

OIL ANALYSIS REPORT

VOLVO PENTA

2300558-MYC VOLVO D4-300I-E 2004033669 - STARBOARD DIESEL ENGINE

Sample No: VPA058283

Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-----|-----|-----|
| Sample Number | VPA058283 | --- | --- | --- |
| Sample Date | 13 Nov 2023 | --- | --- | --- |
| Machine Hours | 109 | --- | --- | --- |
| Oil Hours | 109 | --- | --- | --- |
| Oil Changed | Changed | --- | --- | --- |
| Sample Status | NORMAL | --- | --- | --- |

Helmut's Marine Service

619 Canal Street
SAN RAFAEL, CA
US 94901-3545
Contact: NADINE URUIOLI
SERVICE@HELMUTSMARINE.COM

T: x:

F: x:

OIL CONDITION

| | | | | | |
|------------------|----------|--------|-----|-----|-----|
| Visc @ 100°C | cSt | █ 14.9 | --- | --- | --- |
| Base Number (BN) | mg KOH/g | █ 10.1 | --- | --- | --- |
| Oxidation (PA) | % | 69 | --- | --- | --- |

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

| | | | | | |
|----------------|-----|-------|-----|-----|-----|
| Water | % | NEG | --- | --- | --- |
| Soot % | % | █ 0.1 | --- | --- | --- |
| Nitration (PA) | % | 54 | --- | --- | --- |
| Sulfation (PA) | % | 60 | --- | --- | --- |
| Glycol | % | NEG | --- | --- | --- |
| Fuel | % | < 1.0 | --- | --- | --- |
| Silicon | ppm | █ 10 | --- | --- | --- |
| Sodium | ppm | █ 2 | --- | --- | --- |
| Potassium | ppm | █ 3 | --- | --- | --- |

WEAR METALS

| | | | | | |
|------------|-----|-------|-----|-----|-----|
| Iron | ppm | █ 13 | --- | --- | --- |
| Copper | ppm | █ 3 | --- | --- | --- |
| Lead | ppm | █ < 1 | --- | --- | --- |
| Tin | ppm | █ 0 | --- | --- | --- |
| Aluminum | ppm | █ 8 | --- | --- | --- |
| Chromium | ppm | █ < 1 | --- | --- | --- |
| Molybdenum | ppm | █ 114 | --- | --- | --- |
| Nickel | ppm | █ < 1 | --- | --- | --- |
| Titanium | ppm | █ < 1 | --- | --- | --- |
| Silver | ppm | █ 0 | --- | --- | --- |
| Manganese | ppm | █ < 1 | --- | --- | --- |
| Vanadium | ppm | < 1 | --- | --- | --- |

ADDITIVES

| | | | | | |
|------------|-----|--------|-----|-----|-----|
| Calcium | ppm | █ 1709 | --- | --- | --- |
| Magnesium | ppm | █ 538 | --- | --- | --- |
| Zinc | ppm | █ 1265 | --- | --- | --- |
| Phosphorus | ppm | █ 920 | --- | --- | --- |
| Barium | ppm | █ 0 | --- | --- | --- |
| Boron | ppm | █ 431 | --- | --- | --- |

Depot: VP152741

Unique No: 10755172

Signed: Jonathan Hester

Report Date: 27 Nov 2023

OIL ANALYSIS REPORT

VOLVO PENTA

GRAPHS

