



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR LH30M 121854-1253**  
Component  
**Diesel Engine**  
Fluid  
**CHEVRON DELO LE 5W40 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0267094</b>	LH0258820	LH0272748
Sample Date		Client Info		<b>17 May 2024</b>	15 Mar 2024	02 Jan 2024
Machine Age	hrs	Client Info		<b>8113</b>	7579	6976
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	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>66	<b>4</b>	4	4
Chromium	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>87</b>	87	85
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>8	<b>1</b>	2	2
Lead	ppm	ASTM D5185m	>10	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>74	<b>2</b>	2	2
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</b>	0	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	2
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.

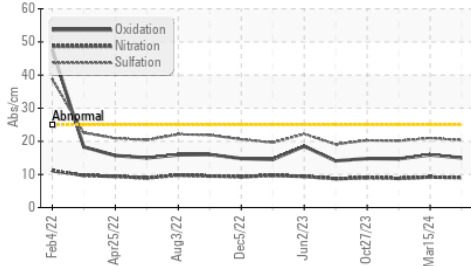
Silicon	ppm	ASTM D5185m	>15	<b>7</b>	7	8
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	2	2
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.0</b>	9.2	8.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.3</b>	21.0	20.1
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

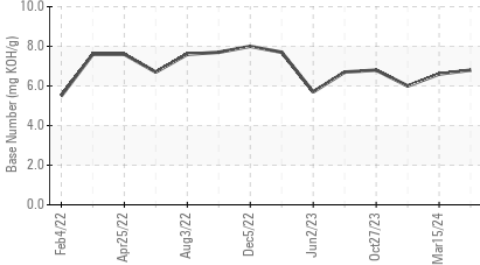
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	2	3
Boron	ppm	ASTM D5185m	66	<b>109</b>	81	101
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	70	<b>4</b>	6	6
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m	1230	<b>710</b>	707	712
Calcium	ppm	ASTM D5185m	930	<b>1318</b>	1330	1292
Phosphorus	ppm	ASTM D5185m	1230	<b>1003</b>	897	967
Zinc	ppm	ASTM D5185m	1310	<b>1192</b>	1157	1196
Sulfur	ppm	ASTM D5185m	3460	<b>3993</b>	3993	3550
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.0</b>	15.9	14.7
Base Number (BN)	mg KOH/g	ASTM D2896		<b>6.8</b>	6.6	6.0
Visc @ 100°C	cSt	ASTM D445	15	<b>13.0</b>	13.2	13.0

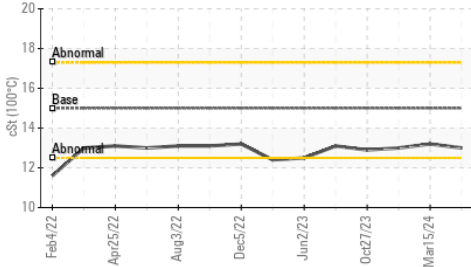
**FT-IR (Direct Trend)**



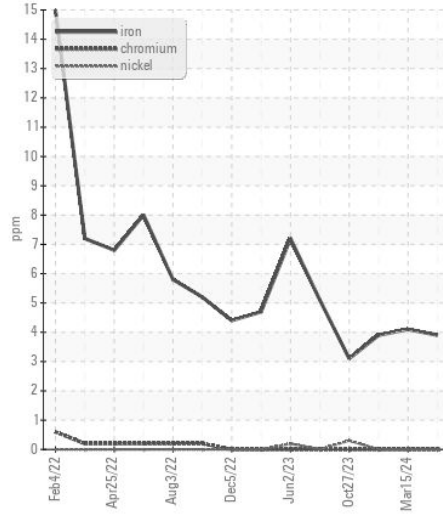
**Base Number**



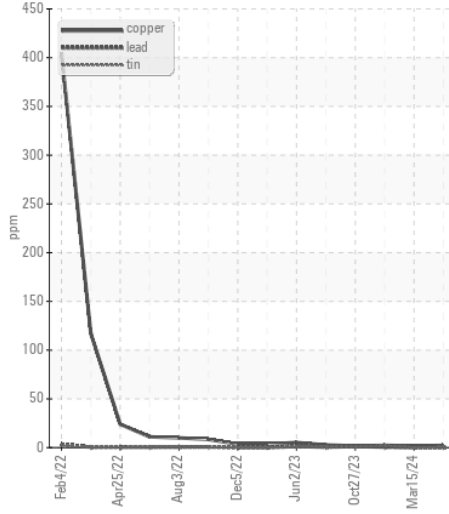
**Viscosity @ 100°C**



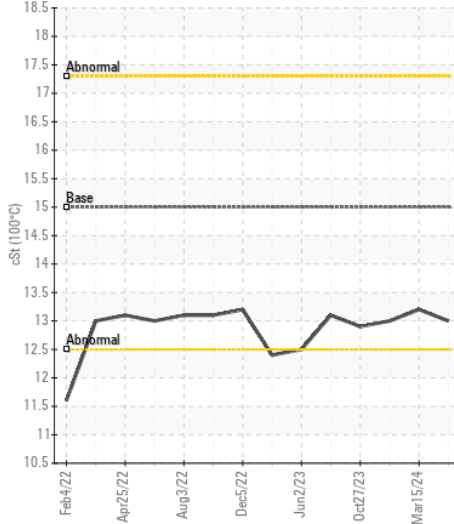
**Ferrous Alloys**



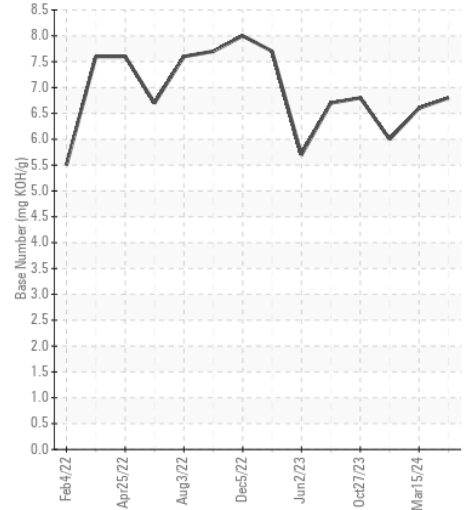
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LH0267094 **Received** : 24 May 2024  
**Lab Number** : 06191613 **Tested** : 29 May 2024  
**Unique Number** : 11048365 **Diagnosed** : 29 May 2024 - Wes Davis  
**Test Package** : CONST ( Additional Tests: TBN )

**AMERICAN STATE EQUIPMENT CO.**  
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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)