

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH60M 120561-1217 - Diesel Engine

Sample No: LHMC155859

Oil Type: DIESEL ENGINE OIL SAE 5W40



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SAMPLE INFORMATION

| Sample Number | LHMC155859 | LH0253859 | LH0220671 | LH0199946 |
|---------------|-------------|-------------|-------------|-------------|
| Sample Date | 31 Jan 2024 | 08 Sep 2023 | 22 Nov 2022 | 11 Feb 2022 |
| Machine Hours | 4643 | 3762 | 1973 | 983 |
| Oil Hours | 0 | 0 | 500 | 0 |
| Oil Changed | Changed | Changed | Changed | Changed |
| Sample Status | NORMAL | ABNORMAL | NORMAL | NORMAL |



OIL CONDITION

| Visc @ 100°C | cSt | 13.5 | 12.3 | 13.3 | 13.3 |
|------------------|----------|------|------|------|------|
| Base Number (BN) | mg KOH/g | 5.0 | 3.1 | 7.2 | 6.9 |
| Oxidation (PA) | % | 100 | 110 | 77 | 86 |



CONTAMINATION

| Water | % | NEG | NEG | NEG | NEG |
|----------------|-----|------|-----|------|------|
| Soot % | % | 0.1 | 0.1 | 0.1 | 0.1 |
| Nitration (PA) | % | 95 | 98 | 84 | 85 |
| Sulfation (PA) | % | 72 | 78 | 66 | 68 |
| Glycol | % | NEG | NEG | NEG | NEG |
| Fuel | % | <1.0 | 1.8 | <1.0 | <1.0 |
| Silicon | ppm | 13 | 8 | 9 | 9 |
| Sodium | ppm | 4 | 31 | 3 | 3 |
| Potassium | ppm | 9 | 26 | 6 | 3 |



WEAR METALS

| | | | | | |
|------------|-----|----|----|----|----|
| Iron | ppm | 11 | 45 | 5 | 7 |
| Copper | ppm | 9 | 7 | 5 | 71 |
| Lead | ppm | 2 | 0 | 1 | 2 |
| Tin | ppm | 1 | <1 | <1 | 1 |
| Aluminum | ppm | 4 | 20 | 2 | 3 |
| Chromium | ppm | 1 | 3 | <1 | <1 |
| Molybdenum | ppm | 4 | 67 | 5 | 4 |
| Nickel | ppm | <1 | 0 | <1 | 0 |
| Titanium | ppm | 96 | 0 | 91 | 77 |
| Silver | ppm | 0 | 0 | <1 | <1 |
| Manganese | ppm | <1 | 2 | <1 | <1 |
| Vanadium | ppm | 1 | 0 | 1 | 1 |



ADDITIVES

| | | | | | |
|------------|-----|------|------|------|------|
| Calcium | ppm | 1196 | 1261 | 1319 | 1446 |
| Magnesium | ppm | 655 | 974 | 687 | 705 |
| Zinc | ppm | 1163 | 1311 | 1194 | 1092 |
| Phosphorus | ppm | 941 | 1060 | 982 | 952 |
| Barium | ppm | 2 | 0 | <1 | 0 |
| Boron | ppm | 50 | 4 | 87 | 103 |

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: LEC0008
 Unique No: 10900473
 Signed: Wes Davis
 Report Date: 28 Feb 2024



GRAPHS

