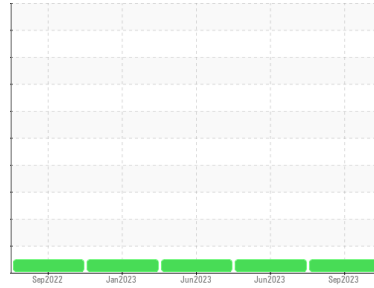




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**927110**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

## 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 |             | <b>GFL0066077</b>  | GFL0066049  | GFL0066103  |
| Sample Date   | Client Info |             | <b>25 Sep 2023</b> | 30 Jun 2023 | 22 Jun 2023 |
| Machine Age   | hrs         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Age       | hrs         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info |             | <b>N/A</b>         | N/A         | N/A         |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >3.0       | <b>&lt;1.0</b> | <1.0     | <1.0     |
| Glycol | WC Method |            | <b>NEG</b>     | NEG      | NEG      |

## WEAR METALS

|          | method | limit/base       | current      | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >120 | <b>14</b>    | 4        | 6        |
| Chromium | ppm    | ASTM D5185m >20  | <b>&lt;1</b> | <1       | <1       |
| Nickel   | ppm    | ASTM D5185m >5   | <b>0</b>     | 0        | 0        |
| Titanium | ppm    | ASTM D5185m >2   | <b>0</b>     | 0        | <1       |
| Silver   | ppm    | ASTM D5185m >2   | <b>0</b>     | 0        | 0        |
| Aluminum | ppm    | ASTM D5185m >20  | <b>3</b>     | 1        | 0        |
| Lead     | ppm    | ASTM D5185m >40  | <b>3</b>     | <1       | 0        |
| Copper   | ppm    | ASTM D5185m >330 | <b>1</b>     | <1       | <1       |
| Tin      | ppm    | ASTM D5185m >15  | <b>1</b>     | <1       | <1       |
| Vanadium | ppm    | ASTM D5185m      | <b>0</b>     | 0        | <1       |
| Cadmium  | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |

## ADDITIVES

|            | method | limit/base       | current      | history1 | history2 |
|------------|--------|------------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185m 0    | <b>4</b>     | 52       | 12       |
| Barium     | ppm    | ASTM D5185m 0    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m 60   | <b>62</b>    | 66       | 60       |
| Manganese  | ppm    | ASTM D5185m 0    | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185m 1010 | <b>902</b>   | 961      | 925      |
| Calcium    | ppm    | ASTM D5185m 1070 | <b>1073</b>  | 1146     | 1106     |
| Phosphorus | ppm    | ASTM D5185m 1150 | <b>971</b>   | 1066     | 988      |
| Zinc       | ppm    | ASTM D5185m 1270 | <b>1247</b>  | 1284     | 1184     |
| Sulfur     | ppm    | ASTM D5185m 2060 | <b>3108</b>  | 4349     | 3519     |

## CONTAMINANTS

|           | method | limit/base      | current  | history1 | history2 |
|-----------|--------|-----------------|----------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >25 | <b>5</b> | 5        | 4        |
| Sodium    | ppm    | ASTM D5185m     | <b>7</b> | <1       | 3        |
| Potassium | ppm    | ASTM D5185m >20 | <b>1</b> | 2        | 1        |

## INFRA-RED

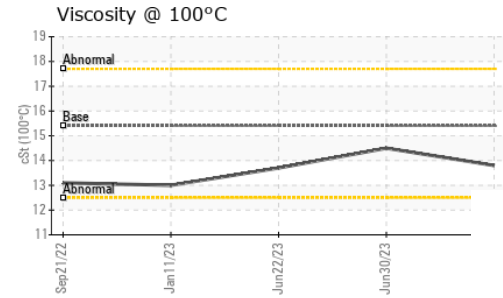
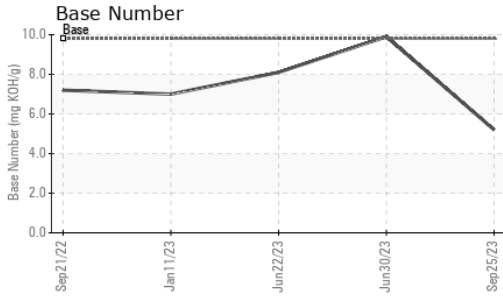
|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 >4  | <b>0.5</b>  | 0.2      | 0.2      |
| Nitration | Abs/cm   | *ASTM D7624 >20 | <b>10.0</b> | 5.0      | 8.4      |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | <b>24.0</b> | 18.9     | 20.3     |

## FLUID DEGRADATION

|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm | *ASTM D7414 >25 | <b>21.9</b> | 13.7     | 16.5     |
| Base Number (BN) | mg KOH/g | ASTM D2896 9.8  | <b>5.2</b>  | 9.9      | 8.1      |



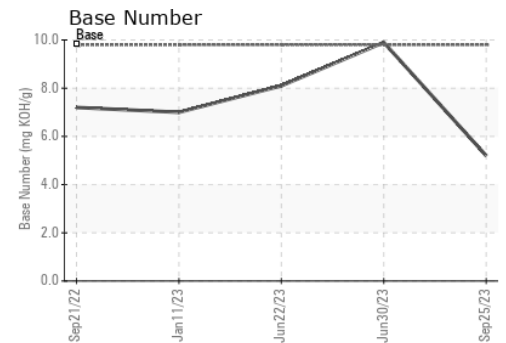
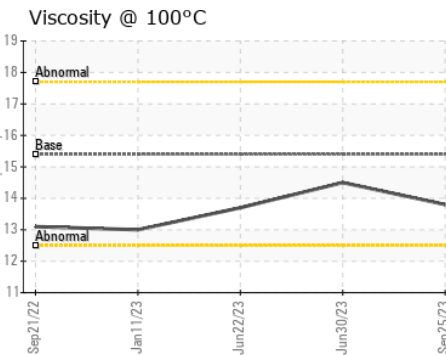
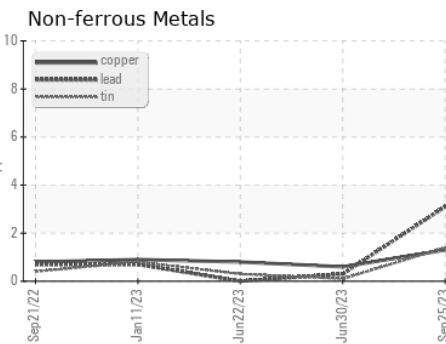
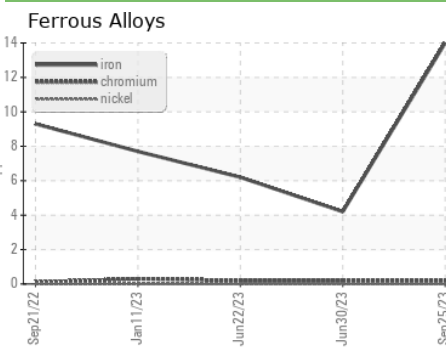
# OIL ANALYSIS REPORT



| PARAMETER        | 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    | 13.8     | 14.5     |

## GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : GFL0066077 Received : 29 Sep 2023  
 Lab Number : 05964417 Diagnosed : 29 Sep 2023  
 Unique Number : 10670968 Diagnostician : Wes Davis  
 Test Package : FLEET

GFL Environmental - 904 - Chippewa Falls HC  
 11888 & 11863 30th Avenue  
 Chippewa Falls, WI  
 US 54729  
 Contact: Andy Kane

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)

T: (715)202-3420

F: