

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR R944 042563-194 - Diesel Engine

Sample No: LH0243882

Oil Type: DIESEL ENGINE OIL 10W40



SAMPLE INFORMATION

Sample Number	LH0243882	LH0229406	LHMC103847	LHMC93581
Sample Date	29 Feb 2024	03 Oct 2022	17 Mar 2018	29 Dec 2015
Machine Hours	29512	28033	19646	15560
Oil Hours	0	500	1000	500
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

LIEBHERR EQUIPMENT SOURCE

4100 CHESTNUT AVENUE
NEWPORT NEWS, VA
US 23607

Contact: LUKE APPLEBY
Lucas.Appleby@liebherr.com

T:
F: (757)298-8700



OIL CONDITION

Visc @ 100°C	cSt	13.8	13.7	13.75	13.5
Base Number (BN)	mg KOH/g	11.5	6.8	---	---
Oxidation (PA)	%	48	57	44	28



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	1.7	2.2	0.8	0.1
Nitration (PA)	%	104	76	50	33
Sulfation (PA)	%	53	66	47	42
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	6	8	6	6
Sodium	ppm	2	1	2	2
Potassium	ppm	0	1	<1	0



WEAR METALS

Iron	ppm	17	23	5	4
Copper	ppm	2	3	<1	<1
Lead	ppm	0	<1	<1	<1
Tin	ppm	0	<1	0	0
Aluminum	ppm	3	2	3	2
Chromium	ppm	<1	<1	0	<1
Molybdenum	ppm	24	90	113	73
Nickel	ppm	0	0	0	<1
Titanium	ppm	0	<1	0	0
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	<1	0
Vanadium	ppm	<1	0	0	0



ADDITIVES

Calcium	ppm	3594	1447	1323	1212
Magnesium	ppm	152	356	456	309
Zinc	ppm	1165	986	856	1038
Phosphorus	ppm	955	872	666	897
Barium	ppm	0	2	0	0
Boron	ppm	222	201	240	319

Diagnosis

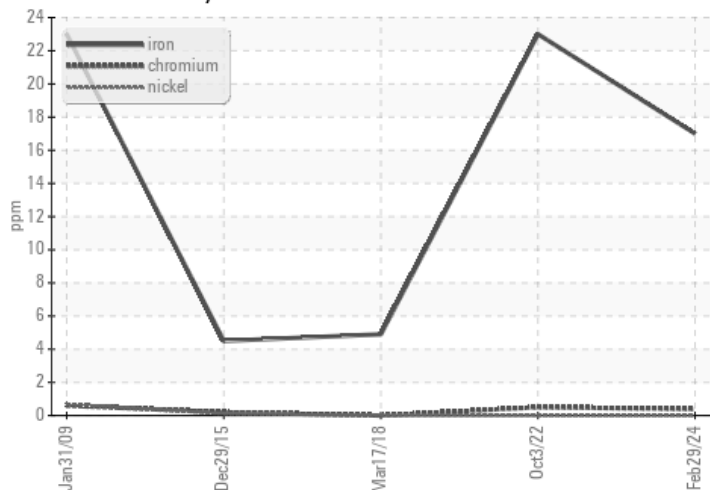
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Depot: LIEBHERRUS
Unique No: 10915364
Signed: Don Baldrige
Report Date: 10 Mar 2024

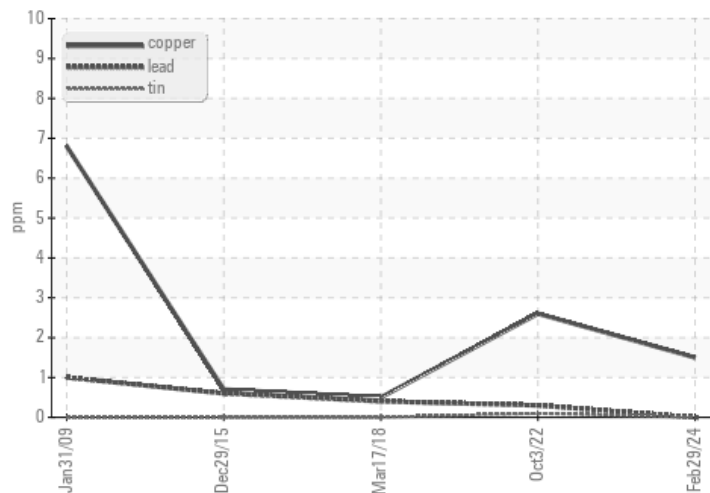


GRAPHS

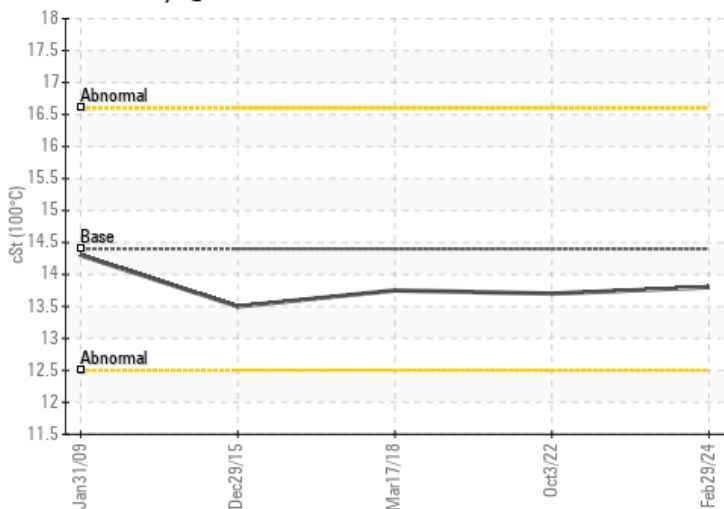
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

