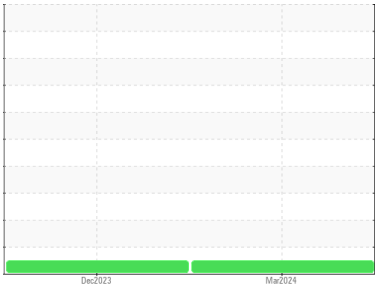
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
## GMI Services
Machine Id
## TB 4 SW4054CC09058
Component
**Diesel Engine**
Fluid
**CITGO 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

**Wear**
Metal levels are typical for a new component breaking in.

**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.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **PCA0115482** | LW0008252 | --- |
| Sample Date | | Client Info | | **27 Mar 2024** | 19 Dec 2023 | --- |
| Machine Age | hrs | Client Info | | **1040** | 455 | --- |
| Oil Age | hrs | Client Info | | **1040** | 455 | --- |
| Oil Changed | | Client Info | | **Not Changd** | Not Changd | --- |
| Sample Status | | | | **NORMAL** | NORMAL | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | --- |
| Water | | WC Method | >0.2 | **NEG** | NEG | --- |
| Glycol | | WC Method | | **NEG** | NEG | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **11** | 15 | --- |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | <1 | --- |
| Nickel | ppm | ASTM D5185m | >4 | **0** | 0 | --- |
| Titanium | ppm | ASTM D5185m | | **<1** | 0 | --- |
| Silver | ppm | ASTM D5185m | >3 | **<1** | <1 | --- |
| Aluminum | ppm | ASTM D5185m | >20 | **3** | 12 | --- |
| Lead | ppm | ASTM D5185m | >40 | **0** | 3 | --- |
| Copper | ppm | ASTM D5185m | >330 | **4** | 13 | --- |
| Tin | ppm | ASTM D5185m | >15 | **1** | 1 | --- |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | --- |

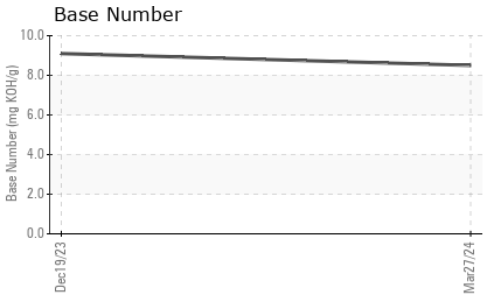
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **62** | 57 | --- |
| Barium | ppm | ASTM D5185m | | **0** | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | | **23** | 49 | --- |
| Manganese | ppm | ASTM D5185m | | **<1** | 2 | --- |
| Magnesium | ppm | ASTM D5185m | | **814** | 872 | --- |
| Calcium | ppm | ASTM D5185m | | **1215** | 1000 | --- |
| Phosphorus | ppm | ASTM D5185m | | **1057** | 968 | --- |
| Zinc | ppm | ASTM D5185m | | **1221** | 1175 | --- |
| Sulfur | ppm | ASTM D5185m | | **3977** | 3528 | --- |

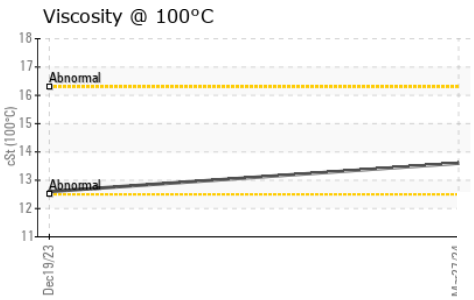
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **6** | 14 | --- |
| Sodium | ppm | ASTM D5185m | | **2** | 2 | --- |
| Potassium | ppm | ASTM D5185m | >20 | **2** | <1 | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.1** | 0.1 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.6** | 6.3 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **18.6** | 18.5 | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **13.3** | 13.2 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **8.5** | 9.1 | --- |

# OIL ANALYSIS REPORT

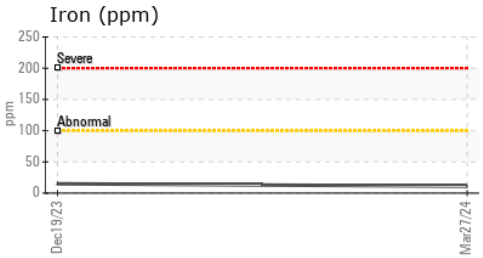


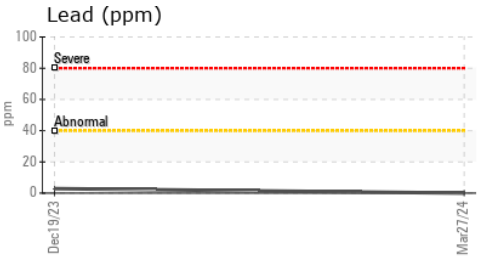



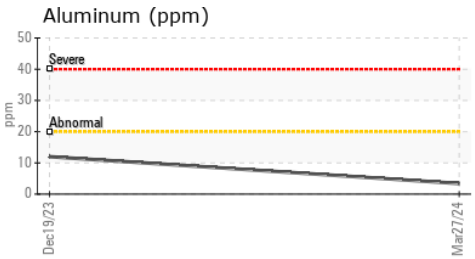

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | --- |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | --- |
| Emulsified Water | scalar | *Visual | >0.2 | **NEG** | NEG | --- |
| Free Water | scalar | *Visual | | **NEG** | NEG | --- |

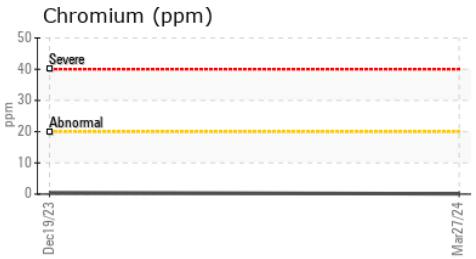
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **13.6** | 12.6 | --- |

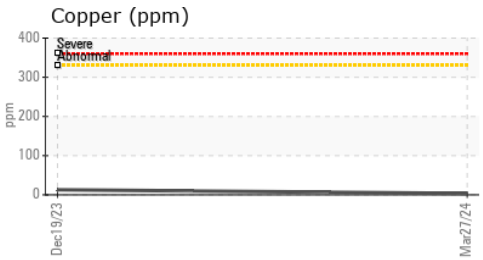
## GRAPHS

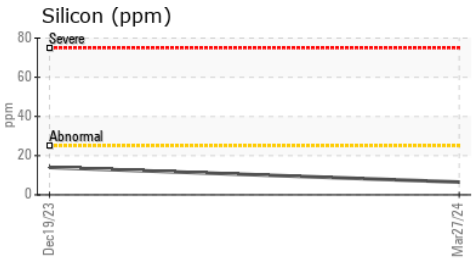


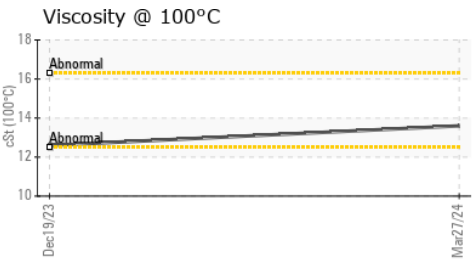



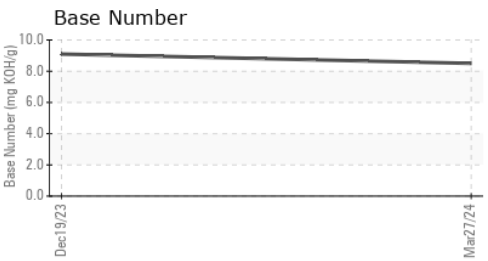




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0115482 **Received** : 02 Apr 2024
**Lab Number** : 06136044 **Tested** : 03 Apr 2024
**Unique Number** : 10955509 **Diagnosed** : 03 Apr 2024 - Wes Davis
**Test Package** : MOB 1 ( Additional Tests: TBN )

*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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