

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR LH50M 1216-108671 - Diesel Engine

Sample No: LH0263829

Oil Type: CHEVRON DELO LE 5W40



**AMERICAN STATE EQUIPMENT CO.**  
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#### SAMPLE INFORMATION

Sample Number	LH0263829	LH0200317	LH0236088	LH0221017
Sample Date	29 Jun 2023	12 Apr 2023	27 Jan 2023	15 Dec 2022
Machine Hours	17296	16979	15891	15261
Oil Hours	0	0	0	0
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	ABNORMAL	ABNORMAL



#### OIL CONDITION

Visc @ 100°C	cSt	13.8	12.7	13.3	11.9
Base Number (BN)	mg KOH/g	8.4	5.5	7.1	12.0
Oxidation (PA)	%	55	73	61	73



#### CONTAMINATION

Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	70	77	73	119
Sulfation (PA)	%	52	59	53	57
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	0.9
Silicon	ppm	8	8	8	11
Sodium	ppm	2	4	3	7
Potassium	ppm	4	2	3	13



#### WEAR METALS

Iron	ppm	4	7	6	17
Copper	ppm	10	53	207	191
Lead	ppm	<1	0	<1	4
Tin	ppm	<1	<1	<1	2
Aluminum	ppm	0	<1	<1	<1
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	16	28	23	2
Nickel	ppm	0	0	0	0
Titanium	ppm	66	47	50	0
Silver	ppm	0	<1	<1	0
Manganese	ppm	<1	<1	<1	1
Vanadium	ppm	<1	<1	<1	0



#### ADDITIVES

Calcium	ppm	1303	1200	1414	3635
Magnesium	ppm	758	804	671	239
Zinc	ppm	1201	1179	1081	1148
Phosphorus	ppm	970	928	895	954
Barium	ppm	0	0	3	29
Boron	ppm	92	27	71	208

#### Diagnosis

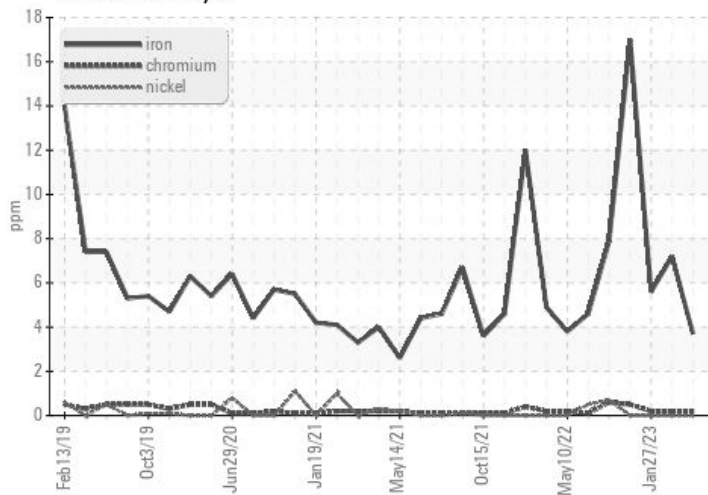
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot: LEC0008  
 Unique No: 10546515  
 Signed: Sean Felton  
 Report Date: 07 Jul 2023

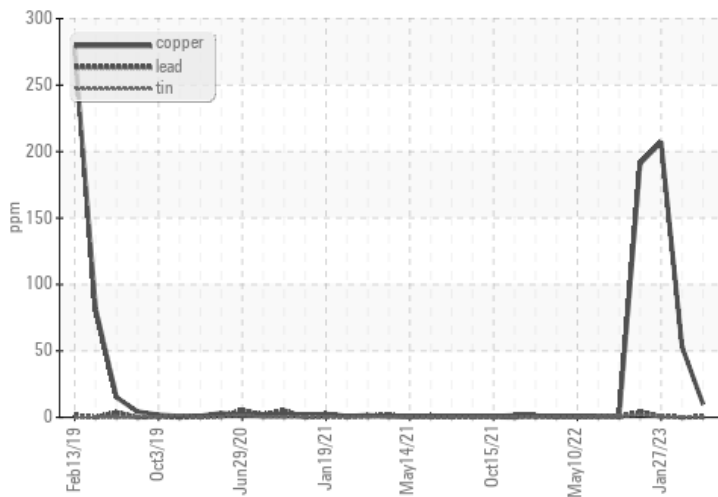


### GRAPHS

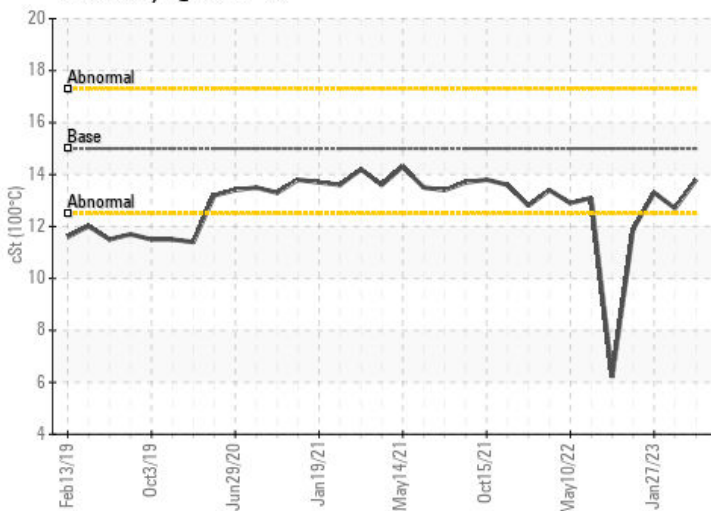
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

