



# OIL ANALYSIS REPORT

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

Machine Id  
**LIEBHERR 31249**  
 Component  
**Right Final Drive**  
 Fluid  
**GEAR OIL SAE 80W90 (--- QTS)**

## RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil 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

Gear wear is indicated.

## CONTAMINATION

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

## FLUID CONDITION

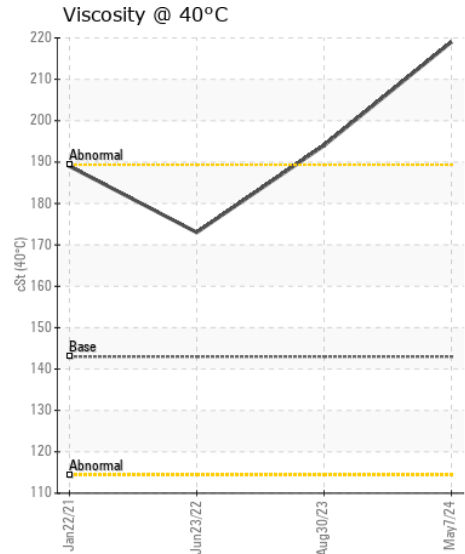
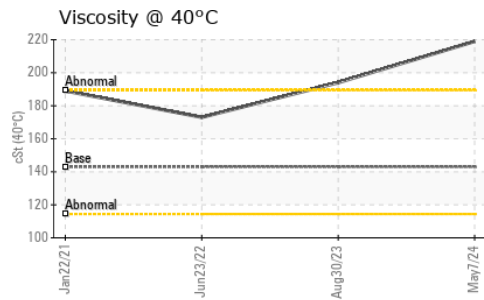
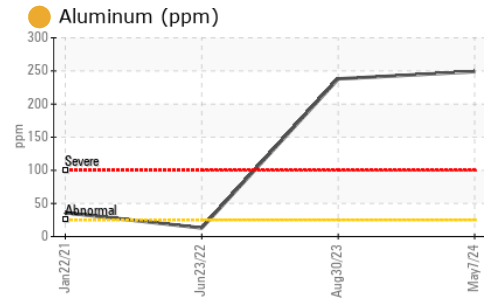
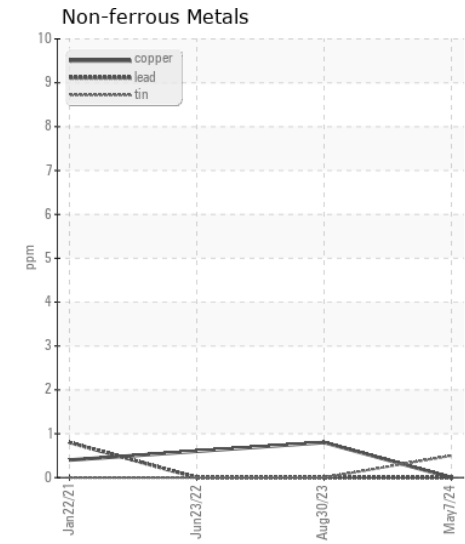
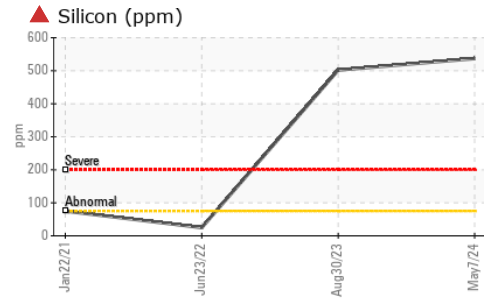
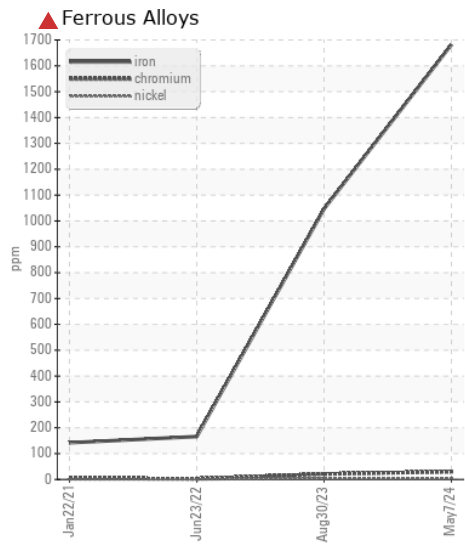
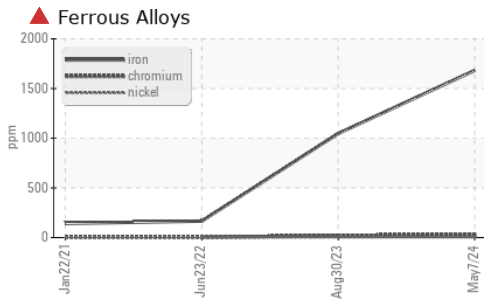
The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0905158</b>	WC0716247	WC0689328
Sample Date		Client Info		<b>07 May 2024</b>	30 Aug 2023	23 Jun 2022
Machine Age	hrs	Client Info		<b>3966</b>	3075	2402
Oil Age	hrs	Client Info		<b>1500</b>	500	500
Filter Age	hrs	Client Info		<b>1500</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Not Changd	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>SEVERE</b>	SEVERE	ATTENTION

Iron	ppm	ASTM D5185m	>500	<b>▲ 1682</b>	▲ 1047	166
Chromium	ppm	ASTM D5185m	>10	<b>▲ 30</b>	▲ 21	3
Nickel	ppm	ASTM D5185m	>10	<b>4</b>	4	0
Titanium	ppm	ASTM D5185m		<b>▲ 11</b>	10	<1
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>● 249</b>	● 238	13
Lead	ppm	ASTM D5185m	>25	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>50	<b>0</b>	<1	<1
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</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

Silicon	ppm	ASTM D5185m	>75	<b>▲ 537</b>	▲ 502	25
Potassium	ppm	ASTM D5185m	>20	<b>22</b>	18	2
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	MODER
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	● SOLID
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

Sodium	ppm	ASTM D5185m	>170	<b>10</b>	10	4
Boron	ppm	ASTM D5185m	400	<b>11</b>	14	23
Barium	ppm	ASTM D5185m	200	<b>6</b>	0	2
Molybdenum	ppm	ASTM D5185m	12	<b>&lt;1</b>	2	<1
Manganese	ppm	ASTM D5185m		<b>13</b>	8	2
Magnesium	ppm	ASTM D5185m	12	<b>11</b>	12	6
Calcium	ppm	ASTM D5185m	150	<b>24</b>	24	18
Phosphorus	ppm	ASTM D5185m	1650	<b>2315</b>	2398	2180
Zinc	ppm	ASTM D5185m	125	<b>20</b>	25	22
Sulfur	ppm	ASTM D5185m	22500	<b>30788</b>	25056	26414
Visc @ 40°C	cSt	ASTM D445	143	<b>219</b>	194	173



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0905158  
**Lab Number** : 06177576  
**Unique Number** : 11023629  
**Test Package** : CONST

**Received** : 13 May 2024  
**Tested** : 14 May 2024  
**Diagnosed** : 15 May 2024 - Don Baldrige

**SULLIVAN EASTERN INC-LIEBHERR**  
 2860 C SLATER RD  
 MORRISVILLE, NC  
 US 27560  
 Contact: CHRIS CALTON

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)

T: (919)484-2136  
 F: (919)484-2136