

AQRP Monthly Technical Report

PROJECT TITLE	Detecting events and seasonal trends in biomass burning plumes using black and brown carbon: (BC) ₂ El Paso	PROJECT #	19-031
PROJECT PARTICIPANTS	Rebecca J. Sheesley (Baylor) Sascha Usenko (Baylor) James Flynn (UH)	DATE SUBMITTED	Mar 11, 2019
REPORTING PERIOD	From: Feb. 1, 2019 To: Feb. 28, 2019	REPORT #	4

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

- Acquired and setup sampling system, including copper tubing, power supplies, and relays for sampling inlet and auto control of valving.
- Finalized instrumental setup and valve configurations for the measurements.
- Started operating TAPs, nephelometer, aethalometer, NO_x and CO in the trailer.
 - NO_x and CO will supplement data from the TCEQ site on UTEP campus to improve detection of biomass burning events.
- Tested instrument operation after the inlet system had been set up.
- Determined the best pumps to attain and maintain system flow through the PM_{2.5} cyclone inlet and then to the TAPs and nephelometer.
- The valve configuration for the inlet lines was set up in the DaqFactory system.
- The system is set up to allow simultaneous operation of both TAPs for initial and periodic intercomparison. It will also allow for alternating operation under normal conditions, with flow alternating between the two TAPs every 30 min to extend the filter lifetime and decrease maintenance visits to the site.
- Tested DaqFactory setup for different settings like alternate TAP sampling, zeroing and calibration.
- Constructed pump housing unit for protection from the rain.

Travel

- The PIs conducted a site visit to El Paso Jan 31-Feb 1. At that time we met with the facilities director and with professors.
- UH PI Flynn traveled to Baylor with research scientist to set up inlet system, install the nephelometer and start the computer system (Feb 4-6).
- Several conference calls were conducted between Baylor and UH PIs to discuss system details and scheduling.

Preliminary Analysis

NA

Data Collected

NA

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

The initial pump and blower system planned for the sampling was insufficient for the flow required. It was determined that two Gast pumps that Sheesley had in house would be effective to maintain the flowrate required to run both the TAPs and the nephelometer through the same PM2.5 inlet. Quotations for replacement pumps have been acquired and fit within the ex. A spare pump will be ordered for backup.

The current timeline for completion of the site is 3/15/19. The site setup is planned for shortly after this If and when future issues arise at the site, we are establishing a good working relationship with folks at UTEP.

The associated TCEQ site funding for this project was set with a start date of Jan 16, 2019. The contract was setup at Baylor on Feb 28.

Goals and Anticipated Issues for the Succeeding Reporting Period

Deployment to El Paso is planned.

Detailed Analysis of the Progress of the Task Order to Date

The project is still in its initial stages.

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 AQRP Project Manager and your TCEQ Liaison?

Yes No

Do you have any bibliographic publications 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 AQRP 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

Submitted to AQRP by

Principal Investigator