



CONSTRUCTION EQUIPMENT

10587 FREEDOM CONST VOLVO ECR145E 315603 - DIESEL ENGINE



Sample No: VCP408980
Oil Type: MOBIL 15W40
Job No: 10587 FREEDOM CONST



SAMPLE INFORMATION

| | | | | |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | VCP408980 | VCP399159 | VCP398693 | VCP376489 |
| Sample Date | 05 Jul 2023 | 28 Mar 2023 | 19 Dec 2022 | 12 Jul 2022 |
| Machine Hours | 2810 | 2335 | 1880 | 1002 |
| Oil Hours | 0 | 500 | 500 | 0 |
| Oil Changed | N/A | Changed | Changed | Changed |
| Sample Status | NORMAL | NORMAL | NORMAL | NORMAL |

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OIL CONDITION

| | | | | | |
|------------------|----------|-------------|------|------|------|
| Visc @ 100°C | cSt | 13.5 | 13.6 | 14.1 | 13.3 |
| Base Number (BN) | mg KOH/g | 7.3 | 7.8 | 7.6 | 11.8 |
| Oxidation (PA) | % | 46 | 51 | 82 | 90 |



CONTAMINATION

| | | | | | |
|----------------|-----|----------------|------|------|------|
| Soot % | % | 0.2 | 0.2 | 0.3 | 0.2 |
| Nitration (PA) | % | 65 | 63 | 84 | 70 |
| Sulfation (PA) | % | 50 | 50 | 66 | 66 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | <1.0 | <1.0 | <1.0 | <1.0 |
| Silicon | ppm | 4 | 6 | 8 | 7 |
| Sodium | ppm | 1 | <1 | 3 | 2 |
| Potassium | ppm | 2 | 2 | 6 | 0 |



WEAR METALS

| | | | | | |
|------------|-----|--------------|----|----|----|
| Iron | ppm | 11 | 12 | 19 | 12 |
| Copper | ppm | 1 | 1 | 2 | 3 |
| Lead | ppm | <1 | 0 | 0 | <1 |
| Tin | ppm | <1 | <1 | 1 | 2 |
| Aluminum | ppm | 3 | 2 | 4 | 4 |
| Chromium | ppm | <1 | <1 | 1 | 1 |
| Molybdenum | ppm | 15 | 27 | 18 | 37 |
| Nickel | ppm | <1 | <1 | 2 | 2 |
| Titanium | ppm | <1 | <1 | 0 | <1 |
| Silver | ppm | 0 | 0 | 0 | <1 |
| Manganese | ppm | <1 | <1 | <1 | <1 |
| Vanadium | ppm | <1 | 0 | <1 | 0 |



ADDITIVES

| | | | | | |
|------------|-----|-------------|------|------|------|
| Calcium | ppm | 2136 | 1872 | 2328 | 1817 |
| Magnesium | ppm | 161 | 355 | 72 | 476 |
| Zinc | ppm | 1063 | 1141 | 1269 | 1144 |
| Phosphorus | ppm | 848 | 962 | 1007 | 923 |
| Barium | ppm | 0 | 2 | 0 | 0 |
| Boron | ppm | 5 | 10 | 72 | 33 |

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.

Depot: VOLVO8879
Unique No: 10550566
Signed: Jonathan Hester
Report Date: 11 Jul 2023



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GRAPHS

