



# OIL ANALYSIS REPORT

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

Machine Id  
**LIEBHERR 31231**  
 Component  
**Swing Drive**  
 Fluid  
**CHEVRON DELO GEAR ESI OIL 80W90 (6 QTS)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0857084</b>	WC0905365	WC0846542
Sample Date		Client Info		<b>02 May 2024</b>	16 Feb 2024	20 Oct 2023
Machine Age	hrs	Client Info		<b>9396</b>	9163	8835
Oil Age	hrs	Client Info		<b>1500</b>	1250	1000
Filter Age	hrs	Client Info		<b>1500</b>	1250	1000
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	ABNORMAL	ATTENTION

## WEAR

Bearing and/or bushing wear is indicated.

Iron	ppm	ASTM D5185m	>400	<b>205</b>	294	15
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	2	<1
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>0</b>	2	1
Lead	ppm	ASTM D5185m	>50	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>200	<b>▲ 362</b>	▲ 356	<1
Tin	ppm	ASTM D5185m	>10	<b>▲ 18</b>	▲ 11	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>MODER</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

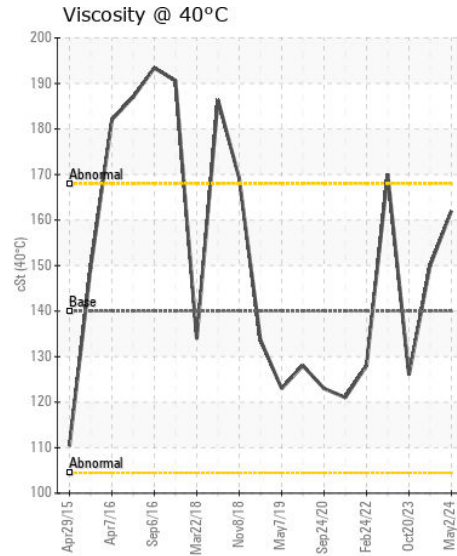
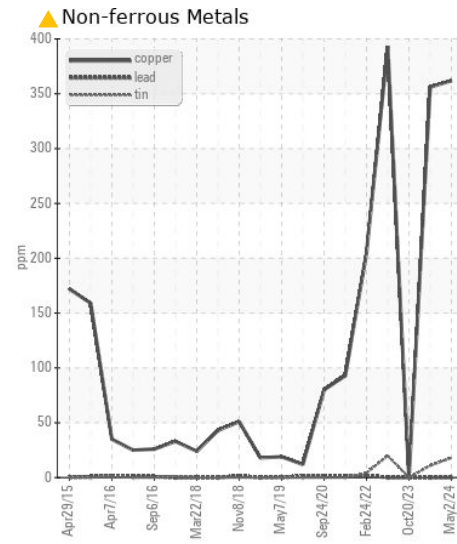
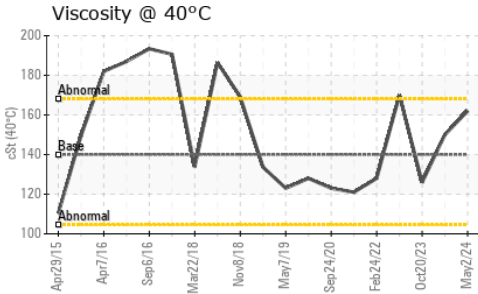
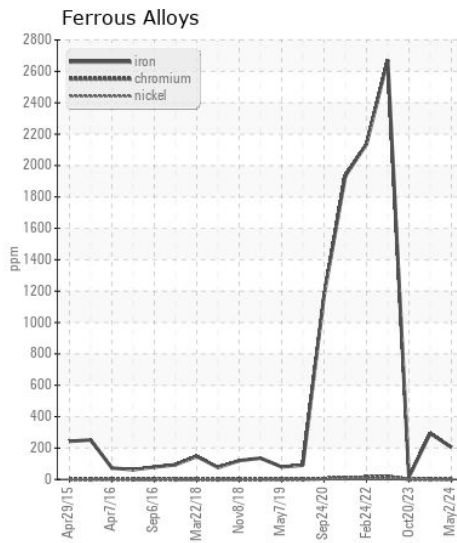
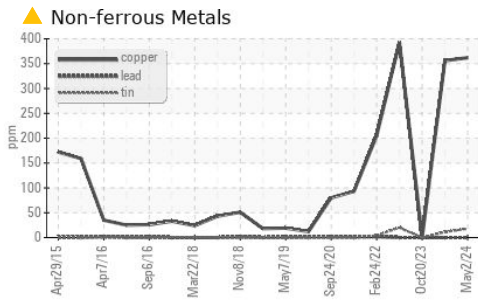
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>50	<b>3</b>	18	6
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	<1
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Silt	scalar	*Visual	NONE	<b>MODER</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

## FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		<b>2</b>	0	<1
Boron	ppm	ASTM D5185m	15	<b>21</b>	39	168
Barium	ppm	ASTM D5185m	0	<b>1</b>	<1	0
Molybdenum	ppm	ASTM D5185m	0	<b>0</b>	2	6
Manganese	ppm	ASTM D5185m		<b>2</b>	3	<1
Magnesium	ppm	ASTM D5185m	0	<b>6</b>	9	21
Calcium	ppm	ASTM D5185m	5	<b>32</b>	29	85
Phosphorus	ppm	ASTM D5185m	600	<b>2554</b>	1567	1580
Zinc	ppm	ASTM D5185m	0	<b>58</b>	50	86
Sulfur	ppm	ASTM D5185m	22000	<b>26501</b>	22888	18581
Visc @ 40°C	cSt	ASTM D445	140	<b>162</b>	150	126



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0857084  
**Lab Number** : 06177561  
**Unique Number** : 11023614  
**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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