



CALIFORNIA BASED EMISSIONS LABORATORY  
**TESTING FOR ALL  
EMISSION REGULATIONS**

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En julio de 2015, la CEE realizó pruebas en una motocicleta Yamaha TTR de 2002 bajo la supervisión del director del proyecto, Larry Swiencki. Las pruebas se realizaron para demostrar los efectos de la tecnología de combustible enzimático XBEE.



40 CFR 1065 Compliant

**Acerca de CEE**

California Environmental Engineering, LLC. es un laboratorio de emisiones comprometido con el desarrollo de productos y el aumento de servicios. Se esfuerza continuamente por mantenerse al frente de las nuevas normativas sobre emisiones.

**California Environmental Engineering** 

En esta prueba se utilizó gasolina de 87 octanos CARB E10 de grado regular proporcionada por Clean Fuel Resources. La muestra se dividió en dos contenedores de un galón. El primer recipiente se marcó como combustible de referencia.

El segundo recipiente se trató con 2 ml de aditivo XBEE. El combustible tratado permaneció durante tres horas antes de ser introducido en el depósito del vehículo.

CEE realizó 3 pruebas de arranque en caliente con el combustible de referencia. Luego, realizó el mismo procedimiento con el combustible XBEE. En la 3era prueba con XBEE, la motocicleta actuó como si se quedara sin combustible durante la aceleración.

La motocicleta se aclaró y funcionó bien durante el resto del ciclo. El resultado de que la motocicleta funcionara mal, hizo que los hidrocarburos aumentaran considerablemente. Por lo tanto, los datos de la 3era prueba con XBEE no se utilizaron para cálculos promedios.

Los resultados fueron positivos en la reducción de HC, CO, CO2 y PM. Además, el ahorro de combustible mejoró.



	Sin Xbee	Con Xbee	Diferencia (%)
PM - Particulas (gr/mile)	0.022	0.017	<b>-22.70</b>
THC - Emisiones tot. de hidrocarburos (gr/mile)	1.375	0.934	<b>-32.10</b>
CO - Monóxido de Carbono (gr/mile)	21.684	18.891	<b>-12.9</b>
NO <sub>x</sub> - Dióxido de Nitrogeno (gr/mile)	0.118	0.131	<b>+11.0</b>
CO <sub>2</sub> - Dióxido de Carbono (gr/mile)	42.48	41.42	<b>-2.50</b>
MPG - Millas por Galón	109.51	119.55	<b>-9.20</b>



## **FINAL REPORT**

### **Exhaust Emission Testing**

**Of The Soltron Enzyme Fuel Treatment  
On a 90cc Yamaha TTR Off-Highway Motorcycle  
Powered by  
A Four-Stroke Gasoline Engine  
Vin.# JYACB03Y42A015392**

**All testing Conducted in Accordance with EPA and California Air  
Resources Board Certification Testing Protocols  
For Off-Road Motorcycles**

### **Testing Conducted By**

**California Environmental Engineering, LLC  
2530 S. Birch Street  
Santa Ana, Ca. 92707**

**CEE is an Independent Emission Testing Facility  
Listed on the Recognized Laboratories List  
By EPA and CARB**



## Executive Summary

C.E.E. conducted testing on a 2002 Yamaha TTR off road motorcycle. The tests were conducted to test the effects of the Soltron Enzyme Fuel Treatment. This test used 87 octane pump gasoline. The gasoline was CARB E10 87 octane regular grade pump gas provided by Clean Fuel Resources. The two gallons provided was divided into two one gallon containers. The first container was then marked as baseline fuel. The second container was treated with 2ml/gal. of the Soltron Enzyme Fuel Treatment. The treated fuel then sat for three hours before being introduced into the vehicle's fuel tank.

C.E.E. ran three baseline hot start tests with the baseline fuel. C.E.E. then ran three hot start tests with the Soltron Enzyme Fuel Treatment treated fuel. The third test with the Soltron Enzyme Fuel Treatment the motorcycle acted as though it was running out of fuel during the high acceleration. The motorcycle then cleared up and ran fine for the remainder of the cycle. The result of the motorcycle running poorly caused the hydrocarbons to go up significantly. Therefore the third test data with the Soltron Enzyme Fuel Treatment was not used in calculating the averages.

The results were positive in that a reduction in HC,CO,CO<sub>2</sub> and PM occurred. In addition the fuel economy also went up. The results of the tests can be found in the test summary page of this report.

If you have any questions please feel free to call me at 714-545-9822 ext.51.

  
Larry Swiencki, Project Manager  
CEE



## TEST VEHICLE

Year : 2002  
Make : YAMAHA  
Model : TTR  
Vin.# : YJACB03Y42A015392  
Eng. Family : 90 cc  
Transmission : M-3



## TEST LABORATORY

California Environmental Engineering is an EPA and CARB recognized Emission Testing Facility located in Santa Ana, Ca.. CEE has been in business since 1984. CEE conducts Chassis and Engine Dynamometer Emission testing on vehicles up to 12,000# and Engines up to 800 HP.

CEE also provides procurement and engineering services. CEE is a current contractor to the CARB. CEE has many product development companies and major manufacturers as clients.

## TEST EQUIPMENT

CEE uses a Horiba Analytical train for emission analyzation, a Horiba CVS and a Mustang Motorcycle Dynamometer with Real Time controls.

## Durability

CEE conducts all durability driving on a chassis dynamometer. The durability schedule was written per Title 40 Part 86, Appendix 4, standard road cycle. All durability miles/KM are driven by CEE personnel and recorded on the computer by lap.



## TEST SUMMARY

<u>Test #</u>	<u>PM</u>	<u>THC</u>	<u>CO</u>	<u>NOx</u>	<u>CO2</u>	<u>MPG</u>
<b>BASELINE</b>						
V6006356	0.0259	1.282	23.234	0.106	43.529	105.28
V6006357	0.0175	1.201	20.424	0.134	43.35	111.72
V6006358	0.0227	1.641	21.394	0.115	40.56	111.54
<b>AVERAGE</b>	<b>0.022</b>	<b>1.375</b>	<b>21.684</b>	<b>0.118</b>	<b>42.48</b>	<b>109.51</b>

### WITH SOLTRON

V6006359	0.0165	0.890	18.522	0.128	42.39	119.14
V6006360	0.0176	0.978	19.259	0.134	40.45	119.95
<b>AVERAGE</b>	<b>0.017</b>	<b>0.934</b>	<b>18.891</b>	<b>0.131</b>	<b>41.42</b>	<b>119.55</b>

### %CHANGE

-22.7%   -32.1%   -12.9%   +11.0%   -2.5%   +9.2%

**NOTE: All numbers in the summary are in grams/mile or Miles per gallon**