

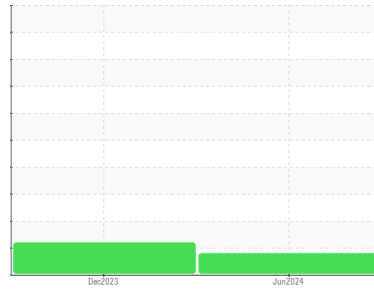


# OIL ANALYSIS REPORT



Machine Id  
**CATERPILLAR 745D 13395 (S/N 3T605878)**  
 Component  
**Hydraulic System**  
 Fluid  
**TDH FLUID SAE 70W80 (--- GAL)**

## Sample Rating Trend



ISO



### DIAGNOSIS

#### Recommendation

The filter change at the time of sampling has been noted. Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) TDH FLUID SAE 70W80. Please confirm.

#### Wear

All component wear rates are normal.

#### Contamination

There is a light amount of silt (particulates < 14 microns in size) present in the oil.

#### 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>WC0899145</b>   | WC0879452   | ---      |
| Sample Date        | Client Info |             |            | <b>19 Jun 2024</b> | 07 Dec 2023 | ---      |
| Machine Age        | hrs         | Client Info |            | <b>3986</b>        | 2028        | ---      |
| Oil Age            | hrs         | Client Info |            | <b>3986</b>        | 2028        | ---      |
| Oil Changed        | Client Info |             |            | <b>Not Chngd</b>   | Not Chngd   | ---      |
| Sample Status      |             |             |            | <b>ATTENTION</b>   | ABNORMAL    | ---      |

| CONTAMINATION |           | method | limit/base | current    | history1 | history2 |
|---------------|-----------|--------|------------|------------|----------|----------|
| Water         | WC Method |        | >0.1       | <b>NEG</b> | NEG      | ---      |

| WEAR METALS |     | method      | limit/base | current      | history1 | history2 |
|-------------|-----|-------------|------------|--------------|----------|----------|
| Iron        | ppm | ASTM D5185m | >20        | <b>2</b>     | <1       | ---      |
| Chromium    | ppm | ASTM D5185m | >10        | <b>0</b>     | 0        | ---      |
| Nickel      | ppm | ASTM D5185m | >10        | <b>0</b>     | 0        | ---      |
| Titanium    | ppm | ASTM D5185m |            | <b>&lt;1</b> | 0        | ---      |
| Silver      | ppm | ASTM D5185m |            | <b>&lt;1</b> | 0        | ---      |
| Aluminum    | ppm | ASTM D5185m | >10        | <b>2</b>     | <1       | ---      |
| Lead        | ppm | ASTM D5185m | >10        | <b>2</b>     | 0        | ---      |
| Copper      | ppm | ASTM D5185m | >75        | <b>1</b>     | 0        | ---      |
| Tin         | ppm | ASTM D5185m | >10        | <b>&lt;1</b> | 0        | ---      |
| Vanadium    | ppm | ASTM D5185m |            | <b>0</b>     | 0        | ---      |
| Cadmium     | ppm | ASTM D5185m |            | <b>0</b>     | 0        | ---      |

| ADDITIVES  |     | method      | limit/base | current      | history1 | history2 |
|------------|-----|-------------|------------|--------------|----------|----------|
| Boron      | ppm | ASTM D5185m | 10         | <b>2</b>     | 0        | ---      |
| Barium     | ppm | ASTM D5185m | 10         | <b>0</b>     | 0        | ---      |
| Molybdenum | ppm | ASTM D5185m | 10         | <b>0</b>     | 0        | ---      |
| Manganese  | ppm | ASTM D5185m |            | <b>&lt;1</b> | <1       | ---      |
| Magnesium  | ppm | ASTM D5185m | 100        | <b>13</b>    | 13       | ---      |
| Calcium    | ppm | ASTM D5185m | 3500       | <b>3130</b>  | 3070     | ---      |
| Phosphorus | ppm | ASTM D5185m | 1150       | <b>1083</b>  | 1029     | ---      |
| Zinc       | ppm | ASTM D5185m | 1150       | <b>1256</b>  | 1229     | ---      |
| Sulfur     | ppm | ASTM D5185m | 5000       | <b>4725</b>  | 3968     | ---      |

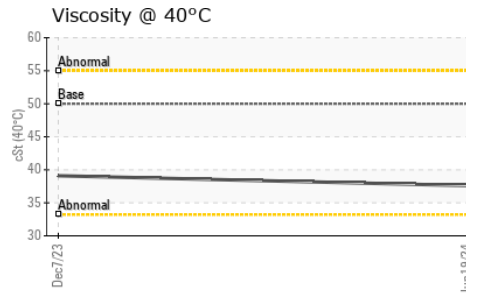
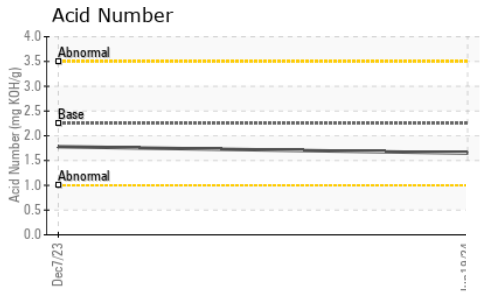
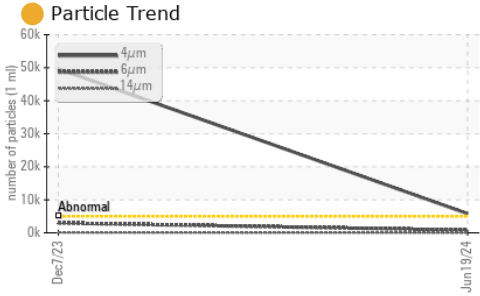
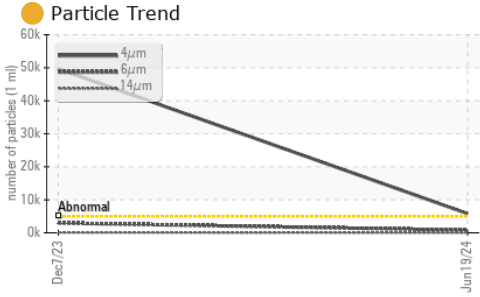
| CONTAMINANTS |     | method      | limit/base | current  | history1 | history2 |
|--------------|-----|-------------|------------|----------|----------|----------|
| Silicon      | ppm | ASTM D5185m | >20        | <b>6</b> | 6        | ---      |
| Sodium       | ppm | ASTM D5185m |            | <b>4</b> | <1       | ---      |
| Potassium    | ppm | ASTM D5185m | >20        | <b>2</b> | 0        | ---      |

| FLUID CLEANLINESS |  | method       | limit/base | current         | history1   | history2 |
|-------------------|--|--------------|------------|-----------------|------------|----------|
| Particles >4µm    |  | ASTM D7647   | >5000      | <b>5798</b>     | ▲ 49686    | ---      |
| Particles >6µm    |  | ASTM D7647   | >1300      | <b>779</b>      | ▲ 2972     | ---      |
| Particles >14µm   |  | ASTM D7647   | >160       | <b>30</b>       | 92         | ---      |
| Particles >21µm   |  | ASTM D7647   | >40        | <b>3</b>        | 25         | ---      |
| Particles >38µm   |  | ASTM D7647   | >10        | <b>0</b>        | 1          | ---      |
| Particles >71µm   |  | ASTM D7647   | >3         | <b>0</b>        | 0          | ---      |
| Oil Cleanliness   |  | ISO 4406 (c) | >19/17/14  | <b>20/17/12</b> | ▲ 23/19/14 | ---      |

| FLUID DEGRADATION |          | method     | limit/base | current     | history1 | history2 |
|-------------------|----------|------------|------------|-------------|----------|----------|
| Acid Number (AN)  | mg KOH/g | ASTM D8045 | 2.25       | <b>1.65</b> | 1.78     | ---      |



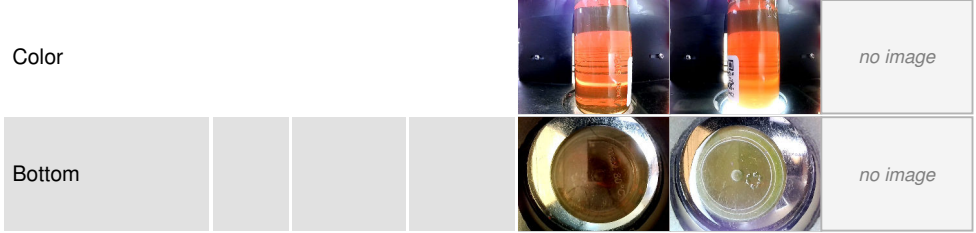
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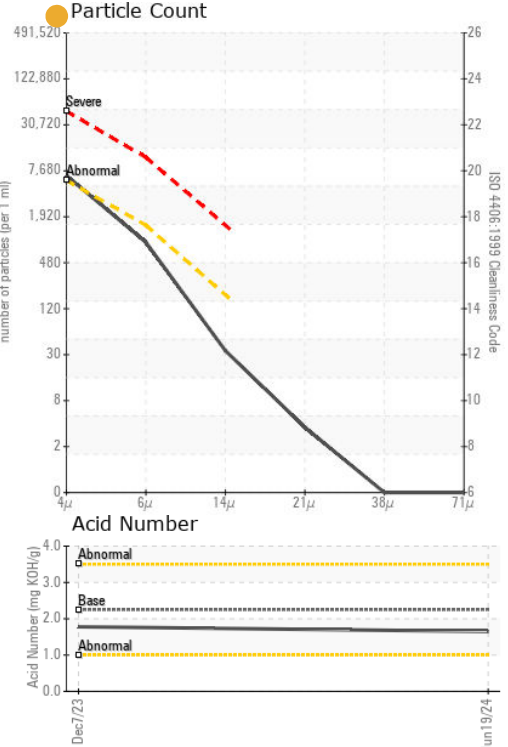
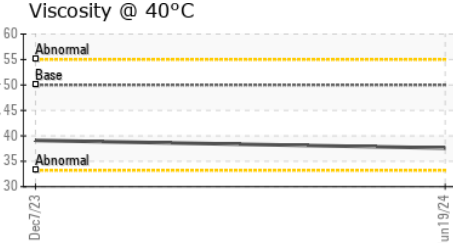
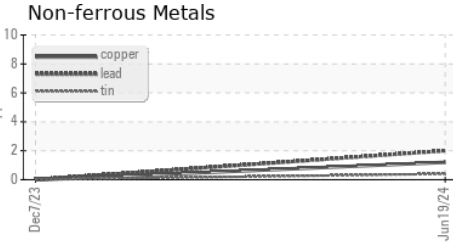
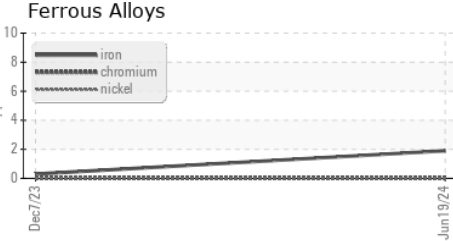
| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | ---      |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | ---      |
| Precipitate      | scalar | *Visual    | NONE    | NONE     | ---      |
| Silt             | scalar | *Visual    | NONE    | NONE     | ---      |
| Debris           | scalar | *Visual    | NONE    | NONE     | ---      |
| 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 D445 50 | 37.6    | 39.1     | ---      |

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



## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0899145      **Received** : 24 Jun 2024  
**Lab Number** : 06218103      **Tested** : 25 Jun 2024  
**Unique Number** : 11096300      **Diagnosed** : 25 Jun 2024 - Wes Davis  
**Test Package** : CONST

**TRADER CONSTRUCTION CO.**  
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 NEW BERN, NC  
 US 28563  
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 T: (252)633-1399  
 F: (252)638-4871

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)