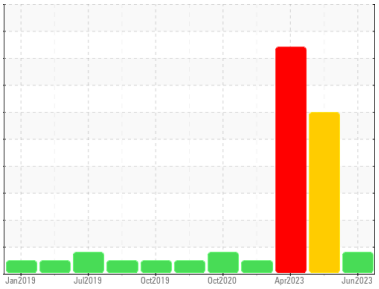
PROBLEM SUMMARY

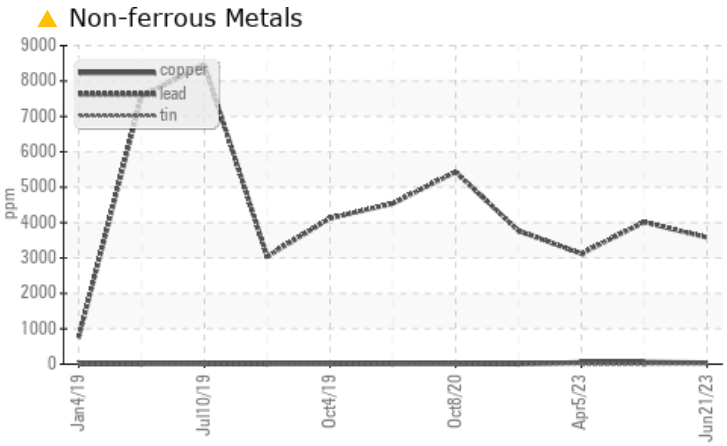
Sample Rating Trend



WEAR

Area
(CGBAQ)
Machine Id
[CGBAQ] CESSNA 172N L-6923-76T
Component
Front Piston Aircraft Engine
Fluid
SHELL AEROSHELL W 15W50 MGR (8 QTS)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	SEVERE	SEVERE
Copper	ppm	ASTM D5185(m)	>25	**41**	61	54

Customer Id: ROC149OTT
Sample No.: WC0827885
Lab Number: 02589587
Test Package: AVI 1

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
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.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

16 May 2023 Diag: Kevin Marson

WEAR

We advise that you monitor for an abnormal oil pressure drop and noise. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.Copper ppm levels are severe. 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

05 Apr 2023 Diag: Kevin Marson

WEAR

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. We advise that you monitor for an abnormal oil pressure drop and noise. We recommend that you drain the oil from the component if this has not already been done. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.Copper ppm levels are severe. Aluminum ppm levels are noted. A sharp increase in the copper level is noted. Bearing and/or bushing wear is indicated. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. High amount of ingressed dirt has caused abrasive wear to the component. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

26 Jul 2021 Diag: Kevin Marson

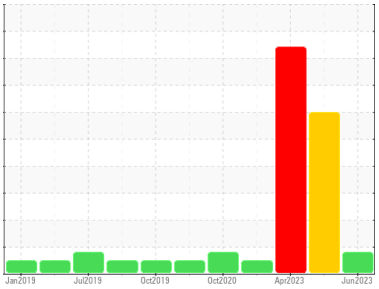
NORMAL

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Area
(CGBAQ)
Machine Id
[CGBAQ] CESSNA 172N L-6923-76T
Component
Front Piston Aircraft Engine
Fluid
SHELL AEROSHELL W 15W50 MGR (8 QTS)

DIAGNOSIS

Recommendation

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.

Wear

Copper ppm levels are abnormal. The copper level has decreased, but is still abnormal. 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		**WC0827885**	WC0806812	WC0806817
Sample Date		Client Info		**21 Jun 2023**	16 May 2023	05 Apr 2023
TSN	hrs	Client Info		**0**	0	0
TSO	hrs	Client Info		**261**	152	0
Oil Age	hrs	Client Info		**60**	50	50
Oil Changed		Client Info		**Changed**	N/A	Changed
Sample Status				**ABNORMAL**	SEVERE	SEVERE

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

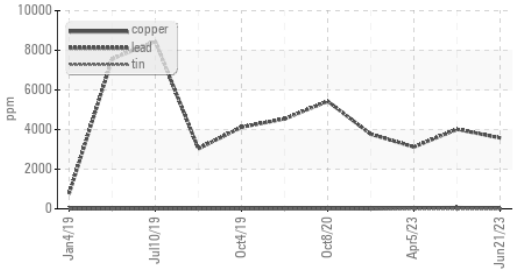
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>90	**13**	34	38
Chromium	ppm	ASTM D5185(m)	>20	**2**	6	9
Nickel	ppm	ASTM D5185(m)	>15	**2**	6	7
Titanium	ppm	ASTM D5185(m)		**0**	<1	<1
Silver	ppm	ASTM D5185(m)	>5	**<1**	0	0
Aluminum	ppm	ASTM D5185(m)	>25	**5**	8	▲ 8
Lead	ppm	ASTM D5185(m)	>20000	**3578**	4014	3121
Copper	ppm	ASTM D5185(m)	>25	▲ **41**	⬢ 61	⬢ 54
Tin	ppm	ASTM D5185(m)	>30	**0**	<1	<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**	2	6

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**<1**	<1	<1
Barium	ppm	ASTM D5185(m)		**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)	5	**<1**	2	2
Manganese	ppm	ASTM D5185(m)		**0**	0	<1
Magnesium	ppm	ASTM D5185(m)	10	**0**	2	2
Calcium	ppm	ASTM D5185(m)	10	**<1**	6	5
Phosphorus	ppm	ASTM D5185(m)	1280	**1060**	1104	1111
Zinc	ppm	ASTM D5185(m)	10	**3**	8	8
Sulfur	ppm	ASTM D5185(m)	1800	**1320**	1243	1144
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

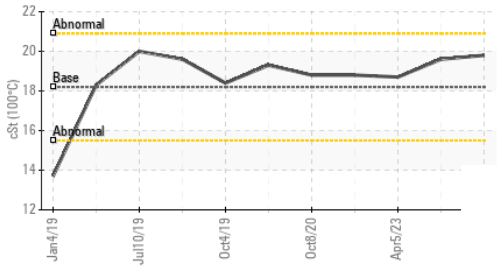
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**6**	8	▲ 19
Sodium	ppm	ASTM D5185(m)		**1**	2	5
Potassium	ppm	ASTM D5185(m)	>20	**0**	<1	0

OIL ANALYSIS REPORT

Non-ferrous Metals



Viscosity @ 100°C

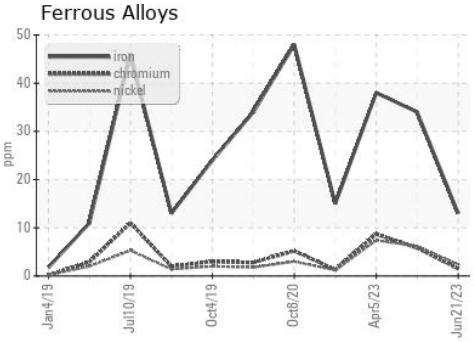


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**LIGHT**	VLITE	VLITE
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt	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

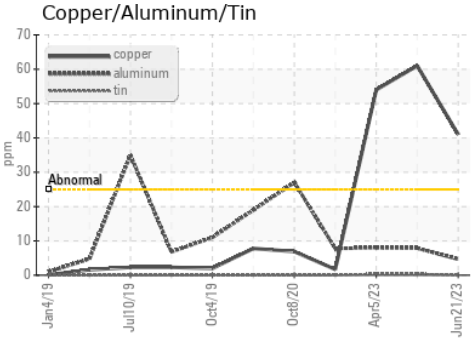
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D7279(m)	18.2	**19.8**	19.6	18.7

GRAPHS

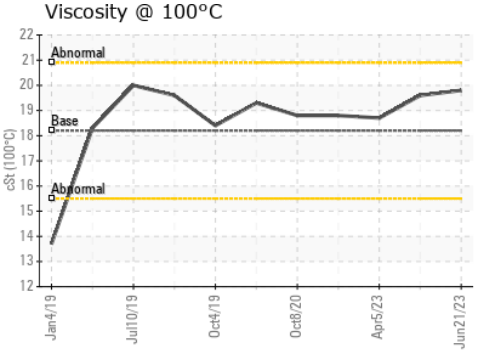
Ferrous Alloys



Copper/Aluminum/Tin



Viscosity @ 100°C



CALA
ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0827885
Lab Number : 02589587
Unique Number : 5658653
Test Package : AVI 1

Received : 17 Oct 2023
Diagnosed : 17 Oct 2023
Diagnostician : Kevin Marson

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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