LIEBHERR
CONSTRUCTION EQUIPMENT

LIEBHERR A934 019732-935 - Hydraulic System

Sample No: LH0272283

Oil Type: MV 46

INTEGRITY METALS
835 EAST INDUSTRIAL
MORRISTOWN, IN
US 46161
Contact: HEIDI KERSTIENS
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Sample Information

Sample Number		**LH0272283**	LH0244917	LH0229936	LH0190607
Sample Date		**06 May 2024**	24 Apr 2023	29 Nov 2022	28 Feb 2022
Machine Hours		**36357**	34266	33522	31951
Oil Hours		**0**	0	0	0
Oil Changed		**Not Changd**	Not Changd	Not Changd	Not Changd
Sample Status		**ABNORMAL**	ABNORMAL	NORMAL	ABNORMAL

Oil Condition

Visc @ 40°C	cSt	**59.2**	59.7	46.0	51.8
Acid Number (AN)	mg KOH/g	**0.34**	0.37	0.93	0.47

Contamination

Water	%	**NEG**	NEG	NEG	NEG
Particles >4µm		**39130**	46025	4075	33107
Particles >6µm		**5750**	1892	886	6587
Particles >14µm		**349**	7	36	394
ISO 4406:1999 (c)		**22/20/16**	23/18/10	19/17/12	22/20/16
Silicon	ppm	**2**	<1	1	3
Sodium	ppm	**3**	1	2	<1
Potassium	ppm	**2**	0	0	2

Wear Metals

Iron	ppm	**31**	15	39	53
Copper	ppm	**5**	2	6	8
Lead	ppm	**<1**	0	<1	<1
Tin	ppm	**<1**	0	0	<1
Aluminum	ppm	**<1**	<1	<1	2
Chromium	ppm	**14**	<1	2	28
Molybdenum	ppm	**0**	<1	0	2
Nickel	ppm	**0**	0	0	0
Titanium	ppm	**0**	0	0	<1
Silver	ppm	**0**	0	0	<1
Manganese	ppm	**<1**	<1	<1	<1
Vanadium	ppm	**0**	0	0	0

Additives

Calcium	ppm	**111**	91	803	334
Magnesium	ppm	**6**	2	7	17
Zinc	ppm	**487**	439	551	526
Phosphorus	ppm	**412**	343	481	396
Barium	ppm	**0**	0	0	0
Boron	ppm	**0**	0	0	0

Diagnosis

No corrective action is recommended at this time. The filter change at the time of sampling has been noted. Resample at the next service interval to monitor.The chromium level is abnormal. All other component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. The oil viscosity is higher than normal. The AN level is acceptable for this fluid.

Depot: INTMORLH
Unique No: 11017994
Signed: Don Baldridge
Report Date: 09 May 2024

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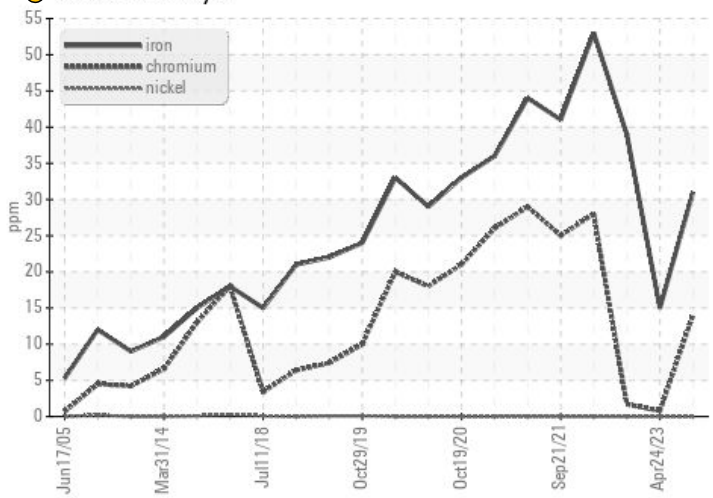
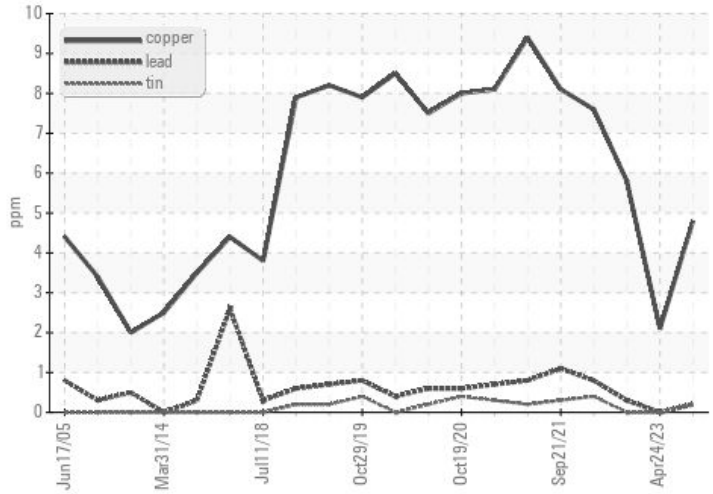
Graphs

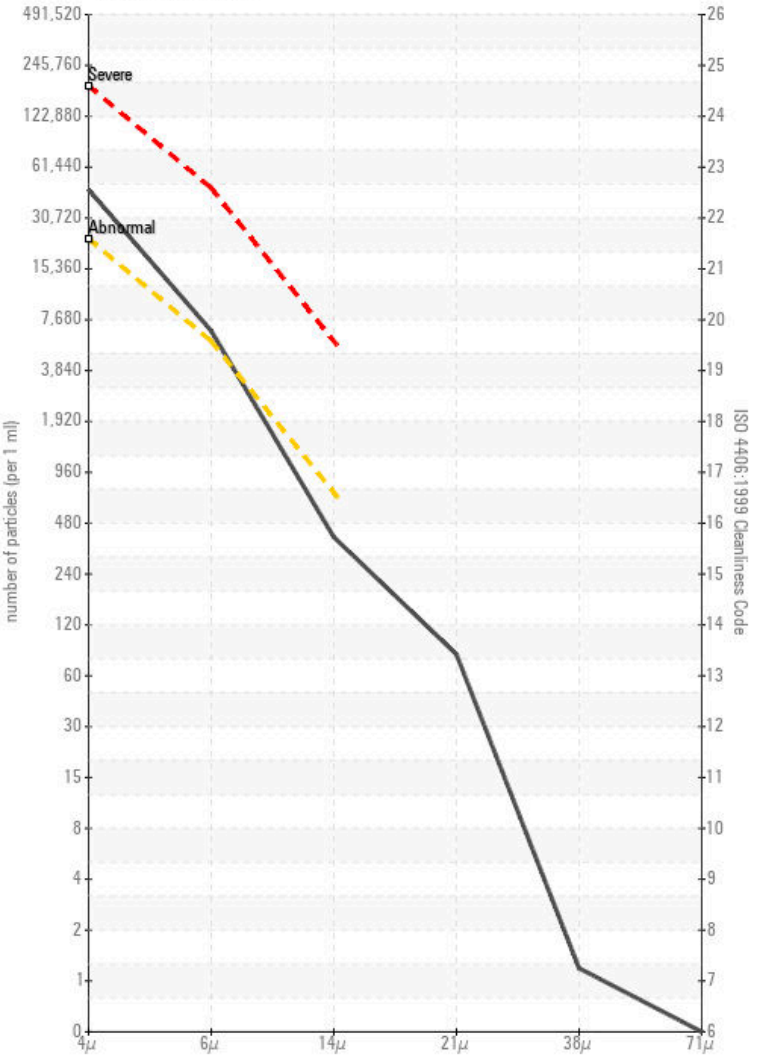
Ferrous Alloys



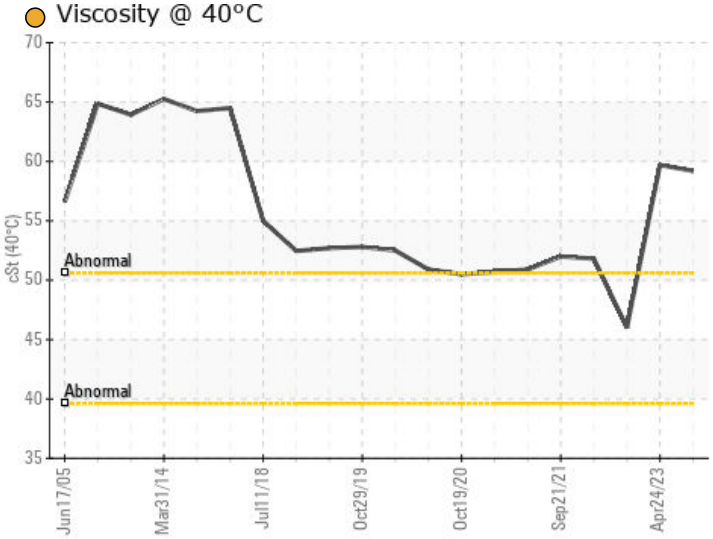
Non-ferrous Metals



Particle Count



Viscosity @ 40°C



Acid Number