



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Machine Id  
**LIEBHERR LH60M 114835-1217**  
Component  
**Diesel Engine**  
Fluid  
**LIEBHERR MOTOROIL 5W30 (8 GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0268847</b>	LH0229409	LH0207434
Sample Date		Client Info		<b>05 Feb 2024</b>	20 Feb 2023	06 Dec 2021
Machine Age	hrs	Client Info		<b>8546</b>	6572	3985
Oil Age	hrs	Client Info		<b>0</b>	500	874
Filter Age	hrs	Client Info		<b>0</b>	0	874
Oil Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Filter Changed		Client Info		<b>Not Chngd</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>21</b>	9	5
Chromium	ppm	ASTM D5185m	>5	<b>1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>15	<b>12</b>	3	2
Lead	ppm	ASTM D5185m	>30	<b>2</b>	<1	1
Copper	ppm	ASTM D5185m	>125	<b>4</b>	1	<1
Tin	ppm	ASTM D5185m	>5	<b>1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

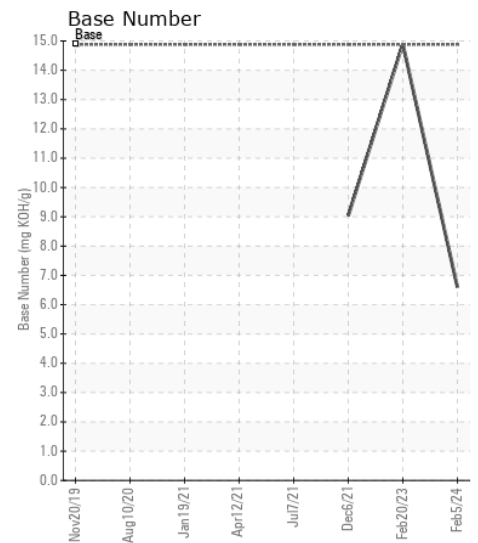
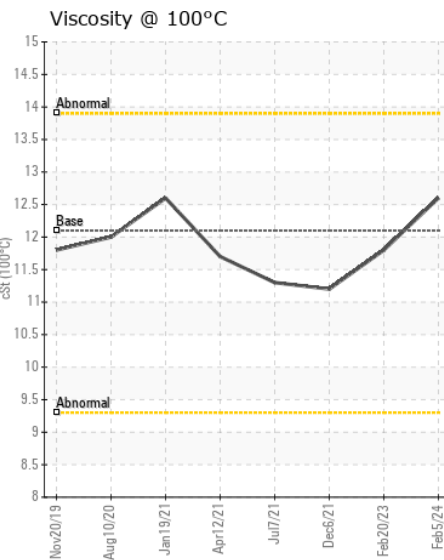
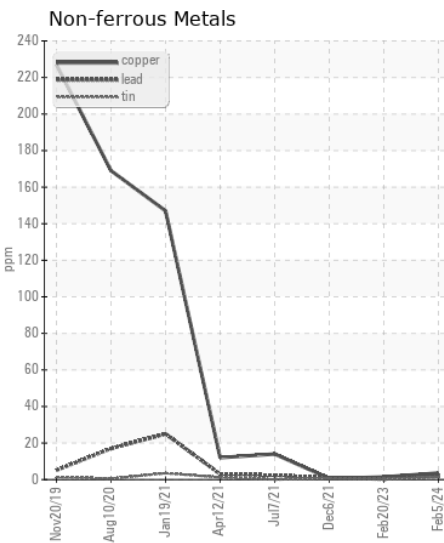
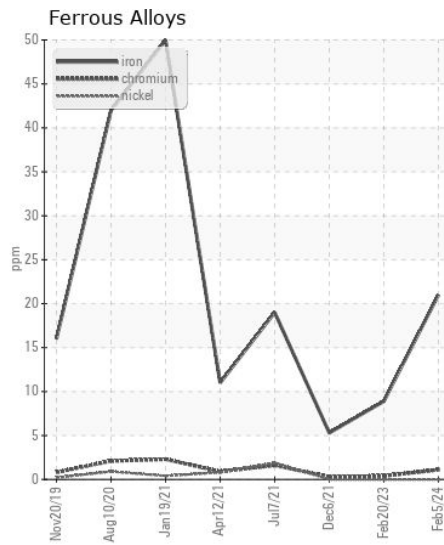
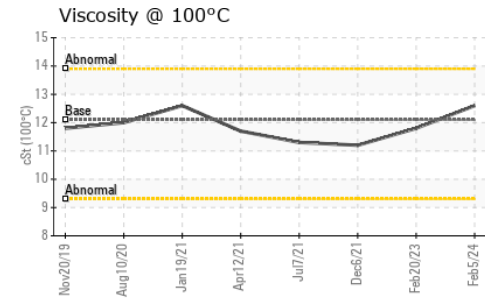
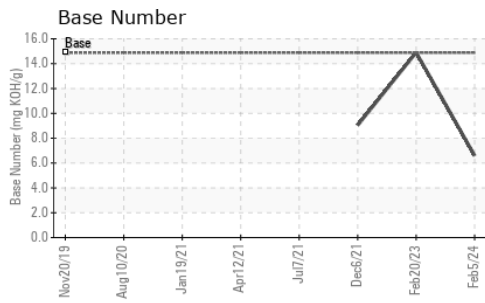
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	<b>7</b>	8	7
Potassium	ppm	ASTM D5185m	>20	<b>16</b>	<1	0
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.2</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>21.1</b>	13.8	10.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>27.5</b>	16.4	14.9
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		<b>3</b>	3	2
Boron	ppm	ASTM D5185m	236	<b>175</b>	244	253
Barium	ppm	ASTM D5185m	0	<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m	0	<b>27</b>	5	1
Manganese	ppm	ASTM D5185m	<1	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	25	<b>165</b>	48	24
Calcium	ppm	ASTM D5185m	4298	<b>3548</b>	4208	3951
Phosphorus	ppm	ASTM D5185m	1020	<b>1065</b>	979	935
Zinc	ppm	ASTM D5185m	1164	<b>1177</b>	1181	1083
Sulfur	ppm	ASTM D5185m	2460	<b>2420</b>	3250	2504
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>28.8</b>	12.2	9.6
Base Number (BN)	mg KOH/g	ASTM D2896	14.88	<b>6.6</b>	14.9	9.04
Visc @ 100°C	cSt	ASTM D445	12.1	<b>12.6</b>	11.8	11.2



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0268847  
**Lab Number** : 06105039  
**Unique Number** : 10903269  
**Test Package** : CONST ( Additional Tests: TBN )

**SIMS METAL MANAGEMENT**  
 3220 DEEPWATER TERMINAL RD  
 RICHMOND, VA  
 US 23234  
 Contact: Service Manager

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)

T: (703)392-0111

F: