

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR A934C 061188-1419 - Front Left Wheel Hub

Sample No: LH0253887

Oil Type: HARTLAND LS 80W90



NORTHERN METAL RECYCLING
 2800 PACIFIC ST N
 MINNEAPOLIS, MN
 US 55411
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SAMPLE INFORMATION

Sample Number	LH0253887	LH0253901	LH0236048	LH0220578
Sample Date	21 Sep 2023	13 Jul 2023	23 Nov 2022	27 Sep 2022
Machine Hours	27222	26744	25468	0
Oil Hours	0	500	500	500
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL



OIL CONDITION

Visc @ 40°C	cSt	143	152	150	152
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CONTAMINATION

Element	ppm	<1	0	1	1
Silicon	ppm	<1	0	1	1
Sodium	ppm	2	2	2	<1
Potassium	ppm	2	1	1	0



WEAR METALS

Element	ppm	10	11	14	10
Iron	ppm	10	11	14	10
Copper	ppm	0	<1	<1	<1
Lead	ppm	0	0	0	0
Tin	ppm	0	0	0	<1
Aluminum	ppm	0	0	0	<1
Chromium	ppm	0	0	0	0
Molybdenum	ppm	2	2	2	2
Nickel	ppm	0	0	0	0
Titanium	ppm	0	0	0	0
Silver	ppm	0	0	0	0
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	0	0	0	0



ADDITIVES

Element	ppm	32	33	23	33
Calcium	ppm	32	33	23	33
Magnesium	ppm	8	9	8	8
Zinc	ppm	20	15	5	20
Phosphorus	ppm	981	1416	944	1106
Barium	ppm	0	0	0	0
Boron	ppm	9	10	13	12

Diagnosis

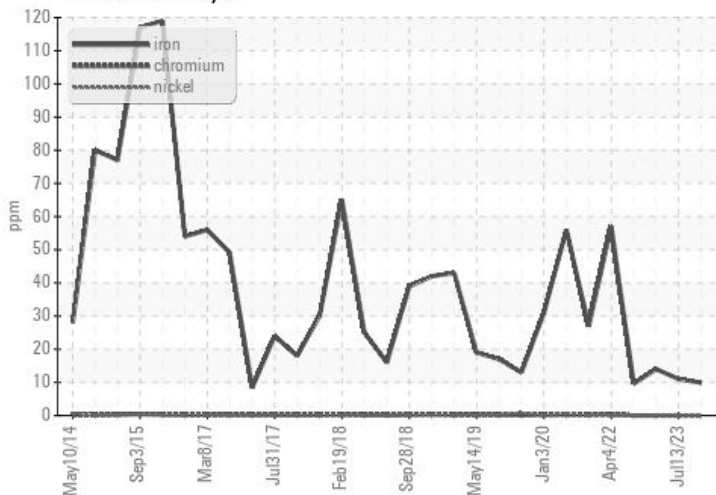
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

Depot: NORMINLH
 Unique No: 10728453
 Signed: Sean Felton
 Report Date: 08 Nov 2023

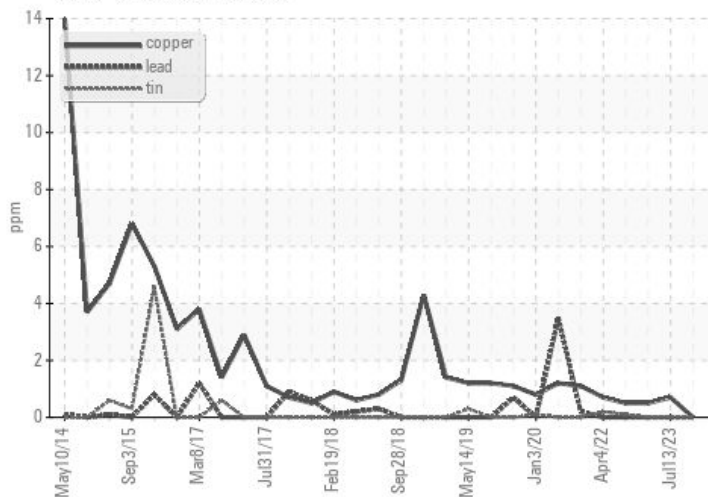


GRAPHS

Ferrous Alloys



Non-ferrous Metals



Viscosity @ 40°C

