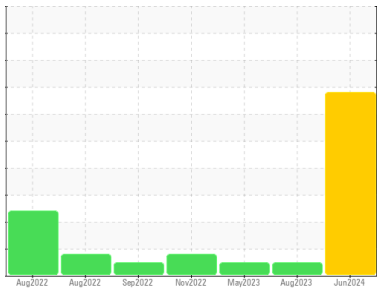
PROBLEM SUMMARY

Area
(C-GPBN)
Machine Id
RL-5406-61A
Component
Left Piston Aircraft Engine
Fluid
SHELL AEROSHELL W 15W50 MGR (10 LTR)

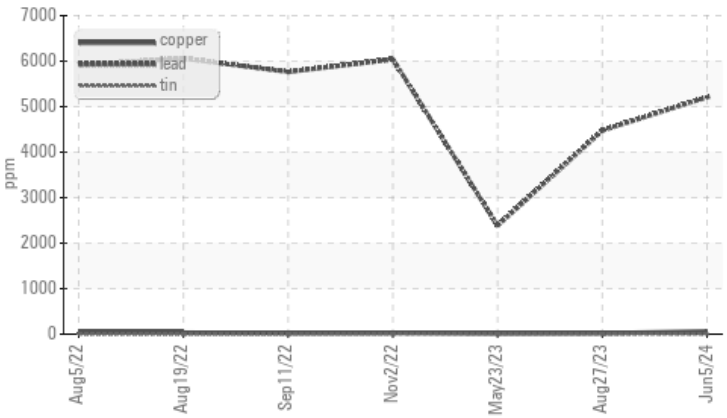
Sample Rating Trend



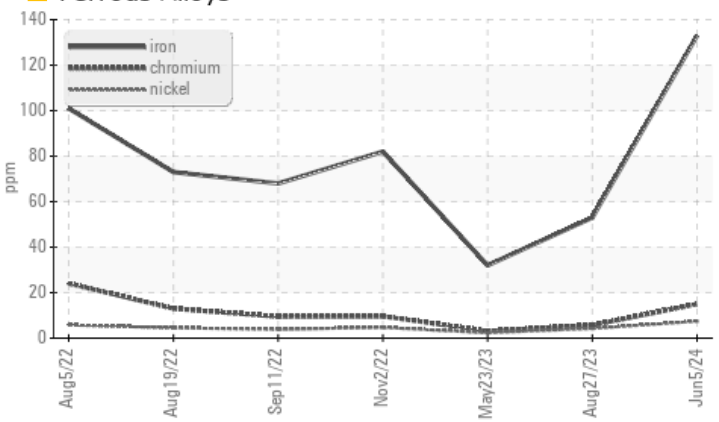
WEAR

COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals



▲ Ferrous Alloys



RECOMMENDATION

We advise that you check the engine magneto timing. We advise that you monitor for an abnormal oil pressure drop and noise. We advise that you perform a compression test, and a borescope exam. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Provided compression test checks O.K., resample in 20 to 25 hours to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	NORMAL
Iron	ppm	ASTM D5185(m)	>90	▲ **133**	53	32
Copper	ppm	ASTM D5185(m)	>25	▲ **61**	21	15

Customer Id: KASDOR
Sample No.: WC0882956
Lab Number: 02645099
Test Package: AVI 1

To manage this report scan the QR code

To discuss the diagnosis or test data:
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Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Monitor	---	---	?	We advise that you monitor for an abnormal oil pressure drop and noise. We advise that you perform a compression test, and a borescope exam.
Resample	---	---	?	We recommend an early resample to monitor this condition. Provided compression test checks O.K., resample in 20 to 25 hours to monitor.
Check Timing	---	---	?	We advise that you check the engine magneto timing.

HISTORICAL DIAGNOSIS

NORMAL

27 Aug 2023 Diag: Kevin Marson
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

NORMAL

23 May 2023 Diag: Kevin Marson
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

WEAR

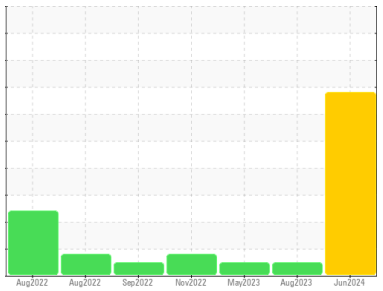
02 Nov 2022 Diag: Kevin Marson
We advise that you monitor for an abnormal oil pressure drop and noise. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.Copper ppm levels are abnormal. Bearing and/or bushing wear is indicated. There is no indication of any contamination in the oil. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

OIL ANALYSIS REPORT

Area
(C-GPBN)
Machine Id
RL-5406-61A
Component
Left Piston Aircraft Engine
Fluid
SHELL AEROSHELL W 15W50 MGR (10 LTR)

Sample Rating Trend



WEAR

DIAGNOSIS

▲ Recommendation
We advise that you check the engine magneto timing. We advise that you monitor for an abnormal oil pressure drop and noise. We advise that you perform a compression test, and a borescope exam. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. Provided compression test checks O.K., resample in 20 to 25 hours to monitor.

▲ Wear
Copper ppm levels are severe. Iron ppm levels are abnormal. Cylinder wear is indicated. Bearing and/or bushing wear is indicated.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0882956**	WC0706053	WC0706005
Sample Date		Client Info		**05 Jun 2024**	27 Aug 2023	23 May 2023
TSN	hrs	Client Info		**0**	0	0
TSO	hrs	Client Info		**1578**	1384	1305
Oil Age	hrs	Client Info		**45**	29	10
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**SEVERE**	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	**<1.0**	<1.0	<1.0
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*	>200	**27**	---	---
Iron	ppm	ASTM D5185(m)	>90	▲ **133**	53	32
Chromium	ppm	ASTM D5185(m)	>20	**15**	6	3
Nickel	ppm	ASTM D5185(m)	>15	**7**	4	2
Titanium	ppm	ASTM D5185(m)		**<1**	0	0
Silver	ppm	ASTM D5185(m)	>5	**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>25	**15**	9	5
Lead	ppm	ASTM D5185(m)	>20000	**5207**	4475	2384
Copper	ppm	ASTM D5185(m)	>25	▲ **61**	21	15
Tin	ppm	ASTM D5185(m)	>30	**<1**	0	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**1**	<1	<1

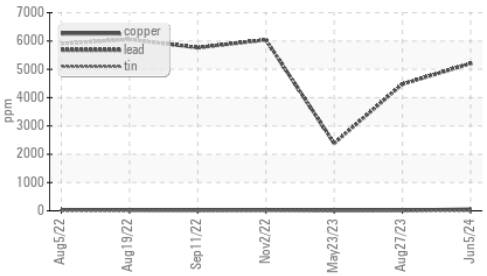
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**<1**	<1	<1
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	5	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)	10	**7**	6	2
Calcium	ppm	ASTM D5185(m)	10	**1**	2	1
Phosphorus	ppm	ASTM D5185(m)	1280	**1235**	1271	1217
Zinc	ppm	ASTM D5185(m)	10	**22**	23	16
Sulfur	ppm	ASTM D5185(m)	1800	**1732**	1415	932
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**6**	4	3
Sodium	ppm	ASTM D5185(m)		**<1**	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1

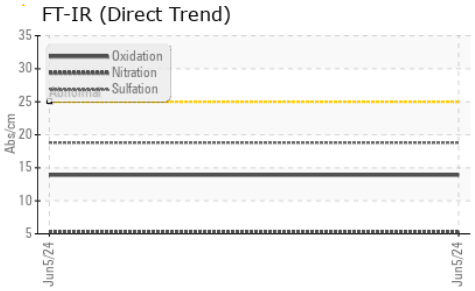
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*		**0.1**	---	---
Nitration	Abs/cm	ASTM D7624*	>20	**5.3**	---	---
Sulfation	Abs/.1mm	ASTM D7415*	>30	**18.8**	---	---

OIL ANALYSIS REPORT

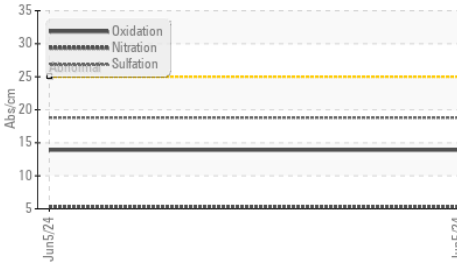
Non-ferrous Metals



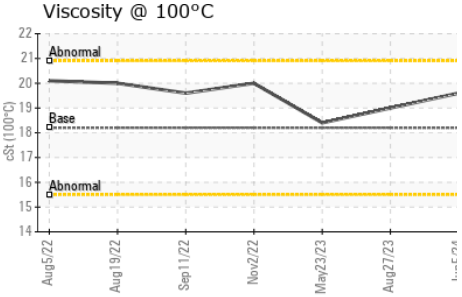
FT-IR (Direct Trend)



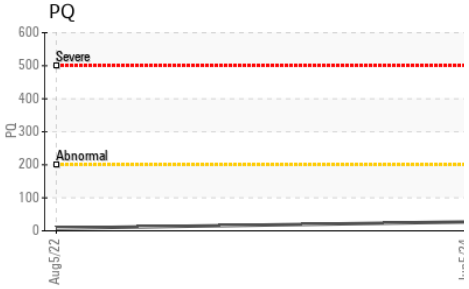
FT-IR (Direct Trend)



Viscosity @ 100°C



PQ



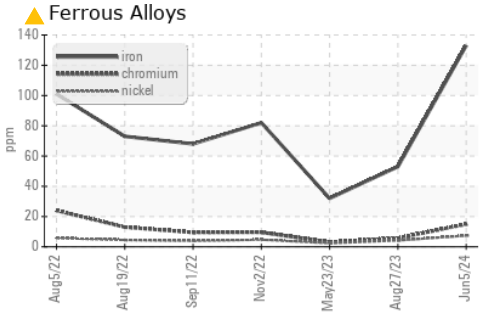
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	**13.9**	---	---

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**VLITE**	LIGHT	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	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*	>0.1	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

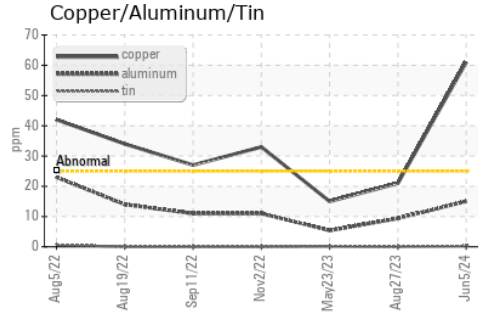
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	18.2	**19.6**	19.0	18.4

GRAPHS

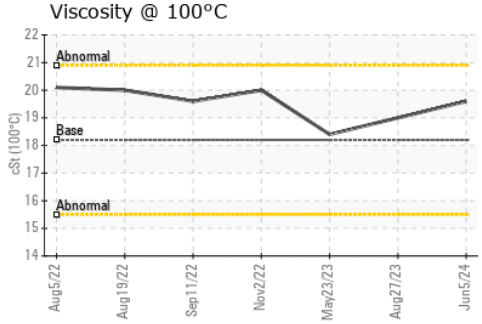
Ferrous Alloys



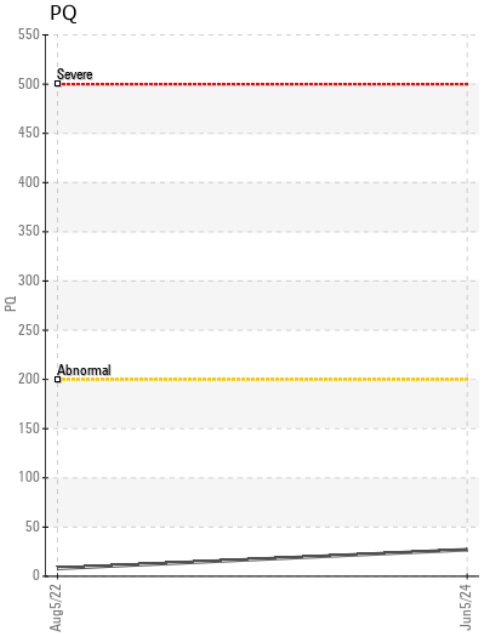
Copper/Aluminum/Tin



Viscosity @ 100°C



PQ



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0882956 **Received** : 02 Jul 2024
Lab Number : 02645099 **Tested** : 03 Jul 2024
Unique Number : 5802638 **Diagnosed** : 03 Jul 2024 - Kevin Marson
Test Package : AVI 1 (Additional Tests: FT-IR, PQ)

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DORVAL, QC
CA H9S 5T8
Contact: MARK KALUS
MARK@KALUSAIR.COM
T: (514)633-5605
F: (514)633-5605

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.