

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR PR766 027906-1681 - Diesel Engine

Sample No: LH0264296

Oil Type: LIEBHERR MOTOROIL 5W30



HEAVY MACHINES INC.
 3930 EAST RAINES RD
 MEMPHIS, TN
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Sample Information

Sample Number	LH0264296	LH0254476	LH0254550	LH0254257
Sample Date	31 May 2024	01 May 2024	03 Apr 2024	07 Mar 2024
Machine Hours	2848	2148	1518	882
Oil Hours	698	629	635	535
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL



Oil Condition

Visc @ 100°C	cSt	11.2	11.2	11.1	11.5
Base Number (BN)	mg KOH/g	6.8	6.9	6.7	7.0
Oxidation (PA)	%	53	54	59	82



Contamination

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.1	0.1	0.1	0.1
Nitration (PA)	%	71	70	72	73
Sulfation (PA)	%	50	50	52	62
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	4	5	3	6
Sodium	ppm	2	2	2	2
Potassium	ppm	3	3	3	2



Wear Metals

Iron	ppm	4	4	2	4
Copper	ppm	43	39	41	29
Lead	ppm	0	2	0	2
Tin	ppm	1	1	0	<1
Aluminum	ppm	<1	<1	0	<1
Chromium	ppm	0	0	0	0
Molybdenum	ppm	0	9	<1	9
Nickel	ppm	0	0	0	0
Titanium	ppm	<1	<1	0	0
Silver	ppm	0	0	0	0
Manganese	ppm	<1	<1	0	<1
Vanadium	ppm	0	0	0	0



Additives

Calcium	ppm	1326	1318	1412	1364
Magnesium	ppm	735	689	752	767
Zinc	ppm	826	782	816	877
Phosphorus	ppm	767	714	792	782
Barium	ppm	0	1	0	4
Boron	ppm	51	74	68	77

Diagnosis

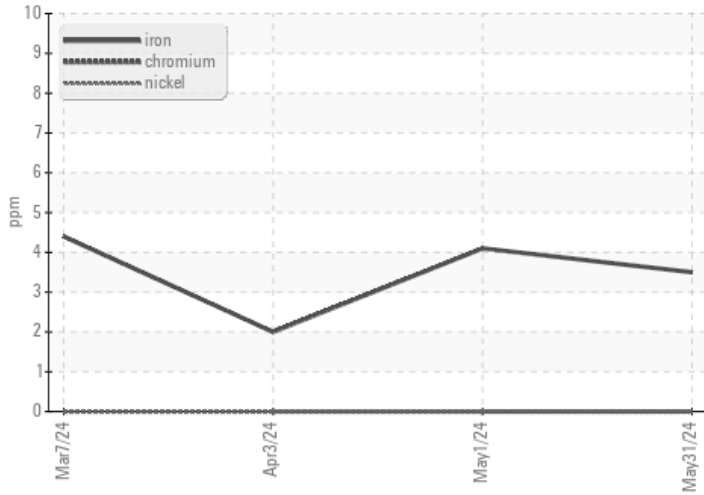
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Depot: LEC0051
Unique No: 11084132
Signed: Don Baldrige
Report Date: 19 Jun 2024

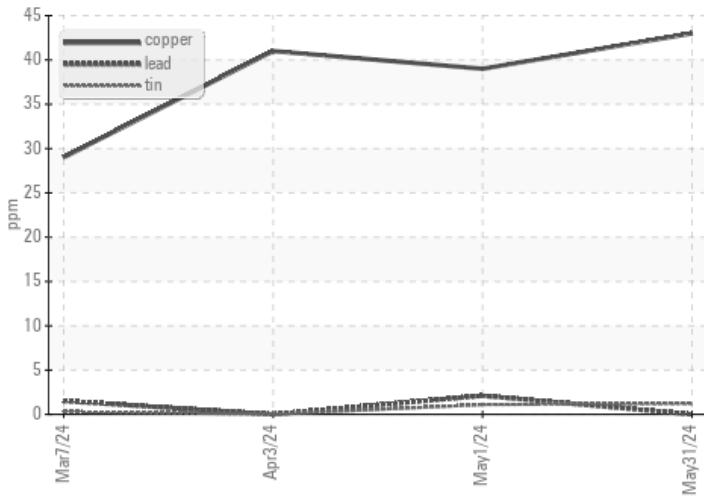


Graphs

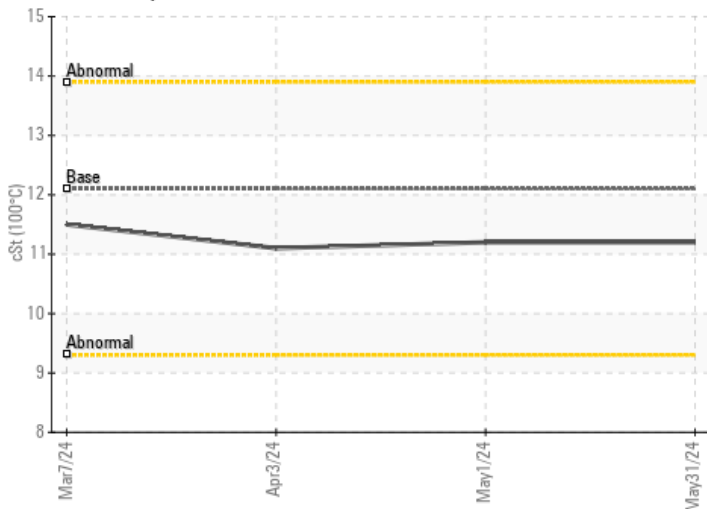
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

