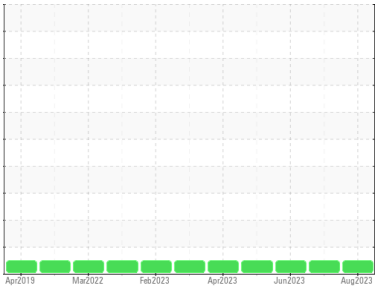
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**2680**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (8 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 | | **GFL0083099** | GFL0083153 | GFL0083163 |
| Sample Date | | Client Info | | **01 Aug 2023** | 08 Jul 2023 | 14 Jun 2023 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Changed | | Client Info | | **Not Changd** | Not Changd | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >3.0 | **<1.0** | <1.0 | <1.0 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >165 | **5** | 65 | 8 |
| Chromium | ppm | ASTM D5185m | >5 | **<1** | 4 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | 2 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | **0** | <1 | <1 |
| Silver | ppm | ASTM D5185m | >2 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **3** | 11 | <1 |
| Lead | ppm | ASTM D5185m | >150 | **0** | <1 | 0 |
| Copper | ppm | ASTM D5185m | >90 | **<1** | 6 | 2 |
| Tin | ppm | ASTM D5185m | >5 | **<1** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **15** | 10 | 8 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | **58** | 60 | 62 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | **769** | 803 | 956 |
| Calcium | ppm | ASTM D5185m | 1070 | **1286** | 1199 | 1237 |
| Phosphorus | ppm | ASTM D5185m | 1150 | **892** | 948 | 1018 |
| Zinc | ppm | ASTM D5185m | 1270 | **1116** | 1139 | 1244 |
| Sulfur | ppm | ASTM D5185m | 2060 | **2933** | 3119 | 3594 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >35 | **4** | 17 | 5 |
| Sodium | ppm | ASTM D5185m | | **3** | 21 | 3 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 3 | <1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >7.5 | **0.2** | 2 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **7.1** | 10.8 | 8.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **18.9** | 24.0 | 19.7 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **15.1** | 18.1 | 15.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | **8.8** | 7.5 | 8.9 |

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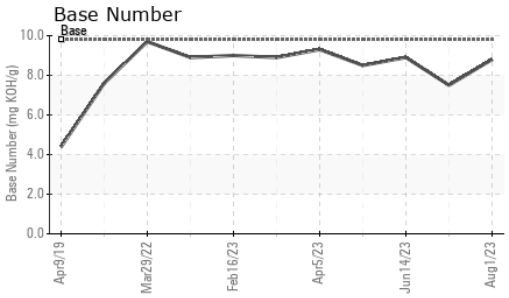
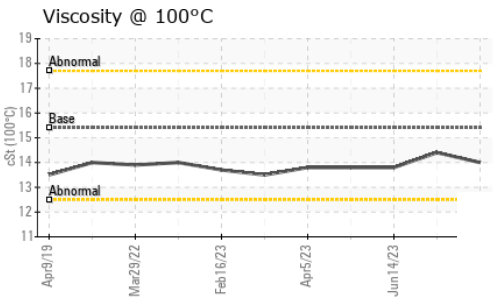


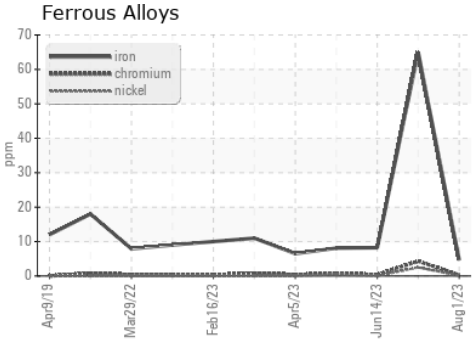




| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

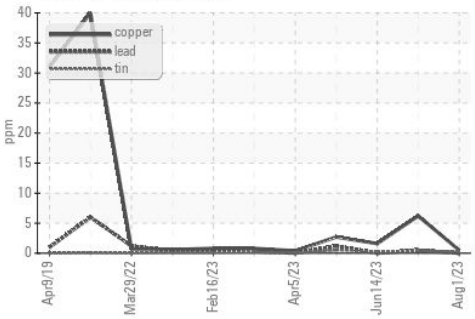
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | **14.0** | 14.4 | 13.8 |

## GRAPHS

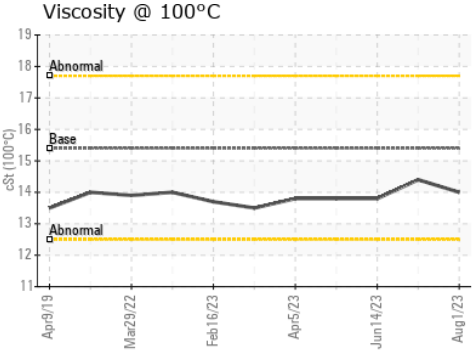
Ferrous Alloys



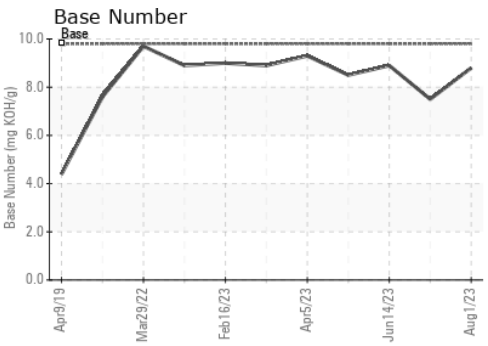

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0083099
**Lab Number** : 05922019
**Unique Number** : 10601966
**Test Package** : FLEET

**Received** : 11 Aug 2023
**Diagnosed** : 12 Aug 2023
**Diagnostician** : Wes Davis

*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)*

**GFL Environmental - 074 - Douglas - Transwaste**
1219 Landfill Road
Douglas, GA
US 31533
Contact: CURTIS JACOBS
CURTIS.JACOBS@GFLENV.COM
T: (912)384-6001
F:

Report Id: GFL074 [WUSCAR] 05922019 (Generated: 08/12/2023 05:22:27) Rev: 1

Submitted By: CURTIS JACOBS