



| | |
|-----------------|---------------|
| WEAR | NORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
INTERNATIONAL 108776
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | IL0032951 | IL0032729 | IL0027553 |
| Sample Date | | Client Info | | 31 Jan 2024 | 03 Oct 2023 | 08 May 2023 |
| Machine Age | mls | Client Info | | 340001 | 321138 | 299177 |
| Oil Age | mls | Client Info | | 18863 | 21961 | 18985 |
| Filter Age | mls | Client Info | | 18863 | 21961 | 18985 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >100 | 89 | 62 | 58 |
| Chromium | ppm | ASTM D5185m | >20 | 2 | 1 | 2 |
| Nickel | ppm | ASTM D5185m | >4 | <1 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 14 | 12 | 3 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 5 | 3 | 6 |
| Tin | ppm | ASTM D5185m | >15 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

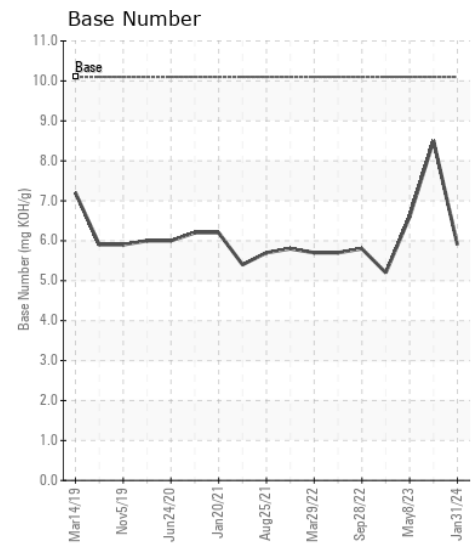
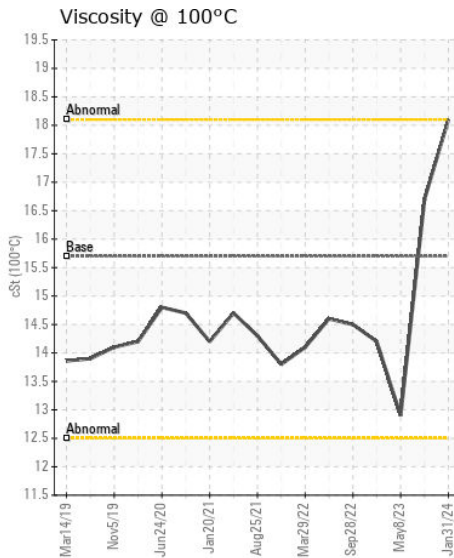
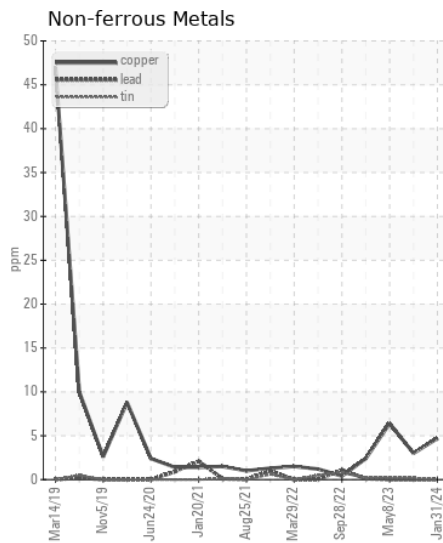
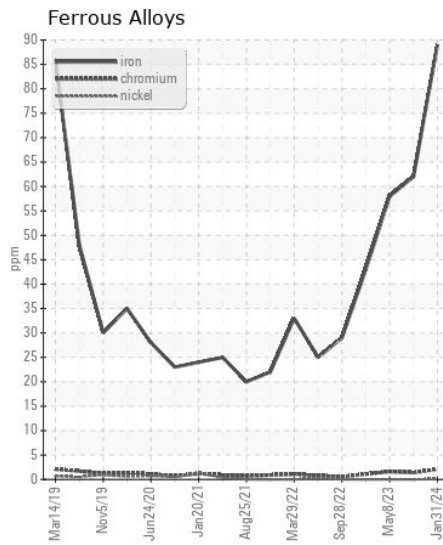
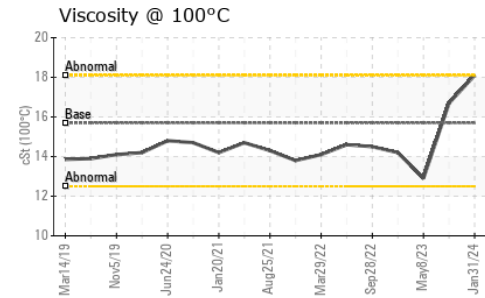
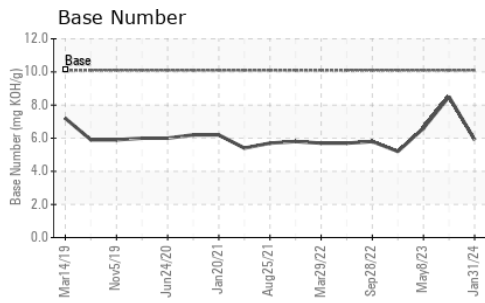
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 11 | 5 | 9 |
| Potassium | ppm | ASTM D5185m | >20 | 10 | 7 | 4 |
| Fuel | | WC Method | >2.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 1.5 | 1.8 | 2.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 19.8 | 14.6 | 16.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 43.1 | 31.2 | 35.2 |
| 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 |

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.

| | | | | | | |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium | ppm | ASTM D5185m | | 4 | 3 | 3 |
| Boron | ppm | ASTM D5185m | 316 | 50 | 72 | 58 |
| Barium | ppm | ASTM D5185m | 0.0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 1.2 | 83 | 40 | 80 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 24 | 731 | 319 | 102 |
| Calcium | ppm | ASTM D5185m | 2292 | 2629 | 2404 | 2518 |
| Phosphorus | ppm | ASTM D5185m | 1064 | 1486 | 1203 | 1101 |
| Zinc | ppm | ASTM D5185m | 1160 | 1879 | 1543 | 1415 |
| Sulfur | ppm | ASTM D5185m | 4996 | 3743 | 3693 | 3811 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 47.6 | 28.9 | 31.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.1 | 5.9 | 8.5 | 6.6 |
| Visc @ 100°C | cSt | ASTM D445 | 15.7 | 18.1 | 16.7 | 12.9 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : IL0032951
Lab Number : 06087020
Unique Number : 10874465
Test Package : FLEET

Received : 13 Feb 2024
Tested : 14 Feb 2024
Diagnosed : 14 Feb 2024 - Don Baldrige

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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)