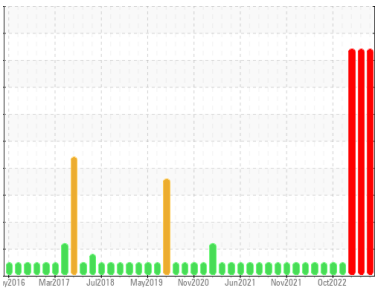
# PROBLEM SUMMARY

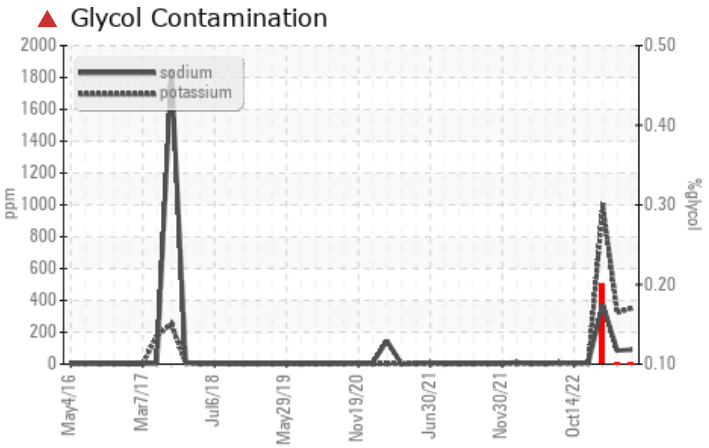
Sample Rating Trend



**GLYCOL**

Area
**(YA154613)**
Machine Id
**10368C**
Component
**Natural Gas Engine**
Fluid
**PETRO CANADA DURON GEO LD 15W40 (30 GAL)**

## COMPONENT CONDITION SUMMARY




## RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | **SEVERE** | SEVERE | SEVERE |
|---|---|---|---|---|---|---|
| Sodium | ppm | ASTM D5185m | | ▲ **91** | ▲ 85 | ▲ 374 |
| Potassium | ppm | ASTM D5185m | >20 | ▲ **351** | ▲ 324 | ▲ 991 |
| Glycol | % | *ASTM D2982 | | ▲ **0.10** | ▲ 0.10 | ▲ 0.20 |

**Customer Id:** GFL007
**Sample No.:** GFL0123379
**Lab Number:** 06227088
**Test Package:** FLEET

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Jonathan Hester +1 919-379-4092 x4092
jhester@wearcheckusa.com

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Fluid | --- | --- | ? | We recommend that you drain the oil and perform a filter service on this component if not already done. |
| Change Filter | --- | --- | ? | We recommend that you drain the oil and perform a filter service on this component if not already done. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Check Glycol Access | --- | --- | ? | We advise that you check for the source of the coolant leak. |

## HISTORICAL DIAGNOSIS

GLYCOL

**18 Jun 2024 Diag: Jonathan Hester**
We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. Test for glycol is positive. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

GLYCOL

**17 Jul 2023 Diag: Jonathan Hester**
We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.All component wear rates are normal. Sodium and/or potassium levels are high. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report

NORMAL

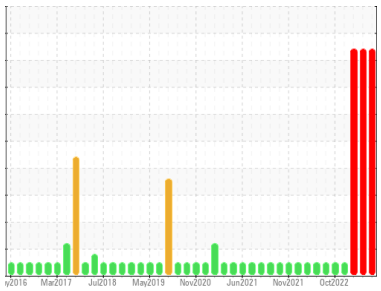
**16 Mar 2023 Diag: Angela Borella**
Resample at the next service interval to monitor.All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

# OIL ANALYSIS REPORT

Area
**(YA154613)**
Machine Id
**10368C**
Component
**Natural Gas Engine**
Fluid
**PETRO CANADA DURON GEO LD 15W40 (30 GAL)**

Sample Rating Trend



**GLYCOL**

## DIAGNOSIS

**Recommendation**
We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend that you drain the oil and perform a filter service on this component if not already done. We recommend an early resample to monitor this condition.

**Wear**
All component wear rates are normal.

**Contamination**
Sodium and/or potassium levels are high. Test for glycol is positive.

**Fluid Condition**
The BN result indicates that there is suitable alkalinity remaining in the oil.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0123379** | GFL0123439 | GFL0082468 |
| Sample Date | | Client Info | | **27 Jun 2024** | 18 Jun 2024 | 17 Jul 2023 |
| Machine Age | hrs | Client Info | | **86539** | 86539 | 4723 |
| Oil Age | hrs | Client Info | | **86539** | 86539 | 1176 |
| Oil Changed | | Client Info | | **N/A** | N/A | Changed |
| Sample Status | | | | **SEVERE** | SEVERE | SEVERE |

| 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** | 19 | 27 |
| Chromium | ppm | ASTM D5185m | >4 | **1** | 2 | 4 |
| Nickel | ppm | ASTM D5185m | >2 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >9 | **2** | 2 | 4 |
| Lead | ppm | ASTM D5185m | >30 | **<1** | 2 | 3 |
| Copper | ppm | ASTM D5185m | >35 | **<1** | 1 | 1 |
| Tin | ppm | ASTM D5185m | >4 | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 50 | **11** | 13 | 0 |
| Barium | ppm | ASTM D5185m | 5 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **59** | 62 | 67 |
| Manganese | ppm | ASTM D5185m | 0 | **0** | <1 | 2 |
| Magnesium | ppm | ASTM D5185m | 560 | **545** | 589 | 533 |
| Calcium | ppm | ASTM D5185m | 1510 | **1491** | 1786 | 1652 |
| Phosphorus | ppm | ASTM D5185m | 780 | **738** | 804 | 696 |
| Zinc | ppm | ASTM D5185m | 870 | **981** | 1104 | 992 |
| Sulfur | ppm | ASTM D5185m | 2040 | **2406** | 3186 | 3059 |

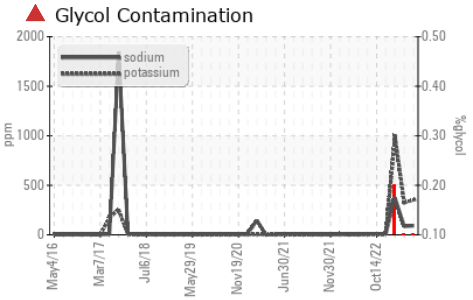
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >+100 | **5** | 5 | 7 |
| Sodium | ppm | ASTM D5185m | | ▲ **91** | ▲ 85 | ▲ 374 |
| Potassium | ppm | ASTM D5185m | >20 | ▲ **351** | ▲ 324 | ▲ 991 |
| Glycol | % | *ASTM D2982 | | ▲ **0.10** | ▲ 0.10 | ▲ 0.20 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | | **0** | 0 | 0 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **10.5** | 10.3 | 11.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **21.5** | 21.6 | 22.9 |

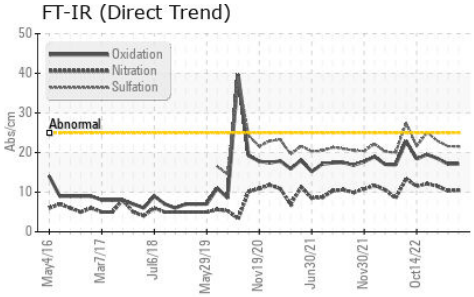
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **17.1** | 17.1 | 18.5 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 10.2 | **5.7** | 5.6 | 6.4 |

# OIL ANALYSIS REPORT

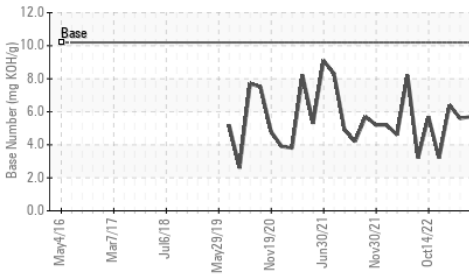
Glycol Contamination



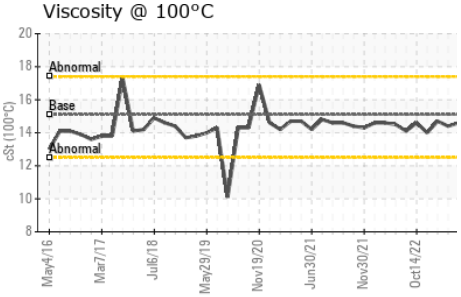

FT-IR (Direct Trend)




Base Number




Viscosity @ 100°C

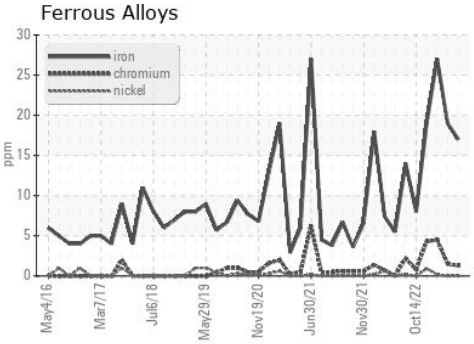



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

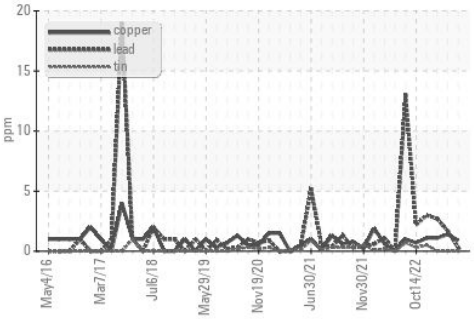
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | **14.6** | 14.4 | 14.7 |

## GRAPHS

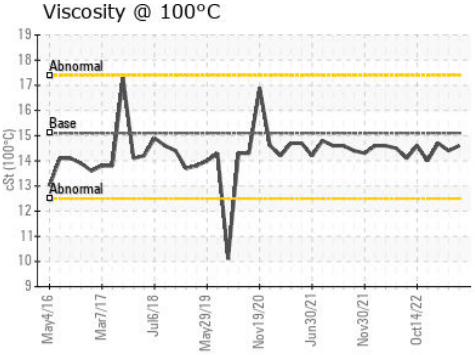
Ferrous Alloys



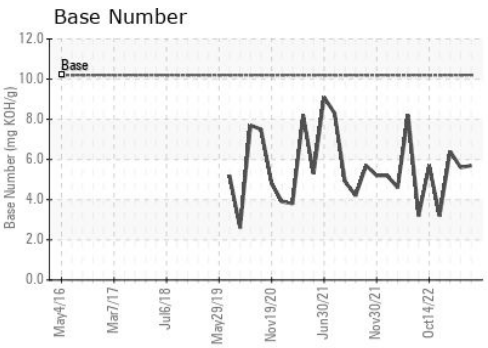

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0123379
**Lab Number** : 06227088
**Unique Number** : 11110581
**Test Package** : FLEET

**Received** : 03 Jul 2024
**Tested** : 05 Jul 2024
**Diagnosed** : 05 Jul 2024 - Jonathan Hester

*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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