

## ***TEST CONDUCTED ON THE TRANSPORTATION UNITS OF A MULTINATIONAL SOFT DRINK BOTTLING PLANT***

Evaluation of the use of **Xp3 for Diesel** in transport units Nos. 950 y 945 was conducted to verify how effective the use of Xp3 is.

Fuel consumption history, oil analysis and injectors were checked before Xp3 was added.

Oil analyses were conducted after 5,352 km, with and without Xp3. In addition a detail record of fuel consumption (km/gallon) was kept for each unit.

### **CONTROL PARAMETERS:**

#### **OIL ANALYSIS:**

The engine internal parts wear can be determine by analyzing the used oil. You can then determine the life expectancy of an engine. One (1) PPM is equal to one minute in two year of an engine. Not all the engine wear can be attributed to the fuel combustion. In this report the only one were analyzed are the one who show wear, like Chrome, Soot, Lead, Oxidation, Water and Sulfur.

Oil test analysis results

#### **Wear on parts per million (ppm)**

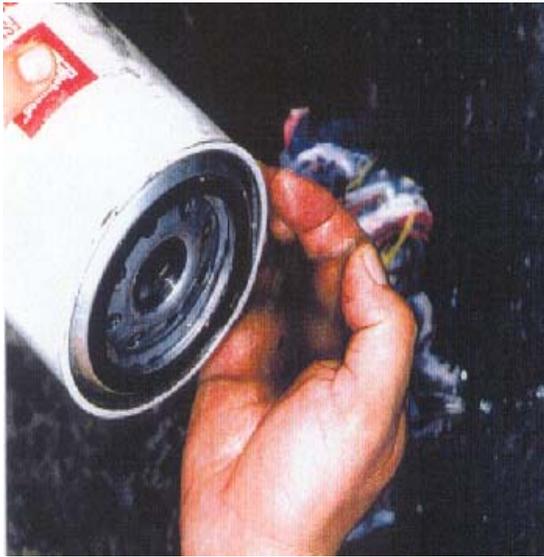
<b><u>Residual</u></b>	<b><u>Without</u></b>	<b><u>With Xp3</u></b>	<b><u>% Difference</u></b>
<b>Sulfur</b>	<b>53</b>	<b>28</b>	<b>- 47%</b>
<b>Soot</b>	<b>156</b>	<b>90</b>	<b>- 42.3%</b>
<b>Water</b>	<b>N</b>	<b>N</b>	<b>N/A</b>
<b>Chrome</b>	<b>25</b>	<b>4</b>	<b>- 84%</b>
<b>Lead</b>	<b>12</b>	<b>0</b>	<b>- 100%</b>
<b>Oxidation</b>	<b>83</b>	<b>76</b>	<b>- 8.4%</b>

## **FUEL FILTERS**

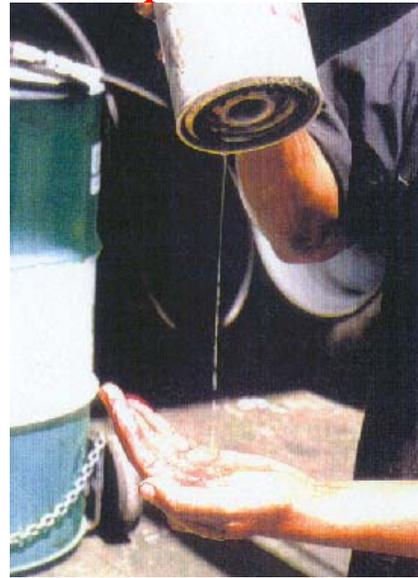
Filter's function is to trap sediments, sludge, fibers, and water present in the fuel lines and in fuel tanks.

The enclosed photographs show the fuel filters from the units before and after the use of Xp3. The first photo is from the non-treated fuel. This is highly contaminated. In contrast the photograph of the fuel treated with xp3 shows a drastic reduction of contaminants.

### **Without**



### **With Xp3**



## **INJECTORS CONDITION**

The injectors were reviewed in both cases after driving 5,325 km. An important reduction of soot and carbon incrustations was obtained with the use of Xp3.

### **Without**



### **With Xp3**



## **FUEL CONSUMPTION**

Consumption was verified by the bottling plant and the Xp3 distributor staff. Both agreed the unit number 950 had 15.72% savings, and unit 945, 22.50%. For the purpose of analyzing the advantages it was decided to use 9.49% as the projected savings.

## **PROJECTED SAVINGS ANALYSIS**

To project the savings we used two different analyses:

- a) Savings in fuel consumption
- b) Savings in maintenance

## **ECONOMICAL PROJECTIONS**

### **a) Fuel Savings**

Diesel fuel used	40,000 gallons
Cost per gallon of diesel	US\$ 1.91
Monthly diesel cost	US\$ 76,400.00
Quantity of Xp3 per month	10 gallons
Gross savings	9.49%
Gross monthly savings	US\$ 7,250.36

**Net savings per year when Xp3 is used      US\$ 87,004.32**

### **b) Savings in maintenance:**

#### **History:**

Units	100 units
When should the unit overhaul take place	every 400,000 Km.
Units per year requiring an overhaul (5%)	5 units
Cost of overhaul:	US\$ 7,000.00
Injectors	US\$ 750.00
Overhaul	US\$ 6,250.00
Total cost for 5 units: US\$ 7,000.00 each	= US\$ 35,000.00 per year
Monthly average cost (35,000/12)	= US\$ 2,916.67 per month

#### **Projected when Xp3 is used:**

Units	100 units
When should the unit overhaul take place	every 500,000 Km
Life expectancy increased by 25%	20 months

**Savings by increasing life expectancy to 20 months      \$58,333.40**