

**GHG Emission Factor Development Project for Selected  
Sources in the Natural Gas Industry**

U.S. Environmental Protection Agency  
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Quarterly Progress Report

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Submitted to

Lisa Hanle, Project Officer  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue (6207J)  
Washington, DC 20460

Prepared by

David T. Allen, Principal Investigator  
The University of Texas at Austin  
10100 Burnet Rd., M.S. R7100  
Austin, TX 78758

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## **Project Overview**

Methane (CH<sub>4</sub>) is the primary component of natural gas and is also a potent greenhouse gas (GHG). Emissions of CH<sub>4</sub> from natural gas production, processing, and distribution are among the top ten source categories of greenhouse gas emissions in the United States, expressed on a CO<sub>2</sub> equivalent basis. The overall goal of the project is to update default CH<sub>4</sub> emission factors for selected processes and equipment used in the natural gas industry. The default emission factors will be updated by compiling and synthesizing existing data for a variety of source categories and by acquiring new emission rate measurement data for selected sources where existing data have unacceptably large uncertainties or are insufficiently representative of current practices or equipment.

The project is organized into four tasks:

- *Task 1, Data Synthesis and Gap Analysis:* The purposes of this task are to: (1) identify, compile, and synthesize existing CH<sub>4</sub> emission factor and activity factor data; (2) critically review the quality and representativeness of the existing data; (3) recommend and prioritize emission source characteristics for new data collection efforts under Task 3.
- *Task 2, Technical Plan Development:* The purpose of this task is to develop technical work plans and detailed cost estimates for conducting data collection and measurement studies aimed at filling the emission data gaps identified in Task 1. In doing so, we will consider the range of potential activity data metrics that could be used for updating default emission factors and gather preliminary data on relevant metrics to ensure that all the major subgroups of equipment or processes are taken into account.
- *Task 3, Measurements and Analysis:* The purposes of this task are to: (1) execute the technical plans developed in Task 2, contingent on authorization by EPA; and (2) analyze the resulting data to develop new default emission factors and uncertainty estimates for the measured sources.
- *Task 4, Reporting and Dissemination:* The purpose of this task is to report on the default emission factors developed in Tasks 1 and 3 of this study, including the methods used in the process. Reporting and communication with stakeholders will be integrated into all of the tasks and a final reporting will disseminate project results.

## **Progress on Tasks**

### ***Task 1***

A draft review of sources of emission factor and/or activity factor data that may have relevance to the natural gas sources of interest was prepared. That draft report is attached.

***Task 2***

During this quarter we have drafted a work plan specifying methods and procedures for gathering additional data needed for updating factors used for estimating methane emissions from centrifugal and reciprocating compressors used in natural gas processing. That plan is attached.

**Equipment Purchased**

We have ordered a Hi-Flow gas sampler for data collection. This equipment was included in the original project budget.

**Plans for Next Quarter**

***Task 1***

During the next quarter we will seek input on the draft literature review from stakeholders.

***Task 2***

After obtaining EPA and industry review of the draft natural gas processing work plan, and addressing comments, the work plan will be completed and used as a model for a similar document which will address compressors, pneumatic devices, and meter/regulating stations used in natural gas transmission and storage.

**Equipment Purchased**

We have ordered a Hi-Flow gas sampler for the data collection. This equipment was included in the original project budget.