



CONSTRUCTION EQUIPMENT

VOLVO L110H 631223 - DIESEL ENGINE



Sample No: VCP447035
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No:



SAMPLE INFORMATION

| | | | | |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | VCP447035 | VCP441882 | VCP417012 | VCP400239 |
| Sample Date | 24 May 2024 | 18 Jan 2024 | 20 Jul 2023 | 20 Jan 2023 |
| Machine Hours | 9186 | 8612 | 8066 | 7447 |
| Oil Hours | 0 | 0 | 0 | 500 |
| Oil Changed | Changed | N/A | Changed | Changed |
| Sample Status | NORMAL | ABNORMAL | NORMAL | NORMAL |

RIPA AND ASSOCIATES

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OIL CONDITION

| | | | | | |
|------------------|----------|-------------|-------|------|------|
| Visc @ 100°C | cSt | 12.8 | 13.08 | 12.4 | 12.8 |
| Base Number (BN) | mg KOH/g | 10.3 | 9.9 | 9.8 | 8.3 |
| Oxidation (PA) | % | 71 | 80 | 75 | 57 |

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 | 0.147 | NEG | NEG |
| Soot % | % | 0.3 | 0.4 | 0.3 | 0.2 |
| Nitration (PA) | % | 60 | 71 | 71 | 69 |
| Sulfation (PA) | % | 56 | 59 | 57 | 50 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | <1.0 | <1.0 | <1.0 | <1.0 |
| Silicon | ppm | 7 | 20 | 4 | 4 |
| Sodium | ppm | 0 | 0 | 0 | 0 |
| Potassium | ppm | 1 | 2 | 1 | 1 |



WEAR METALS

| | | | | | |
|------------|-----|--------------|----|----|----|
| Iron | ppm | 28 | 51 | 11 | 9 |
| Copper | ppm | 3 | 8 | 3 | 2 |
| Lead | ppm | 1 | 3 | 3 | 3 |
| Tin | ppm | 1 | <1 | <1 | 1 |
| Aluminum | ppm | 5 | 11 | 6 | 7 |
| Chromium | ppm | <1 | 4 | <1 | <1 |
| Molybdenum | ppm | 49 | 52 | 54 | 77 |
| Nickel | ppm | <1 | 0 | 0 | <1 |
| Titanium | ppm | <1 | <1 | <1 | 0 |
| Silver | ppm | 0 | 0 | 0 | 0 |
| Manganese | ppm | 0 | 0 | <1 | <1 |
| Vanadium | ppm | 0 | 0 | 0 | <1 |



ADDITIVES

| | | | | | |
|------------|-----|-------------|------|------|------|
| Calcium | ppm | 1382 | 1545 | 1673 | 1814 |
| Magnesium | ppm | 655 | 508 | 429 | 423 |
| Zinc | ppm | 1103 | 1147 | 1111 | 1319 |
| Phosphorus | ppm | 851 | 757 | 926 | 1048 |
| Barium | ppm | 0 | 5 | 2 | <1 |
| Boron | ppm | 17 | 36 | 29 | 31 |

Depot: RIPTAM
Unique No: 11077116
Signed: Don Baldrige
Report Date: 17 Jun 2024



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GRAPHS

