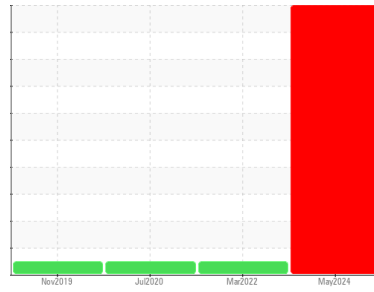




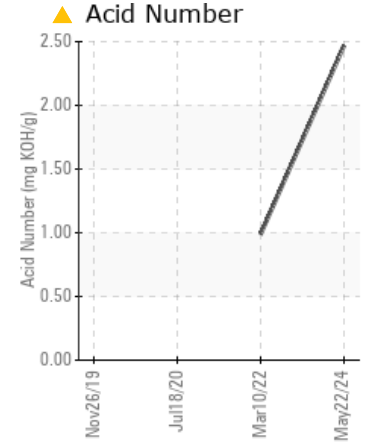
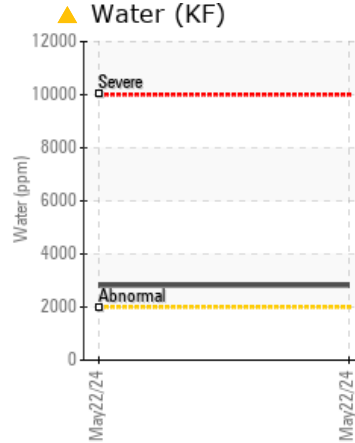
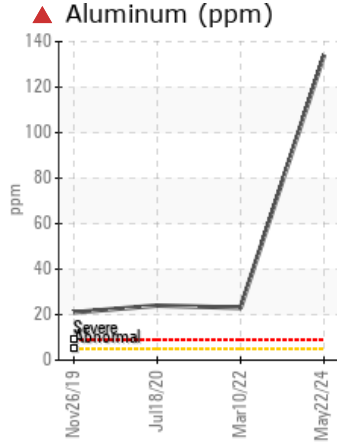
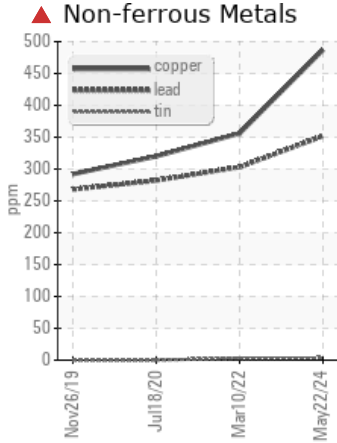
PROBLEM SUMMARY

Area
GENEV
 Machine Id
ZF 20035710 - INBOARD
 Component
Starboard Gearbox
 Fluid
SHELL ROTELLA T 30 (2 GAL)

Sample Rating Trend



COMPONENT CONDITION SUMMARY



RECOMMENDATION

Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	NORMAL
Aluminum	ppm	ASTM D5185m	>5	▲ 134	23	24
Lead	ppm	ASTM D5185m	>65	▲ 352	303	282
Copper	ppm	ASTM D5185m	>80	▲ 487	356	320
Water	%	ASTM D6304	>0.2	▲ 0.282	---	---
ppm Water	ppm	ASTM D6304	>2000	▲ 2820	---	---
Acid Number (AN)	mg KOH/g	ASTM D8045		▲ 2.47	0.99	---

Customer Id: GGTCOV
 Sample No.: WC0839378
 Lab Number: 06195991
 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Change Fluid	---	---	?	Oil and filter change at the time of sampling has been noted.
Change Filter	---	---	?	Oil and filter change at the time of sampling has been noted.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

NORMAL



10 Mar 2022 Diag: Doug Bogart

No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal for OEM. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

view report



NORMAL



18 Jul 2020 Diag: Doug Bogart

No corrective action is recommended at this time. Resample at the next service interval to monitor. All component wear rates are normal for OEM make. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report



NORMAL



26 Nov 2019 Diag: Doug Bogart

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

view report

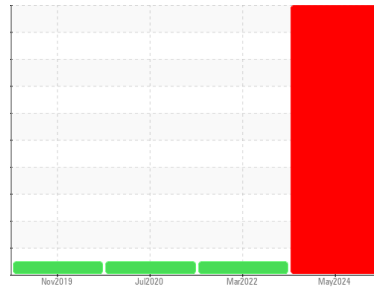




OIL ANALYSIS REPORT

Area
GENEV
 Machine Id
ZF 20035710 - INBOARD
 Component
Starboard Gearbox
 Fluid
SHELL ROTELLA T 30 (2 GAL)

Sample Rating Trend



DIAGNOSIS

▲ Recommendation

Oil and filter change at the time of sampling has been noted. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

▲ Wear

Bearing and/or bushing wear is indicated.

▲ Contamination

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

▲ Fluid Condition

The AN level is at the top-end of the recommended limit.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0839378	WC0563117	VPA019856
Sample Date	Client Info		22 May 2024	10 Mar 2022	18 Jul 2020
Machine Age	hrs	Client Info	1099	0	778
Oil Age	hrs	Client Info	300	0	0
Oil Changed	Client Info		Changed	N/A	N/A
Sample Status			SEVERE	NORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	42	34	26
Chromium	ppm	ASTM D5185m >10	0	<1	<1
Nickel	ppm	ASTM D5185m >10	<1	0	1
Titanium	ppm	ASTM D5185m	<1	<1	<1
Silver	ppm	ASTM D5185m	0	1	0
Aluminum	ppm	ASTM D5185m >5	▲ 134	23	24
Lead	ppm	ASTM D5185m >65	▲ 352	303	282
Copper	ppm	ASTM D5185m >80	▲ 487	356	320
Tin	ppm	ASTM D5185m >8	4	3	0
Antimony	ppm	ASTM D5185m >5	---	---	0
Vanadium	ppm	ASTM D5185m	<1	0	0
Cadmium	ppm	ASTM D5185m	0	<1	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 0	56	64	61
Barium	ppm	ASTM D5185m	<1	0	0
Molybdenum	ppm	ASTM D5185m 0	38	39	34
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	444	455	407
Calcium	ppm	ASTM D5185m 1890	1707	1710	1529
Phosphorus	ppm	ASTM D5185m 680	963	1019	891
Zinc	ppm	ASTM D5185m 750	988	1145	999
Sulfur	ppm	ASTM D5185m	4074	3537	3009

CONTAMINANTS

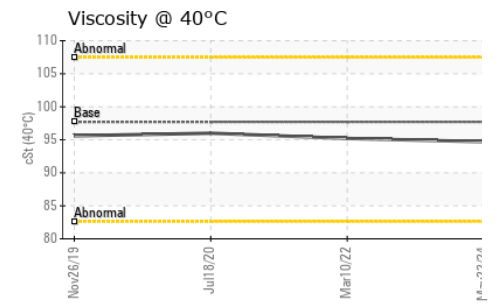
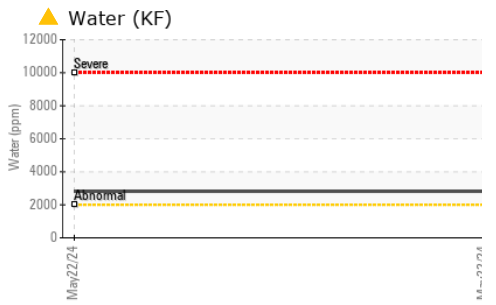
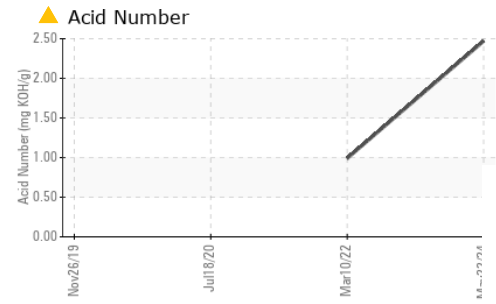
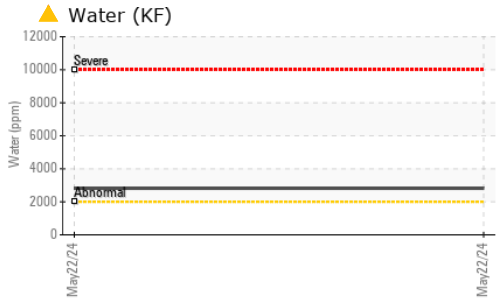
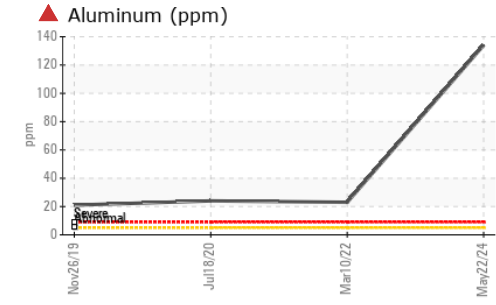
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	8	6	7
Sodium	ppm	ASTM D5185m	2	<1	2
Potassium	ppm	ASTM D5185m >20	1	4	2
Water	%	ASTM D6304 >0.2	▲ 0.282	---	---
ppm Water	ppm	ASTM D6304 >2000	▲ 2820	---	---

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	▲ 2.47	0.99	---



OIL ANALYSIS REPORT

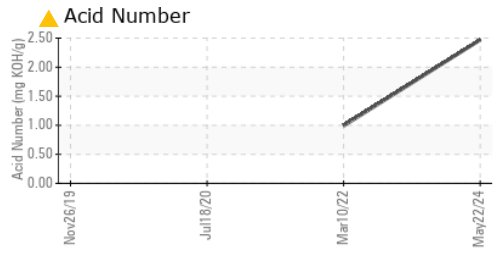
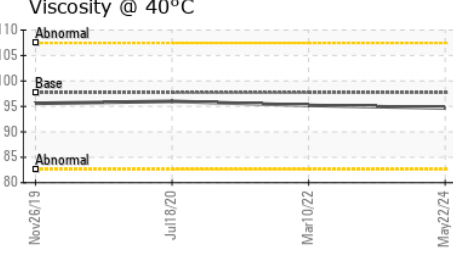
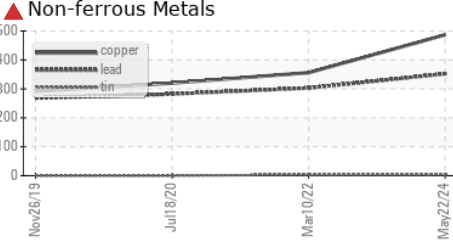
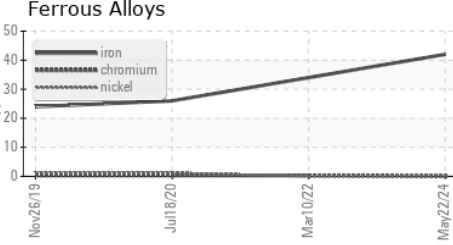


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	0.2%	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	97.7	95.2	96.0

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				no image	no image
Bottom				no image	no image

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0839378 **Received** : 30 May 2024
Lab Number : 06195991 **Tested** : 03 Jun 2024
Unique Number : 11058114 **Diagnosed** : 04 Jun 2024 - Jonathan Hester
Test Package : MAR 2 (Additional Tests: KF)

G&G TECHNOLOGIES
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 COVENTRY, RI
 US 02816
 Contact: GENKO GENEV
 g2@ggtechnologies.com
 T: (401)295-4000
 F:

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)