LIEBHERR
CONSTRUCTION EQUIPMENT

LIEBHERR LH40C 123508-1527 - Hydraulic System

Sample No: LH0175675

Oil Type: AW HYDRAULIC OIL ISO 46

DOMINION NICKEL ALLOYS LTD.
834 APPLEBY LINE
BURLINGTON, ON
CA L7L 2Y7
Contact: Trevor Taylor
trevor@domnickel.com
T: (905)639-9939
F: (905)639-3788

SAMPLE INFORMATION

Sample Number		**LH0175675**	LH0175666	LH0175657	LH0175648
Sample Date		**16 Nov 2023**	08 Mar 2023	27 Oct 2022	14 Dec 2021
Machine Hours		**5000**	4000	3000	2000
Oil Hours		**0**	0	0	0
Oil Changed		**N/A**	N/A	N/A	Not Changd
Sample Status		**ABNORMAL**	NORMAL	NORMAL	NORMAL

OIL CONDITION

Visc @ 40°C	cSt	**43.3**	43.6	43.5	43.8
Acid Number (AN)	mg KOH/g	**0.67**	0.84	0.61	1.00

CONTAMINATION

Water	%	**NEG**	NEG	NEG	NEG
Particles >4µm		**3170**	1326	4521	4723
Particles >6µm		**446**	191	937	319
Particles >14µm		**13**	7	30	20
ISO 4406:1999 (c)		**19/16/11**	18/15/10	19/17/12	19/15/11
Silicon	ppm	**1**	1	1	1
Sodium	ppm	**1**	<1	<1	<1
Potassium	ppm	**0**	<1	<1	<1

WEAR METALS

PQ		**3**	---	---	---
Iron	ppm	**51**	40	42	24
Copper	ppm	**4**	4	4	4
Lead	ppm	**1**	<1	<1	<1
Tin	ppm	**0**	<1	0	<1
Aluminum	ppm	**0**	<1	<1	<1
Chromium	ppm	**6**	4	4	3
Molybdenum	ppm	**0**	0	0	<1
Nickel	ppm	**0**	<1	<1	0
Titanium	ppm	**0**	0	0	0
Silver	ppm	**<1**	0	0	0
Manganese	ppm	**<1**	<1	<1	<1
Vanadium	ppm	**0**	0	0	0

ADDITIVES

Calcium	ppm	**463**	520	575	734
Magnesium	ppm	**3**	3	3	4
Zinc	ppm	**509**	511	517	555
Phosphorus	ppm	**415**	468	473	497
Barium	ppm	**<1**	0	0	0
Boron	ppm	**<1**	<1	0	<1

Diagnosis

We recommend an early resample to monitor this condition.Iron ppm levels are abnormal. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Depot: DOMBUR
Unique No: 5682179
Signed: Kevin Marson
Report Date: 20 Nov 2023

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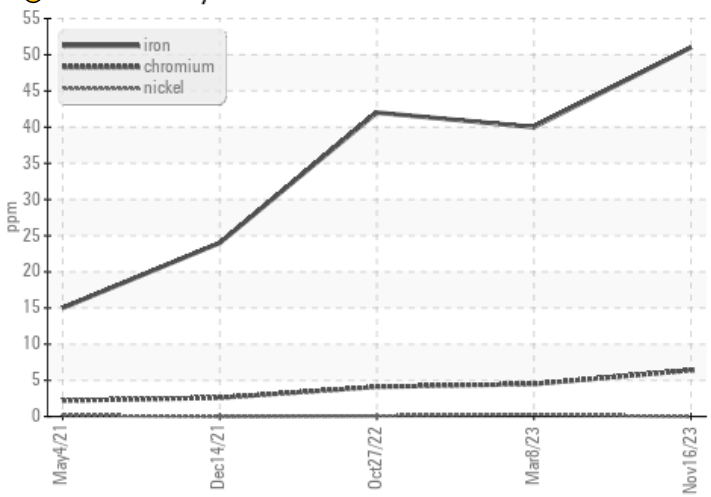
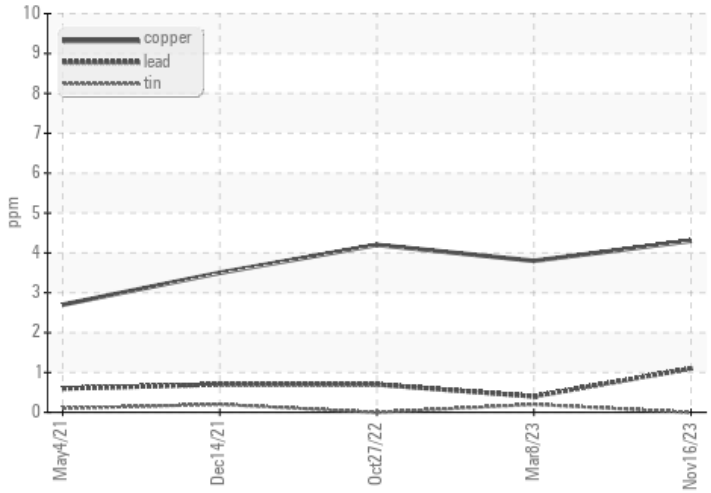
GRAPHS

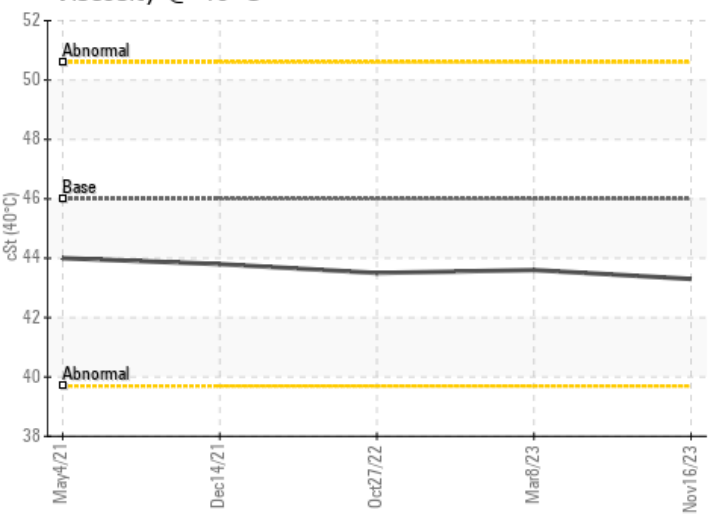
Ferrous Alloys



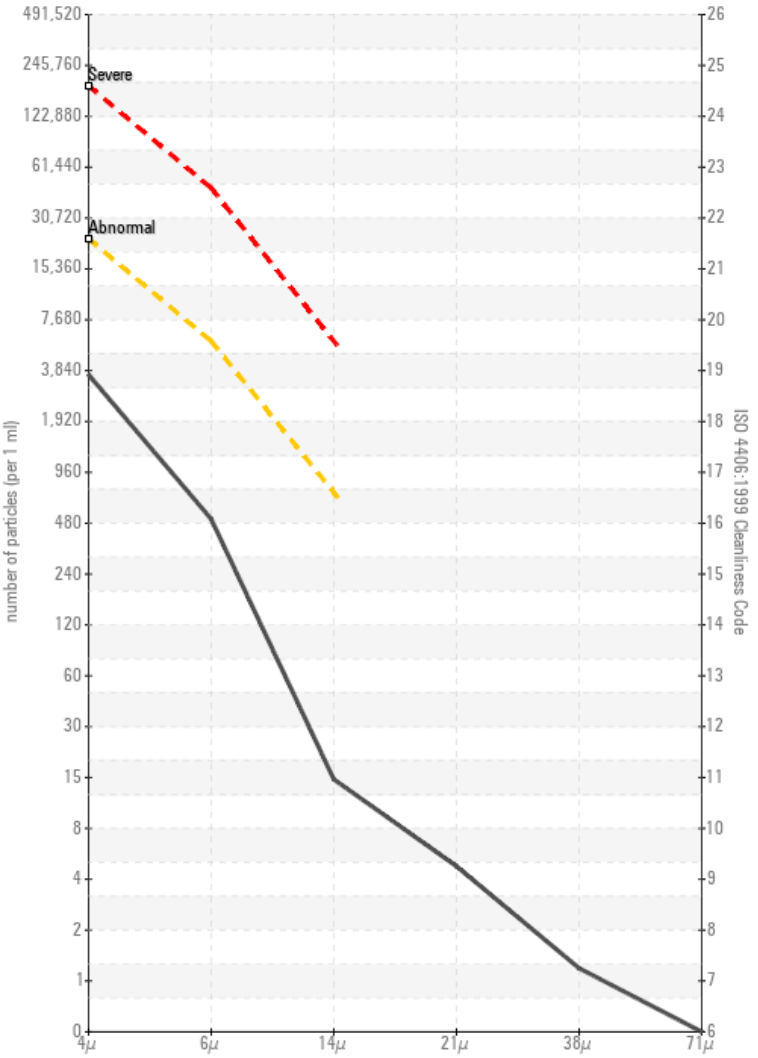
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



Acid Number