# LIEBHERR
## CONSTRUCTION EQUIPMENT

# LIEBHERR LH30 097842-1253 - Hydraulic System

**Sample No:** LH0244713

**Oil Type:** MV 46


**MIDWEST METALS CORP**
40 WINDHURST WAY
SHELBYVILLE, KY
US 40065
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## SAMPLE INFORMATION

| | | | | | |
|---|---|---|---|---|---|
| Sample Number | | **LH0244713** | LH0258247 | LH0230019 | LH0229972 |
| Sample Date | | **15 Mar 2024** | 08 Nov 2023 | 08 Dec 2022 | 11 Aug 2022 |
| Machine Hours | | **13061** | 12403 | 10567 | 9932 |
| Oil Hours | | **0** | 0 | 0 | 0 |
| Oil Changed | | **Not Changd** | Not Changd | Not Changd | Not Changd |
| Sample Status | | **NORMAL** | ABNORMAL | NORMAL | NORMAL |

## OIL CONDITION

| | | | | | |
|---|---|---|---|---|---|
| Visc @ 40°C | cSt | **40.5** | 41.5 | 43.4 | 43.6 |
| Acid Number (AN) | mg KOH/g | **0.667** | 0.65 | 0.59 | 0.66 |

## CONTAMINATION

| | | | | | |
|---|---|---|---|---|---|
| Water | % | **NEG** | 0.145 | 0.054 | NEG |
| Particles >4µm | | **8192** | 9376 | 6357 | 8416 |
| Particles >6µm | | **1571** | 420 | 1727 | 1833 |
| Particles >14µm | | **71** | 8 | 88 | 85 |
| ISO 4406:1999 (c) | | **20/18/13** | 20/16/10 | 20/18/14 | 20/18/14 |
| Silicon | ppm | **2** | 1 | 1 | 2 |
| Sodium | ppm | **4** | 0 | 2 | 3 |
| Potassium | ppm | **1** | 1 | 1 | 0 |

## WEAR METALS

| | | | | | |
|---|---|---|---|---|---|
| Iron | ppm | **14** | 12 | 12 | 11 |
| Copper | ppm | **8** | 12 | 11 | 11 |
| Lead | ppm | **1** | 2 | 2 | 1 |
| Tin | ppm | **<1** | 0 | 0 | 0 |
| Aluminum | ppm | **<1** | 1 | 0 | <1 |
| Chromium | ppm | **2** | 1 | 2 | 2 |
| Molybdenum | ppm | **0** | 1 | 1 | <1 |
| Nickel | ppm | **<1** | 0 | 0 | 0 |
| Titanium | ppm | **0** | 0 | 0 | 0 |
| Silver | ppm | **0** | 0 | 0 | <1 |
| Manganese | ppm | **<1** | 0 | <1 | <1 |
| Vanadium | ppm | **0** | 0 | 0 | 0 |

## ADDITIVES

| | | | | | |
|---|---|---|---|---|---|
| Calcium | ppm | **607** | 684 | 764 | 777 |
| Magnesium | ppm | **18** | 17 | 15 | 15 |
| Zinc | ppm | **522** | 534 | 551 | 560 |
| Phosphorus | ppm | **409** | 471 | 416 | 451 |
| Barium | ppm | **0** | 6 | 0 | <1 |
| Boron | ppm | **2** | <1 | 0 | 0 |

## Diagnosis

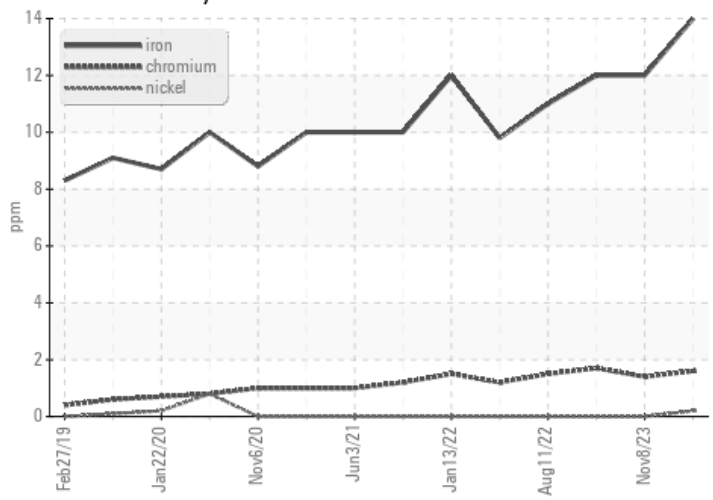
Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

**Depot:** MIDSHELH
**Unique No:** 10949402
**Signed:** Jonathan Hester
**Report Date:** 02 Apr 2024

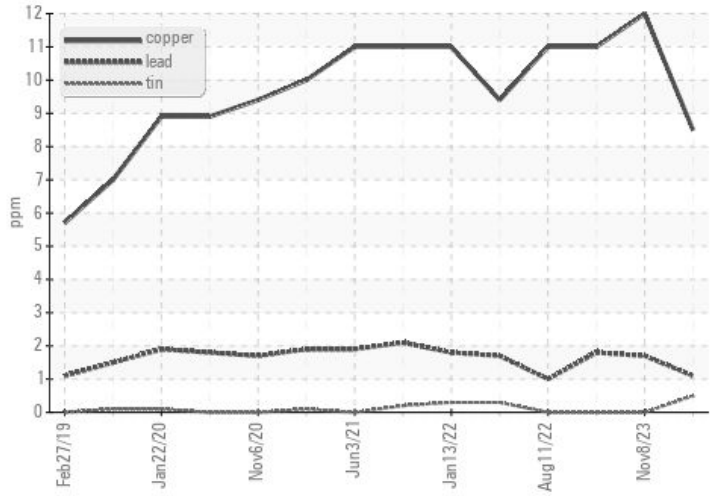
# LIEBHERR
## CONSTRUCTION EQUIPMENT


## GRAPHS

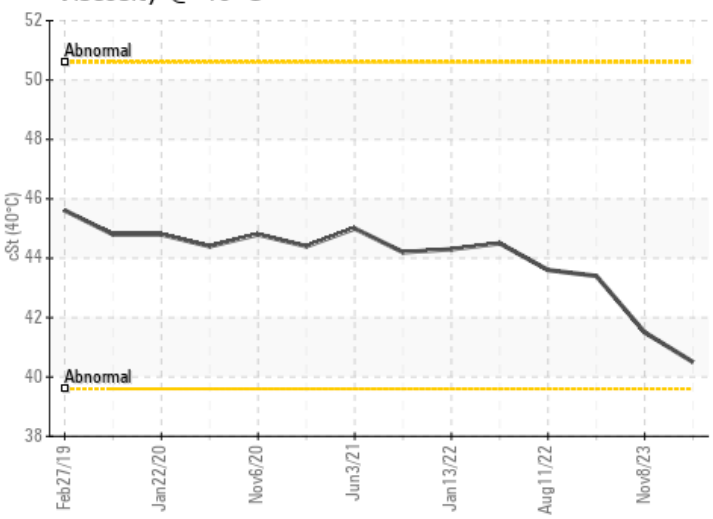
### Ferrous Alloys



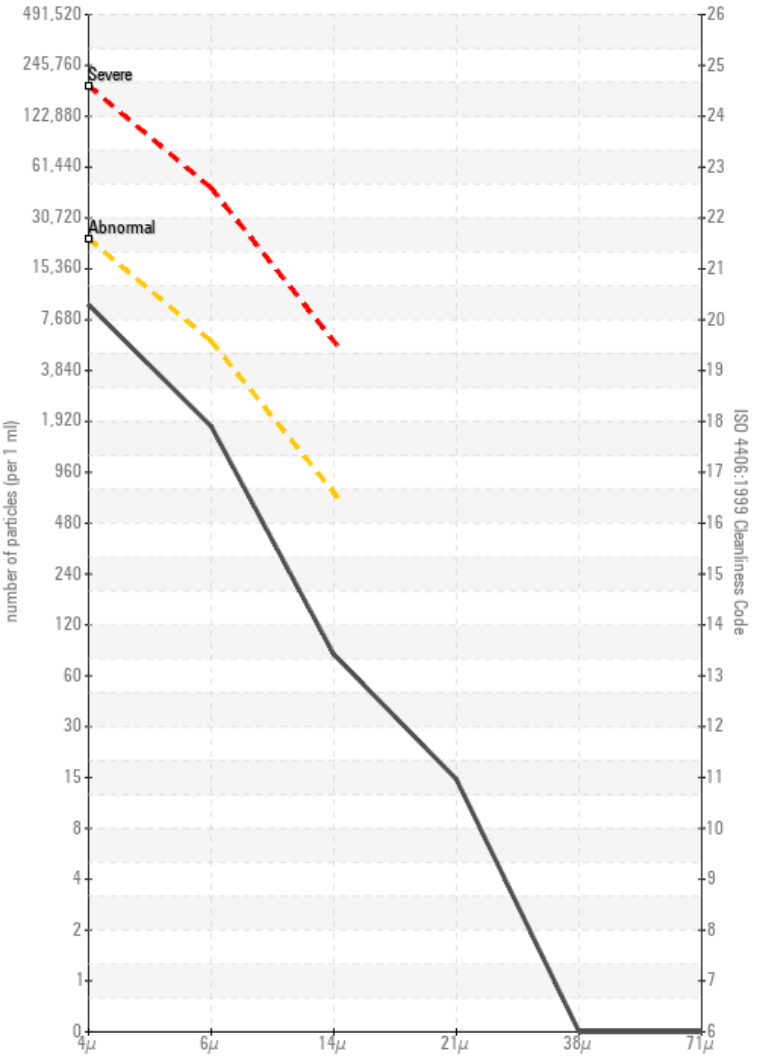

### Non-ferrous Metals




### Viscosity @ 40°C




### Particle Count




### Acid Number