



CONSTRUCTION EQUIPMENT

A10644 FREEDOM VOLVO EC160E 314328 - DIESEL ENGINE



Sample No: VCP411868
Oil Type: MOBIL 15W40
Job No: A10644 FREEDOM



SAMPLE INFORMATION

| | | | | |
|---------------|--------------------|-------------|-------------|-------------|
| Sample Number | VCP411868 | VCP400799 | VCP399130 | VCP365740 |
| Sample Date | 11 Jul 2023 | 25 Apr 2023 | 15 Feb 2023 | 05 Dec 2022 |
| Machine Hours | 5260 | 4875 | 4595 | 4345 |
| Oil Hours | 500 | 500 | 500 | 0 |
| Oil Changed | Changed | Changed | Changed | Changed |
| Sample Status | NORMAL | NORMAL | NORMAL | ABNORMAL |

HOFFMAN EQUIPMENT - LIONVILLE
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OIL CONDITION

| | | | | | |
|------------------|----------|-------------|------|------|------|
| Visc @ 100°C | cSt | 13.3 | 13.2 | 13.2 | 13.9 |
| Base Number (BN) | mg KOH/g | 7.1 | 8.2 | 10.9 | 7.7 |
| Oxidation (PA) | % | 43 | 48 | 79 | 64 |



CONTAMINATION

| | | | | | |
|----------------|-----|----------------|------|------|------|
| Soot % | % | 0.2 | 0.2 | 0.2 | 0.3 |
| Nitration (PA) | % | 61 | 56 | 58 | 88 |
| Sulfation (PA) | % | 47 | 47 | 61 | 57 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | <1.0 | <1.0 | <1.0 | <1.0 |
| Silicon | ppm | 4 | 3 | 7 | 14 |
| Sodium | ppm | <1 | 0 | 2 | 4 |
| Potassium | ppm | 1 | <1 | 2 | 216 |



WEAR METALS

| | | | | | |
|------------|-----|--------------|----|----|------------|
| Iron | ppm | 7 | 6 | 8 | 108 |
| Copper | ppm | 2 | 0 | <1 | 12 |
| Lead | ppm | <1 | 0 | 0 | 5 |
| Tin | ppm | <1 | 0 | <1 | 2 |
| Aluminum | ppm | 2 | 2 | 2 | 85 |
| Chromium | ppm | <1 | <1 | <1 | 4 |
| Molybdenum | ppm | 14 | 26 | 46 | 6 |
| Nickel | ppm | 0 | 0 | 0 | 1 |
| Titanium | ppm | <1 | 0 | 0 | <1 |
| Silver | ppm | 0 | 0 | 0 | <1 |
| Manganese | ppm | <1 | <1 | <1 | 3 |
| Vanadium | ppm | 0 | 0 | 0 | <1 |



ADDITIVES

| | | | | | |
|------------|-----|-------------|------|------|------|
| Calcium | ppm | 2310 | 1748 | 1775 | 1446 |
| Magnesium | ppm | 153 | 335 | 460 | 696 |
| Zinc | ppm | 1193 | 1059 | 1147 | 875 |
| Phosphorus | ppm | 966 | 826 | 971 | 716 |
| Barium | ppm | 0 | 0 | 0 | 0 |
| Boron | ppm | 6 | 10 | 56 | 24 |

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: 10559745
Signed: Wes Davis
Report Date: 16 Jul 2023



CONSTRUCTION EQUIPMENT



VOLVO GRAPHS

