

## **NTRD Program Disclaimers**

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

Contract Number: 528-5-70807-M030

Grantee: Extengine Transport Systems, LLC

Date Submitted: 9/12/05

Report for the **Monthly** period:

Starting Date 8/1/05 Ending Date 8/31/05

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

**Task 1: Develop EPA FTP Transient Test Protocol to establish emissions/fuel economy effects:**

Task completed in prior reporting period.

**Task 2: Validation Testing**

Work completed:

- Reinstalled test engine (1991 DD60)
- Accumulated 40 hours with Extengine LoNOx biodiesel
- Conducted 2 Hot start tests – emissions showed incomplete conditioning
- Accumulated 60 hours with Extengine LoNOx biodiesel
- Conducted 3 hot start tests
- Conducted 1 coldstart test
- Conducted 3 hot start tests with Extengine LoNOx biodiesel with 20% biodiesel
- Conducted 3 hot start tests with Extengine LoNOx fuel without biodiesel components

After 100 hours, Extengine LoNOx 2% Biodiesel reduced NOx nearly 9% and PM nearly 7%. HC and CO increased 17-18% but emissions remained far below emission standards. Fuel consumption increased 2.5%. Extengine LoNOx 20% Biodiesel maintained essentially constant NOx emissions, reduced PM and HC 26%, and increased CO 6% and fuel consumption 5%.

The greatest surprise in this test was that fuel consumption and HC and CO emissions did not show expected reductions. This may have been due to either incomplete conditioning or differences between D2 fuel and the ULSD fuel used for blending the Extengine LoNOx fuels.

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 at this time</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>Not applicable.</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>Not applicable</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)*

Submit project report and close-out project. The report will include a description of the test engine, test laboratory and procedures, the test data, and discuss the test results with regard to the fuels and engine.

Submit final invoice – laboratory fees for tests have exceeded the authorized grant funds due some additional tests included at Extengine's request. The invoice to TCEQ will NOT exceed the remaining authorized funds.

FSR and RFR forms are attached for reference and originals have been mailed.



September 12, 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.*