LIEBHERR
CONSTRUCTION EQUIPMENT

LIEBHERR R938 053625-1650 - Left Final Drive

Sample No: LH0272027

Oil Type: LIEBHERR GEAR BASIC 90 LS

LIEBHERR EQUIPMENT SOURCE
8200 FAYETTEVILLE ROAD
RALEIGH, NC
US 27603
Contact: Timothy Bailey
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T:
F: (919)329-0084

Sample Information

Sample Number		**LH0272027**	LH0200185	---	---
Sample Date		**23 Apr 2024**	13 Oct 2022	---	---
Machine Hours		**2340**	689	---	---
Oil Hours		**1600**	689	---	---
Oil Changed		**Changed**	Changed	---	---
Sample Status		**SEVERE**	ABNORMAL	---	---

Oil Condition

Visc @ 40°C	cSt	**269**	195	---	---

Contamination

Water	%	**0.572**	NEG	---	---
Silicon	ppm	**6531**	104	---	---
Sodium	ppm	**146**	7	---	---
Potassium	ppm	**590**	3	---	---

Wear Metals

Iron	ppm	**10261**	295	---	---
Copper	ppm	**2**	<1	---	---
Lead	ppm	**1**	0	---	---
Tin	ppm	**1**	0	---	---
Aluminum	ppm	**1706**	33	---	---
Chromium	ppm	**120**	5	---	---
Molybdenum	ppm	**8**	<1	---	---
Nickel	ppm	**23**	<1	---	---
Titanium	ppm	**93**	3	---	---
Silver	ppm	**0**	0	---	---
Manganese	ppm	**93**	5	---	---
Vanadium	ppm	**2**	<1	---	---

Additives

Calcium	ppm	**73**	21	---	---
Magnesium	ppm	**63**	0	---	---
Zinc	ppm	**31**	30	---	---
Phosphorus	ppm	**2184**	1317	---	---
Barium	ppm	**21**	0	---	---
Boron	ppm	**7**	0	---	---

Diagnosis

We advise that you check for the source of water entry. We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.The iron, chrome and nickel levels are severe. Gear wear is indicated. There is a moderate concentration of water present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component. The oil is no longer serviceable due to the presence of contaminants.

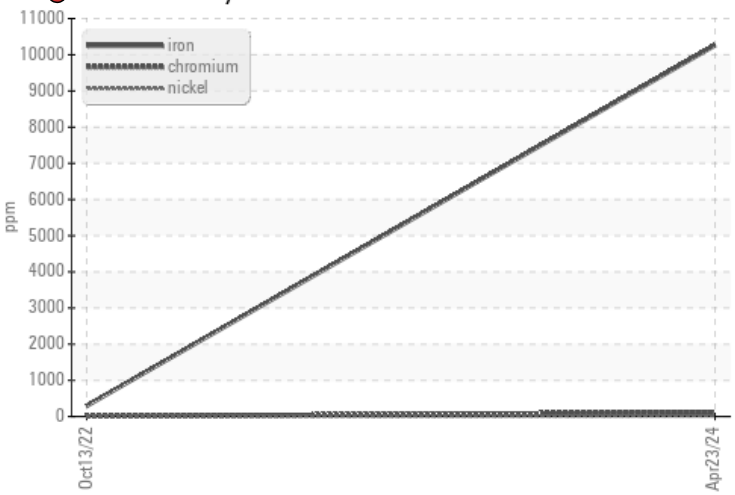
Depot: LIEBHERRNC
Unique No: 10996213
Signed: Don Baldridge
Report Date: 29 Apr 2024

Report Id: LIEBHERRNC [WUSCAR] 06160790 (Generated: 04/29/2024 11:16:53) Rev: 1

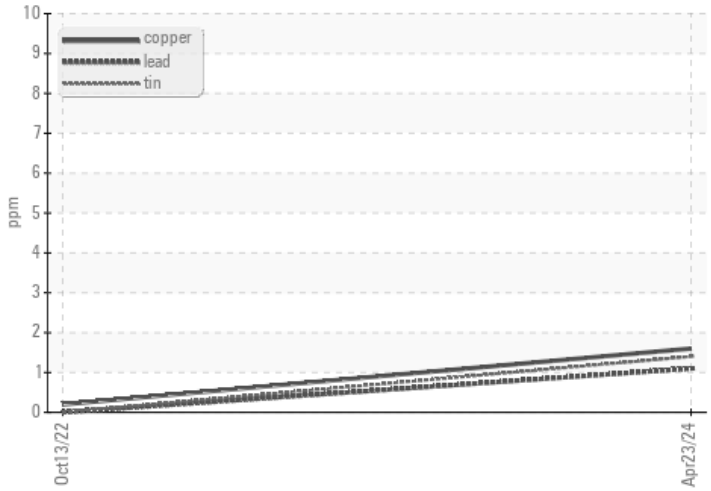
Submitted By: TAYLOR BLALOCK

Graphs

Ferrous Alloys



Non-ferrous Metals



Viscosity @ 40°C