

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR LH110 1227-155752 - Diesel Engine

Sample No: LH0280558

Oil Type: HDMO SYN BLEND 15W40 CK4



KINDER MORGAN
4301 IVERSON
TRINITY, AL
US 35601
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SAMPLE INFORMATION

| | | | | |
|---------------|-------------|-----|-----|-----|
| Sample Number | LH0280558 | --- | --- | --- |
| Sample Date | 28 Dec 2023 | --- | --- | --- |
| Machine Hours | 277 | --- | --- | --- |
| Oil Hours | 0 | --- | --- | --- |
| Oil Changed | Not Changd | --- | --- | --- |
| Sample Status | ATTENTION | --- | --- | --- |



OIL CONDITION

| | | | | | |
|------------------|----------|------|-----|-----|-----|
| Visc @ 100°C | cSt | 12.0 | --- | --- | --- |
| Base Number (BN) | mg KOH/g | 6.2 | --- | --- | --- |
| Oxidation (PA) | % | 197 | --- | --- | --- |



CONTAMINATION

| | | | | | |
|----------------|-----|-----|-----|-----|-----|
| Water | % | NEG | --- | --- | --- |
| Soot % | % | 0.1 | --- | --- | --- |
| Nitration (PA) | % | 87 | --- | --- | --- |
| Sulfation (PA) | % | 107 | --- | --- | --- |
| Glycol | % | NEG | --- | --- | --- |
| Fuel | % | 1.3 | --- | --- | --- |
| Silicon | ppm | 10 | --- | --- | --- |
| Sodium | ppm | 3 | --- | --- | --- |
| Potassium | ppm | 2 | --- | --- | --- |



WEAR METALS

| | | | | | |
|------------|-----|----|-----|-----|-----|
| Iron | ppm | 4 | --- | --- | --- |
| Copper | ppm | 12 | --- | --- | --- |
| Lead | ppm | 2 | --- | --- | --- |
| Tin | ppm | 1 | --- | --- | --- |
| Aluminum | ppm | 2 | --- | --- | --- |
| Chromium | ppm | <1 | --- | --- | --- |
| Molybdenum | ppm | 43 | --- | --- | --- |
| Nickel | ppm | <1 | --- | --- | --- |
| Titanium | ppm | <1 | --- | --- | --- |
| Silver | ppm | 0 | --- | --- | --- |
| Manganese | ppm | <1 | --- | --- | --- |
| Vanadium | ppm | 0 | --- | --- | --- |



ADDITIVES

| | | | | | |
|------------|-----|------|-----|-----|-----|
| Calcium | ppm | 1200 | --- | --- | --- |
| Magnesium | ppm | 818 | --- | --- | --- |
| Zinc | ppm | 801 | --- | --- | --- |
| Phosphorus | ppm | 691 | --- | --- | --- |
| Barium | ppm | 28 | --- | --- | --- |
| Boron | ppm | 125 | --- | --- | --- |

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. Fuel content negligible. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Depot: KINTRI
Unique No: 10847996
Signed: Don Baldrige
Report Date: 29 Jan 2024



GRAPHS

