



# PROBLEM SUMMARY

Sample Rating Trend

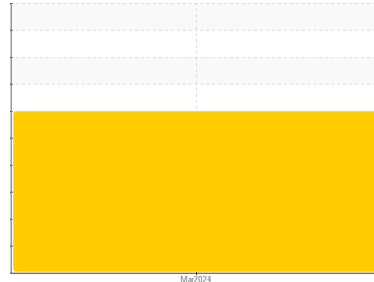
WEAR



Machine Id  
**145374**

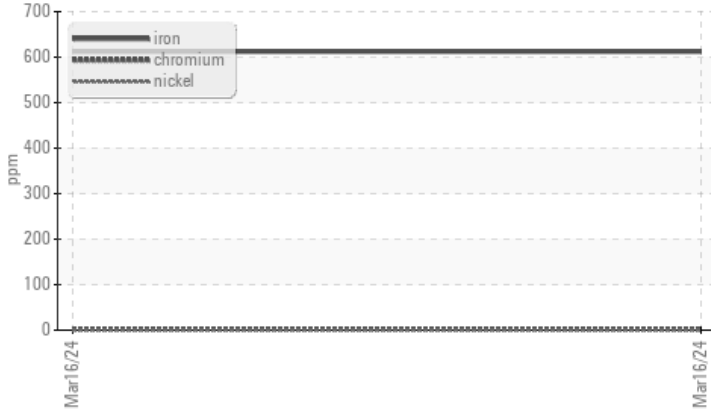
Component  
**Right Steering**

Fluid  
**LIEBHERR GEAR BASIC 90 LS (--- GAL)**



## COMPONENT CONDITION SUMMARY

### ▲ Ferrous Alloys



## RECOMMENDATION

The fluid change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	---	---
Iron	ppm	ASTM D5185m	>60	▲ 612	---	---

Customer Id: LIEHIA  
Sample No.: LM0001042  
Lab Number: 06124413  
Test Package: CONST



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Don Baldrige +1  
[don.b505@comcast.net](mailto:don.b505@comcast.net)

To change component or sample information:  
Customer Service +1 1-800-237-1369  
[customerservice@wearcheck.com](mailto:customerservice@wearcheck.com)

## RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Resample	---	---	?	We recommend an early resample to monitor this condition.

## HISTORICAL DIAGNOSIS



# OIL ANALYSIS REPORT

Sample Rating Trend

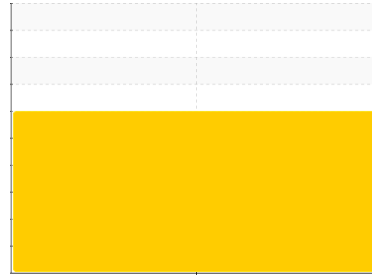
WEAR



Machine Id  
**145374**

Component  
**Right Steering**

Fluid  
**LIEBHERR GEAR BASIC 90 LS (--- GAL)**



## DIAGNOSIS

### ▲ Recommendation

The fluid change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

### ▲ Wear

The iron level is severe.

### Contamination

There is no indication of any contamination in the fluid.

### Fluid Condition

The fluid is no longer serviceable as a result of the abnormal and/or severe wear.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>LM0001042</b>	---	---
Sample Date	Client Info		<b>16 Mar 2024</b>	---	---
Machine Age	hrs	Client Info	<b>5931</b>	---	---
Oil Age	hrs	Client Info	<b>1000</b>	---	---
Oil Changed	Client Info		<b>Changed</b>	---	---
Sample Status			<b>SEVERE</b>	---	---

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method		<b>NEG</b>	---	---

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >60	<b>▲ 612</b>	---	---
Chromium	ppm	ASTM D5185m >12	<b>3</b>	---	---
Nickel	ppm	ASTM D5185m >6	<b>0</b>	---	---
Titanium	ppm	ASTM D5185m	<b>0</b>	---	---
Silver	ppm	ASTM D5185m	<b>0</b>	---	---
Aluminum	ppm	ASTM D5185m >4	<b>0</b>	---	---
Lead	ppm	ASTM D5185m >12	<b>0</b>	---	---
Copper	ppm	ASTM D5185m >30	<b>2</b>	---	---
Tin	ppm	ASTM D5185m	<b>0</b>	---	---
Vanadium	ppm	ASTM D5185m	<b>0</b>	---	---
Cadmium	ppm	ASTM D5185m	<b>0</b>	---	---

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	<b>0</b>	---	---
Barium	ppm	ASTM D5185m 0	<b>0</b>	---	---
Molybdenum	ppm	ASTM D5185m 0	<b>0</b>	---	---
Manganese	ppm	ASTM D5185m 0	<b>5</b>	---	---
Magnesium	ppm	ASTM D5185m <1	<b>0</b>	---	---
Calcium	ppm	ASTM D5185m <1	<b>10</b>	---	---
Phosphorus	ppm	ASTM D5185m 2143	<b>2387</b>	---	---
Zinc	ppm	ASTM D5185m <1	<b>4</b>	---	---
Sulfur	ppm	ASTM D5185m 23468	<b>32139</b>	---	---

## CONTAMINANTS

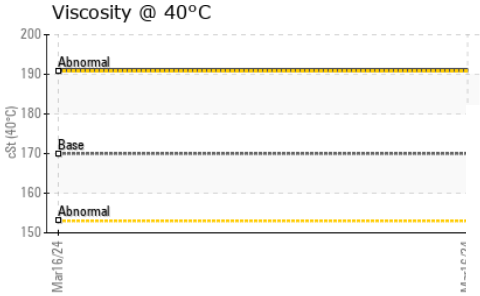
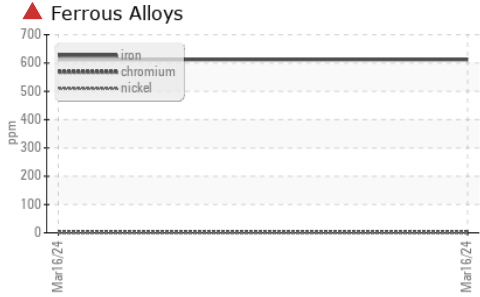
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >10	<b>4</b>	---	---
Sodium	ppm	ASTM D5185m	<b>2</b>	---	---
Potassium	ppm	ASTM D5185m >20	<b>0</b>	---	---

## VISUAL

	method	limit/base	current	history1	history2
White Metal	scalar	*Visual NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	*Visual NONE	<b>NONE</b>	---	---
Precipitate	scalar	*Visual NONE	<b>NONE</b>	---	---
Silt	scalar	*Visual NONE	<b>NONE</b>	---	---
Debris	scalar	*Visual NONE	<b>NONE</b>	---	---
Sand/Dirt	scalar	*Visual NONE	<b>NONE</b>	---	---
Appearance	scalar	*Visual NORML	<b>NORML</b>	---	---
Odor	scalar	*Visual NORML	<b>NORML</b>	---	---
Emulsified Water	scalar	*Visual	<b>NEG</b>	---	---
Free Water	scalar	*Visual	<b>NEG</b>	---	---



# OIL ANALYSIS REPORT



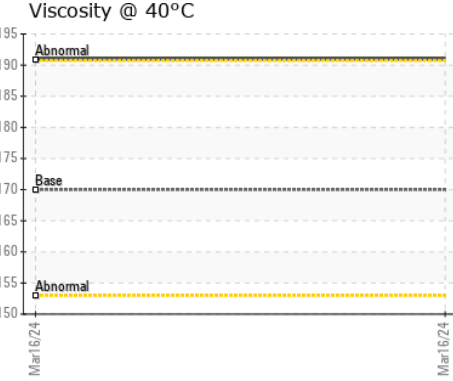
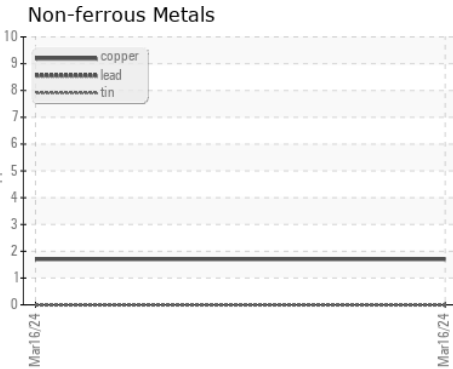
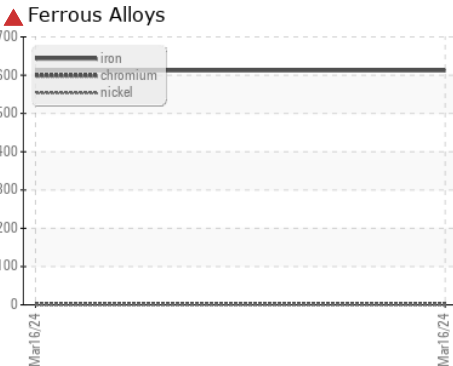
### FLUID PROPERTIES

	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 170	<b>191</b>	---	---

### SAMPLE IMAGES

	method	limit/base	current	history1	history2
Color				no image	no image
Bottom				no image	no image

### GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LM0001042  
**Lab Number** : **06124413**  
**Unique Number** : 10938564  
**Test Package** : CONST  
**Received** : 20 Mar 2024  
**Tested** : 21 Mar 2024  
**Diagnosed** : 23 Mar 2024 - Don Baldrige

**LIEBHERR USA CO - Maritime Cranes**  
 15101 NW 112TH AVE  
 HIALEAH GARDENS, FL  
 US 33018  
 Contact: RONNY FUNK  
 ronny.funk@liebherr.com  
 T: (305)817-7566  
 F:

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)