

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### [[SIMS]] LIEBHERR R956 045436-1476 - Diesel Engine

Sample No: LH0229456

Oil Type: DURALENE Dura-Max 15W40



#### SAMPLE INFORMATION

Sample Number	LH0229456	LH0229515	LH0204456	LHMC57707
Sample Date	21 Jul 2023	20 Jul 2023	19 Apr 2022	04 Jun 2021
Machine Hours	1100	1099	4632	4022
Oil Hours	1	1	0	3
Oil Changed	N/A	N/A	N/A	Changed
Sample Status	NORMAL	---	ABNORMAL	NORMAL

#### LIEBHERR EQUIPMENT SOURCE

6940 OCONNOR CAVE  
HANOVER, MD  
US 21076

Contact: PETE JARVIS  
peter.jarvis@liebherr.com  
T: (410)379-3994  
F: (410)379-3998



#### OIL CONDITION

Visc @ 100°C	cSt	13.4	8.4	13.0	11.9
Base Number (BN)	mg KOH/g	7.6	7.0	7.3	---
Oxidation (PA)	%	35	32	50	35



#### CONTAMINATION

Water	%	---	---	---	0.175
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	43	44	68	78
Sulfation (PA)	%	42	40	56	38
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	6	6	6	7
Sodium	ppm	<1	<1	2	67
Potassium	ppm	1	1	0	10



#### WEAR METALS

Iron	ppm	2	2	8	6
Copper	ppm	0	<1	164	5
Lead	ppm	0	0	4	<1
Tin	ppm	<1	<1	2	<1
Aluminum	ppm	<1	<1	2	2
Chromium	ppm	0	<1	<1	<1
Molybdenum	ppm	3	3	4	<1
Nickel	ppm	0	0	0	<1
Titanium	ppm	0	0	<1	<1
Silver	ppm	0	0	<1	1
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	0	0	0	<1



#### ADDITIVES

Calcium	ppm	2373	2007	2509	3775
Magnesium	ppm	49	47	42	26
Zinc	ppm	1102	922	1153	1174
Phosphorus	ppm	928	775	916	895
Barium	ppm	0	0	0	0
Boron	ppm	3	3	7	247

#### Diagnosis

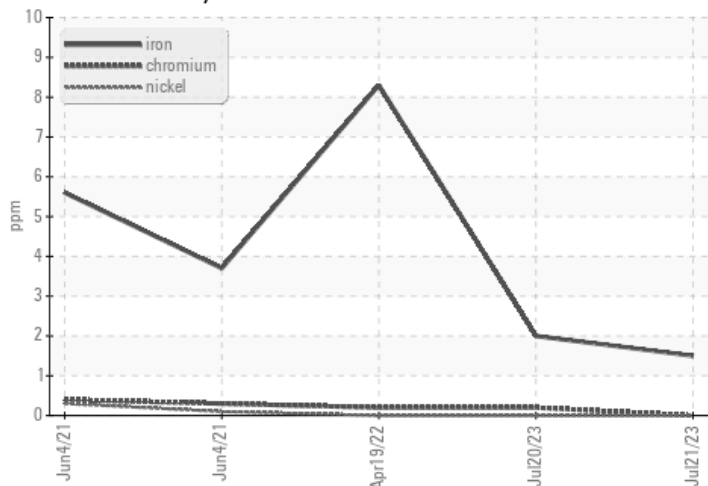
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Depot: LIEBHERRMD  
Unique No: 10566572  
Signed: Angela Borella  
Report Date: 25 Jul 2023

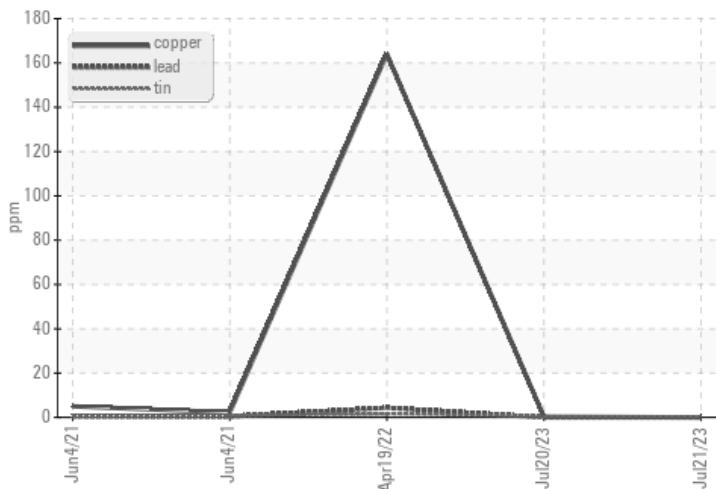


### GRAPHS

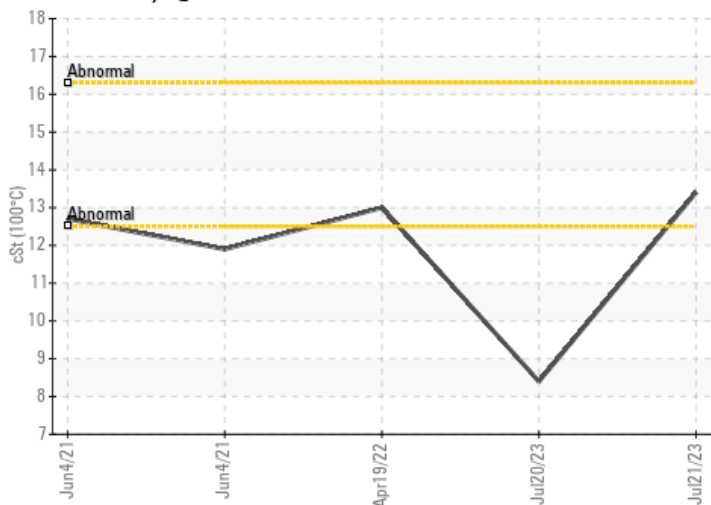
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

