

NTRD Program Disclaimers

1. Disclaimer of Endorsement:

The posting herein of progress reports and final reports provided to TCEQ by its NTRD Grant Agreement recipients does not necessarily constitute or imply an endorsement, recommendation, or favoring by TCEQ or the State of Texas. The views and opinions expressed in said reports do not necessarily state or reflect those of TCEQ or the State of Texas, and shall not be used for advertising or product endorsement purposes.

2. Disclaimer of Liability:

The posting herein of progress reports and final reports provided to TCEQ by its NTRD Grant Agreement recipients does not constitute by TCEQ or the State of Texas the making of any warranty, express or implied, including the warranties of merchantability and fitness for a particular purpose, and such entities do not assume any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represent that its use would not infringe privately owned rights.

**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: _____April 15, 2006_____

Report for the **Monthly** period:

Starting Date ___March 15, 2006___ Ending Date ___April 14, 2006___

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

- **NOx Reduction Test Conducted** - A series of NOx reduction tests has been completed in the microwave unit using the diesel engine exhaust. NOx (NO + NO₂) is successfully reduced by >95% by injecting hexane (see Table 1 in page 3). The catalyst pack is prepared from activated platinum gauze (wire mesh) and SiC foam discs (10 mm dia x 4 mm thick, 80 ppi), and followed by CO+ VOC oxidation catalyst as shown in Figure 1 in page 3.
- **DPF Regeneration Tests Conducted** - An off-line regeneration test indicates that majority of the soot is burnt off in the first 5 minutes and at > 400 °C, and while maintaining DPF temperature at 600-650°C for remaining 15 minutes, slight changes in the filter DP and CO concentration have been observed as shown in Figures 2 and 3 in page 4. This test would give an optimum regeneration time of 10 minutes.
- **No-Cost Extension Requested** - The project has requested for a no-cost extension of the grant contract as well as an amendment to the due dates for the five deliverables associated with the project. The main reason for the need for this request is the delay of the project caused by Hurricane Rita, which hit the Beaumont, TX area in September 2005 and induced substantial damages to the Lamar University. Specifically, the following are requested:
 1. A three-month no-cost extension of the grant contract to August 31, 2006; and
 2. An amendment to the due dates for Tasks 1, 2 and 3 to 11 months from the Notice to Proceed (i.e., to 4/30/2006) and, for Tasks 4 and 5, to the final date of the extended grant contract (i.e., to 8/31/2006)

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

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 NOx reduction conditions;
2. Repeat DPF filter regeneration; and
3. Construct the re-designed prototype unit.

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

Table 1. NOX Reduction Test

	Microwave		Analysis (Testo 350)				
	watt	temp (oC)	O2	CO	NO	NO2	NOx
Engine Exhaust			9.1	538	537	99	636
DeNOx	330	1000	0.5	7980	70	5	75
DeNOx+ CO oxidation	330	1000	0.2	9	0	1	1

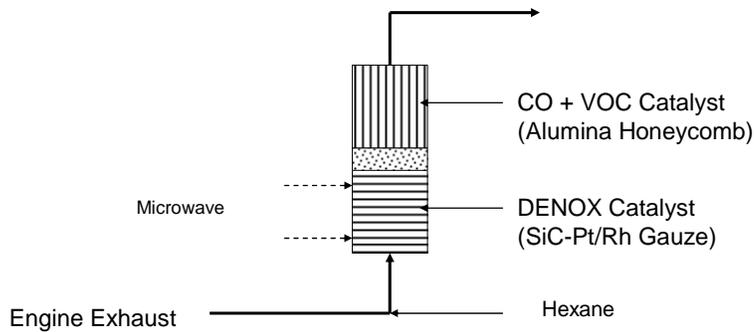
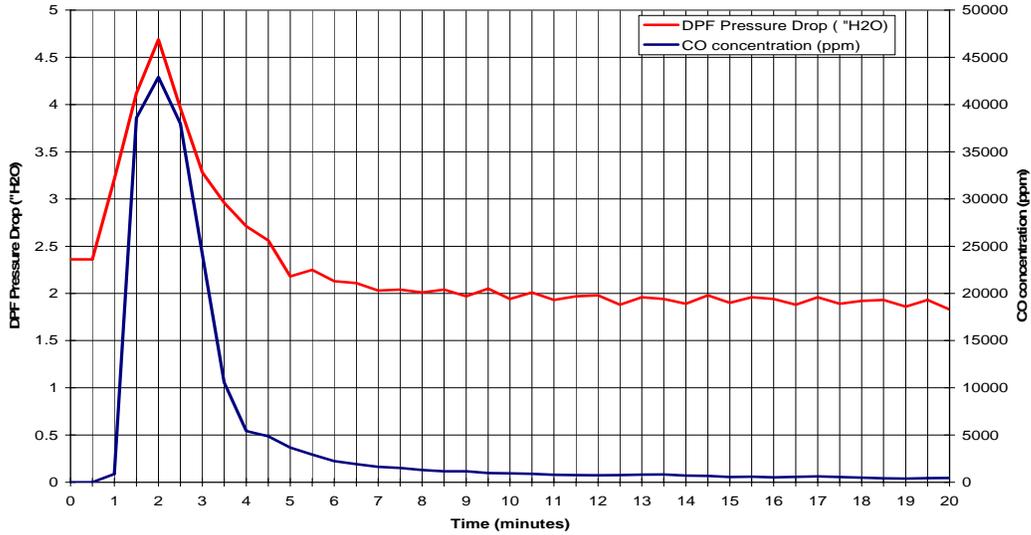
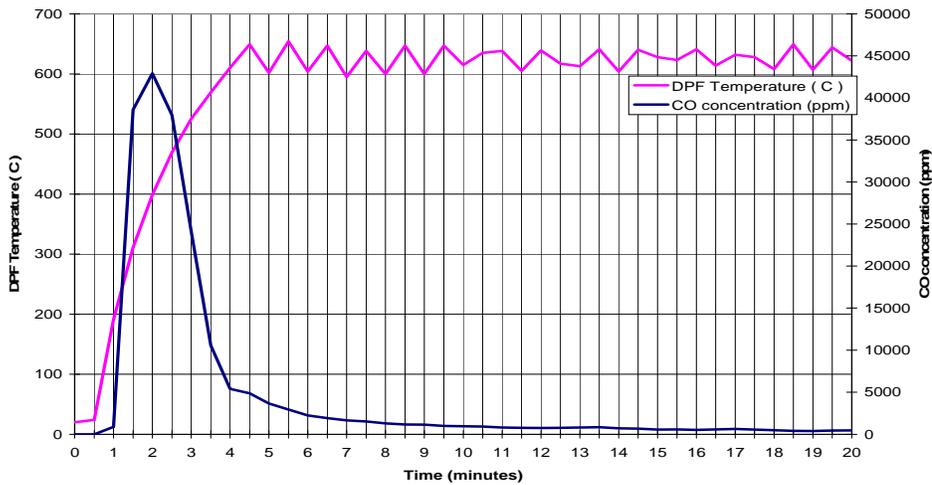


Figure 1. NOx, CO and VOC Catalyst Pack

**Figure 2. Off-line Regeneration
DPF Pressure Drop vs CO concentration**



**Figure 3. Off-line Regeneration
DPF Temperature vs CO concentration**



[Handwritten Signature]

Date: 4/15/06

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.