FLEET WEAR CHECK

OIL ANALYSIS REPORT

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

Area
**[20804]**
Machine Id
**KENWORTH TLL 34**
Component
**Diesel Engine**
Fluid
**VALVOLINE PREMIUM BLUE (48 LTR)**

## RECOMMENDATION

Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

## CONTAMINATION

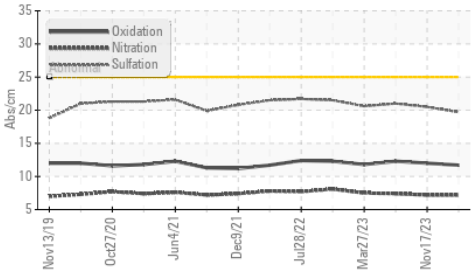
There is no indication of any contamination in the oil.

## FLUID CONDITION

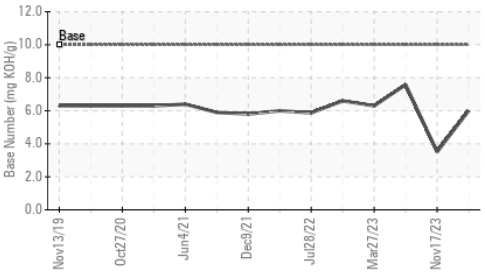
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | WC06237335 | WC06019146 | WC05924480 |
| Sample Date | | Client Info | | 08 Jul 2024 | 17 Nov 2023 | 07 Aug 2023 |
| Machine Age | kms | Client Info | | 959526 | 57263 | 781216 |
| Oil Age | kms | Client Info | | 56217 | 57263 | 60727 |
| Filter Age | kms | Client Info | | 56217 | 57263 | 60727 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | ABNORMAL | SEVERE |
| Iron | ppm | ASTM D5185m | >90 | 21 | 12 | 17 |
| Chromium | ppm | ASTM D5185m | >20 | 2 | <1 | 1 |
| Nickel | ppm | ASTM D5185m | >2 | <1 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 4 | 2 | 1 |
| Lead | ppm | ASTM D5185m | >40 | 4 | 2 | 4 |
| Copper | ppm | ASTM D5185m | >330 | 3 | 0 | <1 |
| Tin | ppm | ASTM D5185m | >15 | 3 | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Silicon | ppm | ASTM D5185m | >25 | 23 | 3 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 2 | 10 | 5 |
| 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 | >6 | 0.3 | 0.4 | 0.5 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 7.2 | 7.2 | 7.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 19.7 | 20.5 | 21.0 |
| 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 | | 5 | 2 | 3 |
| Boron | ppm | ASTM D5185m | 2.9 | 0 | 6 | 3 |
| Barium | ppm | ASTM D5185m | 0.1 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0.0 | 0 | <1 | <1 |
| Manganese | ppm | ASTM D5185m | | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 18 | 38 | 40 | 30 |
| Calcium | ppm | ASTM D5185m | 2936 | 2551 | 2416 | 2695 |
| Phosphorus | ppm | ASTM D5185m | 998 | 953 | 955 | 1001 |
| Zinc | ppm | ASTM D5185m | 1095 | 1119 | 1172 | 1247 |
| Sulfur | ppm | ASTM D5185m | 5469 | 4128 | 3633 | 4586 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 11.7 | 12.0 | 12.3 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.0 | 6.0 | 3.51 | 7.58 |
| Visc @ 100°C | cSt | ASTM D445 | 15.2 | 13.85 | 13.7 | 13.5 |

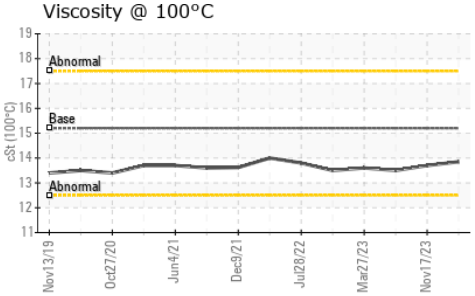
FT-IR (Direct Trend)



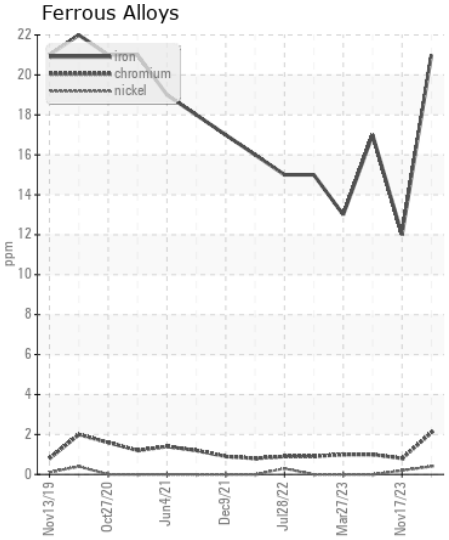

Base Number



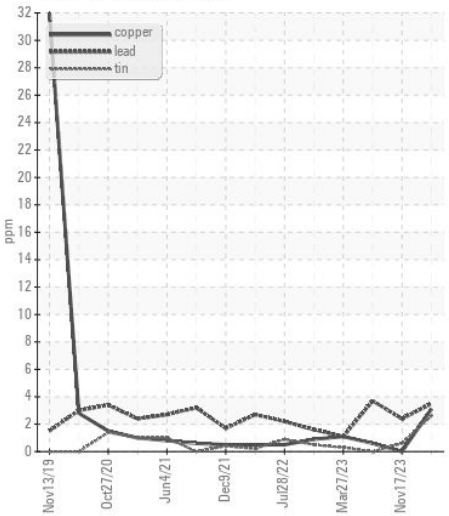

Viscosity @ 100°C



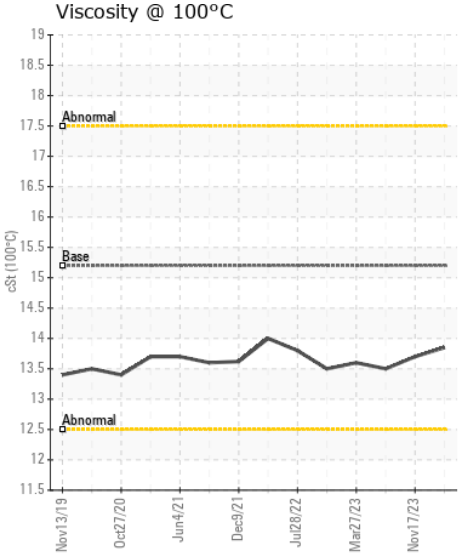

Ferrous Alloys




Non-ferrous Metals




Viscosity @ 100°C

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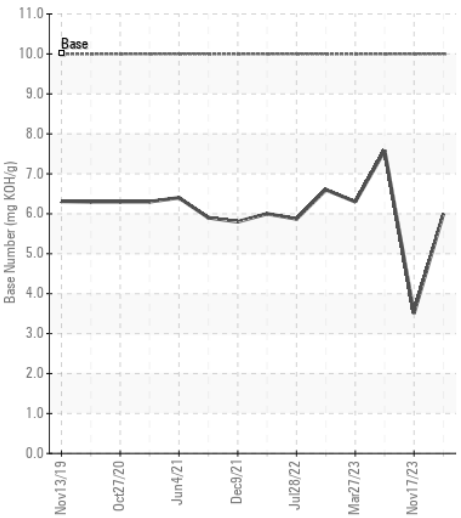


Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC06237335
**Lab Number** : 06237335
**Unique Number** : 11126169
**Test Package** : FLEET

**Received** : 15 Jul 2024
**Tested** : 18 Jul 2024
**Diagnosed** : 18 Jul 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)*

**TRANZLIQUID**
81 HEWLETTS RD
MOUNT MAUNGANUI, ZZ
NZ
Contact: AARON LOYE
aaron@truckline.co.nz
T:
F: