



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL



Machine Id
LIEBHERR L550 017976
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- GAL)

RECOMMENDATION

We advise that you check for the source of water entry. We recommend that you drain the oil from the component if this has not already been done. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0277542	LHMC011023	---
Sample Date		Client Info		08 Jan 2024	29 Jul 2009	---
Machine Age	hrs	Client Info		5671	2370	---
Oil Age	hrs	Client Info		0	1115	---
Filter Age	hrs	Client Info		0	1115	---
Oil Changed		Client Info		Not Changd	Not Changd	---
Filter Changed		Client Info		N/A	Not Changd	---
Sample Status				ABNORMAL	ABNORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	6	20	---
Chromium	ppm	ASTM D5185(m)	>5	<1	2	---
Nickel	ppm	ASTM D5185(m)	>5	<1	<1	---
Titanium	ppm	ASTM D5185(m)		0	<1	---
Silver	ppm	ASTM D5185(m)	>3	<1	0	---
Aluminum	ppm	ASTM D5185(m)	>15	2	2	---
Lead	ppm	ASTM D5185(m)	>30	<1	2	---
Copper	ppm	ASTM D5185(m)	>125	5	▲ 200	---
Tin	ppm	ASTM D5185(m)	>5	<1	0	---
Vanadium	ppm	ASTM D5185(m)		0	0	---
White Metal	scalar	Visual*	NONE	VLITE	NONE	---
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	---

CONTAMINATION

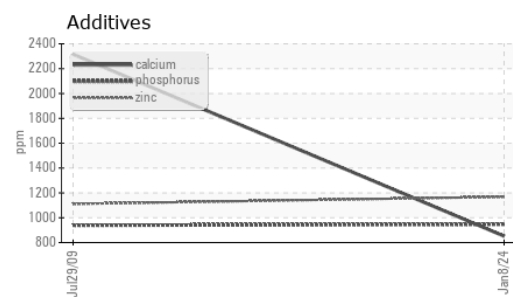
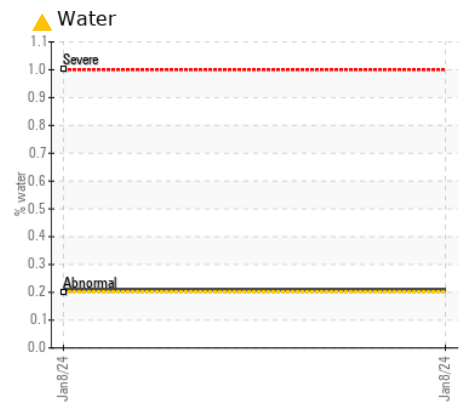
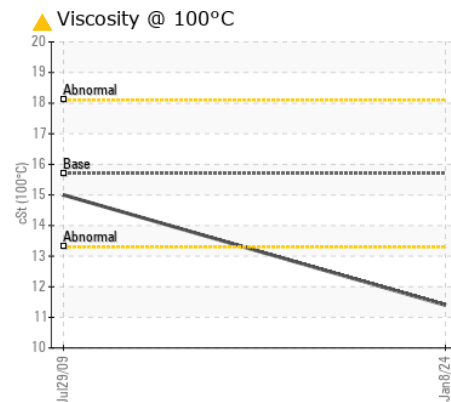
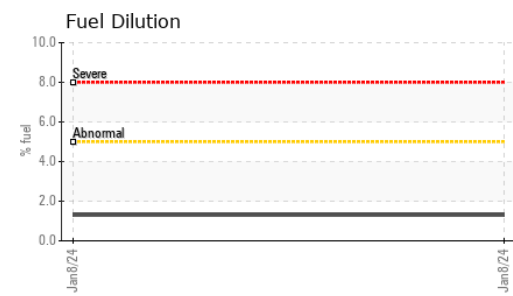
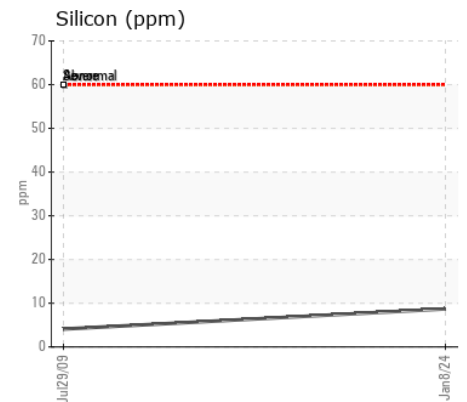
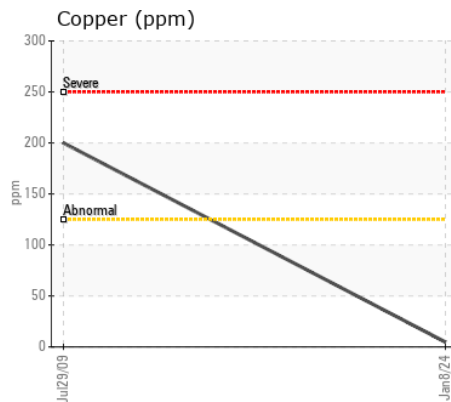
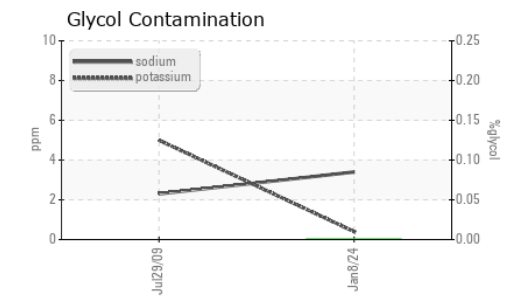
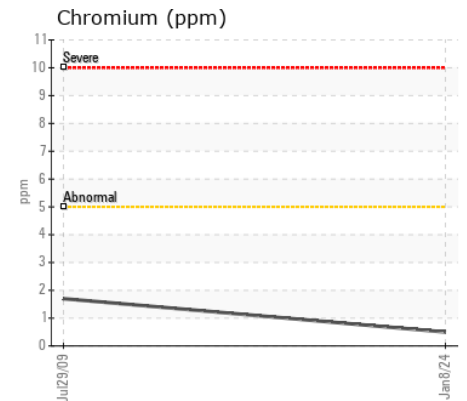
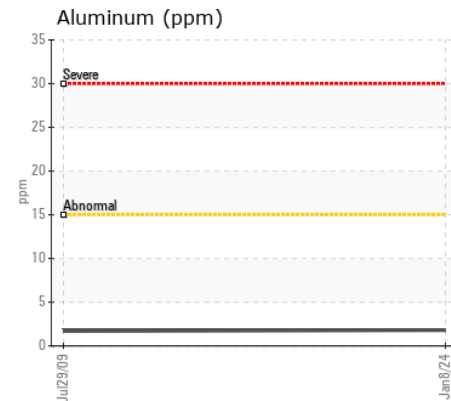
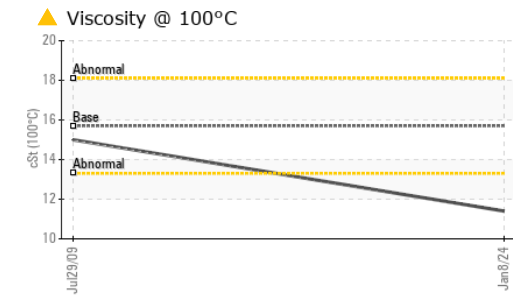
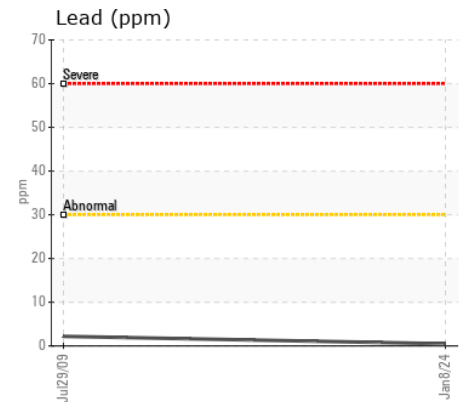
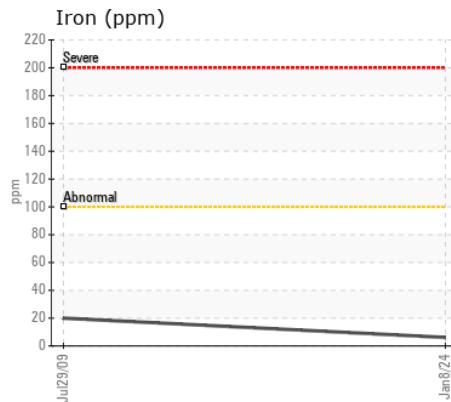
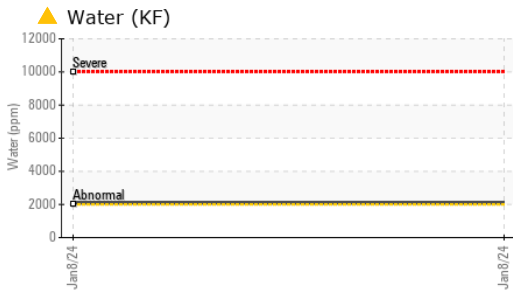
Light fuel dilution occurring. There is a light concentration of water present in the oil. Test for glycol is negative. No other contaminants were detected in the oil.

Silicon	ppm	ASTM D5185(m)	>60	9	4	---
Potassium	ppm	ASTM D5185(m)	>20	<1	5	---
Fuel	%	ASTM D7593*	>5	1.3	<1.0	---
Water	%	ASTM D6304*	>0.2	▲ 0.209	---	---
ppm Water	ppm	ASTM D6304*	>2000	▲ 2092	---	---
Glycol	%	ASTM D7922*		0.0	NEG	---
Soot %	%	ASTM D7844*	>3	0	0.9	---
Nitration	Abs/cm	ASTM D7624*	>20	10.9	8.	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	21.3	20.	---
Silt	scalar	Visual*	NONE	NONE	NONE	---
Debris	scalar	Visual*	NONE	VLITE	NONE	---
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	---
Appearance	scalar	Visual*	NORML	NORML	NORML	---
Odor	scalar	Visual*	NORML	NORML	NORML	---
Emulsified Water	scalar	Visual*	>0.2	▲ .2%	NEG	---

FLUID CONDITION

Viscosity of sample indicates oil is within SAE 30 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 due to the presence of contaminants.

Sodium	ppm	ASTM D5185(m)		3	2	---
Boron	ppm	ASTM D5185(m)	35	23	19	---
Barium	ppm	ASTM D5185(m)	0	0	1	---
Molybdenum	ppm	ASTM D5185(m)	0	60	0	---
Manganese	ppm	ASTM D5185(m)	0	0	<1	---
Magnesium	ppm	ASTM D5185(m)	10	1076	9	---
Calcium	ppm	ASTM D5185(m)	2340	852	2316	---
Phosphorus	ppm	ASTM D5185(m)	1110	947	939	---
Zinc	ppm	ASTM D5185(m)	1210	1168	1111	---
Sulfur	ppm	ASTM D5185(m)	3890	2822	4214	---
Oxidation	Abs/.1mm	ASTM D7414*	>25	19.8	14.	---
Visc @ 100°C	cSt	ASTM D7279(m)	15.7	▲ 11.4	15.00	---



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0277542 **Received** : 09 Jan 2024
Lab Number : 02607362 **Diagnosed** : 10 Jan 2024
Unique Number : 5708448 **Diagnostician** : Kevin Marson
Test Package : MOB 1 (Additional Tests: FuelDilution, Glycol, KF, PercentFuel, Visual)

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.

HEAVY MACHINES INC
 159 NORTH AVE
 SKOWHEGAN, ME
 US 04976
 Contact: LARRY FOLEY
 hmibangor@aol.com
 T: (888)875-3954
 F: (207)858-0051