

AQRP Monthly Technical Report

PROJECT TITLE	Quantifying the Emissions and Spatial/Temporal Distributions of Consumer Volatile Chemical Products (VCPs) in the Greater Houston Area	PROJECT #	22-020
PROJECT PARTICIPANTS	Dr. Yue Zhang, Alana Dederro, Zhenli Lai, Dr. Ying Qi, Hee Won Yim	DATE SUBMITTED	10/10/2022
REPORTING PERIOD	From: Project start date To: 8/31/2022	REPORT #	2

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.

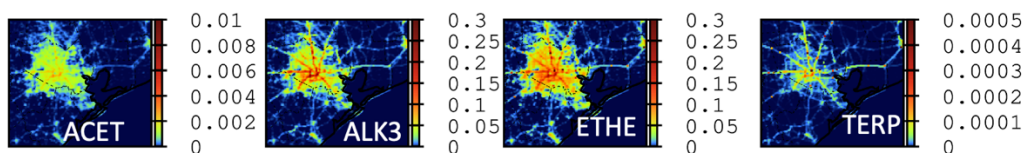
Detailed Accomplishments by Task for reporting period

We finished our second project kickoff team meeting this month, and started planning the routes and logistics for our field study in October. The measurement team is installing the instruments onto the mobile lab and purchased for all the supplies (The funding from AQRP has not been received as of 10/10/2022 and the PI has been using his startup to cover the cost for now. A charge back might be needed). The modeling team is working on simulating the VCP concentration in the Greater Houston Area.

Preliminary Analysis

Our modeling team (Dr. Qi's lab) has simulated the key VCP concentrations in the Greater Houston Area to guide the measurement team's route selection, as shown below in Figure 1.

Onroad emissions(kg/h)



VCPs emissions(kg/h)

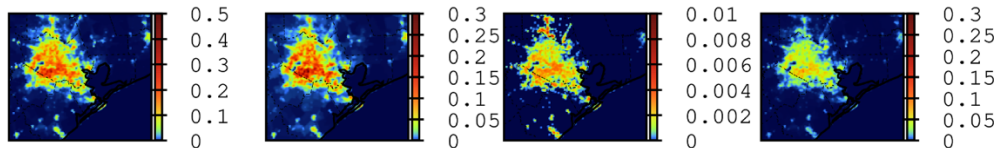


Figure 1. The VCP onroad emission vs non-road emission in the Greater Houston Area

The measurement team (Dr. Zhang's lab) successfully finished route planning as shown below in Figure 2.

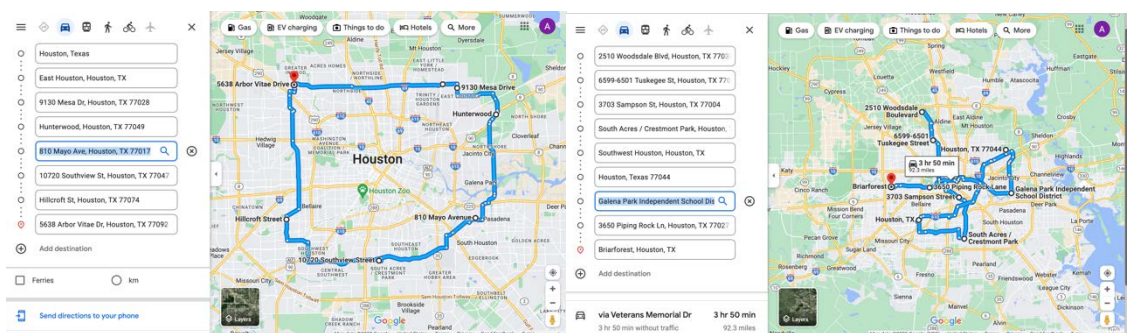


Figure 2. The mobile laboratory sampling route.

The measurement team (Dr. Zhang’s lab) also has generated a detailed list of VCP compounds to be identified by the Vocus CI-MS. Due to the length, the list is not shown here but will be used for future data analysis

Data Collected

The team performed calibrations of the Vocus Chemical Ionization Mass Spectrometer (CI-MS) and the Aerosol Mass Spectrometer (AMS).

Identify Any Problems or Issues Encountered and Proposed Solutions or Adjustments

N/A

Goals and Anticipated Issues for the Succeeding Reporting Period

We plan to: (1) perform the field study in October and collect measurement data; (2) partially analyze the data collected in October to guide the ongoing field study.

Detailed Analysis of the Progress of the Task Order to Date

The measurement team has performed data analysis on the calibration data and demonstrated that the instruments are functioning fine with the ability to measure gas phase species and submicron ambient particles.

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 (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 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

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.

The PI's institution has not received the AQRP funding yet. The PI's institution does not allow the PI to make purchases first and then charge back to the AQRP account later, so the PI has been making purchases related to the AQRP project using the PI's own funding sources. However, the PI's purchasing office just informed the PI that this cannot continue so the project is risking to be delayed in the month of October if the AQRP funding is not received by 10/15/2022. The PI has reached out to both the AQRP team and the SRS office from the PI's institution to find a solution and is still working on it.

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

The whole funding is expected to be used by the end of the project date.

Submitted to AQRP by
Dr. Yue Zhang, PI of the AQRP project 22-020.