



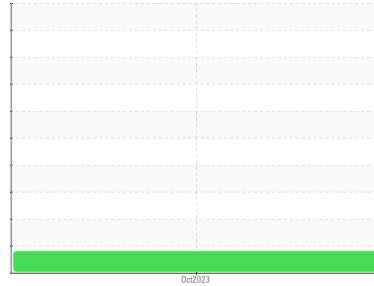
# PROBLEM SUMMARY

Sample Rating Trend

WEAR

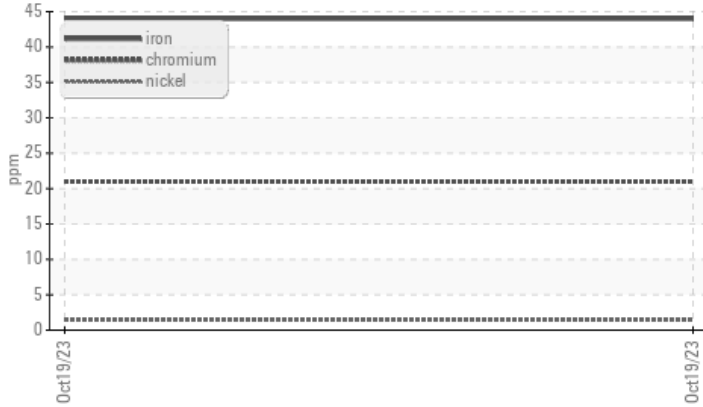


Machine Id  
**[C-GLDQ] CESSNA CARDINAL 177B C-GLDQ**  
Component  
**Piston Aircraft Engine**  
Fluid  
**PHILLIPS 66 AVIATION X/C OIL SAE20W50 (6 LTR)**

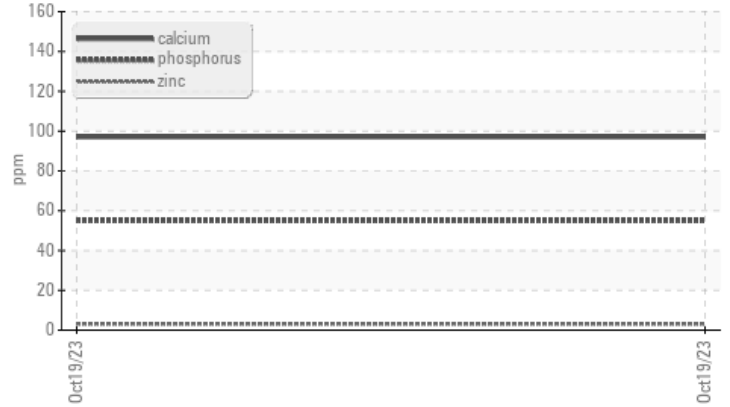


## COMPONENT CONDITION SUMMARY

### ▲ Ferrous Alloys



### Additives



## RECOMMENDATION

We advise that you check the engine magneto timing. The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

| Sample Status | Chromium | ppm | ASTM D5185(m) | >20 | ABNORMAL | --- | --- |
|---------------|----------|-----|---------------|-----|----------|-----|-----|
|               | ▲ 21     |     |               |     |          |     |     |

Customer Id: PETBOW  
Sample No.: WC0866193  
Lab Number: 02591381  
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  
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To change component or sample information:  
Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto:gloria.gonzalez@wearcheck.com)

## RECOMMENDED ACTIONS

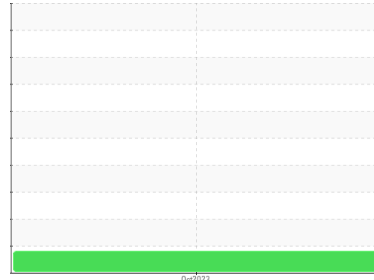
| Action             | Status | Date | Done By | Description   |
|--------------------|--------|------|---------|---|
| Resample           | ---    | ---  | ?       | We recommend an early resample to monitor this condition.           |
| Check Fluid Source | ---    | ---  | ?       | Confirm the source of the lubricant being utilized for top-up/fill. |
| Check Timing       | ---    | ---  | ?       | We advise that you check the engine magneto timing.                 |

## HISTORICAL DIAGNOSIS



# OIL ANALYSIS REPORT

Sample Rating Trend



**WEAR**



Machine Id  
**[C-GLDQ] CESSNA CARDINAL 177B C-GLDQ**  
 Component  
**Piston Aircraft Engine**  
 Fluid  
**PHILLIPS 66 AVIATION X/C OIL SAE20W50 (6 LTR)**

## DIAGNOSIS

### ▲ Recommendation

We advise that you check the engine magneto timing. The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

### ▲ Wear

Chromium ppm levels are abnormal. Ring wear is indicated.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

Additive levels indicate the addition of a different brand, or type of 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 |             | <b>WC0866193</b>   | ---      | ---      |
| Sample Date   | Client Info |             | <b>19 Oct 2023</b> | ---      | ---      |
| TSN           | hrs         | Client Info | <b>2315</b>        | ---      | ---      |
| TSO           | hrs         | Client Info | <b>0</b>           | ---      | ---      |
| Oil Age       | hrs         | Client Info | <b>29</b>          | ---      | ---      |
| Oil Changed   |             | Client Info | <b>Changed</b>     | ---      | ---      |
| Sample Status |             |             | <b>ABNORMAL</b>    | ---      | ---      |

## CONTAMINATION

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

## WEAR METALS

|           | method | limit/base    | current | history1     | history2 |
|-----------|--------|---------------|---------|--------------|----------|
| Iron      | ppm    | ASTM D5185(m) | >90     | <b>44</b>    | ---      |
| Chromium  | ppm    | ASTM D5185(m) | >20     | <b>▲ 21</b>  | ---      |
| Nickel    | ppm    | ASTM D5185(m) | >15     | <b>1</b>     | ---      |
| Titanium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Silver    | ppm    | ASTM D5185(m) | >5      | <b>&lt;1</b> | ---      |
| Aluminum  | ppm    | ASTM D5185(m) | >25     | <b>15</b>    | ---      |
| Lead      | ppm    | ASTM D5185(m) | >20000  | <b>2490</b>  | ---      |
| Copper    | ppm    | ASTM D5185(m) | >25     | <b>7</b>     | ---      |
| Tin       | ppm    | ASTM D5185(m) | >30     | <b>&lt;1</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>2</b>     | ---      |

## ADDITIVES

|            | method | limit/base    | current | history1     | history2 |
|------------|--------|---------------|---------|--------------|----------|
| Boron      | ppm    | ASTM D5185(m) |         | <b>3</b>     | ---      |
| Barium     | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Molybdenum | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Manganese  | ppm    | ASTM D5185(m) |         | <b>0</b>     | ---      |
| Magnesium  | ppm    | ASTM D5185(m) |         | <b>1</b>     | ---      |
| Calcium    | ppm    | ASTM D5185(m) |         | <b>97</b>    | ---      |
| Phosphorus | ppm    | ASTM D5185(m) |         | <b>55</b>    | ---      |
| Zinc       | ppm    | ASTM D5185(m) |         | <b>3</b>     | ---      |
| Sulfur     | ppm    | ASTM D5185(m) |         | <b>1483</b>  | ---      |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | ---      |

## CONTAMINANTS

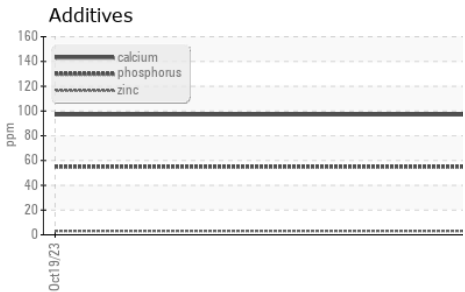
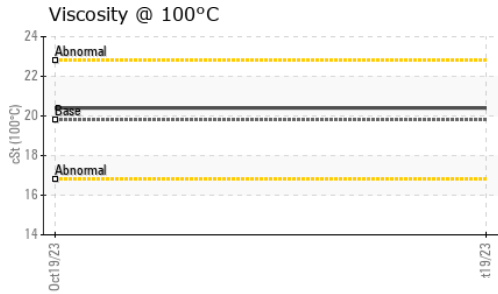
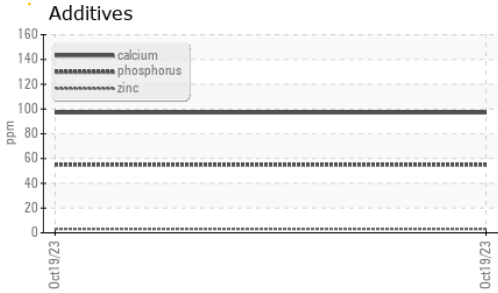
|           | method | limit/base    | current | history1     | history2 |
|-----------|--------|---------------|---------|--------------|----------|
| Silicon   | ppm    | ASTM D5185(m) | >15     | <b>5</b>     | ---      |
| Sodium    | ppm    | ASTM D5185(m) |         | <b>3</b>     | ---      |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>&lt;1</b> | ---      |

## INFRA-RED

|           | method   | limit/base  | current | history1    | history2 |
|-----------|----------|-------------|---------|-------------|----------|
| Soot %    | %        | ASTM D7844* |         | <b>0</b>    | ---      |
| Nitration | Abs/cm   | ASTM D7624* | >20     | <b>4.5</b>  | ---      |
| Sulfation | Abs./1mm | ASTM D7415* | >30     | <b>19.4</b> | ---      |



# OIL ANALYSIS REPORT

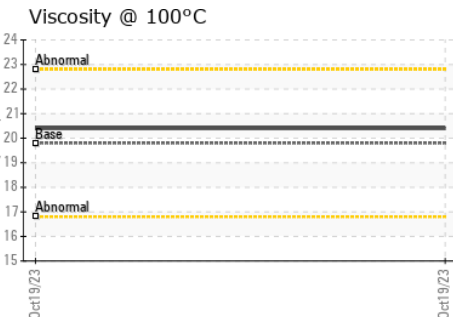
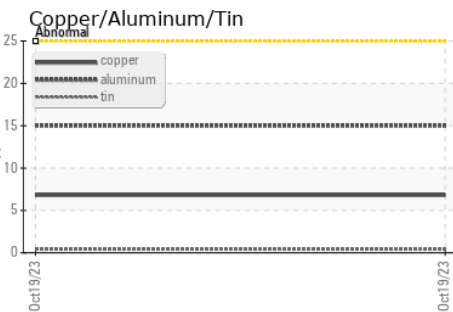
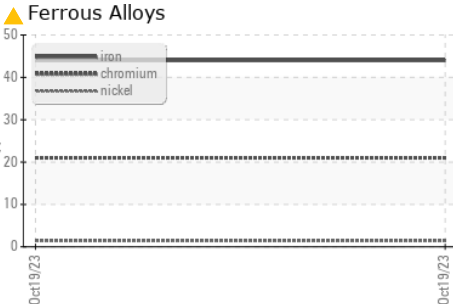


| FLUID DEGRADATION | method   | limit/base  | current | history1    | history2 |     |
|-------------------|----------|-------------|---------|-------------|----------|-----|
| Oxidation         | Abs./1mm | ASTM D7414* | >25     | <b>14.4</b> | ---      | --- |

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

| FLUID PROPERTIES | method | limit/base    | current | history1    | history2 |     |
|------------------|--------|---------------|---------|-------------|----------|-----|
| Visc @ 100°C     | cSt    | ASTM D7279(m) | 19.8    | <b>20.4</b> | ---      | --- |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0866193      **Received** : 24 Oct 2023  
**Lab Number** : **02591381**      **Diagnosed** : 24 Oct 2023  
**Unique Number** : 5668460      **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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