

## **NTRD Program Disclaimers**

### **1. Disclaimer of Endorsement:**

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**Texas Commission on Environmental Quality  
New Technology Research & Development (NTRD) Program  
Monthly Project Status Report**

Contract Number: \_\_\_\_\_582-5-70807-0007\_\_\_\_\_

Grantee: \_\_\_\_\_Lamar University\_\_\_\_\_

Date Submitted: \_\_\_\_\_March 15, 2006\_\_\_\_\_

Report for the **Monthly** period:

Starting Date \_\_\_February 15, 2006\_\_\_      Ending Date \_\_\_March 14, 2006\_\_\_

Section I. Accomplishments *(Please provide a bulleted list of project accomplishments as well as a description of their importance to the project.)*

- **More Powerful Microwave Oven Installed** – To enhance energy supply, a 1400-watt microwave oven has been installed to replace the original 900-watt unit to supply more energy to the SiC DPF with a wave guide. This new unit was able to increase the filter temperature significantly.
- **DPF On-Line Microwave Regeneration Characterized** - The regeneration of the soot-plugged DPF (Diesel Particulate Filter) has been successfully demonstrated by increasing the microwave power from 900 to 1400 watts, which enables to increase the DPF filter temperature up to 672°C. During the regeneration, CO concentration was measured using the on-line analyzer (Testo-350) as shown Figure 1 in the last page of this report. It was confirmed that the DPF was fully regenerated based on the pressure drop measurement of the filter.
- **NOx Reduction Test Unit Designed** - The NOx reduction test unit has been designed to handle a NOx sample and engine exhaust stream as well, and is ready to test for a 1000 ppm NO followed by the engine exhaust. The catalyst pack is prepared from activated platinum gauze (wire mesh) and SiC foam discs (10 mm dia x 4 mm thick, 80 ppi).

**Indicate which part of the Grant Activities as defined in the grant agreement, the above accomplishments are related to:**

The above accomplishments are related to Tasks 1, 2, 3, and 4 described in the Scope of Work of the project.

Section II: Problems/Solutions

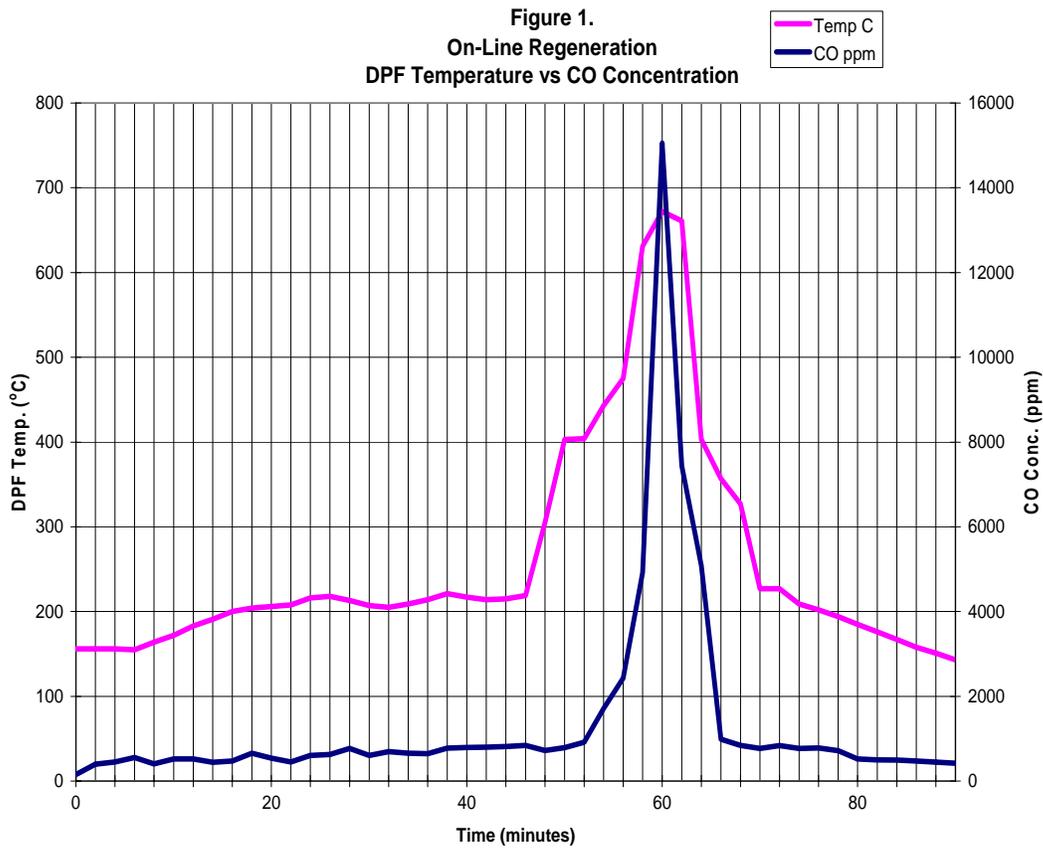
<p><b>Problem(s) Identified</b></p> <p><i>(Please report anticipated or unanticipated problem(s) encountered and its effect on the progress of the project)</i></p>	<p>None</p>
<p><b>Proposed Solution(s)</b></p> <p><i>(Please report any possible solution(s) to the problem(s) that were considered/encountered)</i></p>	<p>N.A.</p>
<p><b>Action(s) Conducted and Results</b></p> <p><i>(Please describe the action(s) taken to resolve the problem(s) and its effect)</i></p>	<p>N.A.</p>

**Section III. Goals and Issues for Succeeding Period:** (Please provide a brief description of the goal(s) you hope to realize in the coming period and identify any notable challenges that can be foreseen)

The goals for the next month are to:

1. Optimize the soot regeneration unit operation;
2. Obtain NOx reduction data and prepare for a large scale test; and
3. Start to prepare the final report.

The next Monthly Progress Report will be submitted to TCEQ on April 15, 2006.



Date: 3/15/06

Authorized Project Representative's Signature

**NOTE:** Please attach any additional information that you feel should be a part of your report or that may be required to meet the deliverable requirements for tasks completed during this reporting period.