# OIL ANALYSIS REPORT

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

Machine Id
**1717**
Component
**Diesel Engine**
Fluid
**SHELL ROTELLA T 15W40 (--- QTS)**

## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

## WEAR

Metal levels are typical for a new component breaking in.

## CONTAMINATION

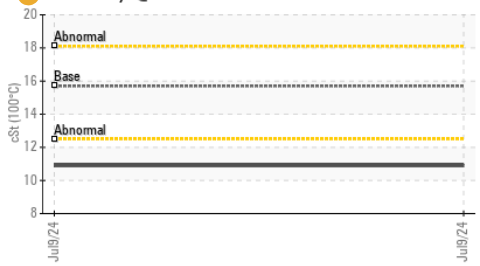
Fuel content negligible. Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

## FLUID CONDITION

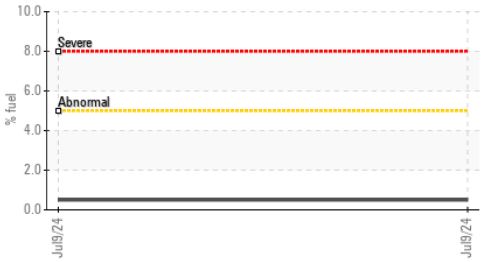
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | WC0827723 | --- | --- |
| Sample Date | | Client Info | | 09 Jul 2024 | --- | --- |
| Machine Age | mls | Client Info | | 24000 | --- | --- |
| Oil Age | mls | Client Info | | 24000 | --- | --- |
| Filter Age | mls | Client Info | | 24000 | --- | --- |
| Oil Changed | | Client Info | | N/A | --- | --- |
| Filter Changed | | Client Info | | N/A | --- | --- |
| Sample Status | | | | ATTENTION | --- | --- |
| Iron | ppm | ASTM D5185m | >100 | 33 | --- | --- |
| Chromium | ppm | ASTM D5185m | >20 | 1 | --- | --- |
| Nickel | ppm | ASTM D5185m | >4 | <1 | --- | --- |
| Titanium | ppm | ASTM D5185m | | <1 | --- | --- |
| Silver | ppm | ASTM D5185m | >3 | <1 | --- | --- |
| Aluminum | ppm | ASTM D5185m | >20 | 22 | --- | --- |
| Lead | ppm | ASTM D5185m | >40 | 1 | --- | --- |
| Copper | ppm | ASTM D5185m | >330 | 7 | --- | --- |
| Tin | ppm | ASTM D5185m | >15 | 2 | --- | --- |
| Vanadium | ppm | ASTM D5185m | | 0 | --- | --- |
| White Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | NONE | --- | --- |
| Silicon | ppm | ASTM D5185m | >25 | 14 | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | 67 | --- | --- |
| Fuel | % | ASTM D3524 | >5 | 0.5 | --- | --- |
| Water | | WC Method | >0.2 | NEG | --- | --- |
| Glycol | | WC Method | | NEG | --- | --- |
| Soot % | % | *ASTM D7844 | >3 | 0.5 | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.8 | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 21.5 | --- | --- |
| 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 | --- | --- |
| Sodium | ppm | ASTM D5185m | | 3 | --- | --- |
| Boron | ppm | ASTM D5185m | 316 | 8 | --- | --- |
| Barium | ppm | ASTM D5185m | 0.0 | 0 | --- | --- |
| Molybdenum | ppm | ASTM D5185m | 1.2 | 56 | --- | --- |
| Manganese | ppm | ASTM D5185m | | 1 | --- | --- |
| Magnesium | ppm | ASTM D5185m | 24 | 846 | --- | --- |
| Calcium | ppm | ASTM D5185m | 2292 | 1172 | --- | --- |
| Phosphorus | ppm | ASTM D5185m | 1064 | 1018 | --- | --- |
| Zinc | ppm | ASTM D5185m | 1160 | 1193 | --- | --- |
| Sulfur | ppm | ASTM D5185m | 4996 | 3339 | --- | --- |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 17.2 | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.1 | 7.4 | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | 15.7 | 10.9 | --- | --- |

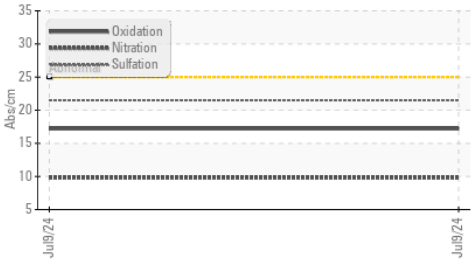
Viscosity @ 100°C



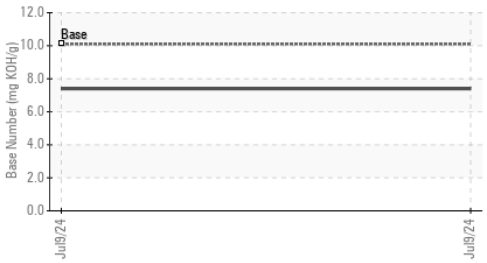

Fuel Dilution



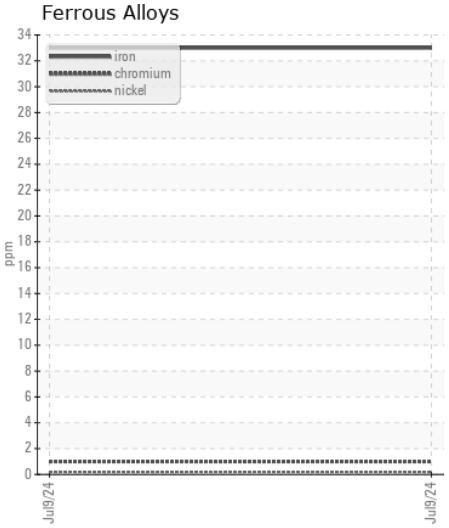

FT-IR (Direct Trend)



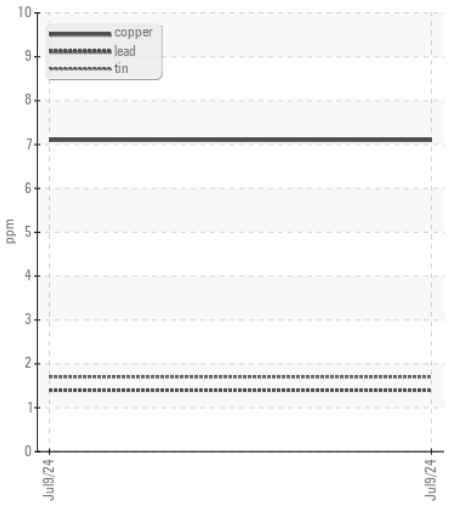

Base Number



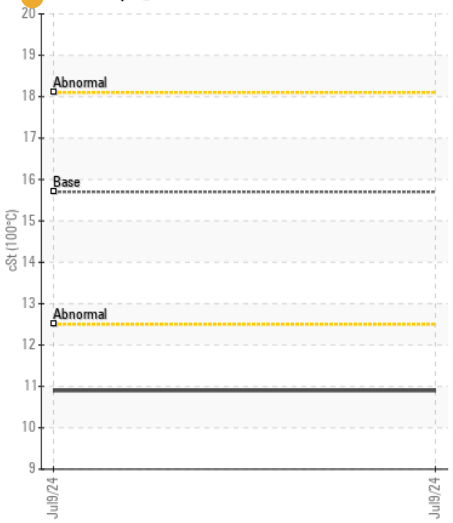

Ferrous Alloys



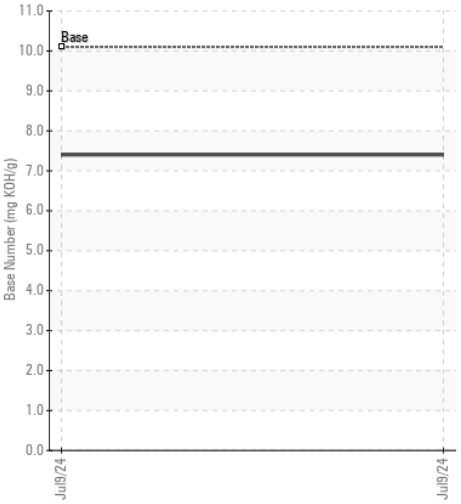

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0827723 **Received** : 17 Jul 2024
**Lab Number** : 06239686 **Tested** : 19 Jul 2024
**Unique Number** : 11128520 **Diagnosed** : 19 Jul 2024 - Sean Felton
**Test Package** : FLEET ( Additional Tests: FuelDilution, PercentFuel )

*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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