

# LIEBHERR

## CONSTRUCTION EQUIPMENT



### LIEBHERR TA230 Sullivan TA230 149809 - Diesel Engine

Sample No: LH0293243

Oil Type: LIEBHERR MOTOROIL 5W30



**LIEBHERR EQUIPMENT SOURCE**  
 8200 FAYETTEVILLE ROAD  
 RALEIGH, NC  
 US 27603  
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 T:  
 F: (919)329-0084



#### Sample Information

Sample Number	LH0293243	LH0264570	---	---
Sample Date	03 Jul 2024	01 Apr 2024	---	---
Machine Hours	1169	650	---	---
Oil Hours	519	650	---	---
Oil Changed	Changed	Changed	---	---
Sample Status	NORMAL	ABNORMAL	---	---



#### Oil Condition

Visc @ 100°C	cSt	● 11.4	● 11.52	---	---
Base Number (BN)	mg KOH/g	● 15.4	● 5.2	---	---
Oxidation (PA)	%	57	173	---	---



#### Contamination

Water	%	NEG	NEG	---	---
Soot %	%	● 0.1	● 0.1	---	---
Nitration (PA)	%	90	91	---	---
Sulfation (PA)	%	47	96	---	---
Glycol	%	NEG	NEG	---	---
Fuel	%	<1.0	● 0.9	---	---
Silicon	ppm	● 5	● 17	---	---
Sodium	ppm	● 4	● 6	---	---
Potassium	ppm	● 3	● 2	---	---



#### Wear Metals

Iron	ppm	● 10	● 11	---	---
Copper	ppm	● 73	● 392	---	---
Lead	ppm	● <1	● 0	---	---
Tin	ppm	● <1	● 3	---	---
Aluminum	ppm	● 4	● 6	---	---
Chromium	ppm	● <1	● 0	---	---
Molybdenum	ppm	● 6	● 33	---	---
Nickel	ppm	● 0	● 0	---	---
Titanium	ppm	0	<1	---	---
Silver	ppm	● 0	● 0	---	---
Manganese	ppm	● <1	● 3	---	---
Vanadium	ppm	0	0	---	---



#### Additives

Calcium	ppm	● 4079	● 1302	---	---
Magnesium	ppm	151	● 853	---	---
Zinc	ppm	● 1169	● 865	---	---
Phosphorus	ppm	● 1056	● 750	---	---
Barium	ppm	● 1	28	---	---
Boron	ppm	● 253	● 109	---	---

#### 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.

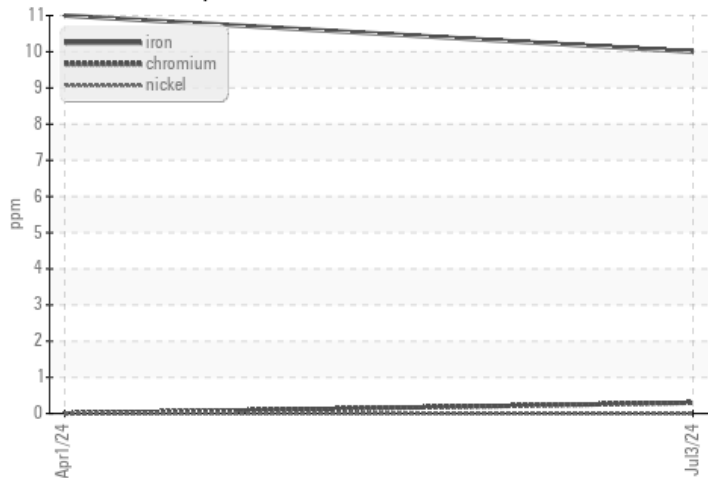
Depot: LIEBHERRNC  
 Unique No: 11113291  
 Signed: Sean Felton  
 Report Date: 09 Jul 2024

Submitted By: SHERWOOD LUCAS

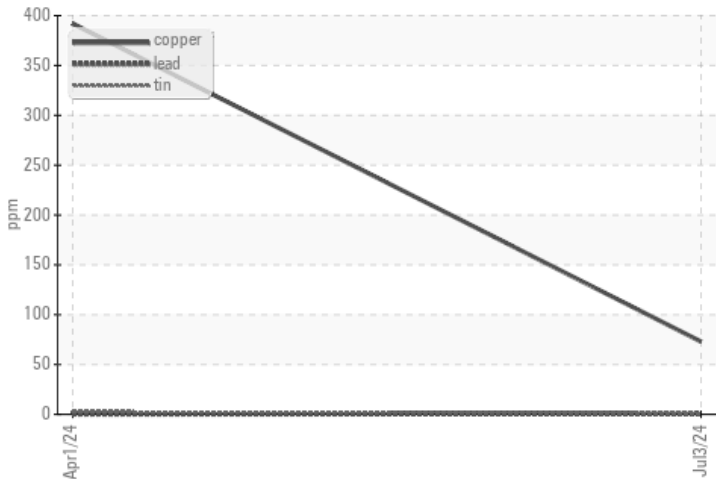


### Graphs

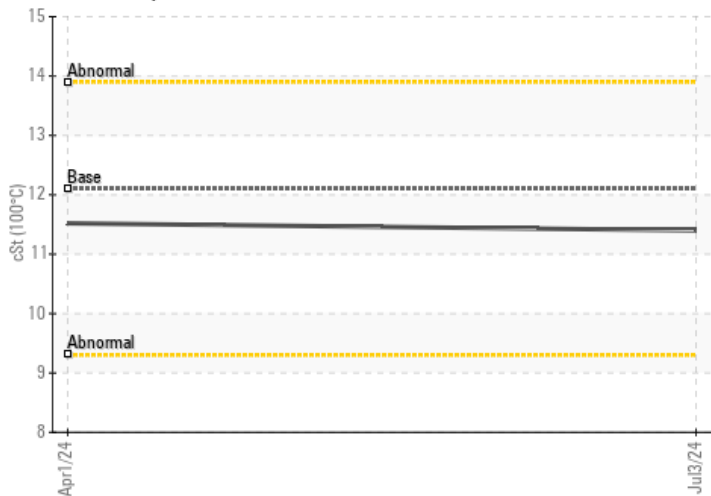
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

