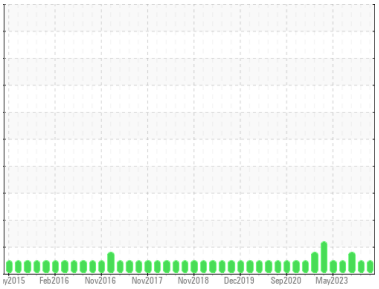
# OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL

Machine Id
**3588C**
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 | | **GFL0094676** | GFL0089273 | GFL0094700 |
| Sample Date | | Client Info | | **27 Oct 2023** | 11 Oct 2023 | 06 Oct 2023 |
| Machine Age | hrs | Client Info | | **43120** | 261998 | 42949 |
| Oil Age | hrs | Client Info | | **0** | 201904 | 0 |
| Oil Changed | | Client Info | | **Changed** | N/A | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | ABNORMAL |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **48** | 33 | 38 |
| Chromium | ppm | ASTM D5185m | >4 | **6** | 4 | 4 |
| Nickel | ppm | ASTM D5185m | >2 | **2** | 2 | 1 |
| Titanium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >9 | **7** | 8 | ▲ 10 |
| Lead | ppm | ASTM D5185m | >30 | **7** | 8 | 8 |
| Copper | ppm | ASTM D5185m | >35 | **12** | 11 | 12 |
| Tin | ppm | ASTM D5185m | >4 | **2** | 2 | 1 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

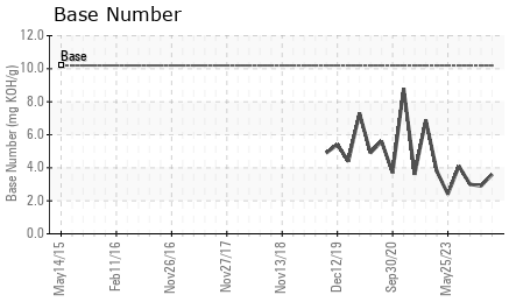
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 50 | **6** | 5 | 3 |
| Barium | ppm | ASTM D5185m | 5 | **20** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **60** | 57 | 62 |
| Manganese | ppm | ASTM D5185m | 0 | **1** | 1 | <1 |
| Magnesium | ppm | ASTM D5185m | 560 | **558** | 563 | 628 |
| Calcium | ppm | ASTM D5185m | 1510 | **1525** | 1602 | 1701 |
| Phosphorus | ppm | ASTM D5185m | 780 | **703** | 692 | 750 |
| Zinc | ppm | ASTM D5185m | 870 | **924** | 981 | 1081 |
| Sulfur | ppm | ASTM D5185m | 2040 | **3118** | 2330 | 2676 |

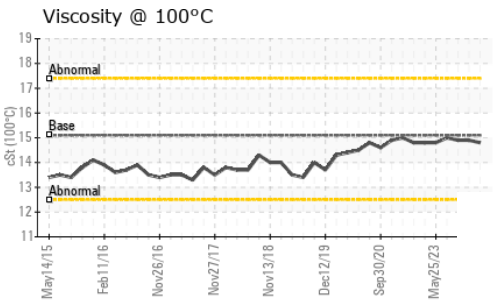
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >+100 | **19** | 19 | 19 |
| Sodium | ppm | ASTM D5185m | | **57** | 47 | 57 |
| Potassium | ppm | ASTM D5185m | >20 | **21** | 15 | 13 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0** | 0 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **12.4** | 12.3 | 12.2 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **26.0** | 26.2 | 25.8 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **21.8** | 22.2 | 21.9 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.2 | **3.6** | 2.9 | 3.0 |

# OIL ANALYSIS REPORT

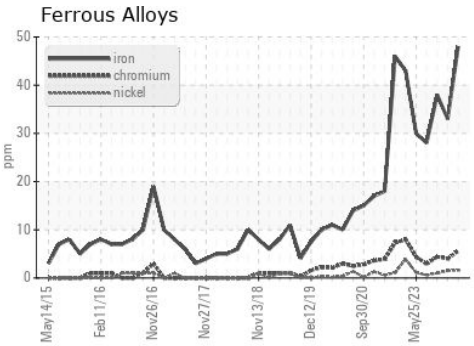


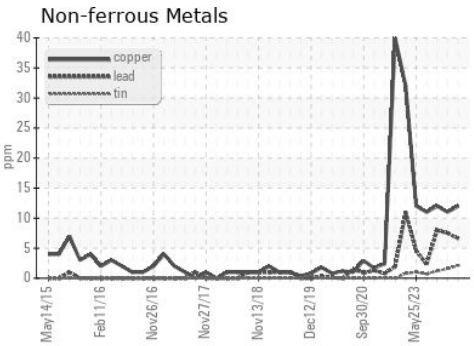



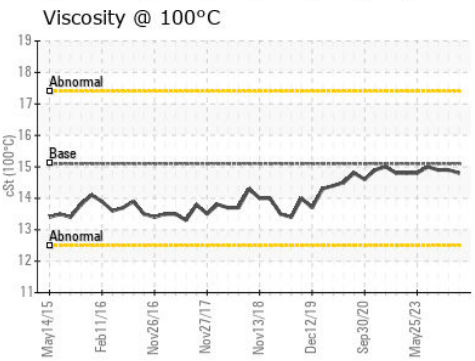

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

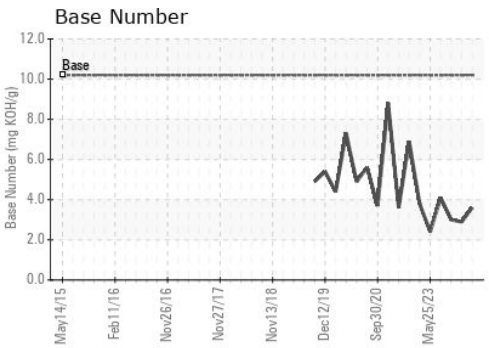
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | **14.8** | 14.9 | 14.9 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0094676
**Lab Number** : 05993973
**Unique Number** : 10722333
**Test Package** : FLEET

**Received** : 31 Oct 2023
**Diagnosed** : 01 Nov 2023
**Diagnostician** : Don Baldridge

*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 - 001 - Raleigh(CNG)**
3741 Conquest Drive
Garner, NC
US 27529
Contact: Craig Johnson
craig.johnson@gflenv.com
T: (919)662-7100
F: (919)662-7130