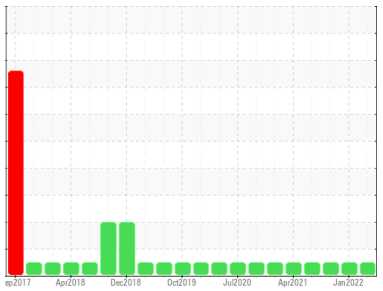
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**10780**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (11 GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

**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 | | **GFL0084251** | GFL0037977 | GFL0030023 |
| Sample Date | | Client Info | | **19 May 2023** | 19 Jan 2022 | 30 Aug 2021 |
| Machine Age | hrs | Client Info | | **12115** | 10009 | 9738 |
| Oil Age | hrs | Client Info | | **12115** | 537 | 266 |
| Oil Changed | | Client Info | | **Changed** | Changed | N/A |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

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

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | | **20** | 31 | 16 |
| Chromium | ppm | ASTM D5185m | | **<1** | 2 | 1 |
| Nickel | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | <1 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | | **0** | 5 | 6 |
| Lead | ppm | ASTM D5185m | | **2** | <1 | <1 |
| Copper | ppm | ASTM D5185m | | **2** | 8 | 2 |
| Tin | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Antimony | ppm | ASTM D5185m | | **---** | 0 | 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 | | **11** | 9 | 21 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **65** | 59 | 63 |
| Manganese | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | **941** | 842 | 920 |
| Calcium | ppm | ASTM D5185m | | **1241** | 1050 | 1096 |
| Phosphorus | ppm | ASTM D5185m | | **1009** | 906 | 1001 |
| Zinc | ppm | ASTM D5185m | | **1285** | 1162 | 1188 |
| Sulfur | ppm | ASTM D5185m | | **3344** | 2543 | 2658 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | | **5** | 7 | 8 |
| Sodium | ppm | ASTM D5185m | | **5** | 4 | 5 |
| Potassium | ppm | ASTM D5185m | | **2** | 1 | 2 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0.6** | 0.8 | 0.4 |
| Nitration | Abs/cm | *ASTM D7624 | | **9.6** | 11.2 | 7.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 | | **21.7** | 22.8 | 19 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | | **17.5** | 18.1 | 14.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **7.7** | 7.8 | 8.2 |

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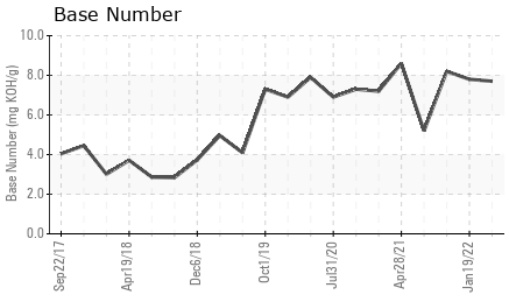
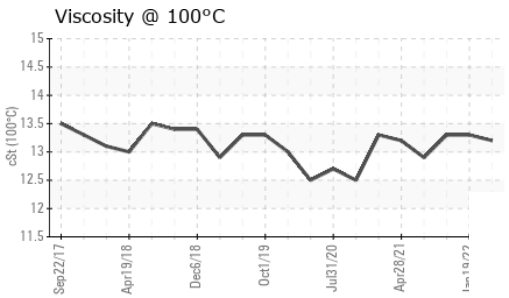
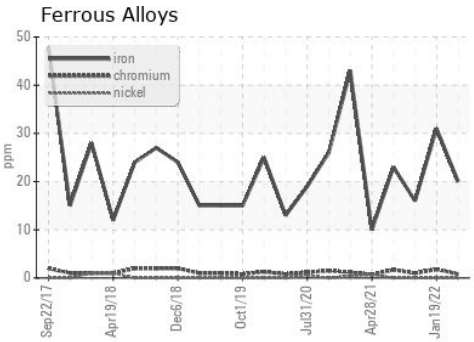


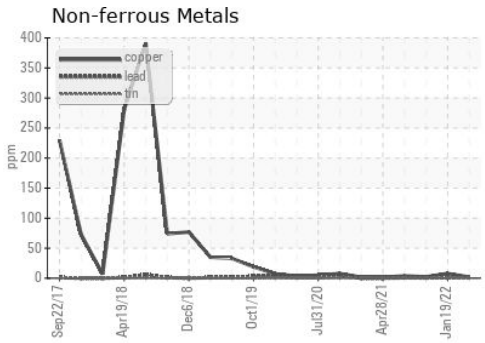



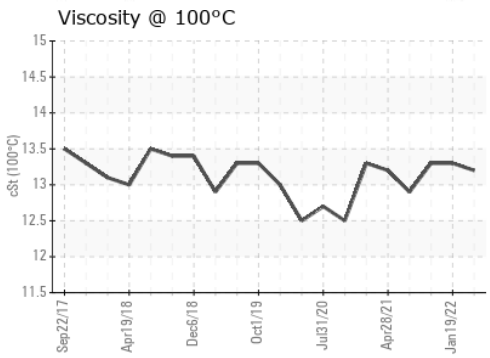

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

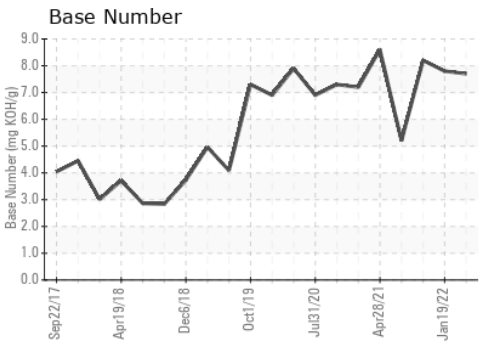
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | | **13.2** | 13.3 | 13.3 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0084251
**Lab Number** : 05853851
**Unique Number** : 10483206
**Test Package** : FLEET

**Received** : 22 May 2023
**Diagnosed** : 23 May 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)*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