

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR LH50M 1216-108671 - Diesel Engine

Sample No: LH0258879  
 Oil Type: LIEBHERR 5W40



**AMERICAN STATE EQUIPMENT CO.**  
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#### Sample Information

Sample Number	LH0258879	LH0258754	LH0272710	LH0272537
Sample Date	05 Apr 2024	23 Feb 2024	17 Jan 2024	14 Dec 2023
Machine Hours	20592	20036	19562	19125
Oil Hours	500	0	0	1000
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL



#### Oil Condition

Visc @ 100°C	cSt	13.1	13.1	12.9	13.1
Base Number (BN)	mg KOH/g	7.3	7.4	7.3	7.0
Oxidation (PA)	%	60	56	57	58



#### Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	73	69	69	70
Sulfation (PA)	%	55	53	54	54
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	9	7	7	9
Sodium	ppm	4	2	3	0
Potassium	ppm	4	1	2	4



#### Wear Metals

Iron	ppm	3	4	4	5
Copper	ppm	2	1	3	3
Lead	ppm	<1	0	0	0
Tin	ppm	<1	0	0	<1
Aluminum	ppm	<1	1	1	3
Chromium	ppm	0	0	0	<1
Molybdenum	ppm	5	6	11	7
Nickel	ppm	0	0	0	<1
Titanium	ppm	89	85	67	92
Silver	ppm	<1	0	0	0
Manganese	ppm	<1	<1	<1	<1
Vanadium	ppm	<1	<1	<1	1



#### Additives

Calcium	ppm	1334	1392	1456	1313
Magnesium	ppm	731	664	667	687
Zinc	ppm	1200	1131	1258	1165
Phosphorus	ppm	1071	934	1021	1005
Barium	ppm	0	0	0	9
Boron	ppm	136	126	98	110

#### Diagnosis

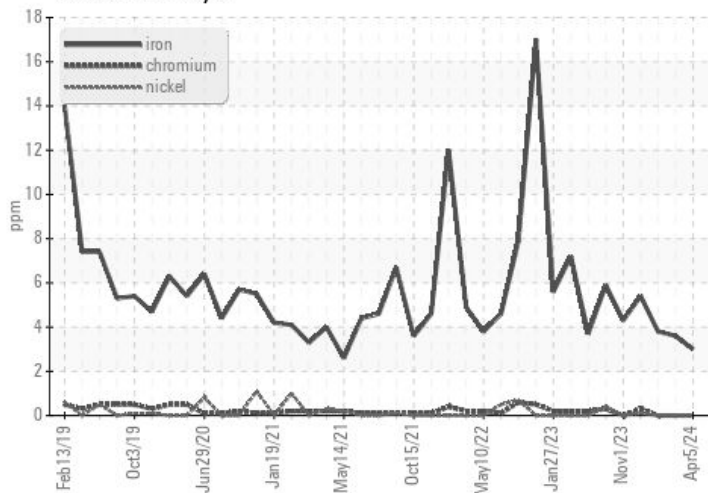
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot: LEC0008  
 Unique No: 10983770  
 Signed: Wes Davis  
 Report Date: 19 Apr 2024

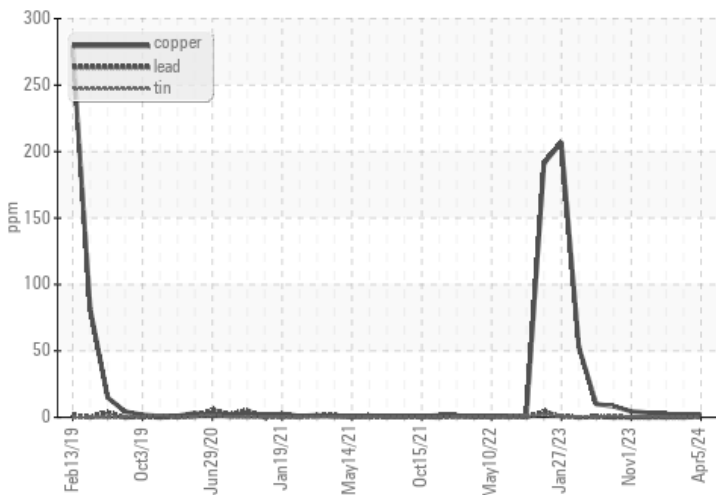


### Graphs

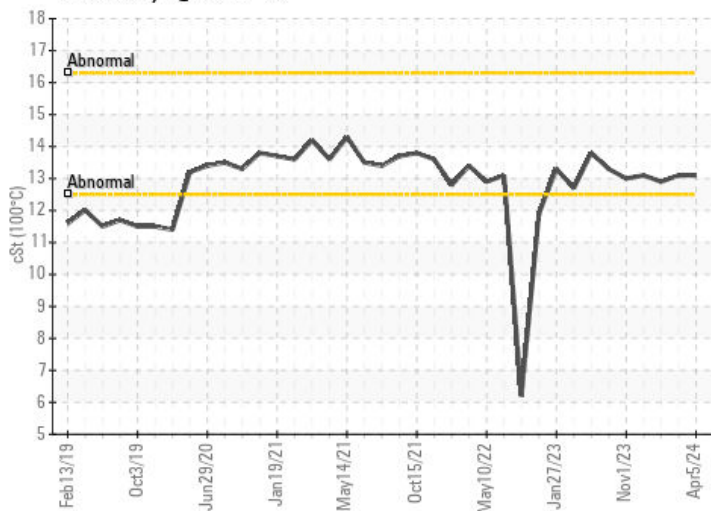
#### Ferrous Alloys



#### Non-ferrous Metals



#### Viscosity @ 100°C



#### Base Number

