FLEET LUBE 360™ OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

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

Machine Id
## 728099 FREIGHTLINER M2 106
Component
## Diesel Engine
Fluid
## TIER 15W40 (--- GAL)

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

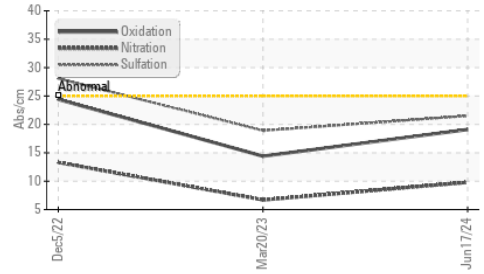
There is no indication of any contamination in the oil.

## FLUID CONDITION

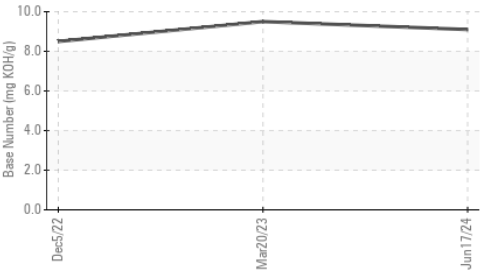
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | GFL0115212 | GFL0061445 | GFL0061444 |
| Sample Date | | Client Info | | 17 Jun 2024 | 20 Mar 2023 | 05 Dec 2022 |
| Machine Age | hrs | Client Info | | 3495 | 748 | 907 |
| Oil Age | hrs | Client Info | | 24 | 907 | 907 |
| Filter Age | hrs | Client Info | | 24 | 907 | 907 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Iron | ppm | ASTM D5185m | >80 | 30 | 37 | 186 |
| Chromium | ppm | ASTM D5185m | >5 | 1 | 1 | 5 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | <1 | 2 |
| Titanium | ppm | ASTM D5185m | | 2 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185m | >30 | 5 | 6 | 28 |
| Lead | ppm | ASTM D5185m | >30 | 2 | <1 | 6 |
| Copper | ppm | ASTM D5185m | >150 | 1 | 3 | 8 |
| Tin | ppm | ASTM D5185m | >5 | 0 | <1 | <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 | >20 | 7 | 8 | 15 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | <1 | 8 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.2 | 0.2 | 1.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.8 | 6.7 | 13.3 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 21.5 | 18.9 | 28.1 |
| 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 | | 2 | 8 | 14 |
| Boron | ppm | ASTM D5185m | | 17 | 17 | 56 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 66 | 69 | 109 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | 2 |
| Magnesium | ppm | ASTM D5185m | | 1010 | 924 | 781 |
| Calcium | ppm | ASTM D5185m | | 1318 | 1259 | 1717 |
| Phosphorus | ppm | ASTM D5185m | | 1143 | 1098 | 993 |
| Zinc | ppm | ASTM D5185m | | 1459 | 1310 | 1208 |
| Sulfur | ppm | ASTM D5185m | | 3216 | 3838 | 3720 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 19.1 | 14.4 | 24.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 9.1 | 9.5 | 8.5 |
| Visc @ 100°C | cSt | ASTM D445 | | 14.1 | 12.8 | 13.7 |

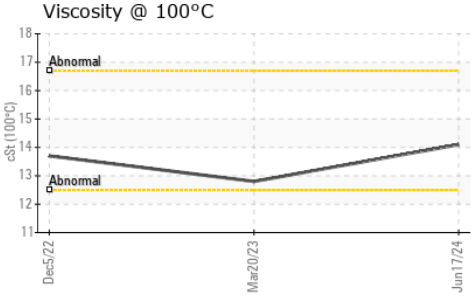
FT-IR (Direct Trend)



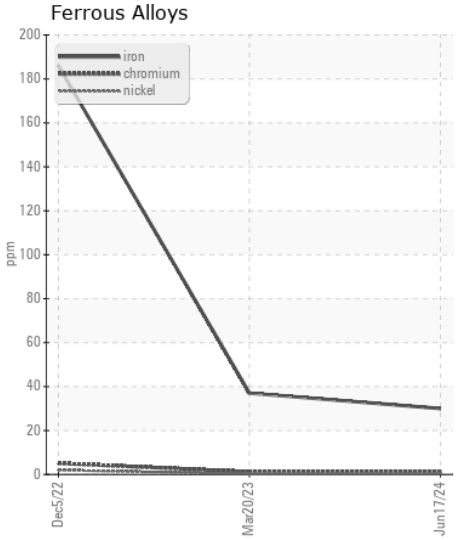

Base Number



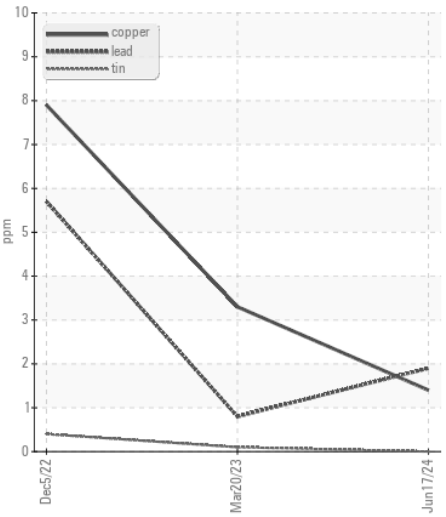

Viscosity @ 100°C



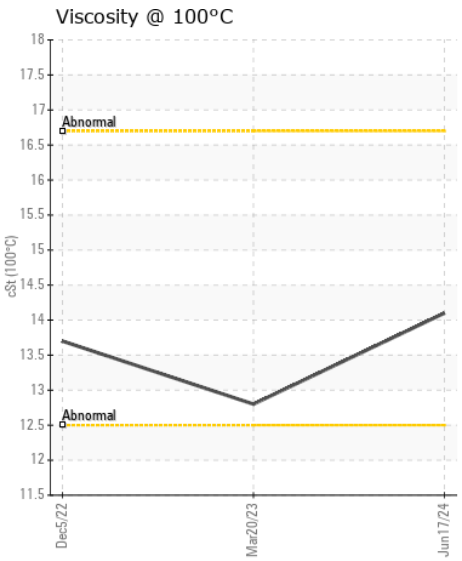

Ferrous Alloys



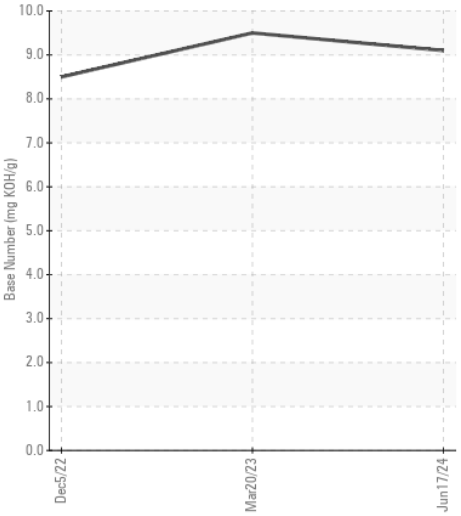

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0115212
**Lab Number** : 06216467
**Unique Number** : 11089331
**Test Package** : FLEET

**Received** : 20 Jun 2024
**Tested** : 22 Jun 2024
**Diagnosed** : 22 Jun 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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