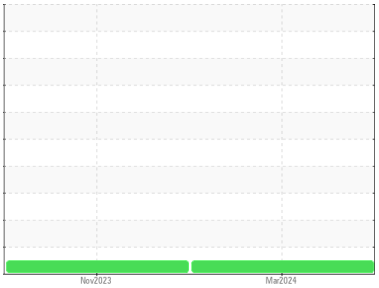
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**923051**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (11 GAL)**

## 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 | | **GFL0108606** | GFL0066023 | --- |
| Sample Date | | Client Info | | **29 Mar 2024** | 15 Nov 2023 | --- |
| Machine Age | hrs | Client Info | | **10002** | 0 | --- |
| Oil Age | hrs | Client Info | | **10002** | 0 | --- |
| Oil Changed | | Client Info | | **Changed** | N/A | --- |
| Sample Status | | | | **NORMAL** | NORMAL | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >3.0 | **<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 | >120 | **7** | 8 | --- |
| Chromium | ppm | ASTM D5185m | >20 | **0** | 0 | --- |
| Nickel | ppm | ASTM D5185m | >5 | **0** | 0 | --- |
| Titanium | ppm | ASTM D5185m | >2 | **0** | 0 | --- |
| Silver | ppm | ASTM D5185m | >2 | **0** | 0 | --- |
| Aluminum | ppm | ASTM D5185m | >20 | **3** | 2 | --- |
| Lead | ppm | ASTM D5185m | >40 | **0** | 0 | --- |
| Copper | ppm | ASTM D5185m | >330 | **2** | 2 | --- |
| Tin | ppm | ASTM D5185m | >15 | **<1** | <1 | --- |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **5** | 4 | --- |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | 60 | **56** | 55 | --- |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | 0 | --- |
| Magnesium | ppm | ASTM D5185m | 1010 | **919** | 914 | --- |
| Calcium | ppm | ASTM D5185m | 1070 | **1085** | 1065 | --- |
| Phosphorus | ppm | ASTM D5185m | 1150 | **1008** | 997 | --- |
| Zinc | ppm | ASTM D5185m | 1270 | **1217** | 1142 | --- |
| Sulfur | ppm | ASTM D5185m | 2060 | **3279** | 2640 | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **4** | 4 | --- |
| Sodium | ppm | ASTM D5185m | | **6** | 4 | --- |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 0 | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >4 | **0.2** | 0.3 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **8.6** | 8.3 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **19.0** | 19.4 | --- |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **15.8** | 15.7 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | **7.2** | 7.5 | --- |

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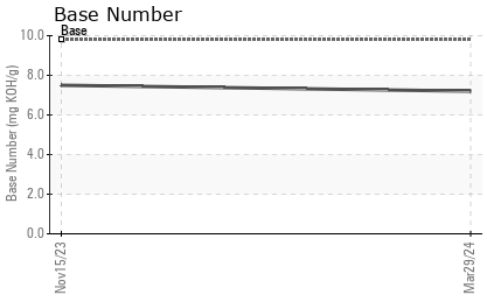
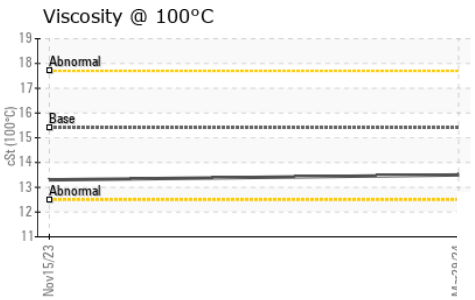
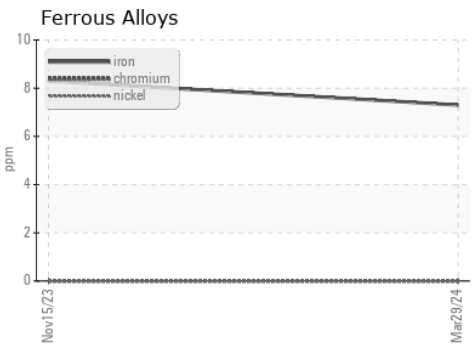


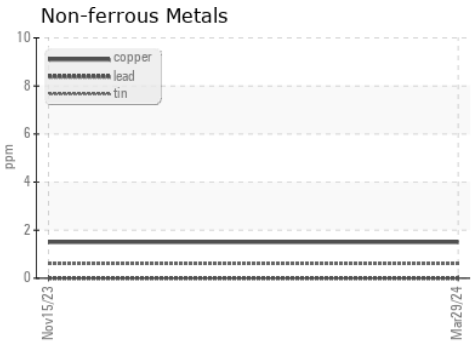



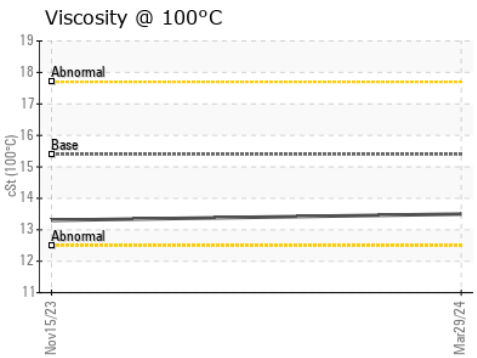

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Silt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

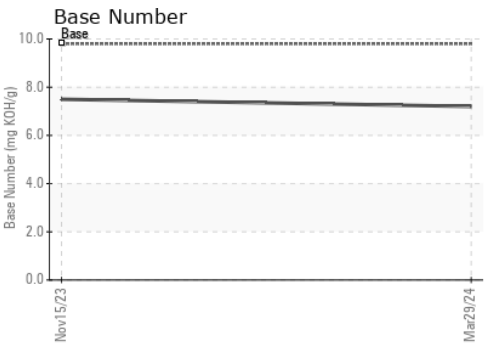
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | **13.5** | 13.3 | --- |

## GRAPHS




**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0108606
**Lab Number** : 06137058
**Unique Number** : 10956523
**Test Package** : FLEET

**Received** : 03 Apr 2024
**Tested** : 03 Apr 2024
**Diagnosed** : 03 Apr 2024 - Wes Davis

Certificate L2367

**GFL Environmental - 904B - Menomonie**
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MENOMONIE, WI
US 54751
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*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)*