



LIEBHERR

OIL ANALYSIS REPORT

| | |
|-----------------|-----------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | ATTENTION |



Machine Id
LIEBHERR LH110 155976-1227
Component
Rear Differential
Fluid
GEAR OIL SAE 80W90 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|-------------|-------------|-------------|
| Sample Number | | Client Info | | LH0267258 | LH0267558 | LH0280571 |
| Sample Date | | Client Info | | 08 Jun 2024 | 12 May 2024 | 23 Feb 2024 |
| Machine Age | hrs | Client Info | | 2430 | 1951 | 995 |
| Oil Age | hrs | Client Info | | 479 | 956 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changed | Changed | Changed |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | ATTENTION | ATTENTION | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|------|------|------|
| Iron | ppm | ASTM D5185m | >150 | 26 | 50 | 57 |
| Chromium | ppm | ASTM D5185m | >5 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >10 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | <1 | <1 | 0 |
| Silver | ppm | ASTM D5185m | | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >5 | 2 | 1 | 2 |
| Lead | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >125 | 5 | 12 | 17 |
| Tin | ppm | ASTM D5185m | >5 | 0 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

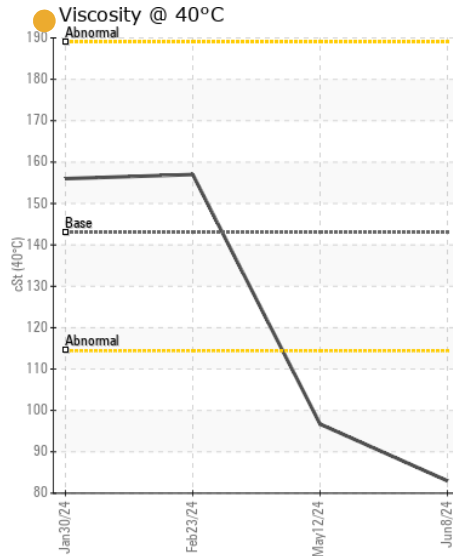
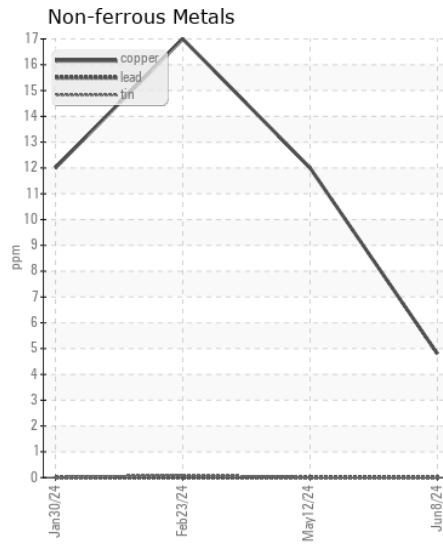
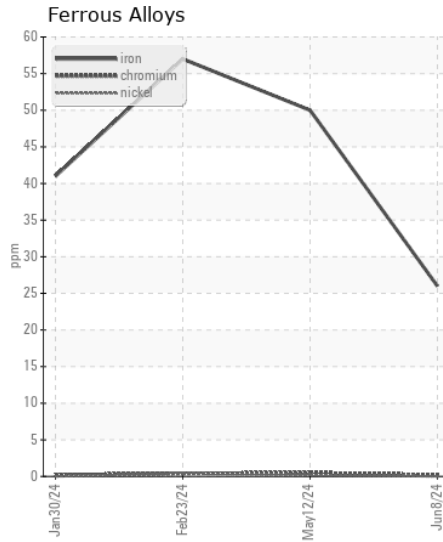
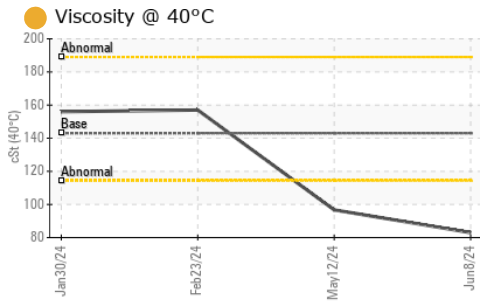
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|--------|-------------|-------|-------|-------|-------|
| Silicon | ppm | ASTM D5185m | >20 | 4 | 7 | 16 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | 1 | 1 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Silt | scalar | *Visual | NONE | NONE | LIGHT | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |

FLUID CONDITION

The oil viscosity is lower than normal. Confirm oil type.

| | | | | | | |
|-------------|-----|-------------|-------|-------|-------|-------|
| Sodium | ppm | ASTM D5185m | >170 | 0 | 1 | 3 |
| Boron | ppm | ASTM D5185m | 400 | 8 | 4 | 14 |
| Barium | ppm | ASTM D5185m | 200 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 12 | 3 | 2 | 0 |
| Manganese | ppm | ASTM D5185m | | <1 | 1 | 2 |
| Magnesium | ppm | ASTM D5185m | 12 | 35 | 7 | 2 |
| Calcium | ppm | ASTM D5185m | 150 | 189 | 166 | 117 |
| Phosphorus | ppm | ASTM D5185m | 1650 | 369 | 437 | 1578 |
| Zinc | ppm | ASTM D5185m | 125 | 157 | 100 | 27 |
| Sulfur | ppm | ASTM D5185m | 22500 | 11213 | 14888 | 19792 |
| Visc @ 40°C | cSt | ASTM D445 | 143 | 83.0 | 96.7 | 157 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : LH0267258

Lab Number : 06216183

Unique Number : 11089047

Test Package : CONST

Received : 20 Jun 2024

Tested : 21 Jun 2024

Diagnosed : 23 Jun 2024 - Don Baldrige

KINDER MORGAN

4301 IVERSON

TRINITY, AL

US 35601

Contact: RICKY JOHNSON

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T:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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