



LIEBHERR

OIL ANALYSIS REPORT

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



Area
(360382)
Machine Id
LIEBHERR LH60C 119564-1528
Component
Hydraulic System
Fluid
LIEBHERR HYDRAULIC HVI (300 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | LH0276277 | LH0277432 | LH0234857 |
| Sample Date | | Client Info | | 18 Apr 2024 | 29 Jan 2024 | 23 Jun 2023 |
| Machine Age | hrs | Client Info | | 4475 | 4049 | 2997 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|---------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185(m) | >50 | 42 | 37 | 28 |
| Chromium | ppm | ASTM D5185(m) | >15 | 2 | 1 | 1 |
| Nickel | ppm | ASTM D5185(m) | >5 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >8 | <1 | <1 | <1 |
| Lead | ppm | ASTM D5185(m) | >5 | <1 | 1 | <1 |
| Copper | ppm | ASTM D5185(m) | >15 | 4 | 4 | 4 |
| Tin | ppm | ASTM D5185(m) | >5 | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| White Metal | scalar | Visual* | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | Visual* | NONE | NONE | NONE | NONE |

CONTAMINATION

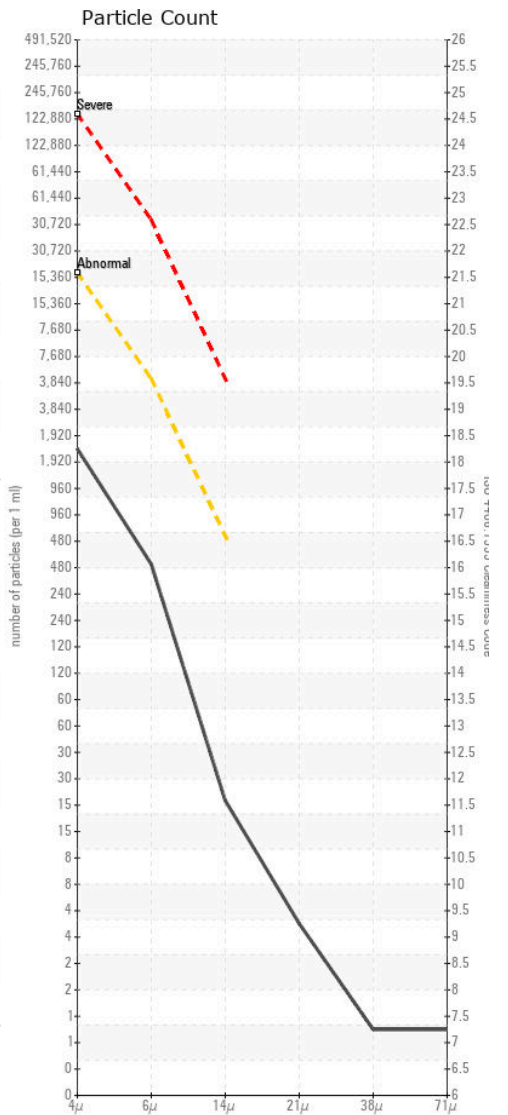
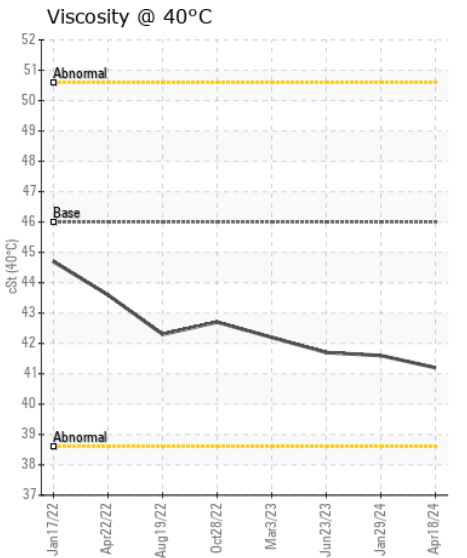
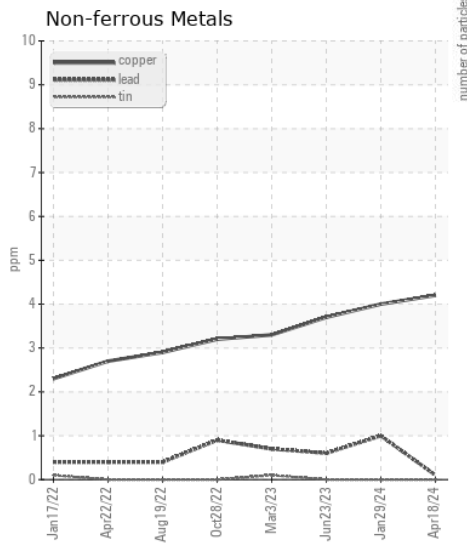
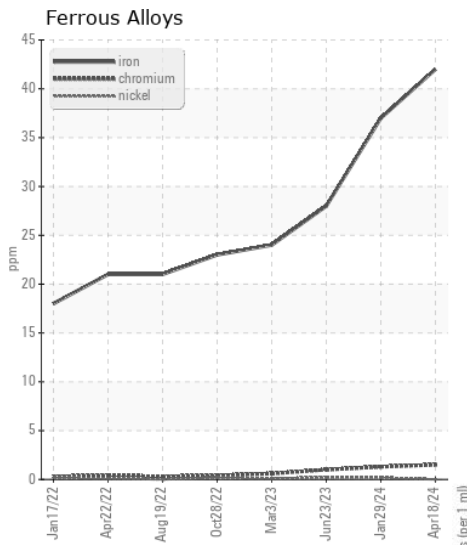
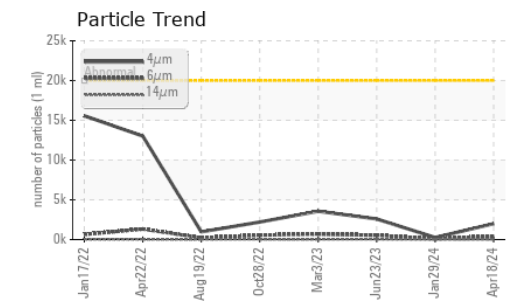
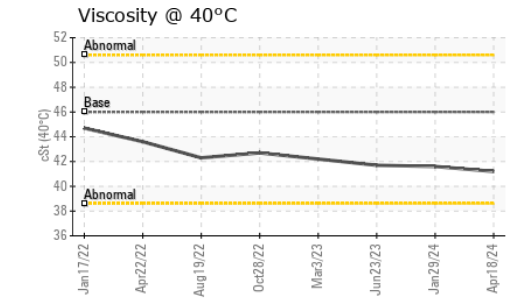
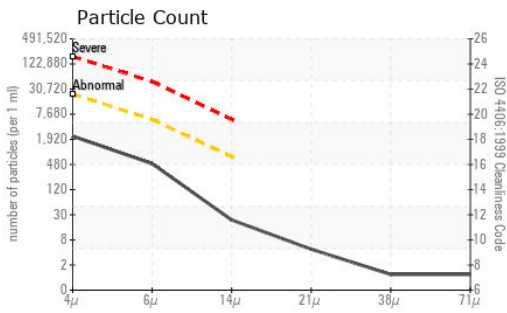
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

| | | | | | | |
|------------------|--------|---------------|-----------|-----------------|----------|----------|
| Silicon | ppm | ASTM D5185(m) | >25 | <1 | 2 | 2 |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | 1 | <1 |
| Water | | WC Method | >0.1 | NEG | NEG | NEG |
| Particles >4µm | | ASTM D7647 | >20000 | 1998 | 260 | 2593 |
| Particles >6µm | | ASTM D7647 | >5000 | 441 | 84 | 540 |
| Particles >14µm | | ASTM D7647 | >640 | 20 | 12 | 35 |
| Particles >21µm | | ASTM D7647 | >160 | 4 | 4 | 11 |
| Particles >38µm | | ASTM D7647 | >40 | 1 | 1 | 2 |
| Particles >71µm | | ASTM D7647 | >10 | 1 | 1 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >21/19/16 | 18/16/11 | 15/14/11 | 19/16/12 |
| Silt | scalar | Visual* | NONE | NONE | NONE | NONE |
| Debris | scalar | Visual* | NONE | VLITE | NONE | VLITE |
| 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* | >0.1 | NEG | NEG | NEG |

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

| | | | | | | |
|-------------|-----|---------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185(m) | | 3 | 3 | 3 |
| Boron | ppm | ASTM D5185(m) | 0 | 2 | 2 | 3 |
| Barium | ppm | ASTM D5185(m) | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 0 | 0 | 0 | <1 |
| Manganese | ppm | ASTM D5185(m) | <1 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 7 | 20 | 20 | 22 |
| Calcium | ppm | ASTM D5185(m) | 1317 | 972 | 1004 | 1077 |
| Phosphorus | ppm | ASTM D5185(m) | 611 | 543 | 588 | 598 |
| Zinc | ppm | ASTM D5185(m) | 696 | 656 | 655 | 677 |
| Sulfur | ppm | ASTM D5185(m) | 2574 | 4192 | 4588 | 4642 |
| Visc @ 40°C | cSt | ASTM D7279(m) | 46 | 41.2 | 41.6 | 41.7 |



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0276277
Lab Number : 02630273
Unique Number : 5763405
Test Package : MOB 1 (Additional Tests: PrtCount)

Received : 19 Apr 2024
Tested : 22 Apr 2024
Diagnosed : 22 Apr 2024 - Wes Davis

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.

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