



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION



Machine Id  
**LIEBHERR LH110 1227-155752**  
Component  
**Gearbox**  
Fluid  
**GEAR OIL SAE 80W90 (--- 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		LH0267276	---	---
Sample Date		Client Info		10 Jun 2024	---	---
Machine Age	hrs	Client Info		2998	---	---
Oil Age	hrs	Client Info		969	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		N/A	---	---
Sample Status				ATTENTION	---	---

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	46	---	---
Chromium	ppm	ASTM D5185m	>10	<1	---	---
Nickel	ppm	ASTM D5185m	>10	0	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m		0	---	---
Aluminum	ppm	ASTM D5185m	>25	2	---	---
Lead	ppm	ASTM D5185m	>50	0	---	---
Copper	ppm	ASTM D5185m	>200	12	---	---
Tin	ppm	ASTM D5185m	>10	0	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

### CONTAMINATION

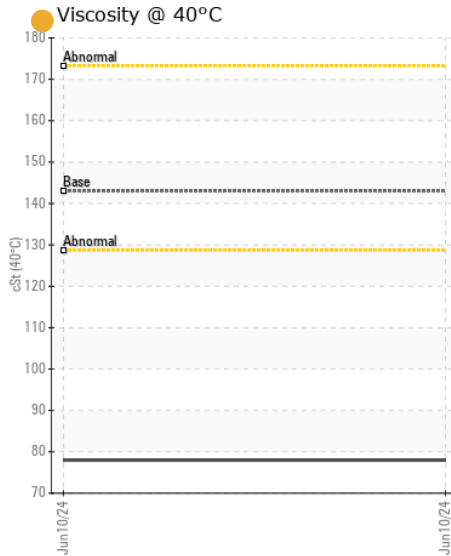
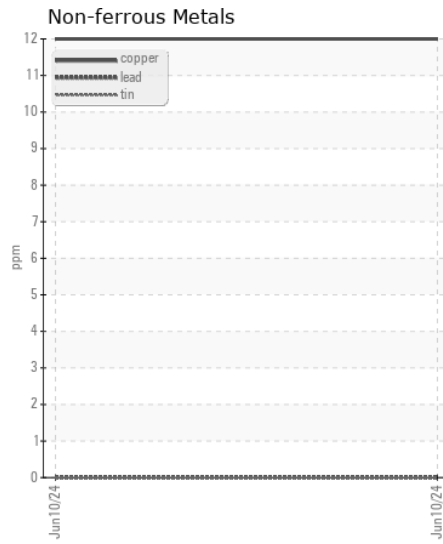
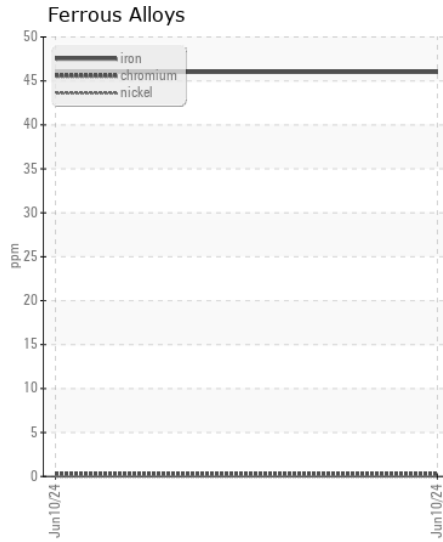
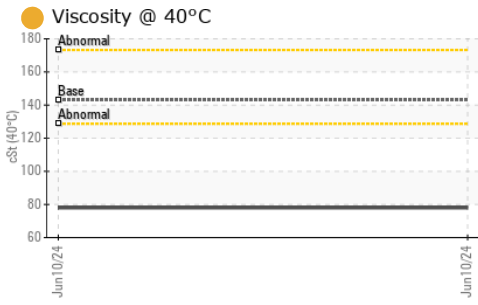
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>50	5	---	---
Potassium	ppm	ASTM D5185m	>20	1	---	---
Water		WC Method	>0.2	NEG	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---

### FLUID CONDITION

The oil viscosity is lower than normal. Confirm oil type.

Sodium	ppm	ASTM D5185m	>170	0	---	---
Boron	ppm	ASTM D5185m	400	9	---	---
Barium	ppm	ASTM D5185m	200	0	---	---
Molybdenum	ppm	ASTM D5185m	12	3	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m	12	47	---	---
Calcium	ppm	ASTM D5185m	150	232	---	---
Phosphorus	ppm	ASTM D5185m	1650	426	---	---
Zinc	ppm	ASTM D5185m	125	192	---	---
Sulfur	ppm	ASTM D5185m	22500	12505	---	---
Visc @ 40°C	cSt	ASTM D445	143	78.0	---	---



Certificate L2367

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

**Sample No.** : LH0267276

**Lab Number** : 06216182

**Unique Number** : 11089046

**Test Package** : CONST

**Received** : 20 Jun 2024

**Tested** : 24 Jun 2024

**Diagnosed** : 24 Jun 2024 - Jonathan Hester

**KINDER MORGAN**

4301 IVERSON

TRINITY, AL

US 35601

Contact: RICKY JOHNSON

ricky\_johnson@kindermorgan.com

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)

F: (256)355-5250