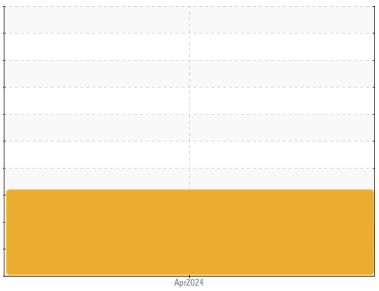
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Machine Id
AEROSTAR
Component
Left Piston Aircraft Engine
Fluid
PHILLIPS 66 AVIATION X/C OIL SAE20W50 (--- GAL)

DIAGNOSIS

Recommendation

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. 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. We recommend that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. Provided compression test checks O.K., resample in 20 to 25 hours to monitor. Please specify the component make and model with your next sample.

Wear

Copper and iron ppm levels are abnormal. Cylinder wear is indicated. Bearing and/or bushing wear is indicated.

Contamination

There is a moderate concentration of dirt present in the oil. High amount of ingressed dirt has caused abrasive wear to the component.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. 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		**WC0498795**	---	---
Sample Date		Client Info		**23 Apr 2024**	---	---
Machine Age	hrs	Client Info		**0**	---	---
Oil Age	hrs	Client Info		**0**	---	---
Oil Changed		Client Info		**N/A**	---	---
Sample Status				**ABNORMAL**	---	---

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

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>90	▲ **122**	---	---
Chromium	ppm	ASTM D5185m	>20	**8**	---	---
Nickel	ppm	ASTM D5185m	>15	**6**	---	---
Titanium	ppm	ASTM D5185m		**0**	---	---
Silver	ppm	ASTM D5185m	>5	**0**	---	---
Aluminum	ppm	ASTM D5185m	>25	**18**	---	---
Lead	ppm	ASTM D5185m	>20000	**3842**	---	---
Copper	ppm	ASTM D5185m	>25	▲ **36**	---	---
Tin	ppm	ASTM D5185m	>30	**1**	---	---
Vanadium	ppm	ASTM D5185m		**0**	---	---
Cadmium	ppm	ASTM D5185m		**<1**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**0**	---	---
Barium	ppm	ASTM D5185m		**0**	---	---
Molybdenum	ppm	ASTM D5185m		**0**	---	---
Manganese	ppm	ASTM D5185m		**1**	---	---
Magnesium	ppm	ASTM D5185m		**1**	---	---
Calcium	ppm	ASTM D5185m		**0**	---	---
Phosphorus	ppm	ASTM D5185m		**0**	---	---
Zinc	ppm	ASTM D5185m		**0**	---	---
Sulfur	ppm	ASTM D5185m		**1340**	---	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	▲ **15**	---	---
Sodium	ppm	ASTM D5185m		**0**	---	---
Potassium	ppm	ASTM D5185m	>20	**<1**	---	---

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.4**	---	---
Nitration	Abs/cm	*ASTM D7624	>20	**4.3**	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	**16.8**	---	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**10.6**	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		**2.5**	---	---

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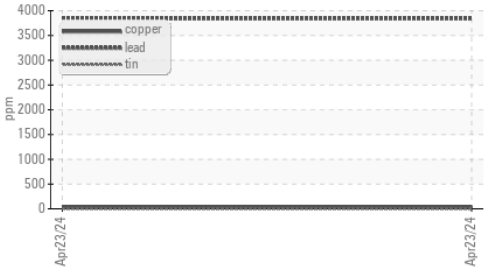
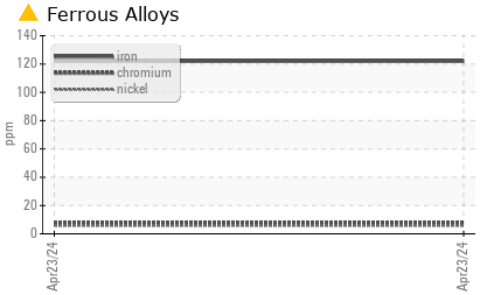
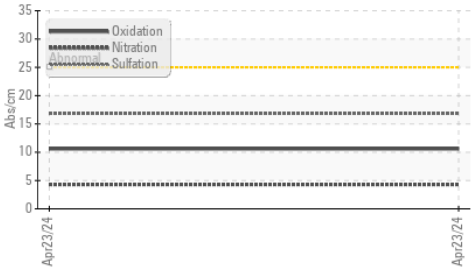
Non-ferrous Metals



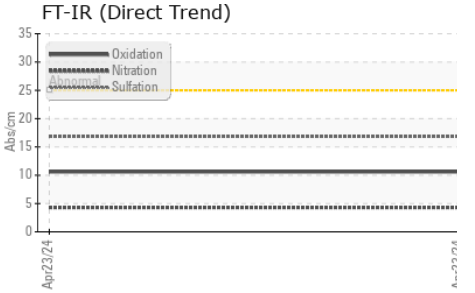
Ferrous Alloys



FT-IR (Direct Trend)



FT-IR (Direct Trend)



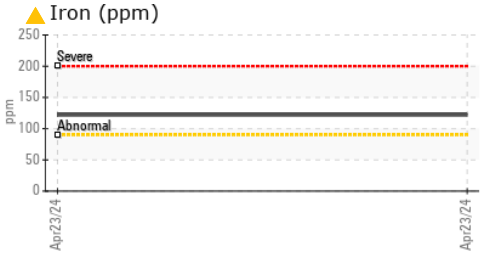
Base Number

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	---	---
Yellow Metal	scalar	*Visual	NONE	**NONE**	---	---
Precipitate	scalar	*Visual	NONE	**NONE**	---	---
Silt	scalar	*Visual	NONE	**NONE**	---	---
Debris	scalar	*Visual	NONE	**NONE**	---	---
Sand/Dirt	scalar	*Visual	NONE	**NONE**	---	---
Appearance	scalar	*Visual	NORML	**NORML**	---	---
Odor	scalar	*Visual	NORML	**NORML**	---	---
Emulsified Water	scalar	*Visual	>0.1	**NEG**	---	---
Free Water	scalar	*Visual		**NEG**	---	---

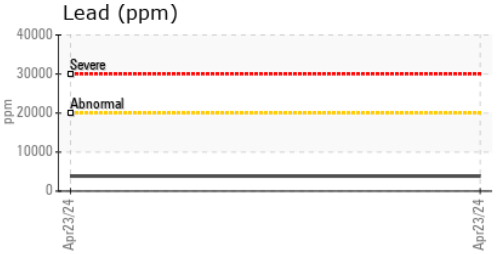
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	19.8	**21.2**	---	---

GRAPHS

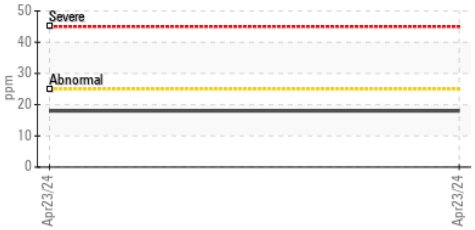
Iron (ppm)



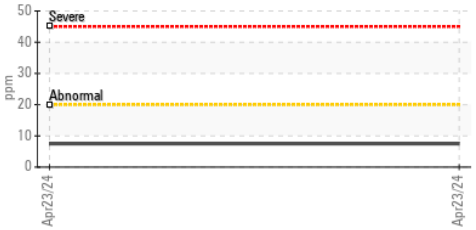
Lead (ppm)



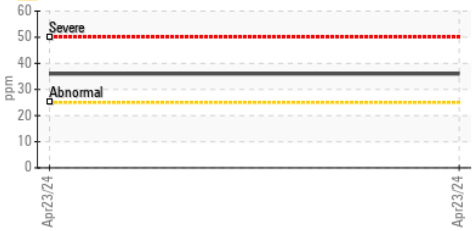
Aluminum (ppm)



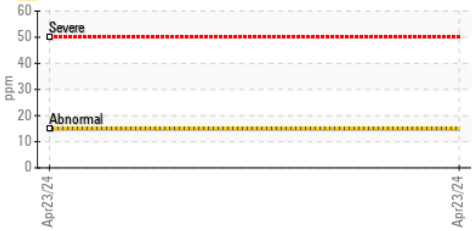
Chromium (ppm)



Copper (ppm)

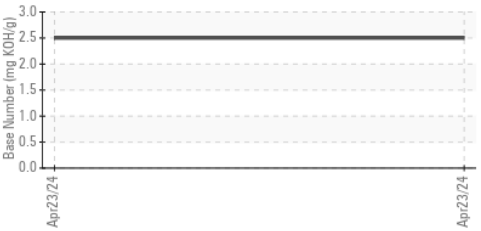


Silicon (ppm)



Viscosity @ 100°C

Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0498795
Lab Number : 06158768
Unique Number : 10994191
Test Package : MOB1+

Received : 24 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 26 Apr 2024 - Jonathan Hester

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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