MOB I LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Machine Id
LIEBHERR LRB18 111114
Component
Diesel Engine
Fluid
DIESEL ENGINE OIL SAE 5W40 (--- GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

Metal levels are typical for a new component breaking in.

CONTAMINATION

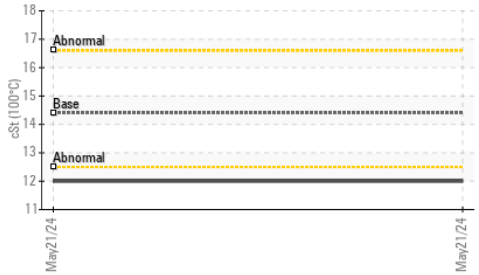
There is no indication of any contamination in the oil.

FLUID CONDITION

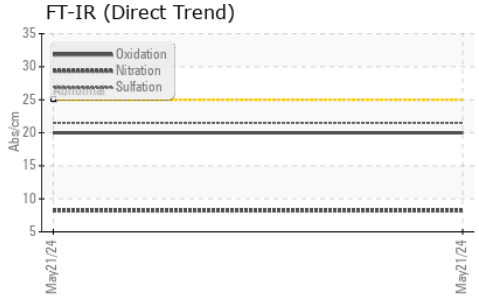
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LHMC77768	---	---
Sample Date		Client Info		21 May 2024	---	---
Machine Age	hrs	Client Info		487	---	---
Oil Age	hrs	Client Info		487	---	---
Filter Age	hrs	Client Info		487	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		Changed	---	---
Sample Status				ABNORMAL	---	---
Iron	ppm	ASTM D5185m	>100	19	---	---
Chromium	ppm	ASTM D5185m	>5	1	---	---
Nickel	ppm	ASTM D5185m	>5	<1	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m	>3	<1	---	---
Aluminum	ppm	ASTM D5185m	>15	12	---	---
Lead	ppm	ASTM D5185m	>30	2	---	---
Copper	ppm	ASTM D5185m	>125	185	---	---
Tin	ppm	ASTM D5185m	>5	3	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Silicon	ppm	ASTM D5185m	>60	13	---	---
Potassium	ppm	ASTM D5185m	>20	50	---	---
Fuel	%	ASTM D3524	>5	<1.0	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol	%	*ASTM D2982		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.2	---	---
Nitration	Abs/cm	*ASTM D7624	>20	8.2	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.5	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---
Sodium	ppm	ASTM D5185m	>44	2	---	---
Boron	ppm	ASTM D5185m	250	147	---	---
Barium	ppm	ASTM D5185m	10	26	---	---
Molybdenum	ppm	ASTM D5185m	100	57	---	---
Manganese	ppm	ASTM D5185m		4	---	---
Magnesium	ppm	ASTM D5185m	450	1091	---	---
Calcium	ppm	ASTM D5185m	3000	1880	---	---
Phosphorus	ppm	ASTM D5185m	1150	983	---	---
Zinc	ppm	ASTM D5185m	1350	1110	---	---
Sulfur	ppm	ASTM D5185m	4250	3036	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	20.0	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	7.8	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 12.0	---	---

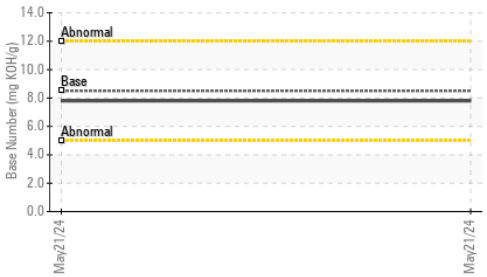
Viscosity @ 100°C



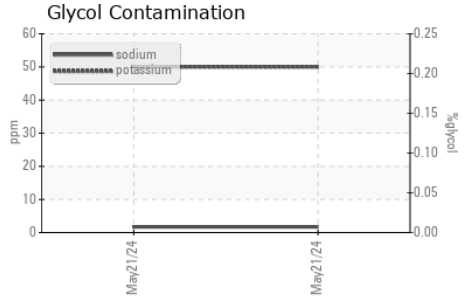
FT-IR (Direct Trend)



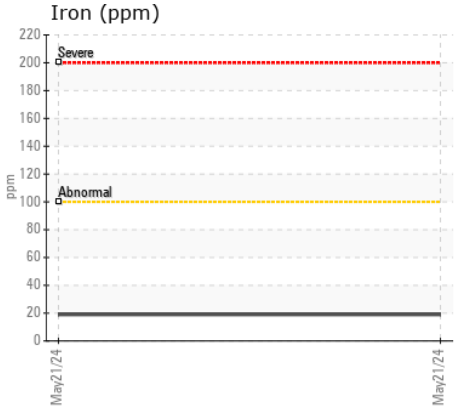
Base Number



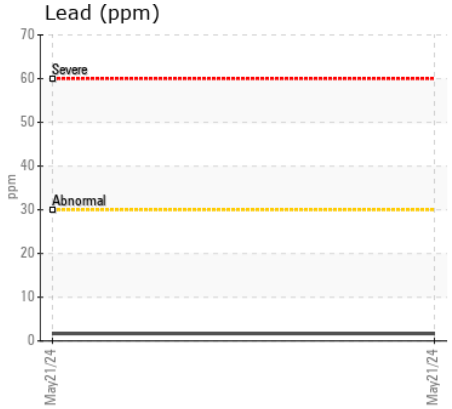
Glycol Contamination



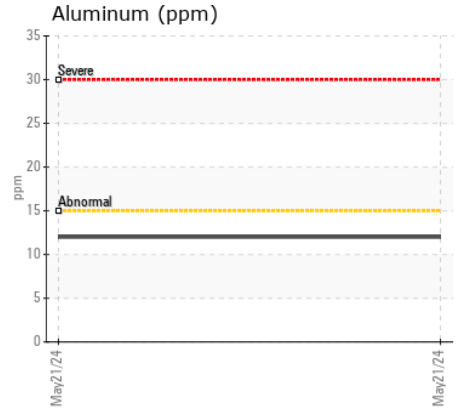
Iron (ppm)



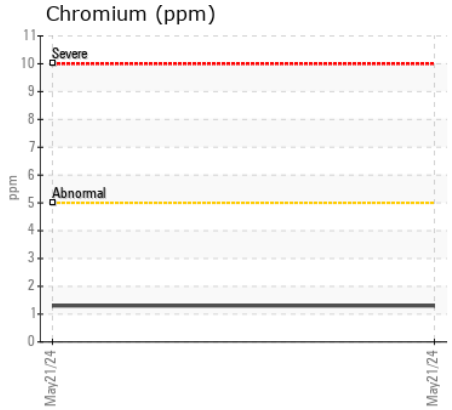
Lead (ppm)



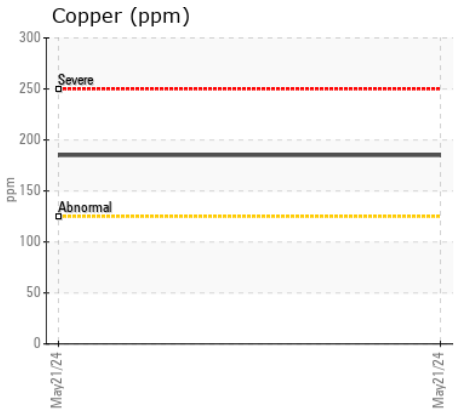
Aluminum (ppm)



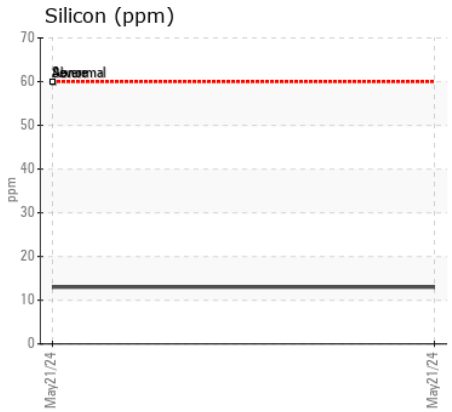
Chromium (ppm)



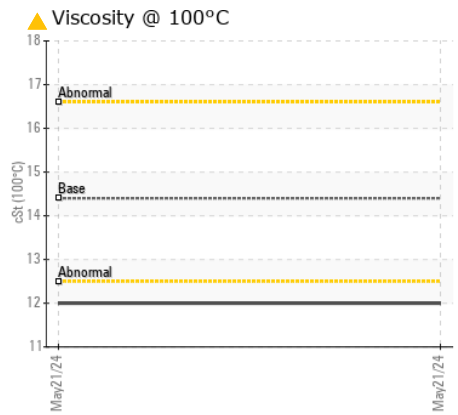
Copper (ppm)



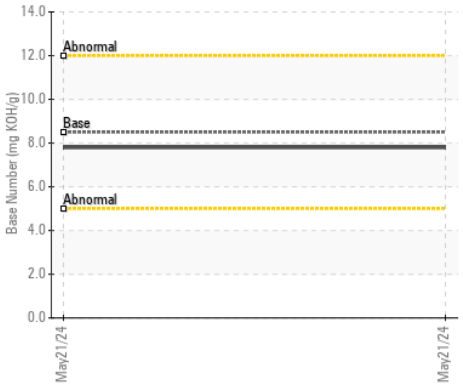
Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LHMC77768
Lab Number : 06194969
Unique Number : 11057092
Test Package : MOB 1 (Additional Tests: FuelDilution, Glycol, TBN)

Received : 30 May 2024
Tested : 04 Jun 2024
Diagnosed : 04 Jun 2024 - Jonathan Hester

Certificate L2367

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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