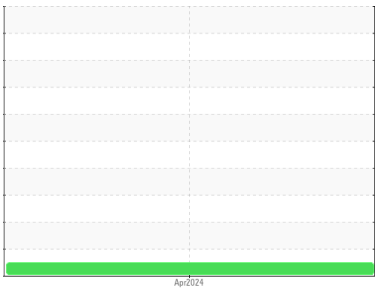
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
**(N4417F)**
Machine Id
**[N4417F] DHC-8-402 PCE-FA1004**
Component
**Left Jet Turbine**
Fluid
**BP TURBO OIL 2380 (--- GAL)**

## 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 ferrography 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 | | **WC0909611** | --- | --- |
| Sample Date | | Client Info | | **18 Apr 2024** | --- | --- |
| TSN | hrs | Client Info | | **0** | --- | --- |
| TSO | hrs | Client Info | | **0** | --- | --- |
| Oil Age | hrs | Client Info | | **0** | --- | --- |
| Oil Changed | | Client Info | | **N/A** | --- | --- |
| Sample Status | | | | **NORMAL** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >8 | **0** | --- | --- |
| Chromium | ppm | ASTM D5185(m) | >2 | **0** | --- | --- |
| Nickel | ppm | ASTM D5185(m) | >2 | **0** | --- | --- |
| Titanium | ppm | ASTM D5185(m) | >2 | **0** | --- | --- |
| Silver | ppm | ASTM D5185(m) | >2 | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >2 | **0** | --- | --- |
| Lead | ppm | ASTM D5185(m) | >3 | **0** | --- | --- |
| Copper | ppm | ASTM D5185(m) | >3 | **0** | --- | --- |
| Tin | ppm | ASTM D5185(m) | >2 | **0** | --- | --- |
| Antimony | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Beryllium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185(m) | | **0** | --- | --- |

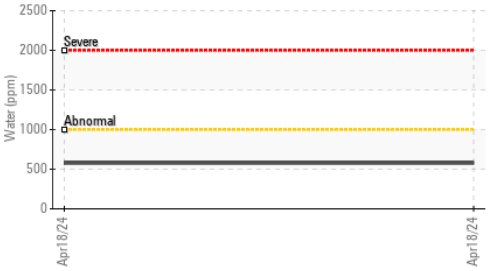
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0 | **<1** | --- | --- |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | 0 | **0** | --- | --- |
| Manganese | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | 0 | **0** | --- | --- |
| Calcium | ppm | ASTM D5185(m) | 0 | **0** | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) | 2500 | **2686** | --- | --- |
| Zinc | ppm | ASTM D5185(m) | 0 | **1** | --- | --- |
| Sulfur | ppm | ASTM D5185(m) | 0 | **4** | --- | --- |
| Lithium | ppm | ASTM D5185(m) | | **<1** | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >8 | **0** | --- | --- |
| Sodium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | **<1** | --- | --- |
| Water | % | ASTM D6304* | >0.1 | **0.057** | --- | --- |
| ppm Water | ppm | ASTM D6304* | >1000 | **577** | --- | --- |

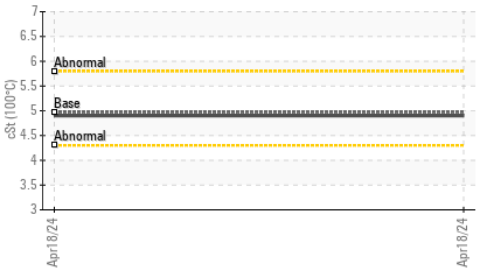
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D974* | 0.43 | **0.37** | --- | --- |

# OIL ANALYSIS REPORT

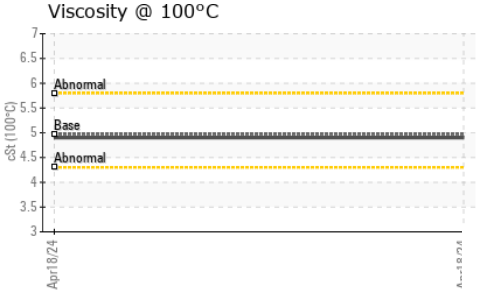
Water (KF)



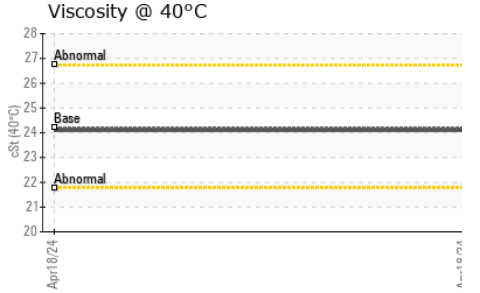

Viscosity @ 100°C




Viscosity @ 100°C

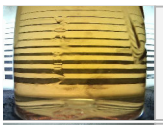



Viscosity @ 40°C



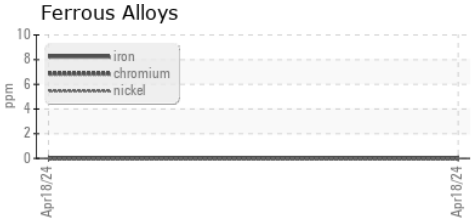

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **NONE** | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | **NONE** | --- | --- |
| Precipitate | scalar | Visual* | NONE | **NONE** | --- | --- |
| Silt | 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 @ 40°C | cSt | ASTM D7279(m) | 24.2 | **24.1** | --- | --- |
| Visc @ 100°C | cSt | ASTM D7279(m) | 4.97 | **4.9** | --- | --- |
| Viscosity Index (VI) | Scale | ASTM D2270* | 134 | **129** | --- | --- |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | |  | *no image* | *no image* |
| Bottom | | |  | *no image* | *no image* |

## GRAPHS

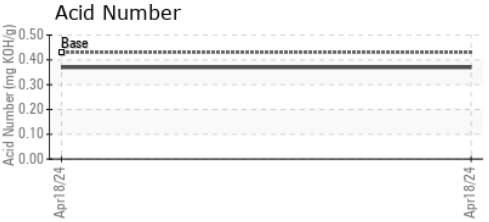
Ferrous Alloys




Non-ferrous Metals


Viscosity @ 40°C


Acid Number




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : WC0909611
**Lab Number** : 02630178
**Unique Number** : 5763310
**Test Package** : AVI 3

**Received** : 19 Apr 2024
**Tested** : 24 Apr 2024
**Diagnosed** : 24 Apr 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.*


**SMART AVIATION**
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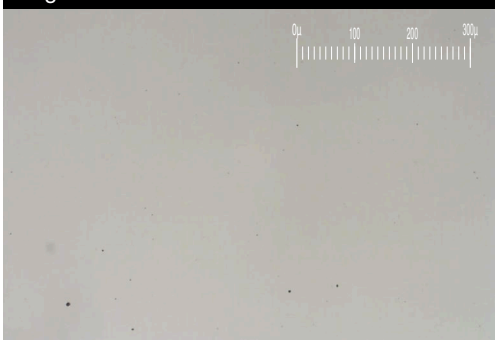
# FERROGRAPHY REPORT

Area
**(N4417F)**
Machine Id
**[N4417F] DHC-8-402 PCE-FA1004**
Component
**Left Jet Turbine**
Fluid
**BP TURBO OIL 2380 (--- GAL)**

Magn: 200x Illum: BC

Magn: 50x Illum: RW

Magn: 100x Illum: RW

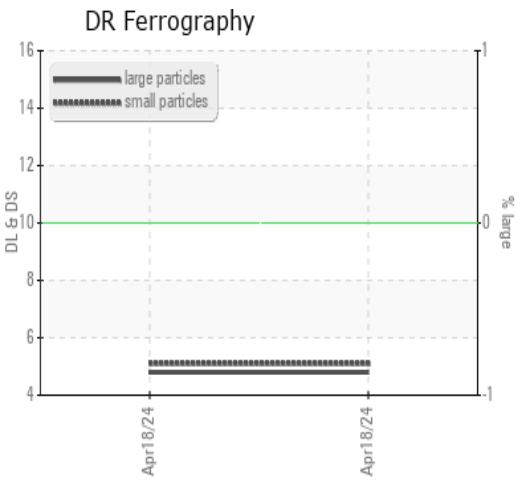


| DR-FERROGRAPHY | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Large Particles | | DR-Ferr* | | **4.8** | --- | --- |
| Small Particles | | DR-Ferr* | | **5.1** | --- | --- |
| Total Particles | | DR-Ferr* | >--- | **9.9** | --- | --- |
| Large Particles Percentage | % | DR-Ferr* | | **0** | --- | --- |
| Severity Index | | DR-Ferr* | | **1** | --- | --- |

| FERROGRAPHY | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Ferrous Rubbing | Scale 0-10 | ASTM D7684* | | **1** | | |
| Ferrous Sliding | Scale 0-10 | ASTM D7684* | | | | |
| Ferrous Cutting | Scale 0-10 | ASTM D7684* | | | | |
| Ferrous Rolling | Scale 0-10 | ASTM D7684* | | **1** | | |
| 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* | | **1** | | |
| Fibres | Scale 0-10 | ASTM D7684* | | | | |
| Spheres | Scale 0-10 | ASTM D7684* | | | | |
| Other | Scale 0-10 | ASTM D7684* | | **1** | | |

## WEAR

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.



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