

AQRP Monthly Technical Report

PROJECT TITLE	A Next Generation Modelling System for Estimating Texas Biogenic VOC Emissions	PROJECT #	16-011
PROJECT PARTICIPANTS	Ramboll Environ Alex Guenther	DATE SUBMITTED	06/9/2017
REPORTING PERIOD	From: May 1, 2017 To: May 31, 2017	REPORT #	8

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

Task 1: Development and Application of a Transparent Approach for Estimating BVOC Emission Factor Distributions

Dr. Guenther continued review of the BVOC emission factor (EF) database system and code. Ramboll Environ applied a user specified J-rating threshold to EF and LDF measurements. The J-rating (expert judgment) assigns a rating to the measurements in the EF database based on the underlying information, including but not limited to, data collection methods and documentation.

Task 2: Emission Factor Development

Dr. Guenther developed an approach for accounting for lack of emissions data for important species and compared and reconciled emissions with aircraft data.

Task 3: Development of MEGAN3

Dr. Guenther and Ramboll Environ evaluated and assessed the MEGAN code and began writing documentation for code and inputs.

Task 4: MEGAN Evaluation and Sensitivity Study

Task 4 was initiated in May. MEGAN3 emissions were evaluated against aircraft flux data from the 2013 Southeast Atmosphere Study (SAS) and compared with two other MEGAN emission inventories: (1) MEGAN v2.1 using the default landcover database and emission factors, and (2) MEGAN v2.1 updated high-resolution landcover database and emission factors from AQRP Project 14-016. Emissions sensitivity tests were carried out with MEGAN3 to evaluate changes in emissions due to use of different J-rating criteria. Ramboll Environ began base case photochemical modeling of the June 1-July 15, 2013 period that encompassed all of the SAS C-130 and P-3 aircraft flights using MEGAN v2.1 biogenic emissions and using the most recent versions of the CAMx model and CB6r4 chemical mechanism.

Task 5: Project Management and Reporting

This task is ongoing. Dr. Guenther continued compiling information for the final report.

Preliminary Analysis

None.

Data Collected

None.

Identify Problems or Issues Encountered and Proposed Solutions or Adjustments

None.

Goals and Anticipated Issues for the Succeeding Reporting Period

Begin MEGAN3 sensitivity testing under Task 4.

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 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

Sue Kemball-Cook
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