

OIL ANALYSIS REPORT



ERIC FRANK VOLVO PENTA 2013903025 - STARBOARD DIESEL ENGINE

Sample No: VPA046237
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

SAMPLE INFORMATION

| | | | | |
|---------------|--------------------|-------------|-----|-----|
| Sample Number | VPA046237 | VPA046889 | --- | --- |
| Sample Date | 20 Sep 2023 | 07 Apr 2022 | --- | --- |
| Machine Hours | 1155 | 364 | --- | --- |
| Oil Hours | 266 | 0 | --- | --- |
| Oil Changed | Not Changd | Not Changd | --- | --- |
| Sample Status | NORMAL | NORMAL | --- | --- |

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OIL CONDITION

| | | | | | |
|------------------|----------|-------------|------|-----|-----|
| Visc @ 100°C | cSt | 13.7 | 13.5 | --- | --- |
| Base Number (BN) | mg KOH/g | 8.1 | 9.9 | --- | --- |
| Oxidation (PA) | % | 58 | 59 | --- | --- |

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

CONTAMINATION

| | | | | | |
|----------------|-----|----------------|------|-----|-----|
| Soot % | % | 1.3 | 0.9 | --- | --- |
| Nitration (PA) | % | 68 | 63 | --- | --- |
| Sulfation (PA) | % | 59 | 60 | --- | --- |
| Glycol | % | NEG | NEG | --- | --- |
| Fuel | % | <1.0 | <1.0 | --- | --- |
| Silicon | ppm | 4 | 14 | --- | --- |
| Sodium | ppm | 2 | 2 | --- | --- |
| Potassium | ppm | 1 | 11 | --- | --- |

WEAR METALS

| | | | | | |
|------------|-----|--------------|----|-----|-----|
| Iron | ppm | 16 | 16 | --- | --- |
| Copper | ppm | 11 | 8 | --- | --- |
| Lead | ppm | <1 | 1 | --- | --- |
| Tin | ppm | <1 | 2 | --- | --- |
| Aluminum | ppm | 0 | 8 | --- | --- |
| Chromium | ppm | <1 | <1 | --- | --- |
| Molybdenum | ppm | 63 | 55 | --- | --- |
| Nickel | ppm | 0 | 0 | --- | --- |
| Titanium | ppm | <1 | 0 | --- | --- |
| Silver | ppm | 0 | <1 | --- | --- |
| Manganese | ppm | <1 | 1 | --- | --- |
| Vanadium | ppm | <1 | 0 | --- | --- |

ADDITIVES

| | | | | | |
|------------|-----|-------------|------|-----|-----|
| Calcium | ppm | 1215 | 1159 | --- | --- |
| Magnesium | ppm | 1040 | 1055 | --- | --- |
| Zinc | ppm | 1330 | 1336 | --- | --- |
| Phosphorus | ppm | 1058 | 1167 | --- | --- |
| Barium | ppm | 0 | 0 | --- | --- |
| Boron | ppm | 2 | 7 | --- | --- |

Depot: VPCYMPOM
Unique No: 10661534
Signed: Doug Bogart
Report Date: 26 Sep 2023

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GRAPHS

