



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR LH50 119411-1216**

Component  
**Diesel Engine**

Fluid  
**LIEBHERR MOTOROIL 5W30 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0268841</b>	LH0264634	LH0253949
Sample Date		Client Info		<b>28 Jan 2024</b>	18 Jul 2023	01 Mar 2023
Machine Age	hrs	Client Info		<b>5692</b>	4944	4520
Oil Age	hrs	Client Info		<b>5692</b>	1000	4520
Filter Age	hrs	Client Info		<b>5692</b>	1000	4520
Oil Changed		Client Info		<b>Changed</b>	Not Changd	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>66	<b>6</b>	4	4
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>1</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>8	<b>2</b>	2	2
Lead	ppm	ASTM D5185m	>10	<b>3</b>	<1	0
Copper	ppm	ASTM D5185m	>74	<b>4</b>	2	4
Tin	ppm	ASTM D5185m	>4	<b>&lt;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

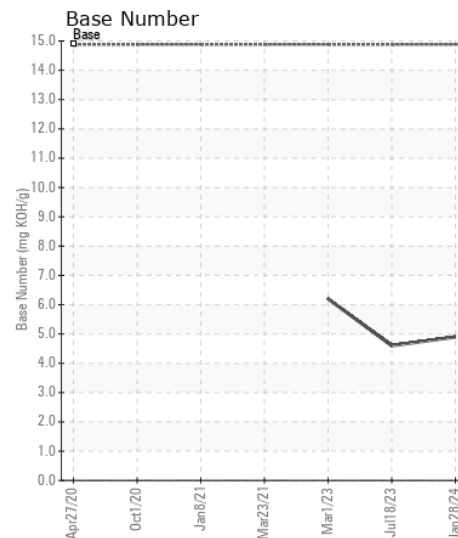
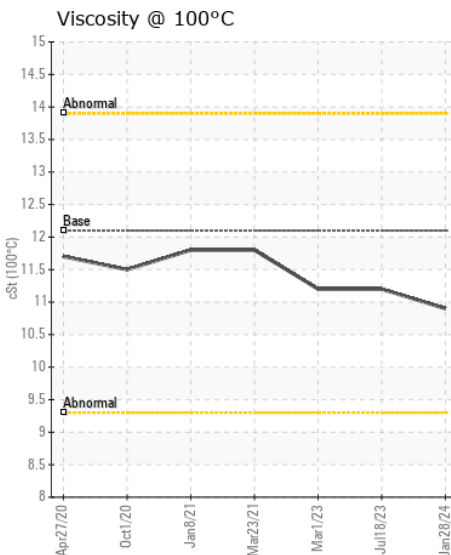
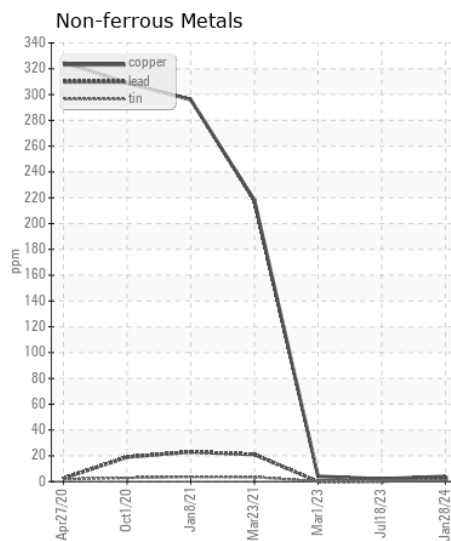
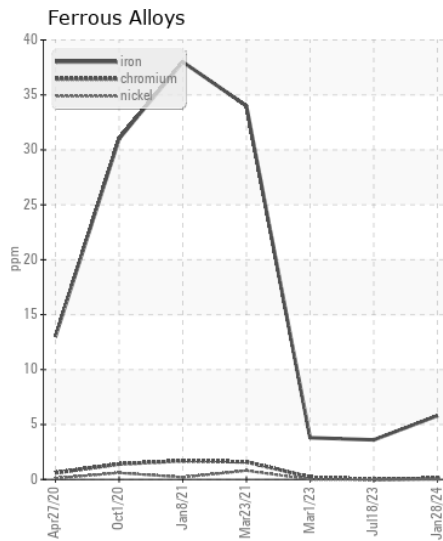
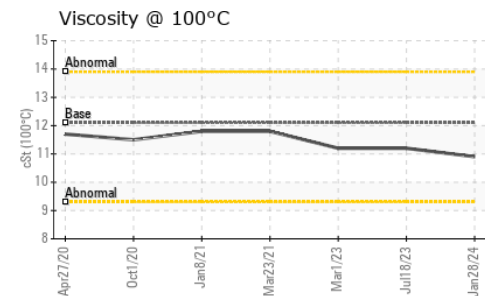
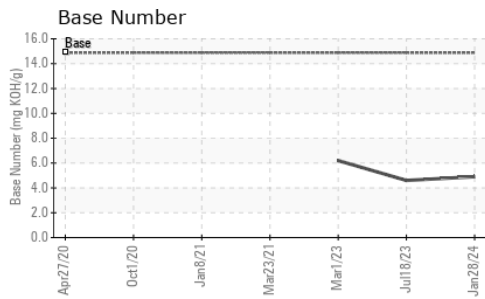
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>15	<b>9</b>	9	9
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	5	2
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>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>12.6</b>	9.2	9.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>24.3</b>	19.1	20.0
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>4</b>	2	1
Boron	ppm	ASTM D5185m	236	<b>39</b>	46	50
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	0	<b>4</b>	<1	<1
Manganese	ppm	ASTM D5185m	<1	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	25	<b>593</b>	688	645
Calcium	ppm	ASTM D5185m	4298	<b>1501</b>	1367	1301
Phosphorus	ppm	ASTM D5185m	1020	<b>725</b>	698	643
Zinc	ppm	ASTM D5185m	1164	<b>819</b>	814	742
Sulfur	ppm	ASTM D5185m	2460	<b>2650</b>	3026	3168
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>21.4</b>	14.2	14.7
Base Number (BN)	mg KOH/g	ASTM D2896	14.88	<b>4.9</b>	4.6	6.2
Visc @ 100°C	cSt	ASTM D445	12.1	<b>10.9</b>	11.2	11.2



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0268841 **Received** : 29 Feb 2024  
**Lab Number** : 06105037 **Tested** : 01 Mar 2024  
**Unique Number** : 10903267 **Diagnosed** : 04 Mar 2024 - Sean Felton  
**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: