



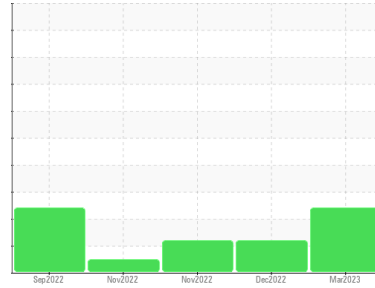
PROBLEM SUMMARY

Sample Rating Trend

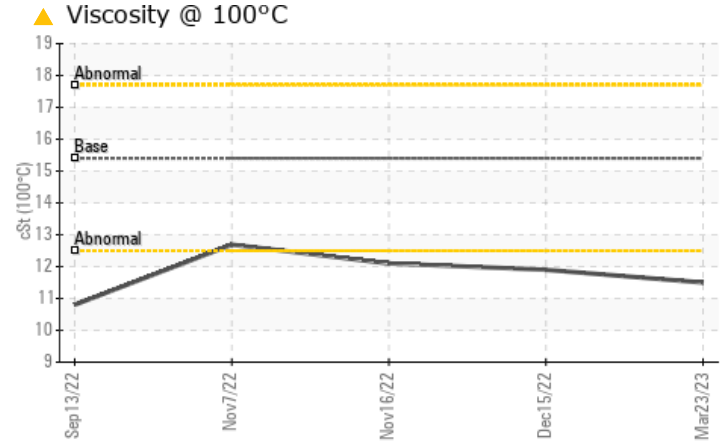
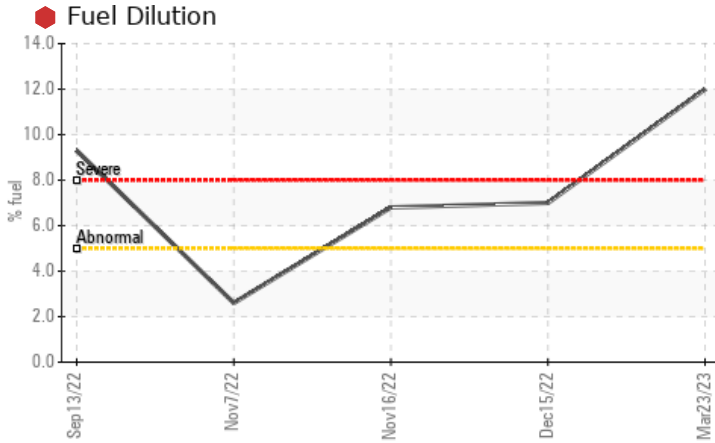
FUEL



Machine Id
426090-402433
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)



COMPONENT CONDITION SUMMARY



RECOMMENDATION

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

| Sample Status | | | | SEVERE | ABNORMAL | ABNORMAL |
|---------------|-----|------------|------|--------|----------|----------|
| Fuel | % | ASTM D3524 | >5 | 12.0 | 7.0 | 6.8 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 11.5 | 11.9 | 12.1 |

Customer Id: GFL891
Sample No.: GFL0060577
Lab Number: 05800664
Test Package: FLEET



To manage this report scan the QR code

To discuss the diagnosis or test data:
Don Baldrige +1
don.b505@comcast.net

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 | --- | --- | ? | Oil and filter change at the time of sampling has been noted. |
| Change Filter | --- | --- | ? | Oil and filter change at the time of sampling has been noted. |
| Resample | --- | --- | ? | We recommend an early resample to monitor this condition. |
| Check Fuel/injector System | --- | --- | ? | We advise that you check the fuel injection system. |

HISTORICAL DIAGNOSIS

15 Dec 2022 Diag: Wes Davis



We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

view report



16 Nov 2022 Diag: Doug Bogart

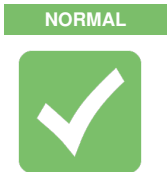


We advise that you check the fuel injection system. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a moderate amount of fuel present in the oil. Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

view report



07 Nov 2022 Diag: Wes Davis



Resample at the next service interval to monitor. No other corrective action is recommended at this time. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. Light fuel dilution occurring. No other contaminants were detected 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





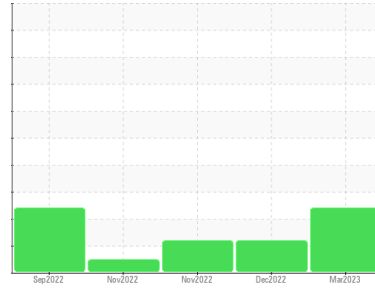
OIL ANALYSIS REPORT

Sample Rating Trend

FUEL



Machine Id
426090-402433
 Component
Diesel Engine
 Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)



DIAGNOSIS

Recommendation

We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

There is a high amount of fuel present in the oil.

Fluid Condition

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | GFL0060577 | GFL0060597 | GFL0060620 |
| Sample Date | Client Info | | 23 Mar 2023 | 15 Dec 2022 | 16 Nov 2022 |
| Machine Age | hrs | Client Info | 3114 | 2507 | 2254 |
| Oil Age | hrs | Client Info | 607 | 531 | 276 |
| Oil Changed | Client Info | | Changed | N/A | Not Changd |
| Sample Status | | | SEVERE | ABNORMAL | ABNORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|------------|----------|----------|
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185m >120 | 62 | 34 | 15 |
| Chromium | ppm | ASTM D5185m >20 | 2 | 2 | 1 |
| Nickel | ppm | ASTM D5185m >5 | <1 | 3 | <1 |
| Titanium | ppm | ASTM D5185m >2 | <1 | <1 | <1 |
| Silver | ppm | ASTM D5185m >2 | 1 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m >20 | 10 | 6 | 3 |
| Lead | ppm | ASTM D5185m >40 | <1 | 2 | 3 |
| Copper | ppm | ASTM D5185m >330 | 2 | 12 | 6 |
| Tin | ppm | ASTM D5185m >15 | <1 | 2 | 1 |
| Vanadium | ppm | ASTM D5185m | <1 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|------------------|-------------|----------|----------|
| Boron | ppm | ASTM D5185m 0 | 35 | 6 | 3 |
| Barium | ppm | ASTM D5185m 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m 60 | 55 | 53 | 55 |
| Manganese | ppm | ASTM D5185m 0 | 2 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m 1010 | 577 | 805 | 837 |
| Calcium | ppm | ASTM D5185m 1070 | 1980 | 987 | 970 |
| Phosphorus | ppm | ASTM D5185m 1150 | 1052 | 864 | 886 |
| Zinc | ppm | ASTM D5185m 1270 | 1231 | 1085 | 998 |
| Sulfur | ppm | ASTM D5185m 2060 | 3535 | 2781 | 2904 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-----------------|-------------|----------|----------|
| Silicon | ppm | ASTM D5185m >25 | 15 | 10 | 5 |
| Sodium | ppm | ASTM D5185m | 0 | 4 | 1 |
| Potassium | ppm | ASTM D5185m >20 | 0 | 0 | 0 |
| Fuel | % | ASTM D3524 >5 | 12.0 | 7.0 | 6.8 |

INFRA-RED

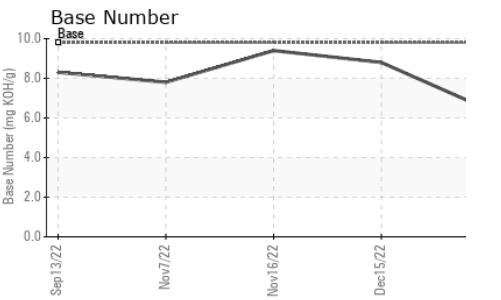
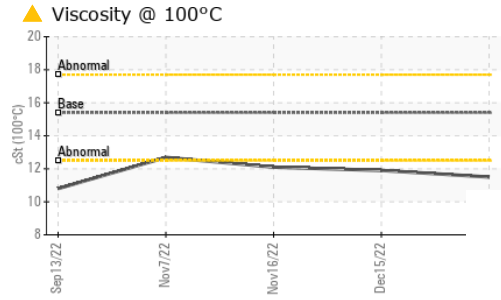
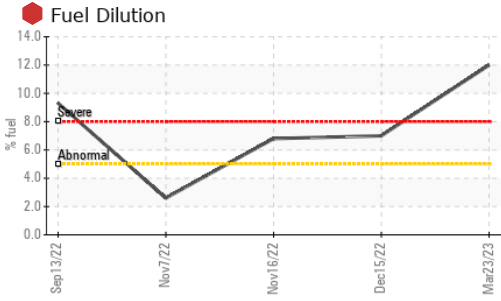
| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | *ASTM D7844 >4 | 3.5 | 3.1 | 1.7 |
| Nitration | Abs/cm | *ASTM D7624 >20 | 10.0 | 10.1 | 7.9 |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | 23.9 | 24.1 | 21.0 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | *ASTM D7414 >25 | 14.2 | 14.6 | 13.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896 9.8 | 6.4 | 8.8 | 9.4 |



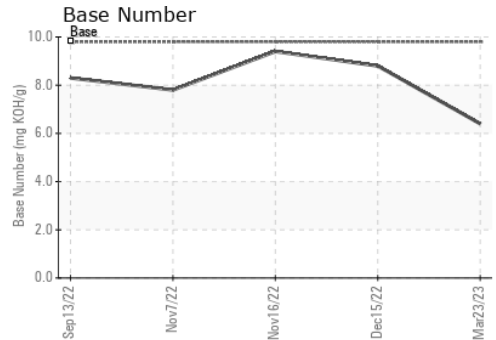
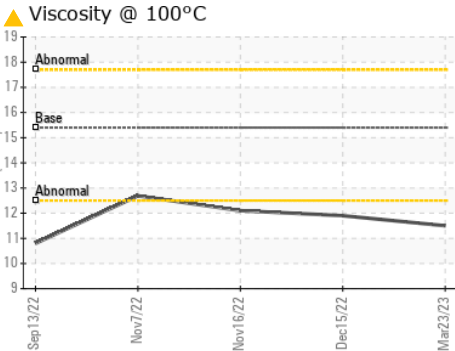
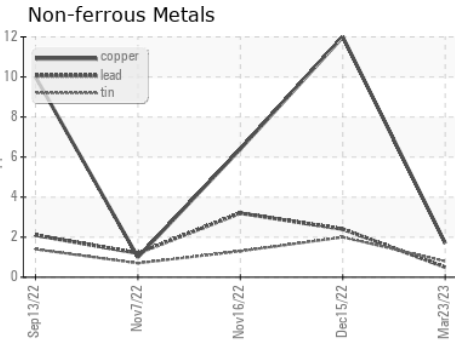
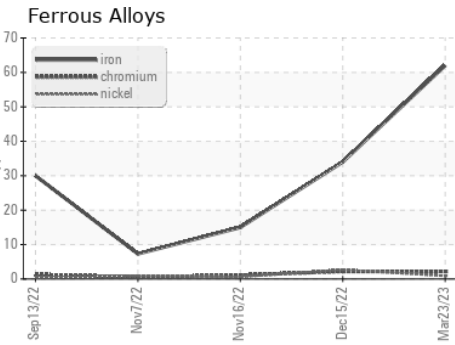
OIL ANALYSIS REPORT



| 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 | ▲ 11.5 | ▲ 11.9 |

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0060577 **Received** : 24 Mar 2023
Lab Number : 05800664 **Diagnosed** : 28 Mar 2023
Unique Number : 10390348 **Diagnostician** : Don Baldrige
Test Package : FLEET (Additional Tests: PercentFuel)

GFL Environmental - 891 - Oklahoma City Hauling
 1001 South Rockwell
 Oklahoma City, OK
 US 73128
 Contact: Andy Smith
 andrew.smith@gflenv.com
 T: (405)306-1651
 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)