

## EXTENDING USABLE OIL LIFE OF A MITSUBISHI S12 R-C2MPTK ENGINE BELONGING TO MS SARCELLE VREESWIJK

### PARTIES & INDIVIDUALS:

MS Sarcelle, Kees de Waard, Owner. BLP International Hillegom, Rob van Hoorn, Project Manager.

### PERIOD:

July 2012 – Present.

### BACKGROUND:

The Mitsubishi S 12 R-C2MPTK normally receives new lubricating oil every 500 hours and the customer is looking to reduce this.

### TEST OBJECTIVES:

The goal is to maintain low oil contamination and oxidation through a more complete fuel combustion and prevent sludge build-up in the rotating parts of the engine. Studies show that an increase in standing time of the oil by a factor of 2 to 3 is possible.

### PRODUCTS USED:

Archoil AR9100 Nanoborate Oil treatment (Friction Modifier)  
Archoil AR6200 Combustion Modifier

### TEST OBJECTIVES:

After an oil change, a sample of the drained oil from the Mitsubishi is taken. Archoil AR9100 is added to the oil at a ratio of 1:28.5. This generates a chemical bond with metal surfaces, providing tremendous wear resistance with a friction coefficient of a 0.0375% (normal quality oil 0.05%) and corrosion prevention. After 500 hours, another oil sample is taken where all relevant parameters can be measured. Archoil AR6200 was also added to the diesel oil to improve combustion quality of the chosen diesel fuel, which also helps keep the engine and oil clean.

### RESULT:

There were noticeably reduced emissions. The standing time of the oil was increased considerably. The oil samples show that PPM and TAN values rise only slightly or not at all. Metal particulates reduced significantly. The engine achieved a reduction in fuel consumption. **This project is ongoing, with a 1,500 hour change interval and 8% fuel savings as of July 2013.**

### PRODUCTS TESTED

Archoil AR9100 Friction Modifier  
AR6200 Fuel Modification



## Kuwait Routine Analysis Service



**Klantnummer:** 904  
**Naam:** Calpam SMD Olie BV  
**t.a.v.:** Guus van der Veeke en/of Jorn Hoogland  
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**Onderzoekscade:** X904H84  
**Kenmerk:** BLP International  
**Merk:** Mitsubishi S12R  
**Motor Type:** C2MPTK geen ARG100  
**Model:** MS Sarcelle  
**Toegepaste olie:** Q8 T 750 SAE 15W-40  
**Verversingsperiode:** 500 uur  
**Bouwjaar:**  
**Registratie datum:** 13-11-2012

<b>Analysevolgnummer</b>	<b>1</b>
Analysedatum	16-11-2012
Monsternamedatum	05-10-2012
Totaal km	
Totaal km of uren olie	500
Bijvulling, ltr	
<b>Slijtage delen</b>	
Lood, mg/kg	9
Aluminium, mg/kg	1
Chroom, mg/kg	<1
Ijzer, mg/kg	4
Koper, mg/kg	<b>62</b>
Tin, mg/kg	<1
Nikkel, mg/kg	<1
Molybdeen, mg/kg	<1
<b>Olie conditie</b>	
Calcium, %	0.221
Fosfor, %	0.088
Zink, %	0.107
Magnesium, %	<=0.001
Zwavel, %	0.587
Boor, mg/kg	3
Viscositeit (100°C), mm <sup>2</sup> /s	<b>8.50</b>
Water, %	<=0.1
Silicium, mg/kg	1
Natrium, mg/kg	1
Onoplosbare delen	0.2
Dispersie	100.0
Brandstofverdunding, %, %	<b>3.8</b>
Ethylene Glycol, mg/kg	
<b>Computer diagnose</b>	<b>AKTIE</b>

### Motor slijtage:

Te hoog koper gehalte, dit kan afkomstig zijn van lagers, lagerbussen of axiale lagers.

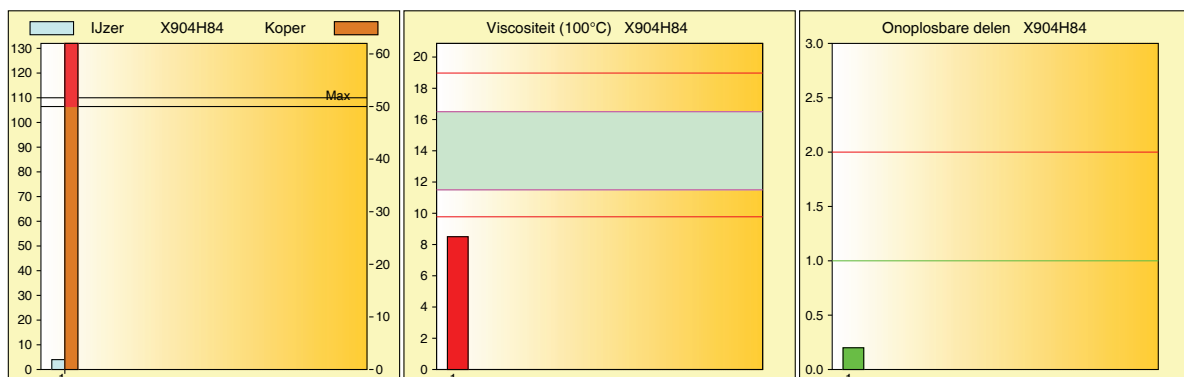
### Olie conditie:

De viscositeit is te laag.

De olie is verontreinigd met brandstof, mogelijk veroorzaakt door slechte werking van het brandstof inspuitsysteem.

**Conclusie: de motor / olie conditie is niet goed. Het verdient aanbeveling de olie te verversen.**

**AKTIE GEWENST**



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**Onderzoekscade:** X904H85  
**Kenmerk:** BLP Lubricants  
**Merk:** Mitsubishi S12R  
**Motor Type:** C2MPTK Met ARG100  
**Model:** MS Sarcelle  
**Toegepaste olie:** Q8 T 750 SAE 15W-40  
**Verversingsperiode:** 500 uur  
**Bouwjaar:**  
**Registratie datum:** 13-11-2012

<b>Analysevolgnummer</b>	<b>1</b>
Analysedatum	16-11-2012
Monsternamedatum	10-11-2012
Totaal km	
Totaal km of uren olie	500
Bijvulling, ltr	
<b>Slijtage delen</b>	
Lood, mg/kg	6
Aluminium, mg/kg	<1
Chroom, mg/kg	<1
IJzer, mg/kg	5
Koper, mg/kg	17
Tin, mg/kg	<1
Nikkel, mg/kg	<1
Molybdeen, mg/kg	<1
<b>Olie conditie</b>	
Calcium, %	0.222
Fosfor, %	0.084
Zink, %	0.102
Magnesium, %	<=0.001
Zwavel, %	0.541
Boor, mg/kg	604
Viscositeit (100°C), mm²/s	11.60
Water, %	<=0.1
Silicium, mg/kg	2
Natrium, mg/kg	8
Onoplosbare delen	0.2
Dispersie	84.0
Brandstofverdunding, %, %	<b>3.5</b>
Ethylene Glycol, mg/kg	
<b>Computer diagnose</b>	<b>Toelaatbaar</b>

### Motor slijtage:

Geen bijzonderheden.

**TOELAATBAAR**

### Olie conditie:

De olie is verontreinigd met brandstof, mogelijk veroorzaakt door slechte werking van het brandstof inspuitsysteem.

**Conclusie: de motor / olie conditie is toelaatbaar.**

