

WEAR NORMAL CONTAMINATION NORMAL FLUID CONDITION NORMAL

Machine Id FREIGHTLINER 19006 Component Diesel Engine Fluid {not provided} (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

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Metal levels are typical for a new component breaking in.

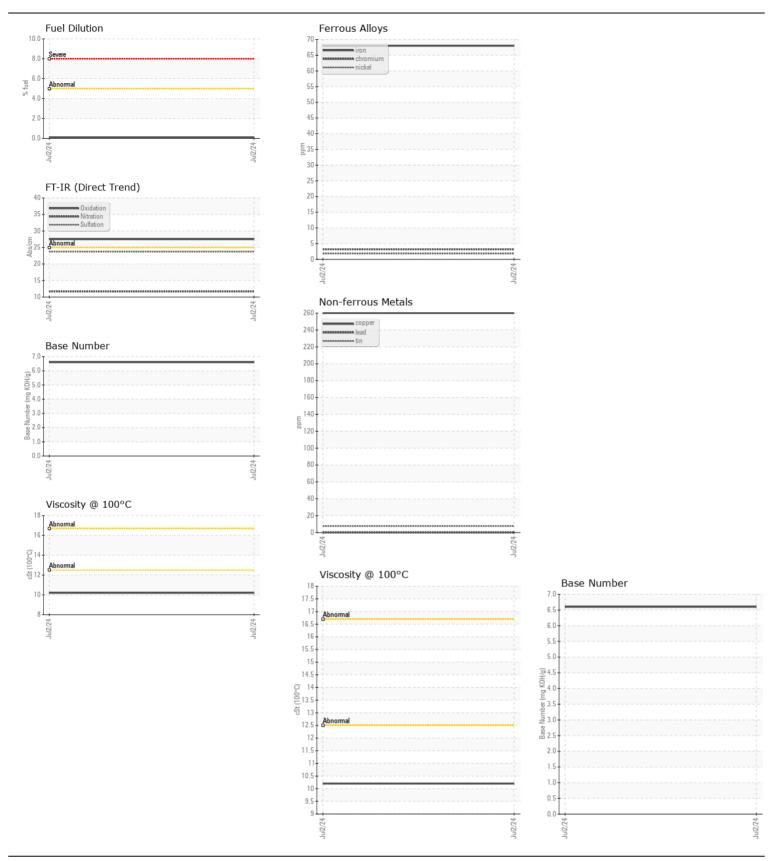
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|----|----------|------|
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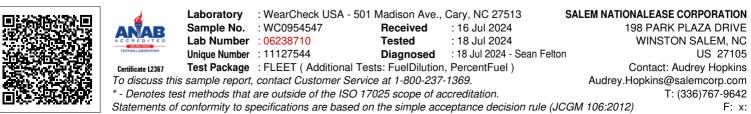
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Tests indicate that there is no fuel present in the oil. There is no indication of any contamination in the oil.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|------------------|------------|-------------|-----------|-------------|----------|----------|
| Sample Number | | Client Info | | WC0954547 | | |
| Sample Date | | Client Info | | 02 Jul 2024 | | |
| Machine Age | mls | Client Info | | 33000 | | |
| Oil Age | mls | Client Info | | 25000 | | |
| Filter Age | mls | Client Info | | 0 | | |
| Oil Changed | | Client Info | | N/A | | |
| Filter Changed | | Client Info | | N/A | | |
| Sample Status | | | | NORMAL | | |
| | | | | | | |
| Iron | ppm | ASTM D5185m | >80 | 68 | | |
| Chromium | ppm | ASTM D5185m | >5 | 3 | | |
| Nickel | ppm | ASTM D5185m | >2 | 2 | | |
| Titanium | ppm | ASTM D5185m | | <1 | | |
| Silver | ppm | ASTM D5185m | >3 | <1 | | |
| Aluminum | ppm | ASTM D5185m | >30 | 50 | | |
| Lead | ppm | ASTM D5185m | >30 | 0 | | |
| Copper | ppm | ASTM D5185m | >150 | 260 | | |
| Tin | ppm | ASTM D5185m | >5 | 8 | | |
| Vanadium | ppm | ASTM D5185m | | <1 | | |
| White Metal | scalar | *Visual | NONE | NONE | | |
| Yellow Metal | scalar | *Visual | NONE | NONE | | |
| | Scalai | visuai | NONL | | | |
| Silicon | ppm | ASTM D5185m | >20 | 8 | | |
| Potassium | ppm | ASTM D5185m | >20 | 117 | | |
| Fuel | % | ASTM D3524 | >5 | 0.1 | | |
| Water | | WC Method | >0.2 | NEG | | |
| Glycol | | WC Method | | NEG | | |
| Soot % | % | *ASTM D7844 | >3 | 0.6 | | |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 11.7 | | |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 23.7 | | |
| 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 | | *Visual | | NEG | | |
| Emuisilieu waler | scalar | visual | >0.2 | NEG | | |
| Sodium | ppm | ASTM D5185m | | 4 | | |
| Boron | ppm | ASTM D5185m | | 32 | | |
| Barium | ppm | ASTM D5185m | | 0 | | |
| Molybdenum | ppm | ASTM D5185m | | 43 | | |
| Manganese | ppm | ASTM D5185m | | 5 | | |
| Magnesium | ppm | ASTM D5185m | | 523 | | |
| Calcium | | ASTM D5185m | | 1702 | | |
| Phosphorus | ppm ppm | ASTM D5185m | | 756 | | |
| Zinc | | ASTM D5185m | | 929 | | |
| Sulfur | ppm | | | | | |
| | ppm | ASTM D5185m | - OE | 1821 | | |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 27.5 | | |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 6.6 | | |
| Visc @ 100°C | cSt | ASTM D445 | | 10.2 | | |

FLUID CONDITION

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.





Contact/Location: Audrey Hopkins - SALWIN Page 2 of 2