



LIEBHERR

OIL ANALYSIS REPORT

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



Machine Id
LIEBHERR LH50 119411-1216
Component
Swing Drive
Fluid
LIEBHERR GEAR BASIC 90 LS (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | LH0268842 | LH0264633 | LH0253952 |
| Sample Date | | Client Info | | 28 Jan 2024 | 18 Jul 2023 | 01 Mar 2023 |
| Machine Age | hrs | Client Info | | 5692 | 4944 | 4520 |
| Oil Age | hrs | Client Info | | 5692 | 1000 | 4520 |
| Filter Age | hrs | Client Info | | 5692 | 1000 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|-------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >1450 | 45 | 55 | 41 |
| Chromium | ppm | ASTM D5185m | >11 | 0 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >3 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >4 | <1 | <1 | 0 |
| Lead | ppm | ASTM D5185m | >4 | 1 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >542 | 129 | 46 | 40 |
| Tin | ppm | ASTM D5185m | >38 | 3 | 3 | 2 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

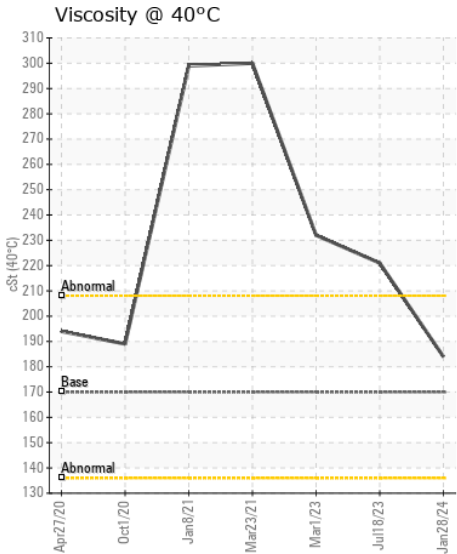
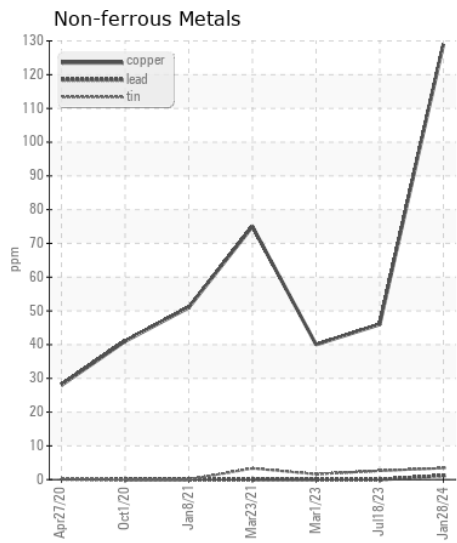
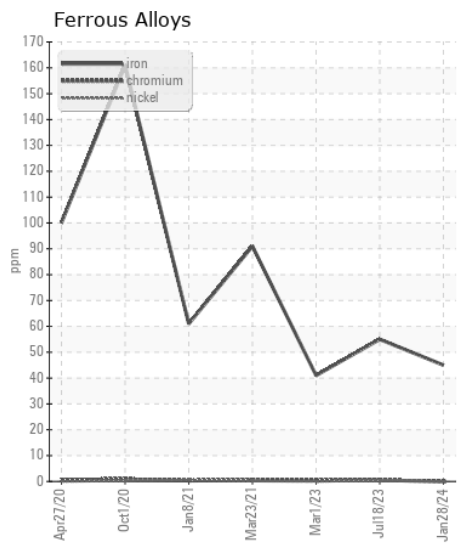
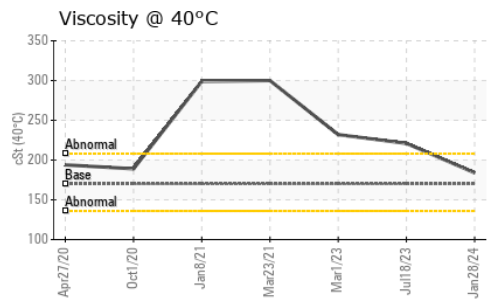
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|--------|-------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >15 | 2 | <1 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 2 | <1 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | LIGHT |
| 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 condition of the oil is acceptable for the time in service.

| | | | | | | |
|-------------|-----|-------------|-------|--------------|-------|-------|
| Sodium | ppm | ASTM D5185m | | <1 | 2 | 0 |
| Boron | ppm | ASTM D5185m | 0 | 40 | 33 | 38 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | 0 | 1 | 1 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | <1 | 4 | 11 | 20 |
| Calcium | ppm | ASTM D5185m | <1 | 533 | 22 | 38 |
| Phosphorus | ppm | ASTM D5185m | 2143 | 1957 | 1813 | 1355 |
| Zinc | ppm | ASTM D5185m | <1 | 147 | 6 | 22 |
| Sulfur | ppm | ASTM D5185m | 23468 | 23685 | 30164 | 20648 |
| Visc @ 40°C | cSt | ASTM D445 | 170 | 184 | 221 | 232 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0268842
Lab Number : 06105625
Unique Number : 10903855
Test Package : CONST
Received : 29 Feb 2024
Tested : 02 Mar 2024
Diagnosed : 02 Mar 2024 - Wes Davis

SIMS METAL MANAGEMENT
 3220 DEEPWATER TERMINAL RD
 RICHMOND, VA
 US 23234
 Contact: Service Manager

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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F: