



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**141701-WHEEL SET 31**  
Component  
**Gearbox**  
Fluid  
**LIEBHERR GEAR HYPOID 90 EP (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LM0000442	---	---
Sample Date		Client Info		19 Mar 2024	---	---
Machine Age	hrs	Client Info		12015	---	---
Oil Age	hrs	Client Info		2000	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		N/A	---	---
Sample Status				NORMAL	---	---

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>200	20	---	---
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	1	---	---
Lead	ppm	ASTM D5185m	>50	0	---	---
Copper	ppm	ASTM D5185m	>200	5	---	---
Tin	ppm	ASTM D5185m	>10	0	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

### CONTAMINATION

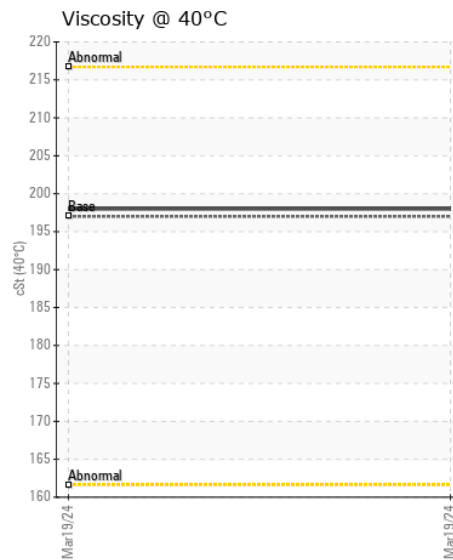
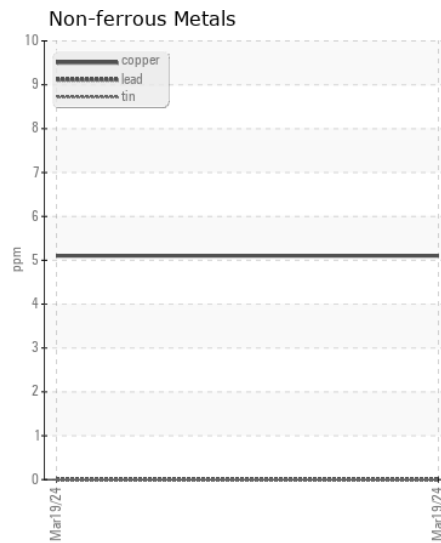
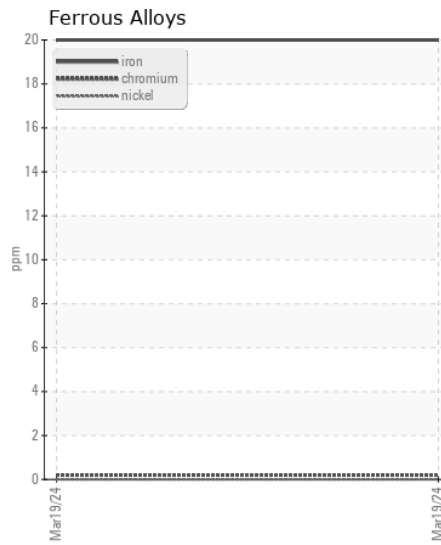
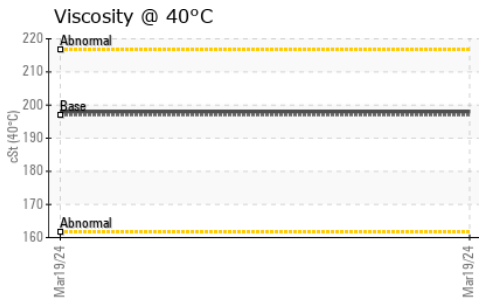
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>50	<1	---	---
Potassium	ppm	ASTM D5185m	>20	1	---	---
Water		WC Method	>0.2	NEG	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	LIGHT	---	---
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 condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<1	---	---
Boron	ppm	ASTM D5185m		3	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		0	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m		6	---	---
Calcium	ppm	ASTM D5185m		4	---	---
Phosphorus	ppm	ASTM D5185m		1310	---	---
Zinc	ppm	ASTM D5185m		2	---	---
Sulfur	ppm	ASTM D5185m		28538	---	---
Visc @ 40°C	cSt	ASTM D445	197	198	---	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LM0000442  
**Lab Number** : 06151369  
**Unique Number** : 10981447  
**Test Package** : CONST

**Received** : 16 Apr 2024  
**Tested** : 18 Apr 2024  
**Diagnosed** : 19 Apr 2024 - Sean Felton

**LIEBHERR USA CO - Maritime Cranes**  
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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)

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