

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	5/8/2015
REPORTING PERIOD	From: April 1, 2015 To: April 30, 2015	REPORT #	11

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

- The correlation analysis of photochemical species on the 19 Aug 2013 and 4 Sept 2013 SEAC⁴RS flights has been largely completed.
- The relationships between the hydroxynitrates and other photochemical products have been investigated. It has become clear that hydroxynitrates are rapidly removed from the atmosphere. This rapid removal must be fully considered as the analysis progresses.
- A preliminary draft of the final report describing the data analysis has been initiated; this draft will serve as the initial starting point of the peer-reviewed publication.
- Setup of modeling inputs for SCICHEM simulations of the 18 September 2013 flight.

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 and determine if the model can capture the hydroxynitrate formation seen in the aircraft measurements.
- Continue writing manuscript to be submitted as the data analysis section of the draft final report and 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