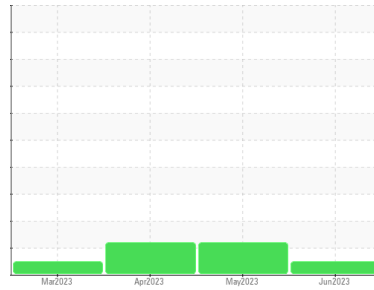




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**USACE - Old Hickory Power Plant**  
 Machine Id  
**Governor #4 Main Reservoir**  
 Component  
**Governor System**  
 Fluid  
**PETRO CANADA TURBOFLO 68 (1500 GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: We hope this system up to our 80 gallon per minute filter skid with one micron filters in an effort to bring the particle down count )

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

### Fluid 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>KFS0003405</b>  | KFS0000421  | WC0542721   |
| Sample Date   | Client Info     | <b>09 Jun 2023</b> | 15 May 2023 | 23 Apr 2023 |
| Machine Age   | hrs Client Info | <b>0</b>           | 0           | 0           |
| Oil Age       | hrs Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info     | <b>Filtered</b>    | N/A         | Filtered    |
| Sample Status |                 | <b>NORMAL</b>      | ABNORMAL    | ABNORMAL    |

## WEAR METALS

| method                   | limit/base | current      | history1 | history2 |
|--------------------------|------------|--------------|----------|----------|
| Iron ppm ASTM D5185m     | >50        | <b>&lt;1</b> | <1       | 0        |
| Chromium ppm ASTM D5185m | >10        | <b>0</b>     | 0        | 0        |
| Nickel ppm ASTM D5185m   | >10        | <b>0</b>     | 0        | 0        |
| Titanium ppm ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Silver ppm ASTM D5185m   |            | <b>0</b>     | 0        | 0        |
| Aluminum ppm ASTM D5185m | >3         | <b>0</b>     | 1        | 0        |
| Lead ppm ASTM D5185m     | >75        | <b>2</b>     | 1        | 0        |
| Copper ppm ASTM D5185m   | >15        | <b>&lt;1</b> | 2        | 0        |
| Tin ppm ASTM D5185m      | >55        | <b>0</b>     | 0        | 0        |
| Vanadium ppm ASTM D5185m |            | <b>0</b>     | 0        | 0        |
| Cadmium ppm ASTM D5185m  |            | <b>0</b>     | 0        | 0        |

## ADDITIVES

| method                     | limit/base | current    | history1 | history2 |
|----------------------------|------------|------------|----------|----------|
| Boron ppm ASTM D5185m      | 0          | <b>0</b>   | 0        | 0        |
| Barium ppm ASTM D5185m     | 0          | <b>0</b>   | 0        | 0        |
| Molybdenum ppm ASTM D5185m | 0          | <b>0</b>   | 0        | 0        |
| Manganese ppm ASTM D5185m  | 0          | <b>0</b>   | 0        | <1       |
| Magnesium ppm ASTM D5185m  | 0          | <b>2</b>   | 0        | 0        |
| Calcium ppm ASTM D5185m    | 0          | <b>0</b>   | 4        | 0        |
| Phosphorus ppm ASTM D5185m | 120        | <b>22</b>  | 34       | 30       |
| Zinc ppm ASTM D5185m       | 0.0        | <b>0</b>   | 13       | 0        |
| Sulfur ppm ASTM D5185m     | 50         | <b>472</b> | 244      | 27       |

## CONTAMINANTS

| method                    | limit/base | current      | history1 | history2 |
|---------------------------|------------|--------------|----------|----------|
| Silicon ppm ASTM D5185m   | >8         | <b>&lt;1</b> | 0        | 0        |
| Sodium ppm ASTM D5185m    |            | <b>&lt;1</b> | 0        | 0        |
| Potassium ppm ASTM D5185m | >20        | <b>1</b>     | 0        | 0        |

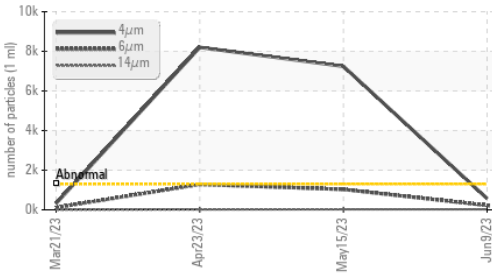
## FLUID CLEANLINESS

| method                       | limit/base | current         | history1   | history2   |
|------------------------------|------------|-----------------|------------|------------|
| Particles >4µm ASTM D7647    | >1300      | <b>571</b>      | ▲ 7243     | ▲ 8201     |
| Particles >6µm ASTM D7647    | >320       | <b>224</b>      | ▲ 1031     | ▲ 1281     |
| Particles >14µm ASTM D7647   | >40        | <b>26</b>       | 26         | 21         |
| Particles >21µm ASTM D7647   | >10        | <b>7</b>        | 5          | 2          |
| Particles >38µm ASTM D7647   | >3         | <b>1</b>        | 0          | 0          |
| Particles >71µm ASTM D7647   | >3         | <b>0</b>        | 0          | 0          |
| Oil Cleanliness ISO 4406 (c) | >17/15/12  | <b>16/15/12</b> | ▲ 20/17/12 | ▲ 20/17/12 |

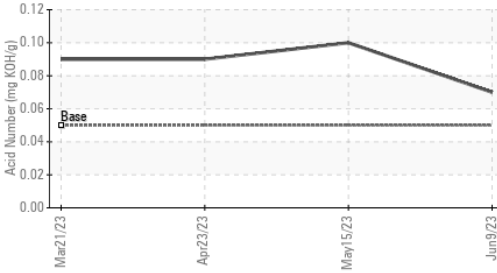
## FLUID DEGRADATION

| method                               | limit/base | current     | history1 | history2 |
|--------------------------------------|------------|-------------|----------|----------|
| Acid Number (AN) mg KOH/g ASTM D8045 | 0.05       | <b>0.07</b> | 0.10     | 0.09     |

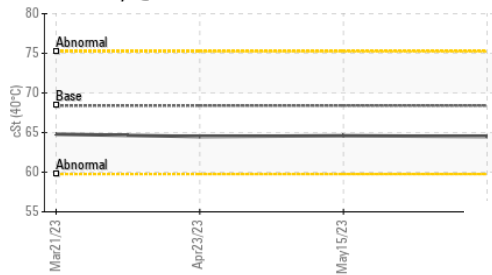
### Particle Trend



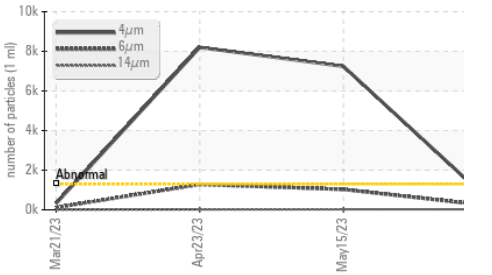
### Acid Number



### Viscosity @ 40°C



### Particle Trend

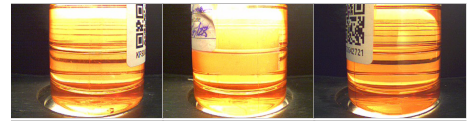


| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
| 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 D445 68.4 | <b>64.5</b> | 64.6     | 64.5     |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---------------|--------|------------|---------|----------|----------|
|---------------|--------|------------|---------|----------|----------|

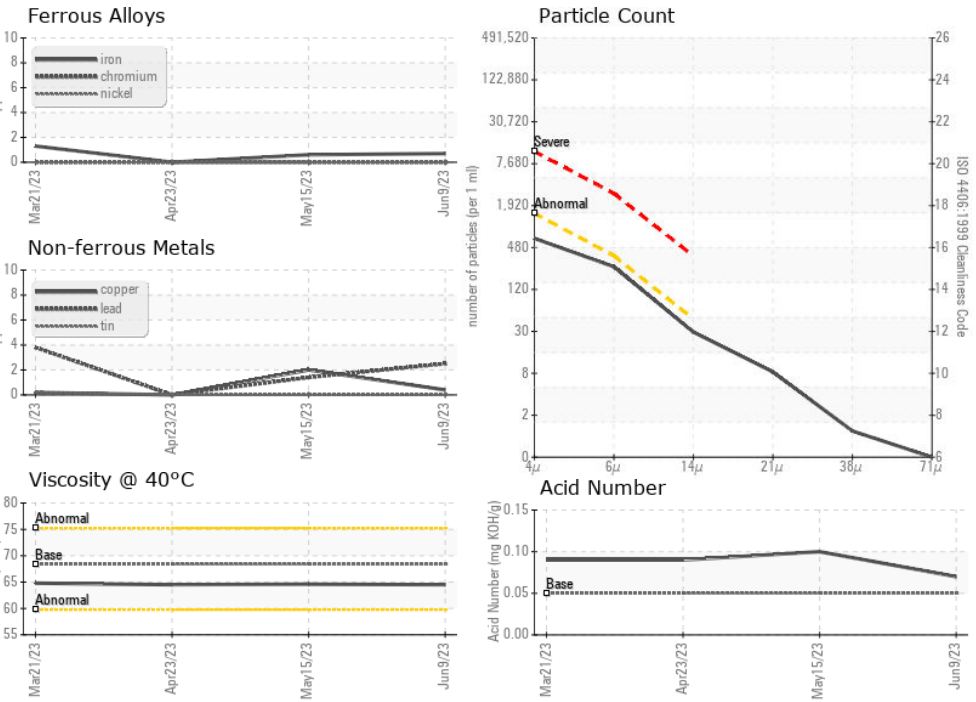
### Color



### Bottom



## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : KFS0003405 **Received** : 13 Jun 2023  
**Lab Number** : **05872032** **Diagnosed** : 15 Jun 2023  
**Unique Number** : 10511816 **Diagnostician** : Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: PrtCount )

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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