



# OIL ANALYSIS REPORT

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

Machine Id  
**LIEBHERR 31231**  
Component  
**Left Final Drive**  
Fluid  
**GEAR OIL LS 80W90 (6 QTS)**

## RECOMMENDATION

We advise that you check all areas where dirt can enter the system. Resample at the next service interval to monitor.

## WEAR

Gear wear is indicated.

## CONTAMINATION

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

## FLUID CONDITION

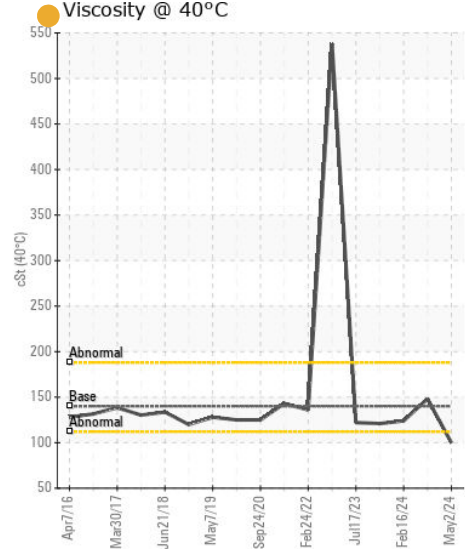
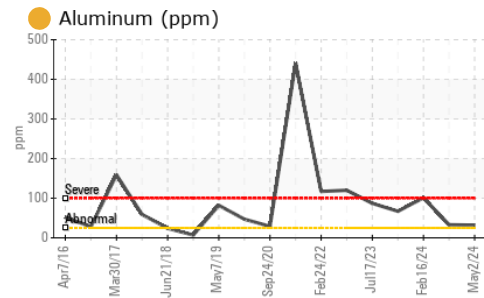
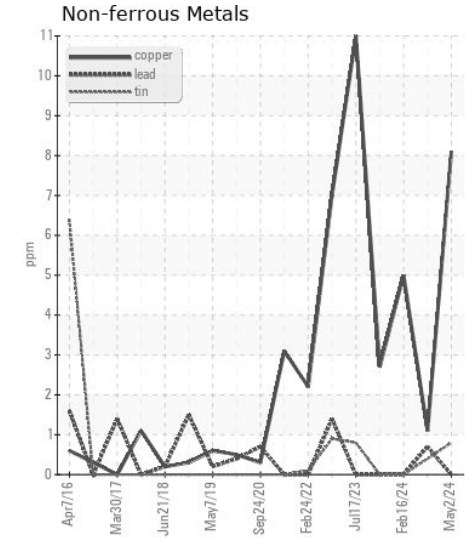
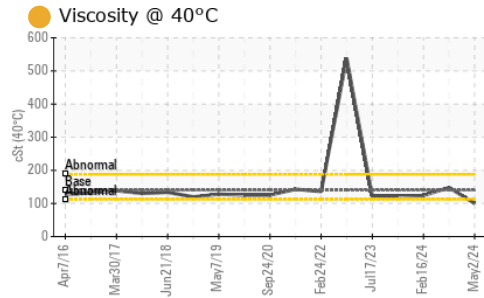
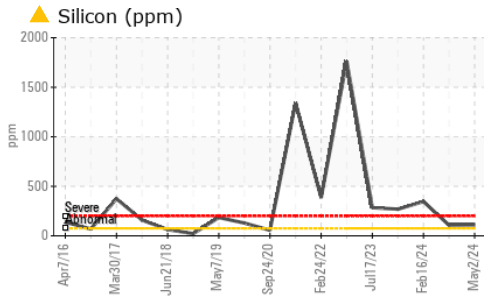
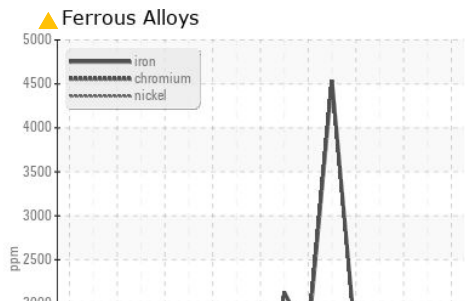
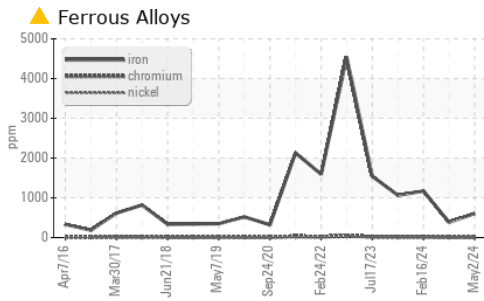
The oil viscosity is lower than normal. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0857083</b>	WC0905134	WC0905363
Sample Date		Client Info		<b>02 May 2024</b>	04 Mar 2024	16 Feb 2024
Machine Age	hrs	Client Info		<b>9396</b>	9224	9163
Oil Age	hrs	Client Info		<b>1500</b>	100	1250
Filter Age	hrs	Client Info		<b>1500</b>	0	1250
Oil Changed		Client Info		<b>Not Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Not Changed</b>	N/A	Changed
Sample Status				<b>ABNORMAL</b>	ABNORMAL	SEVERE

Iron	ppm	ASTM D5185m	>500	<b>▲ 606</b>	385	▲ 1172
Chromium	ppm	ASTM D5185m	>10	<b>5</b>	5	▲ 16
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	2	4
Titanium	ppm	ASTM D5185m		<b>1</b>	3	5
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>● 32</b>	● 33	● 101
Lead	ppm	ASTM D5185m	>25	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>50	<b>8</b>	1	5
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</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>▲ 110</b>	▲ 107	▲ 346
Potassium	ppm	ASTM D5185m	>20	<b>6</b>	6	16
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
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	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

Sodium	ppm	ASTM D5185m		<b>3</b>	3	0
Boron	ppm	ASTM D5185m	150	<b>51</b>	56	131
Barium	ppm	ASTM D5185m		<b>1</b>	<1	<1
Molybdenum	ppm	ASTM D5185m		<b>15</b>	5	7
Manganese	ppm	ASTM D5185m		<b>5</b>	4	9
Magnesium	ppm	ASTM D5185m	10	<b>80</b>	17	26
Calcium	ppm	ASTM D5185m	70	<b>176</b>	61	48
Phosphorus	ppm	ASTM D5185m	2000	<b>2986</b>	2579	1344
Zinc	ppm	ASTM D5185m	50	<b>210</b>	64	81
Sulfur	ppm	ASTM D5185m	20000	<b>17462</b>	27123	17909
Visc @ 40°C	cSt	ASTM D445	140	<b>● 100</b>	148	124



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0857083  
**Lab Number** : 06177562  
**Unique Number** : 11023615  
**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)

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