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LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR LH60M 111784-1217
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 5W40 (9 GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

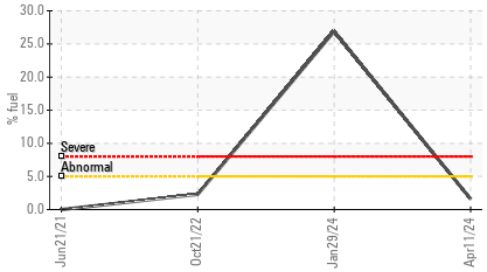
Light fuel dilution occurring. No other contaminants were detected in the oil.

FLUID CONDITION

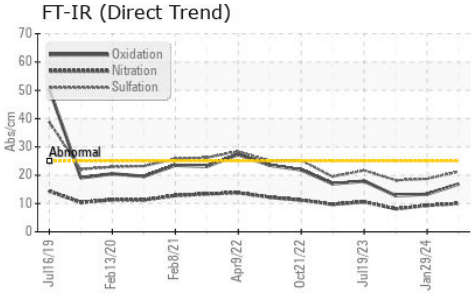
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LHMC165950	LH0268680	LH0267583
Sample Date		Client Info		11 Apr 2024	29 Jan 2024	28 Oct 2023
Machine Age	hrs	Client Info		10104	9721	9344
Oil Age	hrs	Client Info		0	1000	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	Changed	Changed
Filter Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	SEVERE	NORMAL
Iron	ppm	ASTM D5185m	>100	3	6	3
Chromium	ppm	ASTM D5185m	>5	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>15	<1	<1	2
Lead	ppm	ASTM D5185m	>30	<1	<1	<1
Copper	ppm	ASTM D5185m	>125	1	2	1
Tin	ppm	ASTM D5185m	>5	<1	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>60	7	7	10
Potassium	ppm	ASTM D5185m	>20	3	2	5
Fuel	%	ASTM D3524	>5	1.6	▲ 26.9	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	10.0	9.3	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.3	18.7	18.2
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	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m	>44	4	4	1
Boron	ppm	ASTM D5185m	250	60	28	100
Barium	ppm	ASTM D5185m	10	0	<1	9
Molybdenum	ppm	ASTM D5185m	100	7	8	2
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	450	674	467	657
Calcium	ppm	ASTM D5185m	3000	1237	885	1228
Phosphorus	ppm	ASTM D5185m	1150	722	▲ 466	710
Zinc	ppm	ASTM D5185m	1350	799	▲ 588	800
Sulfur	ppm	ASTM D5185m	4250	3310	2043	3419
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.9	13.3	12.8
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	5.6	5.1	8.1
Visc @ 100°C	cSt	ASTM D445	14.4	12.9	▲ 7.6	14.5

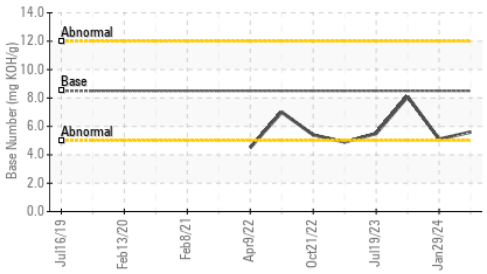
Fuel Dilution



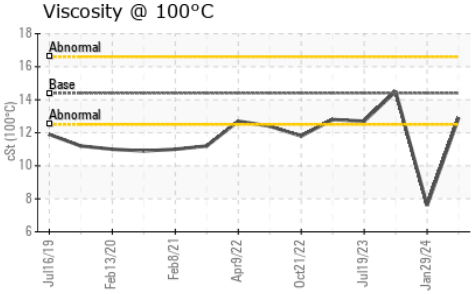
FT-IR (Direct Trend)



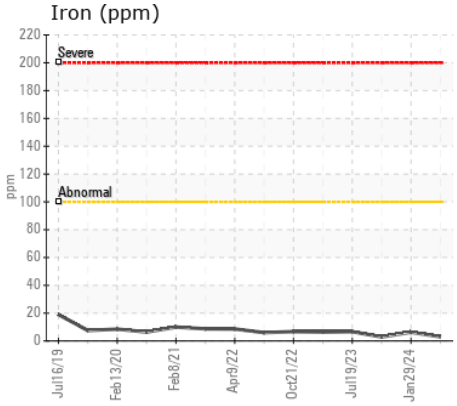
Base Number



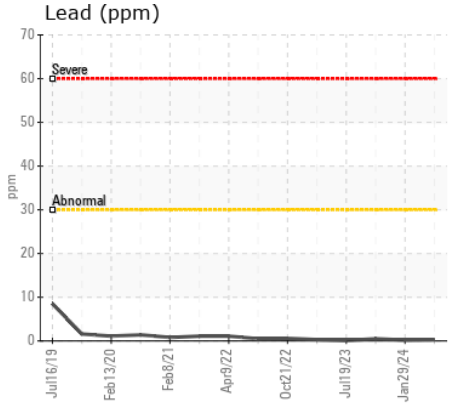
Viscosity @ 100°C



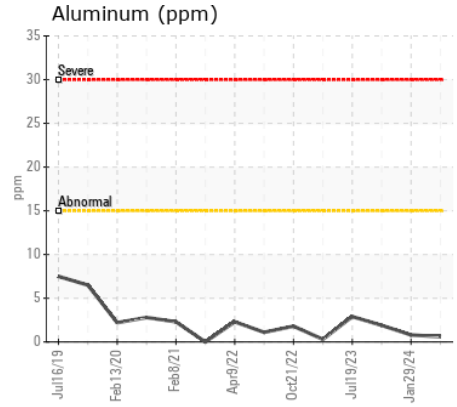
Iron (ppm)



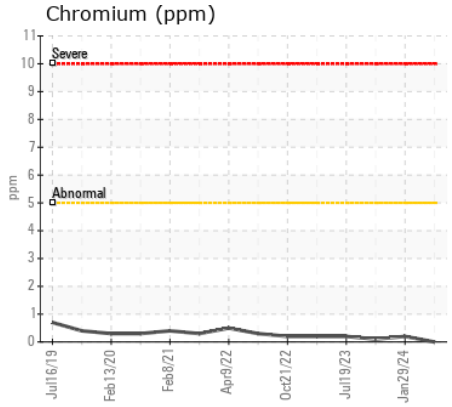
Lead (ppm)



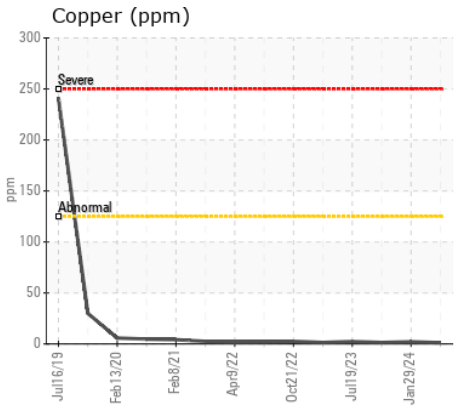
Aluminum (ppm)



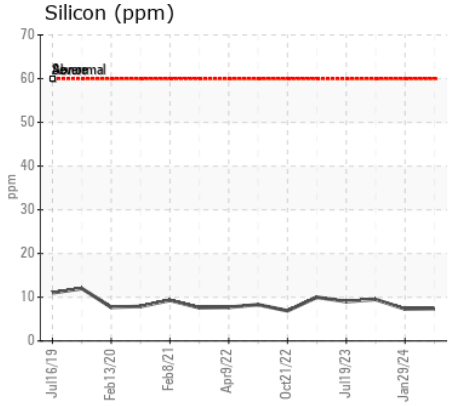
Chromium (ppm)



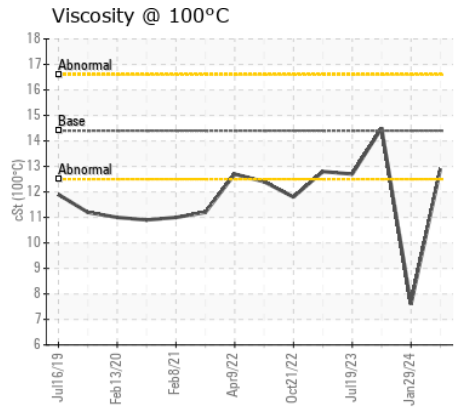
Copper (ppm)



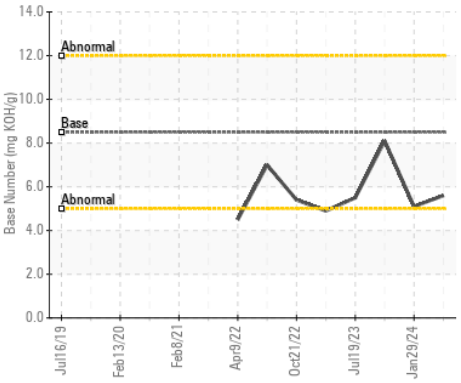
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LHMC165950
Lab Number : 06153587
Unique Number : 10983665
Test Package : MOB 1 (Additional Tests: PercentFuel, TBN)

Received : 18 Apr 2024
Tested : 23 Apr 2024
Diagnosed : 23 Apr 2024 - Wes Davis

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)

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