

OIL ANALYSIS REPORT

VOLVO PENTA

AZ65403 - STARBOARD DIESEL ENGINE

Sample No: VPA056305

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

SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-------------|-----|-----|
| Sample Number | VPA056305 | VPA056142 | --- | --- |
| Sample Date | 11 Aug 2023 | 03 Jul 2023 | --- | --- |
| Machine Hours | 1054 | 1026 | --- | --- |
| Oil Hours | 0 | 0 | --- | --- |
| Oil Changed | N/A | N/A | --- | --- |
| Sample Status | NORMAL | NORMAL | --- | --- |

OIL CONDITION

| | | | | | |
|------------------|----------|--------|--------|-----|-----|
| Visc @ 100°C | cSt | █ 14.3 | █ 14.3 | --- | --- |
| Base Number (BN) | mg KOH/g | █ 7.9 | █ 7.5 | --- | --- |
| Oxidation (PA) | % | 55 | 53 | --- | --- |

CONTAMINATION

| | | | | | |
|----------------|-----|-------|-------|-----|-----|
| Soot % | % | █ 0.5 | █ 0.5 | --- | --- |
| Nitration (PA) | % | 71 | 68 | --- | --- |
| Sulfation (PA) | % | 52 | 50 | --- | --- |
| Glycol | % | NEG | NEG | --- | --- |
| Fuel | % | <1.0 | <1.0 | --- | --- |
| Silicon | ppm | █ 6 | █ 7 | --- | --- |
| Sodium | ppm | █ 0 | █ 0 | --- | --- |
| Potassium | ppm | █ 1 | █ 2 | --- | --- |

WEAR METALS

| | | | | | |
|------------|-----|------|------|-----|-----|
| Iron | ppm | █ 20 | █ 19 | --- | --- |
| Copper | ppm | █ 8 | █ 7 | --- | --- |
| Lead | ppm | █ 1 | █ <1 | --- | --- |
| Tin | ppm | █ <1 | █ <1 | --- | --- |
| Aluminum | ppm | █ 4 | █ 4 | --- | --- |
| Chromium | ppm | █ <1 | █ <1 | --- | --- |
| Molybdenum | ppm | █ 89 | █ 84 | --- | --- |
| Nickel | ppm | █ 2 | █ 2 | --- | --- |
| Titanium | ppm | █ 0 | █ 0 | --- | --- |
| Silver | ppm | █ <1 | █ <1 | --- | --- |
| Manganese | ppm | █ <1 | █ <1 | --- | --- |
| Vanadium | ppm | 0 | 0 | --- | --- |

ADDITIVES

| | | | | | |
|------------|-----|--------|--------|-----|-----|
| Calcium | ppm | █ 2051 | █ 1926 | --- | --- |
| Magnesium | ppm | █ 235 | █ 220 | --- | --- |
| Zinc | ppm | █ 1240 | █ 1190 | --- | --- |
| Phosphorus | ppm | █ 1060 | █ 1025 | --- | --- |
| Barium | ppm | █ 2 | █ 0 | --- | --- |
| Boron | ppm | █ 43 | █ 43 | --- | --- |

ADVANCED DIESEL

1029 INDUSTRIAL BLVD, UNIT 2
NAPLES, FL
US 34104
Contact: KEITH SPICER
keith_advanceddiesel@yahoo.com
T: (239)580-8731
F:

Diagnosis

No corrective action is recommended at this time. 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.

Depot: VPADVNP
Unique No: 10603038
Signed: Doug Bogart
Report Date: 14 Aug 2023

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GRAPHS

