

AQRP Monthly Technical Report

PROJECT TITLE	Texarkana Intensive Campaign	PROJECT #	24-007
PROJECT PARTICIPANTS	University of Houston, Baylor University, Aerodyne Research	DATE SUBMITTED	03/10/2025
REPORTING PERIOD	From: 02/01/2025 To: 02/28/2025	REPORT #	7

A Financial Status Report (FSR) and Invoice will be submitted separately from each of the Project Participants reflecting charges for this Reporting Period. I understand that the FSR and Invoice are due to the AQRP by the 15th of the month following the reporting period shown above.

Detailed Accomplishments by Task for reporting period

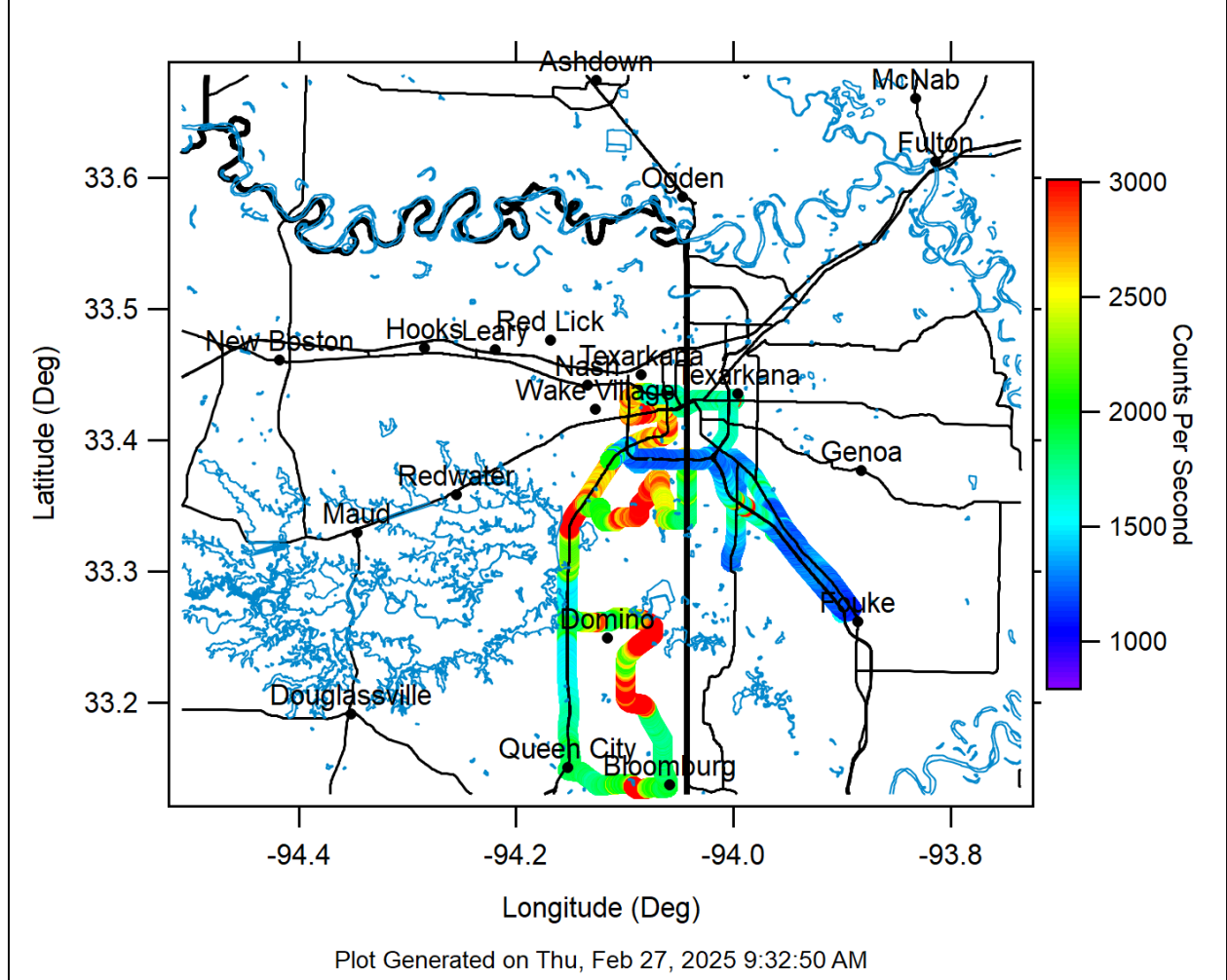
- Successfully conducted the measuring campaign for Texarkana during the month of February.
- Deployed MAQL3 on February 6, 2025. Mobile Air Quality Lab (MAQL3) first went to Baylor University (BU) to integrate the Accelerator Mass Spectrometer (AMS). MAQL3 then headed to Texarkana and arrived on 2/10/2025 at the RV park.
- Calibrations and regular maintenance were conducted during stationary sampling days.
- A Handix Portable Optical Particle Spectrometer (POPS) optical particle scanner was mounted to the Aerodyne Smaller Mobile Laboratory (minAML) <https://aerodyne.com/aerodyne-mobile-laboratory/> while a second POPS was mounted inside MAQL3, connected to the aerosol sample inlet. The POPS units on the minAML and MAQL3 allowed both mobile labs to have a similar measurement to aid in plume identification. It also provided an opportunity for intercomparison between a POPS mounted outside with a very short sample inlet and the POPS mounted inside the mobile lab with a longer sample inlet.
- MAQL3 conducted a total of 13 days of mobile sampling during February, not including the day of arrival.

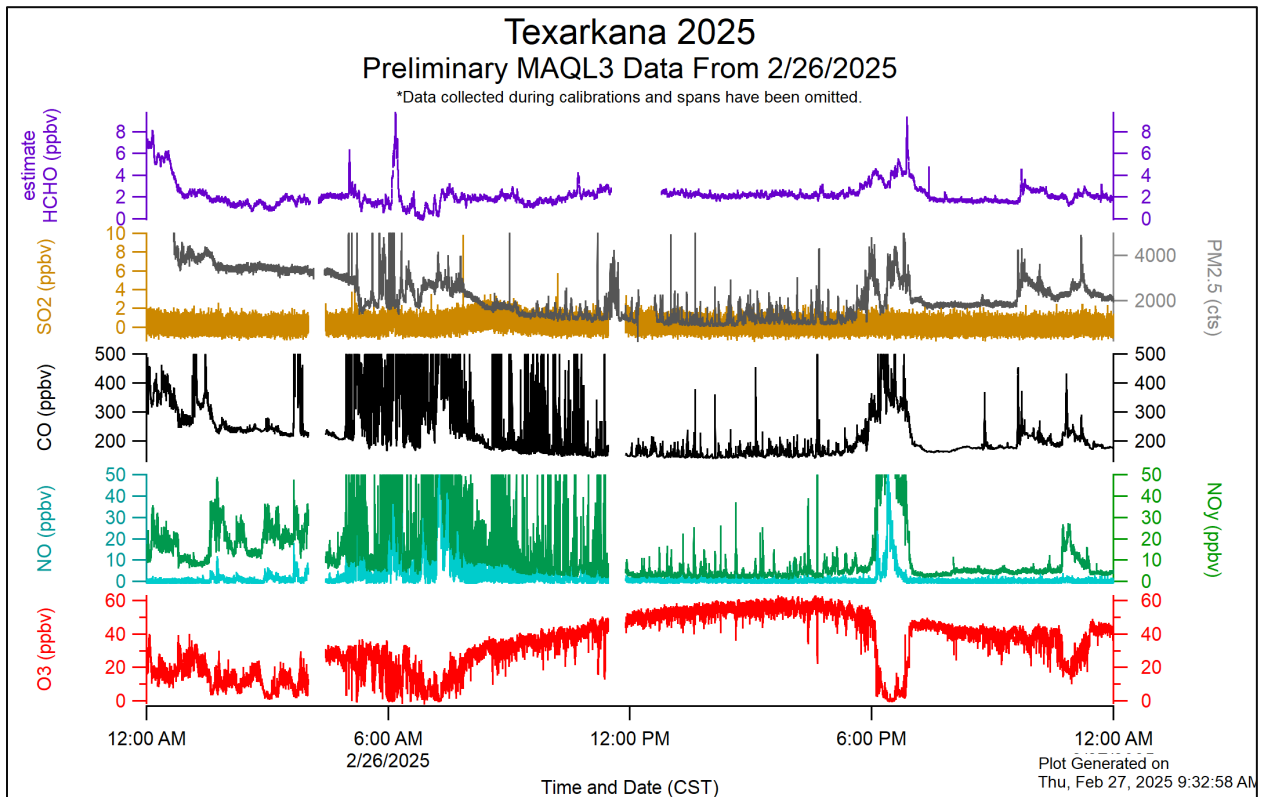
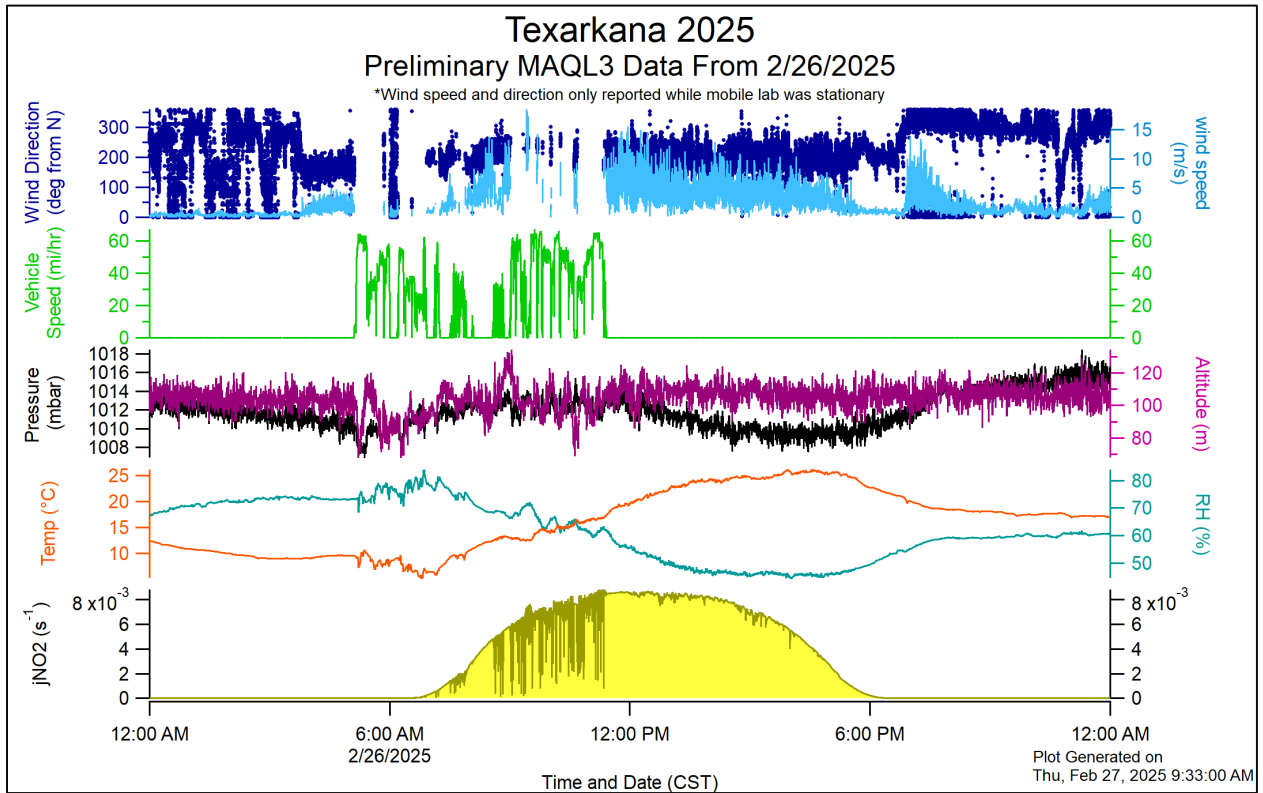
Measurements were made under a variety of wind conditions but southerly winds that were hoped to be seen were relatively rare. On February 26, southerly winds were forecast to begin in the very early hours of the morning. To take advantage of the opportunity, the MAQL3 and minAML teams started mobile sampling around 5 a.m. Measurements were made upwind and downwind of a papermill to the south of Texarkana. Plumes were intercepted multiple times including at the TCEQ PM monitoring site in downtown Texarkana. Later in the morning winds shifted to southwesterly. Plumes were intercepted multiple times to the southeast of Texarkana.

Preliminary Analysis

Preliminary MAQL3 PM2.5 Particle Rate Measurements for Texarkana 2025

2/26/2025





Data Collected

Raw data has been collected and will be processed into final data.

Identify Any Problems or Issues Encountered and Proposed Solutions or Adjustments

The Formaldehyde instrument did not respond to calibration gas after regular maintenance was performed on 2/11. Changing to a different chemical solution batch solved the problem. It was determined that one of the batches taken for the campaign had gone bad. The UH team delivered a new batch of solutions to the mobile lab team mid-campaign to ensure there was enough to get through the end of the campaign.

Goals and Anticipated Issues for the Succeeding Reporting Period

Complete the last two days of sampling at the beginning of March. Perform final calibrations, offload the Baylor University's AMS instrument, and begin final data processing.

Detailed Analysis of the Progress of the Task Order to Date

None

Do you have any publications related to this project currently under development? If so, please provide a working title, and the journals you plan to submit to.

Yes No

Do you have any publications related to this project currently under review by a journal? If so, what is the working title and the journal name? Have you sent a copy of the article to your AQR Project Manager and your TCEQ Liaison?

Yes No

Do you have any bibliographic publications (ie: publications that cite the project) related to this project that have been published? If so, please list the reference information. List all items for the lifetime of the project.

Yes No

Do you have any presentations related to this project currently under development? If so, please provide working title, and the conference you plan to present it (this does not include presentations for the AQR Workshop).

Yes No

Do you have any presentations related to this project that have been published? If so, please list reference information. List all items for the lifetime of the project.

Yes No

Have any personnel changes occurred that were not listed in the original proposal? If so, please include a detailed description of the personnel change(s) below.

Yes No

Are any delays expected in the progress of the research? If so, please include a detailed description of the potential delay below.

Yes No

Describe any possible concerns/issues (technical or non-technical) that AQRP should be made aware of.

N/A

Are you anticipating using all the available funds allocated to this project by the end date? If not, why and approximately what is the amount to be returned?

Yes No

Submitted to AQRP by
James Flynn