



# OIL ANALYSIS REPORT

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

Area  
**(C-GKPK)**  
Machine Id  
**CESSNA 521040**  
Component  
**Right Piston Aircraft Engine**  
Fluid  
**SHELL AEROSHELL W 15W50 MGR (12 LTR)**

## RECOMMENDATION

We advise that you check the engine tuning and timing. We advise that you check for excessive valve and valve guide clearance. 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		<b>WC0811220</b>	WC0712110	WC0712113
Sample Date		Client Info		<b>04 Jan 2024</b>	06 Apr 2023	05 Oct 2022
TSN	hrs	Client Info		<b>0</b>	0	0
TSO	hrs	Client Info		<b>815</b>	771	744
Oil Age	hrs	Client Info		<b>26</b>	27	25
Filter Age	hrs	Client Info		<b>26</b>	27	25
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>ABNORMAL</b>	NORMAL	NORMAL

## WEAR

Nickel ppm levels are abnormal. Exhaust valve wear is indicated.

PQ		ASTM D8184*		<b>32</b>	---	---
Iron	ppm	ASTM D5185(m)	>90	<b>124</b>	83	84
Chromium	ppm	ASTM D5185(m)	>20	<b>20</b>	22	23
Nickel	ppm	ASTM D5185(m)	>15	<b>▲ 50</b>	49	44
Titanium	ppm	ASTM D5185(m)		<b>0</b>	1	<1
Silver	ppm	ASTM D5185(m)	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>25	<b>32</b>	21	26
Lead	ppm	ASTM D5185(m)	>20000	<b>6519</b>	5428	4984
Copper	ppm	ASTM D5185(m)	>25	<b>13</b>	13	13
Tin	ppm	ASTM D5185(m)	>30	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

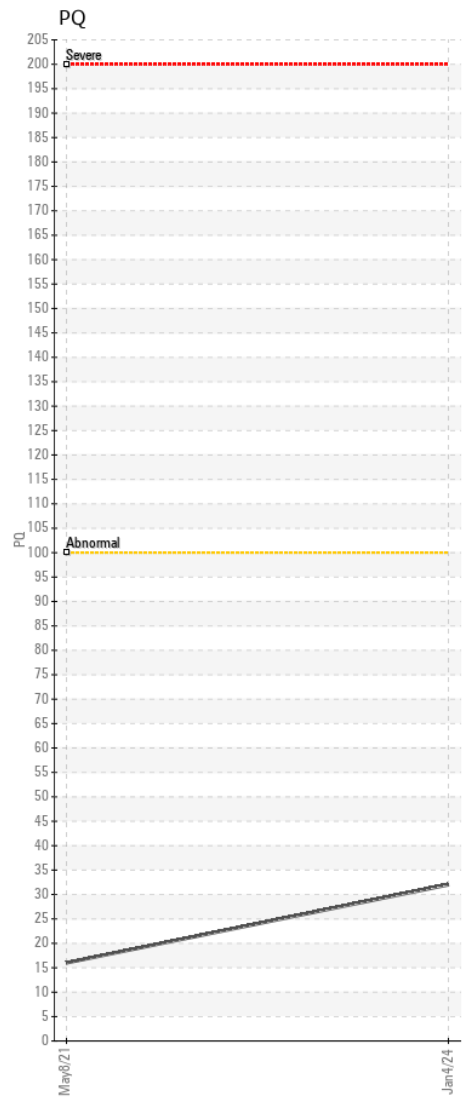
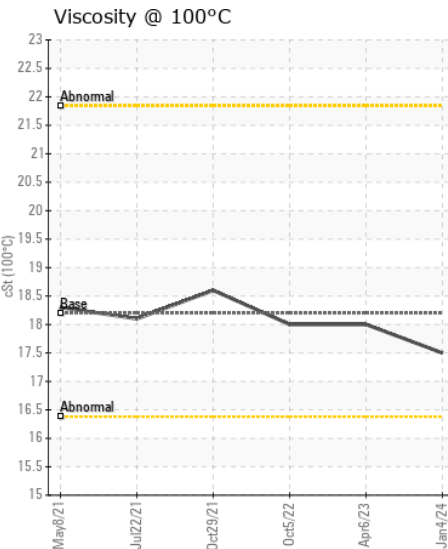
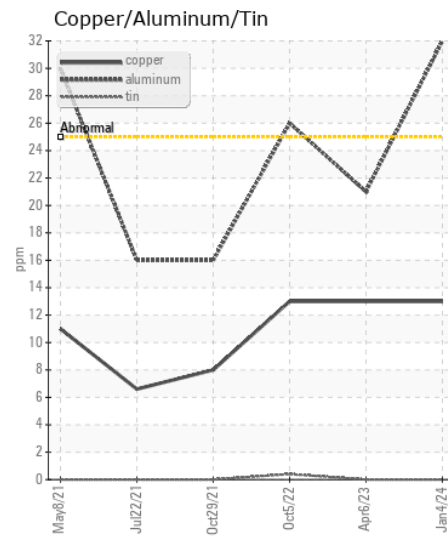
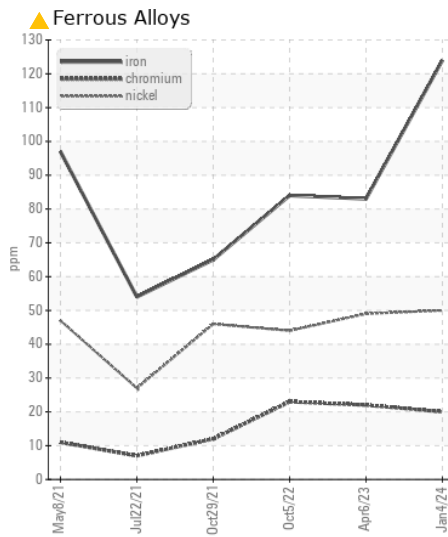
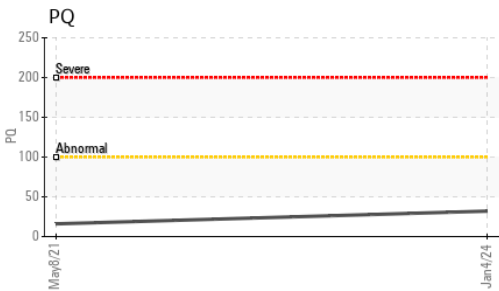
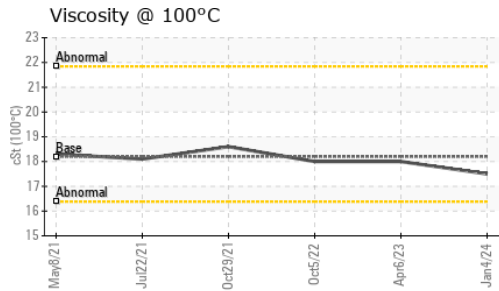
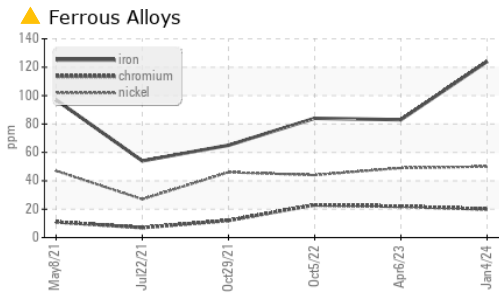
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>15	<b>13</b>	10	13
Potassium	ppm	ASTM D5185(m)	>20	<b>5</b>	0	<1
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Silt	scalar	Visual*	NONE	<b>NONE</b>	VLITE	VLITE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

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

Sodium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	1
Boron	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	5	<b>4</b>	6	6
Manganese	ppm	ASTM D5185(m)		<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185(m)	10	<b>1</b>	<1	1
Calcium	ppm	ASTM D5185(m)	10	<b>4</b>	6	22
Phosphorus	ppm	ASTM D5185(m)	1280	<b>913</b>	935	859
Zinc	ppm	ASTM D5185(m)	10	<b>4</b>	3	3
Sulfur	ppm	ASTM D5185(m)	1800	<b>1243</b>	1147	1168
Visc @ 100°C	cSt	ASTM D7279(m)	18.2	<b>17.5</b>	18.0	18.0



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0811220 **Received** : 11 Jan 2024  
**Lab Number** : 02608152 **Diagnosed** : 12 Jan 2024  
**Unique Number** : 5709238 **Diagnostician** : Kevin Marson  
**Test Package** : AVI 1 ( Additional Tests: PQ )

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.

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