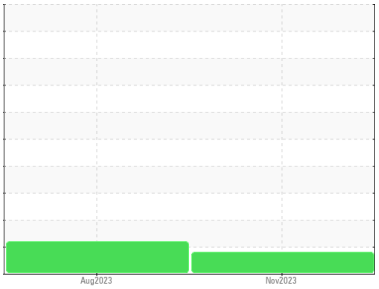
# OIL ANALYSIS REPORT

Sample Rating Trend




**WEAR**

Area
**S0916A-Suamico**
Machine Id
**514029**
Component
**Front Center Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 15W40 (44 QTS)**

## DIAGNOSIS

**Recommendation**
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

**Wear**
The copper level has decreased, but is still abnormal. All other 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 | | **GFL0095965** | GFL0074832 | --- |
| Sample Date | | Client Info | | **14 Nov 2023** | 01 Aug 2023 | --- |
| Machine Age | hrs | Client Info | | **1224** | 607 | --- |
| Oil Age | hrs | Client Info | | **617** | 607 | --- |
| Oil Changed | | Client Info | | **Changed** | Changed | --- |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >3.0 | **<1.0** | 0.2 | --- |
| Water | | WC Method | >0.2 | **NEG** | NEG | --- |
| Glycol | | WC Method | | **NEG** | NEG | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >200 | **17** | 26 | --- |
| Chromium | ppm | ASTM D5185m | >20 | **1** | 1 | --- |
| Nickel | ppm | ASTM D5185m | >2 | **0** | <1 | --- |
| Titanium | ppm | ASTM D5185m | >2 | **0** | 0 | --- |
| Silver | ppm | ASTM D5185m | >2 | **0** | <1 | --- |
| Aluminum | ppm | ASTM D5185m | >30 | **11** | 10 | --- |
| Lead | ppm | ASTM D5185m | >30 | **0** | 0 | --- |
| Copper | ppm | ASTM D5185m | >30 | ▲ **37** | ▲ 259 | --- |
| Tin | ppm | ASTM D5185m | >15 | **1** | 2 | --- |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 0 | **6** | 33 | --- |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | --- |
| Molybdenum | ppm | ASTM D5185m | 60 | **58** | 45 | --- |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | 3 | --- |
| Magnesium | ppm | ASTM D5185m | 1010 | **879** | 567 | --- |
| Calcium | ppm | ASTM D5185m | 1070 | **1214** | 1800 | --- |
| Phosphorus | ppm | ASTM D5185m | 1150 | **931** | 731 | --- |
| Zinc | ppm | ASTM D5185m | 1270 | **1163** | 925 | --- |
| Sulfur | ppm | ASTM D5185m | 2060 | **2053** | 2354 | --- |

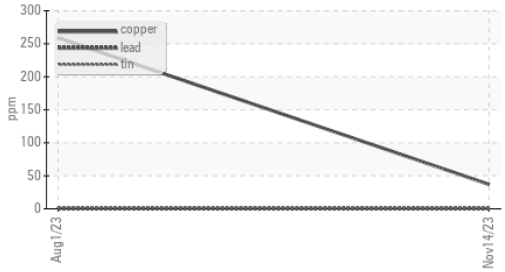
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >30 | **7** | 10 | --- |
| Sodium | ppm | ASTM D5185m | | **<1** | 6 | --- |
| Potassium | ppm | ASTM D5185m | >20 | **38** | 34 | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.5** | 0.3 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **9.0** | 10.0 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **21.0** | 22.9 | --- |

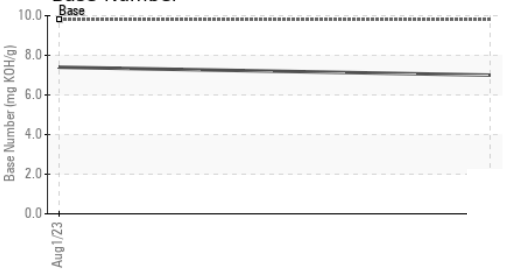
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **18.6** | 24.3 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | **7.0** | 7.4 | --- |

# OIL ANALYSIS REPORT

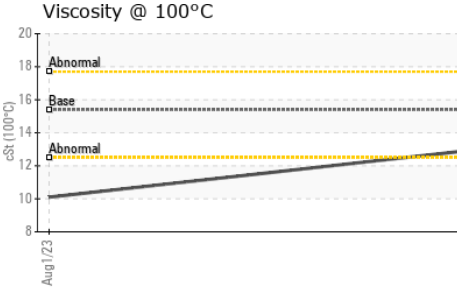
Non-ferrous Metals




Base Number




Viscosity @ 100°C

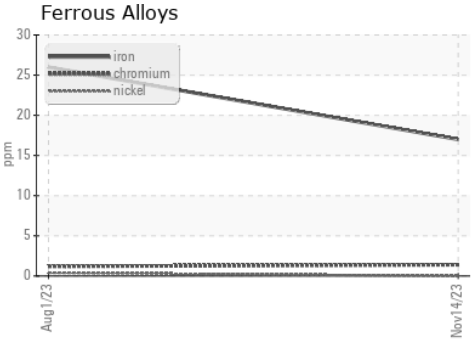



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | --- |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | --- |
| Emulsified Water | scalar | *Visual | >0.2 | **NEG** | NEG | --- |
| Free Water | scalar | *Visual | | **NEG** | NEG | --- |

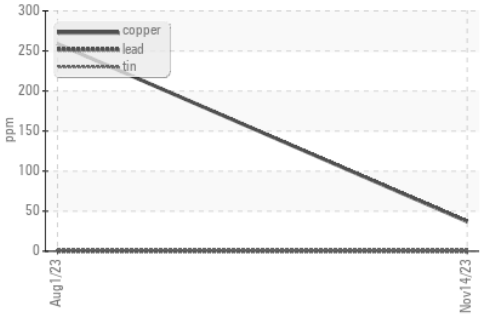
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | **13.0** | ▲ 10.1 | --- |

## GRAPHS

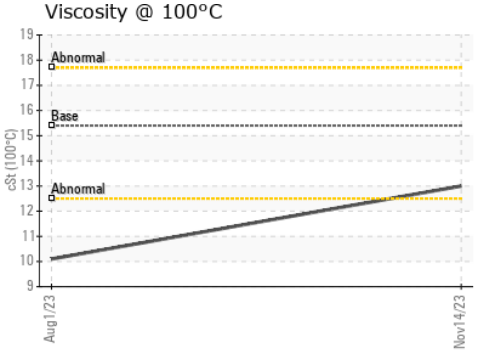
Ferrous Alloys



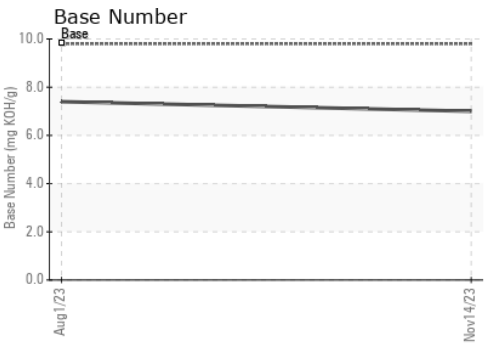

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : GFL0095965
**Lab Number** : 06044429
**Unique Number** : 10805037
**Test Package** : FLEET

**Recieved** : 26 Dec 2023
**Diagnosed** : 27 Dec 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 - 916A - Suamico**
2300 Deerfield Ave E
Suamico, WI
US 54313
Contact: NICHOLAS WEIDNER
nweidner@gflenv.com
T:
F: