

AQRP Monthly Technical Report

PROJECT TITLE	Quantifying Ozone Production from Light Alkenes Using Novel Measurements of Hydroxynitrate Reaction Products in Houston	PROJECT #	14-026
PROJECT PARTICIPANTS	Dr. Tom Ryerson (NOAA) Dr. Greg Yarwood (ENVIRON) Dr. David Parrish	DATE SUBMITTED	4/8/2015
REPORTING PERIOD	From: March 1, 2015 To: March 31, 2015	REPORT #	10

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

- Plumes intercepted on the 19 Aug 2013 and 4 Sept 2013 SEAC⁴RS flights have been identified for further analysis and potential modeling.
- Correlation analysis of photochemical species on the 19 Aug 2013 and 4 Sept 2013 SEAC⁴RS flights has been initiated.
- Completed implementation of the kinetics scheme for the HRVOC chemistry in SCICHEM.
- Developed background surface NO_x and VOC emissions for areas to the west (urban), south (suburban) and northeast (high biogenics) of the ship channel using CAMx modeling inputs for the HGB 4-km domain. These areas characterize the background for possible trajectories of ship channel plumes.

Preliminary Analysis

Data Collected

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

We have requested a 3-month no-cost extension for this study due to the delays in getting the project started and in receiving QA/QC'd hydroxynitrate data for review and analysis. The data analysis is still ongoing and the modeling is in the preliminary stages.

Goals and Anticipated Issues for the Succeeding Reporting Period

- Dr. Parrish will provide meteorological data and background concentrations to ENVIRON colleagues for any other flights that will be modeled.

- Complete the correlation analysis of photochemical species on the 19 Aug 2013 and 4 Sept 2013 SEAC⁴RS flights. Examine plumes intercepted during the following flights for suitability of further correlation analysis: 8/12, 8/16, 8/21, 8/23, 8/27, 8/30, 9/13, 9/23.
- Conduct SCICHEM simulations for the 18 Sep 2013 flight with and without the HRVOC chemistry.
- Begin organizing data analysis manuscript to be submitted for peer-reviewed publication.

Detailed Analysis of the Progress of the Task Order to Date

Submitted to AQRP by: Greg Yarwood

Principal Investigator: Tom Ryerson