

LIEBHERR

CONSTRUCTION EQUIPMENT



[CNRL] 587000020 - Hoist Hydraulic System

Sample No: LH0265175

Oil Type: PETRO CANADA PRODURO TO-4 SYNTHETIC ALL SEASON



Sample Information

Sample Number	LH0265175	LH0238128	LH0084588	LH0209800
Sample Date	07 Jul 2024	14 Mar 2023	07 Jul 2022	10 Jun 2022
Machine Hours	0	22019	17903	17613
Oil Hours	0	0	0	0
Oil Changed	Not Changd	N/A	Not Changd	N/A
Sample Status	ABNORMAL	NORMAL	NORMAL	NORMAL

Liebherr-Canada Ltd.

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 Fort McMurray, AB
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Oil Condition

Visc @ 40°C	cSt	39.7	36.1	37.4	37.4
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Contamination

Water	%	NEG	NEG	NEG	NEG
Particles >4µm		1003	15575	726	3734
Particles >6µm		226	3811	189	713
Particles >14µm		15	164	22	28
ISO 4406:1999 (c)		17/15/11	21/19/15	17/15/12	19/17/12
Silicon	ppm	5	13	7	7
Sodium	ppm	1	<1	1	1
Potassium	ppm	1	<1	1	0

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The condition of the oil is acceptable for the time in service.



Wear Metals

Iron	ppm	2	2	2	2
Copper	ppm	4	0	2	2
Lead	ppm	0	<1	0	0
Tin	ppm	0	0	0	<1
Aluminum	ppm	1	<1	1	1
Chromium	ppm	0	0	0	<1
Molybdenum	ppm	0	<1	<1	<1
Nickel	ppm	<1	<1	0	0
Titanium	ppm	0	<1	<1	0
Silver	ppm	0	0	0	0
Manganese	ppm	0	<1	<1	0
Vanadium	ppm	0	0	0	0



Additives

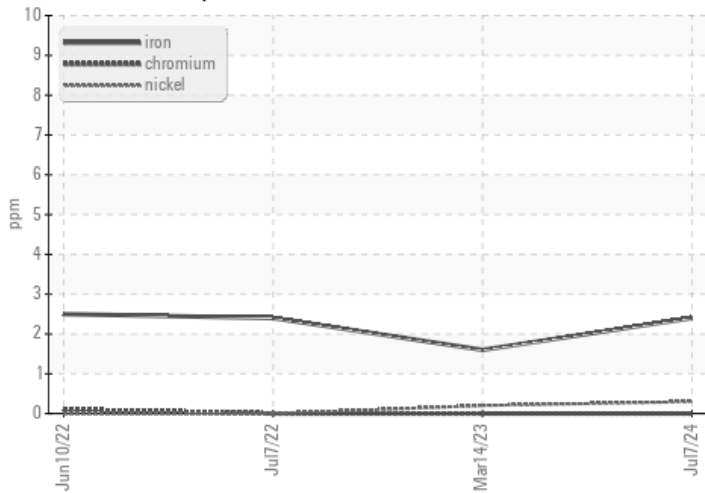
Calcium	ppm	3051	3684	3163	3033
Magnesium	ppm	12	13	17	18
Zinc	ppm	1102	1038	1075	1126
Phosphorus	ppm	945	942	921	994
Barium	ppm	0	0	0	0
Boron	ppm	1	<1	2	2

Depot: LIEFTM
 Unique No: 5814005
 Signed: Kevin Marson
 Report Date: 18 Jul 2024

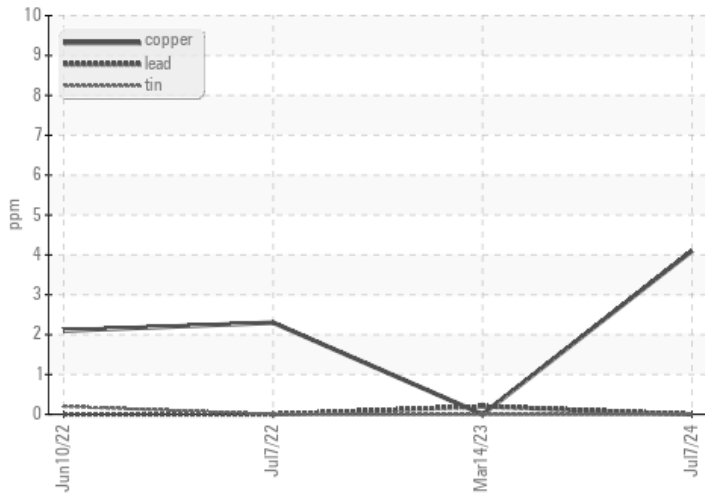


Graphs

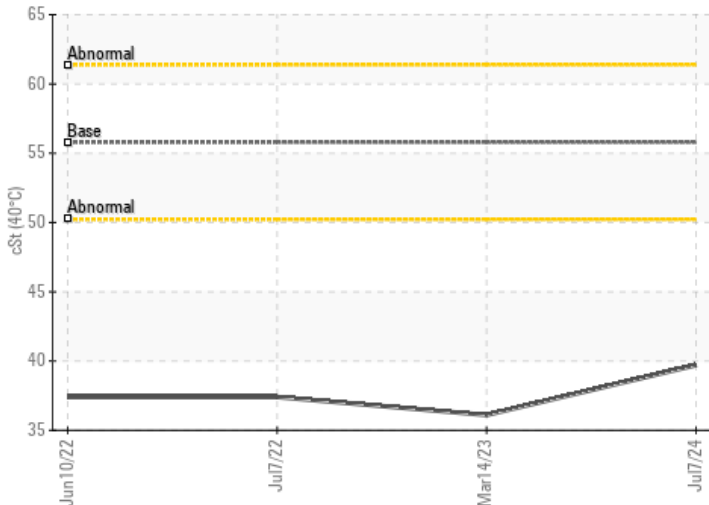
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 40°C



Particle Count

