

OIL ANALYSIS REPORT

**VOLVO
PENTA**

ADAM SOHN DANIEL/502999 ONAN F210933751 - CENTER GENSET

Sample No: VPA060355

Oil Type: VOLVO VDS-4.5 Premium Motor Oil 15W40

SAMPLE INFORMATION

| | | | | |
|---------------|--------------------|-------------|-----|-----|
| Sample Number | VPA060355 | VPA045903 | --- | --- |
| Sample Date | 13 May 2024 | 01 May 2023 | --- | --- |
| Machine Hours | 207 | 127 | --- | --- |
| Oil Hours | 0 | 0 | --- | --- |
| Oil Changed | Changed | Changed | --- | --- |
| Sample Status | NORMAL | NORMAL | --- | --- |

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OIL CONDITION

| | | | | | |
|------------------|----------|-------------|------|-----|-----|
| Visc @ 100°C | cSt | 12.8 | 12.4 | --- | --- |
| Base Number (BN) | mg KOH/g | 9.3 | 8.6 | --- | --- |
| Oxidation (PA) | % | 55 | 62 | --- | --- |

CONTAMINATION

| | | | | | |
|----------------|-----|----------------|-----|-----|-----|
| Water | % | NEG | NEG | --- | --- |
| Soot % | % | 0.1 | 0.1 | --- | --- |
| Nitration (PA) | % | 45 | 60 | --- | --- |
| Sulfation (PA) | % | 49 | 49 | --- | --- |
| Glycol | % | NEG | NEG | --- | --- |
| Fuel | % | <1.0 | 1.7 | --- | --- |
| Silicon | ppm | 11 | 23 | --- | --- |
| Sodium | ppm | 3 | 4 | --- | --- |
| Potassium | ppm | 2 | 1 | --- | --- |

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.

WEAR METALS

| | | | | | |
|------------|-----|--------------|----|-----|-----|
| Iron | ppm | 8 | 12 | --- | --- |
| Copper | ppm | 5 | 11 | --- | --- |
| Lead | ppm | 1 | 0 | --- | --- |
| Tin | ppm | <1 | 0 | --- | --- |
| Aluminum | ppm | 3 | 2 | --- | --- |
| Chromium | ppm | <1 | <1 | --- | --- |
| Molybdenum | ppm | 81 | 62 | --- | --- |
| Nickel | ppm | <1 | <1 | --- | --- |
| Titanium | ppm | <1 | 0 | --- | --- |
| Silver | ppm | 1 | <1 | --- | --- |
| Manganese | ppm | 1 | 3 | --- | --- |
| Vanadium | ppm | <1 | 0 | --- | --- |

ADDITIVES

| | | | | | |
|------------|-----|-------------|------|-----|-----|
| Calcium | ppm | 1525 | 1767 | --- | --- |
| Magnesium | ppm | 1181 | 674 | --- | --- |
| Zinc | ppm | 1519 | 1014 | --- | --- |
| Phosphorus | ppm | 1340 | 846 | --- | --- |
| Barium | ppm | 2 | 8 | --- | --- |
| Boron | ppm | 15 | 53 | --- | --- |

Depot: VP794951
Unique No: 11032216
Signed: Jonathan Hester
Report Date: 18 May 2024

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GRAPHS

