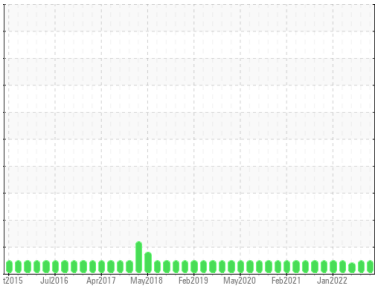
# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
**3577C**
Component
**Natural Gas Engine**
Fluid
**PETRO CANADA DURON GEO LD 15W40 (48 QTS)**

## 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 | | **GFL0089337** | GFL0056605 | GFL0048474 |
| Sample Date | | Client Info | | **15 Aug 2023** | 13 Mar 2023 | 06 May 2022 |
| Machine Age | hrs | Client Info | | **23698** | 1044 | 20454 |
| Oil Age | hrs | Client Info | | **3551** | 803 | 307 |
| Oil Changed | | Client Info | | **Changed** | Changed | Not Changd |
| Sample Status | | | | **NORMAL** | NORMAL | ATTENTION |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **10** | 24 | 9 |
| Chromium | ppm | ASTM D5185m | >4 | **1** | 3 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >9 | **2** | 4 | 6 |
| Lead | ppm | ASTM D5185m | >30 | **8** | 8 | 0 |
| Copper | ppm | ASTM D5185m | >35 | **<1** | 1 | <1 |
| Tin | ppm | ASTM D5185m | >4 | **1** | 2 | <1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 50 | **8** | 6 | 39 |
| Barium | ppm | ASTM D5185m | 5 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **54** | 54 | 39 |
| Manganese | ppm | ASTM D5185m | 0 | **1** | 3 | <1 |
| Magnesium | ppm | ASTM D5185m | 560 | **604** | 745 | 475 |
| Calcium | ppm | ASTM D5185m | 1510 | **1756** | 1579 | 1268 |
| Phosphorus | ppm | ASTM D5185m | 780 | **750** | 725 | 676 |
| Zinc | ppm | ASTM D5185m | 870 | **1004** | 1021 | 739 |
| Sulfur | ppm | ASTM D5185m | 2040 | **2933** | 2650 | 1857 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >+100 | **5** | 11 | 13 |
| Sodium | ppm | ASTM D5185m | | **13** | 8 | 7 |
| Potassium | ppm | ASTM D5185m | >20 | **30** | 3 | <1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0** | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **11.2** | 13.2 | 5.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **23.6** | 27.5 | 17.8 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **19.8** | 23.5 | 14.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.2 | **4.1** | 3.2 | 7.8 |

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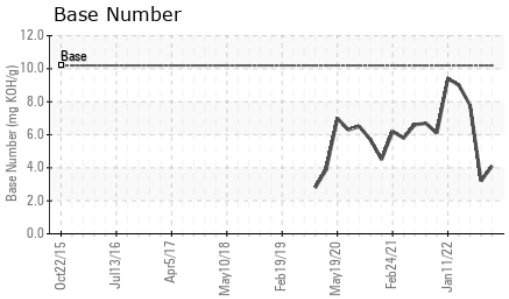
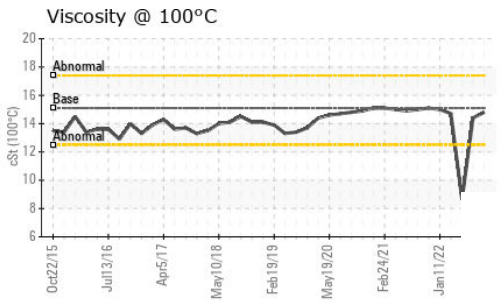
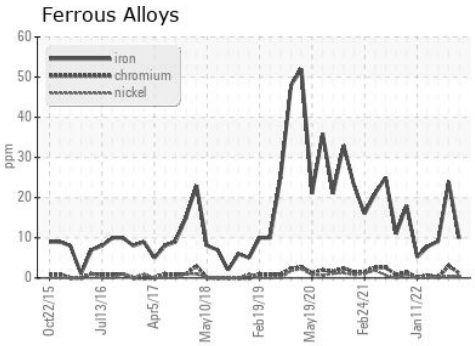


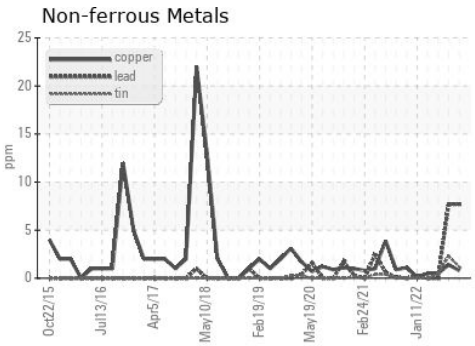



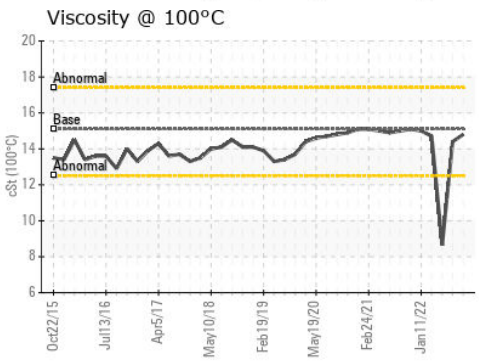

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | LIGHT |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| 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 | >0.1 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

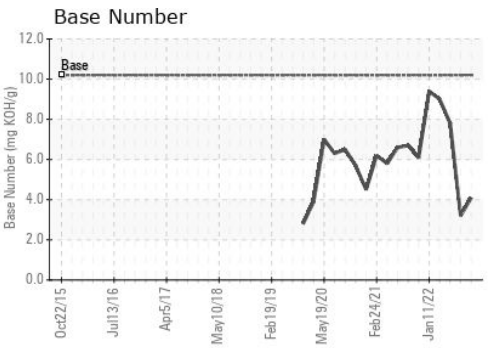
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | **14.8** | 14.4 | ▲ 8.65 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0089337
**Lab Number** : 05926981
**Unique Number** : 10606928
**Test Package** : FLEET

**Received** : 17 Aug 2023
**Diagnosed** : 17 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)*

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Report Id: GFL001 [WUSCAR] 05926981 (Generated: 08/17/2023 15:49:29) Rev: 1

Submitted By: Craig Johnson