



## Environmental Technology Demonstration

**Location: DeFeo's Auto Service**

**Hamilton, ON**

**Dates: Aug 21 & 24, 2004**



# Summary

Tadger Group International and DeFeo's Auto Service collaborated to demonstrate the Tadger in-line emission reduction technology. The testing program was performed according to the Ontario Drive Clean Program for light duty vehicles under ASM 2525. The test vehicles were baseline tested, equipped with the Tadger technology and retested with the Tadger installed.

The ASM 2525 tests on three different vehicles indicated average changes in hydrocarbons of  $-29.6\%$ , carbon monoxide of  $-74.2\%$  and oxides of nitrogen of  $-55.8\%$

The curb idle tests on the same three vehicles indicated average changes in hydrocarbons of  $-21.5\%$  and carbon monoxide of  $-25.0\%$

# Definitions

HC.....	Hydrocarbons
CO.....	Carbon Monoxide
NO.....	Oxides of Nitrogen
PPM.....	Parts per million
ASM.....	Accelerated simulation mode
Km/hr.....	Kilometers per hour

# Vehicles

- 1988 2.8L Chevrolet Beretta
- 1999 4.6L Ford F150 Pickup
- 1995 3.3L Plymouth Voyager



# Test Equipment

Snap On / Sun Tech systems emissions analyzer # A1904

# Test Procedure

- 1) Warm up engine (4km drive)
- 2) Baseline emission test with no Tadger installed (15 min.)
- 3) Install Tadger (10 min.)
- 4) Warm up engine (4km drive)
- 5) Emission test with Tadger installed (15 min.)

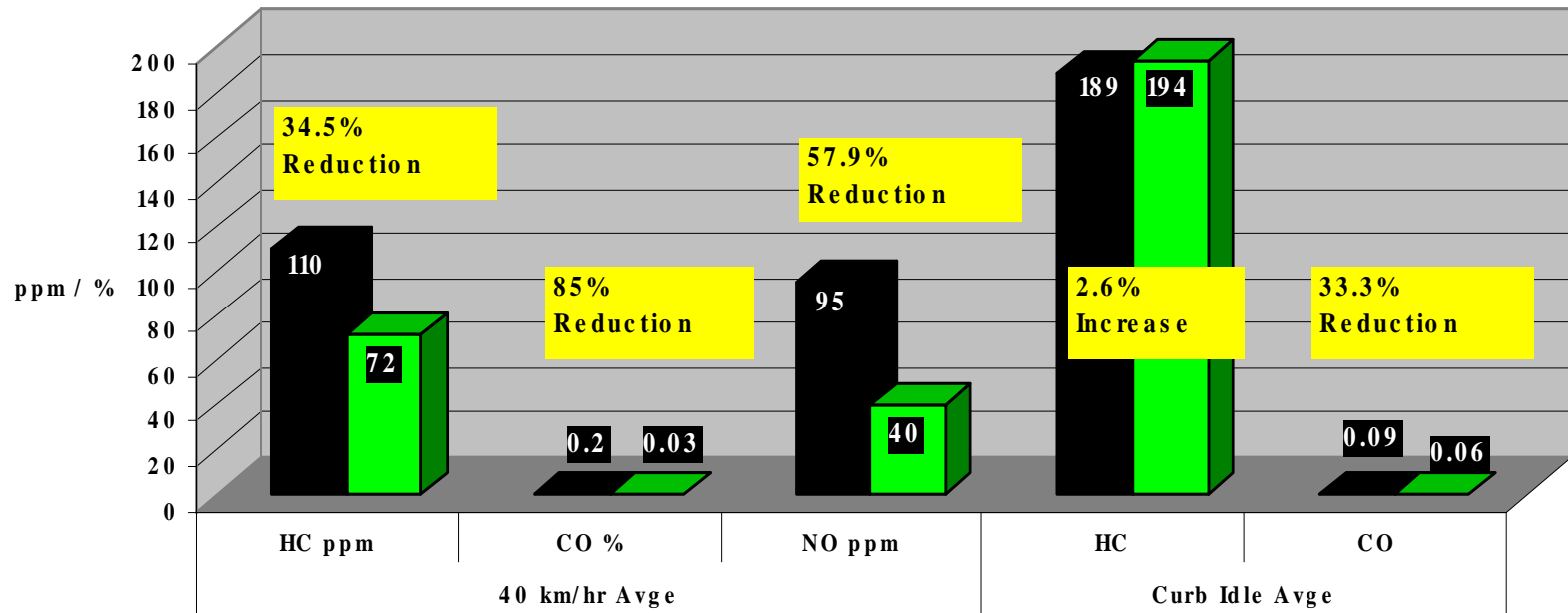


# Results

The results have been documented and illustrated on the attached graphs. Additional test results for other municipalities, private industry and larger fleets is available on request or at [www.tadgergroup.com](http://www.tadgergroup.com)



ASM 2525/Curb Idle Tailpipe Emissions Inspection  
1988 2.8L Chevrolet Beretta

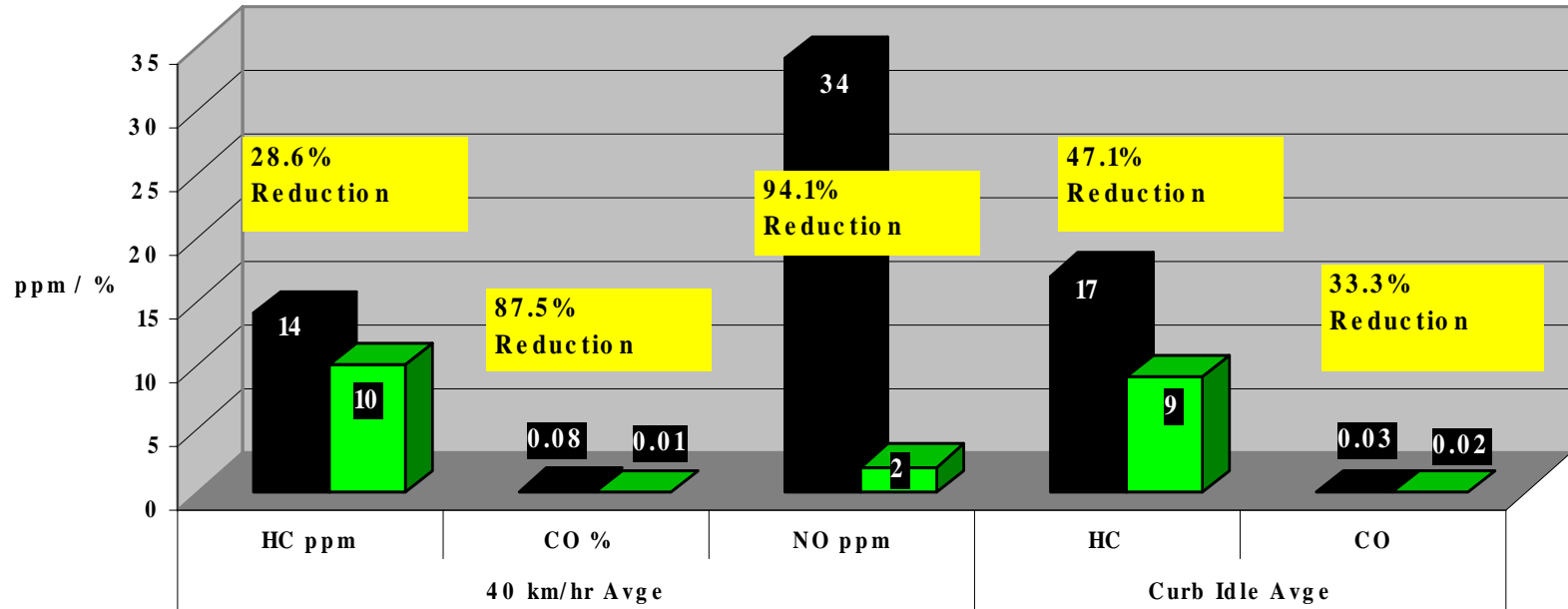


■ Without Tadger - Aug. 21, 2004

■ With Tadger - Aug. 21, 2004



ASM 2525/Curb Idle Tailpipe Emissions Inspection  
1999 4.6L Ford F150 Pickup

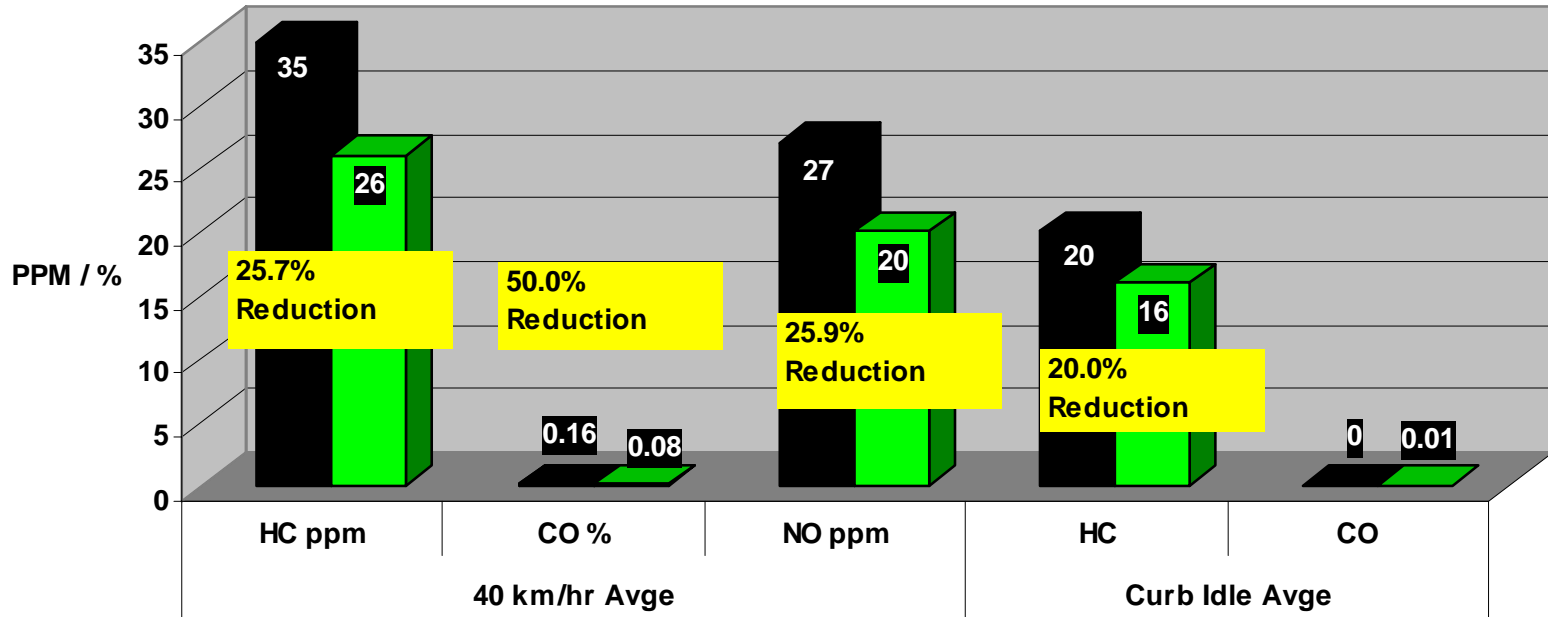


■ Without Tadger - Aug. 21, 2004

■ With Tadger - Aug. 21, 2004



ASM 2525/Curb Idle Tailpipe Emissions Inspection  
1995 3.3L Plymouth Voyager



■ Without Tadger - Aug. 24, 2004      ■ With Tadger - Aug. 24, 2004

### 1988 2.8L Chevrolet Beretta

	<u>40 km/hr Avge</u>			<u>Curb Idle Avge</u>	
	<u>HC ppm</u>	<u>CO %</u>	<u>NO ppm</u>	<u>HC</u>	<u>CO</u>
<u>Without Tadger - Aug. 21, 2004</u>	110	0.2	95	189	0.09
<u>With Tadger - Aug. 21, 2004</u>	72	0.03	40	194	0.06
<u>Improvement</u>	34.5%	85.0%	57.9%	-2.6%	33.3%

### 1999 4.6L Ford F150 Pickup

	<u>40 km/hr Avge</u>			<u>Curb Idle Avge</u>	
	<u>HC ppm</u>	<u>CO %</u>	<u>NO ppm</u>	<u>HC</u>	<u>CO</u>
<u>Without Tadger - Aug. 21, 2004</u>	14	0.08	34	17	0.03
<u>With Tadger - Aug. 21, 2004</u>	10	0.01	2	9	0.02
<u>Improvement</u>	28.6%	87.5%	94.1%	47.1%	33.3%

### 1995 3.3L Plymouth Voyager

	<u>40 km/hr Avge</u>			<u>Curb Idle Avge</u>	
	<u>HC ppm</u>	<u>CO %</u>	<u>NO ppm</u>	<u>HC</u>	<u>CO</u>
<u>Without Tadger - Aug. 24, 2004</u>	35	0.16	27	20	0
<u>With Tadger - Aug. 24, 2004</u>	26	0.08	20	16	0.01
<u>Improvement</u>	25.7%	50.0%	25.9%	20.0%	N/A

# Discussion & Conclusion

The purpose of this test program was to demonstrate the product for its effect on vehicle exhaust emissions.

A total of 6 dynamometer exhaust emission tests were conducted on 3 different vehicles (2 per vehicle) with and without the Tadger product installed.

The results of this dynamometer exhaust emission test program indicated that the Tadger is effective in reducing emissions at 40 km/hr and at curb idle.

