



SMART Emissions Reducer

Trial Program Report Andover Township, NJ

Monday, August 8, 2011

Prepared by:



Emissions, Fuel Economy, and Performance Specialist

150 Main Street, Ogdensburg, NJ 07439

Phone: 973-209-3450

Email: info@extremeenergysolutions.net

Website: www.extremeenergysolutions.net

Introduction:

Extreme Energy Solutions, of Ogdensburg, NJ had offered a free trial program to the Township of Andover, New Jersey, to test the validity of the InterCharger/SMART Emissions Reducer's form and functionality. Testing would validate that the InterCharger/SMART Emissions Reducer could effectively reduce emissions, while providing a level return on investment through relief of reducing fuel consumption. Extreme Energy Solutions and Andover Township agreed to a trial program, at no cost or obligation to the municipality, to test the product over a period of 60 days. Andover Township would monitor and report in the fuel economy numbers. Extreme Energy Solutions would have a third party to test the emissions results for the heavy duty diesel vehicles. Extreme Energy Solutions agreed to install and maintain the units throughout the duration they are applied to the vehicle, and test the gas vehicles. The original 60 Day Trial Program document was signed on February, 23, 2011, by Deputy Mayor Michael Lensak (**see appendix A**). A Letter followed acknowledging the program on official Andover Township letterhead, signed by Vita Thompson, Municipal Clerk/Administrator, dated and issued on February 24, 2011 (**see appendix B**). To maintain the best interest of the project and the residents of Andover Township, a letter was issued by Fred Semrau, of Dorsey & Semrau, Andover Township Attorney (**see appendix item C**). Understanding fully and completely the terms, conditions, and position of Andover Township, Extreme Energy Solutions scheduled a time to install the initial InterCharger/SMART Emissions Reducer units with Andover Township DPW, Darren Dickinson.

Action Plan:

On Wednesday, March 2, 2011, Extreme Energy Solutions Technicians reported to the Andover Township DPW Facility, located at 134 Newton-Sparta Road, Newton, NJ 07860, to begin installing the InterCharger/SMART Emission Reducer devices. Prior to installing the device, each vehicle candidate was given a thorough vehicle condition check to make sure that there were not any negative pre-existing vehicle faults that would effect the potential outcome of the results of the device. Extreme Energy Solutions Technicians tested the emissions of the police vehicles (gas engines), with a calibrated five gas emissions analyzer, and provided a copy of the test, on site. Third party had tested the heavy duty diesel vehicles. Copies of the test results were immediately given to Andover Township DPW Supervisor Darren Dickinson, for review and reference. The initial install of the devices were applied over a two day period, concluding on Friday, March 4, 2011.

Vehicles applied with the InterCharger/SMART Emissions Reducers were:

- 1. Police Car #7.** 2010 Ford Crown Victoria, Vin #2FABP7BV1AX111347. Retrofitted with red unit model for gas engine powered vehicle.
- 2. Police Car #9.** 2009 Ford Crown Victoria, Vin #2FAHP71V79X138236. Retrofitted with red model unit model for gas engine powered vehicle.
- 3. DPW Truck #1.** 2004 Ford Pickup Truck, 8800 GVW, Vin #1FTNX21P64ED63811. Retrofitted with purple unit model for light diesel engine powered vehicle.

4. DPW Truck #3. 2006 Ford Mason Dump, 17950 GVW, Vin #1FDAF57PO6EB71759. Retrofitted with purple unit model for light diesel engine powered vehicle.

5. DPW Truck #8. 2002 International Single Axel Dump Truck, 40600 GVW, Vin #1HTWDADR32JO33135. Retrofitted with blue unit model for heavy duty diesel engine powered vehicle.

6. C/W Street Sweeper. 2001 Elgin NVC CT CRO Street Sweeper, 53000 GVW, Vin #49HAADB61HH95805. Retrofitted with gold unit model for heavy duty diesel engine powered vehicle.

For registration schedules of vehicles retrofitted with the device refer to **(appendix D)**.

All vehicles qualified as healthy candidates, viable vehicles without any vehicle issues, for the trial program. The two police cars selected for the trial were then processed with a before installation emissions test which registered that the both vehicles were clean emissions output vehicles, therefore the main focus of the test for these two vehicles were mainly on increasing the fuel efficiency of Police Car #7 and Police Car #9. For emissions test results, prior to installation for both vehicles, refer to **(appendix E)**. Vehicle would be tested again at 30 days, and in 60 days to monitor long term changes in emissions output.

No emissions testing was performed on DPW Truck #1 or DPW Truck #2. This is not based on the fact that Extreme Energy Solutions did not make a mistake. These vehicles are qualified in a vehicle class where there is no standard testing protocol that could be performed with the standard equipment that both Extreme Energy Solutions has in its possession, or any mobile third party testing agent would have. The state currently did not have at the time a testing protocol that qualifies or disqualifies vehicles in this fleet class as clean or dirty diesel emission producing vehicles. Vehicle verification check list was followed. With devices installed, fuel economy efficiency became the main focus for the two vehicles.

Truck #8 and the Elgin Street Sweeper dedicated to the trial program, were both tested prior to any retrofit modification, third party by:

Interstate Safety Services, Inc., 545 Westwood Ave, River Vale, NJ 07675
NJ PIF LIC 000711 NJ INSP LIC 010194

Both vehicles were tested as to protocol of inspecting levels of pass/fail percentages for opacity, measuring the soot, or particulate output of harmful emissions. Vehicles would be tested in 30 days and again in 60 days to monitor long term changes in emissions data. For emissions results for DPW Truck #8 and the Elgin Sweeper, refer to **(appendix F)**.

During the entire duration of the 60 day trial program, Extreme Energy Solutions technicians would return to service the InterCharger/SMART Emissions Reducer units, every 15 days. Because of the effective form and functionality of the device, material reformed during the catalysis process, would loosen dirty carbon deposits inside the engine. These dirty carbon deposits would collect inside the device. This usually only happens within the first 30 days.

Reformed material acts a carrier for the dirty carbon, and would loosen the material from the metal inside the engine. This happens because the reformed material that exit's the InterCharger/SMART is smaller and lighter, and can get in between dirty carbon deposits and the metal of the engine. Extreme Energy Solutions assumed the burden of servicing the units, until all emissions testing was completed, and the units were broken in. This process is referred to as burn time.

All data would be compiled and made available for review by a Andover Township Council representative, Andover Township DPW Supervisor, Andover Township Clerk/Administrator, Lead Fleet Technician, at the conclusion of each trial program cycle. At that time, it would be mutually agreed by Extreme Energy Solutions, to allow for Andover Township to make its own decision best suited for Andover Township to become confident and comfortable with the test results produced by the product applied. Extreme Energy Solutions allowed for flexibility in the testing time line in the event Andover Township would prefer more testing data to be made available over longer periods of time.

Incidentals:

At the end of the 60 days, Extreme Energy Solutions met with Andover Township Deputy Mayor Michael Lensak, DPW Supervisor Darren Dickinson, and mechanics of the DPW staff. There were a few events that took place during the testing, causing for variables in results and inconclusive data for the fuel economy monitoring. Data was provided and reviewed, by both Extreme Energy Solutions, and Andover Township. It was mutually agreed by both parties, after reviewing the emissions data, that there were consistent results, and that emissions testing would be concluded. Extreme Energy Solutions agreed for Andover Township to continue testing vehicles retrofitted with the InterCharger/SMART devices, for another sixty day period, at which time, another review would follow. The original testing concluded on Wednesday, May 4, 2011. Extension of the testing, purely for the monitoring of fuel economy, would then be extended for another sixty days concluding on Tuesday, July, 5, 2011. Extreme Energy Solutions was notified of the fact lightning had disrupted the monitoring of the data. Extreme Energy Solutions was asked to extend the testing for one last thirty day period of time, where all testing would formally conclude on Sunday, July 31, 2011 for final review.

Review and Results:

It was reported to Extreme Energy Solutions, on Tuesday, August 2, 2011, the final fuel economy test results for over a five month period of time. This information was provided to us after the data was reviewed by Andover Township Mayor Tom Walsh; Deputy Mayor Michael Lensak; and by Vita Thompson, Municipal Clerk/Administrator, prior to our appointment that morning. Emissions data had been previously reviewed and submitted on Wednesday, May 4, 2011, as mentioned in this report. Extreme Energy Solutions was asked to prepare formal report for public review, and would be presented to the residents of Andover Township, Monday, August 8, 2011, at the Andover Town Council Meeting. For purposes of reviewing each vehicle's performance, each vehicle will be broken down into its own performer chart for both fuel economy and emissions.

Test Period March 2, 2011 through July 31, 2011

Yearly Fuel Use During That Period

Fuel	2010	2011	Gallons Saved	Fuel Price (per gallon)
Gasoline	7558.7	7272.3	-286.4	\$3.29
Diesel	5225	4418	-807	\$3.30

Results for Police Car #7

Emissions Results for Police Car #7; Vin #2FABP7BV1AX111347, are as follows:

Emissions	Prior To Install	After 30 Days	After 60 Days
O2%	0.83	1.15	0.07
CO2%	14.8	14.6	14.8
HC PPM	01	00	00
CO%	0.01	0.08	0.01
COK%	0.01	0.08	0.01
AFR	15.30	15.52	15.33
NOX PPM	00	00	00

For original copy of emissions result print out for Police Car #7, refer to **(appendix G)**.

Fuel Economy Results for Police Car #7; Vin #2FABP7BV1AX111347, are as follows:

Year	2010	2011	Total Gain or Loss
Odometer Start	3663	28517	
Odometer End	12609	39298	
Distance Travel	8946	10781	
Quantity in Gallons	828.10	672.4	Saved 325.84 gallons
Miles Per Gallon	10.80	16.03	+5.23

Total Gallons Saved: 325.84 x \$3.29 per gallon = +\$1072 saved

Total Savings per Month: +\$241.4

Total Savings per Week: +\$53.60

Total Cost of Unit: \$404 installed

Net Profit/Loss after 5 months: +\$668

Average Return on Investment: 2 months

Results for Police Car #9

Emissions Results for Police Car #9; Vin #2FAHP71V79X138236, are as follows:

Emissions	Prior To Install	After 30 Days	After 60 Days
O2%	0.70	1.11	0.07
CO2%	14.9	14.6	14.8
HC PPM	01	01	01
CO%	0.00	0.13	0.03
COK%	0.00	0.13	0.03
AFR	15.24	15.44	15.69
NOX PPM	00	00	00

For original copy of emissions result print out for Police Car #9, refer to **(appendix H)**.

Fuel Economy Results for Police Car #9; Vin #2FAHP71V79X138236, are as follows:

Year	2010	2011	Total Gain or Loss
Odometer Start	23030	49597	
Odometer End	32782	61256	
Distance Travel	9752	11659	
Quantity in Gallons	955.70	809.70	Saved 333.30 gallons
Miles Per Gallon	10.20	14.40	+4.20

Total Gallons Saved: 333.30 x \$3.29 per gallon = +\$1096.56 saved

Total Savings per Month: +\$219.31

Total Savings per Week: +\$54.83

Total Cost of Unit: \$404 installed

Net Profit/Loss after 5 months: +\$692.56

Average Return on Investment: 1 months, 3 ½ weeks

Results for DPW Truck #1 (fuel economy only)

Fuel Economy Results for DPW Truck #1, Vin #1FTNX21P64ED63811

Year	2010	2011	Total Gain or Loss
Odometer Start	37521	43729	
Odometer End	39696	46353	

Distance Travel	2175	2624	
Quantity in Gallons	201.60	213.80	Saved 30 gallons
Miles Per Gallon	10.79	12.27	+1.48

Total Gallons Saved: 30 x \$3.30 per gallon = +\$99 saved

Total Savings per Month: +\$19.8

Total Savings per Week: +\$4.95

Total Cost of Unit: \$699 installed

Net Profit/Loss after 5 months: -\$600

Average Return on Investment: 35 months

Results for DPW Truck #3 (fuel economy only)

Fuel Economy Results for DPW Truck #3, Vin #1FDAF57PO6EB71759

Year	2010	2011	Total Gain or Loss
Odometer Start	22500	27895	
Odometer End	23919	29758	
Distance Travel	1419	1863	
Quantity in Gallons	175.3	176.60	Saved 53.68 gallons
Miles Per Gallon	8.09	10.55	+2.46

Total Gallons Saved: 53.68 x \$3.30 per gallon = +\$177.16 saved

Total Savings per Month: +\$35.43

Total Savings per Week: +\$8.86

Total Cost of Unit: \$699 installed

Net Profit/Loss after 5 months: -\$521

Average Return on Investment: 22 months

Results for DPW Truck #8

Emissions Inspection Results for DPW Truck #8, Vin #1HTWDADR32JO33135

Test	Prior to Install	After 30 Days	After 60 Days
1	1.96%	0%	.877%
2	2.28%	1.43%	1.1%
3	2.08%	1.6%	1.02%
Peak Opacity Diff.	.325	1.6	0.226
3 Test Avg Opacity	2.11%	1.01%	1%

For original copy of emissions result print out for DPW Truck 8, refer to **(appendix I)**.

Fuel Economy Results for DPW Truck #8, Vin #1HTWDADR32JO33135.

Year	2010	2011	Total Gain or Loss
Odometer Start	17741	20483	
Odometer End	18635	20806	
Distance Travel	894	323	
Quantity in Gallons	190.8	108.9	
Miles Per Gallon	4.69	2.97	-1.72

Total Cost per Unit: \$1250 installed.

Note: This vehicle does not yet even have 1000 miles of burn time on the device.

Results for DPW Truck Road Sweeper

Emissions Inspection Results for DPW Road Sweeper, Vin #49HAADB61HH95805

Test	Prior to Install	After 30 Days	After 60 Days
1	1.59%	0%	N/D
2	1.77%	.766%	N/D
3	1.98%	0%	N/D
Peak Opacity Diff.	.39	.766	N/D
3 Test Avg. Opacity	1.78	0.255%	N/D

For original copy of emissions result print out for DPW Road Sweeper, refer to **(appendix J)**.

*N/D means not detectable

Fuel Economy Results for DPW Road Sweeper, Vin #49HAADB61HH95805

Year	2010	2011	Total Gain or Loss
Odometer Start	18010	20623	
Odometer End	19719	22636	
Distance Travel	1709	2013	
Quantity in Gallons	789.8	712.8	Saved 219.14 gallons
Miles Per Gallon	2.16	2.82	+0.66

Total Gallons Saved: 219.14 x \$3.30 per gallon = +\$723.18 saved

Total Savings per Month: +\$144.64

Total Savings per Week: +\$36.16
Total Cost of Unit: \$1050 installed
Net Profit/Loss after 5 months: -\$326.82
Average Return on Investment: 7 months, 1 week

Summary:

Five months of testing validates that the product, InterCharger/SMART Emissions Reducer, not only significantly reduces the toxic harmful emissions levels that are omitted into the environment, but the product also offers a return on investment in the form of saving valuable resources on fuel cost. Extreme Energy Solutions suggest taking these points into consideration, when making a decision about purchasing the equipment it has tested for the last five months:

- **The Police vehicles have already paid for themselves.** The return on investment in fuel savings around a two month period of time, has allowed for fuel savings over a period of time where other vehicle units are already paid for even before a purchase has been made.
- **Some of the diesels have a higher return on investment, others have higher emissions results.** With some of the diesel trucks having a higher return on investment, they have made up the difference for the vehicles that have a lower return on investment. Where fuel economy was not as great of an increase, those vehicles excelled in higher emission reduction benchmarks.
- **Some vehicles do not yet have enough burn time.** DPW Truck #8 did not get enough burn time, or mileage of usage to fully break in the device.
- **Some vehicles may have performed better than what the results had demonstrated.** There were some incidentals that could have effected the outcome and not allowing for peak results to be observed. Andover Township noted it did have lighting strike its property, effecting the diesel vehicle records. Some vehicles in the fleet were shuffled and did not get used as intended or planned.
- **The InterCharger/SMART Emissions Reducer effectively reduces emissions and is first and foremost an emissions control device.** Due to its form and functionality, it has the ability to increase fuel economy (see appendix K). It increases combustion efficiencies and addresses emissions on the combustion side of the engine, unlike all other emissions control devices that mitigate the issue after the fact of the fuel being burned.
- **The device improved the quality of health, by improving the quality of the air.** Comments made by DPW Staff that worked around these vehicles as everyday life, commented that the smell and output of the toxic fumes, were not as of a high content that they normally would be subject to, therefore improving air quality conditions for workers exposed to those conditions.

In considering the purchase of the device, Extreme Energy Solutions would like Andover Township to be aware that they are prepared to be flexible on the following end plan to outfit the

entire fleet:

- **Police Cars.** Extreme Energy Solutions is willing to outfit all Andover Police vehicles, including vehicles that are going to be retired within the next coming months. Extreme Energy Solutions will return to switch out the InterCharger/SMART unit from the vehicle that shall be retired, and re-install it in the new police vehicle, as a courtesy, no charge, for the first two vehicles that will be turned over and retired in the fleet. Retired vehicles will be returned to previous stock condition, as they were, prior to the device installation.
- **Light Duty DPW Vehicles, other Township Vehicles.** Extreme Energy Solutions is willing to retrofit all other gas engine powered vehicles, including the DPW Supervisor vehicle, and the light diesel trucks that are similar to DPW Truck #1 and DPW Truck #2. These vehicles do not fall under the Diesel Retrofit Law, and therefore these vehicles would be outfitted with units based on fuel economy initiatives. If Andover Township is not comfortable with the results of these vehicles, Extreme Energy Solutions is prepared to allow Andover Township to continue to test these vehicles, monitor their results, for another 30 to 60 days, if that is an option Andover would like to explore. At that time another review can be made, and Andover Township would be able to have a bit more clarity on the data of these vehicles.
- **Heavy Duty DPW Diesel Vehicles.** Vehicles in this class, did demonstrate a high level of reduction in harmful emissions, and did not achieve all of the fuel economy results desired by Andover Township. Again, Extreme Energy Solutions is prepared to extend testing on these vehicles to better satisfy Andover Township. Another point of consideration is that Extreme Energy Solutions is willing to aid in bridging the gap between New Jersey Department of Environmental Protection (NJDEP), and the compliance situation Andover Township has to address as to the Mandatory Diesel Retrofit Program. It is clear that the InterCharger/SMART is far less costly, less inconvenient, and easier to maintain than the equipment it will be forced to work with in the future. Our competitors systems have all be known to rob the vehicle of performance and fuel economy, causing even more fuel to be consumed. It is suggested that Andover Township writes a letter of petition to the NJ DEP and NJDOT to allow for the InterCharger/SMART to be used as an alternative to compliance requirements. The State of NJ would be saving a significant amount of money and can provide capital for far more number of vehicles with the InterCharger/SMART device, therefore doing more with less. Extreme Energy Solutions has already begun the EPA Verification process, to obtain the status needed to be on the EPA Verified Technology List, allowing for the product listed for compliance use.
- Extreme Energy Solutions is prepared to remove units when vehicles are retired from the fleet and have the ability to re-install the units on future incoming fleet vehicles. The units as to date has a life span of seven (7) years. The life cycle of this product may be longer, since it has more durable materials of construction than the common catalytic converter.

Andover can purchase this product, knowing they will be aiding in putting people back to work. Partners of Extreme Energy Solutions have fully secured InterCharger USA. This product has been secured in control to keep the manufacturing jobs here in the United States. Manufacturing operations of this product will be shifted and created here in the New Jersey and New York Area.

Technical installation jobs are also on the docket as product demand rises. Extreme Energy Solutions has taken steps to train more competent technicians, readying them for the next generation of jobs our country will experience.

Extreme Energy Solutions has provided some comparative studies, third party testimonials, and third party testing results, as reference of what the product has done in similar vehicles. For reference to these other cases refer to **(appendix L)**.

I hereby certify that the information that has been supplied herein this report is truthful and accurate to the best of my ability, and true to the data provided to my via Extreme Energy Solutions Technicians, Andover Township Representatives, and Third Party Testing. I understand that I am presenting this information to a governing body, representing the people of Andover Township, in good standing, and any attempt to inflate or manipulate data is unlawful act to cause do harm to the integrity of the people, punishable and enforceable under the color of the law. As CEO/President I sign this report that I am in healthy state of mind to do so.



Samuel K. Burlum, CEO/President of Extreme Energy Solutions

August 4, 2011
Date

“APPENDIX A”

The original 60 Day Trail Program document was signed on February, 23, 2011, by Deputy Mayor Michael Lensak.

“APPENDIX B”

A Letter followed acknowledging the program on official Andover Township letterhead, signed by Vita Thompson, Municipal Clerk/Administrator, dated and issued on February 24, 2011.

“APPENDIX C”

To maintain the best interest of the project and the residents of Andover Township, a letter was issued by Fred Semrau, of Dorsey & Semrau, Andover Township Attorney.



INTERCHARGER PRODUCTS DIVISION

150 Main Street

Ogdensburg NJ, 07439

Office-Northeast Region: 973-209-3450

Office-Southern Region: 615-604 8139

FAX 615-261-0713

Company Name _____

60 DAY TRIAL PROGRAM (INTER CHARGER)

Extreme Energy solutions inc. is offering a risk free 60 day trial period for evaluations of the Inter Charger product(s). Extreme Energy Solutions Inc.(EES) will work with the above listed entity to install, test and evaluate the appropriate Inter Charger device for the vehicle or vehicles listed on page 2.

The company intending to utilize this evaluation procedure shall provide to EES all the vehicles information requested and have the equipment in satisfactory running condition ready to deliver to EES or its affiliate representative, upon notification of availability of installation/test dates. *(It is suggested that you consult with EES to determine which vehicle best represents the average vehicle in your fleet for evaluation purposes.)* Prior to installation (unless otherwise specified in writing) the company evaluating the device shall also provide a signed copy of the trial agreement, work order for the Inter Charger(s), separate work order to be delivered upon determination of properly sized Inter Charger devices(s), and work order of the installation costs including any necessary hoses, fittings, or other parts necessary to complete the installation.

The evaluating company shall provide baseline data of vehicles or equipments fuel consumption prior to device installation. Supplied data should be accurate, current and verifiable. The most recent state federal or local emissions testing results (if required) should be made available to EES. If no emissions baseline is available EES will arrange to test using a 5 gas analyzer and or 6 gas analyzer. Test will be applied prior to installation and then after installation, allowing for a reasonable operation time to elapse.

The company testing the device and EES shall closely monitor vehicle performance for the next 60 day period. EES recommends an inspection of the device 15th days after install, at 30th day, 45th day, then on the 60th day.

After the 60 day period, the vehicle shall be returned to EES or made available to EES for inspection and retested with the 5 gas and or 6 gas analyzer and or other emissions testing procedures as many be deemed reasonable or necessary be EES. EES will supply third party testing for heavy diesel vehicles using a state licensed inspector.

If the follow up inspection and evaluations shows a positive result for emissions reductions and an increase in fuel economy your company agrees to enter into negotiations for the purchase & installation of the devices on the remainder of your fleet or other vehicles you wish to have modified. If the device does not show any significant reduction in toxic emissions it is designed to reduce and or there is no increase in fuel economy EES will remove the device at no cost to your company and refund you the full invoice amount paid for device.

NO UPFRONT CHARGE

Page 1 of 3



150 Main Street
Ogdensburg, NJ 07439
973-209-3450

Company Andover Township

I am authorized by the above stated company to enter into this agreement and do hereby accept and agree to the terms set forth in the above paragraphs.

I have been informed and understand that this device is primarily marketed as an emission control and that in the past previous users have experienced an increase in fuel economy. Test results have and will vary from vehicle with many conditions and variables affecting an individual vehicle's performances. EES does not warrant or make any claims to any specific amount of fuel economy increase by using the Inter Charger device. Proper maintenance (required) of unit after trial is the responsibility of the user.

This testing is voluntary and mutually agreeable to all parties. The company in trial testing understands how the mechanical failure or issues for the duration of the trial period.

After trial period, if company determines usefulness of product and continues to use device, manufacturers' limited 3 year warranty shall apply.

Signature: [Signature] Date: 2/23/11
Print Name: MICHAEL LENSAR Title: DEPUTY MAYOR

Approval for trial program: Extreme Energy solutions Inc, Inter Charger division

Signature: [Signature] Date: March 2, 2011
Print Name: Samuel Berlin Title: President/CEO

Tentative Start Date of Test: March 2, 2011 End Date: _____

Installation Date: March 2, 2011

Notes:

NO UPFRONT COST AND NO CHARGE IF WE ARE NOT SATISFIED WITH PRODUCT AFTER 60 DAY TEST PERIOD.

TOWNSHIP OF ANDOVER
134 NEWTON-SPARTA ROAD
NEWTON, NEW JERSEY 07860
OFFICE OF THE MUNICIPAL CLERK
(973)383-4280, ext. 223, 234 Phone
(973)383-5039 Fax
Email: vtompson@andovertwp.org

February 24, 2011

Samuel Burlum, CEO/President
Extreme Energy Solutions
150 Main St.
Ogdensburg, NJ 07439

**RE: AGREEMENT FOR 60 DAY TRIAL PROGRAM
INTER CHARGER**

Dear Mr. Burlum,

Andover Township has agreed to enter a 60 day trial program with Extreme Energy Solutions, Inc. to have installed, tested and evaluated the appropriate Inter Charger device for township vehicles. Further, there will be no upfront cost to the township and no charge if we are not satisfied with the product after the 60 day trial period.

A copy of the agreement signed by Deputy Mayor Michael Lensak is attached. Please consider this letter as the form of approval by the Township Committee to enter into this agreement.

Should you have any questions or need additional information please do not hesitate to contact me at the number provided above.

Very truly yours,



Vita Thompson, R.M.C.
Municipal Clerk/Administrator

Enclosures

Cc: Mayor and Township Committee

John H. Dorsey*
Fred Semrau
Dominic DiYanni

*Member of NJ & DC Bars

DORSEY & SEMRAU
Attorneys at Law
714 Main Street
P.O. Box 228
Boonton, NJ 07005
973-334-1900
Facsimile 973-334-3408

Sussex County Office:
83 Spring Street
Suite 104, P.O. Box 68
Newton, NJ 07860

WEBSITE: WWW.DORSEYKINGSEMRAU.COM

Please Respond To: Boonton Office

March 1, 2011

VIA FACSIMILE TO 615-261-0713 AND REGULAR MAIL

Extreme Energy Solutions
Intercharger Products Division
150 Main Street
Ogdensburg, NJ 07439

Re: Township of Andover – 60 Day Trial Program (Inter Charger)

Dear Sir or Madam:

This office serves as the municipal attorney for the Township of Andover and it is in that capacity I am writing in connection with the aforesaid 60 Day Trial Program (Inter Charger) that you will be implementing with the Township.

As a point of clarification, the Township will in fact participate in the Trial Program however, the Township is under no obligation whatsoever to proceed with a purchase or expenditure of any funds unless same is approved and authorized by the Mayor and Township Committee of the Township of Andover.

Therefore, this is to confirm that this 60 Day Trial Program (Inter Charger) is of no obligation or financial consequence to the Township of Andover. If you disagree with the contents of this letter, then I would advise you to cease and desist from participating in said program with the Township.

If you have any questions, please do not hesitate to contact me.

Very truly yours,
DORSEY & SEMRAU


Fred Semrau

FCS:sdj

cc: Mayor and Township Committee
Vita Thompson, Township Administrator

“APPENDIX D”

Registration schedules of vehicles retrofitted with the device.

POLICE CARS

7



VEHICLE REGISTRATION

PLATE NO: MG85026 GOOD THRU: 12/2012
 VIN: 2FABP7BV1AX111347
 FOR 2010 4 DR. WT CRN WC: 8 AX: 2
 TOWNSHIP OF ANDOVER NO FEE VEH 12
 134 NEWTON SPARTA RD DL: 89404 30000 78601
 NEWTON NJ 07860 INITIAL PT: MG
 EQ: 8 FEE: AP NT20093420119

28522.0

9



VEHICLE REGISTRATION

PLATE NO: MG83125 GOOD THRU: 05/2012
 VIN: 2FAHP71V79X138236
 FOR 2009 4 DR. WT C V WC: 8 AX: 2
 TOWNSHIP OF ANDOVER NO FEE VEH 12
 134 NEWTON SPARTA RD DL: 89404 30000 78601
 NEWTON NJ 07860 INITIAL PT: MG
 EQ: 8 FEE: LS NT20091410105

49597.7

TRUCK # 1

43721.7

Motor Vehicle Commission **NEW JERSEY**
CHIEF ADMINISTRATOR MOTOR VEHICLE COMMISSION

VEHICLE REGISTRATION



PLATE NO: **MG61968** GOOD THRU: **07/2013**
 VIN: **1FTNX21P64ED63811**
FOR 2004 TRK GRAY X21 GW: **8800** AX: **2**
 TOWNSHIP OF ANDOVER* NO FEE VEH **12**
 134 NEWTON SPARTA RD CC: **894043000078600**
 NEWTON NJ 07860 RENEWAL PT: **MG**
 FEE: **0.00** RP201016273106801

250

3

27877

Motor Vehicle Commission **NEW JERSEY**
CHIEF ADMINISTRATOR MOTOR VEHICLE COMMISSION

VEHICLE REGISTRATION




PLATE NO: **MG67538** GOOD THRU: **01/2012**
 VIN: **1FDAF57P06EB71759**
FOR 2006 TRK GY GW: **17950** AX: **2**
 TOWNSHIP OF ANDOVER NO FEE VEH **12**
 134 NEWTON SPARTA RD CC: **894043000078601**
 NEWTON NJ 07860 RENEWAL PT: **MG**
 FEE: **0.00** RP200832560047501

450

TRK 8

20477

466 D



VEHICLE REGISTRATION



PLATE NO: **MG49139** GOOD THRU: **02/2014**
VIN: **1HTWDADR32J033135**
INT 2002 TRK GN SFA GW:40600 AX:2
TOWNSHIP OF ANDOVER* **NO FEE VEH 12**
134 NEWTON SPARTA RD **CC:894043000078600**
NEWTON NJ 07860 RENEWAL PT:MG
FEE: 0.00 RP201102171834701

C/W Sweeper

20625.2



VEHICLE REGISTRATION

PLATE NO: **MG46907** GOOD THRU: **04/2013**
VIN: **49HAADBV61HH95805**
ELG 2001 NCV WT CRO GW:53000 AX:2
ANDOVER TWP **NO FEE VEH 12**
134 NEWTON-SPARTA ROAD **CC:043916000078600**
NEWTON NJ 07860 RENEWAL PT:MG
FEE: 0.00 RP201005040383401

"APPENDIX E"

Police Car #7 and Police Car #9. emissions test results, prior to installation for both vehicles.

Police Car #7

Police Car #9

SNAP ON

SNAP ON

DATE 03-02-11
TIME 09:19:12

DATE 03-02-11
TIME 09:21:28

FUEL GASOLINE

O2 %	9.83
CO2 %	14.8
HC ppm	0.01
CO %	0.01
COK %	0.01
AFR	15.30
NOx ppm	00

FUEL GASOLINE

O2 %	9.70
CO2 %	14.9
HC ppm	0.01
CO %	0.00
COK %	0.00
AFR	15.24
NOx ppm	00

"APPENDIX F"

For emissions results for DPW Truck #8 and the Elgin Sweeper, prior to installation.

DPW Truck #8

SAE J1667 OPACITY TEST REPORT

INTERSTATE SAFETY
RU NJ 201 664 1008
NJ PIF LIC 000711
NJ INSP LIC 010194

Test Date: 03-02-11 Test Time: 08:33:21

Meter Mfg: Red Mountain Engineering, Inc.
S/N: 4482414 Model: Smoke Check 1667
Software Version: 3.71NNJR

Test Type: SNAP TEST
Tested by:
Veh. ID: MG49139
Year and Make: 02 INTE 7400 00
Vehicle Mileage: 20482
Year of Engine: 2002
Engine Mfg: INTE
Engine HP: 310

Ambient Temp: 25.6 F
Baro. Press: 28.85 inHg
Rel. Humidity: 0 %

Visual Inspection.....OK

Preliminary Cleanout Snaps

Test #	Peak %
1	1.39
2	1.85
3	1.99

.....OFFICIAL OPACITY TESTS.....

Test #	Peak %
1	1.96
2	2.28
3	2.00

Peak Opacity Difference: 0.325
Difference within spec
Test is VALID

3 TEST AVERAGE OPACITY:.....2.11 %

Max Limit - Engines 1997 and Newer: 20 %
Zero-Drift Check.....PASS

TEST RESULTS: **** PASS ****

Last Calibrated On: 02-26-11 09:03:15
Calibration Filter: 49.7

DEIC Inspector's Signature:

DPW Road Sweeper

SAE J1667 OPACITY TEST REPORT

INTERSTATE SAFETY
RU NJ 201 664 1008
NJ PIF LIC 000711
NJ INSP LIC 010194

Test Date: 03-02-11 Test Time: 08:12:46

Meter Mfg: Red Mountain Engineering, Inc.
S/N: 4482414 Model: Smoke Check 1667
Software Version: 3.71NNJR

Test Type: SNAP TEST
Tested by:
Veh. ID: MG46987
Year and Make: 00 STER
Vehicle Mileage: 20624
Year of Engine: 2000
Engine Mfg: CUMM
Engine HP: 195

Ambient Temp: 41 F
Baro. Press: 28.85 inHg
Rel. Humidity: 0 %

Visual Inspection.....OK

Preliminary Cleanout Snaps

Test #	Peak %
1	1.92
2	1.59
3	1.51

.....OFFICIAL OPACITY TESTS.....

Test #	Peak %
1	1.59
2	1.77
3	1.98

Peak Opacity Difference: 0.39
Difference within spec
Test is VALID

3 TEST AVERAGE OPACITY:.....1.78 %

Max Limit - Engines 1997 and Newer: 20 %
Zero-Drift Check.....PASS

TEST RESULTS: **** PASS ****

Last Calibrated On: 02-26-11 09:03:15
Calibration Filter: 49.7

DEIC Inspector's Signature:

"APPENDIX G"

30 day and 60 day emissions testing results of Police Car #7

30 Day Test Results

SNAP ON Car #7@
30 days

DATE 04-05-11
TIME 11:10:31

FUEL	GASOLINE
O2 %	1.15
CO2 %	14.6
HC ppm	00
CO %	0.08
COK %	0.08
HFR	15.52
NOX ppm	00

60 Day Test Results

SNAP ON 7

DATE 05-05-11
TIME 08:02:20

FUEL	GASOLINE
O2 %	0.97
CO2 %	14.8
HC ppm	01
CO %	0.01
COK %	0.01
HFR	15.33
NOX ppm	00

"APPENDIX H"

30 day and 60 day emissions results for Police Car #9

30 Day Test Results

SNAP ON

DATE 04-05-11
TIME 09:52:56

FUEL GASOLINE
O2 % 1.11
CO2 % 14.6
HC PPM 01
CO % 0.10
COK % 0.10
AFR 15.44
NOX PPM 60

60 Day Test Results

SNAP ON

DATE 05-05-11
TIME 08:49:12

FUEL GASOLINE
O2 % 1.40
CO2 % 14.4
HC PPM 01
CO % 0.03
COK % 0.03
AFR 15.69
NOX PPM 60

“APPENDIX I”

30 and 60 day emissions results for DPW Truck #8

30 Day Test Results

SPE J1667 OPACITY TEST REPORT

INTERSTATE SAFETY
RU NJ 201 664 1000
NJ PIF LIC 000711
NJ INSP LIC 010194

Test Date: 04-05-11 Test Time: 12:02:47

Meter Mfg: Red Mountain Engineering, Inc.
S/N: 4482414 Model: Smoke Check 1667
Software Version: 3.71WNR

Test Type: SNAP TEST
Tested by: MG49139
Veh. ID: 8
Year and Make: 2001 INTE
Vehicle Mileage: 20731
Year of Engine: 2002
Engine Mfg: INTE
Engine HP: 310

Ambient Temp: 48.2 F
Baro. Press: 28.16 inHg
Rel. Humidity: 0 %

Visual Inspection.....OK

Preliminary Cleanout Snaps	
Test #	Peak %
1	1.33
2	1.7
3	1.62

.....OFFICIAL OPACITY TESTS.....

Test #	Peak %
1	0
2	1.43
3	1.6

Peak Opacity Difference: 1.6
Difference within spec
Test is VALID

3 TEST AVERAGE OPACITY:.....1.01 %

Max Limit - Engines 1997 and Newer: 20 %
Zero-Drift Check.....PASS

TEST RESULTS: **** PASS ****

Last Calibrated On: 10-3-10 14:32:10
Calibration Filter: 49.7

DEIC Inspector's Signature:

60 Day Test Results

SPE J1667 OPACITY TEST REPORT

INTERSTATE SAFETY
RU NJ 201 664 1000
NJ PIF LIC 000711
NJ INSP LIC 010194

Test Date: 05-11-11 Test Time: 10:30:55

Meter Mfg: Red Mountain Engineering, Inc.
S/N: 4482414 Model: Smoke Check 1667
Software Version: 3.71WNR

Test Type: SNAP TEST
Tested by: MG49139
Veh. ID: IHTWADR32J033136
Year and Make: 02 INTE 08
Vehicle Mileage: 20047
Year of Engine: 2002
Engine Mfg: INTE
Engine HP: 310

Ambient Temp: 53.6 F
Baro. Press: 28.87 inHg
Rel. Humidity: 0 %

Visual Inspection.....OK

Preliminary Cleanout Snaps	
Test #	Peak %
1	1.02
2	0.691
3	0.771

.....OFFICIAL OPACITY TESTS.....

Test #	Peak %
1	0.877
2	1.1
3	1.02

Peak Opacity Difference: 0.226
Difference within spec
Test is VALID

3 TEST AVERAGE OPACITY:.....1 %

Max Limit - Engines 1997 and Newer: 20 %
Zero-Drift Check.....PASS

TEST RESULTS: **** PASS ****

Last Calibrated On: 10-3-10 14:32:10
Calibration Filter: 49.7

DEIC Inspector's Signature:

"APPENDIX J"

30 and 60 day emissions test results for DPW Road Sweeper

30 Day Test Results

SPE J1667 OPACITY TEST REPORT

INTERSTATE SAFETY
RV NJ 201 664 1000
NJ PIF LIC 000711
NJ INSP LIC 010194

Test Date: 04-05-11 Test Time: 11:47:32

Meter Mfg: Red Mountain Engineering, Inc.
S/N: 4482414 Model: Smoke Check 1667
Software Version: 3.71HWJR

Test Type: SHAP TEST
Tested by: ME46907
Veh. ID: SWEEPER
Year and Make: 01 STER
Vehicle Mileage: 21193
Year of Engine: 2001
Engine Mfg: CUMM
Engine HP: 240

Ambient Temp: 50.5 F
Baro. Press: 28.14 inHg
Rel. Humidity: 0 %

Visual Inspection.....OK

Preliminary Cleanout Snaps

Test #	Peak %
1	0.65
2	0
3	0.804

.....OFFICIAL OPACITY TESTS.....

Test #	Peak %
1	0
2	0.766
3	0

Peak Opacity Difference: 0.766
Difference within spec
Test is VALID

3 TEST AVERAGE OPACITY:.....0.255 %

Max Limit - Engines 1997 and Newer: 20 %
Zero-Drift Check.....PASS

TEST RESULTS: **** PASS ****

Last Calibrated On: 10-3-10 14:32:10
Calibration Filter: 49.7

DEIC Inspector's Signature:

60 Day Test Results

(please note, there are no results for 60 days, the testing equipment could not detect any material and only was registering the material used to clean the device)

“APPENDIX K”

Executive Summary of Science behind the device, explaining the chemistry form and functionality of the InterCharger/SMART Emissions Reducer

INTERCHARGER TECH

The Intercharger works by making electromechanical changes to hydrocarbon molecules. This is accomplished by using a cold catalyst system. Dissimilar metals are used to change the electron flow and break down Hydrocarbon chains. Carbon atoms, more than other atoms, want to readily attach to other atoms. If we release them from their molecular state, they become free radicals, searching to form a new molecule. Hydrogen is the most common atom. Hydrogen is attracted to other atoms by both its negative and positive fields to combine in a molecular state. Such as H₂O, or in our case C₁₀H₈. Gasoline is an 8-chain carbon molecule, while crude oil is a 10-12 chain. Crankcase emissions are some where in between, with extra CO, H₂O, and Hydrogen atoms to make a gaseous state. This "heavy" mixture is run through the Intercharger. This cold catalytic process breaks up the HC chain and deforms the orbit of the electrons in the hydrocarbon molecules. The change in speed, direction, and axis of these electrons opens up the carbon atom. Now the unstable hydrocarbon molecule, and its free radicals, can pick up more carbon and hydrogen atoms. The extra hydrogen atoms change the composition towards an even more gaseous state. This creates a more readily burnable medium. It also pulls up left over hydrocarbons deposited inside the engine, causing a cleaning action.

We are now dealing with a composition that will more readily burn with oxygen. The burn rate is increased, making for a more efficient engine. This is why many installations show an increase in mileage since the fuel mixture and crankcase emissions are burned more efficiently. We see a drop in tailpipe emissions as well. In a diesel engine we are starting out with a higher chain hydrocarbon, than in a gasoline engine. Any changes that make these HC's more volatile will increase efficiency. The Intercharger process helps to break up the bonds of diesel Hydrocarbons and the result is a cleaner more efficient engine.

. On a closed crankcase system such as a gasoline powered engine or a diesel produced after 2007. The Intercharger can be installed directly into the PCV system. The reformulated hydrocarbons are then introduced to the combustion process using the engines vacuum. The combustion changes promoted by the Intercharger work especially

well in diesel engines. In most applications the crankcase emissions are vented directly into the atmosphere. The Intercharger installation reroutes these modified gasses back into the intake system, thus taking advantage of these unused pollutants. With the use of an adjustable venture system, we can control the input of our modified Hydrocarbons. We can also adjust our system's flow to keep out unwanted excess oil in high mileage engines.

Maintenance of the system is minimal, requiring a minor cleanout at each oil change. In most cases this is a 15-minute service operation. Since we are also cleaning out old carbon buildup, engine oil remains cleaner. This gives the benefit of longer oil life, resulting in less engine maintenance.

Essentially, it is the increased speed and efficiency of the combustion process that *makes Intercharger so successful*. Users of the Intercharger have documented large decreases in emission readings. And in most cases have reported significant increases in mileage. This makes Intercharger the most cost effective way to promote a greener footprint for you fleet use.

Mark Ringen
Technical Director
Extreme Energy Solutions

“APPENDIX L”

Comparative studies, third party testing, and client testimonials

ROUSH

ID: VETS7000_20110624_004

Report Generated: 24-Jun-2011 11:31:43

Test Init Start 24-Jun-2011 9:58:38
Posttest Completed At 24-Jun-2011 11:23:54

Test Start 24-Jun-2011 10:04:29
Test Finish 24-Jun-2011 11:20:32

Test Type Combo

Options „CONTITP,

Vehicle Information:

Vehicle Id Number Sonata
Engine Family 4 cyl
Engine Displacement 2.4L

VIN 5NPET46C48H402379
Vehicle Model Hyundai Sonata
Model Year
Sample Delay

Vehicle Conditions:

Test Specifications:

P1 CVS BulkStream Flow: 494.4 scfm 14 scmm
P2 CVS BulkStream Flow: 328.4 scfm 9.3 scmm
P3 CVS BulkStream Flow: 402.6 scfm 11.4 scmm
P4 CVS BulkStream Flow: 550.9 scfm 15.6 scmm

Dynamometer

Inertia (lb): 3625.0
Road Load A (lb): 11.7400
Road Load B (lb/mph): -0.1774
Road Load C (lb/mph^2): 0.0201

Fuel Information:

Fuel EEE_ZA2021LT10_051211
NHV 18392.00
CWF 0.8636
HWF 0.1334

Density (kg/l) 0.7430
R-Factor 0.6000
OWF 0.0000
Fuel Calculation Type CARB
Certification Mode NCERT

Phase Information

	Trace file
Phase 1	EPA75_P1.TRC
Phase 2	EPA75_P2.TRC
Phase 3	EPA75_P1.TRC
Phase 4	HWFET.TRC

Shift file
AT_DEF.SFT
NULL
AT_DEF.SFT
AT_DEF.SFT

Event file
CVS_P1_STCO.EVT
EPA75_P2_CVS.EVT
CVS_P3_STCO.EVT
CVS_P4_WOP.EVT

Pre Test Remarks:

Combo
South Cell
1.5 Drive Axle % inertia
Test #1

Post Test Remarks:

Other:

Driver: Ron
Test Start Odometer: 40023
Test End Odometer: 40044
Calibration:

Operator: Tricia
Project Name:
CDT:

Phase 1 Std	THC (ppmC)	CO (ppm)	CO2 (%)	NOx (ppm)	NMHC (CARB)	CH4 (ppm)	FE [mpg]
Range	50.00000	300.00000	1.00000	10.00000		10.00000	
Sample	23.07000	206.32333	0.62540	6.08073		3.71960	
Std Dev	0.00000	0.01155	0.57735	0.00133		0.00000	
Ambient	3.19470	0.19848	0.04518	0.03267		1.97350	
Std Dev	0.00000	0.00000	0.00000	0.00000		0.00000	
Net conc	20.02906	206.13441	0.58240	6.04953	18.02382	1.83164	
Modal Corr	0.02805	0.29487	22.75344	0.02338		0.00000	
Grams/ph	1.32635	27.25938	1220.48021	1.36033	1.16832	0.13736	
Grams/mi	0.36878	7.57916	339.34081	0.37822	0.32484	0.03819	25.24

Test Info	Times Info
Baro (inHg) = 28.91	Phase start : 10:17:51
Temp (degF) = 78.22	Phase finish : 10:26:17
Rhum (%) = 56.84	Analysis End : 10:35:21
Ahum (gr/lb) = 80.76	
NOx Factor = 1.028	Elapsed (sec) = 507
	BagAri (mm:sec) = 9:01
Vmix (m3) = 112.380	Drv Err (sec) = 0
Dil.Factor = 20.777	Crank time = 1.4
Dist (mi) = 3.597	
SAO T (degF) = 82.878	
SAO P (inHg) = 28.8652	
SAO V (m3) = 106.924	

Phase 2	THC (ppmC)	CO (ppm)	CO2 (%)	NOx (ppm)	NMHC (CARB)	CH4 (ppm)	FE [mpg]
Range	10.00000	50.00000	1.00000	10.00000		10.00000	
Sample	3.53820	25.92967	0.58224	1.70797		2.35070	
Std Dev	0.00000	0.01443	0.57735	0.00127		0.00000	
Ambient	3.10073	0.23728	0.04771	0.05660		1.99827	
Std Dev	0.00150	0.00001	0.54271	0.00129		0.00006	
Net conc	0.67217	25.70270	0.53660	1.65478	0.19138	0.43924	
Modal Corr	0.00137	0.09571	40.79804	0.00863		0.00000	
Grams/ph	0.05126	3.94555	1304.41173	0.42653	0.01420	0.03771	
Grams/mi	0.01326	1.02102	337.55382	0.11038	0.00358	0.00976	26.23

Test Info	Times Info
Baro (inHg) = 28.91	Phase start : 10:26:17
Temp (degF) = 78.42	Phase finish : 10:40:45
Rhum (%) = 58.00	Analysis End : 10:49:50
Ahum (gr/lb) = 80.24	
NOx Factor = 1.025	Elapsed (sec) = 870
	BagAri (mm:sec) = 9:00
Vmix (m3) = 126.680	Drv Err (sec) = 0
Dil.Factor = 23.019	End Shdtn time : 10:40
Dist (mi) = 3.864	
SAO T (degF) = 83.134	
SAO P (inHg) = 26.6886	
SAO V (m3) = 123.43	
	Soak Start : 10:40
	Soak Finish : 10:50
	Elapsed (min) : 0:09

Phase 3	THC (ppmC)	CO (ppm)	CO2 (%)	NOx (ppm)	NMHC (CARB)	CH4 (ppm)	FE [mpg]
Range	10.00000	50.00000	1.00000	10.00000		10.00000	
Sample	4.63270	31.21200	0.65636	1.78427		2.64760	
Std Dev	0.00000	0.00000	0.57735	0.00127		0.00000	
Ambient	3.18500	0.65044	0.04794	0.04966		2.09560	
Std Dev	0.00000	0.01406	0.00000	0.00129		0.00000	
Net conc	1.60421	30.59352	0.61277	1.73677	0.88727	0.65498	
Modal Corr	0.00339	0.09543	23.27683	0.00437		0.00000	
Grams/ph	0.08838	3.36625	1053.24602	0.31734	0.04701	0.04014	
Grams/mi	0.02458	0.93622	292.92926	0.08826	0.01307	0.01116	30.21

Test Info	Times Info
Baro (inHg) = 28.91	Phase start : 10:50:05
Temp (degF) = 79.47	Phase finish : 10:58:33
Rhum (%) = 52.99	Analysis End : 11:07:39
Ahum (gr/lb) = 80.27	
NOx Factor = 1.026	Elapsed (sec) = 507
	BagAri (mm:sec) = 9:03
Vmix (m3) = 91.849	Drv Err (sec) = 0
Dil.Factor = 20.350	Crank time = 1.6
Dist (mi) = 3.596	
SAO T (degF) = 83.305	
SAO P (inHg) = 28.8837	
SAO V (m3) = 87.2224	

Phase 4 results	THC (ppmC)	CO (ppm)	CO2 (%)	NOx (ppm)	NMHC (CARB)	CH4 (ppm)	FE [mpg]
Range	10.00000	50.00000	1.00000	10.00000		10.00000	
Sample	3.57673	14.20100	0.66891	0.89478		2.15370	
Std Dev	0.00150	0.00000	0.57735	0.00224		0.00000	
Ambient	3.43280	0.41451	0.04803	0.04016		2.06650	
Std Dev	0.00000	0.00000	0.54271	0.00129		0.00000	
Net conc	0.31485	13.80713	0.62327	0.85662	0.10678	0.19009	
Grams/ph	0.03446	3.05458	2166.82582	0.31485	0.01151	0.02369	
Grams/mi	0.00336	0.29896	211.38196	0.03071	0.00112	0.00231	41.99

Test Info	Times Info
Baro (inHg) = 28.91	Phase start : 10:58:33
Temp (degF) = 74.46	Phase finish : 11:11:18
Rhum (%) = 54.88	Analysis End : 11:20:26
Ahum (gr/lb) = 77.82	
NOx Factor = 1.014	Elapsed (sec) = 765
	BagAri (mm:sec) = 9:00
Vmix (m3) = 185.81	Drv Err (sec) = 0
Dil.Factor = 20.08	Crank time = 1.6
Dist (mi) = 10.25	
SAO T (degF) = 83.196	
SAO P (inHg) = 28.8655	
SAO V (m3) = 177.115	

Weighted results	THC (ppmC)	CO (ppm)	CO2 (%)	NOx (ppm)	NMHC (CARB)	CH4 (ppm)	FE [mpg]
Total Grams	1.50044	37.63576	5744.96378	2.41904	1.24103	0.23890	
Grams/mi	0.07042	1.76634	266.62480	0.11363	0.05824	0.01121	
Phs 1&2 gms	1.37760	31.20493	2524.89194	1.78688	1.18252	0.17507	
Phs 1&2 g/mi	0.18464	4.18245	338.41526	0.23950	0.15850	0.02346	25.74
Phs 2&3 gms	0.13963	7.31181	2357.65775	0.74388	0.05121	0.07785	
Phs 2&3 g/mi	0.01872	0.98015	316.04634	0.09972	0.00821	0.01044	28.01
Weighted g/mi	0.090	2.36	325.7	0.160	0.073	0.016	26.99
Combined FE							32.16



HYUNDAI 2008 SONATA GLS

GOVERNMENT SAFETY RATINGS

Frontal Driver ★★★★★
Crash Passenger ★★★★★

Star ratings based on the risk of injury in a frontal impact.
 Frontal ratings should ONLY be compared to other vehicles of similar size and weight.

Side Front seat ★★★★★
Crash Rear seat ★★★★★

Star ratings based on the risk of injury in a side impact.

Rollover ★★★★★

Star ratings based on the risk of rollover in a single vehicle crash.

Star ratings range from 1 to 5 stars(★★★★★) with 5 being the highest.
 Source: National Highway Traffic Safety Administration (NHTSA).

www.safercar.gov or 1-888-327-4236

SMOG EMISSION INFORMATION

The SI of this vehicle is: 0.39



The SI of the average new vehicle is: 0.38
 << Cleaner More Polluting >>

Note: The Smog Index (SI) indicates the relative level of smog-forming pollutants emitted by the vehicle. The lower the SI, the lower the vehicle's emissions.

PART CONTENT INFORMATION

FOR VEHICLES IN THIS CARLINE:

U.S. / CANADIAN PARTS CONTENTS: 37 %

MAJOR SOURCES OF FOREIGN PARTS CONTENTS:
 Korea 63 %

Note: Parts content does not include final assembly, distribution, or other non-parts costs.

FOR THIS VEHICLE:

FINAL ASSEMBLY POINT:
 Montgomery, Alabama U.S.A.

COUNTRY OF ORIGIN:
 ENGINE: Korea
 TRANSMISSION PARTS: Korea

Unsu

- U.S. Go and side
- Six stan
- Standar
- Standar
- "Clas
- Classifi

STAND

- * Electr
- * Tractic
- * Tire Pr
- * 4-Whe
- * Front A
- * Front S
- * Side C
- * Front A
- * Front S
- * 2.4L D
- * Contin
- * 4-Spee
- * SHIFT
- * 4-Whe
- * 4-Whl
- * 16" Wi
- * Keyies
- * Jewelie
- * Power
- * AM/FM
- * XM Sa
- * Not Av
- * 6 Audi
- * Non-C
- * Cabin
- * Cruise
- * Tilt Ste
- * Front C
- * 60/40
- * "Large

Manufi
 Retail

VIN:
 MODEL:
 ENGINE
 PORT O
 COLOR:
 MODE C

Manufactu
 pre-deliver
 and dealer
 manufactu

EPA Fuel Economy Estimates

These estimates reflect new EPA methods beginning with 2008 models.

CITY MPG

21

Expected range for most drivers
 17 to 25MPG

HIGHWAY MPG

30

Expected range for most drivers
 24 to 36MPG

Estimated Annual Fuel Cost

\$1,751.00

based on 15,000 miles at \$2.80 per gallon

Combined Fuel Economy

This Vehicle

24

11 25

All Large Cars

Your actual mileage will vary depending on how you drive and maintain your vehicle



See the Free Fuel Economy Guide at dealers or www.fueleconomy.gov



Analysis Report
Exhaust Emission and Crankcase Emission Test
CanTEST Ltd. (800)665-8566 www.cantest.com

REPORT ON: Results of Testing (InterCharger Device)

REPORTED TO: TranCert Marketing Inc

888-2295 Berry Lane
Point Roberts, WA
98281

Attention: Karl Schaefer

NUMBER OF SAMPLES: Four (4)

REPORT DATE: September 30, 2007

DATE SUBMITTED: September 26, 2007

GROUP NUMBER: 7188M

SAMPLE TYPE: Charcoal Tubes

METHODS OF TESTING:

GCMS OPEN SCAN: The samples were collected on a charcoal tube and analysis was performed using laboratory procedure involving desorption of the tubes and analysis using gas chromatography mass spectroscopy (GC/MS). The GC/MS runs are analyzed in the open scan mode and utilizing a full library search we are able to qualitatively identify over 50,000 possible organic compounds.

RESULTS OF TESTING:

(See following page)

CANTEST LTD. (800)-665-8566 www.cantest.com

Omid Ghayyur, B.Sc.
Lab Coordinator, Industrial Hygiene

Page 1 of 2

Analysis Report
Exhaust Emission and Crankcase Emission Test
CanTEST Ltd. (800)665-8566 www.cantest.com

REPORTED TO: TranCert Marketing Inc
REPORT DATE: September 30, 2007
GROUP NUMBER: 7188M (InterCharger Device Test)

Volatile Organic Compounds in Air

CLIENT SAMPLE IDENTIFICATION:	Exhaust diesel w/o device	Exhaust diesel with device	Crankcase Vent w/o device	Crankcase Vent with device
CANTEST ID	7188M-1	7188M-2	7188M-3	7188M-4
Compound				
Hexane	2.5	0.5	ND	ND
Benzene	8.0	1.6	0.26	ND
Methylcyclohexane	ND	ND	ND	ND
Octane	ND	ND	ND	ND
Toluene	1.8	0.4	0.2	ND
Ethylbenzene	0.2	ND	ND	ND
Xylenes	0.4	ND	ND	ND
Decane	32	ND	ND	ND
Trimethylbenzene	0.3	ND	ND	ND
Dodecane	0.2	ND	ND	ND
DETECTION LIMIT	0.5	0.5	0.5	0.5

Results are expressed in micrograms (ug)

ND = Not Detected

Note: The compounds listed above were the major peaks observed on the chromatogram.

My name is Tony DeNicola, I'm a Radio/TV engineer and work for Clear Channel Communications in Sussex County, NJ. I met Samuel one day when he came to the radio station as a guest on a radio show and asked him about this thing called the InterCharger. He told me briefly how it worked and I said that's what I need on my truck. It's being about a year now that I had Samuel install one on my old 1994 Ford XLT Ranger that has 160,000 miles on it and it runs like new, no hesitations or pinging that I would get at times from regular gas. My gas mileage was around 18 miles per gallon. I travel 130 miles back and forth from Edison to Franklin NJ everyday to work and anything that would improve the performance of my truck and give me better gas mileage was worth trying.

I'm happy to say in writing that I'm getting 3 to 4 more miles per gallon with the InterCharger and didn't have to worry about emissions at the inspection station anymore because of the very low emissions with the InterCharger. In fact when I took my truck for inspection the inspector checked to make sure my truck was running because he told me for an old truck it has very low emissions. I was happy to get that passing sticker after that. On a final note I can truly say that not only do I get better gas mileage but my truck has more pep when I press on the accelerator and runs a lot better then it ever did.

Thanks Extreme Energy Solutions

Tony DeNicola/ CE
Clear Channel Tri-State
45 Mitchell Ave.
Franklin, NJ 07416
Cell: 862-266-6447
Office: 973-823-6185

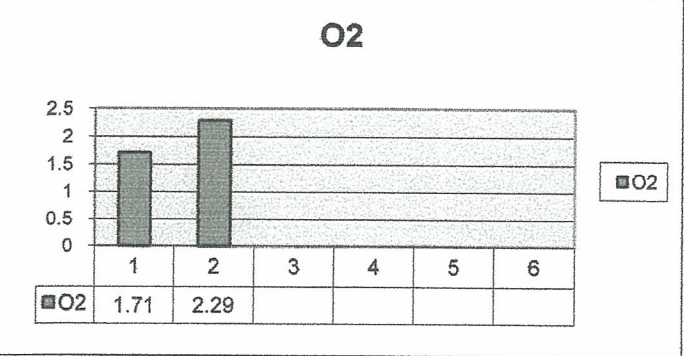
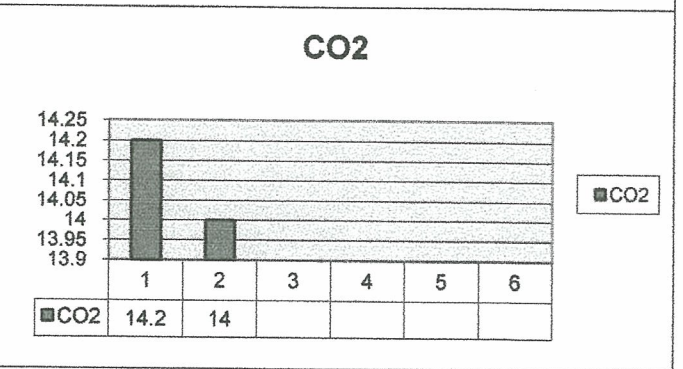
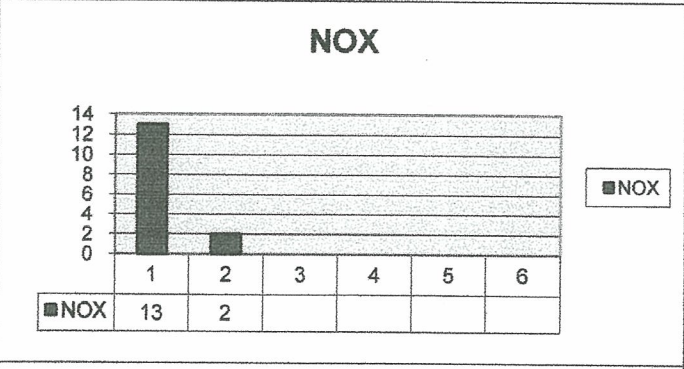
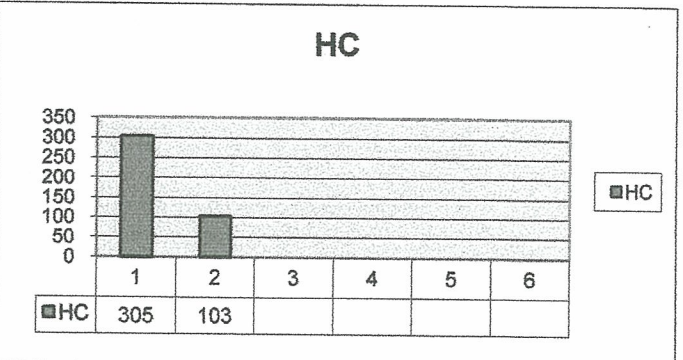
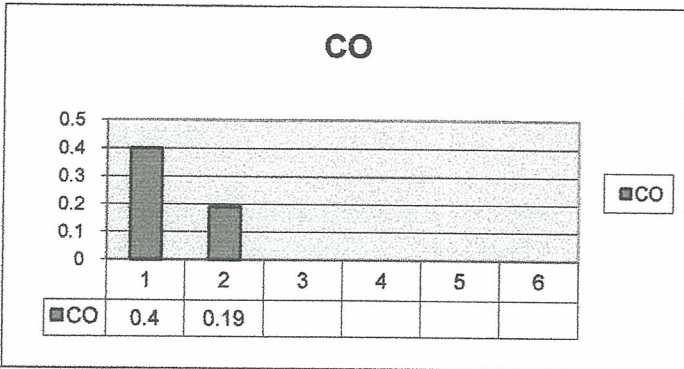
Emissions Data 5 GAS

DeNicola, Tony Vic # 1994 Ford Ranger

Start Date 06/18/10

TESTS	1	2	3	4	5	6
CO	0.4	0.19				
HC	305	103				
NOX	13	2				
CO2	14.2	14				
O2	1.71	2.29				

Test Dates	
1	06/18/10
2	07/01/10
3	
4	
5	
6	



NOTES:

Abbreviations	
CO	Carbon Monoxide
HC	Hydrocarbons
NOX	Oxides of Nitrogen
CO2	Carbon Dioxide
O2	Oxygen

Report prepared by:
 Mark Ringen rk
 Technical Director
 EES

Fleet Emission Reduction Program

Final Report



February 14, 2009

Executive Report Summary

In October of 2008, the City of San Bernardino entered into a fleet emissions reduction program with SC Distributing, Inc. using EnviroCharger™ Products.

EnviroCharger™ is a bundled product with Enviro-Save® Powertrain Treatment and InterCharger™ crankcase vent catalyst system designed to reduce powertrain metal wear and improve combustion through electro-chemical reactions.

PROGRAM DESCRIPTION

The program was implemented to evaluate the benefits of using the EnviroCharger™ products installed on their fleet. The objective of the program included, but not limited to, a reduction of NOx (Nitrates of Oxide) emissions, and increased power and performance. The targeted results were to include improvements to the fleet by reducing lifecycle costs while improving maintainability and pollution reduction.

The city of San Bernardino's fleet totals 345 vehicles.

The test fleet included three vehicles assigned to the program:

- Vehicle 07-152 (Refuse Truck) Model Year: 2007 Engine: CUMM Fuel Type: NG
- Vehicle 07-188 (Refuse Truck) Model Year: 2007 Engine: CUMM Fuel Type: NG
- Vehicle 07-198 (Container Truck) Model Year: 2007 Engine: CUMM Fuel Type: NG

The approach included a review of the maintenance history on each vehicle, interviewing the shop supervisor and pre-data collection including emission data. The vehicles were operated in normal service for a period of 4-months. At the end of the testing cycle, post emission testing and vehicle maintenance records were reviewed.

In conclusion, the crankcase emissions were reduced 100%. The exhaust emissions results revealed a 42% reduction in NOx, a 14% reduction in HC and an 18% reduction in CO2. The vehicle maintenance history revealed improved performance and zero operator complaints. The emission data testing instrumentation is certified by NOVA Analytical Systems. These results include both pre and post testing verified by an exhaust emission analyzer.

These results have met the objectives outlined.

City of San Bernardino - EnviroCharger Project				
Vehicle Number	Average Change	07-152	07-188	07-198
Pre NOx Reading		59.6 PPM	98.3PPM	43.4 PPM
Post NOx Reading		56.5 PPM	33.6 PPM	25.3 PPM
NOx Change	- 42.62% Reduction	- 5.2%	- 74.45%	- 41.7%
Pre HC Reading		59.4 PPM	86.9 PPM	58.5 PPM
Post HC Reading		56.8 PPM	59.8 PPM	58 PPM
HC Change	- 14.78% Reduction	- 4.3%	- 31%	- 0.85%
Pre CO2 Reading		8.23%	7.86%	8.89%
Post CO2 Reading		8.06%	5.86%	6.31%
CO2 Change	- 18.96 Reduction	- 2.06%	- 25.44%	- 29.02%

THE APPROACH

The program was implemented as a preemptive measure to lower NOx emissions within their fleet at the same time, to improve the performance of their natural gas refuse trucks. An outline of the demonstration was drawn out and pre-test data was collected on October 9, 2008 for all three units before installation of the Enviro-Charger kits. In addition, post-test data was collected 4-months later on February 13, 2009 which demonstrates quantitative data to evaluate the test fleet effectiveness.

On October 9, 2008 three refuse trucks were selected by San Bernardino and were tested for emissions before the installation of the EnviroCharger™ kits. After the vehicles were brought up to operating temperature three exhaust gas readings were taken using a Nova Exhaust Gas Analyzer certified by Nova Analytical Systems. Readings were taken at both idle and high idle to establish an average reading for each truck prior to installation. The kits were then installed and the trucks were put back into regular service.

After four months of regular service the trucks were re-tested on February 13, 2009. The trucks were again brought up to operating temperature and three exhaust gas readings were taken at both idle and high idle to establish an average reading for each truck.

THE RESULTS

The results of the 4-month test period showed a 42% reduction of NOx, 18% reduction of CO2 and a 14% reduction of HC on average. These results clearly demonstrate the improvement of combustion and reduction of toxic emissions in these units.



June 24, 2010

David Yassky
Commissioner
TLCCommissioner@tlc.nyc.gov

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New York, NY 10006

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+1 212 676 1100 fax

Mr. Samuel K. Burlum
President, Sales & Operations Director
Extreme Energy Solutions
150 Main Street
Ogdensburg, NJ 07439

Dear Mr. Burlum,

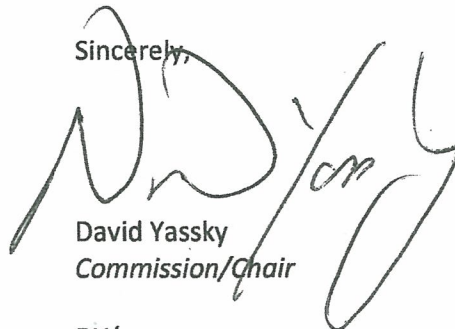
Thank you for your March 15, 2010 letter which enclosed information about the InterCharger technology being offered by Extreme Energy Solutions. Since receiving your letter, we have reviewed your information and you have met with Chief Martin Grindley, who assessed a vehicle equipped with the InterCharger. Upon inspection of your vehicle, Chief Grindley deemed that installation of the InterCharger is not in conflict with the TLC's Taxicab Specifications.

As a result of Chief Grindley's assessment, it is not necessary for you to submit a formal Pilot Proposal for our review, pursuant to Chapter 14 of our rules. You may independently contact vehicle owners to sell your product. This is not an endorsement of your product; we are merely stating in this letter that it is permissible for a taxi to be equipped with the InterCharger product.

We appreciate your interest in testing a "green" solution with New York City's taxicabs. The City of New York has encouraged owners to consider the environment and fuel costs when purchasing and operating their vehicles.

Should you have any questions on this matter, please do not hesitate to contact the Taxi and Limousine Commission's Policy Analyst, Nichole Polyak (nichole.polyak@tlc.nyc.gov, (212) 676-1028).

Sincerely,



David Yassky
Commission/Chair

DY/np

cc. E. Gallo, C. Fraser, M. Grindley, N. Polyak

Emissions Data 5 GAS

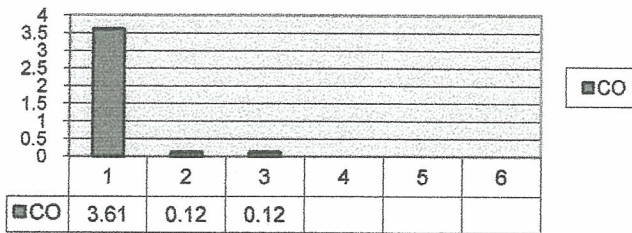
Last Stop Taxi **Vic # 2009 Crown Vic**

Start Date 5/13/2010

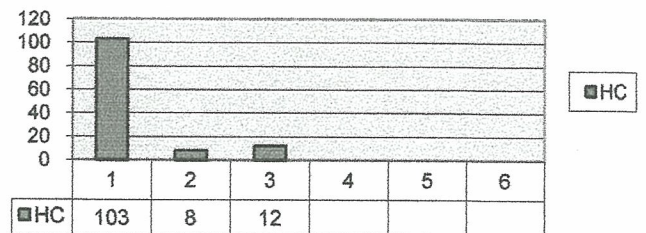
TESTS	1	2	3	4	5	6
CO	3.61	0.12	0.12			
HC	103	8	12			
NOX	0	0	0			
CO2	2.5	14.9	15			
O2	7.75	0.71	0.58			

	Test Date
1	05/13/10
2	05/26/10
3	06/29/10
4	
5	
6	

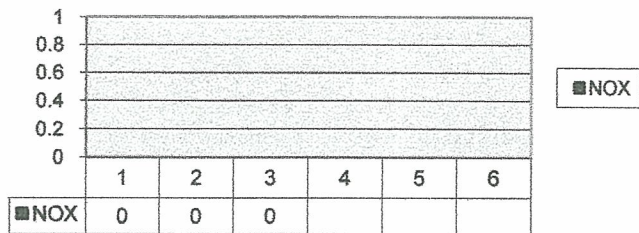
CO



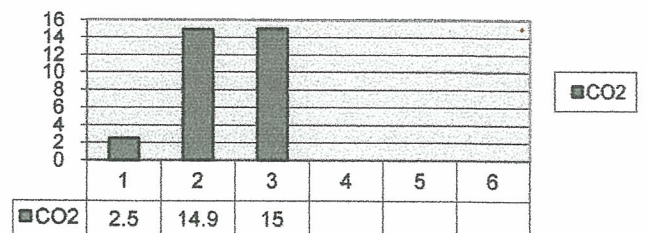
HC



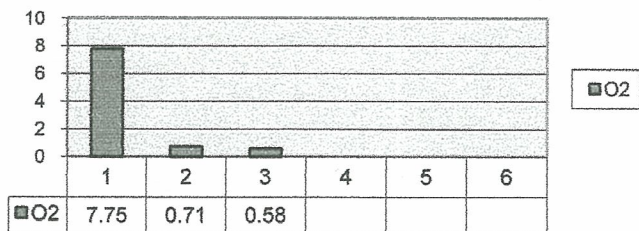
NOX



CO2



O2



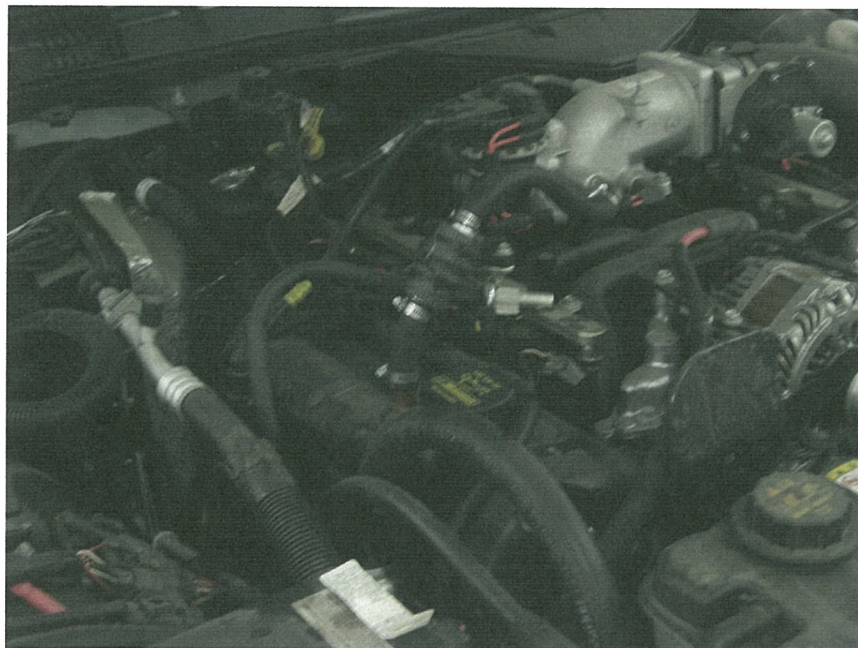
NOTES:

“APPENDIX M”

Pictures of Andover Township vehicles retrofitted with the device and the install.



Police Car #7



Under the hood of Police Car #7



Police Car #9



Under the Hood of Police Car #9



DPW Truck #3



Under the hood of DPW Truck #3



DPW Truck #1



DPW Truck #8



DPW Road Sweeper



Under the hood of the DPW Road Sweeper



GO Green With The Same Machine

InterCharger SMART Emissions Reducer CARB EO #D-671

973-209-3450 or www.extremeenergysolutions.net

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