

Machine Id **2367** Component **Diesel Engine** Fluid **SHELL ROTELLA T 15W40 (--- GAL)**

| RECOMMENDATION | Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|--------------------------------|----------|-------------|-----------|-------------|-------------|----------|
| | Sample Number | UOIVI | Client Info | LITTICADI | WC0871357 | 1115101 y 1 | |
| Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor. | Sample Date | | Client Info | | 27 Mar 2024 | | |
| | Machine Age | mls | Client Info | | 718000 | | |
| | Oil Age | mls | Client Info | | 20000 | | |
| | Filter Age | mls | Client Info | | 20000 | | |
| | Oil Changed | | Client Info | | Changed | | |
| | Filter Changed | | Client Info | | Changed | | |
| | Sample Status | | | | ABNORMAL | | |
| | | | | | | | |
| WEAR The aluminum level is abnormal. All other component wear rates are normal. | Iron | ppm | ASTM D5185m | | 63 | | |
| | Chromium | ppm | ASTM D5185m | >20 | 3 | | |
| | Nickel | ppm | ASTM D5185m | >4 | 1 | | |
| | Titanium | ppm | ASTM D5185m | | <1 | | |
| | Silver | ppm | ASTM D5185m | | <1 | | |
| | Aluminum | ppm | ASTM D5185m | >20 | 4 6 | | |
| | Lead | ppm | ASTM D5185m | | 3 | | |
| | Copper | ppm | ASTM D5185m | | 273 | | |
| | Tin | ppm | ASTM D5185m | >15 | 1 | | |
| | Vanadium | ppm | ASTM D5185m | | <1 | | |
| | White Metal | scalar | *Visual | NONE | NONE | | |
| | Yellow Metal | scalar | *Visual | NONE | NONE | | |
| CONTAMINATION | Silicon | nom | ASTM D5185m | > 25 | 12 | | |
| CONTAMINATION | Potassium | ppm | ASTM D5185m | | 14 | | |
| There is no indication of any contamination in the oil. | Fuel | ppm % | ASTM D3183 | | <1.0 | | |
| | Water | 70 | WC Method | | NEG | | |
| | Glycol | | WC Method | 20.2 | NEG | | |
| | Soot % | % | *ASTM D7844 | >3 | 1.5 | | |
| | Nitration | Abs/cm | *ASTM D7624 | | 10.6 | | |
| | Sulfation | Abs/.1mm | *ASTM D7415 | | 24.6 | | |
| | 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 | >0.2 | NEG | | |
| | | | | | | | |
| FLUID CONDITION | Sodium | ppm | ASTM D5185m | | 2 | | |
| The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service. | Boron | ppm | ASTM D5185m | 316 | 134 | | |
| | Barium | ppm | ASTM D5185m | 0.0 | <1 | | |
| | Molybdenum | ppm | ASTM D5185m | 1.2 | 114 | | |
| | Manganese | ppm | ASTM D5185m | | 1 | | |
| | Magnesium | ppm | ASTM D5185m | | 531 | | |
| | Calcium | ppm | ASTM D5185m | | 1402 | | |
| | Phosphorus | ppm | ASTM D5185m | 1064 | 750 | | |
| | Zinc | ppm | ASTM D5185m | 1160 | 842 | | |
| | Sulfur | ppm | ASTM D5185m | | 2785 | | |
| | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 18.0 | | |
| | D N I I I I I I I I I I | 110111 | | | | | |

Contact/Location: WEBCHECK IN ERGMAG601 - JASON JULIAN - ERGMAR605 Page 1 of 2

ASTM D445 15.7

7.5

12.4

Base Number (BN) mg KOH/g ASTM D2896 10.1

Visc @ 100°C cSt



