

COTTONWOOD AIR QUALITY MONITORING REPORT

March 2026

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EXECUTIVE SUMMARY:

ADEQ has completed an air quality screening assessment in the Cottonwood area to:

- Address community concerns about potential poor ambient air quality due to airborne dust from nearby sources, including the Minerals Research, Inc. slag pile,
- Evaluate particulate matter and metals concentrations, and
- Provide the associated air quality data to the Arizona Department of Health Services (ADHS) to support its health consultation, which will take into account how people living in the area might be exposed to hazardous substances in the environment to determine potential exposures and recommend protective actions.

ADEQ completed this study following two phases of air quality monitoring conducted at two locations: Veterans of Foreign Wars (VFW) Post 7400 (705 E. Aspen St. Cottonwood, AZ 86326) and at the City of Cottonwood Kid's Park (350 S. 12th St. Cottonwood, AZ 86326). ADEQ completed and issued a report on the first phase of the study in September 2024 | [View Report >](#)

ADEQ's air quality screening assessment concluded:

- Data collected for particulate matter with a diameter of 10 micrometers or less (PM₁₀) showed concentrations below the maximum limit set by the U.S. Environmental Protection Agency's (EPA) health-based National Ambient Air Quality Standard (NAAQS) for PM₁₀, indicating levels protective of public health and the environment.
- Data collected for Lead showed concentrations below the maximum limit set by EPA's health-based NAAQS for Lead, indicating levels protective of public health and the environment.
- Data collected for PM₁₀ during the study was analyzed for multiple metals beyond Lead, including Aluminum, Copper, Zinc and others. Because these additional metals do not have a NAAQS for comparison, ADHS will assess that data for potential health impacts.

During Phase 1 (Feb. 15, 2024 - June 9, 2024), ADEQ collected air quality data at the two locations, monitoring PM₁₀ and various metals. Initial Lead concentration results were high at the VFW Post, which prompted the planning of a more extensive Phase 2 study (Dec 5, 2024 - June 30, 2025). However, in April 2025, the laboratory ADEQ contracted, notified ADEQ that it had incorrectly calculated and reported the Phase 1 Lead results. The corrected data showed no Lead concentrations of concern at either monitoring site. All other Phase 1 data, including PM₁₀ and other metals, were correctly measured and reported from the start.

While the corrected Lead data for the VFW location showed that levels were below the health-based NAAQS for Lead, ADEQ staff and Community Science Alliance Volunteers already began a second phase of Lead monitoring by collecting 1-in-3 day samples (one sample collected every three days) using EPA's standard methodology (TSP - Total Suspended Particles), which is necessary for an accurate comparison of the results to the NAAQS.

No additional air monitoring is planned at this time as a result of both Phase 1 and Phase 2 findings. ADEQ will continue to work with ADHS on any potential follow up as a result of its health consultation results, which are expected to be released in early 2026.

WHAT WE DID

Phase 1 – Feb. 15, 2024 through June 9, 2024:

- Assessed and established two monitoring sites in the Cottonwood area to ensure they would capture representative ambient PM₁₀ and metals concentrations.
- Deployed instrumentation at the two monitoring sites (see Figure 1):
 - VFW Post 7400 (705 E. Aspen St. Cottonwood, AZ 86326), and
 - City of Cottonwood Kid's Park (350 S. 12th St. Cottonwood, AZ 86326)
- Collected and tested air quality samples for PM₁₀ and a variety of metals at two locations.
- Analyzed data received from the laboratory ADEQ contracted to determine whether results exceeded the EPA NAAQS, where applicable.

Phase 2 – Dec. 5, 2024 through June 30, 2025:

- Deployed a TSP Lead monitor to the VFW Post location (see Figure 2).
- Collected and tested air quality samples.
- Analyzed data received from an ADHS-certified laboratory ADEQ contracted to determine whether results exceeded EPA's NAAQS for TSP Lead.

Data Quality Indicators

All Data Quality Indicators were met for both phases of this study, and monitoring locations, weather, and data are accurately representative of the Cottonwood area. For more information about Data Quality Indicators, please refer to the [Quality Assurance Program Plan](#)

Figure 1

Phase 1 Study Locations:



Figure 2

Phase 2 Study Location:



WHAT WE PLANNED:

Phase 1:

Principle Study Question

During the study period, do any of the PM₁₀ average daily (24-hour) concentrations exceed 85% of the NAAQS?

Alternative Study Question

Do ambient airborne metals pose a health risk for the area including the VFW Post and Cottonwood Kid's Park?
ADHS will address this question in its health consultation.

Dust & Metals Monitoring

Phase 1 included PM₁₀ monitoring because the Cottonwood community identified dust as the primary pollutant of concern. ADEQ contracted a laboratory to extract metals data from the PM₁₀ samples and provided that data to ADHS for use in its health consultation.

Phase 2:

Principle Study Question

Are Lead concentrations below 50% of the NAAQS for a 3-month rolling average during the study?

Alternative Study Question

Are Lead concentrations similar to the values from the 2024 Phase 1 study (i.e., comparable data distribution, ratio of monthly and total concentration dataset between 75% and 125%)?

WHAT WE LEARNED:

Phase 1:

Ambient levels of PM₁₀ were well below EPA's health-based NAAQS for PM₁₀, which is 150 µg/m³ (micrograms per cubic meter) averaged over 24-hours.

- The average 24-hour PM₁₀ concentration was:
 - 42 µg/m³ at the VFW Post
 - 14 µg/m³ at the Cottonwood Kid's Park
- The maximum 24-hour PM₁₀ concentration was:
 - 150 µg/m³ at the VFW Post*
 - 37 µg/m³ at the Cottonwood Kid's Park

** On April 23, 2024, strong wind gusts over 25 mph likely contributed to this elevated PM₁₀ concentration, which exceeded 85% of the PM₁₀ NAAQS. This stands as an outlier in comparison to concentrations recorded during the rest of the Phase 1 study period. Figures 3 and 4 provide a visual representation of the data.*

- The maximum rolling 3-month average concentration for Lead was:
 - 0.10 µg/m³ at the VFW Post, which is elevated but well below the NAAQS*
 - The Cottonwood Kid's Park monitor showed even lower concentrations of Lead, also well below the NAAQS

** In April 2025, the laboratory ADEQ contracted informed ADEQ that there was an error in their calculations. Actual concentrations for Lead were much lower than previously reported and the corrected VFW Post 3-month rolling average concentration was 0.009 µg/m³.*

Phase 2:

TSP Lead concentrations were well below EPA's health-based NAAQS for Lead, which is 0.15 µg/m³ in TSP over a 3-month rolling average.

- The maximum 24-hour TSP Lead concentration at the VFW Post was 0.065 µg/m³ on June 12, 2025 (see Figure 5)
- The maximum 3-month rolling average TSP Lead concentration at the VFW Post was 0.018 µg/m³, which is well below 85% (12%) of the NAAQS (see Figure 6)

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Figure 3

VFW Post 24-Hour PM₁₀ Concentrations from 2/15/2024 - 6/09/2024

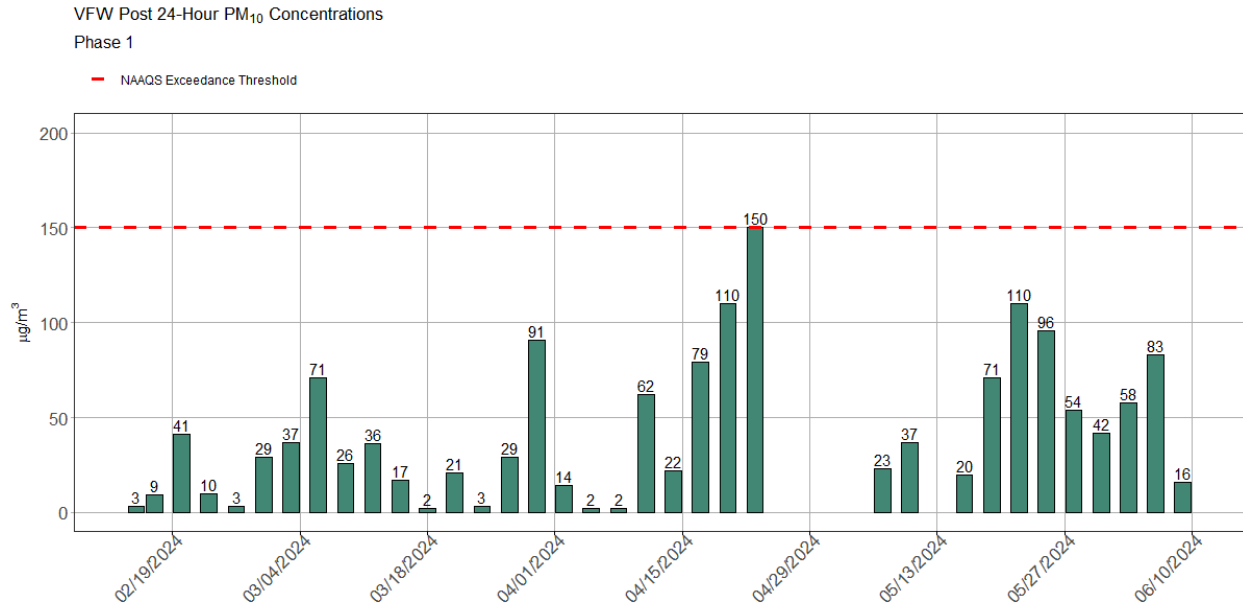
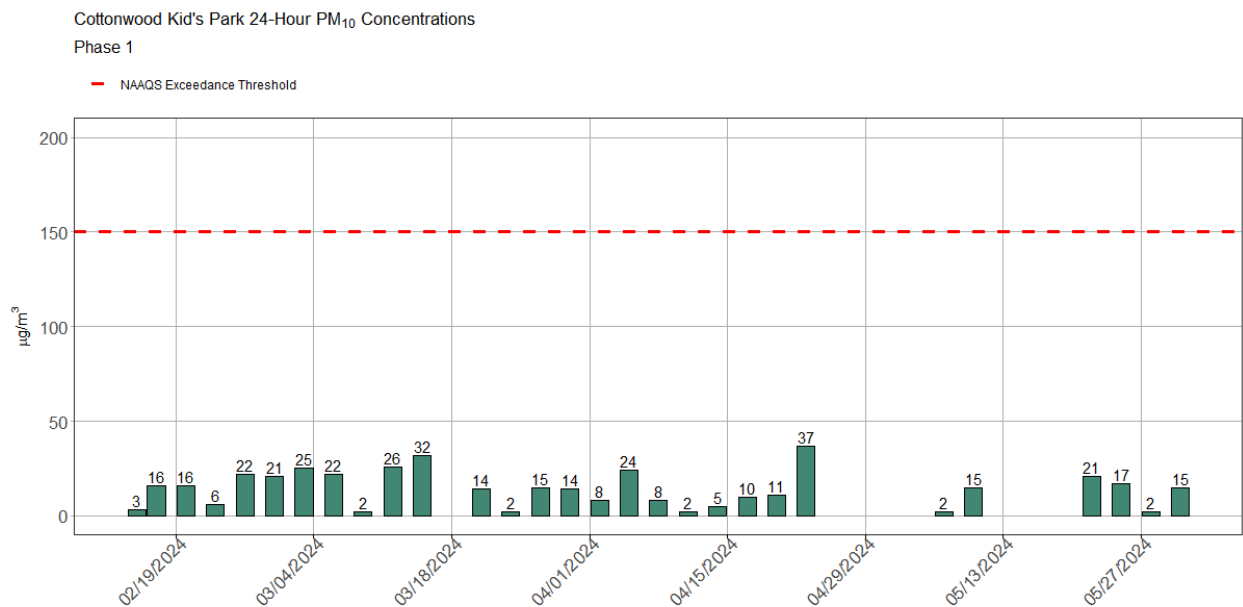


Figure 4

Cottonwood Kid's Park 24-Hour PM₁₀ Concentrations from 2/15/2024 - 6/09/2024



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Figure 5

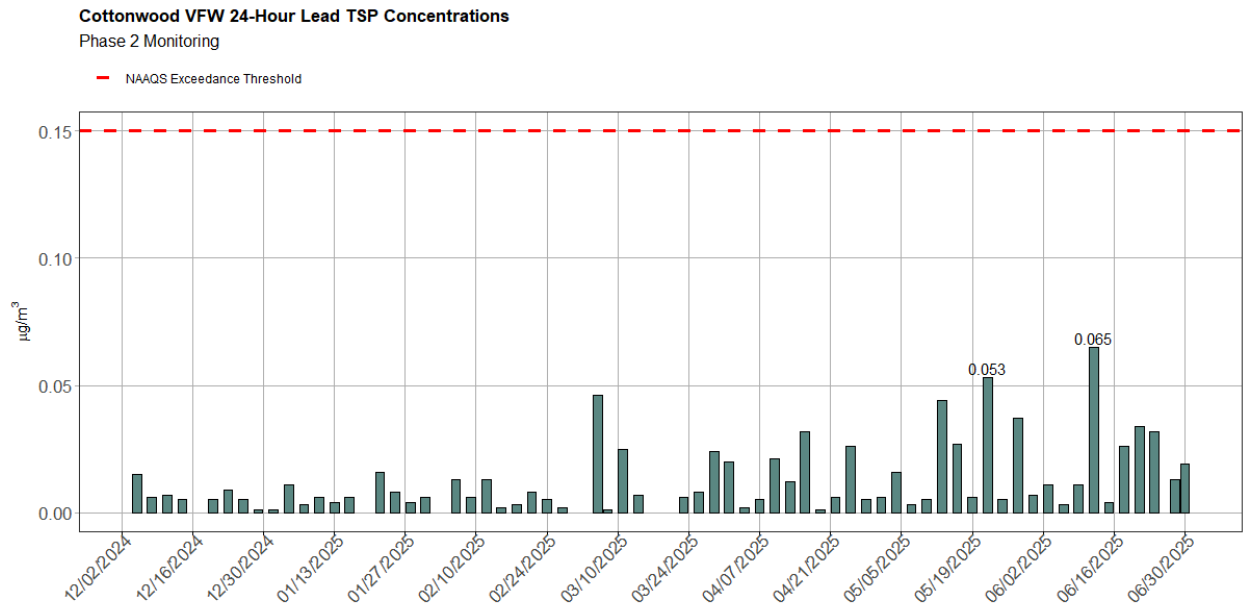
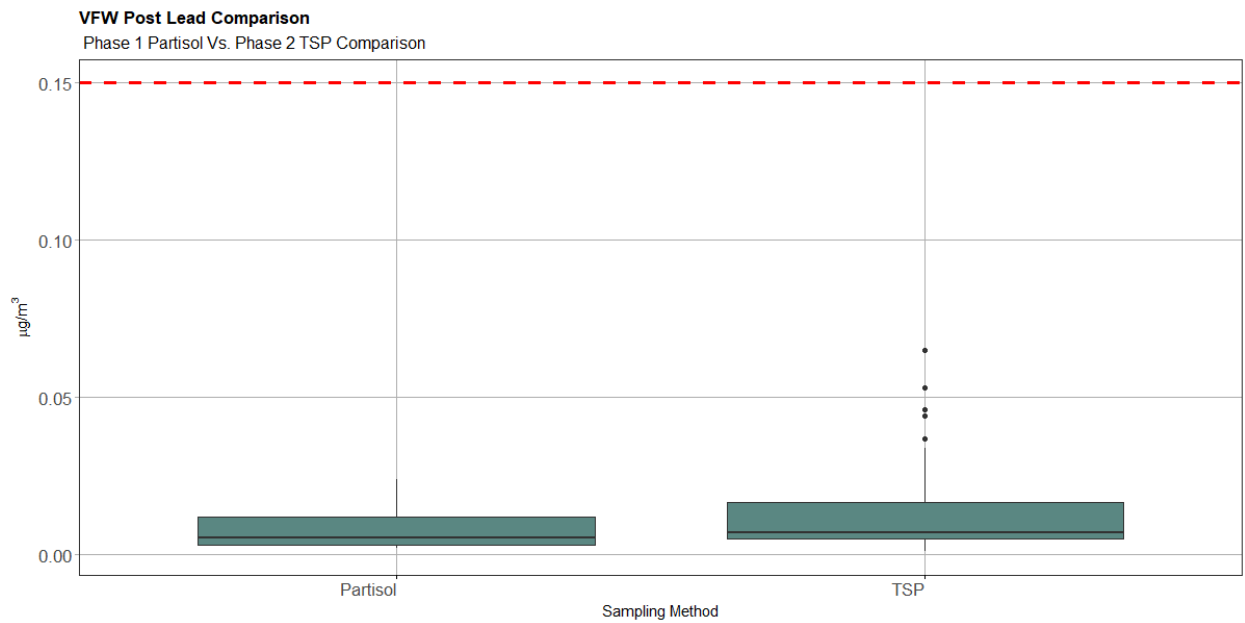


Figure 6



CONCLUSIONS:

All data quality indicators were met for PM₁₀ at both monitoring locations. The collected data for both PM₁₀ and metals indicate that the Cottonwood Kid's Park site experienced significantly lower levels of particulates and metals compared to the VFW Post, with most samples at the Cottonwood Kid's Park showing metal concentrations below detectable limits.

PM₁₀ data from the air quality monitor at the VFW Post indicate that the most significant dust concentrations are driven by high wind events from the south, as shown during the April 23, 2024 wind event that resulted in the 24-hour PM₁₀ concentration of 150 µg/m³. All other values collected for PM₁₀ at the VFW Post were below 85% of the NAAQS, with the average 24-hour PM₁₀ concentration being 42 µg/m³. The PM₁₀ data collected from the Cottonwood Kid's Park located east of the slag pile had an average 24-hour PM₁₀ concentration of 14 µg/m³, with all values well below 85% of the NAAQS. Therefore, data indicate that ambient conditions were below the threshold for air quality concerns for PM₁₀ at both sites.

Although Phase 2 was already set in motion due to incorrectly calculated Lead concentrations, corrected Lead values from Phase 1 show that concentrations were much lower than previously reported and well below the 0.15 µg/m³ NAAQS threshold. The corrected maximum 3-month rolling average was 0.009 µg/m³ for Phase 1.

Lead TSP monitoring during Phase 2 confirmed the corrected results from Phase 1 in that there are no Lead concentrations approaching the NAAQS at the VFW Post. The maximum 24-hour concentration for Lead TSP in Phase 2 was 0.065 µg/m³. The 3-month rolling average for Lead TSP (the NAAQS comparable calculation) was 0.018 µg/m³.

No additional air monitoring is planned at this time as a result of both Phase 1 and Phase 2 findings. ADEQ will continue to work with ADHS on any potential follow up as a result of its health consultation results, which are expected to be released in early 2026.