



**CLEAN OIL**  
BRIGHT IDEAS

## Training Vessel - Diesel Engine - Main Propulsion

### CJC™ Application Study

Application Study  
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#### CUSTOMER

Chilean Navy-Training Ship:  
"Esmeralda", Valparaiso, Chile.

#### THE SYSTEM

**Engine:** MAN B&W Alpha Diesel.  
**Type:** 12V23.  
**Power:** 1920 kW. RPM: 900.  
**Oil volume in sump:** 800 ltrs.  
**Oil type:** TEXACO 16x30.

#### THE PROBLEM

Low load on the engine around 40 to 50% generates high soot contamination. This causes wear on the components. A spectral analysis of the oil showed 15 ppm of iron and 7 ppm of sodium.

#### THE SOLUTION

**CJC™ Fine Filter HDU 427/108**, 720 ltr/hr.  
**Dirt holding capacity:** 64 kilos.  
**Filter:** 3 μm absolute, 0.8 μm nominal.

#### THE RESULT

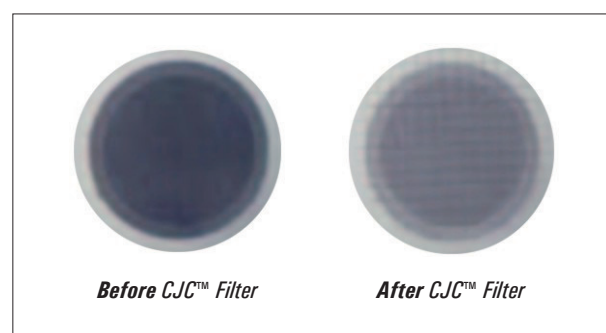
During a test period of 6 months the iron content in the oil reduced to 8 ppm and the sodium to 3 ppm.

The ISO cleanliness code remained at 19/14 and the insolubles were retained at a level of 0.396 gr/ltr.

With these results it is expected that the engine components life time will at least increase with a factor 2.

#### COMMENTS

**Superintendent Engineer**  
**Mr. Niemann from Armada de Chile:**  
*In conjunction with the results obtained it shows that the use of the CJC™ Fine Engine Oil Filter increases the lifetime of the oil. Further analysis conducted by Texaco showed a reduction of iron content from 16 ppm to 5 ppm. The lifetime of the Filter Insert proved shorter than expected but this attributed to the low load on the engine generating high levels of soot contamination.*



Date	5 μm	15 μm	ISO	Weight gr / ltr.	Fe / Na
27.03.02	303,990	15,380	19/13	0.514	13.71 / 7.03
14.06.02	1,482,930	230,880	21/18	0.682	7.75 / 3.6
17.08.02	463,920	12,160	19/14	0.318	7.2 / 3.5
19.09.02	781,160	30,780	20/15	0.369	8.06 / 3.22