FLEET WEAR CHECK

OIL ANALYSIS REPORT

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

Machine Id
## 2018 FREIGHTLINER FTL-300
Component
## Diesel Engine
Fluid
## SHELL ROTELLA T 15W40 (11 QTS)

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

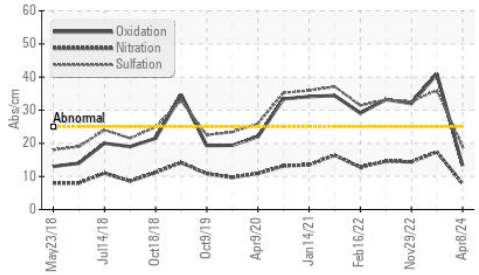
There is no indication of any contamination in the oil.

## FLUID CONDITION

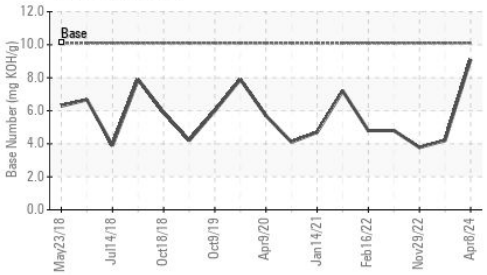
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | KL0011696 | KL0011737 | KL0007939 |
| Sample Date | | Client Info | | 08 Apr 2024 | 26 Jan 2024 | 29 Nov 2022 |
| Machine Age | mls | Client Info | | 255077 | 252949 | 236547 |
| Oil Age | mls | Client Info | | 2128 | 16402 | 70279 |
| Filter Age | mls | Client Info | | 2128 | 16402 | 70279 |
| Oil Changed | | Client Info | | Not Changd | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | ABNORMAL | ABNORMAL |
| Iron | ppm | ASTM D5185m | >165 | 14 | ▲ 193 | 64 |
| Chromium | ppm | ASTM D5185m | >5 | <1 | 4 | 2 |
| Nickel | ppm | ASTM D5185m | >4 | <1 | 2 | <1 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | ▲ 21 | <1 |
| Lead | ppm | ASTM D5185m | >150 | 64 | ▲ 87 | 7 |
| Copper | ppm | ASTM D5185m | >90 | 24 | 25 | 3 |
| Tin | ppm | ASTM D5185m | >5 | 4 | 6 | 1 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | <1 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >35 | 4 | 17 | 8 |
| Potassium | ppm | ASTM D5185m | >20 | <1 | 24 | 11 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >7.5 | 0.2 | 2 | 1.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.7 | 17.4 | 14.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 19.1 | 36.0 | 32.6 |
| 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 |
| Sodium | ppm | ASTM D5185m | | 3 | 6 | 6 |
| Boron | ppm | ASTM D5185m | 316 | 75 | 47 | 44 |
| Barium | ppm | ASTM D5185m | 0.0 | 0 | 2 | 0 |
| Molybdenum | ppm | ASTM D5185m | 1.2 | 9 | 58 | 28 |
| Manganese | ppm | ASTM D5185m | | <1 | 1 | <1 |
| Magnesium | ppm | ASTM D5185m | 24 | 611 | 242 | 81 |
| Calcium | ppm | ASTM D5185m | 2292 | 1340 | 1832 | 2089 |
| Phosphorus | ppm | ASTM D5185m | 1064 | 1011 | 939 | 845 |
| Zinc | ppm | ASTM D5185m | 1160 | 1117 | 1216 | 1089 |
| Sulfur | ppm | ASTM D5185m | 4996 | 4111 | 2754 | 3428 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.3 | 40.9 | 32.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.1 | 9.1 | 4.2 | ▲ 3.78 |
| Visc @ 100°C | cSt | ASTM D445 | 15.7 | 13.6 | 15.9 | 12.9 |

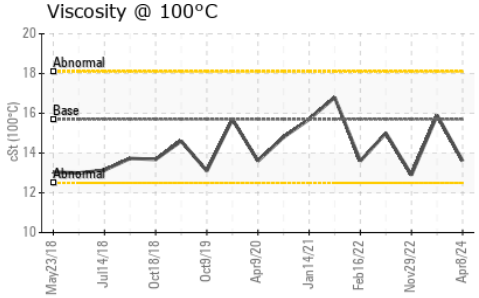
FT-IR (Direct Trend)



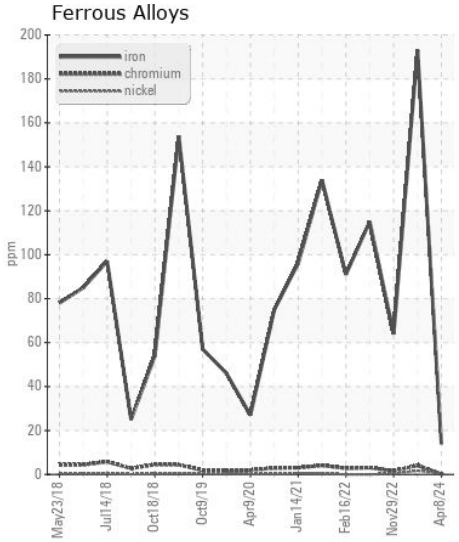

Base Number



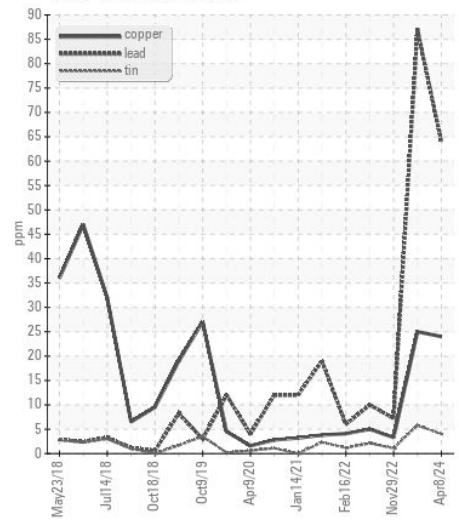

Viscosity @ 100°C



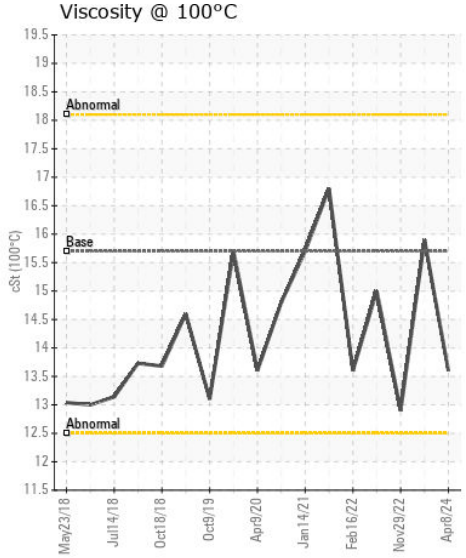

Ferrous Alloys



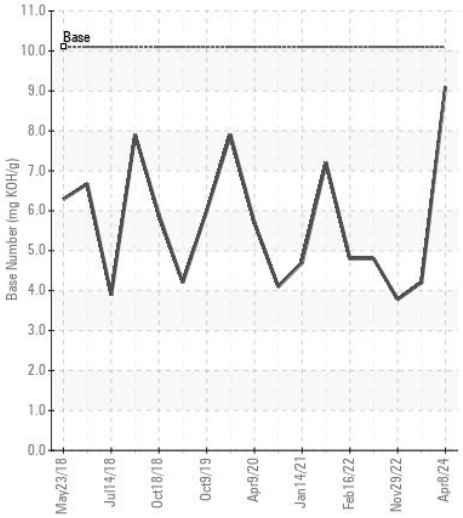

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : KL0011696
**Lab Number** : 06153908
**Unique Number** : 10989331
**Test Package** : FLEET

**Received** : 19 Apr 2024
**Tested** : 22 Apr 2024
**Diagnosed** : 22 Apr 2024 - Wes Davis

*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)*

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