



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR LH40 ML13
Component
Hydraulic System
Fluid
AW HYDRAULIC OIL ISO 68 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. 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		LH0244805	LHMC122823	LHMC103201
Sample Date		Client Info		23 Apr 2024	04 Aug 2023	11 May 2023
Machine Age	hrs	Client Info		13598	12102	11583
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		1500	0	0
Oil Changed		Client Info		Not Changed	N/A	Not Changed
Filter Changed		Client Info		Not Changed	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	9	8	7
Chromium	ppm	ASTM D5185m	>10	2	<1	<1
Nickel	ppm	ASTM D5185m	>10	1	0	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		<1	0	0
Aluminum	ppm	ASTM D5185m	>10	2	0	0
Lead	ppm	ASTM D5185m	>10	2	<1	<1
Copper	ppm	ASTM D5185m	>75	4	3	3
Tin	ppm	ASTM D5185m	>10	1	0	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

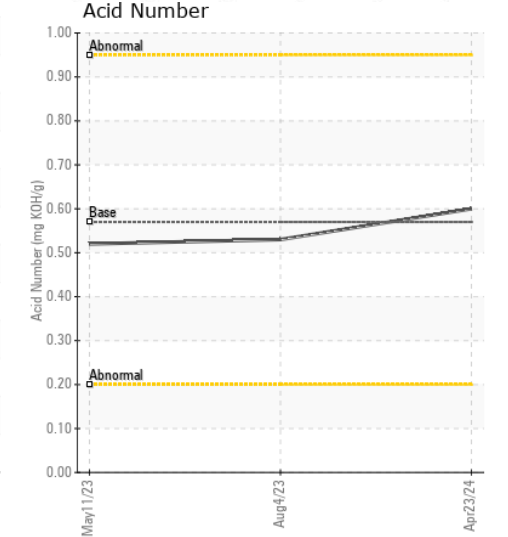
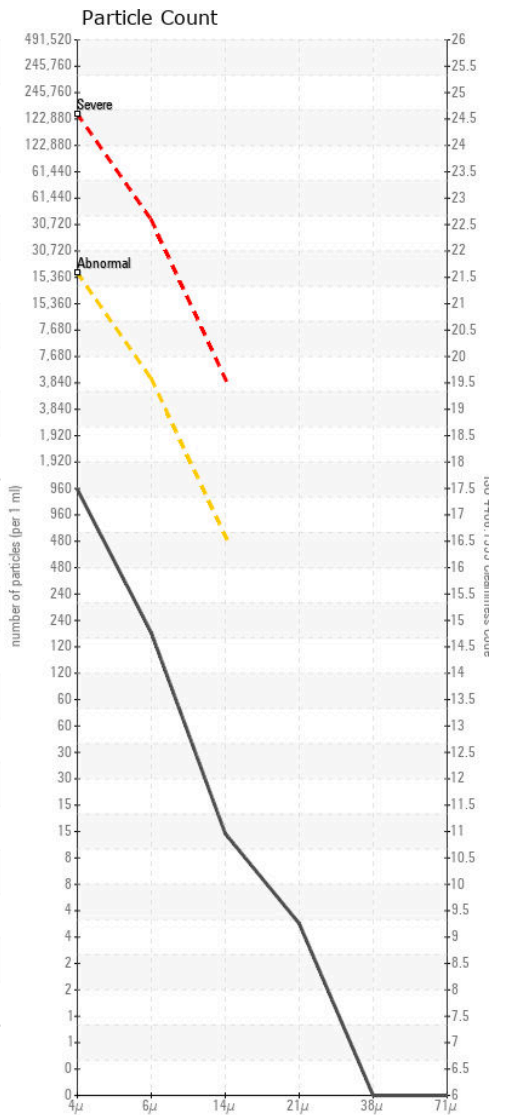
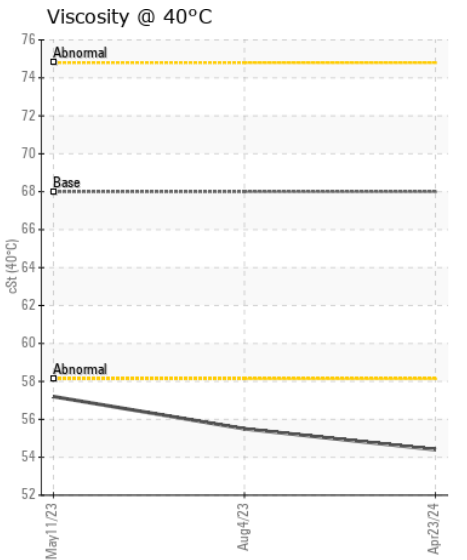
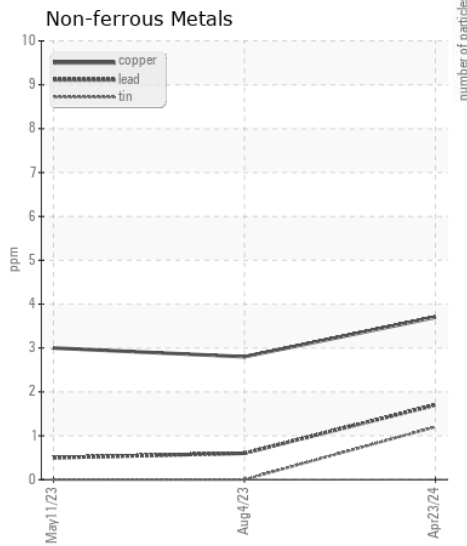
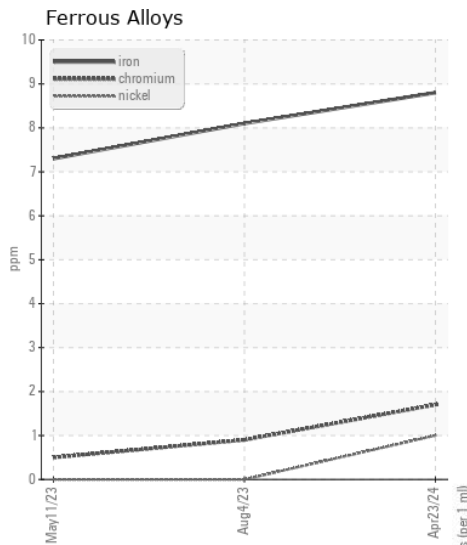
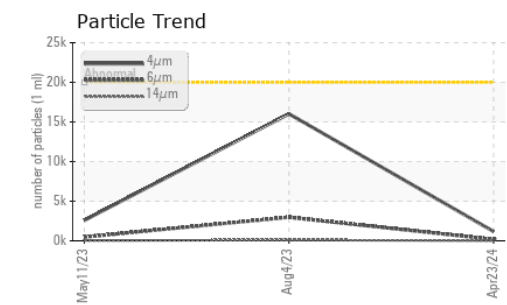
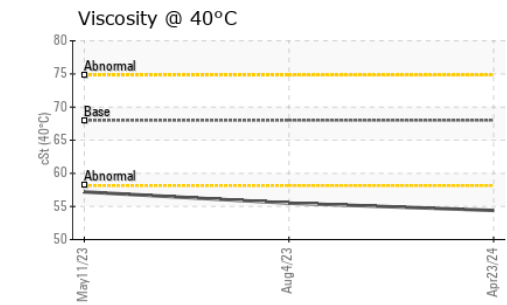
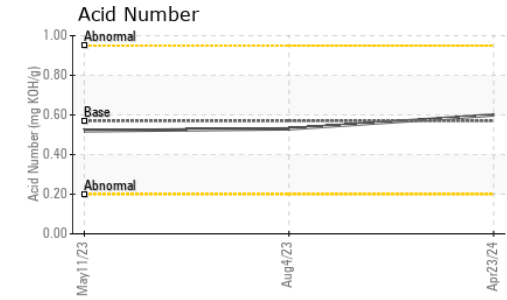
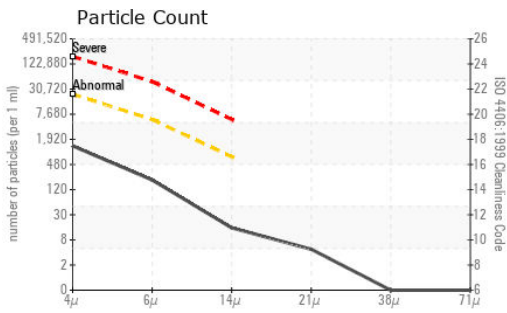
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185m	>20	2	1	<1
Potassium	ppm	ASTM D5185m	>20	2	<1	<1
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	1174	16022	2581
Particles >6µm		ASTM D7647	>5000	180	2974	474
Particles >14µm		ASTM D7647	>640	13	99	32
Particles >21µm		ASTM D7647	>160	4	27	10
Particles >38µm		ASTM D7647	>40	0	1	1
Particles >71µm		ASTM D7647	>10	0	0	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	17/15/11	21/19/14	19/16/12
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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<1	2	0
Boron	ppm	ASTM D5185m	5	0	0	0
Barium	ppm	ASTM D5185m	5	<1	0	0
Molybdenum	ppm	ASTM D5185m	5	1	<1	0
Manganese	ppm	ASTM D5185m		1	0	0
Magnesium	ppm	ASTM D5185m	25	3	<1	2
Calcium	ppm	ASTM D5185m	200	279	283	311
Phosphorus	ppm	ASTM D5185m	300	387	390	370
Zinc	ppm	ASTM D5185m	370	481	519	486
Sulfur	ppm	ASTM D5185m	2500	2043	2321	2164
Acid Number (AN)	mg KOH/g	ASTM D8045	0.57	0.60	0.53	0.52
Visc @ 40°C	cSt	ASTM D445	68	54.4	55.5	57.2



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0244805
Lab Number : 06159771
Unique Number : 10995194
Test Package : CONST

Received : 24 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 25 Apr 2024 - Wes Davis

OSCAR WINSKI CO. INC
 2407 N. 9TH STREET
 LAFAYETTE, IN
 US 47904

Contact: JAYSON FRAZIER
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F: x:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)