

NTRD Program Disclaimers

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

Contract Number: 582-5-70807-M031

Grantee: Extengine Transport Systems, LLC

Date Submitted: October 10, 2005

Report for the **Monthly** period:

Starting Date 9/1/05 Ending Date 9/30/05

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

Task 1: (all technical work is included in this task)

- A 2001 Mack E7-350 engine has been selected – target engine group is 1998-2003 300-450 HP on-road engines).
- Catalyst/DPF configuration has been finalized based on E7-350 engine.
- DPF test hardware has been received
- SCR test hardware has been ordered and is expected soon.
- E7-350 engine has been installed on test dynamometer.
- Urea dozing system transferred to E7-350 engine5.9L test engine.
- Continuing negotiations with EPA and RTI regarding test requirements:
 - Aging cycle and equipment for aging test hardware
 - DPF included a fuel born catalyst (FBC) that EPA has not accepted
 - Range of applications without use of fuel born catalyst.
 - Applicability of existing field durability experience of the SCR and DPF components.
- Field installation of the DPF using the FBC on a Freightliner prototype vehicle for FedEx with satisfactory performance. System is working satisfactorily.
- Two additional DPF prototypes are being installed on off-road construction equipment.
- Bench tests of NOx sensors have not shown good correlation to gas analyzers – further study in process. We believe the problem is related to the CANBUS communication link between the sensor, it's control/interface module, and the operator's lap top computer.
- Submitted application to ARB for joint verification.
- Submitted updated EPA ETV application

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

These accomplishments relate to preparation of test hardware and the initiation of testing. Work to date is required prior to start of testing. These charges are not reimbursable by the grant. A no-charge FSR is attached with this report.

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>	<ol style="list-style-type: none"> 1) Active DPF uses a fuel borne catalyst to enhance low temperature regeneration. EPA will not approve start of verification testing until the additive solution containing the catalyst is registered as an additive. Registration may take 6-12 months, thereby delaying the verification tests significantly beyond the expiration date of this grant. 2) NOx sensor response was not proportional to gas concentration even after repeating tests with updated initialization procedure.
<p>Proposed Solution(s)</p> <p><i>(Please report any possible solution(s) to the problem(s) that were considered/encountered)</i></p>	<ol style="list-style-type: none"> 1) The verification test will be conducted without using the additive which can be added later by an extension. This may limit the lower temperature duty cycles for the initial verification. 2) NOx sensor needs initialization that had been incompletely done.
<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>	<ol style="list-style-type: none"> 1) E-mail and telephone negotiation with EPA and RTI regarding fuel borne catalyst and durability data. 2) Additional test reports have been requested from VERT laboratory in Switzerland. But not yet received. 3) E-mail communication with supplier to clarify NOx sensor performance.

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)*

Goals:

- Complete negotiation on program test protocol between RTI, SwRI, EPA and ARB.
- Receive SCR test hardware
- Continue tests of SCR control software with self-learning feature using bench prototypes
- Issue PO to RTI

Issues:

- NOx sensor response characteristics
- Establishing SCR self-learning algorithm.



October 10, 2005

Date: _____

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.*