



LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR LH60M 146313-1217
Component
Hydraulic System
Fluid
{not provided} (--- GAL)

RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0286974	LH0278624	LH0278961
Sample Date		Client Info		16 Apr 2024	21 Jan 2024	27 Nov 2023
Machine Age	hrs	Client Info		2658	2083	1637
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

Copper ppm levels are abnormal. Bearing and/or bushing wear is indicated.

Iron	ppm	ASTM D5185(m)	>60	26	26	24
Chromium	ppm	ASTM D5185(m)	>40	1	<1	<1
Nickel	ppm	ASTM D5185(m)	>10	0	0	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>5	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>5	0	1	1
Copper	ppm	ASTM D5185(m)	>15	▲ 18	▲ 20	▲ 17
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

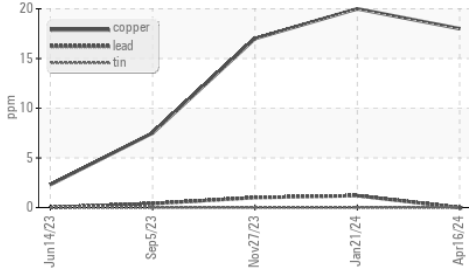
Silicon	ppm	ASTM D5185(m)	>15	2	4	4
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	0
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	4485	8763	18536
Particles >6µm		ASTM D7647	>5000	1267	703	4109
Particles >14µm		ASTM D7647	>640	89	35	170
Particles >21µm		ASTM D7647	>160	22	7	33
Particles >38µm		ASTM D7647	>40	2	1	1
Particles >71µm		ASTM D7647	>10	2	0	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	19/17/14	20/17/12	21/19/15
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG	NEG

FLUID CONDITION

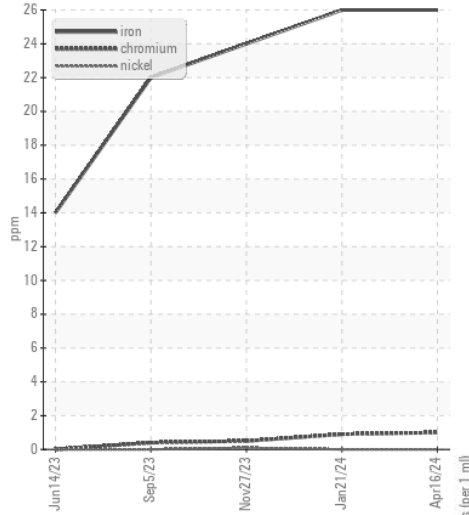
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Sodium	ppm	ASTM D5185(m)		2	2	3
Boron	ppm	ASTM D5185(m)		1	<1	<1
Barium	ppm	ASTM D5185(m)		0	0	<1
Molybdenum	ppm	ASTM D5185(m)		0	0	0
Manganese	ppm	ASTM D5185(m)		<1	<1	<1
Magnesium	ppm	ASTM D5185(m)		6	4	4
Calcium	ppm	ASTM D5185(m)		1030	1187	1185
Phosphorus	ppm	ASTM D5185(m)		567	600	601
Zinc	ppm	ASTM D5185(m)		660	690	699
Sulfur	ppm	ASTM D5185(m)		2916	3504	3235
Visc @ 40°C	cSt	ASTM D7279(m)		42.1	42.8	43.0

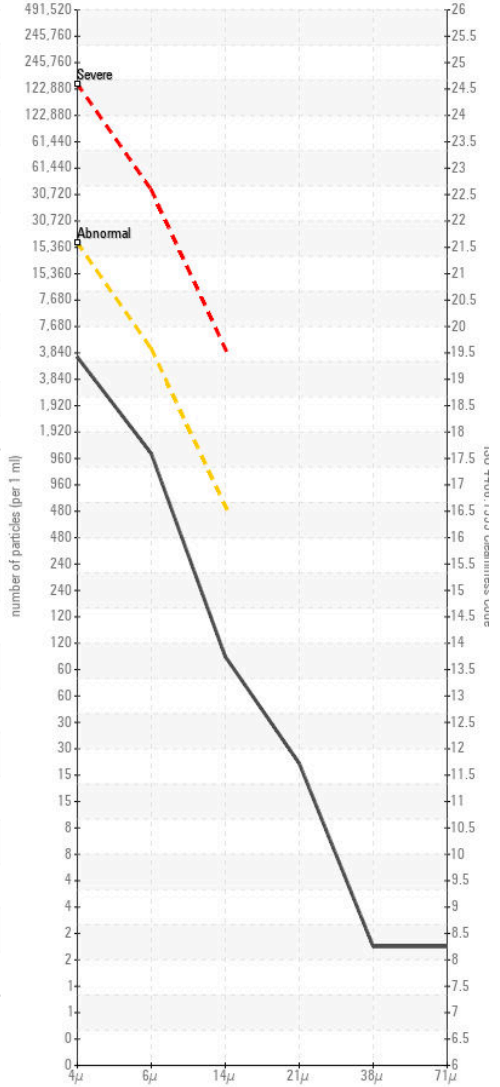
▲ Non-ferrous Metals



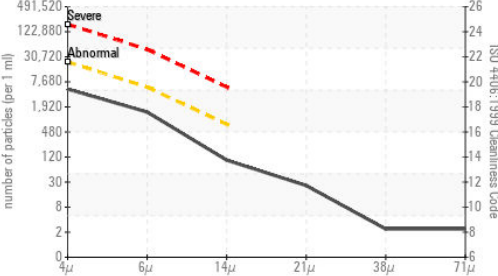
Ferrous Alloys



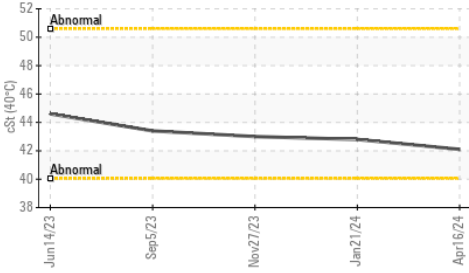
Particle Count



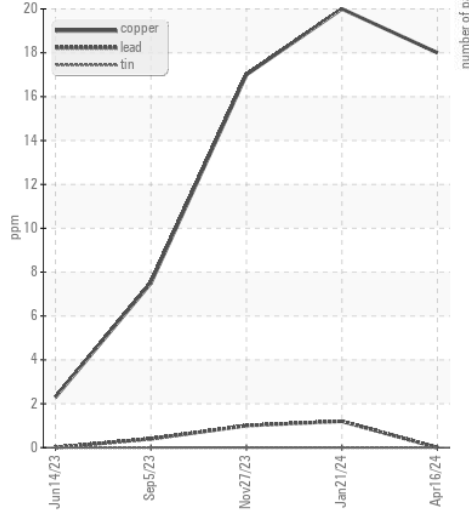
Particle Count



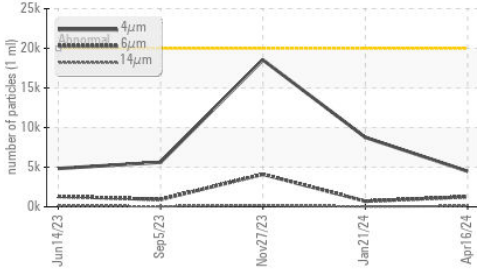
Viscosity @ 40°C



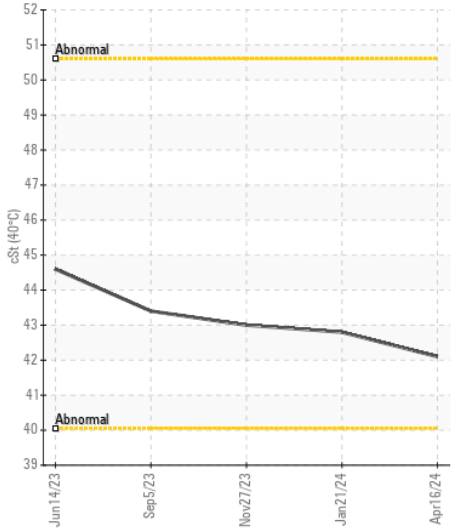
▲ Non-ferrous Metals



Particle Trend



Viscosity @ 40°C



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0286974
Lab Number : 02629673
Unique Number : 5762805
Test Package : MOB 1 (Additional Tests: PrtCount)

WENTWORTH METAL RECYCLING
 495 WENTWORTH STREET NORTH
 HAMILTON, ON
 CA L8L 5X1
 Contact: Jaason
 jaason@wentworthrecycling.com

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.

T:
F: