# OIL ANALYSIS REPORT

Sample Rating Trend


NORMAL

Machine Id
## 1 - OIL FROM BOTTLE
Component
**Diesel Engine**
Fluid
**SHELL ROTELLA T5 10W30 (CJ4) (--- GAL)**

## DIAGNOSIS

**Recommendation**
This is a baseline read-out on the submitted sample.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **WC0927620** | --- | --- |
| Sample Date | | Client Info | | **29 Mar 2024** | --- | --- |
| Machine Age | hrs | Client Info | | **0** | --- | --- |
| Oil Age | hrs | Client Info | | **0** | --- | --- |
| Oil Changed | | Client Info | | **Not Changd** | --- | --- |
| Sample Status | | | | **NORMAL** | --- | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | --- | --- |
| Glycol | | WC Method | | **NEG** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **0** | --- | --- |
| Chromium | ppm | ASTM D5185m | >20 | **0** | --- | --- |
| Nickel | ppm | ASTM D5185m | >4 | **0** | --- | --- |
| Titanium | ppm | ASTM D5185m | | **0** | --- | --- |
| Silver | ppm | ASTM D5185m | >3 | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185m | >20 | **<1** | --- | --- |
| Lead | ppm | ASTM D5185m | >40 | **0** | --- | --- |
| Copper | ppm | ASTM D5185m | >330 | **0** | --- | --- |
| Tin | ppm | ASTM D5185m | >15 | **<1** | --- | --- |
| Vanadium | ppm | ASTM D5185m | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | --- | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **197** | --- | --- |
| Barium | ppm | ASTM D5185m | 0 | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185m | | **0** | --- | --- |
| Manganese | ppm | ASTM D5185m | | **<1** | --- | --- |
| Magnesium | ppm | ASTM D5185m | | **21** | --- | --- |
| Calcium | ppm | ASTM D5185m | | **2080** | --- | --- |
| Phosphorus | ppm | ASTM D5185m | | **1014** | --- | --- |
| Zinc | ppm | ASTM D5185m | | **1126** | --- | --- |
| Sulfur | ppm | ASTM D5185m | | **4018** | --- | --- |

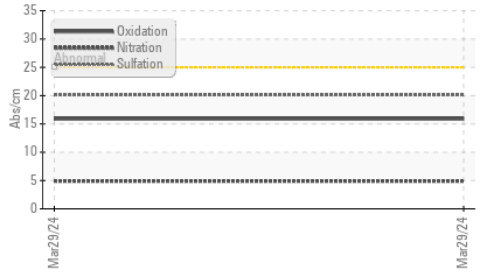
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **5** | --- | --- |
| Sodium | ppm | ASTM D5185m | | **<1** | --- | --- |
| Potassium | ppm | ASTM D5185m | >20 | **6** | --- | --- |
| Water | % | ASTM D6304 | >0.2 | **NEG** | --- | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0** | --- | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **4.9** | --- | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **20.1** | --- | --- |

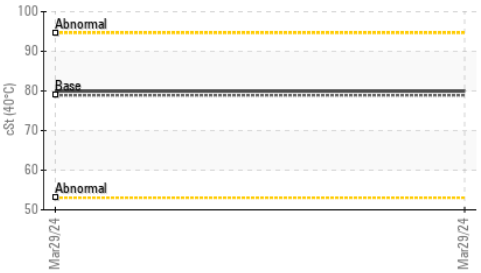
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **15.9** | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.0 | **8.1** | --- | --- |

# OIL ANALYSIS REPORT

FT-IR (Direct Trend)

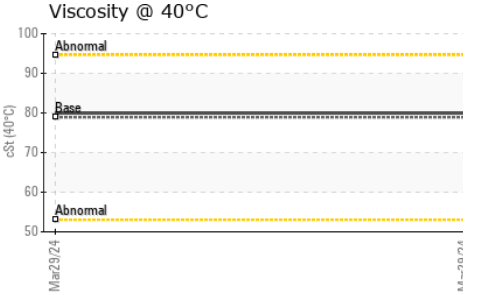



Viscosity @ 40°C




Viscosity @ 100°C


Viscosity @ 40°C

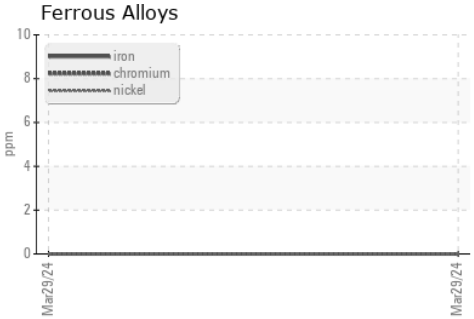



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | --- | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | --- | --- |
| Silt | 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** | --- | --- |
| Free Water | scalar | *Visual | | **NEG** | --- | --- |

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 78.9 | **79.96** | --- | --- |
| Visc @ 100°C | cSt | ASTM D445 | 12.0 | **12.02** | --- | --- |
| Viscosity Index (VI) | Scale | ASTM D2270 | 147 | **145** | --- | --- |

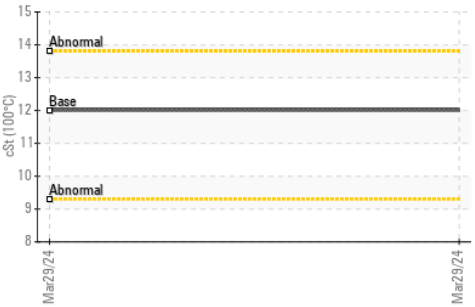
## GRAPHS

Ferrous Alloys

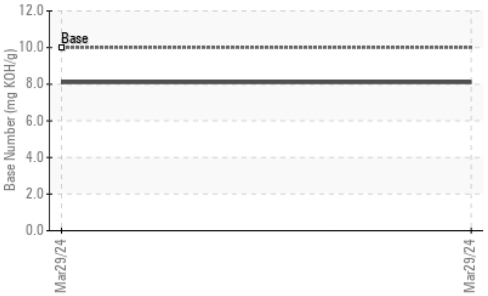



Non-ferrous Metals


Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : WC0927620 **Received** : 03 Apr 2024
**Lab Number** : 06137848 **Tested** : 08 Apr 2024
**Unique Number** : 10962656 **Diagnosed** : 08 Apr 2024 - Jonathan Hester
**Test Package** : FLEET ( Additional Tests: KF, KV40, VI )

*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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