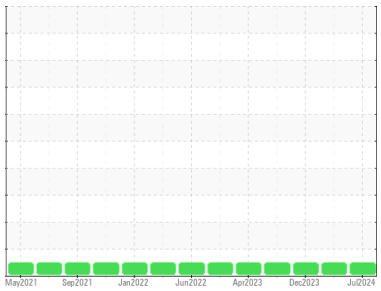
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**749003**
Component
**Natural Gas Engine**
Fluid
**PETRO CANADA DURON GEO LD 15W40 (--- LTR)**

## 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 | | **GFL0119104** | GFL0115480 | GFL0106958 |
| Sample Date | | Client Info | | **10 Jul 2024** | 22 Mar 2024 | 16 Dec 2023 |
| Machine Age | hrs | Client Info | | **13566** | 12860 | 12216 |
| Oil Age | hrs | Client Info | | **706** | 644 | 740 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.1 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >50 | **17** | 21 | 0 |
| Chromium | ppm | ASTM D5185m | >4 | **<1** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | <1 | <1 |
| Titanium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >9 | **5** | 2 | 2 |
| Lead | ppm | ASTM D5185m | >30 | **<1** | <1 | 0 |
| Copper | ppm | ASTM D5185m | >35 | **2** | <1 | <1 |
| Tin | ppm | ASTM D5185m | >4 | **0** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 50 | **5** | 4 | 21 |
| Barium | ppm | ASTM D5185m | 5 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **60** | 59 | 47 |
| Manganese | ppm | ASTM D5185m | 0 | **0** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 560 | **726** | 881 | 579 |
| Calcium | ppm | ASTM D5185m | 1510 | **1397** | 1059 | 1442 |
| Phosphorus | ppm | ASTM D5185m | 780 | **840** | 1039 | 800 |
| Zinc | ppm | ASTM D5185m | 870 | **1101** | 1239 | 974 |
| Sulfur | ppm | ASTM D5185m | 2040 | **2368** | 3403 | 2478 |

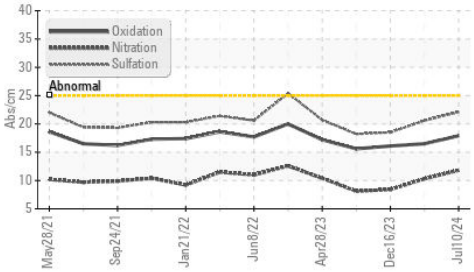
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >+100 | **3** | 3 | 2 |
| Sodium | ppm | ASTM D5185m | | **27** | 18 | 2 |
| Potassium | ppm | ASTM D5185m | >20 | **20** | 9 | 0 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0.8** | 1.5 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **11.8** | 10.3 | 8.4 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.1** | 20.6 | 18.5 |

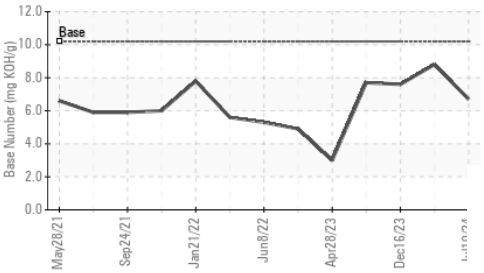
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.9** | 16.5 | 16.1 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.2 | **6.7** | 8.8 | 7.6 |

# OIL ANALYSIS REPORT

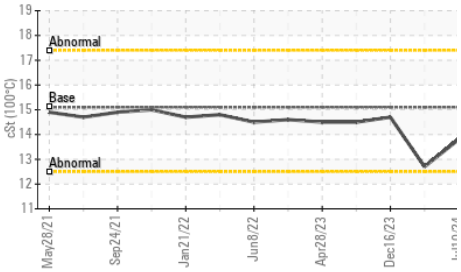
FT-IR (Direct Trend)




Base Number




Viscosity @ 100°C

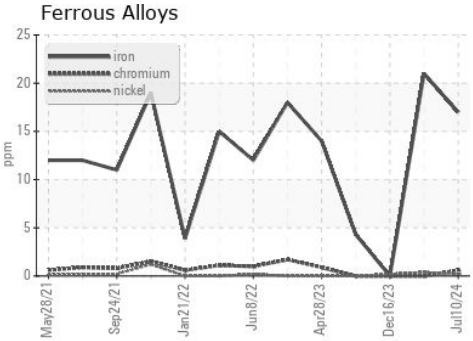



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

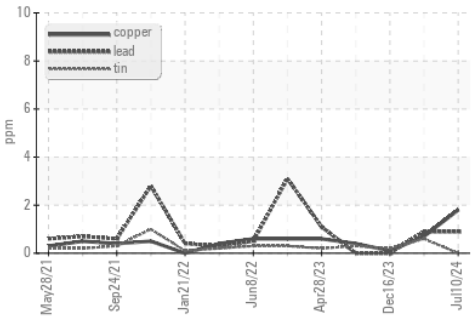
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | **13.8** | 12.7 | 14.7 |

## GRAPHS

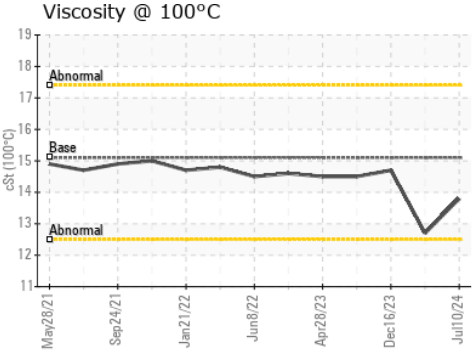
Ferrous Alloys



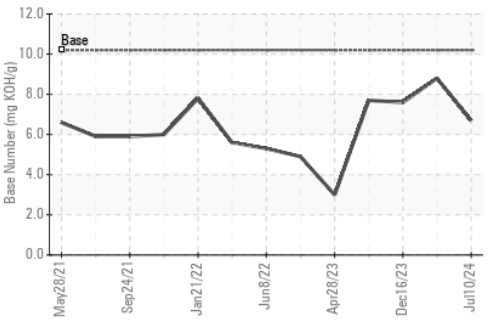

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0119104
**Lab Number** : 06234548
**Unique Number** : 11123382
**Test Package** : FLEET

**Received** : 12 Jul 2024
**Tested** : 12 Jul 2024
**Diagnosed** : 12 Jul 2024 - Wes Davis

**GFL Environmental - 882 - Gainesville**
5002 SW 41st Blvd
Gainesville, FL
US 32608
Contact: ROBERT CLARK
robert.clark@gflenv.com
T:
F:

*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)*

Report Id: GFL882 [WUSCAR] 06234548 (Generated: 07/12/2024 16:36:07) Rev: 1

Submitted By: CARL MIMS