



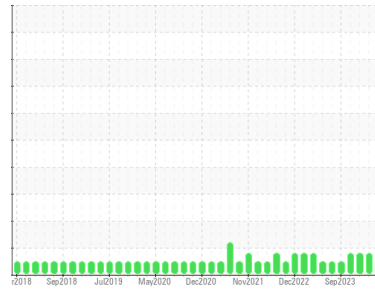
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
CATERPILLAR D10T 15105049 (S/N CATOD10TCRJG01495)
 Component
Diesel Engine
 Fluid
ROYAL PURPLE MOTOR OIL 15W40 (--- GAL)



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 BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | RP0037373 | RP0037368 | RP0036213 |
| Sample Date | Client Info | | 23 Jan 2024 | 04 Jan 2024 | 30 Nov 2023 |
| Machine Age | hrs | Client Info | 25939 | 25689 | 25419 |
| Oil Age | hrs | Client Info | 250 | 1487 | 1217 |
| Oil Changed | Client Info | | Not Chngd | Changed | Not Chngd |
| Sample Status | | | NORMAL | ABNORMAL | ABNORMAL |

CONTAMINATION

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

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >100 | 31 | ▲ 114 | ▲ 107 |
| Chromium | ppm | ASTM D5185m >20 | <1 | 2 | 2 |
| Nickel | ppm | ASTM D5185m >2 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185m >2 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >25 | 2 | 2 | 3 |
| Lead | ppm | ASTM D5185m >40 | 0 | 4 | 2 |
| Copper | ppm | ASTM D5185m >330 | 33 | 160 | 119 |
| Tin | ppm | ASTM D5185m >15 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | 0 | <1 | <1 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|------------------|-------------|----------|----------|
| Boron | ppm | ASTM D5185m 0 | 2 | 0 | 2 |
| Barium | ppm | ASTM D5185m 0 | 1 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 100 | 104 | 94 | 94 |
| Manganese | ppm | ASTM D5185m | 0 | 1 | 2 |
| Magnesium | ppm | ASTM D5185m 60 | 18 | 31 | 24 |
| Calcium | ppm | ASTM D5185m 3050 | 2323 | 2983 | 3001 |
| Phosphorus | ppm | ASTM D5185m 1050 | 968 | 904 | 1009 |
| Zinc | ppm | ASTM D5185m 1200 | 1045 | 1151 | 1187 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|------------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 4 | 5 | 5 |
| Sodium | ppm | ASTM D5185m | 0 | 2 | 3 |
| Potassium | ppm | ASTM D5185m >20 | 3 | 0 | 2 |
| Water | % | ASTM D6304 >0.2 | NEG | NEG | NEG |

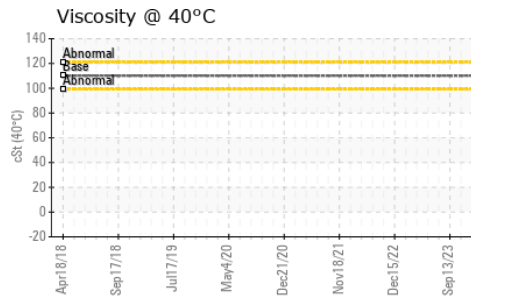
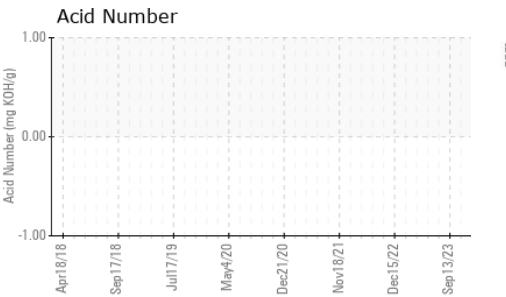
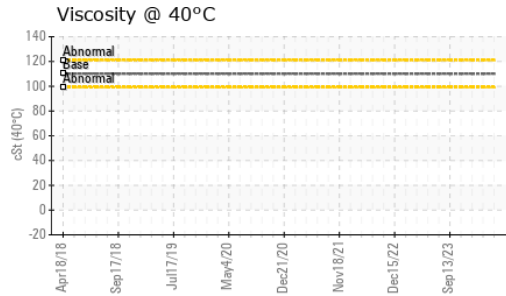
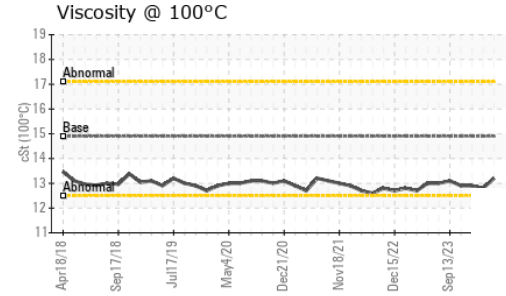
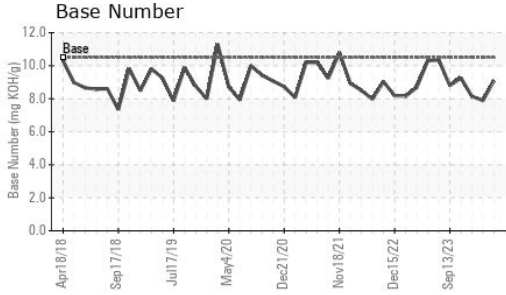
INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >3 | 0.4 | 1.1 | 1.1 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 6.6 | 8.6 | 8.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 20.7 | 29.2 | 28.4 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 13.2 | 18.0 | 17.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 10.5 | 9.09 | 7.89 | 8.14 |

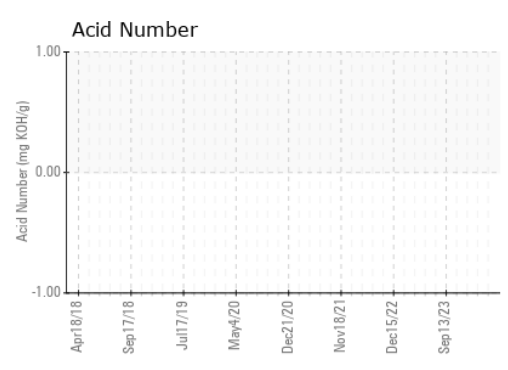
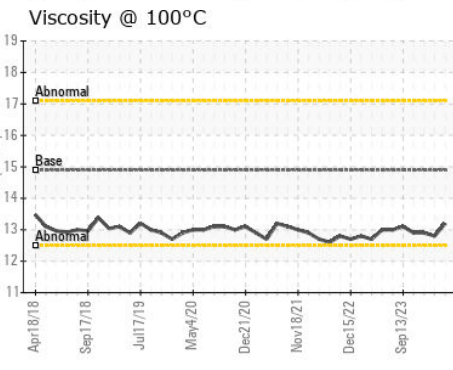
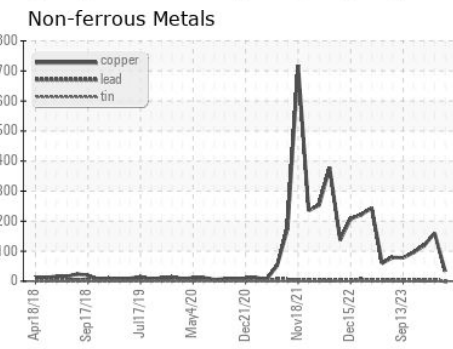
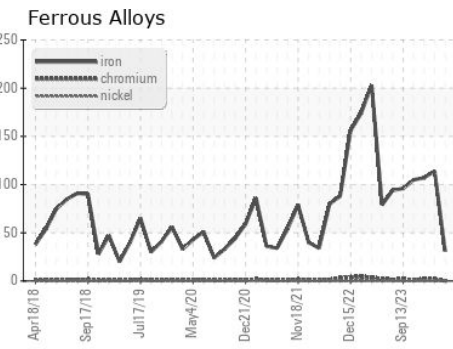
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|--------------|----------|-------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Debris | scalar | *Visual | NONE | NONE | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | NONE |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 | |
|------------------|--------|------------|---------|-------------|----------|------|
| Visc @ 100°C | cSt | ASTM D445 | 14.9 | 13.2 | 12.8 | 12.9 |

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : RP0037373 **Received** : 30 Jan 2024
Lab Number : **06075017** **Diagnosed** : 01 Feb 2024
Unique Number : 10857108 **Diagnostician** : Sean Felton
Test Package : IND 2 (Additional Tests: FT-IR, KV100, TBN)

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Certificate L2367
 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)