34.8rf	24	37.43
10	35.8rf	36.9rf	37.8rf	39.3rf	39.9rf	39.7rf	40.0rf	38.6rf	36.3rf	34.7rf	30.9rf	25.7rf	22.4rf	21.7rf	19.0rf	19.4rf	18.6rf	18.5rf	20.6rf	20.8rf	20.3rf	18.0rf	18.5rf	18.7rf	24	28.00
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	12.3IF	AV	AV	AV	AV	16.4IF	17.1IF	17.3IF	15.9IF	15.2IF	14.6IF	15.1IF	14.8IF	16.1IF	16.0IF	15.5IF	14.8IF	14.8IF	15.6IF	AV	AV	AV	AV	16.0IF	16	15.47
21	16.8rf	16.4rf	18.2rf	18.1rf	16.0rf	14.4rf	16.8rf	21.0rf	29.8rf	40.7rf	51.9rf	55.2rf	52.8rf	51.2rf	49.8rf	50.9rf	56.8rf	56.4rf	57.5rf	56.1rf	58.3rf	62.2rf	58.7rf	55.6rf	24	40.90
22	49.5rf	41.0rf	35.0rf	39.5rf	49.8rf	47.4rf	45.6rf	46.3rf	46.6rf	47.0rf	47.0rf	47.1rf	47.1rf	45.5rf	47.0rf	51.1rf	51.2rf	47.2rf	56.7rf	73.7rf	75.2rf	78.7rf	88.6rf	90.2rf	24	53.92
23	92.1rf	82.5rf	72.5rf	58.0rf	55.8rf	50.7rf	49.8rf	50.6rf	51.1rf	49.6rf	49.0rf	47.3rf	46.8rf	48.0rf	48.6rf	50.8rf	50.6rf	49.9rf	48.7rf	45.2rf	43.8rf	44.5rf	44.5rf	41.7rf	24	53.00
24	38.6rf	37.8rf	37.3rf	37.0rf	36.3rf	35.9rf	34.9rf	34.1rf	32.0rf	31.5rf	31.2rf	30.9rf	30.2rf	31.7rf	32.3rf	32.1rf	32.2rf	29.8rf	29.0rf	28.4rf	28.2rf	27.8rf	27.9rf	28.1rf	24	32.30
25	28.2rf	28.7rf	28.7rf	28.8rf	28.7rf	28.6rf	28.7rf	28.5rf	29.4rf	29.8rf	31.0rf	29.1rf	28.4rf	28.6rf	29.8rf	29.2rf	28.9rf	28.0rf	27.8rf	27.3rf	26.6rf	25.5rf	25.8rf	25.3rf	24	28.31
26	29.2rf	28.9rf	29.1rf	28.2rf	21.3rf	24.7rf	33.2rf	41.5rf	41.2rf	41.5rf	36.3rf	26.0rf	20.5rf	14.9rf	18.2rf	17.9rf	17.3rf	18.0rf	17.7rf	16.4rf	13.5rf	14.6rf	12.9rf	12.4rf	24	23.98
27	11.4IF	11.4IF	12.5IF	14.6IF	15.7IF	16.7IF	19.2IF	19.0IF	22.7IF	21.9IF	23.4IF	24.4IF	24.4IF	23.8IF	16.2IF	11.5IF	12.1IF	12.4IF	12.3IF	12.8IF	15.7IF	18.5IF	17.8IF	15.9IF	24	16.93
28	14.9rt	14.1rt	13.8rt	13.8rt	12.4rt	14.8rt	21.6rt	26.4rt	31.3rt	28.7rt	27.3rt	32.0rt	38.6rt	36.6rt	37.9rt	36.4rt	32.7rt	32.2rt	29.3rt	29.4rt	31.3rt	35.9rt	34.1rt	29.6rt	24	27.30
29	29.4rt	27.9rt	25.4rt	21.2rt	20.5rt	20.5rt	AX	BA	AT	17.2rt	18.4rt	18.8rt	18.2rt	21.4rt	22.4rt	22.2rt	23.3rt	22.7rt	21.9rt	21.7rt	26.1rt	23.3rt	20.0rt	17.2rt	21	21.89
30	16.8IT	15.6IT	14.0IT	13.0IT	12.3IT	12.5IT	13.4IT	15.2IT	18.2IT	25.0IT	23.8IT	23.1IT	21.1IT	21.8IT	26.0IT	30.0IT	20.8IT	17.4IT	21.8IT	23.1IT	24.8IT	22.0IT	20.9IT	21.1IT	24	19.74
31																									0	
NO.:	14	13	13	13	13	14	13	13	13	14	14	14	14	14	14	14	14	14	14	13	13	13	13	14		
MAX:	92.1	82.5	72.5	58.0	55.8	50.7	49.8	50.6	51.1	49.6	62.0	73.4	70.0	59.5	55.2	51.1	56.8	56.4	57.5	73.7	75.2	78.7	88.6	90.2		
AVG:	32.62	32.76	31.25	30.03	29.85	28.29	29.68	30.89	32.32	32.59	34.29	34.41	33.56	32.58	32.42	31.71	30.72	29.61	30.64	33.09	34.49	36.05	35.43	32.97		

MONTHLY OBSERVATIONS: 325 MONTHLY MEAN: 32.17 MONTHLY MAX: 92.1

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-013-0004 POC: 3
COUNTY: (013) Burke
CITY: (00000) Not in a city
SITE ADDRESS: 8315 HIGHWAY 8, KENMARE
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 48.6419300009
LONGITUDE: -102.4018
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 696
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY / HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	30.5rf	30.0rf	30.5rf	34.5rf	33.5rf	34.2rf	29.9rf	23.3rf	24.5rf	33.3rf	32.5rf	33.0rf	37.7rf	39.2rf	37.7rf	35.2rf	31.9rf	28.5rf	21.0rf	18.5rf	15.4rf	14.5rf	10.7rf	7.8rf	24	27.83
11																									0	
12																									0	
13																									0	
14																									0	
15	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
16	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
17	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
18	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
19	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AV	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
20	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
21																									0	
22																									0	
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26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
MAX:	30.5	30.0	30.5	34.5	33.5	34.2	29.9	23.3	24.5	33.3	32.5	33.0	37.7	39.2	37.7	35.2	31.9	28.5	21.0	18.5	15.4	14.5	10.7	7.8		
AVG:	30.50	30.00	30.50	34.50	33.50	34.20	29.90	23.30	24.50	33.30	32.50	33.00	37.70	39.20	37.70	35.20	31.90	28.50	21.00	18.50	15.40	14.50	10.70	7.80		

MONTHLY OBSERVATIONS: 24 MONTHLY MEAN: 27.83 MONTHLY MAX: 39.2

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-013-0004 POC: 3
COUNTY: (013) Burke
CITY: (00000) Not in a city
SITE ADDRESS: 8315 HIGHWAY 8, KENMARE
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 48.6419300009
LONGITUDE: -102.4018
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 696
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	13.5rf	13.7rf	16.7rf	34.8rf	148.8rf	274.2rf	328.5rf	388.9rf	380.8rf	305.3rf	167.7rf	51.4rf	27.2rf	20.4rf	18.5rf	16.5rf	8.5rf	7.7rf	7.5rf	9.9rf	8.3rf	8.4rf	9.8rf	7.5rf	24	94.77
5																									0	
6																									0	
7																									0	
8																									0	
9	6.7IF	6.9IF	6.9IF	7.1IF	7.3IF	8.5IF	AX	8.2IF	9.3IF	9.7IF	9.9IF	10.0IF	9.3IF	8.9IF	10.3IF	10.7IF	11.7IF	16.2IF	28.2IF	14.3IF	13.7IF	17.1IF	26.5IF	41.6IF	23	13.00
10	39.4rf	62.7rf	73.2rf	75.1rf	74.8rf	67.9rf	46.6rf	24.7rf	23.3rf	35.6rf	64.4rf	102.9rf	77.2rf	44.9rf	37.5rf	23.1rf	14.6rf	12.4rf	11.2rf	11.1rf	11.8rf	11.5rf	12.0rf	12.0rf	24	40.41
11	11.7rf	12.5rf	14.6rf	18.1rf	20.6rf	21.6rf	28.6rf	63.3rf	65.6rf	72.8rf	69.9rf	59.1rf	51.7rf	40.5rf	40.2rf	39.6rf	31.2rf	31.4rf	40.0rf	43.9rf	28.6rf	19.6rf	20.0rf	20.1rf	24	36.05
12																									0	
13																									0	
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23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	39.4	62.7	73.2	75.1	148.8	274.2	328.5	388.9	380.8	305.3	167.7	102.9	77.2	44.9	40.2	39.6	31.2	31.4	40.0	43.9	28.6	19.6	26.5	41.6		
AVG:	17.83	23.95	27.85	33.78	62.88	93.05	134.57	121.28	119.75	105.85	77.98	55.85	41.35	28.68	26.63	22.48	16.50	16.93	21.73	19.80	15.60	14.15	17.08	20.30		

MONTHLY OBSERVATIONS: 95 MONTHLY MEAN: 46.41 MONTHLY MAX: 388.9

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-013-0004 POC: 3
COUNTY: (013) Burke
CITY: (00000) Not in a city
SITE ADDRESS: 8315 HIGHWAY 8, KENMARE
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 48.6419300009
LONGITUDE: -102.4018
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 696
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	6.6	6.8	9.5	9.3	5.9	4.1	4.7	3.4	3.1	3.6	5.2	8.3	8.0	16.8	12.3	6.9	6.3	4.8	4.0	3.0	2.3	1.6	1.9	1.3	24	5.82
6																									0	
7																									0	
8	4.8IT	4.5IT	5.0IT	5.0IT	5.0IT	5.3IT	AX	5.4IT	6.7IT	10.9IT	12.3IT	13.4IT	11.9IT	15.7IT	14.9IT	12.8IT	12.2IT	13.4IT	13.8IT	14.5IT	14.0IT	13.7IT	13.8IT	13.9IT	23	10.56
9	15.3IT	16.0IT	13.5IT	10.4IT	8.3IT	7.6IT	7.8IT	9.2IT	9.9IT	10.0IT	11.4IT	11.2IT	9.4IT	11.9IT	13.2IT	11.0IT	9.1IT	9.7IT	9.9IT	12.1IT	16.1IT	14.3IT	15.3IT	17.6IT	24	11.68
10																									0	
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	15.3	16.0	13.5	10.4	8.3	7.6	7.8	9.2	9.9	10.9	12.3	13.4	11.9	16.8	14.9	12.8	12.2	13.4	13.8	14.5	16.1	14.3	15.3	17.6		
AVG:	8.90	9.10	9.33	8.23	6.40	5.67	6.25	6.00	6.57	8.17	9.63	10.97	9.77	14.80	13.47	10.23	9.20	9.30	9.23	9.87	10.80	9.87	10.33	10.93		

MONTHLY OBSERVATIONS: 71 MONTHLY MEAN: 9.34 MONTHLY MAX: 17.6

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 1
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 3

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (143) R & P Model 2000 PM-2.5 Air Sample
PQAO: (0782) North Dakota DEQ

REPORT FOR: 2024

DURATION: 24 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: 2

Day	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1												
2												
3												
4												
5												
6												
7												
8							16.3 rf					
9									8.1	14.9 IT		
10								14.0 rf				
11												
12					22.6 rf							
13												
14												
15												
16								24.9 rf				
17												
18												
19								12.0 IF				
20							11.9 IF					
21												
22												
23							38.6 rf					
24												
25												
26							24.3 rf					
27												
28												
29							12.0 IF					
30												
31												
NO.:	0	0	0	0	1	0	5	3	1	1	0	0
MAX:					22.6		38.6	24.9	8.1	14.9		
MEAN:					22.60		20.62	16.97	8.10	14.90		

ANNUAL OBSERVATIONS: 11 ANNUAL MEAN: 18.15 ANNUAL MAX: 38.6

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 2
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 3

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (143) R & P Model 2000 PM-2.5 Air Sample
PQAO: (0782) North Dakota DEQ

REPORT FOR: 2024

DURATION: 24 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: 2

Day	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER
1												
2												
3												
4												
5												
6												
7												
8							16.7 rf					
9									7.7	13.6 IT		
10								14.0 rf				
11												
12					22.7 rf							
13												
14												
15												
16								25.4 rf				
17												
18												
19								11.8 IF				
20							12.0 IF					
21												
22												
23							39.0 rf					
24												
25												
26							24.5 rf					
27												
28												
29							12.0 IF					
30												
31												
NO.:	0	0	0	0	1	0	5	3	1	1	0	0
MAX:					22.7		39.0	25.4	7.7	13.6		
MEAN:					22.70		20.84	17.07	7.70	13.60		

ANNUAL OBSERVATIONS: 11 ANNUAL MEAN: 18.13 ANNUAL MAX: 39.0

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 3
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (638) Teledyne T640X at 16.67 LPM w/Netw
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	3.8IF	4.0IF	12.4IF	42.4IF	53.0IF	53.2IF	70.2IF	83.0IF	83.0IF	81.2IF	46.4IF	31.6IF	23.2IF	15.1IF	13.1IF	11.8IF	12.1IF	10.7IF	11.4IF	13.2IF	19.7IF	26.5IF	31.3IF	23.9IF	24	32.34
13	22.8IF	17.6IF	17.1IF	26.8IF	29.4IF	32.1IF	34.9IF	37.3IF	34.0IF	38.2IF	42.3IF	41.4IF	43.9IF	37.4IF	31.9IF	30.5IF	29.2IF	26.6IF	28.2IF	29.7IF	27.5IF	23.9IF	19.9IF	14.7IF	24	29.89
14	12.2rf	13.0rf	13.9rf	11.3rf	10.5rf	9.6rf	9.9rf	10.4rf	13.1rf	16.5rf	20.0rf	22.8rf	24.1rf	20.3rf	20.1rf	20.6rf	21.9rf	20.6rf	22.0rf	25.7rf	23.3rf	18.7rf	16.5rf	14.5rf	24	17.15
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	22.8	17.6	17.1	42.4	53.0	53.2	70.2	83.0	83.0	81.2	46.4	41.4	43.9	37.4	31.9	30.5	29.2	26.6	28.2	29.7	27.5	26.5	31.3	23.9		
AVG:	12.93	11.53	14.47	26.83	30.97	31.63	38.33	43.57	43.37	45.30	36.23	31.93	30.40	24.27	21.70	20.97	21.07	19.30	20.53	22.87	23.50	23.03	22.57	17.70		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 26.46 MONTHLY MAX: 83.0

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 3
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (638) Teledyne T640X at 16.67 LPM w/Netw
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	15.4rf	14.2rf	13.0rf	11.6rf	10.7rf	11.2rf	9.0rf	9.6rf	13.3rf	14.6rf	14.6rf	23.7rf	32.3rf	32.2rf	31.4rf	27.5rf	26.3rf	24.9rf	25.6rf	25.2rf	25.7rf	27.3rf	28.5rf	31.9rf	24	20.82
9	28.8rf	28.6rf	35.0rf	28.8rf	27.9rf	27.9rf	AV	29.6rf	29.1rf	23.1rf	19.1rf	17.2rf	17.8rf	20.1rf	25.4rf	28.7rf	28.3rf	28.0rf	28.9rf	32.4rf	35.6rf	38.2rf	38.6rf	39.7rf	23	28.56
10	40.0rf	39.3rf	39.4rf	39.8rf	39.6rf	39.4rf	39.2rf	38.3rf	AZ	BA	27.9rf	24.9rf	22.5rf	21.6rf	22.6rf	22.9rf	22.2rf	20.4rf	18.9rf	16.2rf	17.1rf	18.2rf	18.3rf	17.6rf	22	27.56
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	11.7IF	12.4IF	13.1IF	12.7IF	11.9IF	11.6IF	11.9IF	11.1IF	10.2IF	10.7IF	10.4IF	11.2IF	13.6IF	14.1IF	16.4IF	14.6IF	13.2IF	13.4IF	13.9IF	14.6IF	15.7IF	17.2IF	17.7IF	28.0IF	24	13.80
21	28.9rf	29.6rf	29.2rf	29.3rf	29.3rf	29.3rf	32.2rf	37.1rf	37.0rf	33.8rf	35.1rf	35.1rf	35.8rf	37.3rf	40.4rf	40.5rf	39.2rf	39.2rf	41.8rf	40.7rf	38.1rf	38.4rf	38.0rf	37.9rf	24	35.55
22	39.5rf	40.5rf	40.0rf	41.6rf	40.8rf	42.1rf	41.2rf	34.2rf	29.8rf	29.9rf	29.8rf	32.9rf	37.3rf	38.2rf	42.9rf	45.2rf	46.6rf	46.3rf	42.4rf	48.3rf	49.0rf	47.9rf	45.0rf	46.7rf	24	40.75
23	46.1rf	44.3rf	42.8rf	41.8rf	42.2rf	44.5rf	45.8rf	47.5rf	49.3rf	51.9rf	58.2rf	61.7rf	57.5rf	53.4rf	52.2rf	50.9rf	48.9rf	46.9rf	45.9rf	44.7rf	38.3rf	36.5rf	36.3rf	35.4rf	24	46.79
24	33.8rf	30.2rf	28.9rf	25.7rf	23.6rf	22.7rf	20.7rf	19.6rf	20.7rf	24.8rf	26.8rf	26.7rf	26.6rf	28.5rf	28.9rf	28.3rf	31.1rf	33.8rf	32.5rf	29.9rf	27.9rf	28.0rf	29.9rf	28.2rf	24	27.41
25	27.4rf	27.6rf	28.1rf	29.2rf	29.9rf	28.8rf	28.0rf	27.7rf	26.7rf	26.3rf	25.7rf	25.6rf	25.7rf	26.4rf	29.1rf	30.7rf	32.9rf	33.4rf	31.4rf	29.5rf	28.3rf	26.6rf	24.9rf	24.5rf	24	28.10
26	24.6rf	25.9rf	27.9rf	30.1rf	31.9rf	33.3rf	34.7rf	35.1rf	35.0rf	34.9rf	28.4rf	30.6rf	35.7rf	38.0rf	38.2rf	36.3rf	31.9rf	32.0rf	31.5rf	31.2rf	31.2rf	30.6rf	30.1rf	31.5rf	24	32.11
27	30.4rf	29.2rf	28.5rf	29.0rf	27.3rf	22.8rf	18.1rf	16.5rf	15.5rf	20.4rf	21.1rf	18.0rf	17.8rf	16.9rf	18.0rf	19.2rf	21.5rf	21.7rf	21.6rf	21.6rf	24.3rf	28.1rf	29.0rf	25.0rf	24	22.56
28	23.3IT	24.3IT	24.0IT	23.9IT	24.5IT	23.9IT	22.9IT	21.7IT	19.3IT	17.2IT	15.5IT	14.8IT	14.9IT	15.4IT	15.4IT	14.9IT	15.1IT	15.4IT	18.1IT	14.3IT	14.6IT	15.0IT	15.3IT	14.2IT	24	18.25
29	13.4IT	13.5IT	13.5IT	13.8IT	16.7IT	14.6IT	14.8IT	14.9IT	16.7IT	15.7IT	14.9IT	15.4IT	17.1IT	16.2IT	14.2IT	10.3IT	11.1IT	16.5IT	21.5IT	22.1IT	15.8IT	13.6IT	12.3IT	9.2IT	24	14.91
30	11.2IT	10.3IT	12.8IT	13.8IT	14.4IT	15.6IT	15.7IT	16.5IT	17.3IT	16.1IT	16.2IT	16.6IT	15.8IT	13.3IT	12.2IT	12.3IT	11.6IT	11.7IT	15.8IT	15.8IT	12.1IT	12.4IT	12.5IT	12.4IT	24	13.93
31																									0	
NO.:	14	14	14	14	14	14	13	14	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14		
MAX:	46.1	44.3	42.8	41.8	42.2	44.5	45.8	47.5	49.3	51.9	58.2	61.7	57.5	53.4	52.2	50.9	48.9	46.9	45.9	48.3	49.0	47.9	45.0	46.7		
AVG:	26.75	26.42	26.87	26.51	26.48	26.26	25.71	25.67	24.61	24.57	24.55	25.31	26.46	26.54	27.66	27.31	27.14	27.40	27.84	27.61	26.69	27.00	26.89	27.30		

MONTHLY OBSERVATIONS: 333 MONTHLY MEAN: 26.49 MONTHLY MAX: 61.7

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 3
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (638) Teledyne T640X at 16.67 LPM w/Netw
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	15.6rf	13.5rf	12.8rf	9.0rf	8.3rf	7.7rf	8.5rf	9.4rf	11.3rf	11.7rf	11.9rf	14.1rf	20.6rf	28.0rf	26.8rf	26.7rf	26.0rf	27.1rf	27.5rf	28.6rf	30.7rf	31.7rf	28.4rf	26.4rf	24	19.26
11																									0	
12																									0	
13																									0	
14																									0	
15	4.8IF	5.8IF	6.2IF	7.8IF	8.3IF	10.0IF	10.8IF	12.7IF	15.8IF	16.7IF	15.5IF	14.7IF	15.2IF	15.0IF	16.6IF	17.2IF	14.9IF	15.0IF	15.5IF	15.2IF	15.4IF	15.1IF	14.1IF	13.1IF	24	12.98
16	12.2rf	11.2rf	10.2rf	10.1rf	10.2rf	10.0rf	11.6rf	16.4rf	23.9rf	29.2rf	29.9rf	31.7rf	30.4rf	32.9rf	40.2rf	46.3rf	49.1rf	51.4rf	46.7rf	45.3rf	50.8rf	49.7rf	46.4rf	41.7rf	24	30.73
17	37.2rf	34.7rf	33.2rf	35.9rf	41.5rf	45.4rf	45.7rf	46.4rf	50.5rf	44.1rf	42.4rf	46.2rf	50.7rf	44.3rf	37.7rf	36.0rf	37.0rf	34.7rf	32.2rf	32.1rf	33.4rf	36.3rf	35.4rf	34.6rf	24	39.48
18	30.2IF	29.0IF	24.7IF	24.1IF	23.3IF	21.6IF	19.5IF	18.4IF	16.3IF	14.2IF	13.4IF	12.3IF	12.4IF	12.2IF	12.3IF	13.4IF	13.7IF	14.3IF	14.1IF	13.3IF	14.3IF	14.2IF	14.3IF	13.5IF	24	17.04
19	13.3IF	13.6IF	14.1IF	14.2IF	15.4IF	14.4IF	14.9IF	14.1IF	14.3IF	13.1IF	10.9IF	10.1IF	10.5IF	11.7IF	12.1IF	12.3IF	13.0IF	13.2IF	14.1IF	14.8IF	15.8IF	17.1IF	17.4IF	17.3IF	24	13.82
20	17.6IF	18.0IF	17.6IF	17.2IF	18.0IF	18.1IF	16.6IF	15.0IF	11.7IF	11.4IF	11.3IF	10.2IF	10.4IF	12.2IF	13.9IF	13.4IF	17.1IF	19.0IF	17.5IF	16.4IF	13.1IF	12.2IF	12.0IF	13.2IF	24	14.71
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
MAX:	37.2	34.7	33.2	35.9	41.5	45.4	45.7	46.4	50.5	44.1	42.4	46.2	50.7	44.3	40.2	46.3	49.1	51.4	46.7	45.3	50.8	49.7	46.4	41.7		
AVG:	18.70	17.97	16.97	16.90	17.86	18.17	18.23	18.91	20.54	20.06	19.33	19.90	21.46	22.33	22.80	23.61	24.40	24.96	23.94	23.67	24.79	25.19	24.00	22.83		

MONTHLY OBSERVATIONS: 168 MONTHLY MEAN: 21.15 MONTHLY MAX: 51.4

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 3
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (638) Teledyne T640X at 16.67 LPM w/Netw
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	8.7rf	9.0rf	8.5rf	8.5rf	8.8rf	12.3rf	15.9rf	17.0rf	19.9rf	48.1rf	105.1rf	108.0rf	72.9rf	69.2rf	63.2rf	51.4rf	50.0rf	59.4rf	82.4rf	83.0rf	85.6rf	63.9rf	19.1rf	12.8rf	24	45.11
5																									0	
6																									0	
7																									0	
8																									0	
9	7.5IF	7.7IF	7.7IF	7.9IF	8.0IF	8.2IF	AX	AQ	8.2IF	10.2IF	10.4IF	10.8IF	10.8IF	10.3IF	10.4IF	10.6IF	10.8IF	10.5IF	10.5IF	10.7IF	10.4IF	10.9IF	11.1IF	10.9IF	22	9.75
10	10.5rf	10.7rf	11.2rf	14.7rf	17.1rf	17.2rf	18.2rf	20.0rf	26.5rf	44.3rf	79.6rf	85.3rf	79.9rf	70.0rf	63.6rf	51.9rf	46.6rf	38.9rf	34.0rf	48.2rf	90.7rf	110.8rf	106.7rf	92.5rf	24	49.55
11	103.7rf	106.8rf	98.3rf	83.6rf	97.2rf	108.5rf	108.8rf	116.2rf	132.2rf	133.9rf	124.4rf	113.3rf	92.7rf	87.3rf	80.5rf	72.1rf	65.1rf	59.6rf	55.4rf	57.8rf	56.4rf	54.6rf	54.7rf	53.2rf	24	88.18
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
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24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	4	4	4	4	4	4	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	103.7	106.8	98.3	83.6	97.2	108.5	108.8	116.2	132.2	133.9	124.4	113.3	92.7	87.3	80.5	72.1	65.1	59.6	82.4	83.0	90.7	110.8	106.7	92.5		
AVG:	32.60	33.55	31.43	28.68	32.78	36.55	47.63	51.07	46.70	59.13	79.88	79.35	64.08	59.20	54.43	46.50	43.13	42.10	45.58	49.93	60.78	60.05	47.90	42.35		

MONTHLY OBSERVATIONS: 94 MONTHLY MEAN: 48.96 MONTHLY MAX: 133.9

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 3
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (638) Teledyne T640X at 16.67 LPM w/Netw
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	9.0IT	10.1IT	10.6IT	10.6IT	10.4IT	16.6IT	13.2IT	7.1IT	5.3IT	5.4IT	3.9IT	2.8IT	3.4IT	6.6IT	6.8IT	6.8IT	4.8IT	13.5IT	55.9IT	38.6IT	26.4IT	96.5IT	55.9IT	4.1IT	24	17.68
6																									0	
7																									0	
8	6.9IT	7.0IT	7.5IT	7.2IT	6.8IT	7.0IT	7.0IT	7.5IT	7.8IT	8.0IT	10.9IT	10.0IT	11.0IT	12.6IT	13.9IT	14.2IT	14.9IT	15.7IT	18.7IT	18.3IT	18.0IT	19.3IT	20.9IT	21.2IT	24	12.18
9	21.5IT	22.5IT	23.3IT	23.3IT	26.2IT	27.8IT	25.6IT	25.5IT	26.2IT	26.6IT	24.7IT	21.0IT	16.4IT	12.7IT	11.6IT	10.0IT	10.1IT	11.6IT	14.9IT	13.3IT	13.2IT	12.9IT	15.2IT	17.3IT	24	18.89
10																									0	
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
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24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	21.5	22.5	23.3	23.3	26.2	27.8	25.6	25.5	26.2	26.6	24.7	21.0	16.4	12.7	13.9	14.2	14.9	15.7	55.9	38.6	26.4	96.5	55.9	21.2		
AVG:	12.47	13.20	13.80	13.70	14.47	17.13	15.27	13.37	13.10	13.33	13.17	11.27	10.27	10.63	10.77	10.33	9.93	13.60	29.83	23.40	19.20	42.90	30.67	14.20		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 16.25 MONTHLY MAX: 96.5

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 4
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	5.3IF	5.2IF	17.2IF	60.2IF	76.2IF	75.6IF	98.8IF	115.8IF	116.8IF	114.8IF	67.4IF	45.4IF	33.2IF	21.9IF	19.5IF	17.4IF	17.9IF	15.6IF	16.8IF	19.4IF	29.0IF	39.2IF	46.4IF	35.5IF	24	46.27
13	33.5IF	26.6IF	26.1IF	40.5IF	45.3IF	48.7IF	52.3IF	54.5IF	51.2IF	57.6IF	61.7IF	60.3IF	63.0IF	53.3IF	46.2IF	43.5IF	41.2IF	38.7IF	39.8IF	43.4IF	40.4IF	34.9IF	29.0IF	21.5IF	24	43.88
14	17.5rf	19.2rf	20.8rf	17.1rf	15.5rf	14.4rf	14.8rf	15.5rf	19.3rf	25.1rf	29.1rf	33.0rf	35.2rf	29.5rf	29.4rf	30.1rf	31.9rf	30.9rf	31.9rf	37.0rf	34.0rf	26.3rf	23.7rf	22.0rf	24	25.13
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
21																									0	
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24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	33.5	26.6	26.1	60.2	76.2	75.6	98.8	115.8	116.8	114.8	67.4	60.3	63.0	53.3	46.2	43.5	41.2	38.7	39.8	43.4	40.4	39.2	46.4	35.5		
AVG:	18.77	17.00	21.37	39.27	45.67	46.23	55.30	61.93	62.43	65.83	52.73	46.23	43.80	34.90	31.70	30.33	30.33	28.40	29.50	33.27	34.47	33.47	33.03	26.33		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 38.43 MONTHLY MAX: 116.8

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 4
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	24.2rf	21.8rf	19.9rf	18.4rf	17.2rf	18.4rf	15.1rf	15.2rf	20.2rf	21.7rf	22.1rf	34.5rf	46.7rf	45.9rf	44.3rf	39.3rf	38.1rf	35.6rf	36.8rf	37.2rf	37.2rf	38.9rf	41.5rf	45.8rf	24	30.67
9	41.6rf	41.3rf	48.3rf	41.6rf	40.4rf	41.2rf	AV	42.2rf	41.1rf	32.6rf	27.3rf	24.9rf	26.0rf	29.4rf	35.6rf	40.7rf	39.8rf	39.7rf	41.7rf	45.7rf	50.2rf	53.8rf	55.3rf	55.6rf	23	40.70
10	56.5rf	55.4rf	54.9rf	56.1rf	55.5rf	55.9rf	54.4rf	53.2rf	AZ	BA	30.8rf	26.9rf	24.5rf	23.7rf	24.3rf	24.3rf	23.8rf	22.2rf	20.5rf	17.5rf	18.7rf	19.6rf	19.7rf	19.6rf	22	34.45
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	12.7IF	13.6IF	14.2IF	14.0IF	12.5IF	12.1IF	12.8IF	12.0IF	11.3IF	11.5IF	11.2IF	12.2IF	15.3IF	15.5IF	18.0IF	16.2IF	14.7IF	14.9IF	15.2IF	16.2IF	17.1IF	19.7IF	19.9IF	30.4IF	24	15.13
21	31.4rf	32.3rf	30.6rf	30.8rf	31.5rf	31.1rf	34.6rf	39.6rf	39.0rf	36.6rf	37.3rf	38.2rf	38.6rf	40.0rf	43.7rf	43.7rf	43.3rf	42.0rf	45.4rf	43.2rf	41.1rf	39.4rf	39.7rf	39.7rf	24	38.03
22	41.2rf	43.2rf	42.7rf	44.1rf	42.7rf	43.7rf	43.6rf	35.6rf	31.6rf	32.3rf	31.7rf	35.5rf	40.1rf	41.0rf	46.3rf	48.8rf	50.6rf	49.9rf	46.5rf	52.3rf	51.1rf	49.6rf	46.6rf	49.7rf	24	43.35
23	47.9rf	46.6rf	45.0rf	44.1rf	43.7rf	46.6rf	47.8rf	49.5rf	52.4rf	53.5rf	61.0rf	66.3rf	60.5rf	56.6rf	55.9rf	54.5rf	52.8rf	49.2rf	48.6rf	47.2rf	40.1rf	37.7rf	38.2rf	36.7rf	24	49.27
24	33.8rf	31.2rf	29.5rf	26.9rf	24.7rf	23.5rf	21.6rf	20.5rf	21.6rf	25.6rf	27.9rf	27.4rf	27.3rf	29.2rf	30.1rf	29.8rf	32.1rf	35.3rf	34.0rf	31.0rf	28.7rf	29.3rf	30.4rf	28.7rf	24	28.34
25	28.1rf	27.7rf	28.5rf	30.2rf	30.6rf	29.7rf	29.0rf	28.2rf	27.2rf	27.3rf	26.2rf	25.8rf	25.8rf	27.5rf	30.2rf	32.4rf	34.6rf	35.6rf	32.3rf	31.0rf	28.5rf	26.6rf	25.0rf	24.0rf	24	28.83
26	24.7rf	26.4rf	28.3rf	30.4rf	33.3rf	34.3rf	36.1rf	36.5rf	37.3rf	37.1rf	29.0rf	32.3rf	38.3rf	41.9rf	41.4rf	38.7rf	34.7rf	35.2rf	35.0rf	34.3rf	34.1rf	33.2rf	32.4rf	34.3rf	24	34.13
27	32.4rf	32.0rf	31.3rf	31.7rf	30.1rf	24.6rf	19.9rf	18.2rf	17.5rf	22.1rf	22.9rf	19.7rf	19.1rf	18.4rf	19.4rf	20.8rf	22.5rf	23.2rf	23.1rf	23.1rf	26.5rf	29.5rf	31.3rf	26.8rf	24	24.42
28	25.5IT	26.0IT	26.3IT	25.8IT	26.6IT	26.2IT	25.0IT	23.4IT	20.8IT	18.7IT	16.7IT	15.7IT	15.7IT	16.4IT	16.4IT	16.0IT	16.2IT	16.1IT	19.4IT	15.2IT	15.8IT	16.1IT	16.0IT	15.5IT	24	19.65
29	14.6IT	14.6IT	14.5IT	15.0IT	17.6IT	15.7IT	16.0IT	16.2IT	17.6IT	17.1IT	16.2IT	16.6IT	18.1IT	17.5IT	15.2IT	11.0IT	10.3IT	16.8IT	22.9IT	24.3IT	16.7IT	13.8IT	12.8IT	9.8IT	24	15.87
30	11.7IT	11.4IT	14.1IT	15.2IT	15.5IT	16.6IT	16.0IT	17.7IT	18.0IT	17.0IT	17.4IT	18.3IT	17.0IT	14.2IT	13.1IT	12.9IT	12.3IT	12.3IT	16.7IT	16.8IT	12.9IT	12.6IT	12.4IT	12.5IT	24	14.78
31																									0	
NO.:	14	14	14	14	14	14	13	14	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14		
MAX:	56.5	55.4	54.9	56.1	55.5	55.9	54.4	53.2	52.4	53.5	61.0	66.3	60.5	56.6	55.9	54.5	52.8	49.9	48.6	52.3	51.1	53.8	55.3	55.6		
AVG:	30.45	30.25	30.58	30.31	30.14	29.97	28.61	29.14	27.35	27.16	26.98	28.16	29.50	29.80	30.99	30.65	30.41	30.57	31.29	31.07	29.91	29.99	30.09	30.65		

MONTHLY OBSERVATIONS: 333 MONTHLY MEAN: 29.77 MONTHLY MAX: 66.3

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 4
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	16.9rf	15.1rf	14.0rf	9.8rf	9.0rf	8.7rf	9.8rf	10.8rf	12.8rf	13.3rf	12.8rf	15.4rf	22.6rf	30.1rf	28.7rf	28.1rf	27.6rf	28.4rf	29.6rf	29.9rf	32.6rf	34.4rf	30.7rf	28.5rf	24	20.82
11																									0	
12																									0	
13																									0	
14																									0	
15	5.2IF	5.8IF	6.2IF	7.8IF	8.4IF	10.2IF	11.6IF	13.7IF	16.7IF	17.0IF	16.0IF	15.3IF	16.1IF	15.2IF	17.3IF	17.3IF	15.5IF	15.9IF	16.3IF	16.0IF	16.1IF	16.0IF	14.9IF	13.9IF	24	13.52
16	13.1rf	11.9rf	11.3rf	10.9rf	10.8rf	10.7rf	12.2rf	17.5rf	25.4rf	32.2rf	33.2rf	33.9rf	32.9rf	35.4rf	43.4rf	49.2rf	53.3rf	55.3rf	51.0rf	48.4rf	54.6rf	54.0rf	50.4rf	44.8rf	24	33.16
17	40.6rf	38.5rf	36.4rf	38.9rf	45.4rf	49.8rf	51.4rf	53.4rf	58.7rf	50.3rf	47.9rf	50.0rf	55.6rf	47.1rf	39.8rf	38.4rf	39.6rf	37.3rf	34.8rf	34.5rf	35.8rf	39.2rf	38.5rf	37.5rf	24	43.31
18	32.6IF	31.3IF	26.0IF	26.0IF	25.6IF	23.4IF	21.3IF	20.4IF	17.2IF	15.0IF	14.3IF	13.5IF	13.2IF	13.2IF	13.5IF	14.6IF	15.1IF	15.2IF	14.9IF	14.1IF	15.2IF	14.7IF	15.0IF	14.4IF	24	18.32
19	14.3IF	14.5IF	15.0IF	15.4IF	16.5IF	16.0IF	16.5IF	15.4IF	15.1IF	13.5IF	11.4IF	10.7IF	10.8IF	11.9IF	12.3IF	12.9IF	13.5IF	13.7IF	14.9IF	15.4IF	16.6IF	17.8IF	18.0IF	18.0IF	24	14.59
20	18.9IF	19.0IF	18.7IF	18.4IF	18.8IF	19.4IF	17.3IF	15.3IF	12.4IF	11.7IF	11.6IF	10.8IF	10.5IF	12.6IF	14.7IF	13.9IF	17.7IF	19.8IF	18.3IF	16.8IF	13.9IF	12.7IF	12.7IF	14.2IF	24	15.42
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
MAX:	40.6	38.5	36.4	38.9	45.4	49.8	51.4	53.4	58.7	50.3	47.9	50.0	55.6	47.1	43.4	49.2	53.3	55.3	51.0	48.4	54.6	54.0	50.4	44.8		
AVG:	20.23	19.44	18.23	18.17	19.21	19.74	20.01	20.93	22.61	21.86	21.03	21.37	23.10	23.64	24.24	24.91	26.04	26.51	25.69	25.01	26.40	26.97	25.74	24.47		

MONTHLY OBSERVATIONS: 168 MONTHLY MEAN: 22.73 MONTHLY MAX: 58.7

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 4
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	8.8rf	9.1rf	8.7rf	8.5rf	9.0rf	12.7rf	16.1rf	17.2rf	19.6rf	50.5rf	112.3rf	113.7rf	76.4rf	72.4rf	66.0rf	53.4rf	52.6rf	63.5rf	86.0rf	87.7rf	89.7rf	66.5rf	19.6rf	12.9rf	24	47.20
5																									0	
6																									0	
7																									0	
8																									0	
9	7.7IF	7.8IF	8.1IF	8.3IF	8.4IF	8.8IF	AX	AT	7.7IF	9.1IF	9.4IF	9.7IF	9.7IF	9.3IF	9.0IF	9.5IF	9.5IF	9.3IF	9.5IF	9.5IF	9.4IF	9.7IF	10.0IF	9.8IF	22	9.05
10	9.7rf	9.9rf	10.3rf	13.5rf	16.1rf	16.2rf	17.2rf	18.8rf	25.1rf	42.2rf	75.8rf	81.4rf	75.4rf	67.0rf	61.4rf	49.1rf	43.0rf	35.9rf	31.8rf	45.9rf	87.1rf	104.9rf	101.9rf	87.7rf	24	46.97
11	98.2rf	104.2rf	93.5rf	81.5rf	94.5rf	104.1rf	105.2rf	113.6rf	129.1rf	127.5rf	119.6rf	107.2rf	87.7rf	81.2rf	77.1rf	67.1rf	61.1rf	54.9rf	51.3rf	53.6rf	52.3rf	51.6rf	51.0rf	48.7rf	24	83.99
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
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26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	4	4	4	4	4	4	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	98.2	104.2	93.5	81.5	94.5	104.1	105.2	113.6	129.1	127.5	119.6	113.7	87.7	81.2	77.1	67.1	61.1	63.5	86.0	87.7	89.7	104.9	101.9	87.7		
AVG:	31.10	32.75	30.15	27.95	32.00	35.45	46.17	49.87	45.38	57.33	79.28	78.00	62.30	57.48	53.38	44.78	41.55	40.90	44.65	49.18	59.63	58.18	45.63	39.78		

MONTHLY OBSERVATIONS: 94 MONTHLY MEAN: 47.61 MONTHLY MAX: 129.1

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-015-0003 POC: 4
COUNTY: (015) Burleigh
CITY: (07200) Bismarck
SITE ADDRESS: 1810 N 16TH STREET
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (1010) BISMARCK, ND
LAND USE: RESIDENTIAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.8254250009
LONGITUDE: -100.76821
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 580
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	7.4IT	8.2IT	8.6IT	9.0IT	9.0IT	14.5IT	11.4IT	5.4IT	4.4IT	4.1IT	3.1IT	2.4IT	2.9IT	4.9IT	4.9IT	5.1IT	3.8IT	11.7IT	48.5IT	34.4IT	23.3IT	89.5IT	49.2IT	3.4IT	24	15.38
6																									0	
7																									0	
8	6.1IT	6.2IT	6.5IT	6.4IT	6.0IT	6.3IT	6.2IT	6.9IT	7.1IT	7.2IT	9.7IT	8.9IT	10.2IT	12.1IT	13.4IT	13.3IT	14.0IT	14.6IT	17.3IT	16.7IT	17.0IT	18.3IT	19.5IT	19.9IT	24	11.24
9	20.3IT	21.5IT	22.1IT	22.4IT	25.6IT	27.6IT	25.1IT	24.9IT	25.2IT	25.6IT	23.6IT	20.4IT	15.4IT	12.1IT	10.7IT	9.4IT	9.4IT	11.1IT	14.3IT	12.6IT	12.5IT	12.3IT	14.2IT	16.3IT	24	18.11
10																									0	
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
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24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	20.3	21.5	22.1	22.4	25.6	27.6	25.1	24.9	25.2	25.6	23.6	20.4	15.4	12.1	13.4	13.3	14.0	14.6	48.5	34.4	23.3	89.5	49.2	19.9		
AVG:	11.27	11.97	12.40	12.60	13.53	16.13	14.23	12.40	12.23	12.30	12.13	10.57	9.50	9.70	9.67	9.27	9.07	12.47	26.70	21.23	17.60	40.03	27.63	13.20		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 14.91 MONTHLY MAX: 89.5

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-017-1004 POC: 3
COUNTY: (017) Cass
CITY: (00000) Not in a city
SITE ADDRESS: 4266 40TH AVE NORTH
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (130) METROPOLITAN FARGO-MOORHEAD
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.9337540009
LONGITUDE: -96.85535
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 275
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	6.4rf	5.6rf	4.8rf	4.7rf	4.4rf	25.2rf	63.0rf	89.7rf	102.9rf	96.7rf	98.6rf	80.9rf	74.2rf	63.9rf	59.8rf	48.8rf	30.6rf	28.6rf	42.0rf	105.0rf	62.1rf	23.4rf	25.2rf	29.6rf	24	49.00
13	31.3IF	36.2IF	41.2IF	39.1IF	30.2IF	16.2IF	5.6IF	AX	3.2IF	2.7IF	3.0IF	3.0IF	3.5IF	3.7IF	4.2IF	5.7IF	6.9IF	8.7IF	9.3IF	9.7IF	12.8IF	11.9IF	10.1IF	10.0IF	23	13.40
14	11.9IF	11.9IF	9.8IF	7.1IF	5.9IF	4.8IF	5.3IF	8.5IF	8.9IF	9.9IF	10.8IF	10.8IF	17.0IF	13.3IF	16.8IF	16.6IF	18.1IF	17.9IF	13.8IF	9.8IF	9.8IF	8.0IF	6.7IF	6.1IF	24	10.81
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
21																									0	
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24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	31.3	36.2	41.2	39.1	30.2	25.2	63.0	89.7	102.9	96.7	98.6	80.9	74.2	63.9	59.8	48.8	30.6	28.6	42.0	105.0	62.1	23.4	25.2	29.6		
AVG:	16.53	17.90	18.60	16.97	13.50	15.40	24.63	49.10	38.33	36.43	37.47	31.57	31.57	26.97	26.93	23.70	18.53	18.40	21.70	41.50	28.23	14.43	14.00	15.23		

MONTHLY OBSERVATIONS: 71 MONTHLY MEAN: 24.56 MONTHLY MAX: 105.0

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-017-1004 POC: 3
COUNTY: (017) Cass
CITY: (00000) Not in a city
SITE ADDRESS: 4266 40TH AVE NORTH
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (130) METROPOLITAN FARGO-MOORHEAD
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.9337540009
LONGITUDE: -96.85535
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 275
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	8.8IF	8.4IF	6.6IF	6.0IF	6.5IF	8.8IF	12.7IF	AX	AX	12.7IF	12.2IF	12.5IF	13.8IF	14.4IF	15.9IF	17.8IF	19.3IF	16.8IF	14.8IF	15.4IF	12.1IF	10.5IF	10.4IF	10.9IF	22	12.15
9	12.5IF	9.5IF	8.9IF	9.3IF	11.7IF	21.3IF	12.2IF	12.9IF	13.4IF	13.9IF	14.4IF	13.9IF	15.0IF	17.5IF	20.6IF	19.2IF	19.1IF	18.3IF	17.9IF	18.9IF	16.8IF	14.8IF	12.6IF	12.7IF	24	14.89
10	13.6IF	13.7IF	14.4IF	15.6IF	19.9IF	20.3IF	20.1IF	18.9IF	14.7IF	12.7IF	12.5IF	10.6IF	10.1IF	10.2IF	11.7IF	14.1IF	15.0IF	15.8IF	16.7IF	16.3IF	17.3IF	19.7IF	19.7IF	19.2IF	24	15.53
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	13.8IF	14.1IF	14.6IF	14.2IF	13.5IF	14.0IF	14.9IF	14.6IF	14.6IF	14.4IF	12.7IF	12.6IF	13.2IF	15.0IF	16.9IF	17.3IF	17.8IF	16.2IF	15.5IF	16.1IF	14.5IF	15.8IF	15.2IF	17.7IF	24	14.97
21	19.2IF	18.3IF	19.3IF	21.3IF	19.8IF	18.6IF	18.2IF	18.6IF	17.6IF	17.9IF	16.7IF	16.4IF	17.9IF	20.0IF	19.2IF	17.8IF	18.6IF	19.3IF	15.5IF	14.0IF	14.6IF	13.9IF	14.1IF	15.2IF	24	17.58
22	17.6rf	18.9rf	20.9rf	22.7rf	24.1rf	22.0rf	26.9rf	AX	21.7rf	28.3rf	21.3rf	26.3rf	27.2rf	26.5rf	27.3rf	28.3rf	28.0rf	28.5rf	29.2rf	28.5rf	28.7rf	29.2rf	28.3rf	27.7rf	23	25.57
23	27.6IF	27.8IF	23.9IF	10.7IF	10.4IF	10.3IF	10.7IF	10.8IF	9.7IF	10.6IF	13.3IF	17.4IF	19.4IF	21.6IF	23.0IF	22.7IF	20.5IF	19.4IF	19.3IF	18.8IF	16.3IF	13.5IF	18.6IF	11.5IF	24	16.99
24	7.6IF	7.3IF	6.4IF	6.4IF	6.7IF	6.9IF	6.5IF	6.3IF	6.0IF	5.7IF	6.3IF	7.8IF	10.4IF	13.5IF	13.7IF	13.4IF	14.3IF	15.8IF	14.4IF	14.5IF	14.4IF	14.8IF	14.6IF	13.5IF	24	10.30
25	13.6IF	13.0IF	12.4IF	12.5IF	12.6IF	12.5IF	11.0IF	10.4IF	10.5IF	11.8IF	14.5IF	16.1IF	17.0IF	18.2IF	20.4IF	21.9IF	20.7IF	19.9IF	19.0IF	19.5IF	20.0IF	19.5IF	19.6IF	19.5IF	24	16.09
26	19.8IF	19.6IF	19.1IF	18.5IF	18.7IF	18.3IF	17.7IF	17.3IF	17.5IF	17.0IF	17.6IF	18.7IF	18.9IF	19.4IF	20.5IF	20.4IF	20.6IF	21.8IF	24.0IF	22.9IF	23.0IF	22.3IF	22.6IF	22.9IF	24	19.96
27	23.9rf	25.0rf	26.2rf	26.6rf	23.8rf	24.6rf	24.4rf	24.0rf	25.1rf	23.3rf	24.3rf	24.6rf	24.2rf	23.8rf	24.7rf	20.9rf	18.0rf	18.2rf	18.1rf	17.8rf	17.2rf	17.4rf	17.2rf	17.2rf	24	22.10
28	16.8IT	15.1IT	13.6IT	11.6IT	14.2IT	12.6IT	12.9IT	12.5IT	12.2IT	11.7IT	10.6IT	10.8IT	11.2IT	11.0IT	11.0IT	11.0IT	12.0IT	14.2IT	14.2IT	14.2IT	14.3IT	14.1IT	14.3IT	13.4IT	24	12.90
29	14.4IT	14.5IT	15.3IT	14.5IT	15.5IT	16.8IT	16.6IT	18.3IT	22.8IT	13.3IT	14.1IT	18.2IT	18.5IT	19.8IT	18.7IT	19.3IT	17.9IT	16.4IT	16.4IT	15.7IT	14.9IT	14.8IT	12.7IT	10.6IT	24	16.25
30	9.6IT	6.3IT	7.3IT	9.0IT	10.0IT	11.0IT	10.0IT	10.6IT	10.8IT	7.9IT	7.9IT	10.0IT	9.9IT	10.6IT	10.3IT	9.7IT	10.2IT	10.2IT	9.8IT	9.8IT	9.9IT	10.0IT	10.1IT	9.9IT	24	9.62
31																									0	
NO.:	14	14	14	14	14	14	14	12	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14		
MAX:	27.6	27.8	26.2	26.6	24.1	24.6	26.9	24.0	25.1	28.3	24.3	26.3	27.2	26.5	27.3	28.3	28.0	28.5	29.2	28.5	28.7	29.2	28.3	27.7		
AVG:	15.63	15.11	14.92	14.21	14.81	15.57	15.34	14.60	15.12	14.37	14.17	15.42	16.19	17.25	18.14	18.13	18.00	17.91	17.49	17.31	16.71	16.45	16.43	15.85		

MONTHLY OBSERVATIONS: 333 MONTHLY MEAN: 16.06 MONTHLY MAX: 29.2

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-017-1004 POC: 3
COUNTY: (017) Cass
CITY: (00000) Not in a city
SITE ADDRESS: 4266 40TH AVE NORTH
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (130) METROPOLITAN FARGO-MOORHEAD
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.9337540009
LONGITUDE: -96.85535
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 275
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	2.7	3.8	3.0	2.6	2.6	2.7	2.7	3.2	2.3	2.1	1.8	1.9	2.0	2.5	2.6	2.6	2.6	2.8	2.8	2.9	7.4	12.2	36.3	36.2	24	6.01
11																									0	
12																									0	
13																									0	
14																									0	
15	3.9	3.9	3.8	3.3	3.1	3.6	4.1	4.2	3.2	2.1	1.7	2.5	2.4	2.3	1.1	.7	.4	.7	.5	.4	1.9	1.0	1.1	1.4	24	2.22
16	2.1IF	2.0IF	1.4IF	2.0IF	2.7IF	3.1IF	3.1IF	4.1IF	4.0IF	5.2IF	6.2IF	6.1IF	7.9IF	8.6IF	9.8IF	10.2IF	10.2IF	9.8IF	10.0IF	14.8IF	9.4IF	10.5IF	26.7IF	56.1IF	24	9.42
17	58.6rf	56.6rf	56.7rf	57.2rf	54.8rf	48.1rf	38.3rf	28.0rf	25.4rf	23.9rf	25.4rf	21.0rf	21.2rf	20.5rf	17.1rf	14.6rf	14.1rf	13.8rf	13.9rf	14.2rf	14.6rf	13.4rf	13.9rf	15.2rf	24	28.35
18	14.9rf	15.9rf	16.5rf	15.9rf	13.7rf	14.0rf	11.8rf	22.3rf	30.5rf	31.6rf	32.9rf	30.3rf	29.1rf	29.8rf	29.0rf	26.8rf	25.3rf	26.2rf	23.8rf	24.3rf	26.4rf	26.6rf	27.4rf	26.4rf	24	23.81
19	25.1rf	24.8rf	21.8rf	21.0rf	16.6rf	18.6rf	17.5rf	AX	AX	26.7rf	27.3rf	28.1rf	27.6rf	29.0rf	29.6rf	29.1rf	26.6rf	26.8rf	27.1rf	27.4rf	26.5rf	27.0rf	30.5rf	29.4rf	22	25.64
20	27.4rf	26.2rf	26.0rf	26.9rf	27.0rf	27.0rf	26.9rf	26.4rf	25.8rf	25.2rf	24.5rf	24.0rf	23.2rf	23.8rf	22.5rf	22.1rf	22.5rf	21.4rf	19.3rf	18.3rf	17.7rf	17.4rf	17.7rf	16.6rf	24	23.16
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	7	7	7	7	7	7	7	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
MAX:	58.6	56.6	56.7	57.2	54.8	48.1	38.3	28.0	30.5	31.6	32.9	30.3	29.1	29.8	29.6	29.1	26.6	26.8	27.1	27.4	26.5	27.0	36.3	56.1		
AVG:	19.24	19.03	18.46	18.41	17.21	16.73	14.91	14.70	15.20	16.69	17.11	16.27	16.20	16.64	15.96	15.16	14.53	14.50	13.91	14.61	14.84	15.44	21.94	25.90		

MONTHLY OBSERVATIONS: 166 MONTHLY MEAN: 16.84 MONTHLY MAX: 58.6

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-017-1004 POC: 3
COUNTY: (017) Cass
CITY: (00000) Not in a city
SITE ADDRESS: 4266 40TH AVE NORTH
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (130) METROPOLITAN FARGO-MOORHEAD
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.9337540009
LONGITUDE: -96.85535
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 275
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	7.4IF	7.3IF	7.0IF	6.5IF	6.5IF	6.8IF	7.0IF	7.3IF	9.0IF	11.2IF	11.5IF	11.0IF	11.1IF	13.2IF	11.9IF	10.1IF	9.7IF	9.6IF	11.0IF	12.6IF	17.4IF	22.6IF	28.3IF	47.8IF	24	12.66
5																									0	
6																									0	
7																									0	
8																									0	
9	8.7IF	8.2IF	8.1IF	8.5IF	8.9IF	8.9IF	9.4IF	10.2IF	11.3IF	11.0IF	10.1IF	9.0IF	9.1IF	9.2IF	9.1IF	8.9IF	9.7IF	9.9IF	9.2IF	8.7IF	8.0IF	7.8IF	7.9IF	8.3IF	24	9.09
10	8.4IF	7.5IF	7.8IF	7.8IF	7.6IF	7.6IF	7.6IF	8.0IF	9.4IF	10.2IF	11.3IF	11.1IF	11.7IF	12.7IF	14.5IF	17.2IF	20.1IF	25.3IF	25.7IF	28.1IF	31.0IF	34.9IF	38.2IF	57.0IF	24	17.53
11	61.9rf	69.9rf	77.7rf	91.1rf	122.3rf	126.7rf	121.7rf	108.5rf	95.5rf	85.1rf	75.3rf	66.7rf	57.3rf	52.5rf	43.1rf	35.3rf	35.9rf	42.7rf	39.0rf	36.6rf	34.8rf	28.6rf	27.3rf	24.6rf	24	65.00
12																									0	
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14																									0	
15																									0	
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29																									0	
30																									0	
31																									0	
NO.:	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	61.9	69.9	77.7	91.1	122.3	126.7	121.7	108.5	95.5	85.1	75.3	66.7	57.3	52.5	43.1	35.3	35.9	42.7	39.0	36.6	34.8	34.9	38.2	57.0		
AVG:	21.60	23.23	25.15	28.48	36.33	37.50	36.43	33.50	31.30	29.38	27.05	24.45	22.30	21.90	19.65	17.88	18.85	21.88	21.23	21.50	22.80	23.48	25.43	34.43		

MONTHLY OBSERVATIONS: 96 MONTHLY MEAN: 26.07 MONTHLY MAX: 126.7

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-017-1004 POC: 3
COUNTY: (017) Cass
CITY: (00000) Not in a city
SITE ADDRESS: 4266 40TH AVE NORTH
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (130) METROPOLITAN FARGO-MOORHEAD
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: SUBURBAN

CAS NUMBER:
LATITUDE: 46.9337540009
LONGITUDE: -96.85535
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 275
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	8.1IT	9.0IT	9.5IT	10.0IT	10.4IT	9.4IT	9.6IT	8.6IT	8.4IT	10.0IT	11.2IT	10.3IT	6.3IT	4.9IT	7.1IT	5.4IT	8.6IT	16.9IT	14.1IT	13.2IT	43.2IT	9.6IT	7.0IT	4.8IT	24	10.65
6																									0	
7																									0	
8	12.6	14.1IT	12.2IT	12.0IT	11.7IT	11.0IT	10.0IT	30.1IT	7.8IT	8.4IT	9.7IT	8.5IT	7.4IT	7.7IT	8.2IT	7.3IT	7.6IT	7.5IT	8.8IT	7.7IT	8.0IT	7.5IT	7.1IT	6.5IT	24	9.98
9	5.6IT	5.2IT	5.0IT	4.8IT	4.6IT	4.4IT	4.6IT	4.6IT	5.2IT	5.5IT	6.4IT	8.0IT	9.1IT	10.9IT	12.0IT	13.5IT	14.2IT	13.5IT	16.0IT	18.6IT	12.3IT	11.2IT	13.2IT	15.3IT	24	9.32
10																									0	
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
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27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	12.6	14.1	12.2	12.0	11.7	11.0	10.0	30.1	8.4	10.0	11.2	10.3	9.1	10.9	12.0	13.5	14.2	16.9	16.0	18.6	43.2	11.2	13.2	15.3		
AVG:	8.77	9.43	8.90	8.93	8.90	8.27	8.07	14.43	7.13	7.97	9.10	8.93	7.60	7.83	9.10	8.73	10.13	12.63	12.97	13.17	21.17	9.43	9.10	8.87		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 9.98 MONTHLY MAX: 43.2

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-025-0004 POC: 3
COUNTY: (025) Dunn
CITY: (20940) Dunn Center
SITE ADDRESS: 5th Street South West Dunn Center
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.3424230009
LONGITUDE: -102.645864
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 683.66
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	21.6rf	46.5rf	69.2rf	79.8rf	78.0rf	75.7rf	81.1rf	71.3rf	57.5rf	40.4rf	34.2rf	27.7rf	25.8rf	23.6rf	23.3rf	23.7rf	22.0rf	16.6rf	14.9rf	16.0rf	15.9rf	15.7rf	17.2rf	19.5rf	24	38.22
13	18.5IF	20.7IF	18.6IF	18.5IF	18.6IF	18.8IF	20.9IF	25.2IF	29.8IF	21.2IF	16.9IF	19.5IF	20.2IF	18.8IF	17.1IF	16.9IF	19.3IF	21.9IF	23.5IF	17.5IF	17.5IF	18.0IF	20.3IF	24.1IF	24	20.10
14	24.9IF	24.4IF	22.2IF	16.6IF	AX	13.9IF	14.0IF	16.6IF	17.5IF	12.4IF	11.9IF	11.0IF	11.2IF	10.7IF	8.0IF	6.9IF	7.1IF	7.7IF	7.6IF	17.5IF	16.8IF	14.0IF	13.2IF	13.1IF	23	13.88
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
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27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	24.9	46.5	69.2	79.8	78.0	75.7	81.1	71.3	57.5	40.4	34.2	27.7	25.8	23.6	23.3	23.7	22.0	21.9	23.5	17.5	17.5	18.0	20.3	24.1		
AVG:	21.67	30.53	36.67	38.30	48.30	36.13	38.67	37.70	34.93	24.67	21.00	19.40	19.07	17.70	16.13	15.83	16.13	15.40	15.33	17.00	16.73	15.90	16.90	18.90		

MONTHLY OBSERVATIONS: 71 MONTHLY MEAN: 24.21 MONTHLY MAX: 81.1

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-025-0004 POC: 3
COUNTY: (025) Dunn
CITY: (20940) Dunn Center
SITE ADDRESS: 5th Street South West Dunn Center
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.3424230009
LONGITUDE: -102.645864
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 683.66
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	7.7IF	8.6IF	10.3IF	11.2IF	11.5IF	7.9IF	8.6IF	18.0IF	20.6IF	25.3IF	28.6IF	25.1IF	23.1IF	19.0IF	15.7IF	13.9IF	12.9IF	12.9IF	13.2IF	20.7IF	22.6IF	21.9IF	22.8IF	23.3IF	24	16.89
9	23.0rf	22.6rf	20.9rf	19.2rf	AX	19.7rf	18.4rf	15.3rf	14.4rf	16.3rf	16.9rf	16.6rf	16.9rf	16.6rf	16.8rf	16.2rf	15.9rf	16.8rf	22.4rf	27.7rf	30.5rf	32.0rf	31.6rf	31.4rf	23	20.79
10	32.6rf	31.8rf	32.3rf	30.7rf	26.5rf	26.6rf	29.1rf	29.7rf	24.7rf	18.6rf	17.4rf	16.6rf	15.2rf	14.4rf	13.1rf	12.6rf	11.3rf	10.5rf	10.7rf	11.8rf	14.1rf	18.9rf	20.7rf	22.9rf	24	20.53
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	18.4IF	19.3IF	18.7IF	20.3IF	19.0IF	19.3IF	18.8IF	18.2IF	15.8IF	11.5IF	11.5IF	14.8IF	22.4IF	17.6IF	17.7IF	15.5IF	13.4IF	14.2IF	15.3IF	16.5IF	17.1IF	17.6IF	18.6IF	20.7IF	24	17.18
21	23.5rf	23.5rf	20.0rf	19.7rf	21.3rf	21.6rf	21.4rf	18.1rf	16.9rf	18.5rf	19.7rf	23.3rf	29.2rf	32.3rf	34.4rf	38.1rf	40.2rf	43.7rf	51.0rf	56.6rf	53.0rf	51.0rf	50.5rf	51.4rf	24	32.45
22	50.5rf	49.7rf	46.4rf	41.9rf	41.5rf	36.7rf	37.6rf	40.7rf	41.2rf	42.2rf	46.3rf	50.8rf	51.0rf	53.0rf	54.7rf	51.4rf	49.0rf	48.5rf	49.9rf	50.0rf	51.0rf	51.8rf	52.4rf	51.5rf	24	47.49
23	52.1rf	53.5rf	55.1rf	45.9rf	AX	BA	52.5rf	48.0rf	45.3rf	43.6rf	45.8rf	49.7rf	52.1rf	52.3rf	53.9rf	53.7rf	49.8rf	47.9rf	49.1rf	49.8rf	49.1rf	48.9rf	45.4rf	43.2rf	22	49.40
24	40.0rf	39.3rf	38.0rf	37.7rf	37.5rf	AV	AV	33.6rf	33.5rf	32.0rf	31.4rf	31.5rf	33.1rf	35.0rf	36.2rf	36.6rf	36.1rf	33.8rf	31.4rf	30.8rf	30.7rf	29.2rf	28.4rf	27.6rf	22	33.79
25	27.3rf	27.8rf	28.8rf	29.8rf	30.7rf	31.2rf	32.8rf	34.0rf	32.7rf	30.7rf	27.3rf	23.0rf	22.0rf	20.5rf	17.4rf	18.2rf	19.9rf	24.7rf	30.3rf	30.1rf	30.4rf	29.7rf	30.2rf	30.3rf	24	27.49
26	30.4rf	31.2rf	31.8rf	26.9rf	10.0rf	12.8rf	24.7rf	34.5rf	39.7rf	41.9rf	37.7rf	29.6rf	23.7rf	19.7rf	15.1rf	15.0rf	14.1rf	15.1rf	15.4rf	16.0rf	16.5rf	18.2rf	16.7rf	16.3rf	24	23.04
27	16.3rf	17.2rf	16.7rf	17.8rf	21.8rf	26.5rf	28.7rf	26.9rf	22.1rf	20.1rf	21.3rf	23.4rf	22.8rf	22.3rf	22.8rf	22.1rf	21.4rf	21.2rf	21.2rf	21.2rf	22.6rf	27.0rf	25.2rf	27.4rf	24	22.33
28	24.7IT	26.2IT	29.6IT	26.0IT	22.4IT	18.9IT	16.1IT	15.0IT	13.9IT	13.4IT	13.4IT	13.5IT	14.4IT	15.1IT	15.8IT	16.6IT	16.3IT	15.5IT	17.3IT	15.6IT	15.2IT	15.2IT	15.4IT	15.6IT	24	17.55
29	14.5IT	14.8IT	14.7IT	15.0IT	14.9IT	14.6IT	15.0IT	16.2IT	16.2IT	16.0IT	15.8IT	18.1IT	18.7IT	18.0IT	19.7IT	26.9IT	27.7IT	23.9IT	20.5IT	19.1IT	17.9IT	15.9IT	12.9IT	10.5IT	24	17.40
30	10.9rt	12.5rt	14.9rt	18.4rt	15.3rt	22.2rt	21.8rt	22.5rt	24.1rt	29.8rt	33.2rt	36.2rt	37.3rt	40.1rt	35.5rt	30.8rt	26.1rt	26.6rt	26.6rt	25.2rt	24.2rt	26.4rt	27.0rt	28.7rt	24	25.68
31																									0	
NO.:	14	14	14	14	12	12	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14		
MAX:	52.1	53.5	55.1	45.9	41.5	36.7	52.5	48.0	45.3	43.6	46.3	50.8	52.1	53.0	54.7	53.7	49.8	48.5	51.0	56.6	53.0	51.8	52.4	51.5		
AVG:	26.56	27.00	27.01	25.75	22.70	21.50	25.04	26.48	25.79	25.71	26.16	26.59	27.28	26.85	26.34	26.26	25.29	25.38	26.74	27.94	28.21	28.84	28.41	28.63		

MONTHLY OBSERVATIONS: 331 MONTHLY MEAN: 26.41 MONTHLY MAX: 56.6

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-025-0004 POC: 3
COUNTY: (025) Dunn
CITY: (20940) Dunn Center
SITE ADDRESS: 5th Street South West Dunn Center
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.3424230009
LONGITUDE: -102.645864
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 683.66
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	10.4rf	10.1rf	10.4rf	10.1rf	10.8rf	9.8rf	10.2rf	10.9rf	10.1rf	23.4rf	29.0rf	26.5rf	23.8rf	22.5rf	23.4rf	23.0rf	23.5rf	23.0rf	25.8rf	29.7rf	32.3rf	32.9rf	29.3rf	29.5rf	24	20.43
11																									0	
12																									0	
13																									0	
14																									0	
15	10.4rf	12.1rf	12.0rf	12.1rf	12.0rf	12.2rf	11.6rf	12.1rf	12.8rf	12.8rf	12.4rf	14.0rf	18.2rf	35.8rf	60.3rf	65.3rf	47.5rf	39.8rf	39.1rf	47.3rf	37.9rf	31.4rf	30.1rf	24.6rf	24	25.99
16	20.7rf	17.5rf	14.9rf	13.9rf	12.6rf	11.7rf	15.2rf	40.1rf	55.6rf	72.4rf	62.8rf	57.1rf	57.6rf	61.1rf	65.4rf	63.1rf	47.7rf	46.2rf	51.5rf	52.9rf	55.0rf	56.5rf	57.8rf	60.9rf	24	44.59
17	61.4rf	53.7rf	51.0rf	50.1rf	48.1rf	53.4rf	53.5rf	49.5rf	38.9rf	29.7rf	32.2rf	34.3rf	30.5rf	26.9rf	24.7rf	23.1rf	23.6rf	25.4rf	28.4rf	30.6rf	31.8rf	32.4rf	33.1rf	33.6rf	24	37.50
18	33.0rf	34.6rf	34.8rf	33.2rf	30.7rf	25.6rf	26.8rf	22.0rf	21.9rf	20.6rf	21.6rf	21.0rf	21.2rf	23.4rf	23.0rf	17.6rf	14.6rf	15.1rf	16.1rf	15.2rf	15.4rf	15.1rf	13.6rf	12.7rf	24	22.03
19	12.7IF	12.2IF	11.2IF	11.0IF	11.1IF	11.8IF	11.0IF	11.6IF	11.8IF	8.9IF	7.3IF	6.6IF	6.4IF	5.5IF	4.5IF	4.2IF	5.0IF	5.5IF	7.4IF	10.9IF	13.0IF	13.8IF	14.0IF	14.5IF	24	9.66
20	15.1IF	15.4IF	15.0IF	15.3IF	16.3IF	15.3IF	14.5IF	11.6IF	10.3IF	11.0IF	11.0IF	11.1IF	10.7IF	14.4IF	17.1IF	17.8IF	17.7IF	18.2IF	18.8IF	18.6IF	19.2IF	18.0IF	18.7IF	18.8IF	24	15.41
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
MAX:	61.4	53.7	51.0	50.1	48.1	53.4	53.5	49.5	55.6	72.4	62.8	57.1	57.6	61.1	65.4	65.3	47.7	46.2	51.5	52.9	55.0	56.5	57.8	60.9		
AVG:	23.39	22.23	21.33	20.81	20.23	19.97	20.40	22.54	23.06	25.54	25.19	24.37	24.06	27.09	31.20	30.59	25.66	24.74	26.73	29.31	29.23	28.59	28.09	27.80		

MONTHLY OBSERVATIONS: 168 MONTHLY MEAN: 25.09 MONTHLY MAX: 72.4

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-025-0004 POC: 3
COUNTY: (025) Dunn
CITY: (20940) Dunn Center
SITE ADDRESS: 5th Street South West Dunn Center
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.3424230009
LONGITUDE: -102.645864
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 683.66
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	18.8rf	20.0rf	20.0rf	17.7rf	28.8rf	72.9rf	164.9rf	195.0rf	194.1rf	146.0rf	117.2rf	110.8rf	110.0rf	109.8rf	44.2rf	22.3rf	15.0rf	14.3rf	10.7rf	6.0rf	5.9rf	6.6rf	5.9rf	4.8rf	24	60.90
5																									0	
6																									0	
7																									0	
8																									0	
9	8.5IF	7.9IF	7.8IF	8.2IF	8.4IF	8.8IF	8.6IF	8.3IF	8.9IF	10.0IF	10.3IF	9.3IF	9.9IF	11.3IF	13.6IF	15.4IF	15.9IF	15.9IF	18.5IF	31.8IF	43.1IF	47.7IF	50.0IF	58.6IF	24	18.20
10	65.0rf	67.7rf	74.2rf	82.1rf	87.7rf	106.6rf	117.0rf	108.7rf	81.2rf	54.9rf	43.4rf	28.3rf	24.4rf	25.6rf	41.6rf	99.4rf	100.3rf	76.9rf	54.4rf	41.2rf	35.8rf	28.4rf	25.5rf	27.0rf	24	62.39
11	29.4rf	31.2rf	30.6rf	28.2rf	29.3rf	36.7rf	53.2rf	70.3rf	75.4rf	89.6rf	104.6rf	115.2rf	117.8rf	113.4rf	93.6rf	84.1rf	70.5rf	62.8rf	56.8rf	54.5rf	53.0rf	54.3rf	49.1rf	48.4rf	24	64.67
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	65.0	67.7	74.2	82.1	87.7	106.6	164.9	195.0	194.1	146.0	117.2	115.2	117.8	113.4	93.6	99.4	100.3	76.9	56.8	54.5	53.0	54.3	50.0	58.6		
AVG:	30.43	31.70	33.15	34.05	38.55	56.25	85.93	95.58	89.90	75.13	68.88	65.90	65.53	65.03	48.25	55.30	50.43	42.48	35.10	33.38	34.45	34.25	32.63	34.70		

MONTHLY OBSERVATIONS: 96 MONTHLY MEAN: 51.54 MONTHLY MAX: 195.0

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-025-0004 POC: 3
COUNTY: (025) Dunn
CITY: (20940) Dunn Center
SITE ADDRESS: 5th Street South West Dunn Center
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.3424230009
LONGITUDE: -102.645864
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 683.66
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	7.6IT	16.8IT	10.7IT	6.1IT	4.0IT	8.2IT	3.4IT	2.7IT	2.6IT	4.0IT	7.3IT	8.6IT	5.0IT	5.3IT	4.6IT	4.1IT	3.9IT	3.7IT	4.3IT	49.7IT	3.2IT	2.4IT	9.1IT	36.7IT	24	8.92
6																									0	
7																									0	
8	6.3IT	6.8IT	8.2IT	7.1IT	7.8IT	8.1IT	8.9IT	9.0IT	13.3IT	18.7IT	19.2IT	20.0IT	15.4IT	11.5IT	10.4IT	9.8IT	14.1IT	16.1IT	15.0IT	16.4IT	19.3IT	17.9IT	16.0IT	16.1IT	24	12.98
9	18.5IT	13.5IT	17.0IT	13.8IT	15.1IT	18.7IT	16.9IT	16.6IT	22.3IT	21.9IT	19.7IT	18.0IT	20.4IT	20.4IT	22.7IT	21.8IT	22.3IT	22.4IT	20.8IT	18.4IT	24.2IT	25.3IT	20.9IT	22.7IT	24	19.76
10																									0	
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
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25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	18.5	16.8	17.0	13.8	15.1	18.7	16.9	16.6	22.3	21.9	19.7	20.0	20.4	20.4	22.7	21.8	22.3	22.4	20.8	49.7	24.2	25.3	20.9	36.7		
AVG:	10.80	12.37	11.97	9.00	8.97	11.67	9.73	9.43	12.73	14.87	15.40	15.53	13.60	12.40	12.57	11.90	13.43	14.07	13.37	28.17	15.57	15.20	15.33	25.17		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 13.88 MONTHLY MAX: 49.7

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-053-0002 POC: 3
COUNTY: (053) McKenzie
CITY: (00000) Not in a city
SITE ADDRESS: 229 SERVICE RD., WATFORD CITY
SITE COMMENTS: LOCATED IN THE THOEDORE ROOSEVELT NATIONAL PARK APPROXIMATELY 10 KM INSIDE THE PAF
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.5812
LONGITUDE: -103.2995
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 624
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	9.3rf	14.0rf	21.5rf	30.1rf	34.4rf	44.8rf	45.6rf	66.0rf	86.4rf	77.8rf	56.7rf	38.2rf	30.0rf	26.8rf	26.6rf	27.1rf	28.0rf	25.6rf	22.3rf	20.3rf	19.4rf	19.4rf	20.0rf	19.6rf	24	33.75
13	19.4IF	18.9IF	20.9IF	21.0IF	20.4IF	20.8IF	20.3IF	20.0IF	17.0IF	15.8IF	17.2IF	21.5IF	21.3IF	22.4IF	21.8IF	18.2IF	16.8IF	17.1IF	12.8IF	10.0IF	7.8IF	8.7IF	12.7IF	14.3IF	24	17.38
14	14.9IF	15.8IF	18.7IF	21.7IF	21.7IF	20.9IF	20.6IF	20.5IF	18.5IF	10.9IF	9.7IF	11.3IF	10.5IF	9.2IF	7.1IF	7.4IF	6.8IF	7.2IF	7.5IF	8.0IF	8.4IF	10.4IF	13.6IF	13.2IF	24	13.10
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
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30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	19.4	18.9	21.5	30.1	34.4	44.8	45.6	66.0	86.4	77.8	56.7	38.2	30.0	26.8	26.6	27.1	28.0	25.6	22.3	20.3	19.4	19.4	20.0	19.6		
AVG:	14.53	16.23	20.37	24.27	25.50	28.83	28.83	35.50	40.63	34.83	27.87	23.67	20.60	19.47	18.50	17.57	17.20	16.63	14.20	12.77	11.87	12.83	15.43	15.70		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 21.41 MONTHLY MAX: 86.4

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-053-0002 POC: 3
COUNTY: (053) McKenzie
CITY: (00000) Not in a city
SITE ADDRESS: 229 SERVICE RD., WATFORD CITY
SITE COMMENTS: LOCATED IN THE THOEDORE ROOSEVELT NATIONAL PARK APPROXIMATELY 10 KM INSIDE THE PAF
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.5812
LONGITUDE: -103.2995
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 624
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	6.9IF	6.9IF	7.2IF	7.4IF	5.8IF	7.0IF	6.6IF	8.2IF	13.6IF	17.8IF	27.5IF	24.8IF	22.0IF	17.3IF	14.9IF	13.1IF	AV	11.3IF	10.6IF	10.1IF	9.7IF	8.7IF	9.2IF	9.9IF	23	12.02
9	9.9IF	10.3IF	11.0IF	11.5IF	12.0IF	11.6IF	12.3IF	13.6IF	13.0IF	11.9IF	13.2IF	14.2IF	13.4IF	12.8IF	12.7IF	12.0IF	11.6IF	11.2IF	11.7IF	11.3IF	11.0IF	11.1IF	11.8IF	16.2IF	24	12.14
10	20.2IF	21.7IF	21.8IF	22.3IF	23.4IF	23.2IF	25.4IF	23.8IF	19.4IF	16.4IF	14.8IF	14.6IF	12.8IF	11.4IF	9.6IF	8.6IF	8.3IF	8.4IF	8.8IF	9.0IF	8.2IF	9.5IF	9.7IF	16.6IF	24	15.33
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	15.2IF	14.9IF	15.3IF	15.9IF	16.2IF	15.8IF	15.4IF	17.6IF	18.3IF	16.7IF	14.4IF	15.0IF	14.4IF	15.6IF	16.5IF	16.0IF	15.4IF	13.5IF	12.1IF	12.0IF	14.5IF	14.9IF	14.4IF	14.6IF	24	15.19
21	15.2rf	14.8rf	14.7rf	15.1rf	15.4rf	15.5rf	16.1rf	22.9rf	24.9rf	23.6rf	28.0rf	23.3rf	20.9rf	19.4rf	20.7rf	27.3rf	35.3rf	36.6rf	33.8rf	39.8rf	43.1rf	45.6rf	46.4rf	44.4rf	24	26.78
22	43.4rf	45.2rf	45.8rf	44.8rf	40.8rf	41.3rf	47.7rf	54.2rf	51.9rf	50.1rf	48.2rf	50.5rf	50.2rf	49.7rf	51.5rf	52.8rf	51.0rf	51.1rf	53.7rf	52.3rf	50.8rf	50.1rf	52.2rf	54.2rf	24	49.31
23	53.5rf	52.0rf	50.8rf	51.3rf	56.5rf	59.6rf	56.4rf	57.3rf	49.5rf	46.4rf	43.5rf	44.9rf	48.2rf	49.1rf	50.5rf	51.7rf	53.1rf	52.2rf	52.4rf	53.8rf	55.3rf	51.5rf	48.0rf	46.9rf	24	51.43
24	46.0rf	43.8rf	42.8rf	41.2rf	40.5rf	40.9rf	39.2rf	37.8rf	37.3rf	36.6rf	36.0rf	36.2rf	36.2rf	37.0rf	37.0rf	35.1rf	32.6rf	26.3rf	25.5rf	32.3rf	34.6rf	35.3rf	34.0rf	32.9rf	24	36.55
25	32.1rf	31.7rf	32.3rf	33.4rf	35.0rf	34.0rf	35.3rf	34.2rf	29.7rf	24.8rf	24.2rf	22.2rf	19.1rf	18.6rf	19.1rf	16.7rf	16.4rf	19.7rf	22.4rf	19.7rf	16.9rf	14.9rf	15.5rf	15.5rf	24	24.31
26	16.8IF	18.3IF	18.1IF	14.9IF	8.8IF	10.8IF	22.6IF	30.9IF	37.8IF	44.5IF	35.8IF	31.1IF	19.4IF	14.9IF	13.9IF	12.7IF	12.3IF	12.4IF	12.9IF	14.0IF	15.2IF	14.6IF	AV	AV	22	19.67
27	15.7rf	16.5rf	18.1rf	19.7rf	20.8rf	22.3rf	22.7rf	23.0rf	21.8rf	21.8rf	22.7rf	23.0rf	23.2rf	22.8rf	21.5rf	18.8rf	18.5rf	17.8rf	18.6rf	23.2rf	24.0rf	23.1rf	23.1rf	22.5rf	24	21.05
28	AV	AV	23.5IT	24.3IT	22.5IT	21.8IT	21.8IT	20.2IT	15.7IT	13.8IT	13.1IT	15.2IT	14.5IT	13.4IT	14.1IT	15.8IT	16.5IT	16.9IT	16.9IT	16.6IT	16.8IT	16.1IT	16.1IT	16.3IT	22	17.36
29	16.6rt	17.2rt	16.8rt	16.7rt	17.0rt	17.9rt	19.1rt	19.4rt	16.0rt	15.5rt	15.4rt	16.8rt	18.7rt	22.5rt	26.8rt	24.5rt	25.2rt	24.2rt	28.2rt	28.2rt	26.9rt	26.6rt	22.2rt	17.7rt	24	20.67
30	15.3rt	14.9rt	15.4rt	15.3rt	15.1rt	AX	AT	18.2IT	19.9rt	25.0rt	29.2rt	31.4rt	31.1rt	26.8rt	25.7rt	23.7rt	26.4rt	26.2rt	23.5rt	24.3rt	22.7rt	21.6rt	21.1rt	21.8rt	22	22.48
31																									0	
NO.:	13	13	14	14	14	13	13	14	14	14	14	14	14	14	14	14	13	14	14	14	14	14	13	13		
MAX:	53.5	52.0	50.8	51.3	56.5	59.6	56.4	57.3	51.9	50.1	48.2	50.5	50.2	49.7	51.5	52.8	53.1	52.2	53.7	53.8	55.3	51.5	52.2	54.2		
AVG:	23.60	23.71	23.83	23.84	23.56	24.75	26.20	27.24	26.34	26.06	26.14	25.94	24.58	23.66	23.89	23.49	24.82	23.41	23.65	24.76	24.98	24.54	24.90	25.35		

MONTHLY OBSERVATIONS: 329 MONTHLY MEAN: 24.72 MONTHLY MAX: 59.6

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-053-0002 POC: 3
COUNTY: (053) McKenzie
CITY: (00000) Not in a city
SITE ADDRESS: 229 SERVICE RD., WATFORD CITY
SITE COMMENTS: LOCATED IN THE THOEDORE ROOSEVELT NATIONAL PARK APPROXIMATELY 10 KM INSIDE THE PAF
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.5812
LONGITUDE: -103.2995
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 624
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	9.8IF	9.4IF	9.1IF	8.9IF	8.9IF	8.6IF	8.8IF	9.0IF	9.3IF	9.7IF	16.7IF	30.5IF	31.5IF	26.9IF	25.1IF	25.6IF	25.0IF	23.9IF	21.4IF	23.0IF	23.9IF	22.8IF	22.8IF	23.2IF	24	18.08
11																									0	
12																									0	
13																									0	
14																									0	
15	10.1rf	9.5rf	9.8rf	9.6rf	9.4rf	10.9rf	10.5rf	10.5rf	11.5rf	12.6rf	12.9rf	14.3rf	40.9rf	85.5rf	75.4rf	66.6rf	58.2rf	46.3rf	38.2rf	34.8rf	32.3rf	30.7rf	29.2rf	27.7rf	24	29.06
16	26.6rf	25.3rf	24.4rf	23.7rf	22.2rf	21.7rf	20.4rf	20.7rf	31.6rf	53.6rf	AV	57.3rf	52.8rf	52.5rf	57.1rf	65.4rf	67.1rf	66.9rf	57.4rf	44.9rf	46.0rf	45.8rf	46.6rf	47.9rf	23	42.52
17	48.8rf	51.9rf	54.8rf	57.1rf	58.2rf	56.7rf	56.4rf	54.6rf	48.1rf	35.2rf	27.2rf	27.9rf	25.1rf	21.9rf	18.4rf	17.9rf	17.1rf	16.8rf	24.8rf	31.6rf	31.5rf	28.8rf	27.7rf	26.3rf	24	36.03
18	27.6IF	26.7IF	26.8IF	27.8IF	26.9IF	26.0IF	25.8IF	25.3IF	23.7IF	23.6IF	22.0IF	18.5IF	16.7IF	15.5IF	17.6IF	17.7IF	18.4IF	16.2IF	11.6IF	12.8IF	13.7IF	12.6IF	12.7IF	12.0IF	24	19.93
19	11.3	10.9	10.0	8.9	8.0	7.6	8.1	8.1	7.4	7.4	7.5	6.1	6.6	6.0	5.8	5.5	5.2	4.6	4.4	4.9	6.0	7.5	9.1	10.2	24	7.38
20	11.1IF	11.2IF	10.9IF	10.3IF	10.6IF	12.2IF	12.5IF	12.9IF	12.1IF	10.6IF	8.8IF	7.5IF	6.8IF	6.2IF	6.5IF	6.5IF	6.2IF	6.7IF	11.2IF	14.0IF	14.5IF	14.4IF	14.9IF	15.0IF	24	10.57
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	7	7	7	7	7	7	7	7	7	7	6	7	7	7	7	7	7	7	7	7	7	7	7	7		
MAX:	48.8	51.9	54.8	57.1	58.2	56.7	56.4	54.6	48.1	53.6	27.2	57.3	52.8	85.5	75.4	66.6	67.1	66.9	57.4	44.9	46.0	45.8	46.6	47.9		
AVG:	20.76	20.70	20.83	20.90	20.60	20.53	20.36	20.16	20.53	21.81	15.85	23.16	25.77	30.64	29.41	29.31	28.17	25.91	24.14	23.71	23.99	23.23	23.29	23.19		

MONTHLY OBSERVATIONS: 167 MONTHLY MEAN: 23.25 MONTHLY MAX: 85.5

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-053-0002 POC: 3
COUNTY: (053) McKenzie
CITY: (00000) Not in a city
SITE ADDRESS: 229 SERVICE RD., WATFORD CITY
SITE COMMENTS: LOCATED IN THE THOEDORE ROOSEVELT NATIONAL PARK APPROXIMATELY 10 KM INSIDE THE PAF
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.5812
LONGITUDE: -103.2995
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 624
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	13.7rf	14.9rf	17.0rf	21.0rf	47.6rf	126.0rf	227.2rf	254.3rf	273.8rf	300.9rf	284.0rf	184.1rf	127.1rf	53.7rf	17.5rf	13.8rf	14.3rf	15.3rf	12.7rf	6.2rf	5.5rf	5.9rf	5.6rf	3.5rf	24	85.23
5																									0	
6																									0	
7																									0	
8																									0	
9	7.7rf	8.3rf	8.2rf	8.1rf	7.9rf	8.0rf	8.5rf	8.2rf	9.2rf	9.0rf	9.5rf	9.6rf	10.7rf	12.4rf	17.4rf	20.1rf	26.6rf	29.6rf	47.9rf	51.2rf	51.6rf	52.2rf	52.5rf	53.7rf	24	22.00
10	54.2rf	54.3rf	58.7rf	57.0rf	57.8rf	AX	60.6rf	63.9rf	69.6rf	35.9rf	22.3rf	22.2rf	24.8rf	33.8rf	53.8rf	51.1rf	41.8rf	21.0rf	24.1rf	28.6rf	23.3rf	22.1rf	22.2rf	22.1rf	23	40.23
11	22.7rf	21.5rf	21.5rf	22.9rf	22.8rf	23.8rf	32.6rf	62.7rf	92.4rf	82.2rf	83.4rf	85.2rf	95.9rf	105.9rf	99.0rf	95.7rf	84.0rf	78.0rf	70.8rf	62.0rf	58.3rf	53.8rf	55.1rf	56.3rf	24	62.02
12																									0	
13																									0	
14																									0	
15																									0	
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27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	54.2	54.3	58.7	57.0	57.8	126.0	227.2	254.3	273.8	300.9	284.0	184.1	127.1	105.9	99.0	95.7	84.0	78.0	70.8	62.0	58.3	53.8	55.1	56.3		
AVG:	24.58	24.75	26.35	27.25	34.03	52.60	82.23	97.28	111.25	107.00	99.80	75.28	64.63	51.45	46.93	45.18	41.68	35.98	38.88	37.00	34.68	33.50	33.85	33.90		

MONTHLY OBSERVATIONS: 95 MONTHLY MEAN: 52.50 MONTHLY MAX: 300.9

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-053-0002 POC: 3
COUNTY: (053) McKenzie
CITY: (00000) Not in a city
SITE ADDRESS: 229 SERVICE RD., WATFORD CITY
SITE COMMENTS: LOCATED IN THE THOEDORE ROOSEVELT NATIONAL PARK APPROXIMATELY 10 KM INSIDE THE PAF
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.5812
LONGITUDE: -103.2995
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 624
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	7.1	16.4	10.0	5.9	3.8	3.2	3.2	2.7	2.3	2.5	2.7	3.1	3.7	3.4	3.7	3.2	3.0	2.9	2.4	3.0	3.2	2.9	2.4	2.2	24	4.12
6																									0	
7																									0	
8	10.3rt	11.1rt	9.0rt	9.4rt	11.2rt	26.9rt	100.2rt	46.0rt	16.7rt	12.8rt	16.3rt	19.2rt	20.5rt	14.5rt	17.4rt	15.0rt	15.7rt	19.7rt	20.0rt	28.0rt	30.6rt	16.0rt	12.1rt	16.0rt	24	21.44
9	18.7rt	12.6rt	10.5rt	8.7rt	8.2rt	17.6rt	70.8rt	16.8rt	15.5rt	15.3rt	18.1rt	26.9rt	31.9rt	35.9rt	26.7rt	18.7rt	17.9rt	25.5rt	19.8rt	16.0rt	18.8rt	14.4rt	16.1rt	17.7rt	24	20.80
10																									0	
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
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25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	18.7	16.4	10.5	9.4	11.2	26.9	100.2	46.0	16.7	15.3	18.1	26.9	31.9	35.9	26.7	18.7	17.9	25.5	20.0	28.0	30.6	16.0	16.1	17.7		
AVG:	12.03	13.37	9.83	8.00	7.73	15.90	58.07	21.83	11.50	10.20	12.37	16.40	18.70	17.93	15.93	12.30	12.20	16.03	14.07	15.67	17.53	11.10	10.20	11.97		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 15.45 MONTHLY MAX: 100.2

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-057-0004 POC: 3
COUNTY: (057) Mercer
CITY: (00000) Not in a city
SITE ADDRESS: 6024 HIGHWAY 200
SITE COMMENTS:
MONITOR COMMENTS: *

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.2986110009
LONGITUDE: -101.766944
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 630
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	7.0rf	14.7rf	19.5rf	31.6rf	47.7rf	61.4rf	74.3rf	73.9rf	57.4rf	32.1rf	20.6rf	21.6rf	16.3rf	12.5rf	12.0rf	11.8rf	12.1rf	13.0rf	14.5rf	16.7rf	17.6rf	15.9rf	20.6rf	25.4rf	24	27.09
13	23.4rf	22.5rf	23.6rf	22.9rf	21.9rf	24.0rf	27.7rf	31.7rf	38.2rf	AX	38.7rf	30.8rf	29.5rf	30.2rf	29.5rf	26.9rf	23.6rf	22.5rf	22.1rf	24.0rf	24.9rf	25.9rf	24.9rf	25.6rf	23	26.74
14	23.7IF	19.2IF	17.6IF	15.5IF	13.4IF	11.4IF	12.1IF	12.6IF	14.9IF	16.5IF	18.7IF	19.8IF	16.1IF	16.1IF	13.2IF	10.7IF	10.2IF	7.9IF	9.2IF	13.3IF	14.8IF	13.1IF	10.7IF	10.6IF	24	14.22
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	23.7	22.5	23.6	31.6	47.7	61.4	74.3	73.9	57.4	32.1	38.7	30.8	29.5	30.2	29.5	26.9	23.6	22.5	22.1	24.0	24.9	25.9	24.9	25.6		
AVG:	18.03	18.80	20.23	23.33	27.67	32.27	38.03	39.40	36.83	24.30	26.00	24.07	20.63	19.60	18.23	16.47	15.30	14.47	15.27	18.00	19.10	18.30	18.73	20.53		

MONTHLY OBSERVATIONS: 71 MONTHLY MEAN: 22.63 MONTHLY MAX: 74.3

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-057-0004 POC: 3
COUNTY: (057) Mercer
CITY: (00000) Not in a city
SITE ADDRESS: 6024 HIGHWAY 200
SITE COMMENTS:
MONITOR COMMENTS: *

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.2986110009
LONGITUDE: -101.766944
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 630
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	7.4rf	7.1rf	7.5rf	7.7rf	AX	8.8rf	8.9rf	9.2rf	13.6rf	24.4rf	38.3rf	34.5rf	30.6rf	29.6rf	27.6rf	27.3rf	26.1rf	25.2rf	25.3rf	26.2rf	26.1rf	26.8rf	26.6rf	26.0rf	23	21.34
9	25.6rf	25.5rf	25.9rf	25.2rf	24.6rf	24.7rf	24.0rf	22.5rf	21.2rf	18.1rf	16.1rf	17.8rf	21.7rf	26.3rf	28.8rf	30.7rf	32.2rf	31.1rf	31.9rf	35.2rf	33.9rf	37.7rf	38.9rf	38.4rf	24	27.42
10	40.7rf	38.6rf	38.2rf	37.0rf	35.3rf	36.9rf	38.3rf	38.8rf	36.8rf	35.6rf	34.6rf	32.0rf	27.5rf	25.1rf	22.0rf	20.5rf	19.4rf	18.4rf	18.4rf	19.9rf	22.2rf	21.9rf	21.6rf	20.9rf	24	29.19
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	10.4IF	10.3IF	9.8IF	10.5IF	11.7IF	13.0IF	13.5IF	12.9IF	12.4IF	11.9IF	12.4IF	12.5IF	13.1IF	15.5IF	14.2IF	13.2IF	13.9IF	14.1IF	15.5IF	15.3IF	18.6IF	17.7IF	16.7IF	17.2IF	24	13.60
21	17.0rf	17.4rf	16.6rf	15.9rf	16.3rf	17.4rf	16.8rf	17.7rf	21.2rf	24.7rf	32.0rf	49.9rf	47.4rf	47.6rf	43.9rf	42.4rf	42.0rf	44.4rf	44.4rf	39.3rf	40.6rf	40.0rf	41.1rf	40.3rf	24	32.35
22	41.1rf	41.2rf	40.2rf	40.8rf	40.2rf	AX	BA	36.1rf	33.4rf	31.0rf	31.2rf	41.8rf	54.4rf	58.5rf	62.3rf	59.6rf	55.5rf	56.4rf	57.3rf	54.4rf	55.1rf	54.6rf	53.0rf	53.7rf	22	47.81
23	53.8rf	51.9rf	52.2rf	51.8rf	50.8rf	46.9rf	49.0rf	51.9rf	55.6rf	55.8rf	62.2rf	63.5rf	59.0rf	55.8rf	58.0rf	56.7rf	56.4rf	51.4rf	52.0rf	54.3rf	53.3rf	50.3rf	46.8rf	41.5rf	24	53.37
24	38.3rf	34.6rf	33.8rf	32.9rf	32.3rf	30.0rf	27.0rf	30.2rf	29.1rf	30.0rf	28.4rf	28.4rf	29.1rf	29.4rf	30.4rf	31.4rf	31.9rf	32.0rf	30.9rf	29.6rf	30.0rf	30.9rf	29.5rf	29.2rf	24	30.80
25	29.7rf	31.4rf	31.6rf	31.5rf	31.3rf	31.3rf	32.2rf	33.4rf	33.6rf	33.5rf	32.7rf	32.4rf	33.2rf	32.7rf	32.4rf	31.7rf	31.4rf	28.8rf	30.0rf	36.0rf	32.6rf	31.8rf	30.3rf	29.5rf	24	31.88
26	29.9rf	31.6rf	32.6rf	35.4rf	36.0rf	35.7rf	36.9rf	26.2rf	30.4rf	36.3rf	43.8rf	46.1rf	41.7rf	39.8rf	35.2rf	30.9rf	28.2rf	26.2rf	33.7rf	32.4rf	28.1rf	25.1rf	17.8rf	31.1rf	24	32.96
27	34.0rf	35.7rf	34.7rf	36.8rf	35.1rf	34.0rf	32.9rf	31.0rf	26.0rf	21.1rf	16.5rf	17.2rf	17.2rf	18.7rf	20.1rf	17.1rf	17.2rf	23.5rf	25.5rf	25.7rf	25.6rf	25.6rf	23.2rf	25.2rf	24	25.82
28	24.6IT	24.3IT	24.7IT	25.4IT	24.7IT	19.2IT	16.3IT	16.3IT	15.9IT	15.8IT	15.4IT	15.8IT	15.4IT	15.6IT	15.8IT	16.3IT	15.9IT	15.1IT	16.0IT	16.5IT	18.0IT	15.9IT	16.3IT	15.8IT	24	17.96
29	15.1IT	15.9IT	16.0IT	15.3IT	15.2IT	15.5IT	15.7IT	15.6IT	17.2IT	17.4IT	16.8IT	14.7IT	14.4IT	15.1IT	16.6IT	15.5IT	17.0IT	16.9IT	19.5IT	21.3IT	19.0IT	21.8IT	17.0IT	15.7IT	24	16.68
30	14.7rt	15.4rt	21.0rt	26.8rt	34.4rt	38.1rt	37.8rt	37.2rt	35.1rt	30.6rt	29.8rt	31.7rt	33.3rt	32.0rt	37.2rt	34.1rt	29.0rt	AV	31.6rt	27.2rt	26.4rt	22.4rt	22.6rt	24.4rt	23	29.25
31																									0	
NO.:	14	14	14	14	13	13	13	14	14	14	14	14	14	14	14	14	14	13	14	14	14	14	14	14		
MAX:	53.8	51.9	52.2	51.8	50.8	46.9	49.0	51.9	55.6	55.8	62.2	63.5	59.0	58.5	62.3	59.6	56.4	56.4	57.3	54.4	55.1	54.6	53.0	53.7		
AVG:	27.31	27.21	27.49	28.07	29.84	27.04	26.87	27.07	27.25	27.59	29.30	31.31	31.29	31.55	31.75	30.53	29.72	29.50	30.86	30.95	30.68	30.18	28.67	29.21		

MONTHLY OBSERVATIONS: 332 MONTHLY MEAN: 29.23 MONTHLY MAX: 63.5

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-057-0004 POC: 3
COUNTY: (057) Mercer
CITY: (00000) Not in a city
SITE ADDRESS: 6024 HIGHWAY 200
SITE COMMENTS:
MONITOR COMMENTS: *

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.2986110009
LONGITUDE: -101.766944
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 630
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
11																									0	
12																									0	
13																									0	
14																									0	
15	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
16	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
17	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
18	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
19	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
20	AS	AS	AS	AS	AX	BA	BA	14.0IF	11.0IF	12.2IF	15.4IF	17.7IF	18.4IF	18.4IF	17.9IF	17.8IF	18.2IF	19.8IF	20.0IF	21.0IF	21.7IF	20.6IF	19.6IF	18.2IF	17	17.76
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
MAX:								14.0	11.0	12.2	15.4	17.7	18.4	18.4	17.9	17.8	18.2	19.8	20.0	21.0	21.7	20.6	19.6	18.2		
AVG:								14.00	11.00	12.20	15.40	17.70	18.40	18.40	17.90	17.80	18.20	19.80	20.00	21.00	21.70	20.60	19.60	18.20		

MONTHLY OBSERVATIONS: 17 MONTHLY MEAN: 17.76 MONTHLY MAX: 21.7

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-057-0004 POC: 3
COUNTY: (057) Mercer
CITY: (00000) Not in a city
SITE ADDRESS: 6024 HIGHWAY 200
SITE COMMENTS:
MONITOR COMMENTS: *

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.2986110009
LONGITUDE: -101.766944
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 630
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	14.4rf	16.1rf	16.4rf	17.6rf	18.2rf	18.3rf	27.9rf	86.5rf	AX	AX	169.8rf	121.8rf	86.7rf	85.9rf	79.4rf	115.7rf	87.5rf	41.9rf	24.1rf	25.2rf	13.0rf	9.3rf	10.2rf	7.9rf	22	49.72
5																									0	
6																									0	
7																									0	
8																									0	
9	7.9IF	8.2IF	8.4IF	8.5IF	8.4IF	8.8IF	8.9IF	9.5IF	9.2IF	10.4IF	11.5IF	11.7IF	11.8IF	11.9IF	12.5IF	12.0IF	12.7IF	13.8IF	16.1IF	16.2IF	16.0IF	16.0IF	17.9IF	19.6IF	24	12.00
10	26.2rf	34.7rf	42.2rf	55.3rf	60.2rf	61.4rf	85.6rf	95.3rf	110.6rf	103.6rf	92.8rf	66.4rf	45.4rf	34.7rf	31.2rf	42.6rf	104.5rf	206.6rf	174.7rf	122.9rf	58.2rf	51.8rf	64.4rf	55.0rf	24	76.10
11	62.2rf	56.2rf	41.7rf	38.4rf	39.3rf	51.1rf	64.2rf	76.5rf	90.5rf	118.9rf	141.3rf	146.7rf	138.8rf	115.7rf	102.4rf	85.7rf	77.0rf	71.7rf	74.3rf	66.6rf	63.9rf	61.5rf	56.4rf	54.2rf	24	78.97
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
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26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	4	4	4	4	4	4	4	4	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	62.2	56.2	42.2	55.3	60.2	61.4	85.6	95.3	110.6	118.9	169.8	146.7	138.8	115.7	102.4	115.7	104.5	206.6	174.7	122.9	63.9	61.5	64.4	55.0		
AVG:	27.68	28.80	27.18	29.95	31.53	34.90	46.65	66.95	70.10	77.63	103.85	86.65	70.68	62.05	56.38	64.00	70.43	83.50	72.30	57.73	37.78	34.65	37.23	34.18		

MONTHLY OBSERVATIONS: 94 MONTHLY MEAN: 54.29 MONTHLY MAX: 206.6

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-057-0004 POC: 3
COUNTY: (057) Mercer
CITY: (00000) Not in a city
SITE ADDRESS: 6024 HIGHWAY 200
SITE COMMENTS:
MONITOR COMMENTS: *

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.2986110009
LONGITUDE: -101.766944
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 630
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	7.7rt	8.4rt	9.3rt	16.4rt	16.3rt	8.2rt	6.3rt	6.6rt	4.1rt	3.2rt	3.8rt	5.1rt	13.3rt	18.5rt	17.7rt	16.8rt	23.2rt	8.1rt	4.4rt	77.8rt	89.5rt	110.9rt	27.9rt	6.8rt	24	21.26
6																									0	
7																									0	
8	4.5IT	5.0IT	5.6IT	6.1IT	6.5IT	7.1IT	7.3IT	7.5IT	8.5IT	10.8IT	13.0IT	14.7IT	15.7IT	19.7IT	22.2IT	18.1IT	15.9IT	14.5IT	17.2IT	18.1IT	16.9IT	20.0IT	17.6IT	16.8IT	24	12.89
9	15.9rt	16.2rt	17.2rt	18.1rt	18.5rt	17.9rt	17.5rt	18.0rt	20.6rt	25.3rt	22.3rt	22.8rt	16.5rt	12.6rt	17.4rt	19.2rt	19.3rt	19.8rt	24.1rt	25.7rt	26.2rt	27.8rt	26.7rt	28.2rt	24	20.58
10																									0	
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
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26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	15.9	16.2	17.2	18.1	18.5	17.9	17.5	18.0	20.6	25.3	22.3	22.8	16.5	19.7	22.2	19.2	23.2	19.8	24.1	77.8	89.5	110.9	27.9	28.2		
AVG:	9.37	9.87	10.70	13.53	13.77	11.07	10.37	10.70	11.07	13.10	13.03	14.20	15.17	16.93	19.10	18.03	19.47	14.13	15.23	40.53	44.20	52.90	24.07	17.27		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 18.24 MONTHLY MAX: 110.9

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-057-0004 POC: 4
COUNTY: (057) Mercer
CITY: (00000) Not in a city
SITE ADDRESS: 6024 HIGHWAY 200
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.2986110009
LONGITUDE: -101.766944
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 630
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	6.7rf	14.2rf	19.4rf	31.3rf	46.4rf	60.6rf	72.6rf	71.8rf	55.8rf	31.4rf	19.7rf	20.6rf	15.4rf	11.8rf	11.6rf	11.4rf	11.5rf	12.6rf	13.9rf	16.0rf	16.8rf	15.3rf	19.4rf	24.7rf	24	26.29
13	22.1rf	21.4rf	21.8rf	21.9rf	20.7rf	22.9rf	26.5rf	31.5rf	37.0rf	AX	37.0rf	29.8rf	28.5rf	29.2rf	28.1rf	26.0rf	22.6rf	21.4rf	20.7rf	22.8rf	23.6rf	24.4rf	24.4rf	24.8rf	23	25.61
14	22.9IF	19.4IF	17.4IF	15.6IF	13.0IF	11.1IF	11.8IF	12.3IF	13.9IF	16.1IF	17.9IF	19.3IF	15.2IF	15.0IF	12.5IF	10.3IF	9.8IF	7.7IF	8.7IF	12.8IF	14.6IF	13.0IF	10.5IF	10.4IF	24	13.80
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	22.9	21.4	21.8	31.3	46.4	60.6	72.6	71.8	55.8	31.4	37.0	29.8	28.5	29.2	28.1	26.0	22.6	21.4	20.7	22.8	23.6	24.4	24.4	24.8		
AVG:	17.23	18.33	19.53	22.93	26.70	31.53	36.97	38.53	35.57	23.75	24.87	23.23	19.70	18.67	17.40	15.90	14.63	13.90	14.43	17.20	18.33	17.57	18.10	19.97		

MONTHLY OBSERVATIONS: 71 MONTHLY MEAN: 21.85 MONTHLY MAX: 72.6

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-057-0004 POC: 4
COUNTY: (057) Mercer
CITY: (00000) Not in a city
SITE ADDRESS: 6024 HIGHWAY 200
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.2986110009
LONGITUDE: -101.766944
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 630
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	7.2rf	7.0rf	7.1rf	7.5rf	AX	8.3rf	8.4rf	8.8rf	12.9rf	23.6rf	36.2rf	32.4rf	28.6rf	27.8rf	26.2rf	26.0rf	24.6rf	23.9rf	24.1rf	25.2rf	25.3rf	25.6rf	25.0rf	24.8rf	23	20.28
9	24.0rf	24.1rf	24.3rf	24.3rf	23.1rf	23.5rf	22.8rf	21.5rf	20.5rf	17.4rf	15.5rf	17.0rf	20.7rf	25.3rf	27.9rf	30.0rf	29.8rf	29.9rf	30.0rf	32.7rf	32.3rf	36.0rf	37.9rf	37.2rf	24	26.15
10	38.0rf	36.9rf	36.2rf	35.3rf	33.0rf	35.0rf	36.6rf	37.0rf	35.0rf	33.9rf	33.3rf	31.3rf	26.8rf	24.2rf	21.5rf	19.7rf	19.0rf	17.7rf	17.8rf	19.6rf	21.9rf	21.6rf	20.8rf	20.4rf	24	28.02
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	10.4IF	10.1IF	9.9IF	10.4IF	11.5IF	12.6IF	13.4IF	12.5IF	12.2IF	11.2IF	12.1IF	11.9IF	13.0IF	15.2IF	13.7IF	12.4IF	12.9IF	13.6IF	14.9IF	14.7IF	17.6IF	16.7IF	15.9IF	16.6IF	24	13.14
21	16.5rf	17.2rf	16.2rf	15.1rf	15.6rf	17.4rf	16.4rf	17.5rf	20.8rf	24.1rf	31.2rf	47.7rf	45.4rf	45.9rf	42.3rf	41.3rf	40.7rf	43.5rf	42.9rf	38.3rf	39.5rf	38.6rf	39.9rf	40.6rf	24	31.44
22	40.5rf	40.8rf	39.4rf	39.9rf	39.3rf	AX	BA	31.4rf	29.2rf	27.4rf	27.7rf	36.8rf	47.8rf	52.8rf	55.1rf	51.2rf	49.1rf	50.0rf	50.2rf	48.9rf	50.2rf	49.0rf	47.8rf	48.3rf	22	43.31
23	48.1rf	47.9rf	48.0rf	46.3rf	45.0rf	41.9rf	43.8rf	47.3rf	49.0rf	51.1rf	57.2rf	57.2rf	52.3rf	49.8rf	51.6rf	52.5rf	50.8rf	46.7rf	46.3rf	49.2rf	49.0rf	45.2rf	42.7rf	38.1rf	24	48.21
24	35.2rf	32.2rf	30.7rf	30.2rf	29.1rf	26.7rf	24.2rf	28.0rf	26.6rf	26.9rf	25.4rf	25.6rf	25.3rf	26.3rf	26.8rf	28.2rf	28.6rf	27.5rf	27.0rf	26.7rf	26.4rf	27.5rf	26.7rf	25.7rf	24	27.65
25	27.1rf	28.4rf	28.4rf	28.1rf	28.3rf	28.2rf	29.0rf	30.0rf	29.7rf	29.9rf	28.9rf	28.8rf	28.4rf	28.0rf	27.9rf	27.9rf	27.6rf	25.5rf	25.8rf	31.3rf	29.0rf	28.2rf	26.3rf	25.8rf	24	28.19
26	26.2rf	27.8rf	28.9rf	31.2rf	31.9rf	32.2rf	32.7rf	22.6rf	26.7rf	30.7rf	36.8rf	39.6rf	35.6rf	34.4rf	29.4rf	26.7rf	23.8rf	22.4rf	28.7rf	27.0rf	23.6rf	20.6rf	15.1rf	25.5rf	24	28.34
27	28.4rf	30.1rf	29.6rf	31.5rf	29.6rf	29.1rf	27.4rf	25.5rf	21.9rf	17.5rf	14.0rf	14.5rf	14.6rf	15.8rf	17.1rf	14.4rf	14.7rf	19.6rf	21.5rf	21.7rf	21.9rf	21.0rf	19.5rf	21.4rf	24	21.76
28	20.5IT	20.5IT	20.4IT	21.3IT	20.7IT	15.9IT	13.6IT	13.7IT	13.4IT	13.3IT	13.6IT	13.9IT	13.4IT	13.1IT	13.2IT	13.7IT	13.4IT	12.9IT	13.8IT	14.1IT	15.2IT	13.7IT	13.9IT	13.5IT	24	15.20
29	12.7IT	13.7IT	13.2IT	12.9IT	12.9IT	12.8IT	13.3IT	13.3IT	14.6IT	14.8IT	14.4IT	12.6IT	12.1IT	12.9IT	14.0IT	13.3IT	14.5IT	14.3IT	16.7IT	18.8IT	16.7IT	19.4IT	14.5IT	13.9IT	24	14.26
30	12.7rt	13.2rt	18.0rt	23.0rt	30.8rt	33.5rt	32.4rt	32.3rt	31.4rt	26.1rt	25.3rt	26.9rt	27.5rt	27.3rt	32.1rt	29.5rt	24.3rt	AV	27.4rt	22.7rt	22.7rt	19.3rt	19.2rt	20.8rt	23	25.15
31																									0	
NO.:	14	14	14	14	13	13	13	14	14	14	14	14	14	14	14	14	14	13	14	14	14	14	14	14		
MAX:	48.1	47.9	48.0	46.3	45.0	41.9	43.8	47.3	49.0	51.1	57.2	57.2	52.3	52.8	55.1	52.5	50.8	50.0	50.2	49.2	50.2	49.0	47.8	48.3		
AVG:	24.82	24.99	25.02	25.50	26.98	24.39	24.15	24.39	24.56	24.85	26.54	28.30	27.96	28.49	28.49	27.63	26.70	26.73	27.65	27.92	27.95	27.31	26.09	26.61		

MONTHLY OBSERVATIONS: 332 MONTHLY MEAN: 26.43 MONTHLY MAX: 57.2

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-057-0004 POC: 4
COUNTY: (057) Mercer
CITY: (00000) Not in a city
SITE ADDRESS: 6024 HIGHWAY 200
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.2986110009
LONGITUDE: -101.766944
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 630
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
11																									0	
12																									0	
13																									0	
14																									0	
15	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
16	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
17	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
18	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
19	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	AS	0	
20	AS	AS	AS	AS	AX	BA	BA	11.6IF	9.5IF	10.8IF	13.3IF	15.6IF	16.3IF	15.9IF	15.8IF	15.9IF	15.6IF	17.2IF	17.2IF	18.4IF	19.0IF	17.8IF	17.4IF	15.4IF	17	15.45
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:								1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
MAX:								11.6	9.5	10.8	13.3	15.6	16.3	15.9	15.8	15.9	15.6	17.2	17.2	18.4	19.0	17.8	17.4	15.4		
AVG:								11.60	9.50	10.80	13.30	15.60	16.30	15.90	15.80	15.90	15.60	17.20	17.20	18.40	19.00	17.80	17.40	15.40		

MONTHLY OBSERVATIONS: 17 MONTHLY MEAN: 15.45 MONTHLY MAX: 19.0

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-057-0004 POC: 4
COUNTY: (057) Mercer
CITY: (00000) Not in a city
SITE ADDRESS: 6024 HIGHWAY 200
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.2986110009
LONGITUDE: -101.766944
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 630
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	11.7rf	13.3rf	13.5rf	14.8rf	14.9rf	15.7rf	24.4rf	76.4rf	AX	AX	156.3rf	107.0rf	77.2rf	75.8rf	68.8rf	102.2rf	75.1rf	35.7rf	20.1rf	21.2rf	10.5rf	7.8rf	8.4rf	6.8rf	22	43.53
5																									0	
6																									0	
7																									0	
8																									0	
9	7.0IF	7.0IF	7.1IF	7.2IF	7.1IF	7.3IF	7.7IF	8.1IF	7.7IF	8.9IF	9.5IF	9.7IF	9.9IF	9.9IF	10.4IF	10.1IF	10.5IF	11.4IF	13.3IF	13.6IF	13.4IF	13.4IF	15.2IF	16.5IF	24	10.08
10	22.4rf	29.3rf	36.7rf	47.4rf	51.4rf	54.0rf	74.8rf	83.1rf	97.7rf	93.0rf	80.1rf	57.0rf	38.7rf	29.1rf	26.3rf	36.5rf	89.6rf	182.2rf	153.0rf	106.9rf	50.0rf	43.9rf	55.7rf	45.7rf	24	66.02
11	53.3rf	47.8rf	35.3rf	32.4rf	33.2rf	44.5rf	55.7rf	67.0rf	81.0rf	105.0rf	126.2rf	131.8rf	123.2rf	103.7rf	88.2rf	74.2rf	66.1rf	62.9rf	63.7rf	58.5rf	56.6rf	53.7rf	48.7rf	47.2rf	24	69.16
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
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23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	4	4	4	4	4	4	4	4	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	53.3	47.8	36.7	47.4	51.4	54.0	74.8	83.1	97.7	105.0	156.3	131.8	123.2	103.7	88.2	102.2	89.6	182.2	153.0	106.9	56.6	53.7	55.7	47.2		
AVG:	23.60	24.35	23.15	25.45	26.65	30.38	40.65	58.65	62.13	68.97	93.03	76.38	62.25	54.63	48.43	55.75	60.33	73.05	62.53	50.05	32.63	29.70	32.00	29.05		

MONTHLY OBSERVATIONS: 94 MONTHLY MEAN: 47.28 MONTHLY MAX: 182.2

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-057-0004 POC: 4
COUNTY: (057) Mercer
CITY: (00000) Not in a city
SITE ADDRESS: 6024 HIGHWAY 200
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.2986110009
LONGITUDE: -101.766944
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 630
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	7.2rt	7.7rt	8.5rt	15.5rt	15.1rt	7.5rt	5.7rt	5.7rt	3.9rt	3.0rt	3.6rt	4.8rt	11.5rt	16.7rt	16.5rt	16.0rt	22.2rt	7.4rt	3.9rt	80.1rt	92.3rt	105.7rt	27.9rt	6.7rt	24	20.63
6																									0	
7																									0	
8	4.2IT	4.7IT	5.2IT	5.7IT	6.4IT	6.7IT	6.8IT	6.9IT	7.8IT	9.9IT	12.2IT	13.8IT	14.9IT	19.2IT	21.5IT	17.2IT	15.0IT	13.8IT	16.1IT	16.9IT	16.2IT	19.2IT	16.7IT	15.9IT	24	12.20
9	15.1rt	16.0rt	16.8rt	16.6rt	17.8rt	16.8rt	16.8rt	16.8rt	19.9rt	24.8rt	20.7rt	21.5rt	15.7rt	12.0rt	16.4rt	18.6rt	18.2rt	19.2rt	22.7rt	24.9rt	24.8rt	25.4rt	25.3rt	26.9rt	24	19.57
10																									0	
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
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22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	15.1	16.0	16.8	16.6	17.8	16.8	16.8	16.8	19.9	24.8	20.7	21.5	15.7	19.2	21.5	18.6	22.2	19.2	22.7	80.1	92.3	105.7	27.9	26.9		
AVG:	8.83	9.47	10.17	12.60	13.10	10.33	9.77	9.80	10.53	12.57	12.17	13.37	14.03	15.97	18.13	17.27	18.47	13.47	14.23	40.63	44.43	50.10	23.30	16.50		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 17.47 MONTHLY MAX: 105.7

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-065-0002 POC: 3
COUNTY: (065) Oliver
CITY: (00000) Not in a city
SITE ADDRESS: 1575 HIGHWAY 31
SITE COMMENTS: *
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.1858330009
LONGITUDE: -101.428056
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 697
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	4.6rf	16.0rf	36.1rf	47.6rf	59.0rf	56.6rf	70.2rf	71.1rf	59.6rf	39.8rf	24.6rf	19.0rf	15.8rf	12.5rf	11.8rf	11.8rf	12.1rf	11.4rf	16.4rf	22.8rf	22.3rf	17.3rf	22.7rf	30.6rf	24	29.65
13	20.5rf	12.4rf	20.2rf	20.3rf	21.5rf	26.1rf	31.6rf	35.4rf	38.6rf	36.6rf	40.4rf	41.2rf	34.6rf	31.9rf	29.2rf	28.1rf	26.7rf	26.7rf	26.8rf	26.2rf	26.8rf	28.4rf	25.5rf	24.4rf	24	28.34
14	22.2IF	18.5IF	17.3IF	15.1IF	12.6IF	11.6IF	11.5IF	11.7IF	16.4IF	18.8IF	17.2IF	15.9IF	16.0IF	15.3IF	15.6IF	14.2IF	13.6IF	12.4IF	12.1IF	9.7IF	13.6IF	12.0IF	12.4IF	14.1IF	24	14.58
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
21																									0	
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24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	22.2	18.5	36.1	47.6	59.0	56.6	70.2	71.1	59.6	39.8	40.4	41.2	34.6	31.9	29.2	28.1	26.7	26.7	26.8	26.2	26.8	28.4	25.5	30.6		
AVG:	15.77	15.63	24.53	27.67	31.03	31.43	37.77	39.40	38.20	31.73	27.40	25.37	22.13	19.90	18.87	18.03	17.47	16.83	18.43	19.57	20.90	19.23	20.20	23.03		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 24.19 MONTHLY MAX: 71.1

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-065-0002 POC: 3
COUNTY: (065) Oliver
CITY: (00000) Not in a city
SITE ADDRESS: 1575 HIGHWAY 31
SITE COMMENTS: *
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.1858330009
LONGITUDE: -101.428056
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 697
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	10.6rf	9.7rf	8.3rf	8.8rf	9.7rf	11.6rf	13.6rf	16.5rf	23.0rf	27.4rf	36.2rf	36.4rf	27.0rf	24.6rf	26.3rf	25.0rf	25.6rf	25.4rf	25.5rf	26.0rf	27.0rf	27.2rf	27.7rf	27.5rf	24	21.94
9	27.5rf	27.2rf	26.9rf	26.0rf	26.4rf	23.8rf	22.4rf	21.0rf	18.0rf	16.8rf	17.3rf	17.8rf	22.4rf	26.8rf	28.2rf	29.5rf	29.7rf	32.5rf	34.1rf	35.7rf	38.0rf	40.6rf	42.0rf	42.7rf	24	28.05
10	40.5rf	39.0rf	40.9rf	42.4rf	39.3rf	37.9rf	38.3rf	36.5rf	36.5rf	32.2rf	31.4rf	30.9rf	28.3rf	26.8rf	24.9rf	24.4rf	23.9rf	23.5rf	22.8rf	23.3rf	20.8rf	19.6rf	17.6rf	17.2rf	24	29.95
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	10.7IF	10.4IF	9.6IF	9.4IF	9.6IF	9.7IF	9.5IF	9.5IF	10.4IF	10.8IF	11.3IF	12.3IF	13.9IF	15.1IF	14.9IF	13.3IF	13.6IF	14.1IF	13.9IF	14.3IF	15.0IF	15.0IF	15.0IF	15.3IF	24	12.36
21	16.9rf	20.3rf	23.0rf	19.3rf	20.5rf	19.1rf	22.3rf	25.5rf	27.5rf	27.3rf	37.7rf	41.8rf	43.4rf	43.5rf	40.8rf	44.7rf	42.8rf	43.0rf	42.9rf	40.9rf	41.4rf	40.3rf	40.6rf	41.3rf	24	33.62
22	42.5rf	38.2rf	28.2rf	28.4rf	35.5rf	31.7rf	29.7rf	28.6rf	25.5rf	25.8rf	27.6rf	30.1rf	36.7rf	41.2rf	50.0rf	55.2rf	55.0rf	54.8rf	52.9rf	54.3rf	53.0rf	53.0rf	50.2rf	50.3rf	24	40.77
23	50.2rf	50.0rf	50.1rf	47.9rf	45.1rf	45.6rf	45.8rf	47.6rf	55.8rf	59.7rf	64.6rf	63.0rf	58.3rf	57.6rf	54.9rf	52.8rf	52.3rf	50.7rf	51.0rf	49.9rf	46.8rf	44.4rf	39.9rf	37.7rf	24	50.90
24	35.2rf	34.0rf	27.6rf	27.6rf	26.7rf	25.7rf	24.9rf	24.6rf	27.2rf	26.6rf	26.0rf	26.7rf	27.3rf	27.5rf	29.0rf	28.9rf	26.8rf	27.1rf	28.1rf	29.7rf	30.3rf	29.4rf	29.1rf	28.7rf	24	28.11
25	28.9rf	29.8rf	30.5rf	31.4rf	31.7rf	31.1rf	30.3rf	29.7rf	30.2rf	30.2rf	30.1rf	29.8rf	30.1rf	31.0rf	30.1rf	29.3rf	29.8rf	30.1rf	31.9rf	31.5rf	31.0rf	29.2rf	27.0rf	26.3rf	24	30.04
26	28.0rf	29.2rf	31.2rf	32.8rf	34.4rf	35.7rf	35.8rf	31.1rf	25.0rf	29.3rf	32.9rf	39.5rf	40.6rf	36.4rf	32.0rf	33.3rf	32.3rf	31.2rf	30.3rf	30.5rf	30.4rf	29.1rf	23.5rf	26.3rf	24	31.70
27	30.5rf	30.5rf	31.3rf	31.8rf	31.1rf	28.6rf	24.9rf	21.2rf	15.1rf	13.2rf	12.8rf	13.7rf	15.2rf	13.5rf	14.9rf	17.2rf	14.6rf	14.5rf	17.0rf	23.2rf	24.3rf	23.6rf	23.5rf	23.1rf	24	21.22
28	23.0IT	23.3IT	23.8IT	23.2IT	22.8IT	19.9IT	17.1IT	15.7IT	14.4IT	14.3IT	13.7IT	13.8IT	13.9IT	14.1IT	14.1IT	13.7IT	14.0IT	14.2IT	13.5IT	13.5IT	14.0IT	14.5IT	14.5IT	14.1IT	24	16.38
29	14.1IT	13.6IT	13.5IT	13.6IT	13.7IT	13.7IT	14.3IT	15.7IT	16.8IT	15.6IT	16.2IT	16.2IT	13.7IT	14.5IT	15.4IT	15.5IT	17.4IT	20.9IT	21.8IT	15.4IT	20.6IT	18.6IT	15.5IT	13.3IT	24	15.82
30	14.6rt	16.0rt	20.2rt	24.2rt	28.1rt	28.9rt	AX	BA	22.1rt	23.4rt	24.4rt	25.5rt	25.8rt	26.3rt	25.9rt	19.3rt	18.0rt	AV	18.7rt	21.8rt	24.3rt	22.9rt	22.1rt	23.2rt	21	22.65
31																									0	
NO.:	14	14	14	14	14	14	13	13	14	14	14	14	14	14	14	14	14	13	14	14	14	14	14	14		
MAX:	50.2	50.0	50.1	47.9	45.1	45.6	45.8	47.6	55.8	59.7	64.6	63.0	58.3	57.6	54.9	55.2	55.0	54.8	52.9	54.3	53.0	53.0	50.2	50.3		
AVG:	26.66	26.51	26.08	26.20	26.76	25.93	25.30	24.86	24.82	25.19	27.30	28.39	28.33	28.49	28.67	28.72	28.27	29.38	28.89	29.29	29.78	29.10	27.73	27.64		

MONTHLY OBSERVATIONS: 333 MONTHLY MEAN: 27.44 MONTHLY MAX: 64.6

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-065-0002 POC: 3
COUNTY: (065) Oliver
CITY: (00000) Not in a city
SITE ADDRESS: 1575 HIGHWAY 31
SITE COMMENTS: *
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.1858330009
LONGITUDE: -101.428056
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 697
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	8.8IF	8.9IF	8.7IF	7.9IF	6.5IF	8.1IF	10.1IF	11.4IF	11.1IF	11.7IF	11.0IF	14.7IF	29.4IF	28.1IF	28.1IF	28.5IF	26.9IF	26.3IF	26.5IF	27.4IF	28.7IF	29.0IF	26.0IF	24.2IF	24	18.67
11																									0	
12																									0	
13																									0	
14																									0	
15	6.7IF	7.0IF	6.7IF	8.6IF	9.3IF	9.8IF	11.1IF	10.9IF	11.5IF	12.4IF	13.9IF	14.9IF	15.3IF	13.9IF	14.0IF	18.8IF	23.0IF	16.8IF	17.9IF	14.5IF	11.7IF	10.8IF	10.2IF	10.1IF	24	12.49
16	10.5rf	12.1rf	13.2rf	13.5rf	12.8rf	13.0rf	17.9rf	23.1rf	39.4rf	34.9rf	33.1rf	33.6rf	35.0rf	39.7rf	45.9rf	51.0rf	54.1rf	55.6rf	55.9rf	57.7rf	59.4rf	60.3rf	59.7rf	61.6rf	24	37.21
17	63.3rf	54.2rf	46.8rf	37.7rf	30.6rf	26.7rf	24.0rf	29.6rf	40.9rf	47.8rf	46.0rf	40.8rf	39.4rf	36.5rf	36.3rf	35.7rf	34.9rf	34.8rf	31.8rf	31.4rf	32.5rf	33.0rf	32.4rf	35.7rf	24	37.62
18	33.9IF	34.0IF	30.6IF	28.1IF	26.7IF	25.5IF	21.6IF	17.3IF	15.3IF	12.9IF	12.5IF	14.8IF	15.9IF	14.4IF	14.2IF	15.8IF	16.3IF	16.7IF	16.6IF	16.1IF	14.2IF	14.5IF	13.8IF	12.2IF	24	18.91
19	11.2IF	11.0IF	11.6IF	11.8IF	12.7IF	13.5IF	13.5IF	13.0IF	12.5IF	11.2IF	10.5IF	9.1IF	8.1IF	6.2IF	5.9IF	7.3IF	9.3IF	10.7IF	12.6IF	13.0IF	14.3IF	15.1IF	15.9IF	16.9IF	24	11.54
20	17.2IF	17.0IF	16.9IF	15.7IF	15.1IF	15.7IF	16.2IF	14.0IF	9.7IF	11.1IF	12.9IF	14.9IF	15.0IF	15.7IF	16.2IF	16.4IF	18.2IF	17.8IF	17.2IF	18.0IF	18.2IF	17.5IF	14.2IF	12.8IF	24	15.57
21																									0	
22																									0	
23																									0	
24																									0	
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26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
MAX:	63.3	54.2	46.8	37.7	30.6	26.7	24.0	29.6	40.9	47.8	46.0	40.8	39.4	39.7	45.9	51.0	54.1	55.6	55.9	57.7	59.4	60.3	59.7	61.6		
AVG:	21.66	20.60	19.21	17.61	16.24	16.04	16.34	17.04	20.06	20.29	19.99	20.40	22.59	22.07	22.94	24.79	26.10	25.53	25.50	25.44	25.57	25.74	24.60	24.79		

MONTHLY OBSERVATIONS: 168 MONTHLY MEAN: 21.71 MONTHLY MAX: 63.3

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-065-0002 POC: 3
COUNTY: (065) Oliver
CITY: (00000) Not in a city
SITE ADDRESS: 1575 HIGHWAY 31
SITE COMMENTS: *
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.1858330009
LONGITUDE: -101.428056
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 697
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	9.3rf	9.6rf	13.5rf	14.0rf	16.3rf	15.9rf	15.1rf	36.9rf	97.6rf	132.6rf	130.2rf	105.7rf	79.8rf	65.8rf	71.6rf	74.8rf	100.1rf	81.4rf	57.5rf	31.2rf	11.6rf	6.5rf	7.5rf	8.9rf	24	49.73
5																									0	
6																									0	
7																									0	
8																									0	
9	7.4IF	7.2IF	7.1IF	7.3IF	7.4IF	7.5IF	7.7IF	7.7IF	8.0IF	8.6IF	9.4IF	9.2IF	9.9IF	9.8IF	9.9IF	10.1IF	10.8IF	12.1IF	14.5IF	13.8IF	13.4IF	13.4IF	13.1IF	13.5IF	24	9.95
10	16.5rf	26.0rf	33.9rf	43.6rf	54.3rf	74.7rf	AX	102.3rf	106.3rf	94.8rf	82.6rf	75.4rf	45.8rf	33.9rf	29.2rf	25.9rf	35.7rf	71.0rf	130.8rf	121.3rf	96.9rf	87.1rf	63.4rf	49.2rf	23	65.24
11	44.2rf	41.9rf	38.5rf	35.8rf	34.5rf	45.7rf	65.5rf	86.5rf	101.8rf	139.9rf	138.3rf	127.7rf	115.5rf	96.9rf	83.0rf	71.1rf	64.5rf	62.6rf	62.4rf	57.0rf	55.4rf	50.5rf	47.1rf	46.9rf	24	71.38
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
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27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	4	4	4	4	4	4	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	44.2	41.9	38.5	43.6	54.3	74.7	65.5	102.3	106.3	139.9	138.3	127.7	115.5	96.9	83.0	74.8	100.1	81.4	130.8	121.3	96.9	87.1	63.4	49.2		
AVG:	19.35	21.18	23.25	25.18	28.13	35.95	29.43	58.35	78.43	93.98	90.13	79.50	62.75	51.60	48.43	45.48	52.78	56.78	66.30	55.83	44.33	39.38	32.78	29.63		

MONTHLY OBSERVATIONS: 95 MONTHLY MEAN: 48.91 MONTHLY MAX: 139.9

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-065-0002 POC: 3
COUNTY: (065) Oliver
CITY: (00000) Not in a city
SITE ADDRESS: 1575 HIGHWAY 31
SITE COMMENTS: *
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.1858330009
LONGITUDE: -101.428056
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 697
PROBE HEIGHT: 4

SUPPORT AGENCY: (0782) North Dakota DEQ
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	6.8	7.2IT	7.9IT	9.6IT	20.4IT	7.7IT	6.5IT	4.2IT	4.2IT	3.2IT	3.2IT	4.5IT	7.9IT	13.2IT	13.4IT	11.7IT	20.1IT	18.5IT	5.1IT	20.7IT	53.1IT	82.5IT	10.6IT	1.7IT	24	14.33
6																									0	
7																									0	
8	4.0IT	4.7IT	4.6IT	4.8IT	5.3IT	5.9IT	6.8IT	AX	8.3IT	10.6IT	14.7IT	16.6IT	14.4IT	16.1IT	18.2IT	19.7IT	18.6IT	15.8IT	15.3IT	17.4IT	23.0IT	19.6IT	19.1IT	13.9IT	23	12.93
9	14.5IT	15.8IT	16.0IT	16.2IT	17.5IT	17.0IT	14.0IT	15.1IT	17.1IT	17.5IT	11.2IT	11.0IT	9.7IT	11.1IT	14.3IT	16.8IT	17.8IT	18.4IT	22.0IT	25.6IT	23.7IT	23.5IT	22.9IT	23.5IT	24	17.18
10																									0	
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
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21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	3	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	14.5	15.8	16.0	16.2	20.4	17.0	14.0	15.1	17.1	17.5	14.7	16.6	14.4	16.1	18.2	19.7	20.1	18.5	22.0	25.6	53.1	82.5	22.9	23.5		
AVG:	8.43	9.23	9.50	10.20	14.40	10.20	9.10	9.65	9.87	10.43	9.70	10.70	10.67	13.47	15.30	16.07	18.83	17.57	14.13	21.23	33.27	41.87	17.53	13.03		

MONTHLY OBSERVATIONS: 71 MONTHLY MEAN: 14.84 MONTHLY MAX: 82.5

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-101-0003 POC: 3
COUNTY: (101) Ward
CITY: (00000) Not in a city
SITE ADDRESS: 184th Street SW Ryder
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.9408610009
LONGITUDE: -101.571583
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 639
PROBE HEIGHT: 4

SUPPORT AGENCY: (301) Three Affiliated Tribes of Fort Berthold Reservation, ND
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: MAY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10																									0	
11																									0	
12	25.9rf	54.6rf	69.0rf	83.8rf	82.7rf	81.1rf	75.8rf	53.2rf	31.1rf	21.2rf	13.5rf	10.0rf	11.0rf	9.1rf	15.7rf	19.7rf	16.8rf	12.9rf	13.9rf	26.3rf	35.0rf	32.6rf	32.1rf	29.3rf	24	35.68
13	18.4rf	22.3rf	32.7rf	33.1rf	29.6rf	27.1rf	24.6rf	24.0rf	25.5rf	27.4rf	26.5rf	30.8rf	33.3rf	31.4rf	28.8rf	29.3rf	29.8rf	30.3rf	31.4rf	29.6rf	24.7rf	19.4rf	17.4rf	19.1rf	24	26.94
14	25.0IF	23.4IF	20.0IF	19.8IF	17.5IF	15.4IF	AX	AT	12.9IF	15.5IF	16.8IF	16.2IF	14.4IF	14.8IF	13.5IF	13.2IF	12.6IF	13.8IF	15.1IF	11.9IF	10.2IF	9.6IF	5.9IF	6.4IF	22	14.72
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20																									0	
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	3	3	3	3	3	3	2	2	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	25.9	54.6	69.0	83.8	82.7	81.1	75.8	53.2	31.1	27.4	26.5	30.8	33.3	31.4	28.8	29.3	29.8	30.3	31.4	29.6	35.0	32.6	32.1	29.3		
AVG:	23.10	33.43	40.57	45.57	43.27	41.20	50.20	38.60	23.17	21.37	18.93	19.00	19.57	18.43	19.33	20.73	19.73	19.00	20.13	22.60	23.30	20.53	18.47	18.27		

MONTHLY OBSERVATIONS: 70 MONTHLY MEAN: 26.10 MONTHLY MAX: 83.8

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-101-0003 POC: 3
COUNTY: (101) Ward
CITY: (00000) Not in a city
SITE ADDRESS: 184th Street SW Ryder
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.9408610009
LONGITUDE: -101.571583
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 639
PROBE HEIGHT: 4

SUPPORT AGENCY: (301) Three Affiliated Tribes of Fort Berthold Reservation, ND
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: JULY 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8	10.1rf	12.0rf	11.7rf	13.7rf	16.1rf	18.8rf	19.2rf	23.4rf	25.2rf	25.0rf	21.8rf	18.3rf	17.7rf	23.2rf	28.2rf	37.2rf	43.5rf	44.8rf	45.0rf	43.8rf	45.0rf	47.3rf	47.5rf	43.6rf	24	28.42
9	40.1rf	36.9rf	36.6rf	34.7rf	34.4rf	31.7rf	30.3rf	AX	23.3rf	23.5rf	26.1rf	26.0rf	30.5rf	34.5rf	37.8rf	37.7rf	38.0rf	37.9rf	36.8rf	38.2rf	43.3rf	41.8rf	40.6rf	40.0rf	23	34.81
10	37.6rf	35.0rf	34.8rf	37.1rf	34.8rf	34.2rf	33.4rf	33.6rf	35.8rf	36.8rf	37.9rf	36.1rf	33.0rf	27.5rf	26.2rf	25.6rf	25.6rf	23.3rf	22.6rf	22.1rf	23.5rf	25.0rf	22.9rf	19.3rf	24	30.15
11																									0	
12																									0	
13																									0	
14																									0	
15																									0	
16																									0	
17																									0	
18																									0	
19																									0	
20	23.7IF	22.6IF	21.4IF	19.7IF	18.3IF	19.5IF	19.3IF	19.4IF	18.8IF	19.2IF	17.1IF	15.2IF	15.6IF	14.7IF	15.7IF	15.8IF	14.5IF	13.7IF	13.2IF	12.7IF	14.0IF	16.8IF	17.7IF	20.1IF	24	17.45
21	26.0rf	31.0rf	32.2rf	32.2rf	28.7rf	29.2rf	35.7rf	37.5rf	43.6rf	49.5rf	47.5rf	45.0rf	49.5rf	51.0rf	48.5rf	44.8rf	47.3rf	46.9rf	44.0rf	41.5rf	42.0rf	42.8rf	40.7rf	37.2rf	24	40.60
22	36.1rf	36.3rf	35.0rf	34.9rf	30.3rf	21.5rf	19.9rf	26.4rf	30.9rf	39.1rf	45.9rf	53.1rf	55.6rf	55.0rf	50.8rf	51.6rf	53.6rf	57.3rf	53.9rf	53.3rf	52.8rf	52.7rf	53.3rf	53.0rf	24	43.85
23	50.7rf	48.6rf	47.6rf	49.3rf	53.5rf	58.3rf	51.5rf	56.3rf	48.9rf	53.2rf	49.7rf	48.8rf	49.6rf	53.3rf	57.1rf	55.7rf	52.3rf	49.8rf	49.2rf	47.6rf	48.7rf	47.3rf	42.1rf	36.5rf	24	50.23
24	37.0rf	37.6rf	37.9rf	37.9rf	37.2rf	30.6rf	27.2rf	AX	26.9rf	28.6rf	28.7rf	26.9rf	26.4rf	26.9rf	27.9rf	27.4rf	28.2rf	28.6rf	28.7rf	28.8rf	30.6rf	31.6rf	30.5rf	30.2rf	23	30.53
25	29.5rf	30.4rf	30.6rf	31.2rf	30.4rf	30.8rf	31.8rf	30.9rf	30.0rf	30.7rf	31.2rf	31.0rf	30.1rf	29.5rf	28.5rf	29.0rf	28.2rf	27.2rf	28.3rf	30.1rf	30.9rf	28.7rf	28.5rf	29.2rf	24	29.86
26	28.2rf	26.8rf	26.3rf	27.0rf	29.1rf	30.5rf	30.1rf	26.2rf	30.9rf	36.7rf	40.0rf	39.4rf	38.8rf	29.6rf	23.3rf	16.2rf	15.7rf	15.6rf	13.8rf	13.5rf	12.7rf	12.8rf	14.0rf	14.8rf	24	24.67
27	13.6IF	13.9IF	14.1IF	15.7IF	24.2IF	19.5IF	21.9IF	26.5IF	23.3IF	21.6IF	20.9IF	17.6IF	17.1IF	15.8IF	17.9IF	22.1IF	23.5IF	23.3IF	23.6IF	18.2IF	15.4IF	14.7IF	15.1IF	15.1IF	24	18.94
28	14.7IT	14.2IT	14.0IT	14.7IT	14.7IT	14.3IT	14.2IT	12.3IT	12.2IT	13.7IT	14.7IT	16.1IT	17.9IT	18.5IT	18.9IT	18.9IT	17.6IT	17.5IT	17.9IT	20.4IT	23.9IT	23.5IT	22.2IT	21.9IT	24	17.04
29	20.8IT	19.1IT	17.6IT	16.7IT	15.9IT	16.5IT	15.4IT	15.6IT	24.5IT	15.7IT	15.6IT	18.0IT	20.7IT	19.2IT	19.1IT	24.6IT	22.7IT	17.7IT	16.8IT	19.5IT	19.6IT	16.2IT	16.4IT	18.1IT	24	18.42
30	19.7rt	20.7rt	20.9rt	21.6rt	23.7rt	25.2rt	29.7rt	31.1rt	30.6rt	26.7rt	25.7rt	28.0rt	29.6rt	30.5rt	29.0rt	21.4rt	18.2rt	20.7rt	19.0rt	14.8rt	15.4rt	16.5rt	18.6rt	19.0rt	24	23.18
31																									0	
NO.:	14	14	14	14	14	14	14	12	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14		
MAX:	50.7	48.6	47.6	49.3	53.5	58.3	51.5	56.3	48.9	53.2	49.7	53.1	55.6	55.0	57.1	55.7	53.6	57.3	53.9	53.3	52.8	52.7	53.3	53.0		
AVG:	27.70	27.51	27.19	27.60	27.95	27.19	27.11	28.27	28.92	30.00	30.20	29.96	30.86	30.66	30.64	30.57	30.64	30.31	29.49	28.89	29.84	29.84	29.29	28.43		

MONTHLY OBSERVATIONS: 334 MONTHLY MEAN: 29.13 MONTHLY MAX: 58.3

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-101-0003 POC: 3
COUNTY: (101) Ward
CITY: (00000) Not in a city
SITE ADDRESS: 184th Street SW Ryder
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.9408610009
LONGITUDE: -101.571583
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 639
PROBE HEIGHT: 4

SUPPORT AGENCY: (301) Three Affiliated Tribes of Fort Berthold Reservation, ND
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: AUGUST 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5																									0	
6																									0	
7																									0	
8																									0	
9																									0	
10	17.8rf	17.4rf	17.5rf	16.7rf	17.9rf	21.6rf	22.0rf	19.2rf	21.5rf	21.8rf	25.2rf	41.7rf	49.4rf	49.5rf	44.4rf	40.1rf	38.0rf	36.3rf	32.3rf	28.9rf	24.0rf	16.2rf	12.4rf	10.2rf	24	26.75
11																									0	
12																									0	
13																									0	
14																									0	
15	7.8IF	6.9IF	7.8IF	19.4IF	19.1IF	23.8IF	22.8IF	16.7IF	13.5IF	12.0IF	14.3IF	18.5IF	17.0IF	14.5IF	14.6IF	10.5IF	12.6IF	12.3IF	10.0IF	9.8IF	9.1IF	9.6IF	9.3IF	10.5IF	24	13.43
16	11.4rf	11.5rf	12.7rf	16.0rf	36.1rf	46.8rf	57.4rf	65.7rf	60.4rf	60.4rf	60.2rf	65.2rf	66.7rf	66.2rf	66.5rf	66.6rf	66.6rf	65.7rf	59.8rf	61.0rf	63.7rf	63.0rf	62.5rf	61.9rf	24	53.08
17	61.4rf	57.5rf	56.3rf	50.5rf	34.8rf	30.8rf	35.2rf	35.6rf	39.2rf	42.9rf	48.7rf	50.3rf	50.1rf	48.2rf	47.9rf	47.7rf	46.3rf	44.9rf	45.1rf	44.4rf	43.1rf	46.6rf	46.1rf	41.2rf	24	45.62
18	37.6rf	35.9rf	36.2rf	36.5rf	36.4rf	34.6rf	32.1rf	27.1rf	22.3rf	17.8rf	15.9rf	17.6rf	18.0rf	15.8rf	15.5rf	16.0rf	16.0rf	16.2rf	13.8rf	13.9rf	14.9rf	13.5rf	13.5rf	14.1rf	24	22.13
19	14.4IF	14.5IF	15.2IF	14.8IF	16.1IF	15.9IF	14.5IF	13.6IF	13.7IF	12.8IF	11.2IF	8.3IF	7.7IF	7.9IF	7.7IF	8.8IF	9.7IF	10.9IF	12.1IF	14.3IF	15.0IF	15.8IF	16.2IF	16.8IF	24	12.83
20	16.2IF	16.1IF	16.0IF	15.9IF	16.4IF	16.4IF	16.3IF	16.8IF	15.0IF	12.0IF	9.2IF	11.8IF	13.2IF	14.2IF	14.9IF	14.7IF	15.1IF	16.3IF	17.9IF	17.6IF	17.1IF	18.8IF	17.9IF	15.5IF	24	15.47
21																									0	
22																									0	
23																									0	
24																									0	
25																									0	
26																									0	
27																									0	
28																									0	
29																									0	
30																									0	
31																									0	
NO.:	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7		
MAX:	61.4	57.5	56.3	50.5	36.4	46.8	57.4	65.7	60.4	60.4	60.2	65.2	66.7	66.2	66.5	66.6	66.6	65.7	59.8	61.0	63.7	63.0	62.5	61.9		
AVG:	23.80	22.83	23.10	24.26	25.26	27.13	28.61	27.81	26.51	25.67	26.39	30.49	31.73	30.90	30.21	29.20	29.19	28.94	27.29	27.13	26.70	26.21	25.41	24.31		

MONTHLY OBSERVATIONS: 168 MONTHLY MEAN: 27.05 MONTHLY MAX: 66.7

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-101-0003 POC: 3
COUNTY: (101) Ward
CITY: (00000) Not in a city
SITE ADDRESS: 184th Street SW Ryder
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.9408610009
LONGITUDE: -101.571583
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 639
PROBE HEIGHT: 4

SUPPORT AGENCY: (301) Three Affiliated Tribes of Fort Berthold Reservation, ND
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: SEPTEMBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY	HOUR 0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4	10.7rf	11.4rf	10.5rf	10.6rf	11.9rf	14.6rf	A%	AX	189.0rf	156.0rf	153.2rf	137.1rf	94.9rf	147.4rf	94.5rf	46.9rf	37.3rf	39.3rf	20.0rf	28.3rf	16.2rf	10.3rf	6.6rf	7.5rf	22	57.01
5																									0	
6																									0	
7																									0	
8																									0	
9	6.6IF	7.0IF	7.3IF	7.3IF	7.7IF	7.9IF	8.3IF	8.1IF	7.9IF	8.5IF	9.3IF	9.0IF	9.2IF	8.2IF	9.2IF	9.7IF	10.8IF	11.0IF	12.3IF	13.1IF	12.1IF	12.5IF	12.5IF	11.0IF	24	9.44
10	11.0rf	14.1rf	22.2rf	41.2rf	58.4rf	55.4rf	65.1rf	77.4rf	66.2rf	40.8rf	29.6rf	30.0rf	39.4rf	73.1rf	146.4rf	127.6rf	52.9rf	37.2rf	36.2rf	33.9rf	45.4rf	38.3rf	34.8rf	28.4rf	24	50.21
11	23.3rf	20.1rf	18.9rf	18.4rf	20.2rf	39.6rf	69.3rf	88.0rf	114.5rf	116.7rf	112.3rf	95.3rf	84.5rf	79.1rf	69.9rf	63.6rf	59.0rf	58.9rf	50.2rf	42.4rf	37.1rf	35.1rf	29.3rf	31.6rf	24	57.39
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NO.:	4	4	4	4	4	4	3	3	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
MAX:	23.3	20.1	22.2	41.2	58.4	55.4	69.3	88.0	189.0	156.0	153.2	137.1	94.9	147.4	146.4	127.6	59.0	58.9	50.2	42.4	45.4	38.3	34.8	31.6		
AVG:	12.90	13.15	14.73	19.38	24.55	29.38	47.57	57.83	94.40	80.50	76.10	67.85	57.00	76.95	80.00	61.95	40.00	36.60	29.68	29.43	27.70	24.05	20.80	19.63		

MONTHLY OBSERVATIONS: 94 MONTHLY MEAN: 43.22 MONTHLY MAX: 189.0

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
AIR QUALITY SYSTEM
RAW DATA REPORT

Jul. 14, 2025

(88101) PM2.5 - Local Conditions

SITE ID: 38-101-0003 POC: 3
COUNTY: (101) Ward
CITY: (00000) Not in a city
SITE ADDRESS: 184th Street SW Ryder
SITE COMMENTS:
MONITOR COMMENTS:

STATE: (38) North Dakota
AQCR: (172) NORTH DAKOTA
URBANIZED AREA: (0000) NOT IN AN URBAN AREA
LAND USE: AGRICULTURAL
LOCATION SETTING: RURAL

CAS NUMBER:
LATITUDE: 47.9408610009
LONGITUDE: -101.571583
UTM ZONE:
UTM NORTHING:
UTM EASTING:
ELEVATION-MSL: 639
PROBE HEIGHT: 4

SUPPORT AGENCY: (301) Three Affiliated Tribes of Fort Berthold Reservation, ND
MONITOR TYPE: SLAMS
COLLECTION AND ANALYSIS METHOD: (636) Teledyne T640 at 5.0 LPM w/Network
PQAO: (0782) North Dakota DEQ

REPORT FOR: OCTOBER 2024

DURATION: 1 HOUR
UNITS: Micrograms/cubic meter (LC)
MIN DETECTABLE: .1

DAY \ HOUR	0000	0100	0200	0300	0400	0500	0600	0700	0800	0900	1000	1100	1200	1300	1400	1500	1600	1700	1800	1900	2000	2100	2200	2300	OBS	MEAN
1																									0	
2																									0	
3																									0	
4																									0	
5	6.8	7.2	7.9	12.9	11.7	7.3	3.9	4.5	3.4	3.1	5.5	5.1	5.0	10.1	8.9	11.5	54.7	24.0	5.8	4.3	3.3	2.4	1.6	1.5	24	8.85
6																									0	
7																									0	
8	6.7	5.8IT	5.0IT	4.6IT	4.8IT	5.1IT	6.0IT	6.6IT	6.9IT	8.1IT	12.3IT	13.5IT	14.2IT	15.7IT	17.7IT	17.6IT	16.2IT	20.1IT	16.0IT	17.0IT	19.0IT	21.3IT	19.5IT	19.9IT	24	12.48
9	20.0IT	19.8IT	18.9IT	18.7IT	18.7IT	19.4IT	18.5IT	17.7IT	14.7IT	12.4IT	12.4IT	13.5IT	14.6IT	17.7IT	19.8IT	22.2IT	19.2IT	19.3IT	25.1IT	27.6IT	28.3IT	28.8IT	27.1IT	23.6IT	24	19.92
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NO.:	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
MAX:	20.0	19.8	18.9	18.7	18.7	19.4	18.5	17.7	14.7	12.4	12.4	13.5	14.6	17.7	19.8	22.2	54.7	24.0	25.1	27.6	28.3	28.8	27.1	23.6		
AVG:	11.17	10.93	10.60	12.07	11.73	10.60	9.47	9.60	8.33	7.87	10.07	10.70	11.27	14.50	15.47	17.10	30.03	21.13	15.63	16.30	16.87	17.50	16.07	15.00		

MONTHLY OBSERVATIONS: 72 MONTHLY MEAN: 13.75 MONTHLY MAX: 54.7

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional review are shown in lower case. An asterisk ("*") indicates that the region has reviewed the value and does not concur with the qualifier.

QUALIFIER CODES:

Qualifier Code	Qualifier Description	Qualifier Type
AQ	Collection Error.	NULL
AS	Poor Quality Assurance Results.	NULL
AT	Calibration.	NULL
AV	Power Failure.	NULL
AX	Precision Check.	NULL
AZ	Q C Audit.	NULL
BA	Maintenance/Routine Repairs.	NULL
IF	Fire - Canadian.	INFORM
IT	Wildfire-U. S.	INFORM
rf	Fire - Canadian.	REQEXC
rt	Wildfire-U. S.	REQEXC

Note: Qualifier codes with regional concurrence are shown in upper case, and those without regional concurrence are shown in lower case.

APPENDIX G PUBLIC COMMENTS

This report is subject to 30 days of public comment before finalization. This Appendix will be populated with applicable public comments along with comment responses before finalization.