



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR LH50 1216-116574**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 5W40 (--- GAL)**

### RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0272152</b>	LH0171171	LH0171113
Sample Date		Client Info		<b>20 Dec 2023</b>	29 Aug 2023	27 Apr 2023
Machine Age	hrs	Client Info		<b>19776</b>	17910	16726
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>N/A</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>66	<b>11</b>	8	13
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>85</b>	84	66
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>8	<b>2</b>	2	0
Lead	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<1
Copper	ppm	ASTM D5185m	>74	<b>3</b>	2	2
Tin	ppm	ASTM D5185m	>4	<b>2</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>2</b>	<1	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

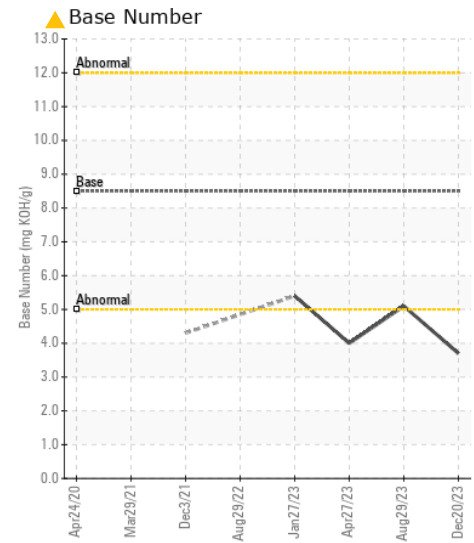
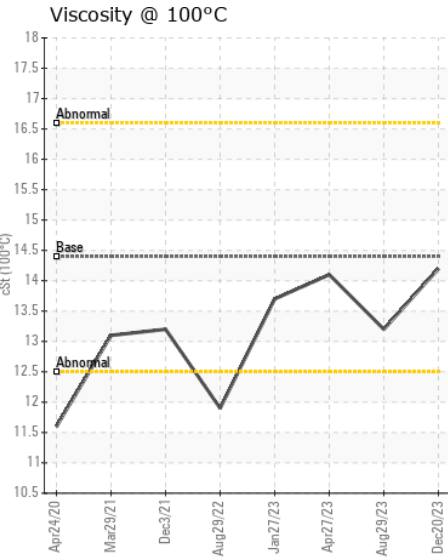
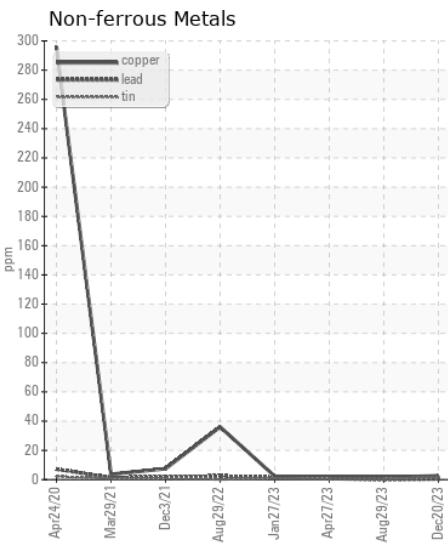
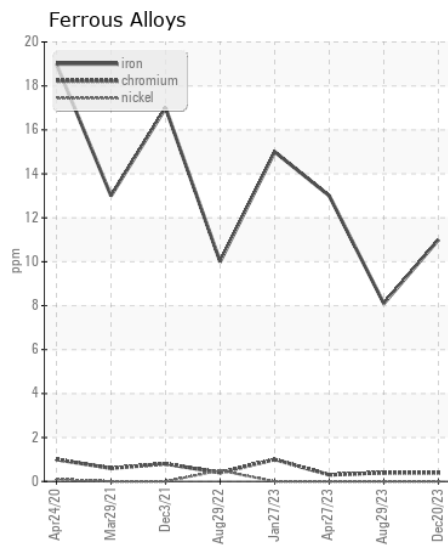
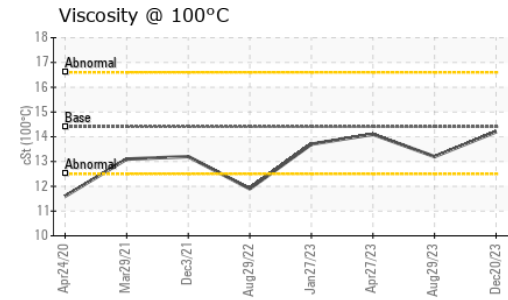
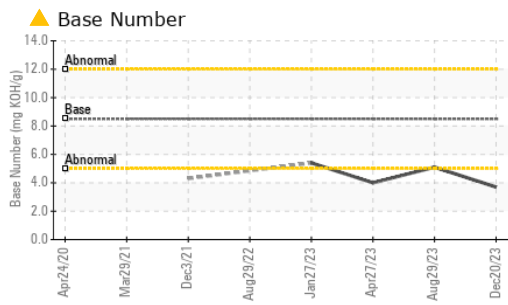
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>15	<b>11</b>	9	8
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	2	6
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>	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>14.2</b>	11.1	13.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>28.7</b>	25.1	25.0
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 level is low. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>44	<b>4</b>	3	1
Boron	ppm	ASTM D5185m	250	<b>37</b>	35	42
Barium	ppm	ASTM D5185m	10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	100	<b>5</b>	3	9
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	450	<b>759</b>	821	744
Calcium	ppm	ASTM D5185m	3000	<b>1285</b>	1408	1305
Phosphorus	ppm	ASTM D5185m	1150	<b>918</b>	995	899
Zinc	ppm	ASTM D5185m	1350	<b>1199</b>	1237	1117
Sulfur	ppm	ASTM D5185m	4250	<b>3153</b>	4000	2765
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>30.4</b>	22.6	28.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	<b>3.7</b>	5.1	4.0
Visc @ 100°C	cSt	ASTM D445	14.4	<b>14.2</b>	13.2	14.1



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0272152 **Received** : 16 Jan 2024  
**Lab Number** : 06061844 **Diagnosed** : 17 Jan 2024  
**Unique Number** : 10833226 **Diagnostician** : Don Baldrige  
**Test Package** : CONST ( Additional Tests: TBN )

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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