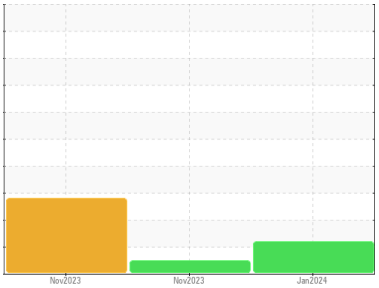
# OIL ANALYSIS REPORT

Sample Rating Trend




**DEGRADATION**

Area
**GFL035**
Machine Id
**834019**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (38 QTS)**

## DIAGNOSIS

**Recommendation**
The oil is near the end of it`s useful service life, recommend schedule an oil change. 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 level is low.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0102340** | GFL0085160 | GFL0085171 |
| Sample Date | | Client Info | | **26 Jan 2024** | 17 Nov 2023 | 02 Nov 2023 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **600** | 300 | 600 |
| Oil Changed | | Client Info | | **Not Changd** | Not Changd | Changed |
| Sample Status | | | | **ABNORMAL** | NORMAL | ABNORMAL |

| 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 | **21** | 16 | 36 |
| Chromium | ppm | ASTM D5185m | >20 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >15 | **<1** | <1 | 1 |
| Titanium | ppm | ASTM D5185m | >2 | **0** | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >20 | **4** | 2 | 4 |
| Lead | ppm | ASTM D5185m | >40 | **2** | <1 | 2 |
| Copper | ppm | ASTM D5185m | >330 | **3** | 3 | 18 |
| Tin | ppm | ASTM D5185m | >15 | **1** | <1 | 1 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | <1 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **4** | 20 | 3 |
| Barium | ppm | ASTM D5185m | 0 | **<1** | 0 | 9 |
| Molybdenum | ppm | ASTM D5185m | 60 | **53** | 52 | 55 |
| Manganese | ppm | ASTM D5185m | 0 | **3** | 2 | 14 |
| Magnesium | ppm | ASTM D5185m | 1010 | **587** | 568 | 806 |
| Calcium | ppm | ASTM D5185m | 1070 | **1562** | 1517 | 1276 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **707** | 742 | 732 |
| Zinc | ppm | ASTM D5185m | 1270 | **948** | 933 | 878 |
| Sulfur | ppm | ASTM D5185m | 2060 | **2281** | 2465 | 2425 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **7** | 6 | ▲ 30 |
| Sodium | ppm | ASTM D5185m | | **8** | 4 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **6** | 3 | 8 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >4 | **0** | 0 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **11.8** | 9.2 | 13.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **24.2** | 19.6 | 24.1 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **20.2** | 17.0 | 22.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | ▲ **3.0** | 6.8 | ▲ 3.7 |

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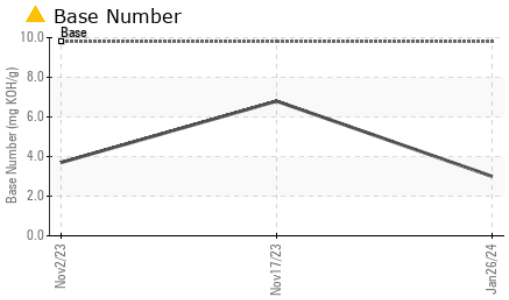
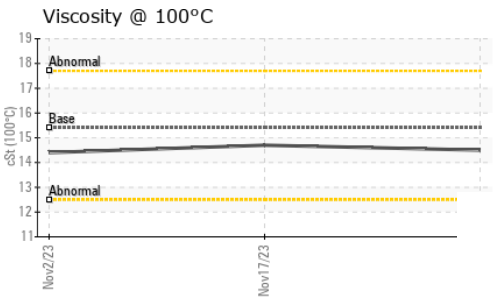
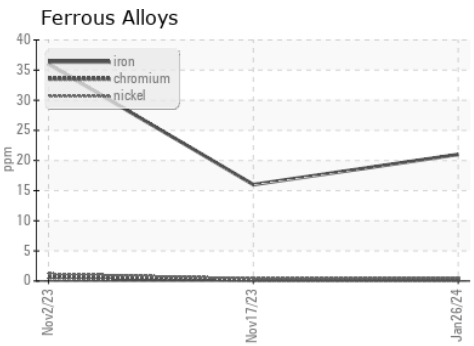


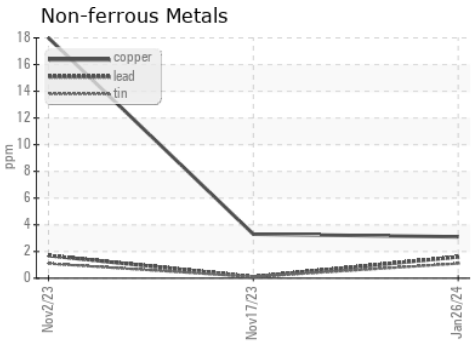



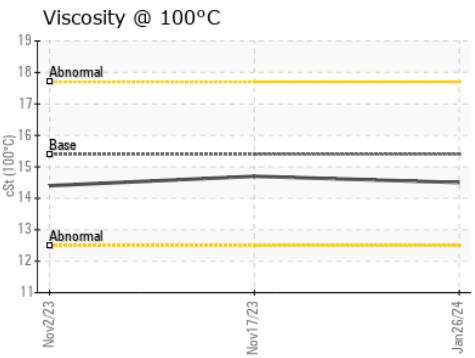

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

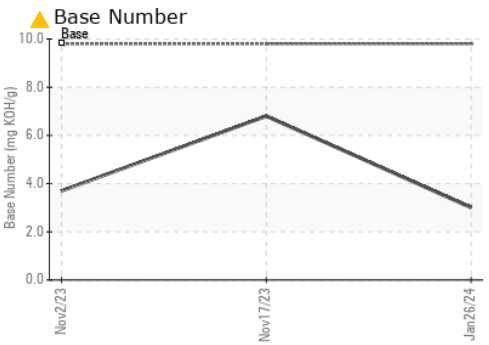
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | **14.5** | 14.7 | 14.4 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0102340
**Lab Number** : 06072656
**Unique Number** : 10849333
**Test Package** : FLEET

**Recieved** : 29 Jan 2024
**Diagnosed** : 31 Jan 2024
**Diagnostician** : Sean Felton

*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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Report Id: GFL035 [WUSCAR] 06072656 (Generated: 02/01/2024 03:29:50) Rev: 1

Submitted By: JORGE COSTA