



OIL ANALYSIS REPORT

WEAR
CONTAMINATION
FLUID CONDITION

ATTENTION
ABNORMAL
NORMAL

Machine Id
LIEBHERR 31240
Component
Right Final Drive
Fluid
CHEVRON DELO GEAR ESI OIL 80W90 (6 QTS)

RECOMMENDATION

We advise that you check all areas where dirt can enter the system. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0913671	WC0857036	WC0822773
Sample Date		Client Info		12 Apr 2024	27 Nov 2023	15 Aug 2023
Machine Age	hrs	Client Info		10788	10304	9827
Oil Age	hrs	Client Info		1000	500	2000
Filter Age	hrs	Client Info		1000	500	2000
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>500	392	268	▲ 760
Chromium	ppm	ASTM D5185m	>10	7	4	▲ 12
Nickel	ppm	ASTM D5185m	>10	1	<1	2
Titanium	ppm	ASTM D5185m		2	1	2
Silver	ppm	ASTM D5185m		0	0	0
Aluminum	ppm	ASTM D5185m	>25	77	18	● 57
Lead	ppm	ASTM D5185m	>25	0	0	0
Copper	ppm	ASTM D5185m	>50	14	8	17
Tin	ppm	ASTM D5185m	>10	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

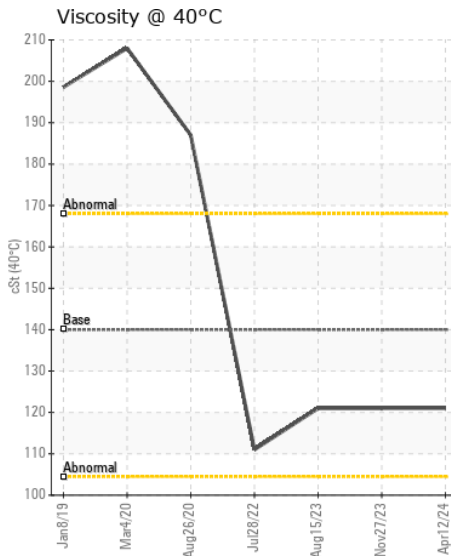
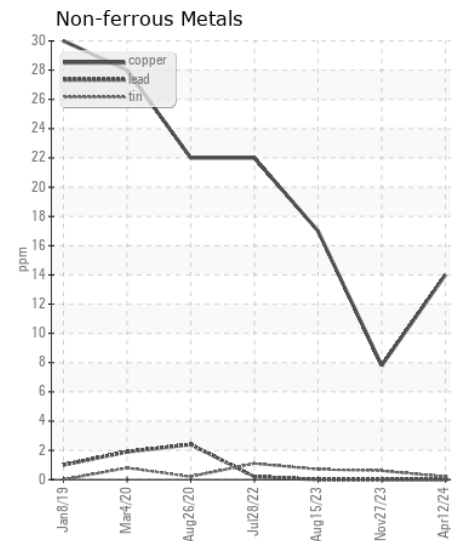
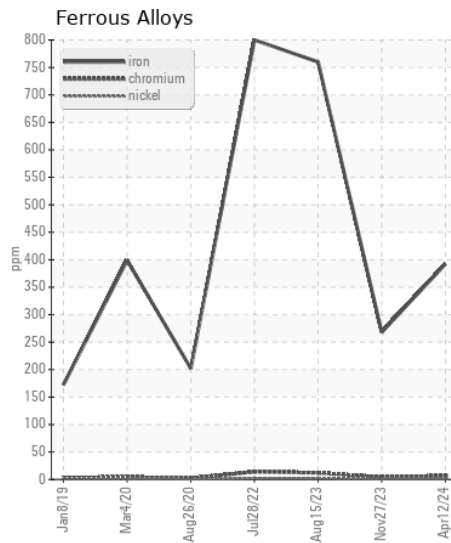
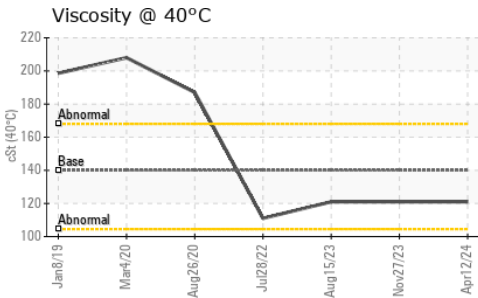
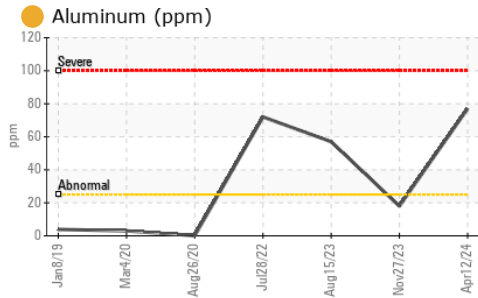
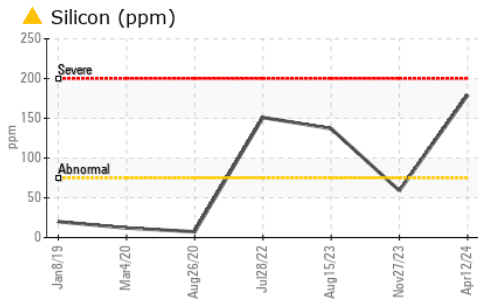
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>75	▲ 179	59	▲ 137
Potassium	ppm	ASTM D5185m	>20	20	5	9
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	*Visual	NONE	MODER	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	LIGHT	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		8	4	6
Boron	ppm	ASTM D5185m	15	91	107	115
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	0	7	6	6
Manganese	ppm	ASTM D5185m		2	2	6
Magnesium	ppm	ASTM D5185m	0	30	25	23
Calcium	ppm	ASTM D5185m	5	121	105	130
Phosphorus	ppm	ASTM D5185m	600	2160	1945	3121
Zinc	ppm	ASTM D5185m	0	91	85	91
Sulfur	ppm	ASTM D5185m	22000	19240	18135	23039
Visc @ 40°C	cSt	ASTM D445	140	121	121	121



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0913671
Lab Number : 06151381
Unique Number : 10981459
Test Package : CONST

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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