

LIEBHERR

CONSTRUCTION EQUIPMENT



LIEBHERR A934C 045480-1007 - Hydraulic System

Sample No: LH0263947

Oil Type: AW HYDRAULIC OIL ISO 46



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

Sample Number	LH0263947	LH0253905	LH0220600	LH0220618
Sample Date	19 Dec 2023	12 Jul 2023	07 Jun 2022	08 Apr 2022
Machine Hours	31068	30160	27613	27204
Oil Hours	0	250	0	1000
Oil Changed	Not Changd	Not Changd	Not Changd	Not Changd
Sample Status	ABNORMAL	NORMAL	NORMAL	NORMAL



OIL CONDITION

Visc @ 40°C	cSt	48.7	46.4	44.7	44.5
Acid Number (AN)	mg KOH/g	0.35	0.40	0.47	0.30



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Particles >4µm		---	763	3555	2719
Particles >6µm		---	202	1032	369
Particles >14µm		---	19	77	23
ISO 4406:1999 (c)		---	17/15/11	19/17/13	19/16/12
Silicon	ppm	4	<1	<1	<1
Sodium	ppm	0	<1	<1	0
Potassium	ppm	<1	0	0	0



WEAR METALS

Iron	ppm	3	1	5	6
Copper	ppm	1	1	1	1
Lead	ppm	<1	0	<1	0
Tin	ppm	<1	0	<1	0
Aluminum	ppm	2	0	<1	<1
Chromium	ppm	<1	<1	1	1
Molybdenum	ppm	<1	0	<1	<1
Nickel	ppm	<1	0	0	0
Titanium	ppm	2	0	0	0
Silver	ppm	0	0	<1	<1
Manganese	ppm	<1	<1	0	0
Vanadium	ppm	0	0	0	0



ADDITIVES

Calcium	ppm	92	68	79	109
Magnesium	ppm	14	<1	5	4
Zinc	ppm	583	478	544	603
Phosphorus	ppm	504	365	435	530
Barium	ppm	0	0	0	0
Boron	ppm	0	0	8	0

Diagnosis

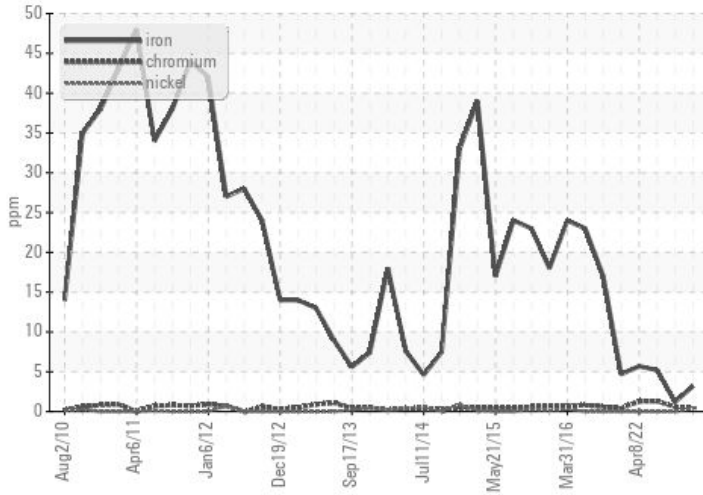
The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. We were unable to perform a particle count due to a high concentration of particles present in this sample. All component wear rates are normal. Moderate concentration of visible dirt/debris present in the oil. The AN level is acceptable for this fluid. The condition of the oils additive package is suitable for further service.

Depot: NORMINLH
 Unique No: 10844304
 Signed: Doug Bogart
 Report Date: 07 Feb 2024

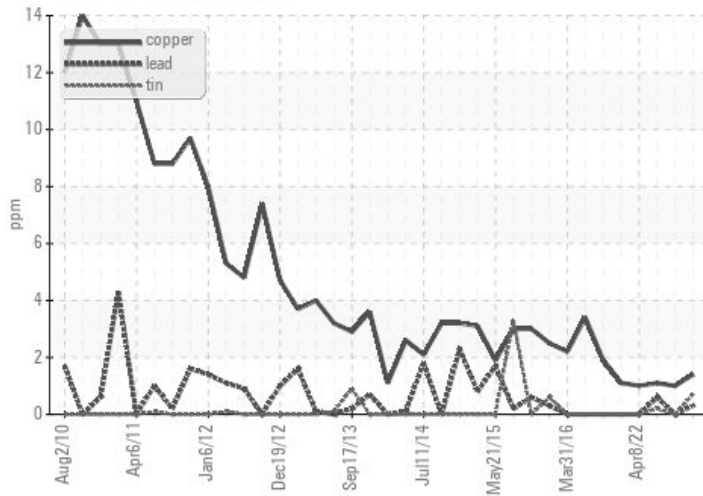


GRAPHS

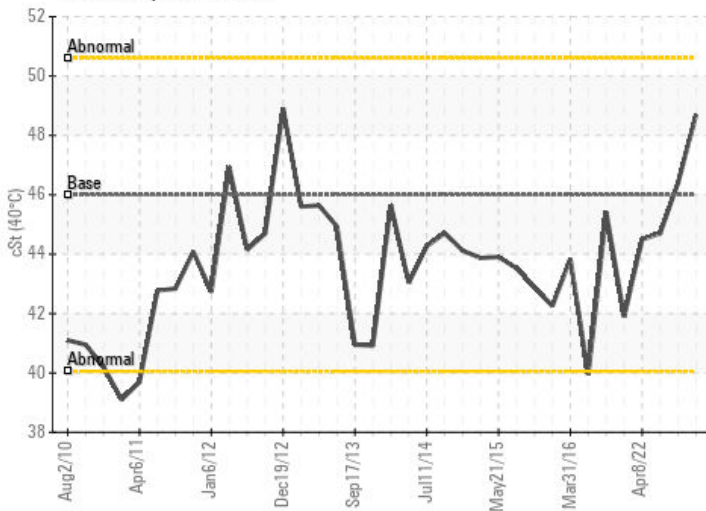
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 40°C



Acid Number

