

## (C-GTJF) [C-GTJF] PIPER PA31-350 RL-1372-68A

## **Piston Aircraft Engine**

## PHILLIPS 66 AVIATION X/C OIL SAE20W50 (--- GAL)

RECOMMENDATION
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Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

W	ΕA	

An increase in the nickel level is noted. All other component wear rates are normal.

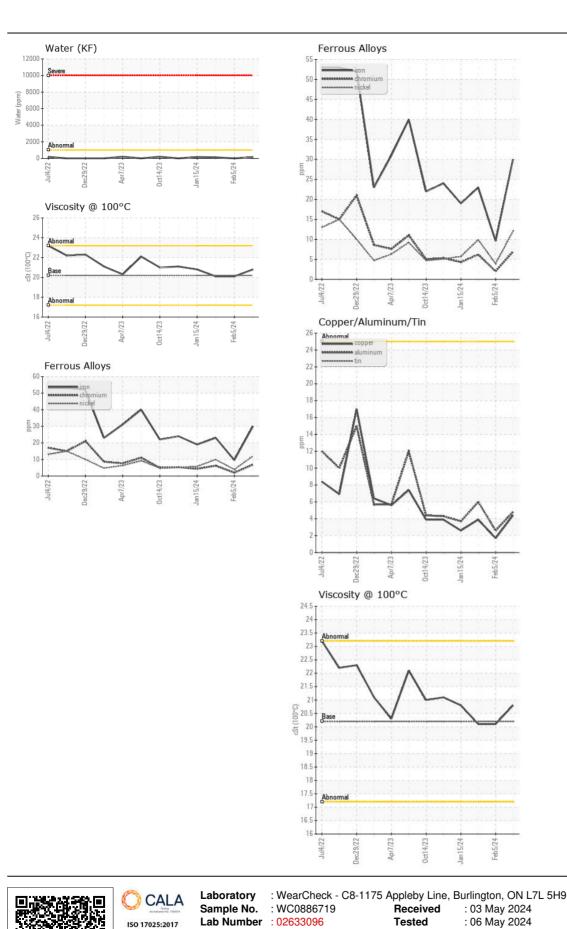
## CONTAMINATION

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

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The condition of the oil is acceptable for the time in service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0886719	WC0886704	WC0838447
Sample Date		Client Info		26 Apr 2024	05 Feb 2024	02 Feb 2024
TSN	hrs	Client Info		0	10323	0
TSO	hrs	Client Info		3460	3285	3281
Oil Age	hrs	Client Info		48	4	13
Filter Age	hrs	Client Info		48	17	13
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL
				•••		
Iron	ppm	ASTM D5185(m)	>90	30	10	23
Chromium	ppm	ASTM D5185(m)	>20	7	2	6
Nickel	ppm	ASTM D5185(m)	>15	12	4	10
Titanium	ppm	ASTM D5185(m)	-	<1	0	0
Silver	ppm	ASTM D5185(m)	>5	0	<1	<1
Aluminum	ppm	ASTM D5185(m)	>25	5	3	6
Lead	ppm	ASTM D5185(m)	>20000	7679	1547	3945
Copper	ppm	ASTM D5185(m)	>25	4	2	4
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	mqq	ASTM D5185(m)	>15	4	11	12
Silicon Potassium	ppm ppm	ASTM D5185(m) ASTM D5185(m)	>15 >20	4 <1	11 <1	12 <1
		. /		-		
Potassium		ASTM D5185(m)	>20	<1	<1	<1
Potassium Fuel	ppm	ASTM D5185(m) WC Method	>20 >4.0	<1 <1.0	<1 <1.0	<1 <1.0
Potassium Fuel Water	ppm %	ASTM D5185(m) WC Method ASTM D6304*	>20 >4.0 >0.1	<1 <1.0 0.015	<1 <1.0	<1 <1.0 0.012
Potassium Fuel Water ppm Water	ppm %	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304*	>20 >4.0 >0.1	<1 <1.0 0.015 151	<1 <1.0 	<1 <1.0 0.012 128
Potassium Fuel Water ppm Water Glycol	ppm % ppm	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304* WC Method	>20 >4.0 >0.1 >1000	<1 <1.0 0.015 151 NEG	<1 <1.0  NEG	<1 <1.0 0.012 128 NEG
Potassium Fuel Water ppm Water Glycol Silt	ppm % ppm scalar	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304* WC Method Visual*	>20 >4.0 >0.1 >1000 NONE	<1 <1.0 0.015 151 NEG VLITE	<1 <1.0  NEG VLITE	<1 <1.0 0.012 128 NEG LIGHT
Potassium Fuel Water ppm Water Glycol Silt Debris	ppm % ppm scalar scalar	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304* WC Method Visual* Visual*	>20 >4.0 >0.1 >1000 NONE NONE	<1 <1.0 0.015 151 NEG VLITE NONE	<1 <1.0   NEG VLITE NONE	<1 <1.0 0.012 128 NEG LIGHT NONE
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt	ppm % ppm scalar scalar scalar	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304* WC Method Visual* Visual* Visual*	>20 >4.0 >0.1 >1000 NONE NONE NONE	<1 <1.0 0.015 151 NEG VLITE NONE NONE	<1 <1.0  NEG VLITE NONE NONE	<1 <1.0 0.012 128 NEG LIGHT NONE NONE
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance	ppm % ppm scalar scalar scalar scalar	ASTM D5185(m) WC Method ASTM D6304* WC Method Visual* Visual* Visual* Visual*	>20 >4.0 >0.1 >1000 NONE NONE NONE NORML	<1 <1.0 0.015 151 NEG VLITE NONE NONE NORML	<1 <1.0  NEG VLITE NONE NONE NORML	<1 <1.0 0.012 128 NEG LIGHT NONE NONE NORML
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water	ppm % ppm scalar scalar scalar scalar scalar scalar	ASTM D5185(m) WC Method ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* Visual* Visual*	>20 >4.0 >0.1 >1000 NONE NONE NORME NORML	<1 <1.0 0.015 151 NEG VLITE NONE NONE NORML .2%	<1 <1.0  NEG VLITE NONE NONE NORML NORML NEG	<1 <1.0 0.012 128 NEG LIGHT NONE NONE NORML NORML .2%
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium	ppm % ppm scalar scalar scalar scalar scalar scalar	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* ASTM D5185(m)	>20 >4.0 >0.1 >1000 NONE NONE NORML NORML >0.1	<1 <1.0 0.015 151 NEG VLITE NONE NONE NORML .2%	<1 <1.0  NEG VLITE NONE NORML NORML NEG 0	<1 <1.0 0.012 128 NEG LIGHT NONE NONE NORML NORML .2% 0
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron	ppm % ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m)	>20 >4.0 >0.1 >1000 NONE NONE NORML NORML >0.1	<1 <1.0 0.015 151 NEG VLITE NONE NONE NORML .2% <1 0	<1 <1.0  NEG VLITE NONE NORML NORML NEG 0 0	<1 <1.0 0.012 128 NEG LIGHT NONE NONE NORML NORML .2% 0 0 0 0
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium	ppm % ppm scalar scalar scalar scalar scalar scalar ppm ppm	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m)	>20 >4.0 >0.1 >1000 NONE NONE NONE NORML >0.1	<1 <1.0 0.015 151 NEG VLITE NONE NONE NORML .2% <1 0 0	<1 <1.0  NEG VLITE NONE NORML NORML NEG 0 0 0	<1 <1.0 0.012 128 NEG LIGHT NONE NONE NORML .2% 0 0 0
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum	ppm % ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185(m) WC Method ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	>20 >4.0 >0.1 >1000 NONE NONE NORML NORML >0.1	<1 <1.0 0.015 151 NEG VLITE NONE NONE NORML .2% <1 0 0 0	<1 <1.0  NEG VLITE NONE NORML NORML NORML NEG 0 0 0 0 0	<1 <1.0 0.012 128 NEG LIGHT NONE NONE NORML .2% 0 0 0 0 0 0
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese	ppm % ppm scalar scalar scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185(m) WC Method ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	>20 >4.0 >0.1 >1000 NONE NONE NONE NORML >0.1 0.0 0.0 0.0 0.0	<1 <1.0 0.015 151 NEG VLITE NONE NONE NORML .2% <1 0 0 0 0 0	<1 <1.0  NEG VLITE NONE NONE NORML NORML NEG 0 0 0 0 0 0 0 0	<1 <1.0 0.012 128 NEG LIGHT NONE NONE NORML .2% 0 0 0 0 0 0 0 0
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium	ppm % ppm scalar scalar scalar scalar scalar scalar scalar ppm ppm ppm	ASTM D5185(m) WC Method ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	>20 >4.0 >0.1 >1000 NONE NONE NONE NORML >0.1 0.0 0.0 0.0 0.0 0.0 0.0	<1 <1.0 0.015 151 NEG VLITE NONE NONE NORML .2% <1 0 0 0 0 0 4	<1 <1.0  NEG VLITE NONE NORML NORML NEG 0 0 0 0 0 0 0 0 1	<1 <1.0 0.012 128 NEG LIGHT NONE NORML NORML .2% 0 0 0 0 0 0 0 0 0 3
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm % ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm	ASTM D5185(m) WC Method ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	>20 >4.0 >0.1 >1000 NONE NONE NORML NORML >0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.7	<1 <1.0 0.015 151 NEG VLITE NONE NORML NORML .2% <1 0 0 0 0 0 4 <1	<1 <1.0 NEG VLITE NONE NORML NORML NORML 0 0 0 0 0 0 1 5 5	<pre>&lt;1 &lt;1.0 0.012 128 NEG LIGHT NONE NONE NORML NORML .2% 0 0 0 0 0 0 0 3 1</pre>
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm % ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	>20 >4.0 >0.1 >1000 NONE NONE NORML NORML >0.1 0.0 0.0 0.0 0.0 0.0 0.0 4.7 0.0	<1 <1.0 0.015 151 NEG VLITE NONE NONE NORML .2% <1 0 0 0 0 0 0 4 <1 2	<1 <p>&lt;1.0</p> NEG VLITE NONE NORML NORML NORML NORML NORML 0 0 0 0 0 0 0 1 5 2	<1 <p>&lt;1.0</p> 0.012 128 NEG LIGHT NONE NORML NORML NORML .2% 0 0 0 0 0 0 0 0 0 0 1 1 1
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm % ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	>20 >4.0 >0.1 >1000 NONE NONE NORML >0.1 0.0 0.0 0.0 0.0 0.0 0.0 0.0 4.7 0.0 0.1	<1 <1.0 0.015 151 NEG VLITE NONE NORML .2% <1 0 0 0 0 0 0 0 0 0 4 <1 2 3	<1 <1.0  NEG VLITE NONE NORML NORML NORML NEG 0 0 0 0 0 0 0 0 0 1 5 2 2 3	<1 <ul> <li>&lt;1.0</li> <li>0.012</li> <li>128</li> <li>NEG</li> <li>LIGHT</li> <li>NONE</li> <li>NORML</li> <li>NORML</li> <li>.2%</li> </ul> <ul> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>0</li> <li>1</li> <li>2</li> </ul>
Potassium Fuel Water ppm Water Glycol Silt Debris Sand/Dirt Appearance Odor Emulsified Water Sodium Boron Barium Molybdenum Manganese Magnesium Calcium	ppm % ppm scalar scalar scalar scalar scalar scalar ppm ppm ppm ppm ppm ppm	ASTM D5185(m) WC Method ASTM D6304* ASTM D6304* WC Method Visual* Visual* Visual* Visual* Visual* Visual* ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m)	>20 >4.0 >0.1 >1000 NONE NONE NORML NORML >0.1 0.0 0.0 0.0 0.0 0.0 0.0 4.7 0.0	<1 <1.0 0.015 151 NEG VLITE NONE NONE NORML .2% <1 0 0 0 0 0 0 4 <1 2	<1 <p>&lt;1.0</p> NEG VLITE NONE NORML NORML NORML NORML NORML 0 0 0 0 0 0 0 1 5 2	<1 <1.0 0.012 128 NEG LIGHT NONE NONE NORML NORML .2% 0 0 0 0 0 0 0 1 1 1 1



SKYCARE AIR AMBULANCE BOX 289, 17 AIRPORT ROAD SIOUX LOOKOUT, ON CA P8T 1A3 Contact: Jason Murphy prm@skycare.ca T: (807)737-0039 F: (807)737-0040



 
 Accredited Laboratory
 Unique Number
 : 5774249
 Diagnosed
 : 06 May 2024 - 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.