



LIEBHERR

OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ATTENTION
ABNORMAL
NORMAL



Machine Id
LIEBHERR LH60C 1528-132602
Component
Left Final Drive
Fluid
TEXACO HAVOLINE GEAR OIL 80W90 (--- 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. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0210076	LH0210067	LH0210058
Sample Date		Client Info		22 Jan 2024	22 Sep 2023	04 Apr 2023
Machine Age	hrs	Client Info		5938	5266	4009
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	ABNORMAL	ABNORMAL

WEAR

Gear wear is indicated.

Iron	ppm	ASTM D5185m	>350	208	▲ 575	▲ 722
Chromium	ppm	ASTM D5185m	>5	1	6	6
Nickel	ppm	ASTM D5185m	>5	2	4	6
Titanium	ppm	ASTM D5185m		3	4	7
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>10	▲ 39	▲ 44	▲ 91
Lead	ppm	ASTM D5185m	>10	2	2	6
Copper	ppm	ASTM D5185m	>125	10	24	28
Tin	ppm	ASTM D5185m	>10	<1	1	1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	MODER
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

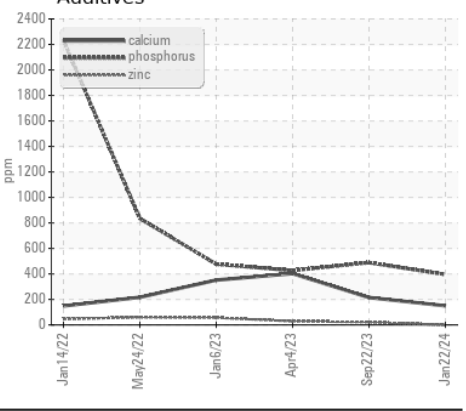
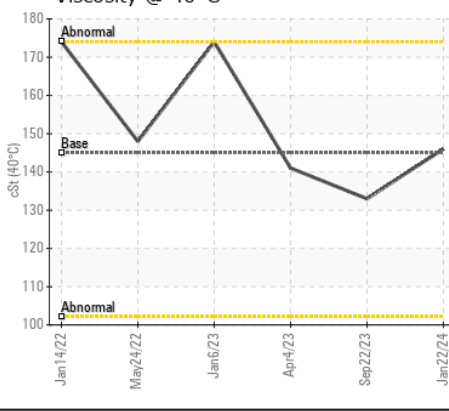
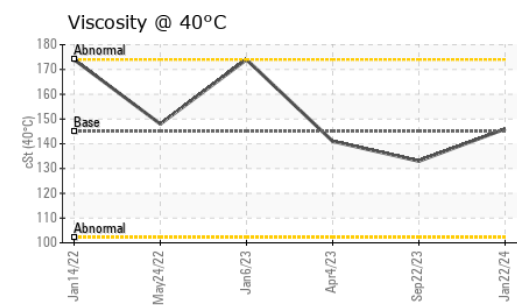
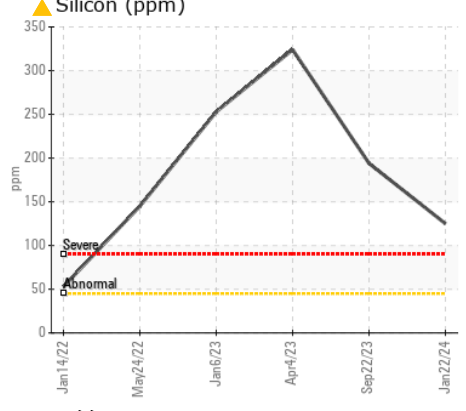
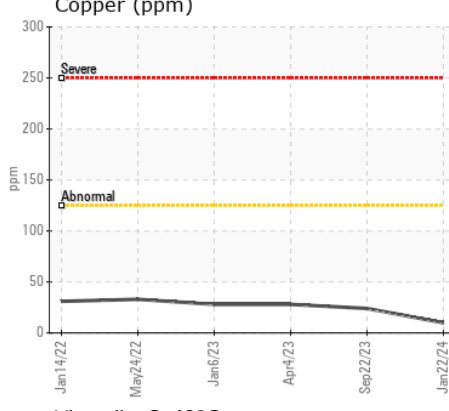
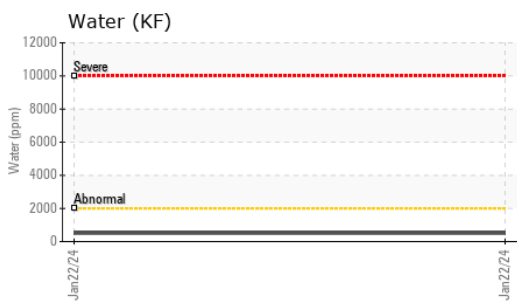
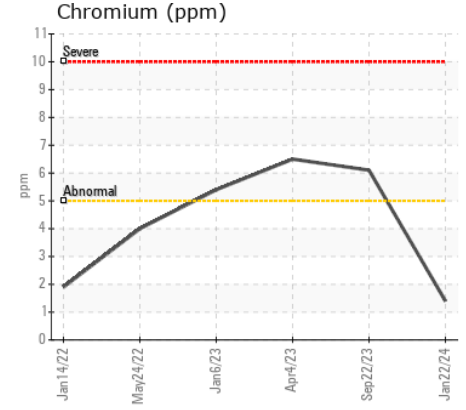
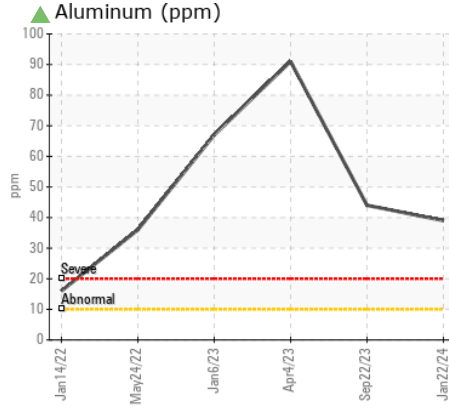
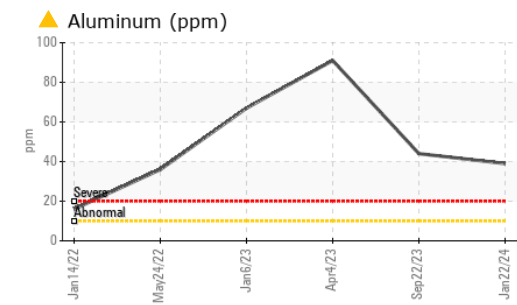
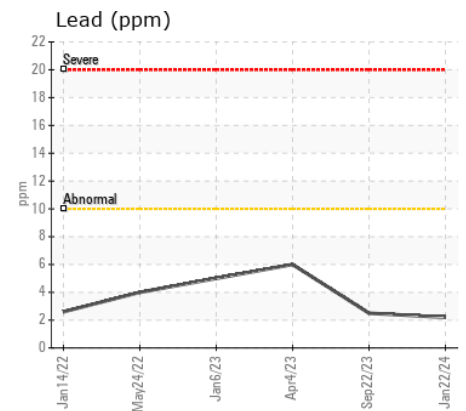
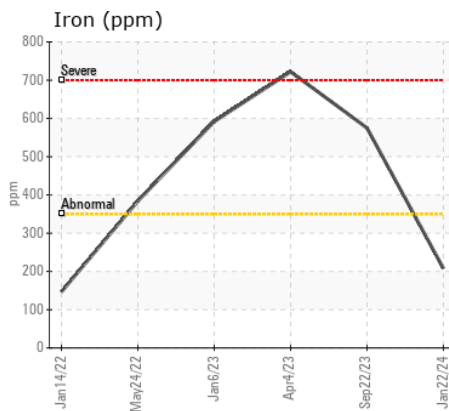
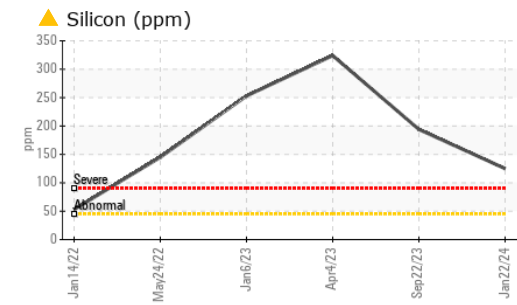
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The water content is negligible.

Silicon	ppm	ASTM D5185m	>45	▲ 125	▲ 194	▲ 324
Potassium	ppm	ASTM D5185m	>20	14	13	26
Water	%	ASTM D6304	>0.2	0.051	---	---
ppm Water	ppm	ASTM D6304	>2000	510	---	---
Silt	scalar	*Visual	NONE	MODER	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	>0.2	0.2%	NEG	NEG

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		0	3	5
Boron	ppm	ASTM D5185m		0	3	7
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		<1	<1	2
Manganese	ppm	ASTM D5185m		2	5	6
Magnesium	ppm	ASTM D5185m		17	26	46
Calcium	ppm	ASTM D5185m		150	215	403
Phosphorus	ppm	ASTM D5185m		396	489	427
Zinc	ppm	ASTM D5185m		0	22	29
Sulfur	ppm	ASTM D5185m		18947	19371	17399
Visc @ 40°C	cSt	ASTM D445	145	146	133	141



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LH0210076 **Received** : 30 Jan 2024
Lab Number : 06074206 **Diagnosed** : 31 Jan 2024
Unique Number : 10856297 **Diagnostician** : Sean Felton
Test Package : MOBCE (Additional Tests: KF)

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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)