



# LIEBHERR

## OIL ANALYSIS REPORT

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



Machine Id  
**LIEBHERR LH110 155976-1227**  
Component  
**Rear Left Wheel Hub**  
Fluid  
**GEAR OIL SAE 80W90 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0267253</b>	LH0267551	LH0267534
Sample Date		Client Info		<b>08 Jun 2024</b>	12 May 2024	18 Apr 2024
Machine Age	hrs	Client Info		<b>2430</b>	1951	1623
Oil Age	hrs	Client Info		<b>479</b>	956	628
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Not Changed</b>	Changed	Not Changed
Filter Changed		Client Info		<b>N/A</b>	None	None
Sample Status				<b>ABNORMAL</b>	ATTENTION	ATTENTION

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>650	<b>32</b>	55	36
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m		<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>25	<b>2</b>	1	<1
Lead	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>60	<b>5</b>	12	8
Tin	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

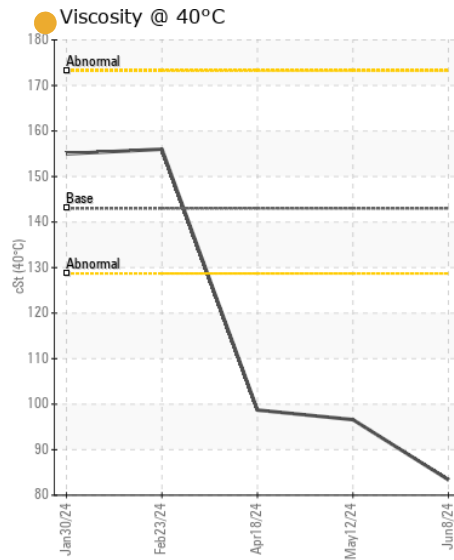
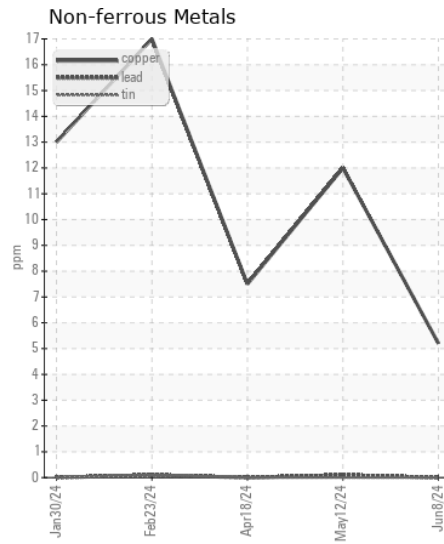
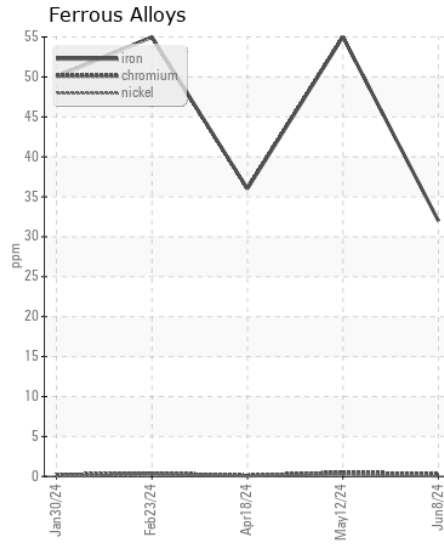
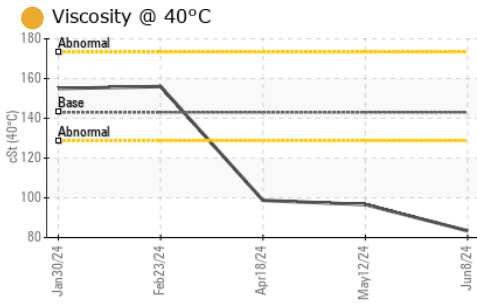
Moderate concentration of visible dirt/debris present in the oil.

Silicon	ppm	ASTM D5185m	>75	<b>5</b>	7	5
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	1	0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	MODER
Debris	scalar	*Visual	NONE	<b>▲ MODER</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 oil viscosity is lower than normal. Confirm oil type.

Sodium	ppm	ASTM D5185m	>170	<b>2</b>	2	0
Boron	ppm	ASTM D5185m	400	<b>9</b>	3	<1
Barium	ppm	ASTM D5185m	200	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	12	<b>3</b>	2	1
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	1	<1
Magnesium	ppm	ASTM D5185m	12	<b>40</b>	6	4
Calcium	ppm	ASTM D5185m	150	<b>222</b>	161	177
Phosphorus	ppm	ASTM D5185m	1650	<b>444</b>	435	466
Zinc	ppm	ASTM D5185m	125	<b>187</b>	97	103
Sulfur	ppm	ASTM D5185m	22500	<b>13378</b>	14769	16387
Visc @ 40°C	cSt	ASTM D445	143	<b>● 83.4</b>	● 96.6	● 98.7



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : LH0267253

**Lab Number** : 06216184

**Unique Number** : 11089048

**Test Package** : CONST

**Received** : 20 Jun 2024

**Tested** : 21 Jun 2024

**Diagnosed** : 23 Jun 2024 - Don Baldrige

**KINDER MORGAN**

4301 IVERSON

TRINITY, AL

US 35601

Contact: RICKY JOHNSON

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T:

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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