



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Machine Id
LIEBHERR 31244

Component
Swing Drive

Fluid
CHEVRON DELO GEAR ESI OIL 80W90 (--- GAL)

RECOMMENDATION

We advise that you check for the source of water entry. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0846791	WC0822577	WC0756664
Sample Date		Client Info		10 Jan 2024	27 Jul 2023	27 Jan 2023
Machine Age	hrs	Client Info		9320	8836	8201
Oil Age	hrs	Client Info		500	1000	1250
Filter Age	hrs	Client Info		500	0	1250
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	N/A	Changed
Sample Status				SEVERE	ABNORMAL	ABNORMAL

WEAR

Bearing and/or gear wear is indicated.

Iron	ppm	ASTM D5185m	>400	266	▲ 445	342
Chromium	ppm	ASTM D5185m	>10	3	4	6
Nickel	ppm	ASTM D5185m	>10	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>25	1	<1	<1
Lead	ppm	ASTM D5185m	>50	0	0	0
Copper	ppm	ASTM D5185m	>200	▲ 235	▲ 242	53
Tin	ppm	ASTM D5185m	>10	4	6	7
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	MODER

CONTAMINATION

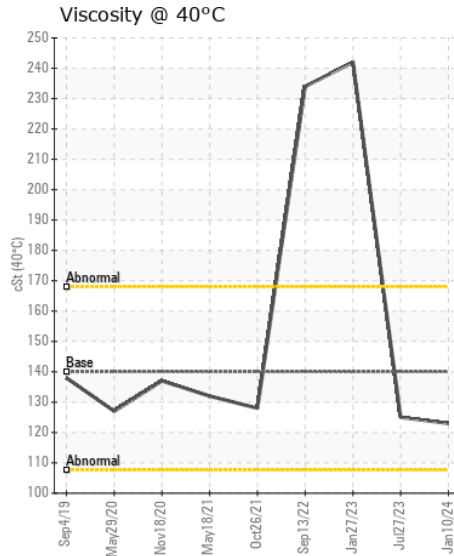
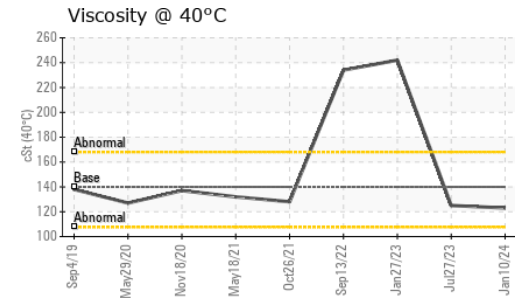
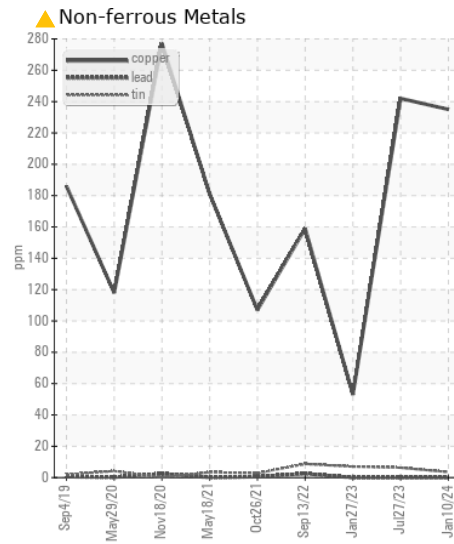
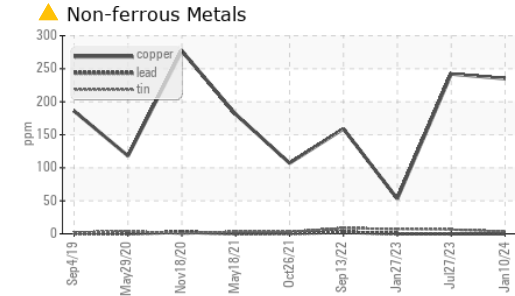
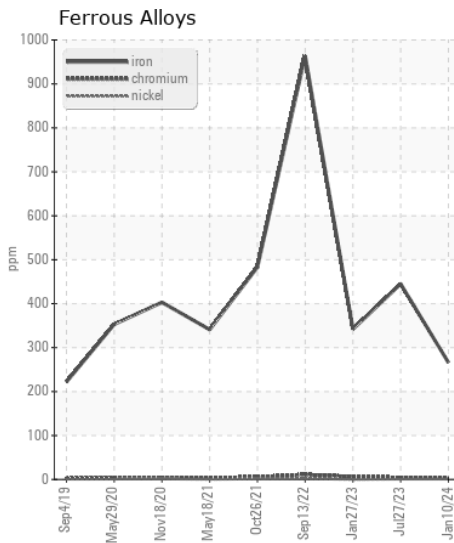
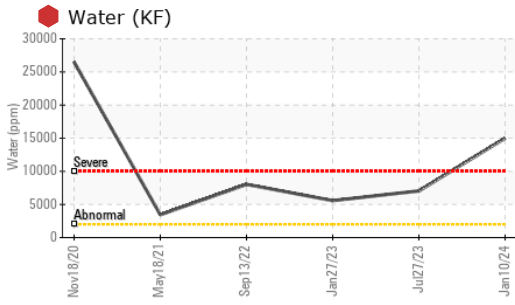
There is a high concentration of water present in the oil.

Silicon	ppm	ASTM D5185m	>50	4	2	1
Potassium	ppm	ASTM D5185m	>20	0	1	0
Water	%	ASTM D6304	>0.2	◆ 1.50	▲ 0.704	▲ 0.558
ppm Water	ppm	ASTM D6304	>2000	◆ 15000	▲ 7040	▲ 5580
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	▲ HAZY	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	◆ 0.2%	▲ 0.2%	0.2%

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		0	0	<1
Boron	ppm	ASTM D5185m	15	72	32	2
Barium	ppm	ASTM D5185m	0	0	0	0
Molybdenum	ppm	ASTM D5185m	0	8	7	0
Manganese	ppm	ASTM D5185m		3	4	4
Magnesium	ppm	ASTM D5185m	0	27	7	0
Calcium	ppm	ASTM D5185m	5	122	22	6
Phosphorus	ppm	ASTM D5185m	600	1443	1296	1656
Zinc	ppm	ASTM D5185m	0	123	88	21
Sulfur	ppm	ASTM D5185m	22000	18184	21476	31043
Visc @ 40°C	cSt	ASTM D445	140	123	125	242



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0846791 **Received** : 16 Jan 2024
Lab Number : 06061532 **Diagnosed** : 18 Jan 2024
Unique Number : 10832914 **Diagnostician** : Angela Borella
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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