

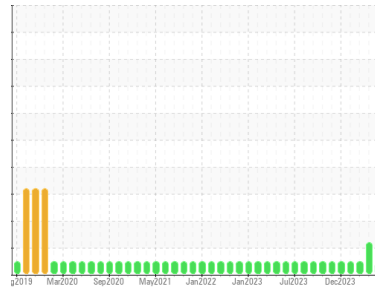


OIL ANALYSIS REPORT



Machine Id
CATERPILLAR D10T 15105050 (S/N CATOD10TCRJG01497)
 Component
Diesel Engine
 Fluid
CAT DIESEL ENGINE OIL 15W40 (--- GAL)

Sample Rating Trend



VISCOSITY



DIAGNOSIS

- Recommendation**
Resample at the next service interval to monitor.
- Wear**
All component wear rates are normal.
- Contamination**
There is no indication of any contamination in the oil.
- Fluid Condition**
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | RP0036873 | RP0036958 | RP0037013 |
| Sample Date | Client Info | | 09 May 2024 | 12 Apr 2024 | 14 Feb 2024 |
| Machine Age | hrs | Client Info | 77687 | 77404 | 77070 |
| Oil Age | hrs | Client Info | 283 | 334 | 1657 |
| Oil Changed | Client Info | | Not Chngd | N/A | Not Chngd |
| Sample Status | | | ATTENTION | MARGINAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >5 | <1.0 | ▲ 2.3 | <1.0 |
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >100 | 29 | 21 | 45 |
| Chromium | ppm | ASTM D5185m >20 | 1 | <1 | 1 |
| Nickel | ppm | ASTM D5185m >2 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185m >2 | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >25 | 1 | 3 | 3 |
| Lead | ppm | ASTM D5185m >40 | 4 | 3 | 5 |
| Copper | ppm | ASTM D5185m >330 | 8 | 23 | 23 |
| Tin | ppm | ASTM D5185m >15 | 1 | 3 | <1 |
| Vanadium | ppm | ASTM D5185m | <1 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|------------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185m | 2 | 237 | 0 |
| Barium | ppm | ASTM D5185m | 0 | 1 | 0 |
| Molybdenum | ppm | ASTM D5185m | 93 | 94 | 110 |
| Manganese | ppm | ASTM D5185m | <1 | 2 | <1 |
| Magnesium | ppm | ASTM D5185m | 74 | 589 | 17 |
| Calcium | ppm | ASTM D5185m | 2358 | 1562 | 2746 |
| Phosphorus | ppm | ASTM D5185m | 872 | 770 | 897 |
| Zinc | ppm | ASTM D5185m 1460 | 1036 | 883 | 1129 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|------------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 13 | 20 | 5 |
| Sodium | ppm | ASTM D5185m | 3 | 3 | 2 |
| Potassium | ppm | ASTM D5185m >20 | 0 | 0 | 3 |
| Water | % | ASTM D6304 >0.2 | NEG | NEG | NEG |

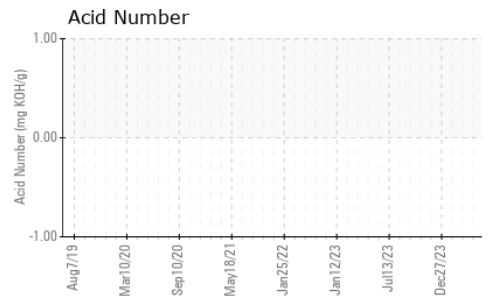
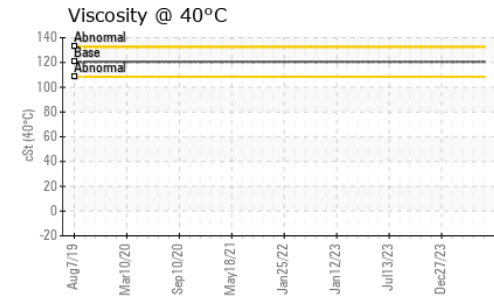
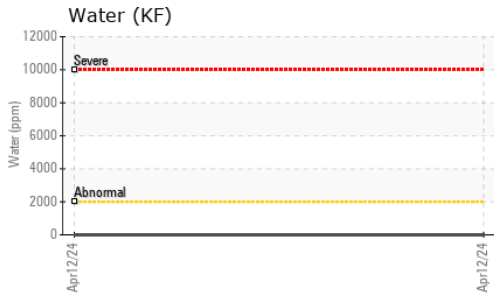
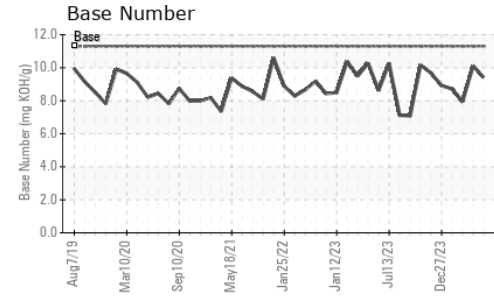
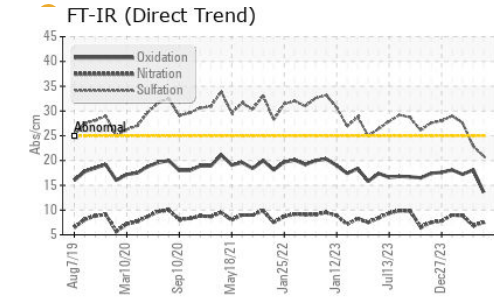
INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0.5 | 0.3 | 1.2 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 7.5 | 6.9 | 8.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 20.9 | 22.9 | 27.6 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 13.6 | 18.1 | 17.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 11.3 | 9.41 | 10.11 | 7.93 |

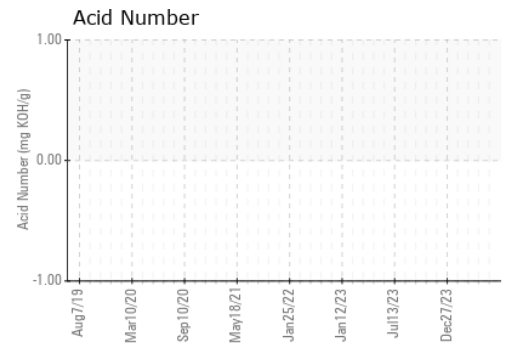
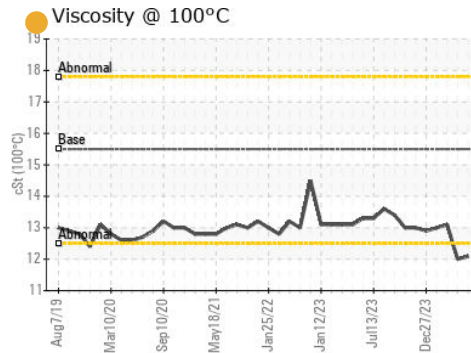
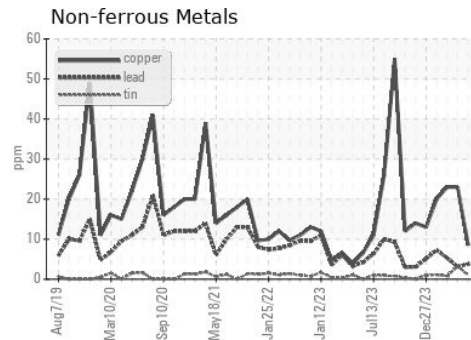
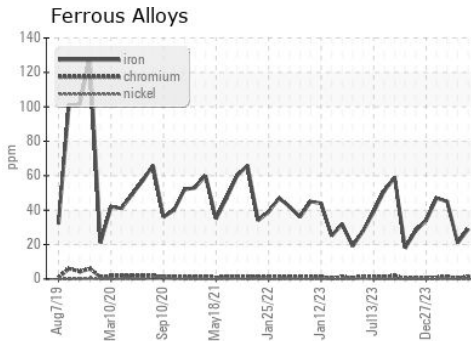
OIL ANALYSIS REPORT



| 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 | >0.2 | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|----------|----------|------|
| Visc @ 100°C | cSt | ASTM D445 | 15.5 | ● 12.1 | ▲ 12.0 | 13.1 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP0036873
Lab Number : 06178993
Unique Number : 11030319
Test Package : IND 2 (Additional Tests: FT-IR, KV100, TBN)

Received : 14 May 2024
Tested : 16 May 2024
Diagnosed : 16 May 2024 - Don Baldrige

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 F: (903)626-9772

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)