Department of Environmental Conservation's Air Monitoring Program
Community-Based Air Monitoring Project

2024-25 Winter Season Air Quality Report for Maniilaq Association, Kotzebue, Alaska

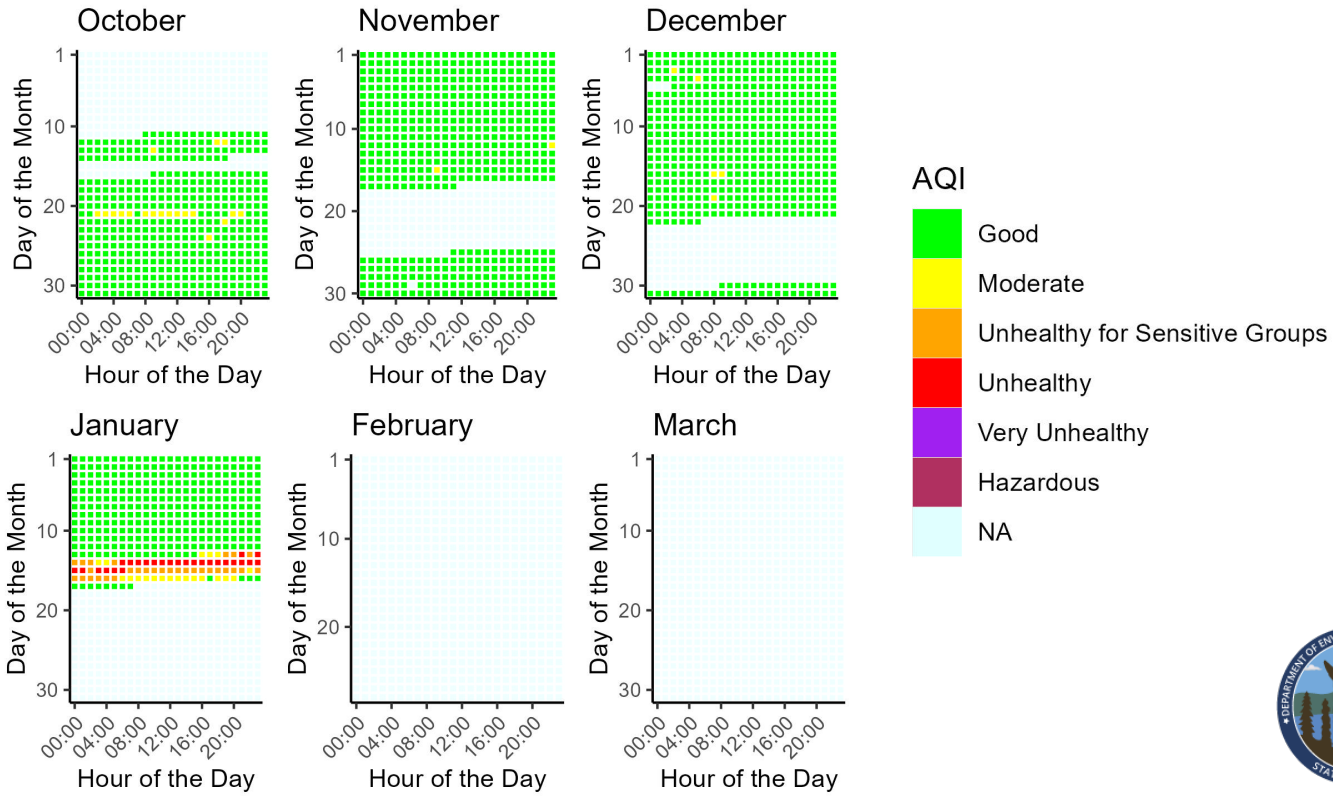
The QuantAQ MODULAIR™ sensor in Kotzebue was installed on 07/09/2024.

The sensor measures for carbon monoxide (CO), ozone (O_3), nitrogen oxide (NO), nitrogen dioxide (NO_2), particulate matter ($PM_{2.5}$ and PM_{10}), temperature (°C), and relative humidity (RH). Data is collected every minute and is then processed into hourly averages.

The sensor in Kotzebue has experienced multiple significant gaps in data collection for several reasons: The sensor underwent a planned outage on August 14th when it was removed from its original site (163 Lagoon St; site A, right), then remained offline until it could be relocated to a new site (66°53'53.5"N 162°34'58.4"W; site B, left) on October 11th. The sensor underwent two power outages in November and December, before losing network connectivity completely in January due to a severed underwater cable. The cable is on track to be fixed in Fall 2025- ADEC staff are actively looking into alternative sensor options for Kotzebue in the meantime.

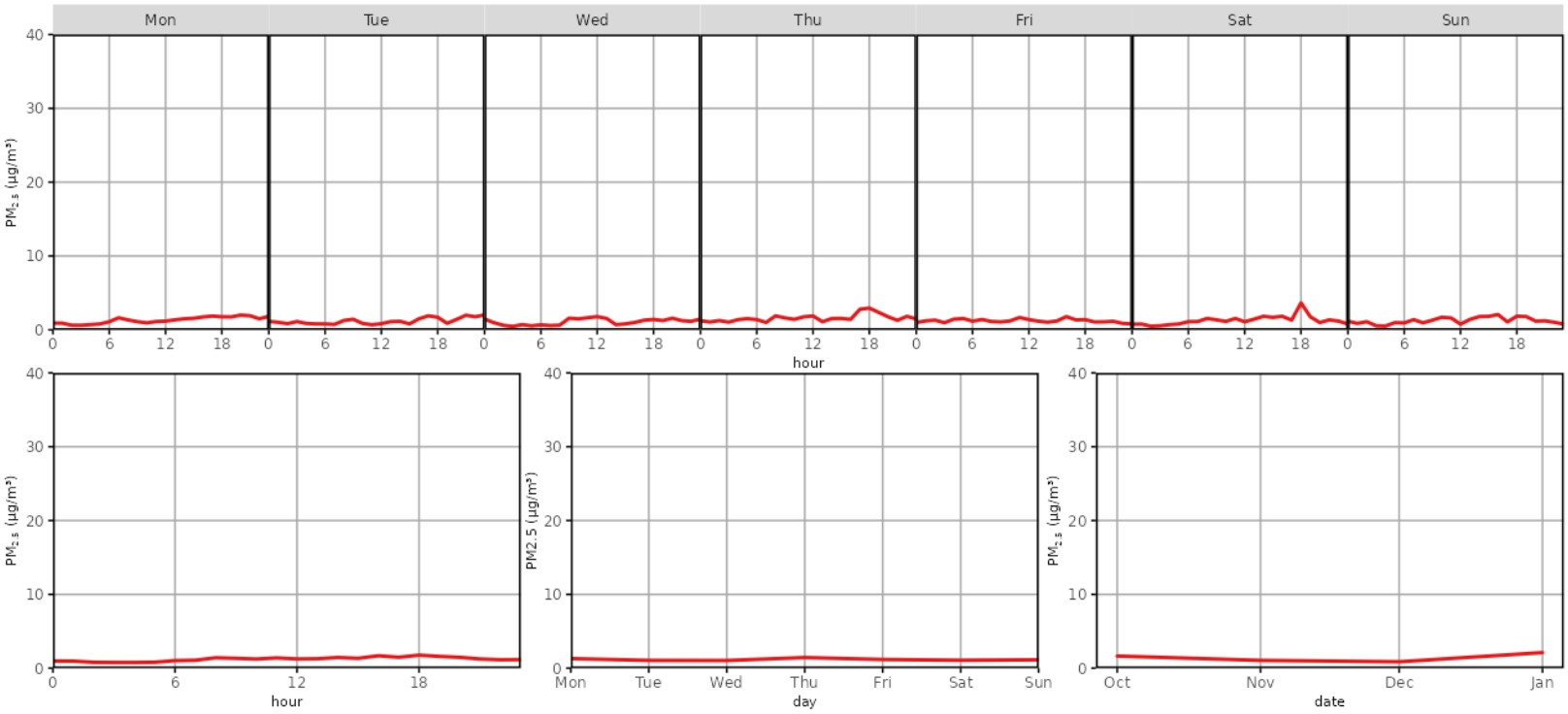
This data report covers the date range of October 1, 2024, to March 31, 2025.

Daily $PM_{2.5}$ Air Quality Index (AQI) for October 1, 2024 – March 31, 2025



2024-25 Winter Season Air Quality Report for Maniilaq Association

Median $PM_{2.5}$ Concentrations for October 1, 2024 – March 31, 2025



Descriptive Statistics of Air Pollutants*

Parameter	1-hr $PM_{2.5}$ ($\mu g/m^3$)	24-hr $PM_{2.5}$ ($\mu g/m^3$)	1-hr PM_{10} ($\mu g/m^3$)**	24-hr PM_{10} ($\mu g/m^3$)**	1-hr O_3 (ppb)	1-hr NO_2 (ppb)	1-hr NO (ppb)	1-hr CO (ppb)
Min	0.02	0.22	0.00	0.21	17.20	2.90	1.42	0.70
Mean	3.57	3.72	10.15	10.00	31.95	21.19	4.20	0.81
1st Max	91.39	61.99	600.00	138.25	80.80	56.54	31.03	1.40
2nd Max	85.14	48.10	446.00	92.75	75.60	42.67	15.25	1.30

Data Discussion

Kotzebue's $PM_{2.5}$ ambient air quality for the winter 2024-25 season reported consistently in the "good" range of the Air Quality Index (AQI; more information about AQI is provided on page 3), except for the end of January, where AQI levels reached the "unhealthy" AQI range for multiple consecutive hours before returning to "good". Diurnal patterns show little variability of $PM_{2.5}$ concentrations across different times of day or days of the week. $PM_{2.5}$ concentrations through October to mid-January remained low and steady.

* These statistics are based on preliminary data readings and are intended to provide a brief overview of sensor activity. Finalized data may be obtained upon request and through our annual statistical reports. Data from the community sensor network is non-regulatory and not comparable to the EPA's National Ambient Air Quality Standards (NAAQS; more information about the EPA NAAQS is provided on page 3).

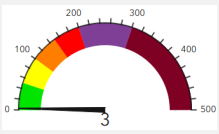
** PM_{10} particle sensors are influenced by weather events such as fog and snow due to hygroscopic effects, creating false maximum values that do not pose health risks.

Resources

Alaska Department of Environmental Conservation

EPA NAAQS Information

Air Quality Index (AQI) Basics



Real-Time AQI Data

Data Access

To access historical data for your community's sensor, please email a request to: AMQA-Data-Request@alaska.gov . Data will be provided in Excel or .csv format.

Questions or Comments?

Please contact us!

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