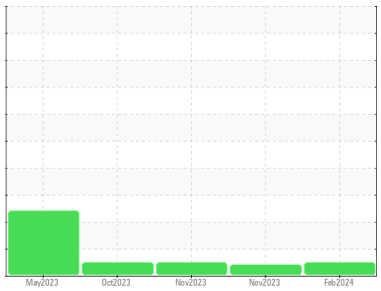
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
**(YA172354) {UNASSIGNED}**
Machine Id
**413037**
Component
**Diesel Engine**
Fluid
**DIESEL ENGINE OIL SAE 30 (24 QTS)**

## DIAGNOSIS

**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.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0109752** | GFL0092669 | GFL0092725 |
| Sample Date | | Client Info | | **29 Feb 2024** | 08 Nov 2023 | 03 Nov 2023 |
| Machine Age | hrs | Client Info | | **0** | 627 | 627 |
| Oil Age | hrs | Client Info | | **0** | 223 | 222 |
| Oil Changed | | Client Info | | **N/A** | Not Changd | Not Changd |
| Sample Status | | | | **NORMAL** | ATTENTION | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| 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 |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >120 | **26** | 4 | 9 |
| Chromium | ppm | ASTM D5185m | >20 | **2** | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | **6** | 0 | 1 |
| Titanium | ppm | ASTM D5185m | >2 | **<1** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **<1** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **10** | 2 | 4 |
| Lead | ppm | ASTM D5185m | >40 | **<1** | <1 | 0 |
| Copper | ppm | ASTM D5185m | >330 | **13** | 5 | 4 |
| Tin | ppm | ASTM D5185m | >15 | **2** | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **<1** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 250 | **3** | 8 | 14 |
| Barium | ppm | ASTM D5185m | 10 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 100 | **68** | 61 | 63 |
| Manganese | ppm | ASTM D5185m | | **1** | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 450 | **919** | 951 | 962 |
| Calcium | ppm | ASTM D5185m | 3000 | **1164** | 1090 | 1173 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **929** | 1023 | 1056 |
| Zinc | ppm | ASTM D5185m | 1350 | **1172** | 1269 | 1345 |
| Sulfur | ppm | ASTM D5185m | 4250 | **2571** | 3183 | 3363 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **11** | 6 | 6 |
| Sodium | ppm | ASTM D5185m | >75 | **2** | 13 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **25** | 27 | 7 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >4 | **0.4** | 0.1 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **9.3** | 5.6 | 5.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **20.7** | 17.9 | 18.0 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.5** | 13.6 | 13.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 8.5 | **5.6** | 8.9 | 8.7 |

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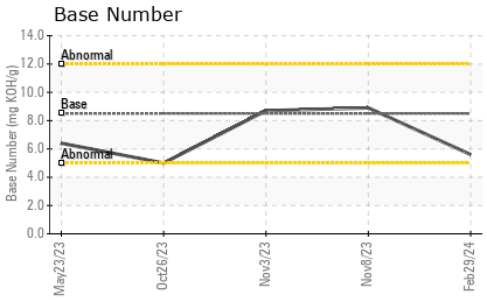
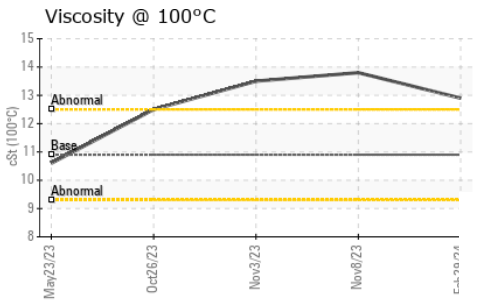
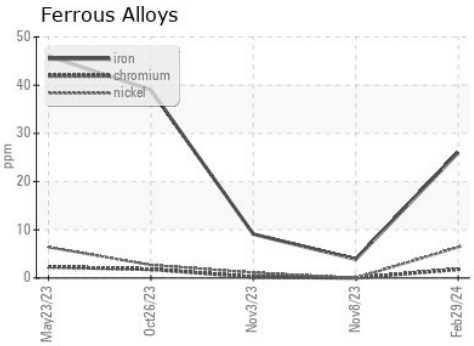


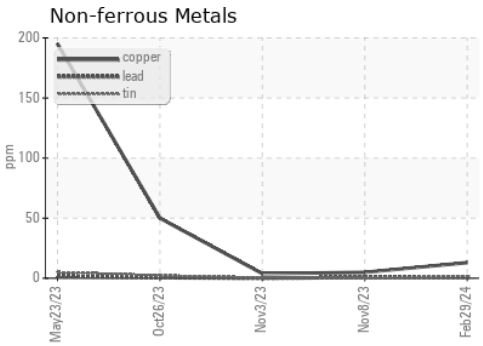



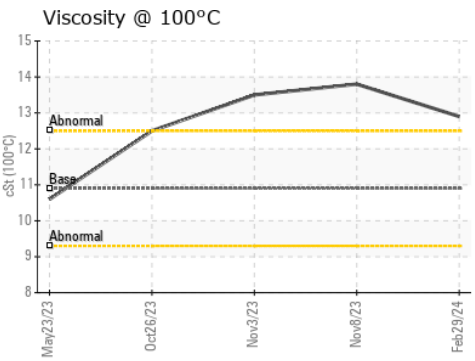

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

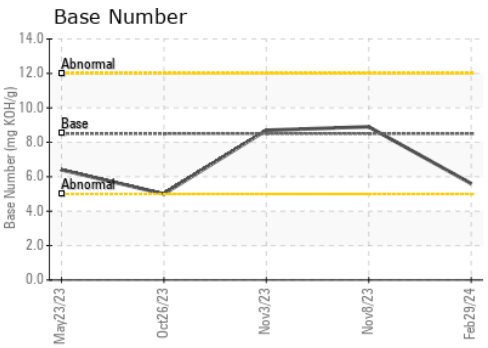
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 10.9 | **12.9** | 13.8 | 13.5 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0109752
**Lab Number** : 06113489
**Unique Number** : 10916986
**Test Package** : FLEET

**Received** : 08 Mar 2024
**Tested** : 11 Mar 2024
**Diagnosed** : 12 Mar 2024 - Don Baldridge

*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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