MOB

LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
LIEBHERR LH60C 106512-1528
Component
Left Final Drive
Fluid
LIEBHERR GEAR BASIC 90 LS (--- GAL)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

WEAR

Iron and chromium ppm levels are abnormal. Aluminum ppm levels are noted. Gear wear is indicated.

CONTAMINATION

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.

FLUID CONDITION

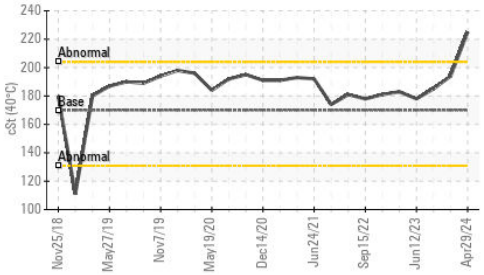
Viscosity of sample indicates oil is within SAE 80W140 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0288228	LH0278580	LH
Sample Date		Client Info		29 Apr 2024	05 Jan 2024	23 Aug 2023
Machine Age	hrs	Client Info		23144	21976	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		None	None	None
Sample Status				ABNORMAL	NORMAL	NORMAL
PQ		ASTM D8184*		418	---	---
Iron	ppm	ASTM D5185(m)	>500	▲ 544	2	30
Chromium	ppm	ASTM D5185(m)	>10	▲ 8	0	<1
Nickel	ppm	ASTM D5185(m)	>10	3	<1	<1
Titanium	ppm	ASTM D5185(m)		5	0	<1
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>25	● 64	<1	3
Lead	ppm	ASTM D5185(m)	>25	2	0	0
Copper	ppm	ASTM D5185(m)	>50	19	<1	2
Tin	ppm	ASTM D5185(m)	>10	<1	0	0
Vanadium	ppm	ASTM D5185(m)		<1	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>75	▲ 258	<1	12
Potassium	ppm	ASTM D5185(m)	>20	12	<1	<1
Water		WC Method	>0.2	NEG	NEG	NEG
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	HAZY
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185(m)		11	1	3
Boron	ppm	ASTM D5185(m)	0	3	<1	2
Barium	ppm	ASTM D5185(m)	0	2	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	28	0	1
Magnesium	ppm	ASTM D5185(m)	<1	136	<1	6
Calcium	ppm	ASTM D5185(m)	<1	405	2	35
Phosphorus	ppm	ASTM D5185(m)	2143	2251	2260	2327
Zinc	ppm	ASTM D5185(m)	<1	18	2	9
Sulfur	ppm	ASTM D5185(m)	23468	24201	24045	25833
Visc @ 40°C	cSt	ASTM D7279(m)	170	▲ 225	194	185

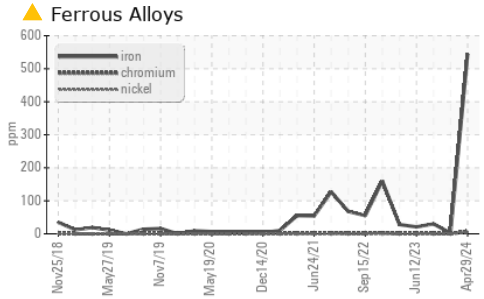
Report Id: MANSEL [WCAMIS] 02633286 (Generated: 05/05/2024 12:02:05) Rev: 1

Submitted By: Bastian Firmbach

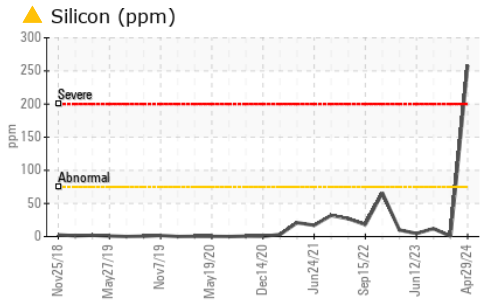
Viscosity @ 40°C



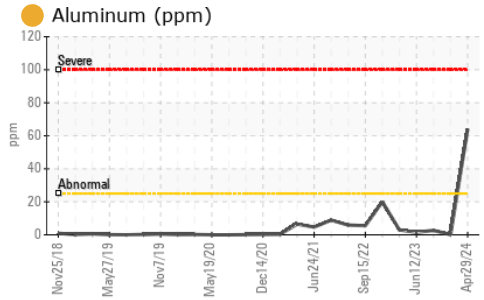
Ferrous Alloys



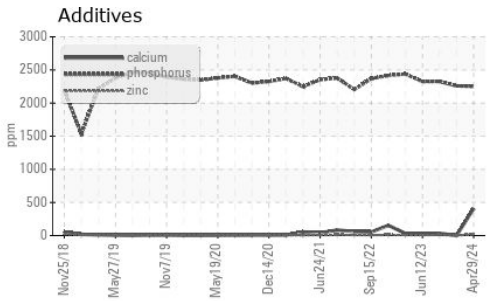
Silicon (ppm)



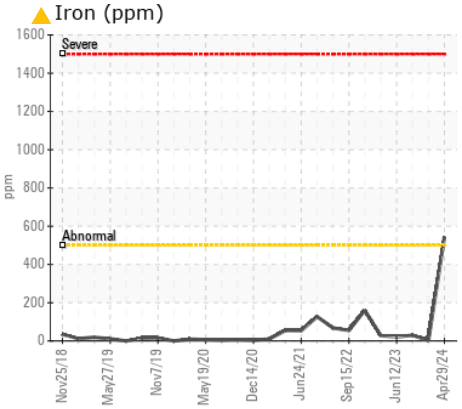
Aluminum (ppm)



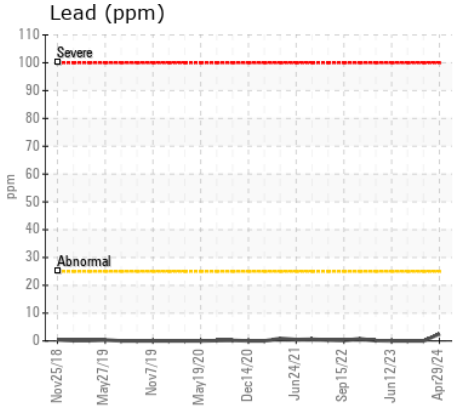
Additives



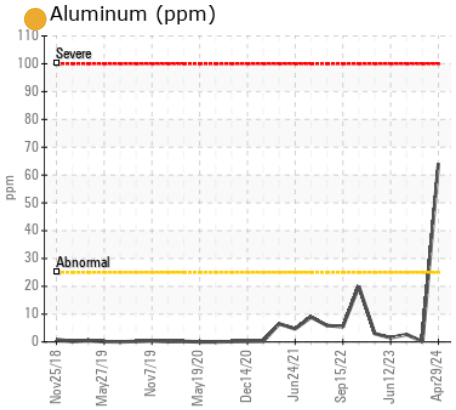
Iron (ppm)



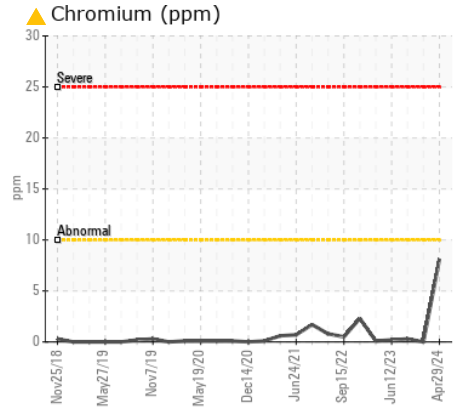
Lead (ppm)



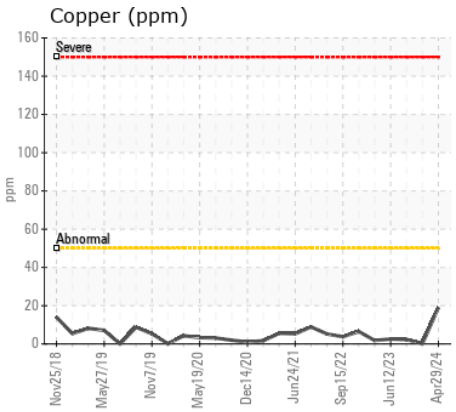
Aluminum (ppm)



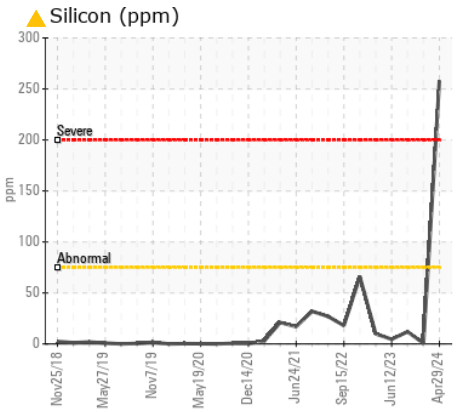
Chromium (ppm)



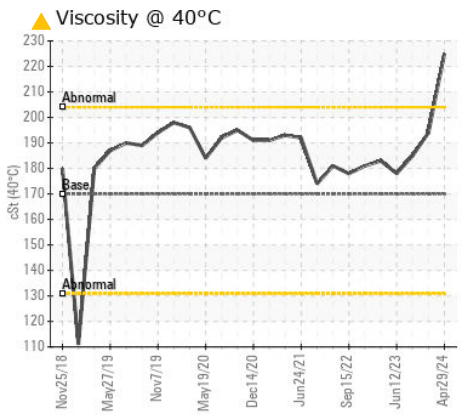
Copper (ppm)



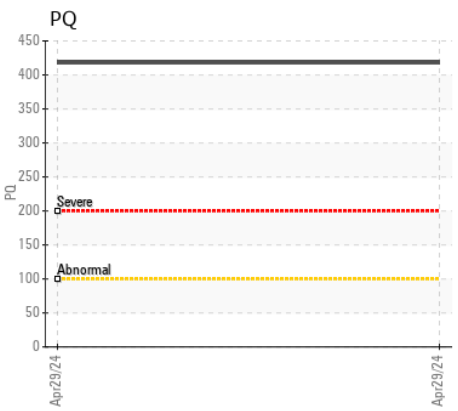
Silicon (ppm)



Viscosity @ 40°C



PQ



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0288228
Lab Number : 02633286
Unique Number : 5774439
Test Package : MOB 1 (Additional Tests: PQ)

Received : 03 May 2024
Tested : 03 May 2024
Diagnosed : 05 May 2024 - Kevin Marson

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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