



# OIL ANALYSIS REPORT

Sample Rating Trend

**WEAR**



Machine Id  
**PIPER C-FXVH (S/N 28-444)**  
 Component  
**Piston Aircraft Engine**  
 Fluid  
**SHELL AEROSHELL W 15W50 MGR (8 QTS)**



## DIAGNOSIS

### Recommendation

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.

### Wear

Copper ppm levels are 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 |             | <b>WC0852806</b>   | ---      | ---      |
| Sample Date   | Client Info |             | <b>01 Nov 2023</b> | ---      | ---      |
| TSN           | hrs         | Client Info | <b>0</b>           | ---      | ---      |
| TSO           | hrs         | Client Info | <b>0</b>           | ---      | ---      |
| Oil Age       | hrs         | Client Info | <b>25</b>          | ---      | ---      |
| Oil Changed   |             | Client Info | <b>N/A</b>         | ---      | ---      |
| Sample Status |             |             | <b>ABNORMAL</b>    | ---      | ---      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >4.0       | <b>&lt;1.0</b> | ---      | ---      |
| Water  | WC Method | >0.1       | <b>NEG</b>     | ---      | ---      |
| Glycol | WC Method |            | <b>NEG</b>     | ---      | ---      |

## WEAR METALS

|           | method | limit/base    | current | history1     | history2 |
|-----------|--------|---------------|---------|--------------|----------|
| Iron      | ppm    | ASTM D5185(m) | >90     | <b>4</b>     | ---      |
| Chromium  | ppm    | ASTM D5185(m) | >20     | <b>&lt;1</b> | ---      |
| Nickel    | ppm    | ASTM D5185(m) | >15     | <b>&lt;1</b> | ---      |
| Titanium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Silver    | ppm    | ASTM D5185(m) | >5      | <b>0</b>     | ---      |
| Aluminum  | ppm    | ASTM D5185(m) | >25     | <b>4</b>     | ---      |
| Lead      | ppm    | ASTM D5185(m) | >20000  | <b>98</b>    | ---      |
| Copper    | ppm    | ASTM D5185(m) | >25     | <b>▲ 33</b>  | ---      |
| Tin       | ppm    | ASTM D5185(m) | >30     | <b>0</b>     | ---      |
| Antimony  | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Vanadium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Beryllium | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Cadmium   | ppm    | ASTM D5185(m) |         | <b>4</b>     | ---      |

## ADDITIVES

|            | method | limit/base    | current | history1     | history2 |
|------------|--------|---------------|---------|--------------|----------|
| Boron      | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Barium     | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Molybdenum | ppm    | ASTM D5185(m) | 5       | <b>0</b>     | ---      |
| Manganese  | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Magnesium  | ppm    | ASTM D5185(m) | 10      | <b>14</b>    | ---      |
| Calcium    | ppm    | ASTM D5185(m) | 10      | <b>&lt;1</b> | ---      |
| Phosphorus | ppm    | ASTM D5185(m) | 1280    | <b>1181</b>  | ---      |
| Zinc       | ppm    | ASTM D5185(m) | 10      | <b>13</b>    | ---      |
| Sulfur     | ppm    | ASTM D5185(m) | 1800    | <b>1286</b>  | ---      |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | ---      |

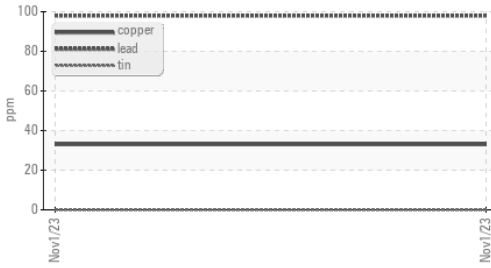
## CONTAMINANTS

|           | method | limit/base    | current | history1 | history2 |
|-----------|--------|---------------|---------|----------|----------|
| Silicon   | ppm    | ASTM D5185(m) | >15     | <b>3</b> | ---      |
| Sodium    | ppm    | ASTM D5185(m) |         | <b>0</b> | ---      |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>2</b> | ---      |

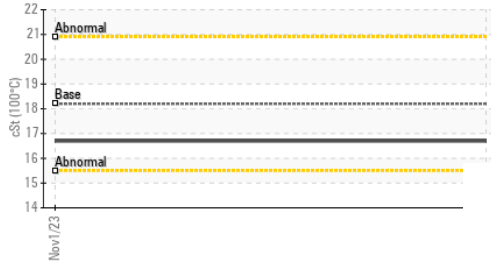


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### ▲ Non-ferrous Metals



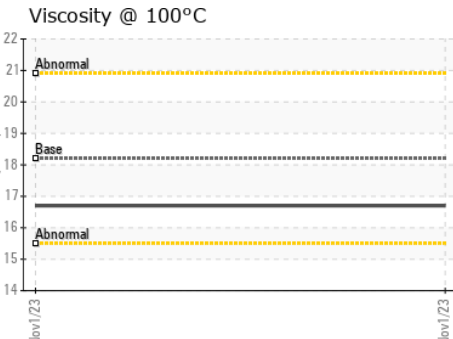
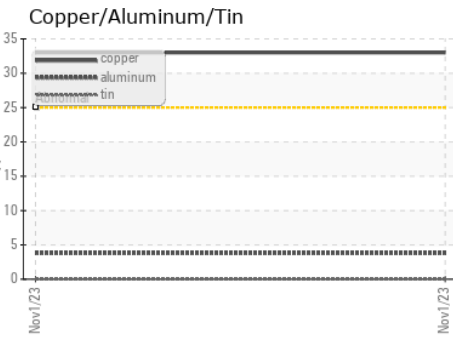
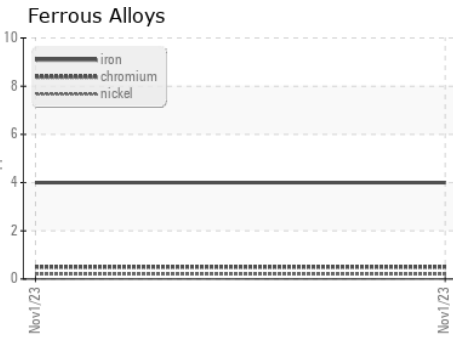
### Viscosity @ 100°C



| 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    | VLITE    | ---      |
| 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 D7279(m) | 18.2    | 16.7     | ---      |

### GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0852806      **Received** : 02 Jan 2024  
**Lab Number** : 02605882      **Diagnosed** : 03 Jan 2024  
**Unique Number** : 5706968      **Diagnostician** : Kevin Marson  
**Test Package** : AVI 1 ( Additional Tests: FT-IR )

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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