

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR LH50 145582-1216 - Diesel Engine

Sample No: LH0272942

Oil Type: LIEBHERR MOTOROIL 10W-40



**RECO EQUIPMENT INC**  
 10461 GRAND RIVER RD  
 BRIGHTON, MI  
 US 48116  
 Contact: MATT VISEL  
 MVISEL@RECOEQUIP.COM  
 T: (810)299-1731  
 F:



#### SAMPLE INFORMATION

Sample Number	LH0272942	LH0268523	LH0243269	LH0243211
Sample Date	20 Nov 2023	14 Sep 2023	15 Jun 2023	15 Mar 2023
Machine Hours	2062	1633	1005	461
Oil Hours	0	0	0	461
Oil Changed	Changed	Not Changd	Changed	Not Changd
Sample Status	ABNORMAL	ABNORMAL	ABNORMAL	MARGINAL



#### OIL CONDITION

Visc @ 100°C	cSt	13.3	12.3	12.4	11.7
Base Number (BN)	mg KOH/g	1.6	2.7	5.8	5.5
Oxidation (PA)	%	222	198	186	191



#### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.2	0.1	0.1	0.1
Nitration (PA)	%	159	128	112	103
Sulfation (PA)	%	107	102	100	104
Glycol	%	NEG	0.0	NEG	NEG
Fuel	%	<1.0	1.3	<1.0	<1.0
Silicon	ppm	10	9	7	7
Sodium	ppm	3	3	2	1
Potassium	ppm	6	4	3	2



#### WEAR METALS

Iron	ppm	23	19	14	8
Copper	ppm	162	160	153	168
Lead	ppm	7	7	4	5
Tin	ppm	2	2	1	<1
Aluminum	ppm	4	5	3	3
Chromium	ppm	1	1	<1	0
Molybdenum	ppm	32	33	34	40
Nickel	ppm	0	0	0	0
Titanium	ppm	0	<1	0	0
Silver	ppm	0	0	0	0
Manganese	ppm	2	2	1	<1
Vanadium	ppm	0	0	0	0



#### ADDITIVES

Calcium	ppm	1815	1839	1761	1601
Magnesium	ppm	640	706	694	846
Zinc	ppm	1039	1060	1025	927
Phosphorus	ppm	845	833	818	725
Barium	ppm	29	29	23	15
Boron	ppm	85	81	116	131

#### Diagnosis

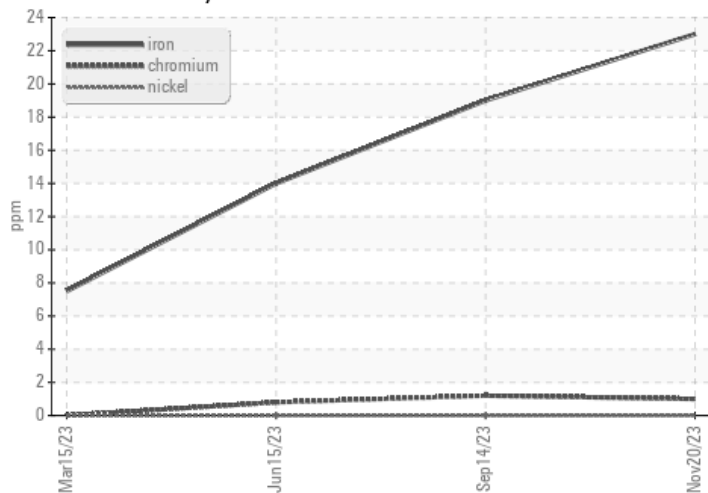
The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). There is no indication of any contamination in the oil. The BN level is low. The condition of the oil is acceptable for the time in service.

**Depot:** RECBRILH  
**Unique No:** 10849355  
**Signed:** Jonathan Hester  
**Report Date:** 30 Jan 2024

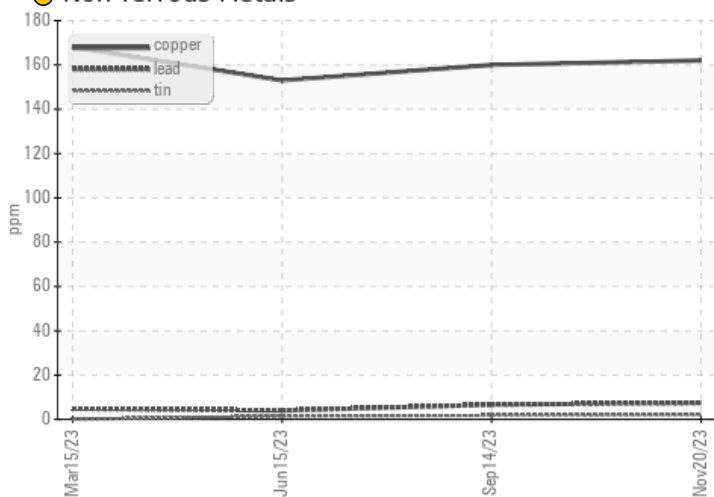


### GRAPHS

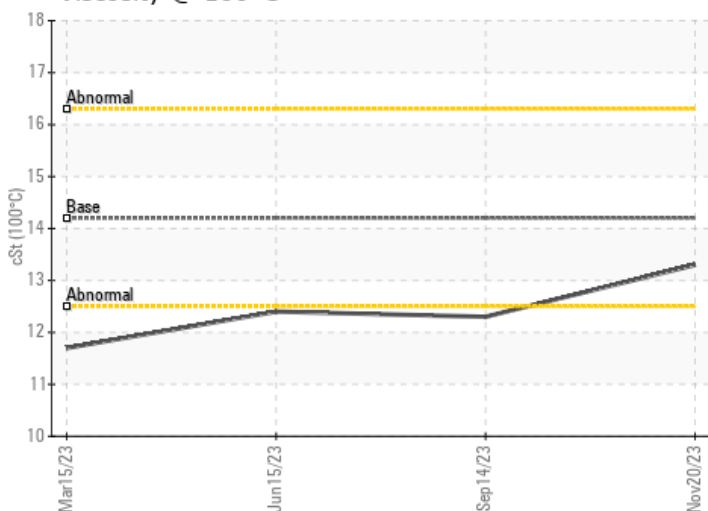
#### Ferrous Alloys



#### Non-ferrous Metals



#### Viscosity @ 100°C



#### Base Number

