



# OIL ANALYSIS REPORT

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

Machine Id  
**LIEBHERR 31240**  
Component  
**Swing Drive**  
Fluid  
**CHEVRON DELO GEAR ESI OIL 80W90 (3 QTS)**

## RECOMMENDATION

We advise that you check for the source of water entry. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

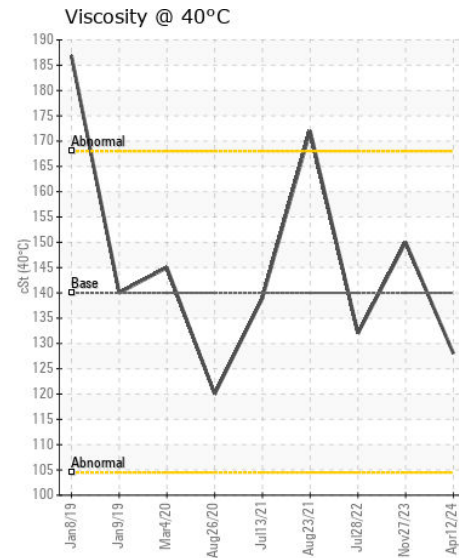
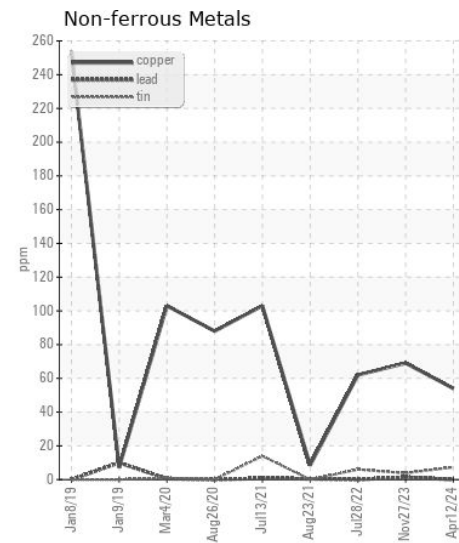
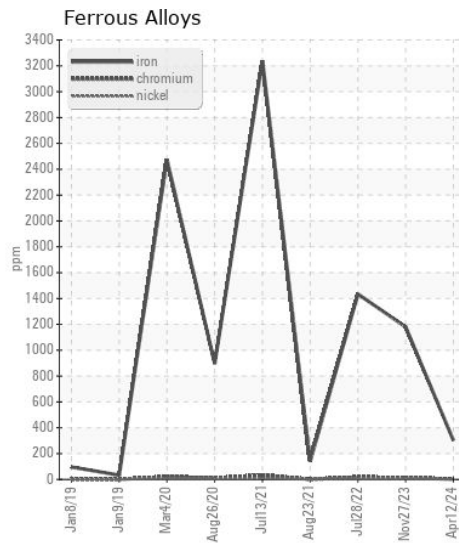
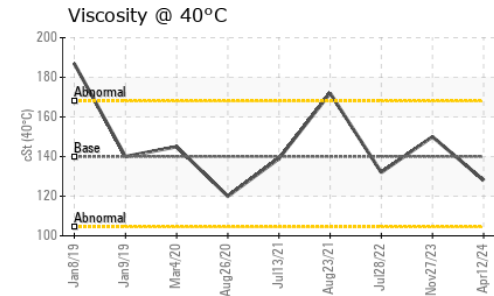
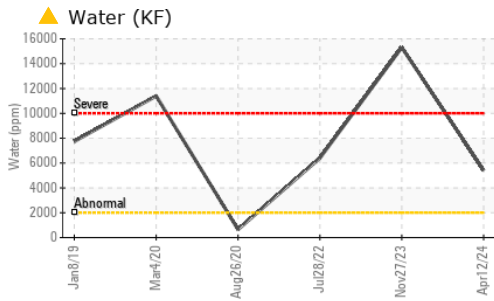
## CONTAMINATION

Appearance is milky. There is a moderate concentration of water present in the oil.

## FLUID CONDITION

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

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0913669</b>	WC0857035	WC0716014
Sample Date		Client Info		<b>12 Apr 2024</b>	27 Nov 2023	28 Jul 2022
Machine Age	hrs	Client Info		<b>10788</b>	10304	9451
Oil Age	hrs	Client Info		<b>1000</b>	500	627
Filter Age	hrs	Client Info		<b>1000</b>	500	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	N/A
Sample Status				<b>ABNORMAL</b>	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>400	<b>302</b>	▲ 1180	▲ 1434
Chromium	ppm	ASTM D5185m	>10	<b>3</b>	▲ 13	▲ 18
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	5	6
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>25	<b>1</b>	2	4
Lead	ppm	ASTM D5185m	>50	<b>0</b>	1	0
Copper	ppm	ASTM D5185m	>200	<b>54</b>	69	62
Tin	ppm	ASTM D5185m	>10	<b>7</b>	4	6
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	>50	<b>3</b>	4	6
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	2	0
Water	%	ASTM D6304	>0.2	▲ <b>0.541</b>	▲ 1.53	▲ 0.640
ppm Water	ppm	ASTM D6304	>2000	▲ <b>5410</b>	▲ 15300	▲ 6400
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>MILKY</b>	NORML	● HAZY
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	▲ <b>0.2%</b>	▲ 0.2%	▲ 0.2%
Sodium	ppm	ASTM D5185m		<b>0</b>	2	<1
Boron	ppm	ASTM D5185m	15	<b>37</b>	144	55
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	0	<b>11</b>	8	5
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	7	10
Magnesium	ppm	ASTM D5185m	0	<b>17</b>	28	8
Calcium	ppm	ASTM D5185m	5	<b>35</b>	154	66
Phosphorus	ppm	ASTM D5185m	600	<b>1795</b>	2215	3085
Zinc	ppm	ASTM D5185m	0	<b>74</b>	119	60
Sulfur	ppm	ASTM D5185m	22000	<b>20563</b>	17149	24449
Visc @ 40°C	cSt	ASTM D445	140	<b>128</b>	150	132



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0913669 **Received** : 16 Apr 2024  
**Lab Number** : 06151383 **Tested** : 19 Apr 2024  
**Unique Number** : 10981461 **Diagnosed** : 19 Apr 2024 - Sean Felton  
**Test Package** : CONST ( Additional Tests: KF )

**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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