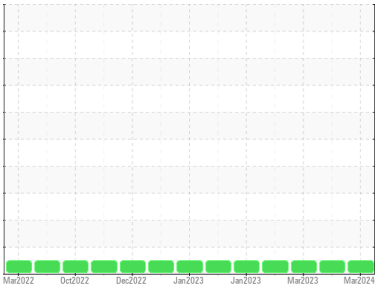
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**946016-260297**
Component
**Natural Gas Engine**
Fluid
**PETRO CANADA DURON GEO LD 15W40 (--- GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**Wear**
Metal levels are typical for a new component breaking in.

**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 | | **GFL0106810** | GFL0084729 | GFL0073643 |
| Sample Date | | Client Info | | **13 Mar 2024** | 16 Jun 2023 | 03 Mar 2023 |
| Machine Age | hrs | Client Info | | **6574** | 122905 | 5344 |
| Oil Age | hrs | Client Info | | **600** | 0 | 0 |
| Oil Changed | | Client Info | | **Changed** | Changed | Not Changd |
| 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 | **37** | 10 | 5 |
| Chromium | ppm | ASTM D5185m | >4 | **0** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >9 | **1** | 1 | 1 |
| Lead | ppm | ASTM D5185m | >30 | **0** | <1 | <1 |
| Copper | ppm | ASTM D5185m | >35 | **20** | 10 | 1 |
| Tin | ppm | ASTM D5185m | >4 | **0** | 0 | <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 | 50 | **17** | 39 | 25 |
| Barium | ppm | ASTM D5185m | 5 | **0** | 10 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **50** | 46 | 46 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | 3 | 1 |
| Magnesium | ppm | ASTM D5185m | 560 | **618** | 793 | 503 |
| Calcium | ppm | ASTM D5185m | 1510 | **1680** | 1265 | 1564 |
| Phosphorus | ppm | ASTM D5185m | 780 | **838** | 745 | 649 |
| Zinc | ppm | ASTM D5185m | 870 | **1032** | 911 | 868 |
| Sulfur | ppm | ASTM D5185m | 2040 | **3064** | 2867 | 2148 |

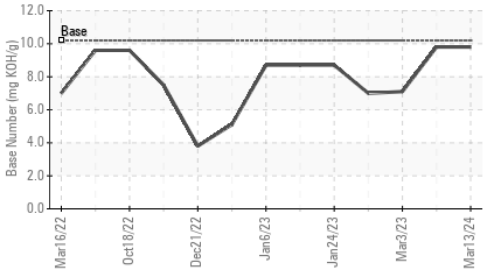
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >+100 | **10** | 16 | 7 |
| Sodium | ppm | ASTM D5185m | | **7** | 6 | 6 |
| Potassium | ppm | ASTM D5185m | >20 | **<1** | 1 | 0 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0.1** | 0.1 | 0.1 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **10.4** | 7.9 | 8.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **18.3** | 19.8 | 19.4 |

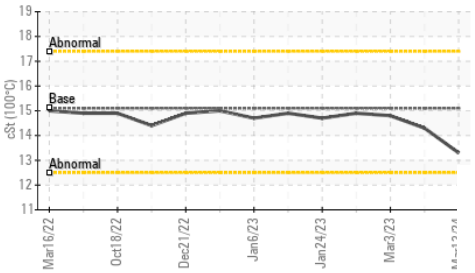
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.7** | 16.5 | 16.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.2 | **9.8** | 9.8 | 7.1 |

# OIL ANALYSIS REPORT

Base Number




Viscosity @ 100°C

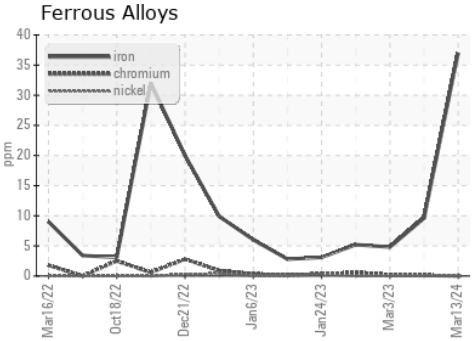



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **LIGHT** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

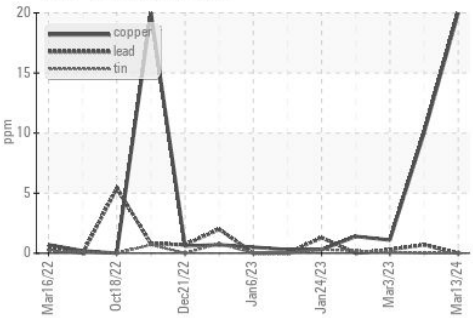
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | **13.3** | 14.3 | 14.8 |

## GRAPHS

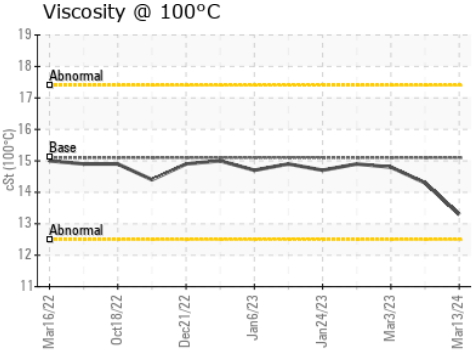
Ferrous Alloys



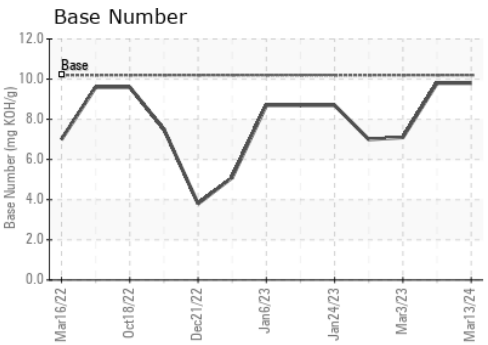

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0106810
**Lab Number** : 06123378
**Unique Number** : 10937529
**Test Package** : FLEET

**Received** : 20 Mar 2024
**Tested** : 21 Mar 2024
**Diagnosed** : 21 Mar 2024 - 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 - 856 - Houston South**
8515 Highway 6 South
Houston, TX
US 77083
Contact: Apolinar Zacarias
pzacariascano@gflenv.com
T:
F: