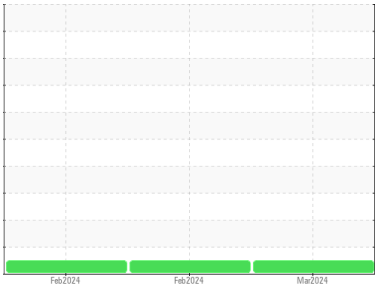
# OIL ANALYSIS REPORT

Sample Rating Trend




**NORMAL**

Machine Id
**414074**
Component
**1 Diesel Engine**
Fluid
**PETRO CANADA 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**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 | | **GFL0112749** | GFL0112720 | GFL0112799 |
| Sample Date | | Client Info | | **09 Mar 2024** | 23 Feb 2024 | 16 Feb 2024 |
| Machine Age | hrs | Client Info | | **930** | 817 | 762 |
| Oil Age | hrs | Client Info | | **0** | 817 | 762 |
| Oil Changed | | Client Info | | **Changed** | N/A | Not Changd |
| Sample Status | | | | **NORMAL** | NORMAL | 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 | **14** | 9 | 7 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | **<1** | 1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | **<1** | <1 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **5** | 4 | 4 |
| Lead | ppm | ASTM D5185m | >40 | **0** | <1 | 0 |
| Copper | ppm | ASTM D5185m | >330 | **201** | 31 | 43 |
| Tin | ppm | ASTM D5185m | >15 | **1** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

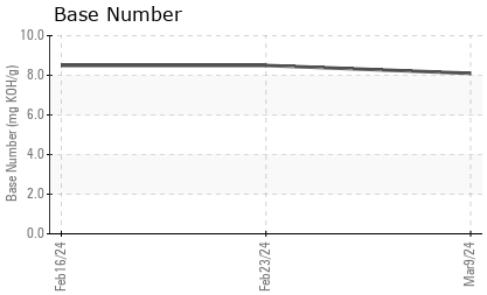
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **17** | 12 | 12 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **64** | 63 | 60 |
| Manganese | ppm | ASTM D5185m | | **1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | **923** | 918 | 875 |
| Calcium | ppm | ASTM D5185m | | **1060** | 1020 | 1000 |
| Phosphorus | ppm | ASTM D5185m | | **993** | 1029 | 922 |
| Zinc | ppm | ASTM D5185m | | **1197** | 1237 | 1159 |
| Sulfur | ppm | ASTM D5185m | | **3224** | 3005 | 2733 |

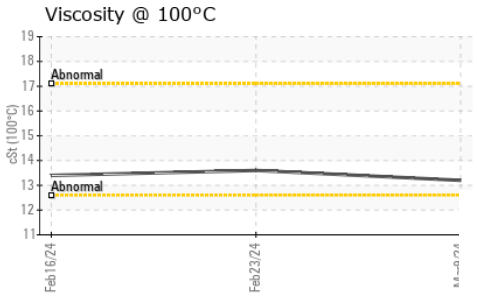
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **20** | 10 | 12 |
| Sodium | ppm | ASTM D5185m | | **2** | 9 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **10** | 36 | 0 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >4 | **0.2** | 0.2 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.2** | 6.7 | 6.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **19.8** | 18.9 | 19.4 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **15.6** | 15.2 | 15.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **8.1** | 8.5 | 8.5 |

# OIL ANALYSIS REPORT

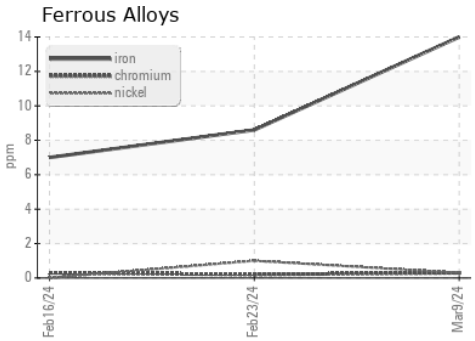


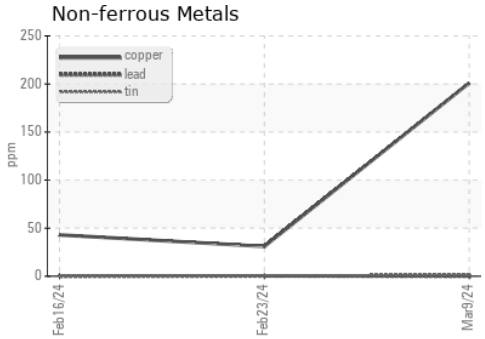



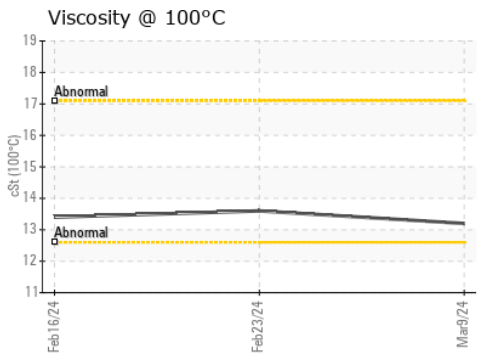

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

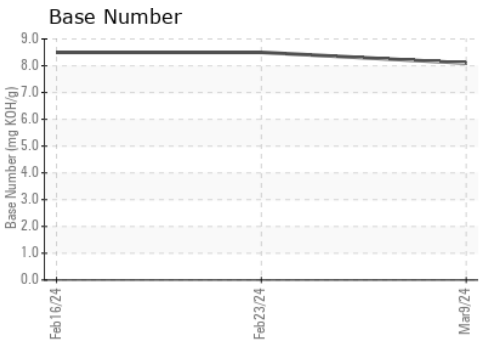
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **13.2** | 13.6 | 13.4 |

## GRAPHS





**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0112749 **Received** : 20 Mar 2024
**Lab Number** : 06124212 **Tested** : 21 Mar 2024
**Unique Number** : 10938363 **Diagnosed** : 21 Mar 2024 - Wes Davis
**Test Package** : FLEET

Certificate L2367

**GFL Environmental - 654 - Richmond Hauling**
11800 Lewis Road
Chester, VA
US 23831
Contact: Jimmy Mayes
jmayes@gflenv.com
T:
F:


*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)*