AVI WEAR CHECK

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
(C-FPXL)
Machine Id
[C-FPXL] PIPER PA31-325 RL-5313-61AC
Component
Left Piston Aircraft Engine
Fluid
PHILLIPS 66 AVIATION X/C OIL SAE20W50 (12 LTR)

RECOMMENDATION

We advise that you check the engine magneto timing. 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.

WEAR

Chromium and nickel ppm levels are abnormal. Ring wear is indicated. Exhaust valve wear is indicated.

CONTAMINATION

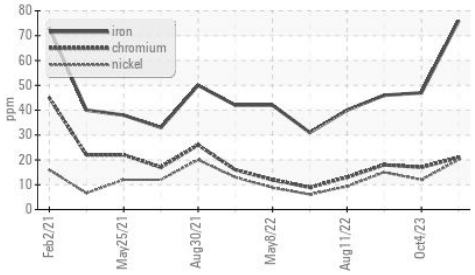
The water content is negligible. There is no indication of any contamination in the oil.

FLUID CONDITION

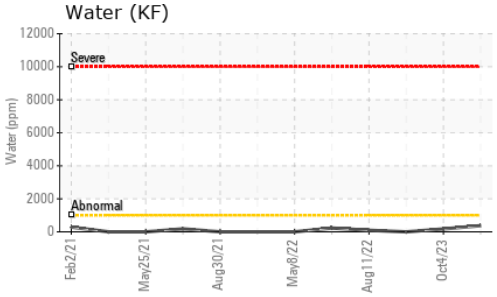
The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0921446	WC0841058	WC0749484
Sample Date		Client Info		24 Apr 2024	04 Oct 2023	27 Oct 2022
TSN	hrs	Client Info		0	0	0
TSO	hrs	Client Info		1008	950	705
Oil Age	hrs	Client Info		58	51	53
Filter Age	hrs	Client Info		58	51	53
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	MARGINAL
Iron	ppm	ASTM D5185(m)	>90	76	47	46
Chromium	ppm	ASTM D5185(m)	>20	▲ 21	17	18
Nickel	ppm	ASTM D5185(m)	>15	▲ 20	12	▲ 15
Titanium	ppm	ASTM D5185(m)		<1	0	<1
Silver	ppm	ASTM D5185(m)	>5	<1	2	<1
Aluminum	ppm	ASTM D5185(m)	>25	13	14	12
Lead	ppm	ASTM D5185(m)	>20000	9105	8163	8989
Copper	ppm	ASTM D5185(m)	>25	12	8	10
Tin	ppm	ASTM D5185(m)	>30	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>15	3	4	5
Potassium	ppm	ASTM D5185(m)	>20	<1	0	0
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water	%	ASTM D6304*	>0.1	0.037	0.017	---
ppm Water	ppm	ASTM D6304*	>1000	372	175.0	---
Glycol		WC Method		NEG	NEG	NEG
Silt	scalar	Visual*	NONE	LIGHT	LIGHT	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	VLITE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	.2%	.2%	NEG
Sodium	ppm	ASTM D5185(m)		<1	<1	<1
Boron	ppm	ASTM D5185(m)		<1	0	0
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		0	0	0
Manganese	ppm	ASTM D5185(m)		0	0	0
Magnesium	ppm	ASTM D5185(m)		6	3	5
Calcium	ppm	ASTM D5185(m)		0	<1	<1
Phosphorus	ppm	ASTM D5185(m)		0	1	0
Zinc	ppm	ASTM D5185(m)		2	2	1
Sulfur	ppm	ASTM D5185(m)		1007	970	1038
Visc @ 100°C	cSt	ASTM D7279(m)	19.8	21.8	22.1	22.4

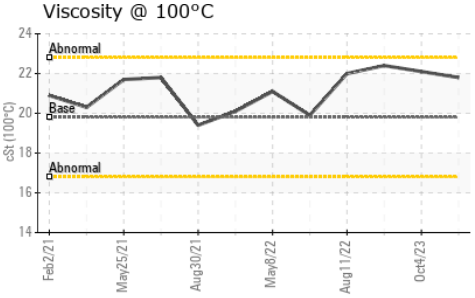
Ferrous Alloys



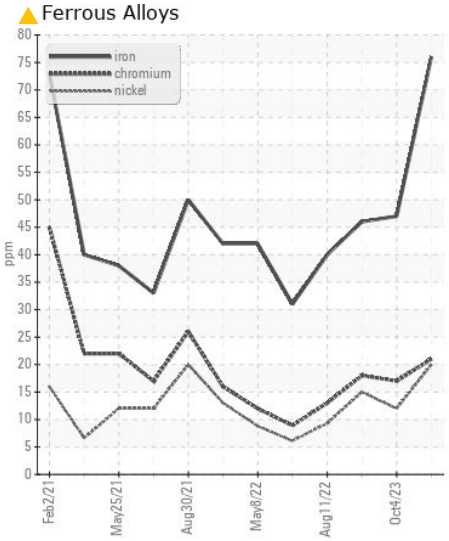
Water (KF)



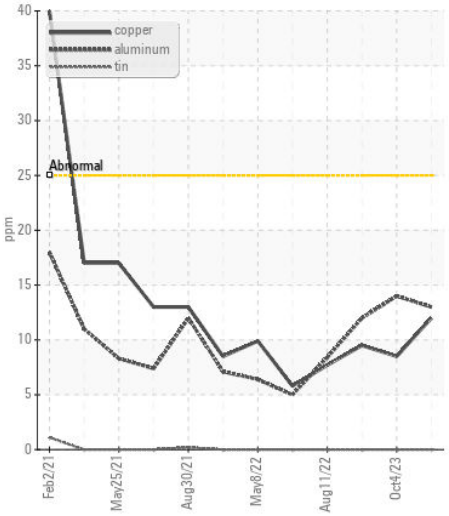
Viscosity @ 100°C



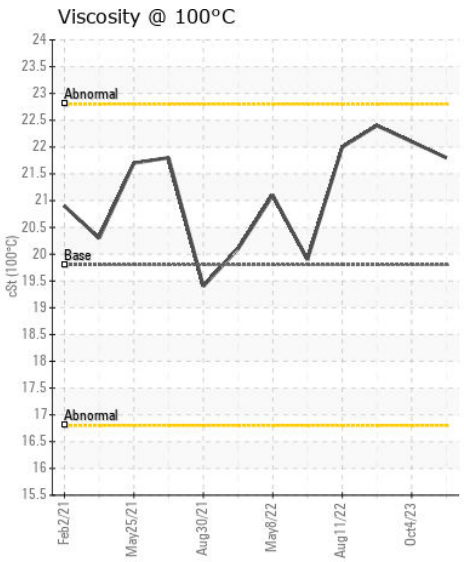
Ferrous Alloys



Copper/Aluminum/Tin



Viscosity @ 100°C



ISO 17025:2017 Accredited Laboratory

Laboratory	: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9		
Sample No.	: WC0921446	**Received**	: 26 Apr 2024
Lab Number	: 02631604	**Tested**	: 29 Apr 2024
Unique Number	: 5772757	**Diagnosed**	: 29 Apr 2024 - Kevin Marson
Test Package	: AVI 1 (Additional Tests: KF)		

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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