

# Fuel Economy Savings Study



## Medic One Ambulance Service Rentar Fuel Catalyst Testing

### **Data Accumulated By**

Medic One Ambulance Service

Unit #9 at facilities in Jonesboro, Arkansas

Unit #11 at Pochahontas, Arkansas

Unit #25 at Mauldin, MO

### **Purpose of Testing**

To Track Fuel Economy with and Without The  
Rentar Fuel Catalyst

### **Type of Testing**

Baseline Vs. With Rentar Fuel Catalyst

Units #9 and #25 were Chevrolet Duramax engines

Unit #11 was a Ford w/ International Powerstroke engine

### **Date of Testing**

June 1, 2009 through February 28, 2010

Summary of Findings

Merdc One Ambulance Service conducted fuel economy studies. They solely managed and collected the data. The results are reported below.

At Medic One's facilities, they created a baseline, installation of the Rentar Fuel Catalyst and collection of the "post" data. The results as documented in the attached report due to the Rentar Fuel Catalyst were an overall **4.683% average improvement in fuel consumption** on the three vehicles.

### **Effect On A Fleet using approximately 110,428 gals per year of diesel fuel.**

The effect of using the Rentar Fuel Catalyst on the Ambulance fleet based on fourteen of these vehicles averaging 89,320 gals per year and six vehicles averaging 21,108 gal per year for a total of 110,428 gals per year; purchasing fuel at an average of \$3.00 per gallon would be a fuel cost reduction of \$15,514 annually

### **Return On Investment**

The return on investment (ROI) or repayment of the cost of the catalyst would be approximately 16 months.

### **Greenhouse Gas CO2 Emissions**

In addition to saving 5,171 gallons of fuel per year, Medic One Ambulance Service would not be emitting 51.71 metric tons of CO2 greenhouse gas into the atmosphere. This number is based on an EPA standard which states that for every 100 gallons of diesel fuel burned equates to 1 metric ton of CO2 released into the atmosphere.

### **Being A Green Entity**

Being a "green entity" has its own inherent value in protecting the environment and the health of its employees and clients. A positive public image is created by being "Green".

### **Monetary Value Of Reducing CO2 Greenhouse Gases**

The 51.71 metric tons of CO2 not being emitted will have a monetary value that could become an additional income stream for Medic One. This would be the result of the upcoming cap & trade programs

currently being adapted in the United States similar to the cap & trade programs in effect in 162 countries under the Kyoto Treaty.

## Test Protocol

### **Jonesboro, Pocahontas Arkansas and Mauldin, MO - Controlled Comparison Testing**

Medic One selected 3 similar ambulances with Diesel Engines. Beginning and ending odometer readings were taken by fleet Supervisor for Phase 1 and Phase 3. Medic One also supplied the fuel usage for each vehicle in each phase. Three months of baseline was collected showing an average of 8.457 mpg. Fuel usage was acquired from the company's official fuel billing records, provided by the company, to ensure accuracy.

The testing was conducted in and around the above listed cities. The 3 vehicles were driven in similar weather conditions throughout the duration of the fuel economy study. At the conclusion of the Comparison Study, the test mileage per gallon was compared prior to fuel catalyst installation (Phase 1) to test mileage per gallon after fuel catalyst installation (Phase 3).

### **Testing Timeline**

Phase 1 – 3 months fuel figures from 6-1-2009 to 8-1-2009

Baseline information was collected on the three vehicles.

Phase 2 - Cleanout period 9-1-2009 to 2-28-2010

Cleanout Period – The Rentar Fuel Catalysts were installed on vehicle # 9 on 11-19-2009 and on vehicle # 25 on 11-20-2009 and on vehicle #11 on 12-07-2009.

The engines were allowed to operate for three months each or approximately 7000 to 13000 miles, each vehicle before post data was taken.

Phase 3 – 11-19-2009 through 2-28-2010 for vehicle #9 and 11-20-2009 through 2-28-2010 for vehicle #25 and 12-7-2009 through 2-28-2010 for vehicle #11

Data was collected from the 3 vehicles that were now

operating with the fuel catalyst in place for comparison to the baseline data. Vehicles #25 and #11 were adjusted to eliminate the outliers in both pre and post tests.

Data was collected over 135 days for each vehicle during which a total of 20,450 miles were accumulated.

**The fuel consumption improvement was 5.24% for vehicle #11 and 4.56% for vehicle #9 and 4.26% for vehicle #25 for an overall average of 4.683%**

**Through EPA recognized laboratories we has proven reductions in NOx of 15 to 20%, CO2 in this case would be 10 to 15%, particulate matter 12%, volatile organics such as toulene, benzene and xylenes up to 46% and opacity by 50%**

**See attached documentation showing the exact information provided by the Company.**

## Summary of numbers

### Unit #11

8.64 mpg post / 8.21 mpg baseline = **5.24% better fuel consumption.**

### Unit #9

8.699 mpg post / 8.32 mpg baseline = **4.56% better fuel consumption.**

### Unit #25

9.217 mpg post / 8.84 mpg baseline = **4.26% better fuel consumption.**

### Average of the overall

$5.24 + 4.56 + 4.26 / 3 =$  **4.683% better fuel consumption**