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LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Machine Id
LIEBHERR LH50M 138820-1216
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 40 (--- 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

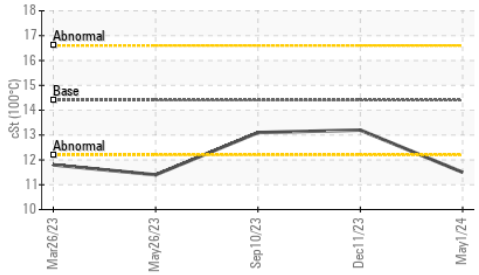
Fuel content negligible. There is no indication of any contamination in the oil.

FLUID CONDITION

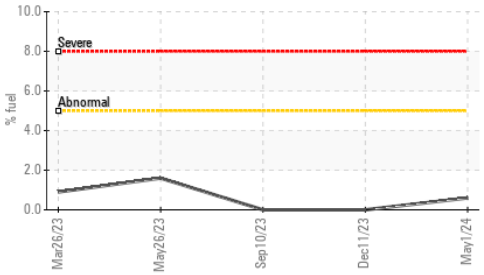
Viscosity of sample indicates oil is within SAE 30 range, advise investigate. The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		**LH**	LH0279438	LH
Sample Date		Client Info		**01 May 2024**	11 Dec 2023	10 Sep 2023
Machine Age	hrs	Client Info		**1000**	2140	950
Oil Age	hrs	Client Info		**0**	0	0
Filter Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	N/A	N/A
Filter Changed		Client Info		**Changed**	N/A	N/A
Sample Status				**ABNORMAL**	NORMAL	NORMAL
Iron	ppm	ASTM D5185(m)	>66	**6**	3	4
Chromium	ppm	ASTM D5185(m)	>4	**<1**	0	<1
Nickel	ppm	ASTM D5185(m)	>4	**0**	<1	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)	>3	**0**	<1	0
Aluminum	ppm	ASTM D5185(m)	>8	**1**	1	2
Lead	ppm	ASTM D5185(m)	>10	**0**	1	2
Copper	ppm	ASTM D5185(m)	>74	**4**	6	28
Tin	ppm	ASTM D5185(m)	>4	**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Silicon	ppm	ASTM D5185(m)	>15	**7**	6	8
Potassium	ppm	ASTM D5185(m)	>20	**<1**	0	2
Fuel	%	ASTM D7593*	>5	**0.6**	<1.0	<1.0
Water		WC Method	>0.2	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG
Soot %	%	ASTM D7844*	>3	**0**	0	0
Nitration	Abs/cm	ASTM D7624*	>20	**10.3**	8.3	8.3
Sulfation	Abs/.1mm	ASTM D7415*	>30	**22.9**	18.6	19.5
Emulsified Water	scalar	Visual*	>0.2	**NEG**	NEG	NEG
Sodium	ppm	ASTM D5185(m)	>216	**4**	2	2
Boron	ppm	ASTM D5185(m)	250	**21**	2	3
Barium	ppm	ASTM D5185(m)	10	**<1**	<1	<1
Molybdenum	ppm	ASTM D5185(m)	100	**61**	60	57
Manganese	ppm	ASTM D5185(m)		**0**	0	<1
Magnesium	ppm	ASTM D5185(m)	450	**1133**	989	971
Calcium	ppm	ASTM D5185(m)	3000	**878**	1099	1109
Phosphorus	ppm	ASTM D5185(m)	1150	**1024**	998	1068
Zinc	ppm	ASTM D5185(m)	1350	**1238**	1207	1222
Sulfur	ppm	ASTM D5185(m)	4250	**2615**	2523	2411
Oxidation	Abs/.1mm	ASTM D7414*	>25	**23.7**	16.2	16.7
Visc @ 100°C	cSt	ASTM D7279(m)	14.4	▲ **11.5**	13.2	13.1

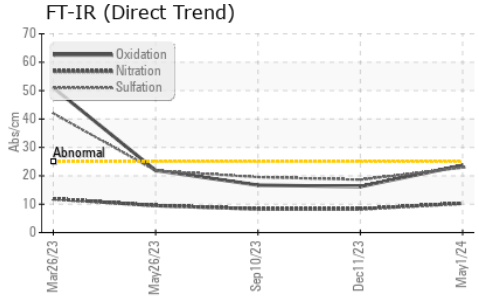
Viscosity @ 100°C



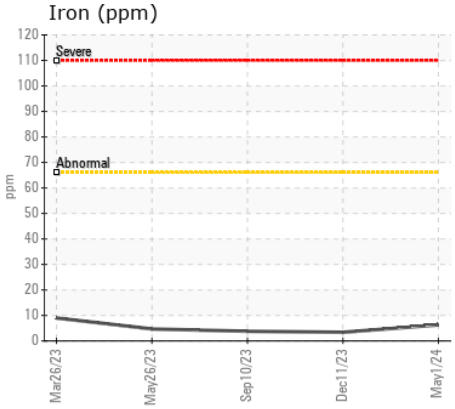
Fuel Dilution



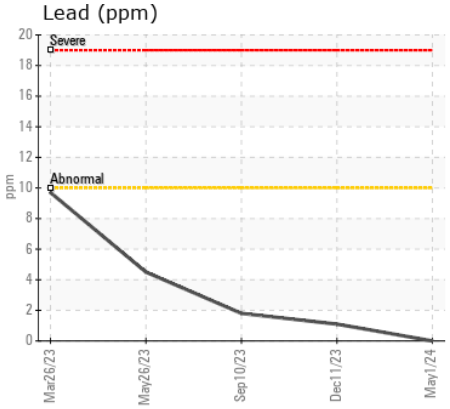
FT-IR (Direct Trend)



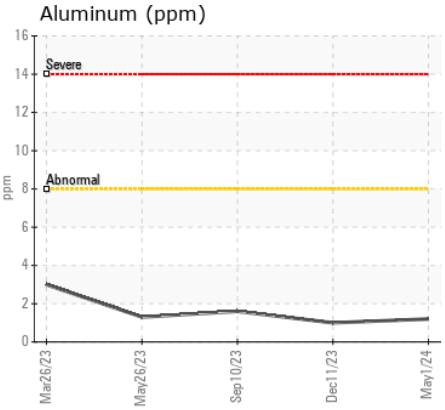
Iron (ppm)



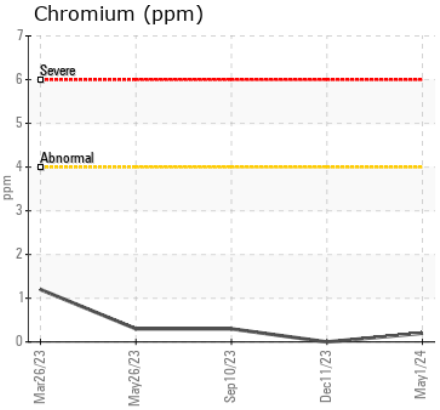
Lead (ppm)



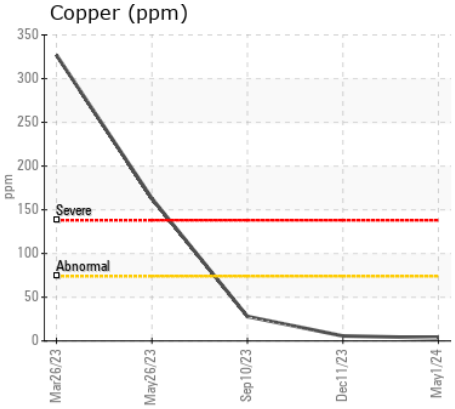
Aluminum (ppm)



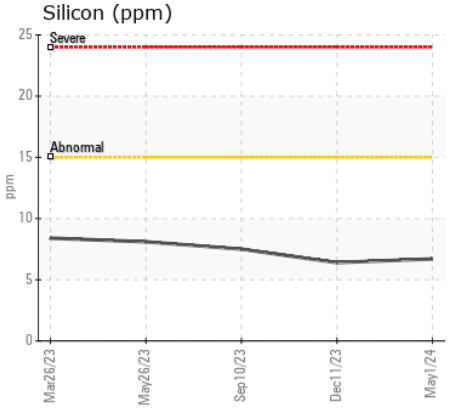
Chromium (ppm)



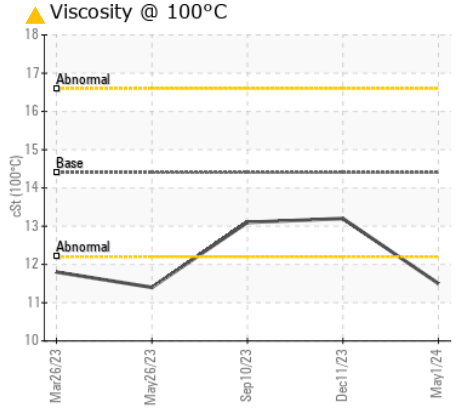
Copper (ppm)



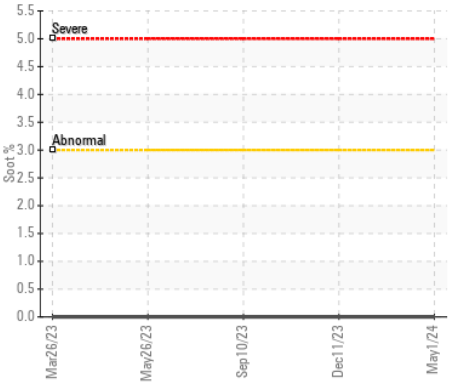
Silicon (ppm)



Viscosity @ 100°C



Soot %



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH
Lab Number : 02632715
Unique Number : 5773868
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel)

Received : 02 May 2024
Tested : 03 May 2024
Diagnosed : 03 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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