LIEBHERR
CONSTRUCTION EQUIPMENT

LIEBHERR LH40C 113524-1527 - Right Final Drive

Sample No: LH0224737

Oil Type: GEAR OIL SAE 80W90

RICHMOND STEEL RECYCLING
9623 78TH STREET
Fort St.John, BC
CA V1J 4J8
Contact: Service Manager

T:
F:

SAMPLE INFORMATION

Sample Number		**LH0224737**	LH0238660	LH0110732	---
Sample Date		**04 Jan 2024**	23 Feb 2023	29 Aug 2019	---
Machine Hours		**0**	8256	575	---
Oil Hours		**0**	0	0	---
Oil Changed		**N/A**	Changed	Changed	---
Sample Status		**SEVERE**	SEVERE	NORMAL	---

OIL CONDITION

Visc @ 40°C	cSt	**497**	101	186	---

CONTAMINATION

Water	%	**6.883**	1.374	NEG	---
Silicon	ppm	**13243**	5781	86	---
Sodium	ppm	**369**	154	7	---
Potassium	ppm	**693**	262	8	---

WEAR METALS

PQ		**3204**	5940	---	---
Iron	ppm	**20586**	10974	275	---
Copper	ppm	**53**	16	2	---
Lead	ppm	**53**	22	<1	---
Tin	ppm	**0**	<1	0	---
Aluminum	ppm	**2576**	926	15	---
Chromium	ppm	**356**	97	7	---
Molybdenum	ppm	**18**	5	<1	---
Nickel	ppm	**143**	31	1	---
Titanium	ppm	**195**	64	1	---
Silver	ppm	**<1**	0	<1	---
Manganese	ppm	**286**	77	5	---
Vanadium	ppm	**9**	4	<1	---

ADDITIVES

Calcium	ppm	**2704**	2649	56	---
Magnesium	ppm	**524**	206	5	---
Zinc	ppm	**160**	718	27	---
Phosphorus	ppm	**1405**	1423	2313	---
Barium	ppm	**121**	31	17	---
Boron	ppm	**294**	169	6	---

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. Check seals and/or filters for points of contaminant entry. We recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.Aluminum and chromium, iron and nickel and titanium ppm levels are severe. PQ levels are severe. Lead, copper ppm levels are abnormal. Gear wear is indicated. Bearing and/or bushing wear is indicated. The very high ferrous density (PQ) index indicates that severe wear is occurring. There is a high 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. Viscosity of sample indicates oil is within ISO 460 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Depot: RIC962FOR
Unique No: 5708648
Signed: Kevin Marson
Report Date: 11 Jan 2024

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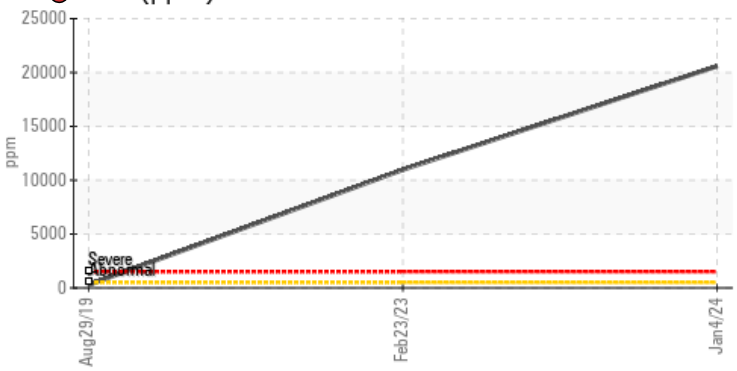
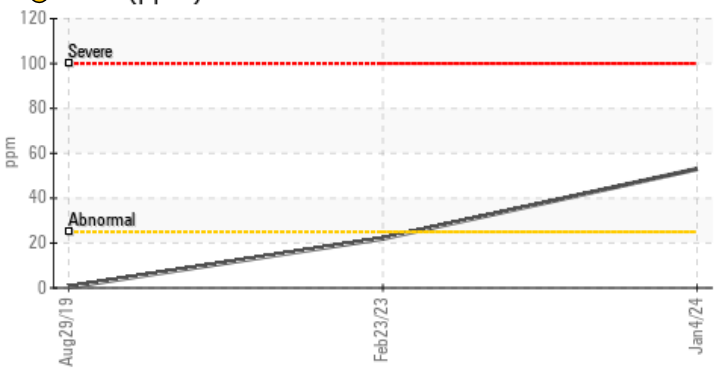
GRAPHS

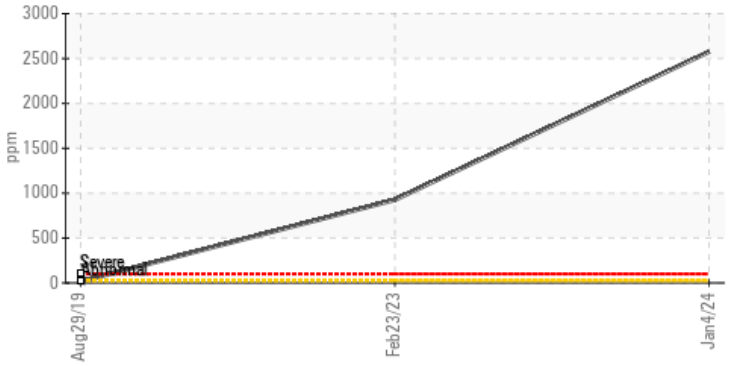
Iron (ppm)



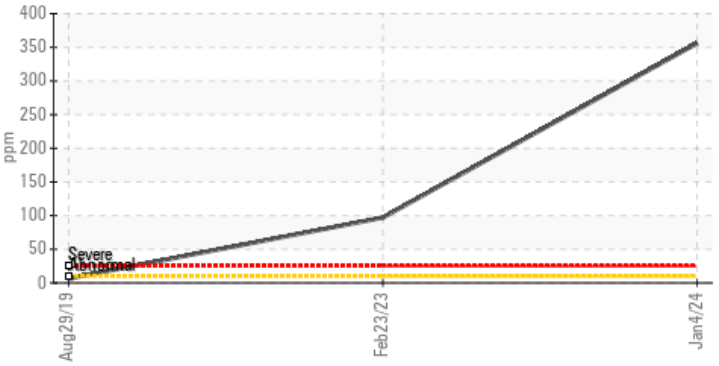
Lead (ppm)



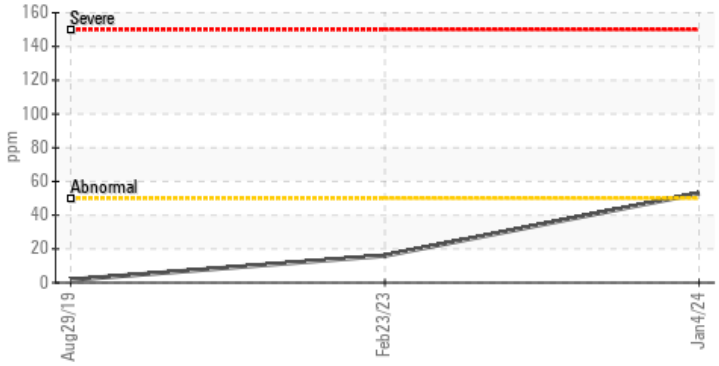
Aluminum (ppm)



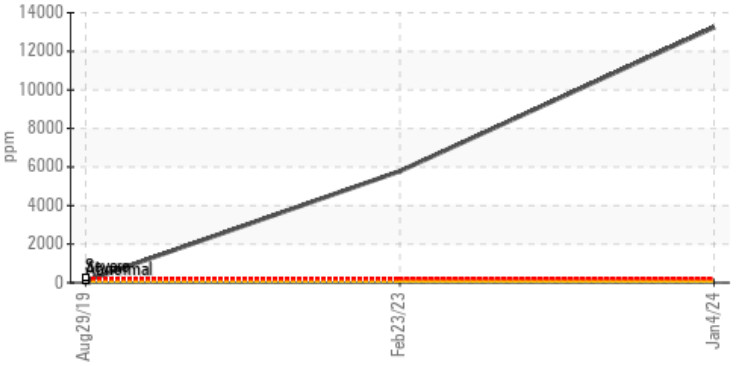
Chromium (ppm)



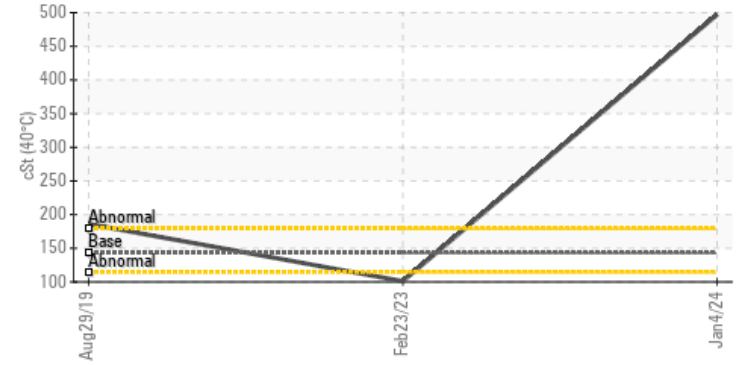
Copper (ppm)



Silicon (ppm)



Viscosity @ 40°C



Water