



# LIEBHERR

## OIL ANALYSIS REPORT



Machine Id  
**LIEBHERR LH50 1216-123739**  
Component  
**Diesel Engine**  
Fluid  
**MOBIL DELVAC 1 5W40 (--- GAL)**

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

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0211706</b>	LH0211682	LH0211664
Sample Date		Client Info		<b>10 Apr 2024</b>	31 Jan 2024	22 Sep 2023
Machine Age	hrs	Client Info		<b>11545</b>	10743	9153
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>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	ABNORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>66	<b>3</b>	19	1
Chromium	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>8	<b>2</b>	2	2
Lead	ppm	ASTM D5185m	>10	<b>1</b>	<1	1
Copper	ppm	ASTM D5185m	>74	<b>2</b>	1	1
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

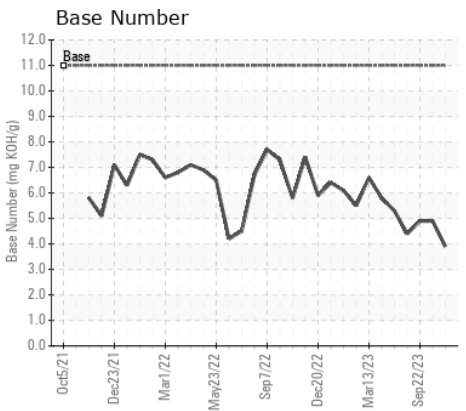
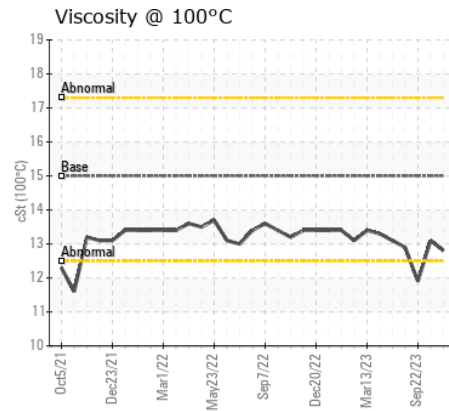
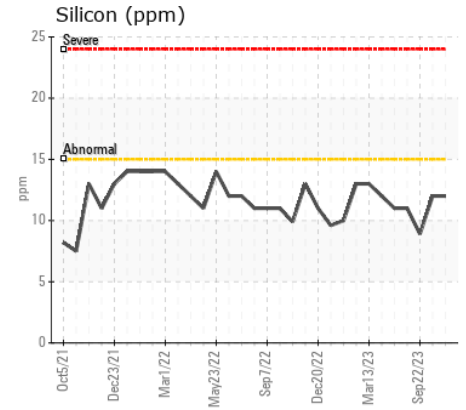
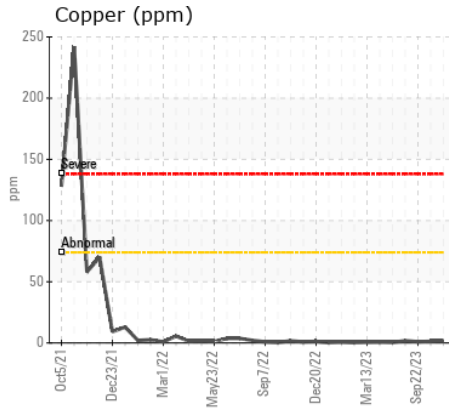
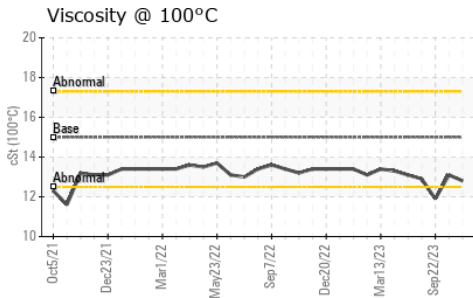
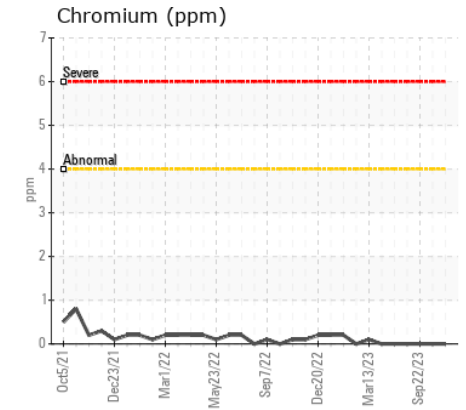
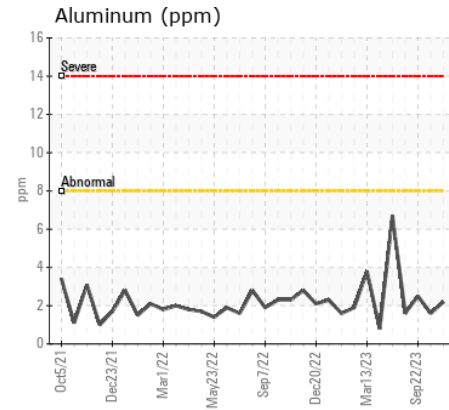
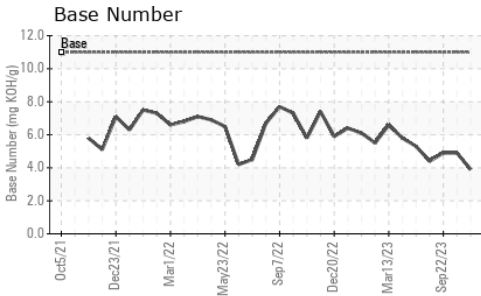
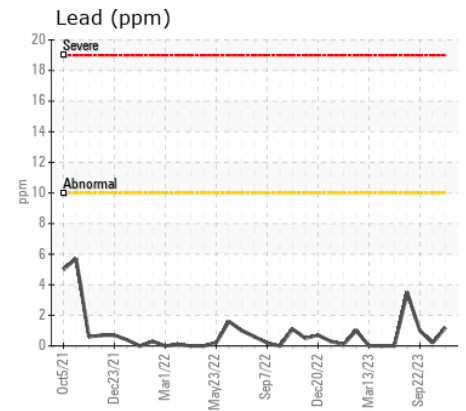
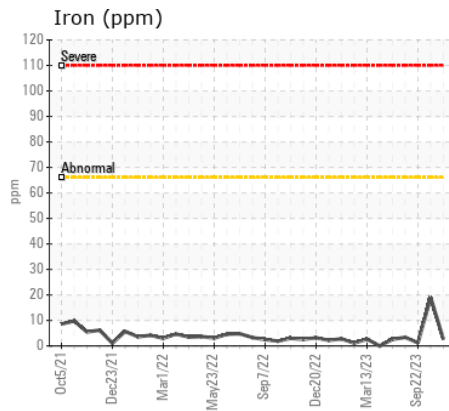
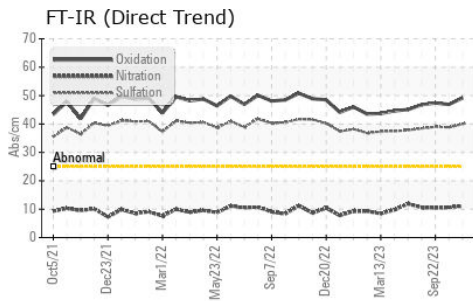
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>15	<b>12</b>	12	9
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	0	2
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	▲ 2.1
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>11.1</b>	10.6	10.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>40.0</b>	38.8	▲ 39.0
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 suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	<1	1
Boron	ppm	ASTM D5185m	291	<b>87</b>	77	46
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	8.0	<b>44</b>	45	42
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m	624	<b>871</b>	904	794
Calcium	ppm	ASTM D5185m	2158	<b>1014</b>	1002	925
Phosphorus	ppm	ASTM D5185m	1132	<b>1053</b>	1054	925
Zinc	ppm	ASTM D5185m	1300	<b>1224</b>	1270	1145
Sulfur	ppm	ASTM D5185m	3616	<b>3399</b>	3138	2707
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>49.2</b>	46.9	▲ 47.4
Base Number (BN)	mg KOH/g	ASTM D2896	11.0	<b>3.9</b>	4.9	4.9
Visc @ 100°C	cSt	ASTM D445	15.0	<b>12.8</b>	13.1	▲ 11.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0211706  
**Lab Number** : 06153687  
**Unique Number** : 10983765  
**Test Package** : MOBCE ( Additional Tests: TBN )

**AHLSTROM-MUNKSJO NA SPECIALTY**  
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 US 54130  
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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)