

LIEBHERR

CONSTRUCTION EQUIPMENT



[[CLEVELAND CLIFF]] LIEBHERR LH60 107739-1217 - Diesel Eng

Sample No: LH0268100

Oil Type: DIESEL ENGINE OIL SAE 5W40



SAMPLE INFORMATION

Sample Number	LH0268100	LH0244212	LH0236126	LH0200108
Sample Date	22 Jan 2024	26 Jan 2023	24 Oct 2022	14 Jul 2022
Machine Hours	8998	7471	7067	6544
Oil Hours	500	0	0	500
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	ATTENTION	NORMAL

FINKBINER EQUIPMENT CO.

15 W 400 N FRONTAGE RD
BURR RIDGE, IL
US 60527
Contact: TROY MILLER
tmiller@finkbiner.com
T: (630)654-3700
F: (630)654-3792



OIL CONDITION

Visc @ 100°C	cSt	13.1	13.6	12.3	12.7
Base Number (BN)	mg KOH/g	5.8	6.3	5.5	6.7
Oxidation (PA)	%	65	69	86	97



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	77	89	94	110
Sulfation (PA)	%	55	58	70	68
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	2.1	<1.0
Silicon	ppm	10	8	7	8
Sodium	ppm	0	2	3	3
Potassium	ppm	4	2	3	2



WEAR METALS

Iron	ppm	4	4	5	5
Copper	ppm	2	<1	1	1
Lead	ppm	1	<1	<1	<1
Tin	ppm	<1	<1	<1	<1
Aluminum	ppm	1	2	2	1
Chromium	ppm	<1	<1	<1	0
Molybdenum	ppm	11	20	25	44
Nickel	ppm	<1	0	0	0
Titanium	ppm	2	<1	<1	<1
Silver	ppm	<1	0	0	0
Manganese	ppm	<1	<1	<1	0
Vanadium	ppm	<1	<1	0	0



ADDITIVES

Calcium	ppm	1260	1504	1621	1187
Magnesium	ppm	622	571	387	775
Zinc	ppm	790	915	1062	1081
Phosphorus	ppm	760	749	888	887
Barium	ppm	0	0	0	0
Boron	ppm	69	60	49	46

Diagnosis

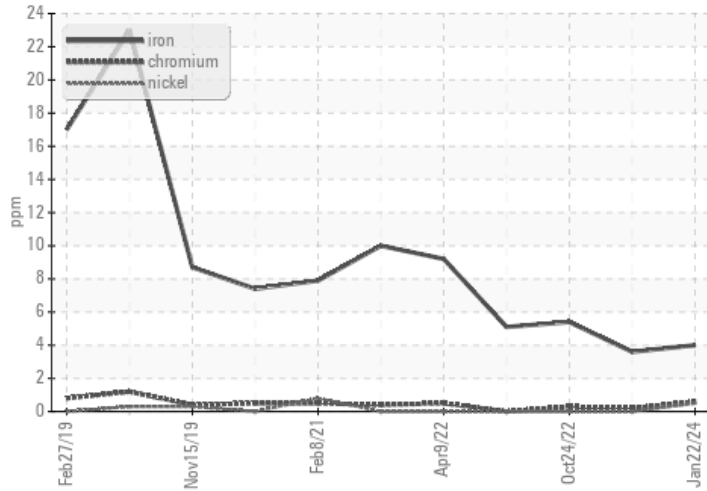
Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot: LEC0033
Unique No: 10883725
Signed: Wes Davis
Report Date: 19 Feb 2024

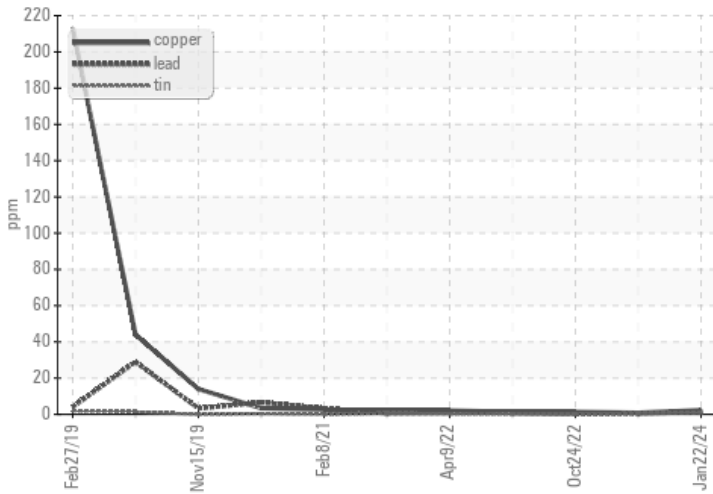


GRAPHS

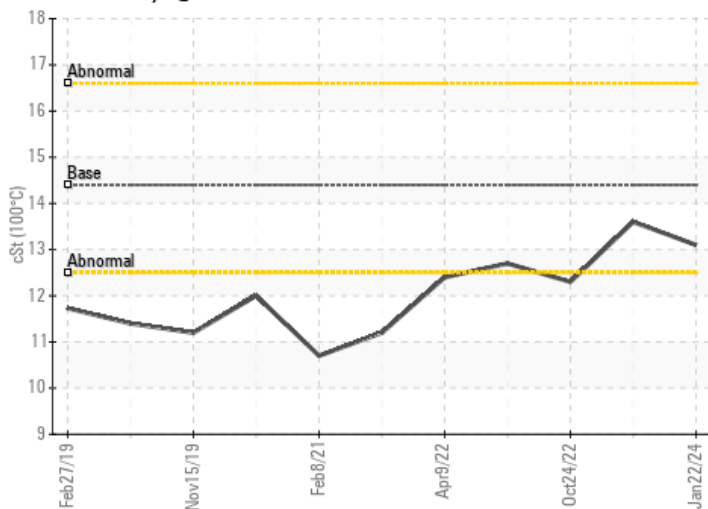
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

