

# Fuel Economy Savings Study



## **City of Jonesboro, AR**

Data Accumulated By  
City of Jonesboro  
At The City of Jonesboro Facilities in Jonesboro, AR.

### **Purpose of Testing**

To Track Fuel Economy with and Without The  
Rentar Fuel Catalyst

### **Type of Testing**

Comparison test using ten vehicles of various types and job description. Vehicles ages ranged from 2007 to 2009. Engine tested were Caterpillar C-7, C-9, Mack MP7 and Nissan UD 2300.

### **Date of Testing**

Jonesboro, AR  
Comparison Study  
11/18/2010 – 8/05/2011

## Summary of Findings

The City of Jonesboro conducted the fuel economy studies. They solely managed and collected the data. The results are reported below.

In Jonesboro, AR at the City of Jonesboro facilities, the City of Jonesboro managed the creation of 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 a **6.74% average improvement in fuel consumption** on the nine vehicles. One vehicle was pulled from the test because engine problems. One third of the vehicles averaged 2.73% savings and **two thirds of the vehicles averaged 8.75% savings.**

### **Effect on This fleet using 175,500 gallon per year**

The effect of using 175,500 gallons per year at \$3.69 per gallon is \$647,600 per year with savings of 6.74% would be \$43,500.00 per year savings. At 8.75% the saving would be \$56,700.00

### **Return On Investment**

The return on investment (ROI) or repayment of the cost of the catalyst would be approximately 15 months. On the vehicles that average 8.75% improvement the ROI is 11.5 months. Once the ROI is passed, the benefits continue cost free for years to come.

### **Greenhouse Gas CO2 Emissions**

In addition to saving 118,000 gallons of fuel per year, City of Jonesboro would not be emitting 118 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 118 metric tons of CO2 not being emitted will have a monetary value that could become an additional income stream for City of Jonesboro. 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, AR - Controlled Comparison Testing**

City of Jonesboro selected 10 vehicles from their fleet. Beginning and ending odometer readings were taken by City of Jonesboro personnel for Phase 1 and Phase 3. City of Jonesboro also supplied the fuel usage for each vehicle in each phase. **All fuel used was the Ultra Low Sulfur fuel as required by U.S. regulations.** Fuel usage was acquired from City of Jonesboro official fuel billing records, provided by City of Jonesboro to ensure accuracy.

The testing was conducted at the City of Jonesboro facility in Jonesboro, AR. The 10 vehicles were driven over their normal operating routes and in similar weather conditions throughout the duration of the fuel economy study. At the conclusion of the Comparison Study in Jonesboro, AR, the fleet mileage per gallon was compared prior to fuel catalyst installation (Phase 1) to fleet mileage per gallon after fuel catalyst installation (Phase 3).

### **Testing Timeline**

Phase 1 – 9-1-2009 – 9-30-2010

Test Period - one year

Baseline information was collected on 10 vehicles. One vehicle was eventually removed from the test.

Phase 2 – 11-18-2010 – 4-2-2011

Test Period - 4 months

Break-in Period – The Rentar Fuel Catalysts were installed. The engines were allowed to operate for four months before data was taken.

Phase 3 – 4-3-2011 – 8-7-2011

Test Period - 4 months

Data was collected from the 9 vehicles that were now operating with the fuel catalyst in place for comparison to the baseline data.

Data was collected over 126 days during which a total of 120,787 miles were accumulated.

***The fuel consumption improvement was 6.74%, 8.75% on two thirds of the vehicles. 2.73% was the average on one third of the vehicles. It is believed that extreme use of power takeoffs to operate equipment on these vehicles is what accounts for the low percentage of improvement.***

### **Fuel and odometer Transactions by vehicle**

Truck #	Baseline			Post install			percent improvement
	miles	fuel used	mpg	miles	fuel used	mpg	
4309	11240	2920.1	3.85	7416	1904.7	3.89	1.0
4347	12442	6404.7	1.94	8672	4096.8	2.12	9.3
4348	16152	7367.4	2.19	8087	3407.1	2.37	8.2
4349	14178	6932.6	2.04	7768	3475.9	2.23	9.3
4352	13835	2954.5	4.68	4824	943.6	5.11	9.2
4364	15834	7843.1	2.02	9270	4398.3	2.11	4.4
4365	11415	3242.8	3.52	6987	1931.2	3.62	2.8
4366	10698	2642.6	4.05	7943	1845.9	4.30	6.2
4369	14993	5706.9	2.63	8163	2814.9	2.90	10.3