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LIEBHERR

OIL ANALYSIS REPORT

WEAR	SEVERE
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR LH50 14791
Component
Hydraulic System
Fluid
IRVING HYDRAULIC OIL LP 46 (--- GAL)

RECOMMENDATION

We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

WEAR

Lead ppm levels are severe. A sharp increase in the lead level is noted. Bearing and/or bushing wear is indicated.

CONTAMINATION

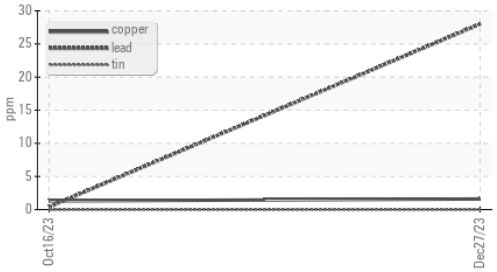
There is a light amount of silt (particulates < 14 microns in size) present in the oil. There is a moderate concentration of water present in the oil. Free water present.

FLUID CONDITION

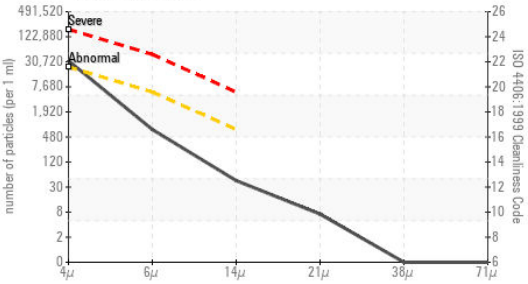
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH	LH0269636	---
Sample Date		Client Info		27 Dec 2023	16 Oct 2023	---
Machine Age	hrs	Client Info		22000	21000	---
Oil Age	hrs	Client Info		0	0	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Changed	Not Changd	---
Filter Changed		Client Info		N/A	N/A	---
Sample Status				SEVERE	ABNORMAL	---
Iron	ppm	ASTM D5185(m)	>50	26	19	---
Chromium	ppm	ASTM D5185(m)	>5	<1	<1	---
Nickel	ppm	ASTM D5185(m)	>2	<1	0	---
Titanium	ppm	ASTM D5185(m)		0	0	---
Silver	ppm	ASTM D5185(m)		0	<1	---
Aluminum	ppm	ASTM D5185(m)	>2	1	<1	---
Lead	ppm	ASTM D5185(m)	>4	⬢ 28	<1	---
Copper	ppm	ASTM D5185(m)	>10	2	1	---
Tin	ppm	ASTM D5185(m)	>2	0	0	---
Vanadium	ppm	ASTM D5185(m)		0	0	---
White Metal	scalar	Visual*	NONE	NONE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	---
Silicon	ppm	ASTM D5185(m)	>17	2	2	---
Potassium	ppm	ASTM D5185(m)	>20	1	0	---
Water		WC Method	>0.1	NEG	NEG	---
Particles >4µm		ASTM D7647	>20000	▲ 28232	2067	---
Particles >6µm		ASTM D7647	>5000	636	333	---
Particles >14µm		ASTM D7647	>640	38	18	---
Particles >21µm		ASTM D7647	>160	6	3	---
Particles >38µm		ASTM D7647	>40	0	0	---
Particles >71µm		ASTM D7647	>10	0	0	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ 22/16/12	18/16/11	---
Silt	scalar	Visual*	NONE	NONE	NONE	---
Debris	scalar	Visual*	NONE	NONE	NONE	---
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	---
Appearance	scalar	Visual*	NORML	▲ WGOIL	▲ WGOIL	---
Odor	scalar	Visual*	NORML	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.1	.2%	.2%	---
Sodium	ppm	ASTM D5185(m)		<1	<1	---
Boron	ppm	ASTM D5185(m)		8	8	---
Barium	ppm	ASTM D5185(m)		0	<1	---
Molybdenum	ppm	ASTM D5185(m)		2	2	---
Manganese	ppm	ASTM D5185(m)		0	0	---
Magnesium	ppm	ASTM D5185(m)		16	15	---
Calcium	ppm	ASTM D5185(m)		180	179	---
Phosphorus	ppm	ASTM D5185(m)		390	374	---
Zinc	ppm	ASTM D5185(m)	400	437	459	---
Sulfur	ppm	ASTM D5185(m)		1192	1099	---
Visc @ 40°C	cSt	ASTM D7279(m)	47.1	39.8	38.1	---

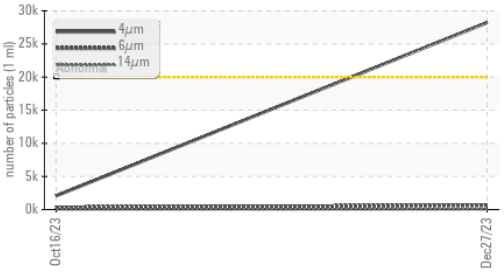
Non-ferrous Metals



Particle Count

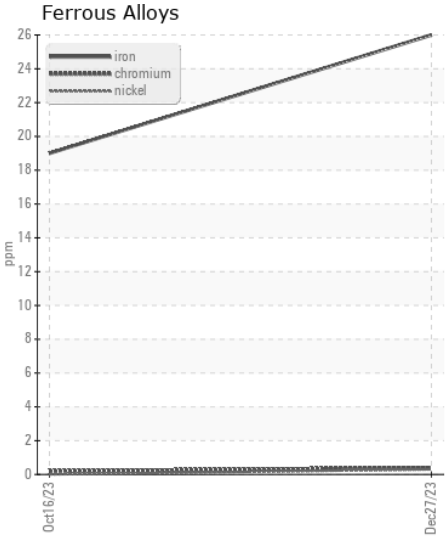


Particle Trend

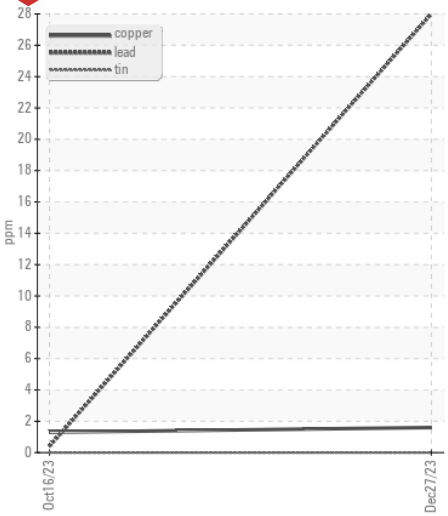


Viscosity @ 40°C

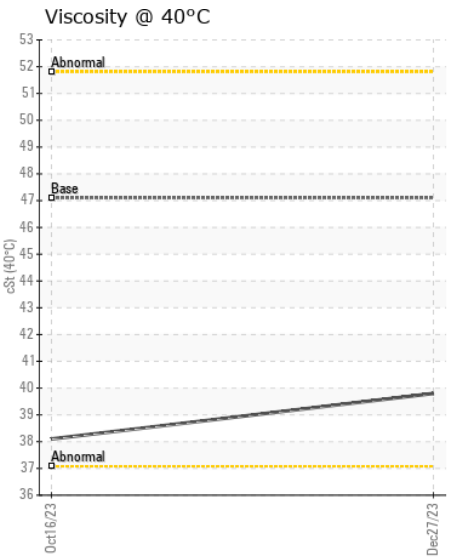
Ferrous Alloys



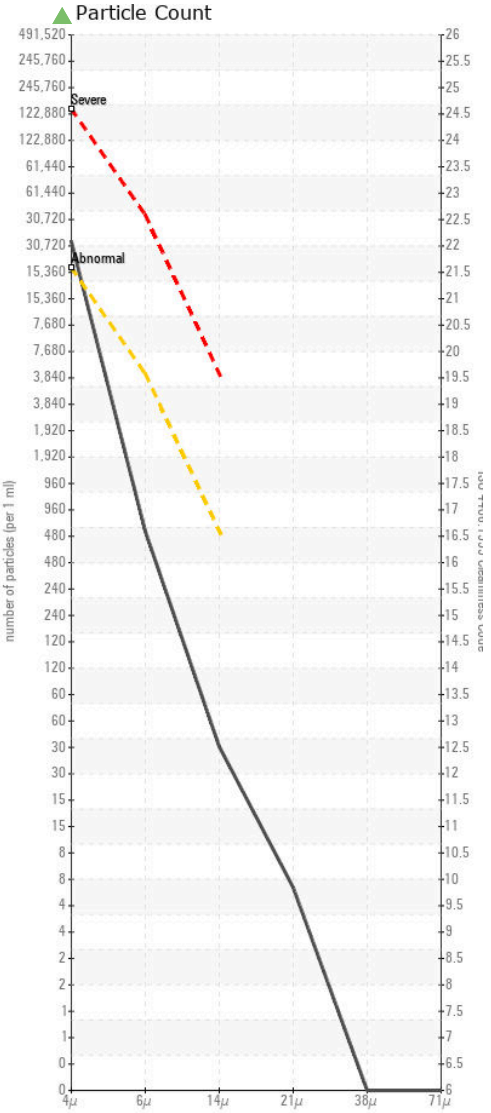
Non-ferrous Metals



Viscosity @ 40°C



Particle Count



ISO 17025:2017 Accredited Laboratory

Laboratory	: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9		
Sample No.	: LH	**Recieved**	: 15 Jan 2024
Lab Number	: 02608737	**Diagnosed**	: 16 Jan 2024
Unique Number	: 5709823	**Diagnostician**	: Kevin Marson
Test Package	: MOB 1 (Additional Tests: PrtCount)		

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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