

OIL ANALYSIS REPORT

**VOLVO
PENTA**

TOM KATECHIS NICK VOLVO PENTA A1084195 - DIESEL ENGINE

Sample No: VPA036881
Oil Type: VALVOLINE 15W40

SAMPLE INFORMATION

| | | | | |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | VPA036881 | VPA035089 | VPA043469 | VPA040362 |
| Sample Date | 29 Nov 2023 | 15 Nov 2022 | 08 Jun 2022 | 18 May 2022 |
| Machine Hours | 377 | 316 | 269 | 245 |
| Oil Hours | 61 | 83 | 24 | 12 |
| Oil Changed | Changed | Changed | Not Changd | Changed |
| Sample Status | NORMAL | NORMAL | NORMAL | NORMAL |

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OIL CONDITION

| | | | | | |
|------------------|----------|-------------|------|------|------|
| Visc @ 100°C | cSt | 13.3 | 13.1 | 13.5 | 13.6 |
| Base Number (BN) | mg KOH/g | 10.0 | 11.3 | 10.8 | 11.3 |
| Oxidation (PA) | % | 54 | 60 | 57 | 58 |

CONTAMINATION

| | | | | | |
|----------------|-----|----------------|------|-----|-----|
| Water | % | NEG | NEG | NEG | NEG |
| Soot % | % | 0.2 | 0.2 | 0.1 | 0.1 |
| Nitration (PA) | % | 43 | 50 | 43 | 43 |
| Sulfation (PA) | % | 51 | 57 | 53 | 55 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | <1.0 | <1.0 | 0.1 | 0.2 |
| Silicon | ppm | 4 | 6 | 4 | 6 |
| Sodium | ppm | <1 | <1 | 2 | <1 |
| Potassium | ppm | 0 | 1 | 1 | 1 |

WEAR METALS

| | | | | | |
|------------|-----|--------------|----|----|----|
| Iron | ppm | 16 | 18 | 10 | 9 |
| Copper | ppm | 4 | 6 | 4 | 3 |
| Lead | ppm | 1 | 2 | 2 | 2 |
| Tin | ppm | 0 | <1 | <1 | <1 |
| Aluminum | ppm | 1 | 2 | 1 | 1 |
| Chromium | ppm | 1 | 1 | <1 | <1 |
| Molybdenum | ppm | 56 | 61 | 58 | 55 |
| Nickel | ppm | 3 | 2 | 2 | 2 |
| Titanium | ppm | 0 | 0 | 0 | 0 |
| Silver | ppm | 0 | 0 | <1 | <1 |
| Manganese | ppm | <1 | <1 | <1 | <1 |
| Vanadium | ppm | 0 | 0 | <1 | 0 |

ADDITIVES

| | | | | | |
|------------|-----|-------------|------|------|------|
| Calcium | ppm | 1053 | 1121 | 1055 | 1080 |
| Magnesium | ppm | 943 | 904 | 907 | 966 |
| Zinc | ppm | 1258 | 1238 | 1221 | 1231 |
| Phosphorus | ppm | 884 | 1040 | 1017 | 1018 |
| Barium | ppm | 0 | 0 | 0 | 0 |
| Boron | ppm | 0 | 4 | 4 | 3 |

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 acceptable for the time in service.

Depot: VP850387
Unique No: 10780096
Signed: Don Baldrige
Report Date: 13 Dec 2023

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GRAPHS

