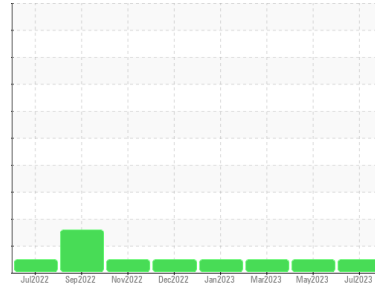




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**(C-GBYN)**  
 Machine Id  
**[C-GBYN] BEECHCRAFT KING AIR B200 PCEPJ0202**  
 Component  
**Left Jet Turbine**  
 Fluid  
**EASTMAN TURBO OIL 2380 (--- LTR)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.  
 NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

### Wear

All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system.

### Contaminants

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

### Oil Condition

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>WC0928133</b>   | WC0779684   | WC0790194   |
| Sample Date   | Client Info |             | <b>17 Jul 2023</b> | 17 May 2023 | 30 Mar 2023 |
| TSN           | hrs         | Client Info | <b>13678</b>       | 13492       | 13295       |
| TSO           | hrs         | Client Info | <b>5969</b>        | 5783        | 5586        |
| Oil Age       | hrs         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   |             | Client Info | <b>Not Changed</b> | Not Changed | Not Changed |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## WEAR METALS

|           | method | limit/base    | current | history1     | history2 |    |
|-----------|--------|---------------|---------|--------------|----------|----|
| Iron      | ppm    | ASTM D5185(m) | >8      | <b>0</b>     | 0        | 0  |
| Chromium  | ppm    | ASTM D5185(m) | >2      | <b>0</b>     | 0        | 0  |
| Nickel    | ppm    | ASTM D5185(m) | >2      | <b>0</b>     | <1       | 0  |
| Titanium  | ppm    | ASTM D5185(m) | >2      | <b>0</b>     | 0        | 0  |
| Silver    | ppm    | ASTM D5185(m) | >2      | <b>0</b>     | 0        | 0  |
| Aluminum  | ppm    | ASTM D5185(m) | >2      | <b>&lt;1</b> | <1       | <1 |
| Lead      | ppm    | ASTM D5185(m) | >3      | <b>0</b>     | 0        | 0  |
| Copper    | ppm    | ASTM D5185(m) | >3      | <b>&lt;1</b> | <1       | 0  |
| Tin       | ppm    | ASTM D5185(m) | >2      | <b>0</b>     | 0        | 0  |
| Antimony  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | <1 |
| Vanadium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Beryllium | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Cadmium   | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |

## ADDITIVES

|            | method | limit/base    | current | history1     | history2 |      |
|------------|--------|---------------|---------|--------------|----------|------|
| Boron      | ppm    | ASTM D5185(m) | 0       | <b>&lt;1</b> | <1       | <1   |
| Barium     | ppm    | ASTM D5185(m) | 0       | <b>0</b>     | 0        | 0    |
| Molybdenum | ppm    | ASTM D5185(m) | 0       | <b>0</b>     | 0        | 0    |
| Manganese  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0    |
| Magnesium  | ppm    | ASTM D5185(m) | 0       | <b>&lt;1</b> | <1       | 0    |
| Calcium    | ppm    | ASTM D5185(m) | 0       | <b>&lt;1</b> | 0        | 0    |
| Phosphorus | ppm    | ASTM D5185(m) | 2500    | <b>2826</b>  | 2804     | 2800 |
| Zinc       | ppm    | ASTM D5185(m) | 0       | <b>2</b>     | 2        | <1   |
| Sulfur     | ppm    | ASTM D5185(m) | 0       | <b>2</b>     | 1        | 9    |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1   |

## CONTAMINANTS

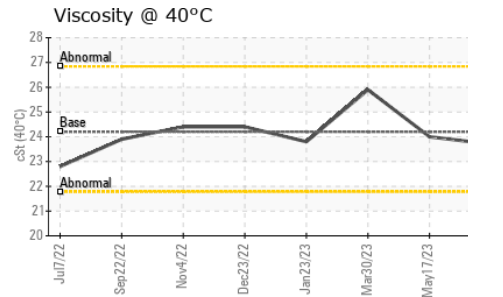
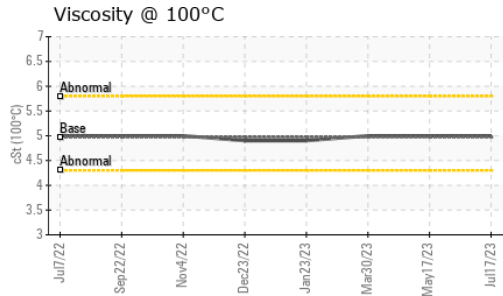
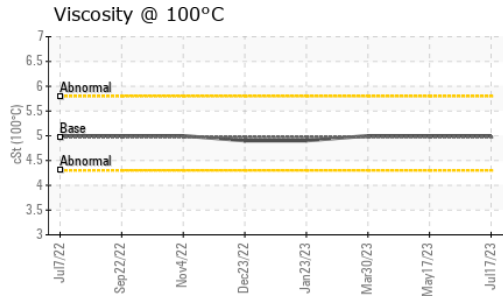
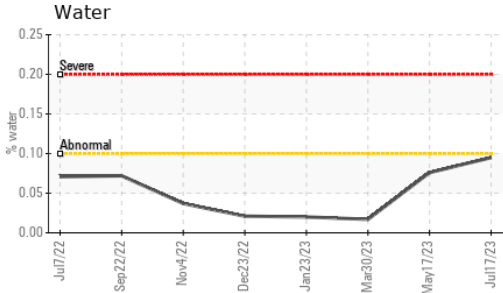
|           | method | limit/base    | current | history1     | history2 |       |
|-----------|--------|---------------|---------|--------------|----------|-------|
| Silicon   | ppm    | ASTM D5185(m) | >8      | <b>&lt;1</b> | <1       | <1    |
| Sodium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1    |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>&lt;1</b> | 0        | <1    |
| Water     | %      | ASTM D6304*   | >0.1    | <b>0.095</b> | 0.076    | 0.017 |
| ppm Water | ppm    | ASTM D6304*   | >1000   | <b>951.5</b> | 769.5    | 176.6 |

## FLUID DEGRADATION

|                  | method   | limit/base | current | history1    | history2 |      |
|------------------|----------|------------|---------|-------------|----------|------|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.43    | <b>0.27</b> | 0.33     | 0.33 |



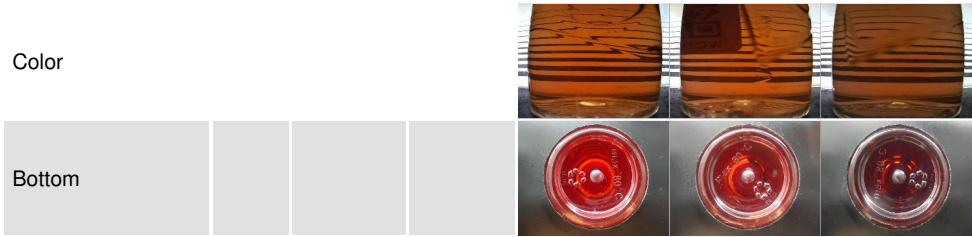
# OIL ANALYSIS REPORT



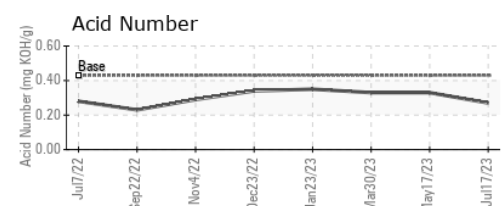
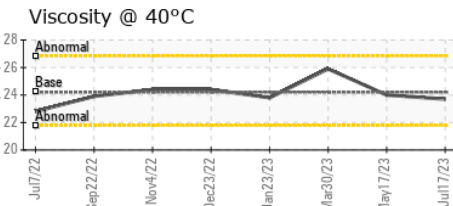
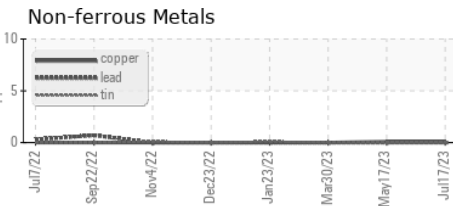
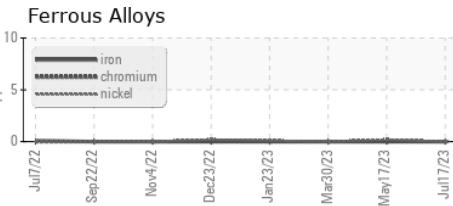
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | Visual*    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | Visual*    | NONE    | NONE     | NONE     |
|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

| FLUID PROPERTIES     | method | limit/base    | current | history1 | history2 |
|----------------------|--------|---------------|---------|----------|----------|
| Visc @ 40°C          | cSt    | ASTM D7279(m) | 24.2    | 23.7     | 24.0     |
| Visc @ 100°C         | cSt    | ASTM D7279(m) | 4.97    | 5        | 5        |
| Viscosity Index (VI) | Scale  | ASTM D2270*   | 134     | 142      | 138      |

### SAMPLE IMAGES



### GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0928133  
**Lab Number** : 02580346  
**Unique Number** : 5633406  
**Test Package** : AVI 3

**Keewatin Air LP**  
 50 Morberg Way  
 Winnipeg, MB  
 CA R3H 0A4  
 Contact: Rochelle Aranez  
 raranez@keewatinair.ca  
 T: (204)888-0100  
 F: (204)888-5791

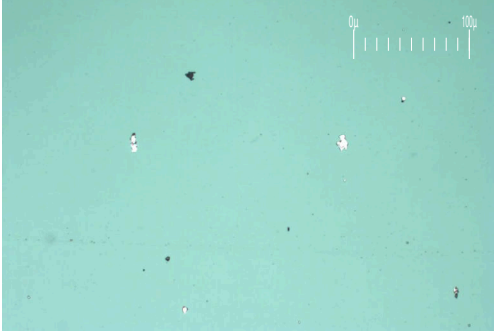
To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.



# FERROGRAPHY REPORT

Area  
**(C-GBYN)**  
 Machine Id  
**[C-GBYN] BEECHCRAFT KING AIR B200 PCEPJ0202**  
 Component  
**Left Jet Turbine**  
 Fluid  
**EASTMAN TURBO OIL 2380 (--- LTR)**

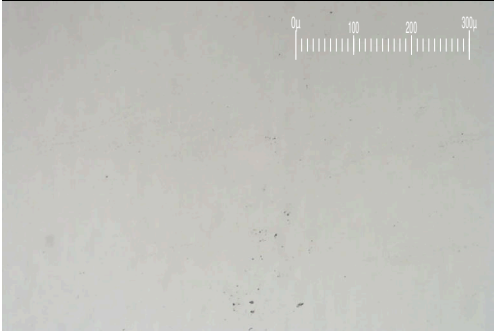
Magn: 200x Illum: BC



Magn: 50x Illum: RW



Magn: 100x Illum: RW

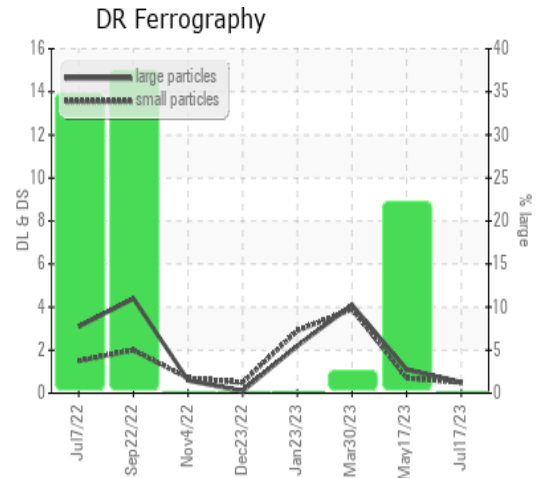


| DR-FERROGRAPHY             |   | method   | limit/base | current    | history1 | history2 |
|----------------------------|---|----------|------------|------------|----------|----------|
| Large Particles            |   | DR-Ferr* |            | <b>0.5</b> | 1.1      | 4.1      |
| Small Particles            |   | DR-Ferr* |            | <b>0.5</b> | 0.7      | 3.9      |
| Total Particles            |   | DR-Ferr* | >---       | <b>1</b>   | 1.8      | 8        |
| Large Particles Percentage | % | DR-Ferr* |            | <b>0</b>   | 22.2     | 2.5      |
| Severity Index             |   | DR-Ferr* |            | <b>0</b>   | 0        | 1        |

| FERROGRAPHY           |            | method      | limit/base | current  | history1 | history2 |
|-----------------------|------------|-------------|------------|----------|----------|----------|
| Ferrous Rubbing       | Scale 0-10 | ASTM D7684* |            | <b>1</b> | 1        | 1        |
| Ferrous Sliding       | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Ferrous Cutting       | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Ferrous Rolling       | Scale 0-10 | ASTM D7684* |            | <b>1</b> |          |          |
| Ferrous Break-in      | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Ferrous Spheres       | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Ferrous Black Oxides  | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Ferrous Red Oxides    | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Ferrous Corrosive     | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Ferrous Other         | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Nonferrous Rubbing    | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Nonferrous Sliding    | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Nonferrous Cutting    | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Nonferrous Rolling    | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Nonferrous Other      | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Carbonaceous Material | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Lubricant Degradation | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Sand/Dirt             | Scale 0-10 | ASTM D7684* |            | <b>1</b> | 1        | 1        |
| Fibres                | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Spheres               | Scale 0-10 | ASTM D7684* |            |          |          |          |
| Other                 | Scale 0-10 | ASTM D7684* |            | <b>1</b> | 1        | 1        |

## WEAR

All component wear rates are normal. The direct-reading & analytical ferrographic results are normal indicating no abnormal wear in the system.



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