



OIL ANALYSIS REPORT

| | |
|-----------------|--------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
VOLVO 17-INTT-01-011-M

Component
Front Diesel Engine

Fluid
MOBIL 15W40 (40 LTR)



PRODUIT : ZP-700 ADDITIF MOTEUR - Cas d'étude #01- c / 3 de 3

RECOMMENDATION

Resample at the next service interval to monitor. Sample Comment:
USE ENGINE OIL ADDITIVE ADRENALUBE ZP-700 MATCH
HISTORY 0389215, 0323763

Commentaires : L'unité est affectée au service local.

**Hist. 1: Oil age / Age de l'huile en heures = 1103 h.
Age de l'huile au ralenti 'idle' = 654 h.
(pour la distance de 63806 km)**

WEAR

All component wear rates are normal.

**History1 :
Niveau d'usure acceptable.
Concentration des métaux d'usure acceptable, à l'exception du Fer qui est un peu haut.**

CONTAMINATION

There is no indication of any contamination in the oil.

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

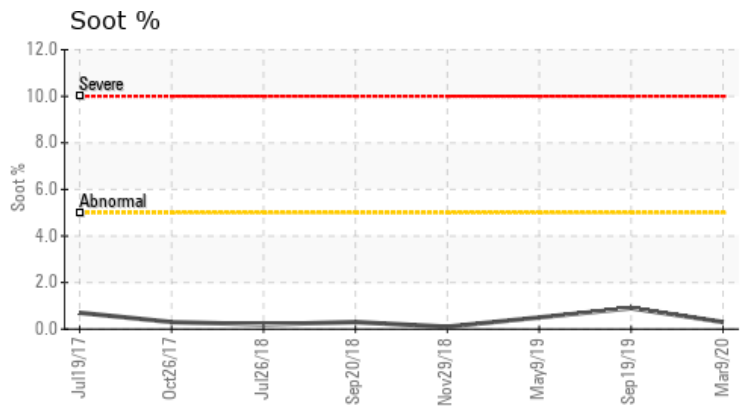
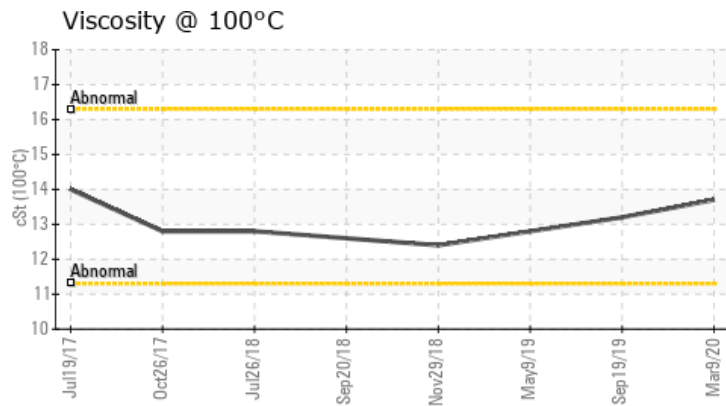
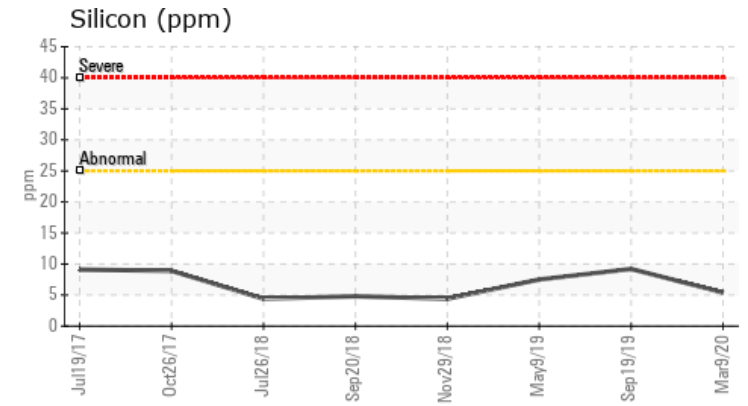
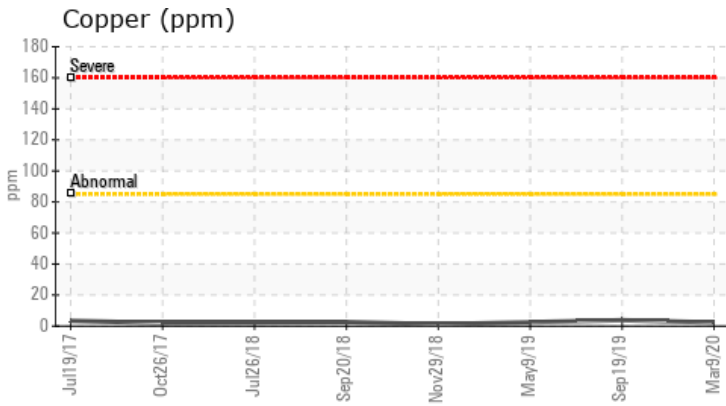
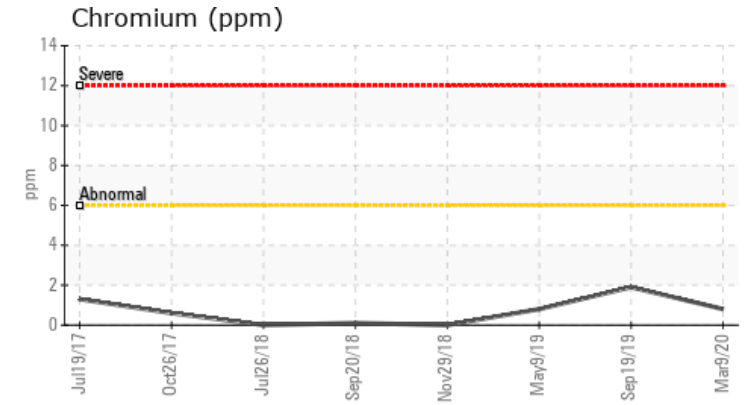
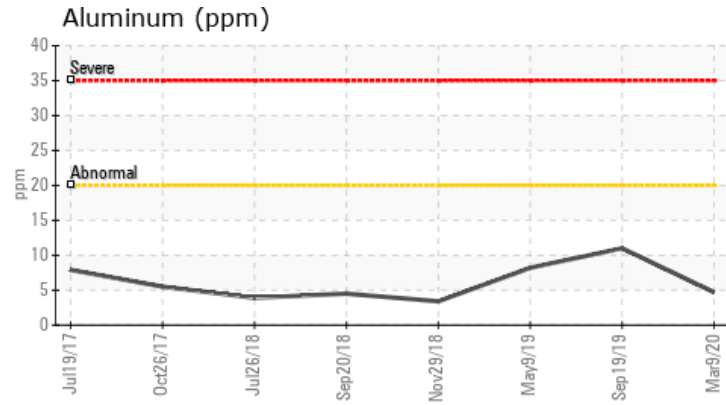
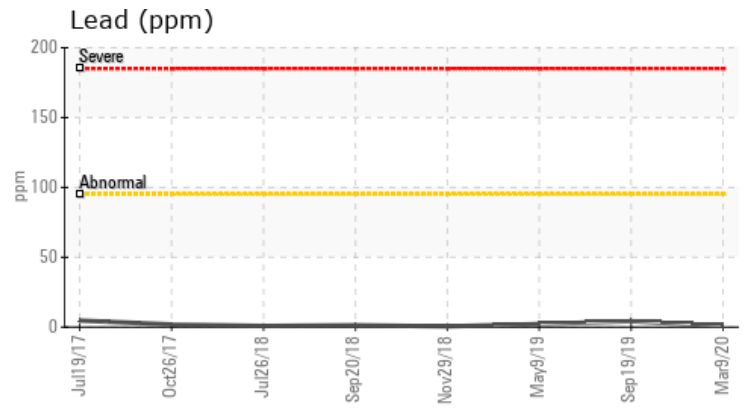
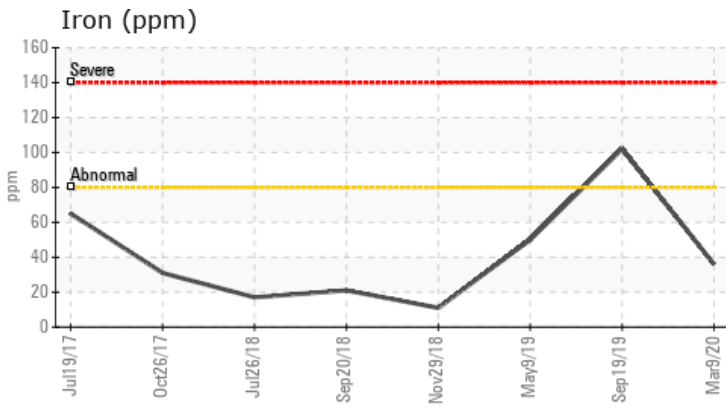
**History1 :
La condition de l'huile est inacceptable pour les niveaux de la sulfatation et de l'oxydation.**

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|--------|-----------|--------------------|--------------|-------------|
| Sample Number | | | | WC0416892 | WC0389215 | WC0323763 |
| Sample Date | | | | 09 Mar 2020 | 19 Sep 2019 | 09 May 2019 |
| Machine Age | kms | | | 1442164 | 1413146 | 1388190 |
| Oil Age | kms | | | 29018 | 63806 | 24065 |
| Filter Age | kms | | | 29018 | 63806 | 24065 |
| Oil Changed | | | | Not Chngd | Changed | Not Chngd |
| Filter Changed | | | | Not Chngd | Changed | Not Chngd |
| Sample Status | | | | NORMAL | ABNORMAL | NORMAL |

| | | | | | | |
|----------|-----|---------------|-----|--------------|--------------|----|
| Iron | ppm | ASTM D5185(m) | >80 | 36 | ▲ 102 | 50 |
| Chromium | ppm | ASTM D5185(m) | >6 | <1 | 2 | <1 |
| Nickel | ppm | ASTM D5185(m) | >2 | 1 | 2 | 1 |
| Titanium | ppm | ASTM D5185(m) | >2 | <1 | <1 | <1 |
| Silver | ppm | ASTM D5185(m) | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | 5 | 11 | 8 |
| Lead | ppm | ASTM D5185(m) | >95 | <1 | 4 | 2 |
| Copper | ppm | ASTM D5185(m) | >85 | 2 | 4 | 2 |
| Tin | ppm | ASTM D5185(m) | >9 | <1 | 1 | <1 |
| Vanadium | ppm | ASTM D5185(m) | | <1 | <1 | 0 |

| | | | | | | |
|------------------|----------|---------------|------|----------------|-------------|------|
| Silicon | ppm | ASTM D5185(m) | >25 | 5 | 9 | 8 |
| Potassium | ppm | ASTM D5185(m) | >20 | 7 | 7 | 5 |
| Fuel | | ASTM D3524 | >4.0 | <1.0 | <1.0 | <1.0 |
| Glycol | | ASTM D2982 | | NEG | NEG | NEG |
| Soot % | % | ASTM D7686 | | 0.3 | 0.9 | 0.5 |
| Nitration | Abs/cm | ASTM D7624 | >20 | 13.3 | 17.7 | 14.5 |
| Sulfation | Abs/.1mm | ASTM D7415 | >30 | 31.9 | 32.2 | 26.7 |
| Emulsified Water | scalar | Visual | >0.1 | NEG | NEG | NEG |

| | | | | | | |
|--------------|----------|---------------|------|--------------|-------------|------|
| Sodium | ppm | ASTM D5185(m) | >118 | 3 | 14 | 11 |
| Boron | ppm | ASTM D5185(m) | | 31 | 29 | 31 |
| Barium | ppm | ASTM D5185(m) | | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | | 25 | 69 | 70 |
| Manganese | ppm | ASTM D5185(m) | | <1 | 1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | | 133 | 446 | 451 |
| Calcium | ppm | ASTM D5185(m) | | 2033 | 1739 | 1620 |
| Phosphorus | ppm | ASTM D5185(m) | | 918 | 777 | 727 |
| Zinc | ppm | ASTM D5185(m) | | 1089 | 932 | 860 |
| Sulfur | ppm | ASTM D5185(m) | | 2688 | 2064 | 2074 |
| Oxidation | Abs/.1mm | ASTM D7414 | >25 | 25.8 | 35.3 | 29.2 |
| Visc @ 100°C | cSt | ASTM D7279(m) | | 13.7 | 13.2 | 12.8 |



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0416892 **Received** : 10 Mar 2020
Lab Number : 02342753 **Diagnosed** : 11 Mar 2020
Unique Number : 5018181 **Diagnostician** : Kevin Marson
Test Package : MOB 1

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 (m) Denotes a modified test method, (e) Denotes a test conducted using an external laboratory.

Adrenalube - 9042628 Canada Inc
 3755 - E Boul Matte
 Brossard, QC
 Canada J4Y 2P4
 Contact: Pierre Beauchamp
 support-tech@adrenalube.com
 T: (514)999-5546
 F: