

Title: Diesel Fuel Purifier System		Report No: 10002901
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Prepared By:	Approved By:	Date: 12-05-2011

INTRODUCTION

Nowadays fuel is often used with serious contamination in the form of water, asphaltenes and or bacteria, causing sludge which results in filter plugging and injector damage. Because the common rail engines are more sensitive, this contamination can cause engine damage. Injectors are malfunctioning or break down due to water in fuel. Therefore the fuel system can be equipped with an extra fuel purifying system. The purpose of this report is to describe the test procedure and efficiency of this system.



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PARTS NEEDED

The equipment, which will be tested, is the Diesel fuel purifier and the Diesel fuel stabilizer. The test will be carryout on the test unit R00011 equipped with C6.6 Caterpillar engine. ("Safari Unit")

The following parts will be needed for the test:

8501037976/A Diesel fuel purification system
 8501037979/A Magnetic stabilizer
 Transparent Jerry cans to mix water, fuel and dirt.

Write down all other part numbers, fittings and hoses used for installation:



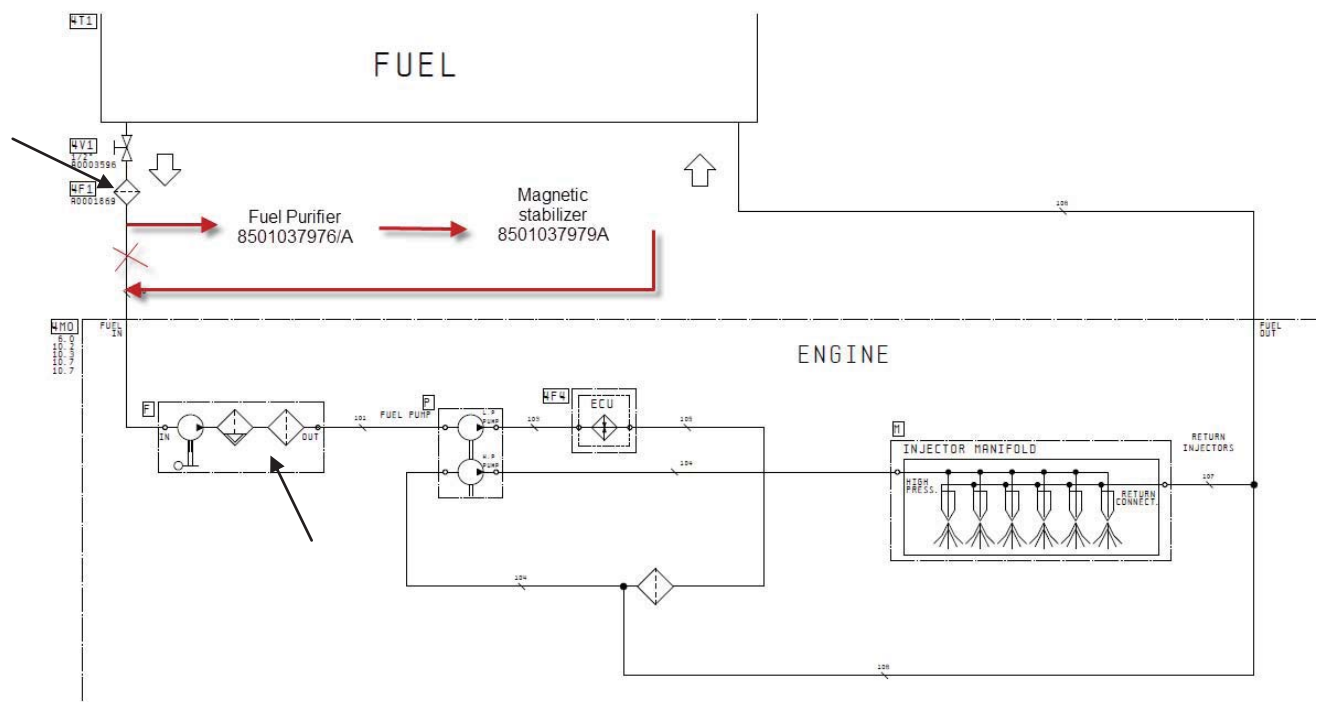
Purifier and stabilizer

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ACTION

NOTE: Make pictures of every step

1. Place the fuel purifier and magnetic stabilizer as shown in scheme below.
See system installation manual: MAN-10002867/A



Fuel scheme R00011 with C6.6 Caterpillar

2. Check the original fuel filters, shown with black arrow in the scheme above.
Clean them or replace if necessary.

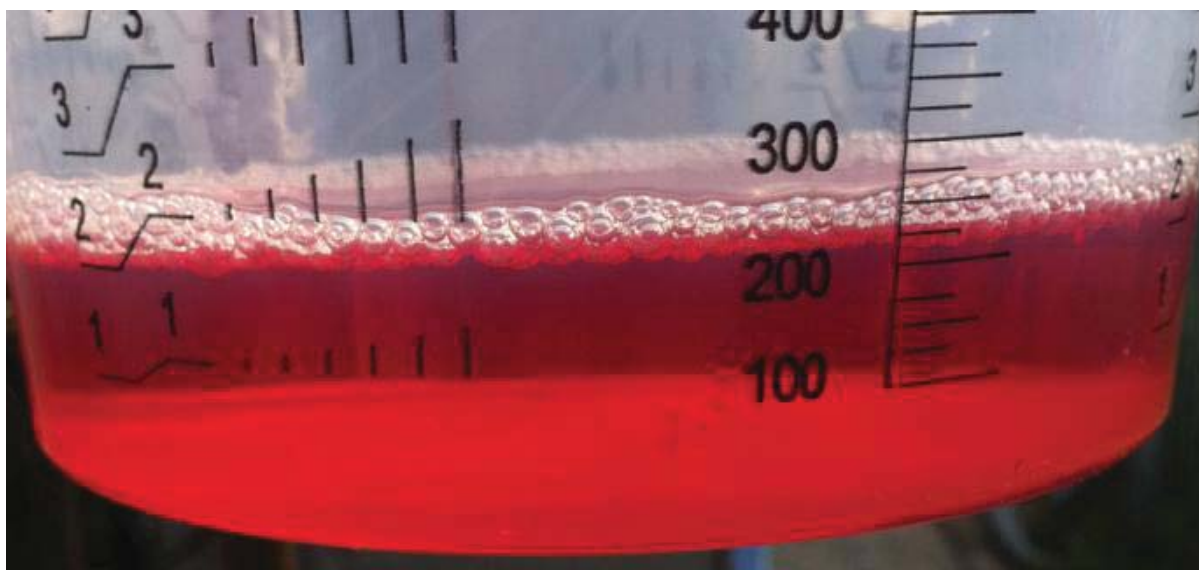
[Original caterpillar pre-filter/water separator and fine filter is clean and can be used for the test.]

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Test 1

3. Let the engine run for 2 hours, stop the engine and drain the purifier. Collect the substance (water, sludge, diesel) in a clean transparent can. When the fuel flow is clean you can close the ball valve.
4. Let rest the diesel, water emulsion so the diesel will float on top of the water and sludge.

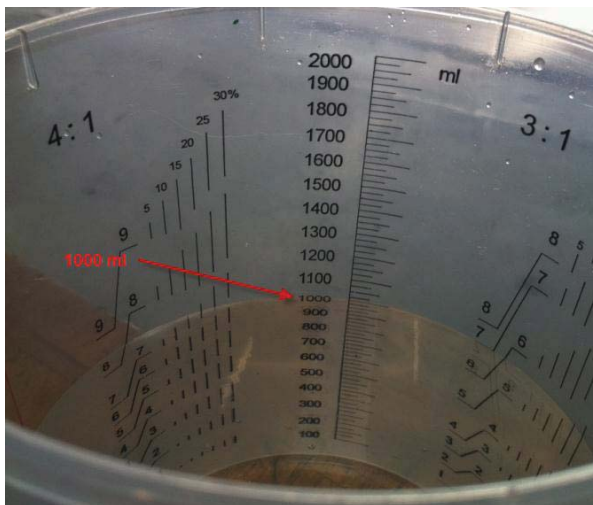
[There is no water or dirt collected after 2 hours running.]



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Test 2

- Take a jerry can and fill it up with 20% (clean) water and 80% diesel. Shake the jerry can to mix the water diesel emulsion.



Water =1.....Litre (1)
 Diesel =4.....Litre (4)



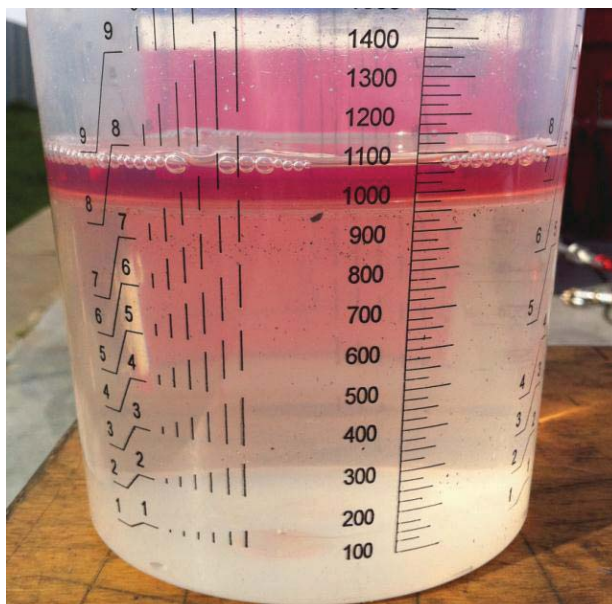
- Let the engine run on the diesel water emulsion until the jerry can is empty.

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7. Drain the purifier and collect the substance (water, diesel) in a clean transparent can. When the fuel flow is clean you can close the ball valve.



8. Let rest the water diesel emulsion, afterwards write down the amount of water.



Water =[1].....Litre

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Test 3

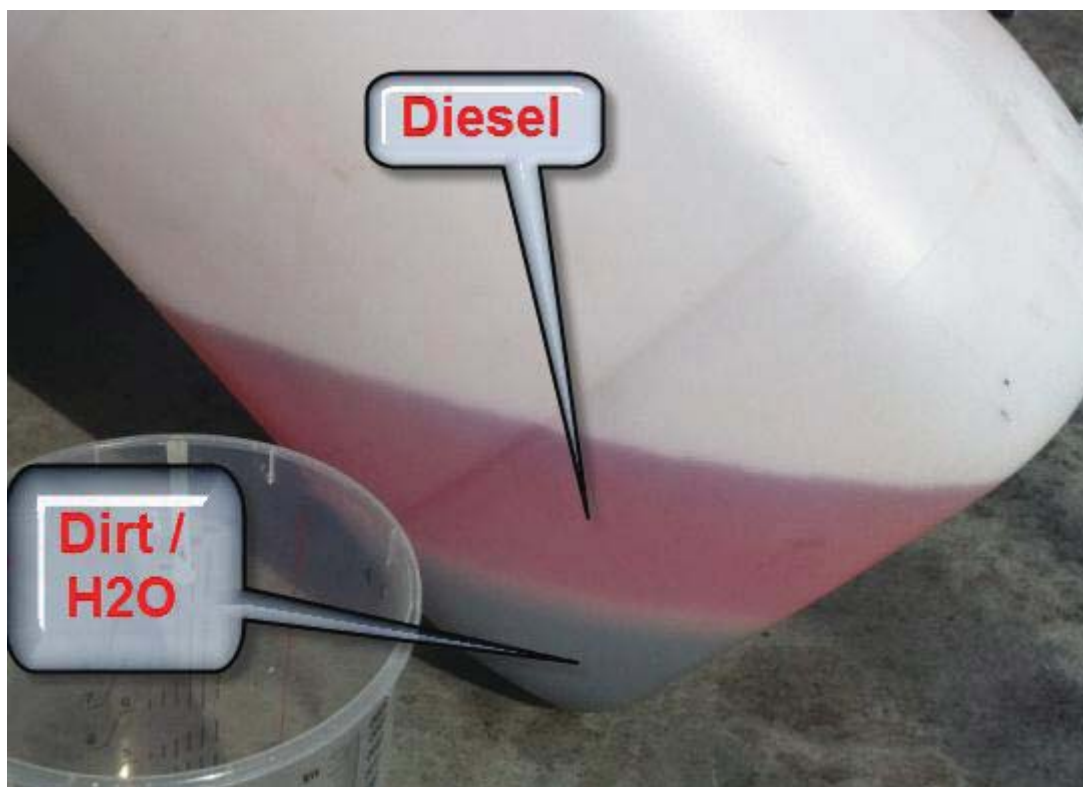
- Take a jerry can and fill it up with 1L water and 4L diesel and 1L dirt from the bottom of the ditch (river). Shake the jerry can to mix the water diesel dirt emulsion.

Water =1.....Litre (1)

Dirty water =1.....Litre (1)

Diesel =4.....Litre (4)

- Let the engine run on the diesel water dirt emulsion until the jerry can is empty.



- Drain the purifier and collect the substance (water, diesel, dirt) in a clean transparent can. When the fuel flow is clean you can close the ball valve.

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[After 1,5 litre of dirt water the purifier is full and the original water separator gets filled with water. Motor is stopped and the water purifier is drained. Also the caterpillar separator is drained and the filter element is changed for a new clean filter.]

12. Let rest the water diesel emulsion, afterwards write down the amount of water.



[Water =1,5 litre in purifier and 0.3 litre in the caterpillar separator. The rest (0.2 litres) is still inside the jerry can.]

13. Is there dirt in the drained emulsion? [YES]

14. Check the Caterpillar water separator on water and/or dirt.

[Yes there is water and dirt inside the water separator.]

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Test 4

- Take a jerry can and fill it up with 4L diesel and 1L dirt from the bottom of the ditch (river). Shake the jerry can to mix the water diesel dirt emulsion.

Dirty Water =1.....Litre (1)

Diesel =4.....Litre (4)

- Let the engine run on the diesel water dirt emulsion until the jerry can is empty.
- Drain the purifier and collect the substance (water, diesel, dirt) in a clean transparent can. When the fuel flow is clean you can close the ball valve.

[1 litre of dirty water is collected from the drain after running. The new water separator is clean, no water or dirt is coming true.]

Conclusion: The purifier works as is should work; it filters all water and dirt out of the fuel and can be drained on the bottom of the purifier.

Advice: When the user is not sure about the diesel quality or the cleanness of the diesel tank it's recommended to use an extra purifier. This purifier can be drained when it's full and can be reused again without changing filter elements. The purifier can be used as an addition for the original fuel filter system of caterpillar. The original fuel filters will be spared but still be necessary.

The fuel purifier filters the bacteria. The stabilizer will kill/sterilize the bacteria this avoids bacteria growth in the tank.

NOTE: The purifier will not clean Diesel mixed with oil, only water, bacteria and dirt like rust and sand.