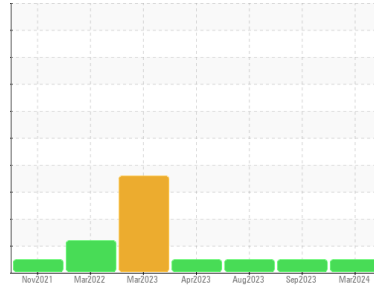




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**921031-205217**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (--- LTR)**

## 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>GFL0106093</b>  | GFL0078652  | GFL0078668  |
| Sample Date   | Client Info | <b>07 Mar 2024</b> | 20 Sep 2023 | 24 Aug 2023 |
| Machine Age   | hrs         | <b>3974</b>        | 3553        | 3482        |
| Oil Age       | hrs         | <b>600</b>         | 600         | 186         |
| Oil Changed   | Client Info | <b>Changed</b>     | Changed     | Not Changed |
| 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     |
| Water  | WC Method >0.2 | <b>NEG</b>     | NEG      | NEG      |
| Glycol | WC Method      | <b>NEG</b>     | NEG      | NEG      |

## WEAR METALS

| method   | limit/base           | current      | history1 | history2 |
|----------|----------------------|--------------|----------|----------|
| Iron     | ppm ASTM D5185m >120 | <b>11</b>    | 12       | 10       |
| Chromium | ppm ASTM D5185m >20  | <b>&lt;1</b> | <1       | <1       |
| Nickel   | ppm ASTM D5185m >5   | <b>&lt;1</b> | <1       | 0        |
| Titanium | ppm ASTM D5185m >2   | <b>0</b>     | 0        | 0        |
| Silver   | ppm ASTM D5185m >2   | <b>0</b>     | 0        | 0        |
| Aluminum | ppm ASTM D5185m >20  | <b>7</b>     | 5        | 5        |
| Lead     | ppm ASTM D5185m >40  | <b>&lt;1</b> | 0        | 0        |
| Copper   | ppm ASTM D5185m >330 | <b>2</b>     | 3        | 1        |
| Tin      | ppm ASTM D5185m >15  | <b>&lt;1</b> | <1       | <1       |
| Vanadium | ppm ASTM D5185m      | <b>0</b>     | 0        | 0        |
| Cadmium  | ppm ASTM D5185m      | <b>0</b>     | 0        | 0        |

## ADDITIVES

| method     | limit/base           | current      | history1 | history2 |
|------------|----------------------|--------------|----------|----------|
| Boron      | ppm ASTM D5185m 0    | <b>8</b>     | 17       | 19       |
| Barium     | ppm ASTM D5185m 0    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm ASTM D5185m 60   | <b>57</b>    | 64       | 64       |
| Manganese  | ppm ASTM D5185m 0    | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm ASTM D5185m 1010 | <b>884</b>   | 931      | 944      |
| Calcium    | ppm ASTM D5185m 1070 | <b>1000</b>  | 1120     | 1116     |
| Phosphorus | ppm ASTM D5185m 1150 | <b>986</b>   | 1041     | 1064     |
| Zinc       | ppm ASTM D5185m 1270 | <b>1178</b>  | 1231     | 1295     |
| Sulfur     | ppm ASTM D5185m 2060 | <b>3341</b>  | 3850     | 4034     |

## CONTAMINANTS

| method    | limit/base          | current  | history1 | history2 |
|-----------|---------------------|----------|----------|----------|
| Silicon   | ppm ASTM D5185m >25 | <b>6</b> | 8        | 7        |
| Sodium    | ppm ASTM D5185m     | <b>3</b> | 9        | 5        |
| Potassium | ppm ASTM D5185m >20 | <b>2</b> | 2        | 1        |

## INFRA-RED

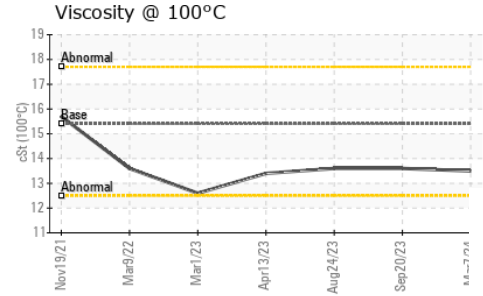
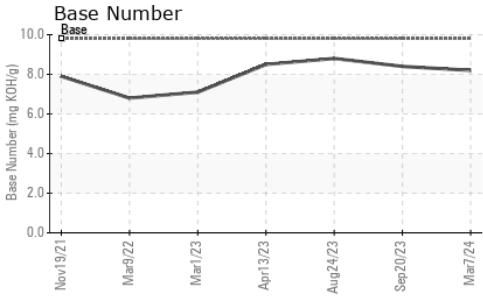
| method    | limit/base               | current     | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot %    | % *ASTM D7844 >4         | <b>0.4</b>  | 0.5      | 0.4      |
| Nitration | Abs/cm *ASTM D7624 >20   | <b>7.8</b>  | 6.8      | 6.2      |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | <b>18.0</b> | 17.5     | 17.4     |

## FLUID DEGRADATION

| method           | limit/base               | current     | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm *ASTM D7414 >25 | <b>14.6</b> | 13.1     | 12.9     |
| Base Number (BN) | mg KOH/g ASTM D2896 9.8  | <b>8.2</b>  | 8.4      | 8.8      |



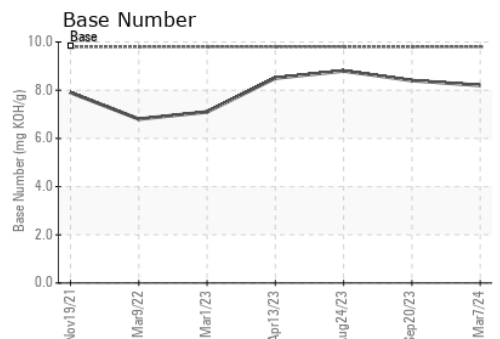
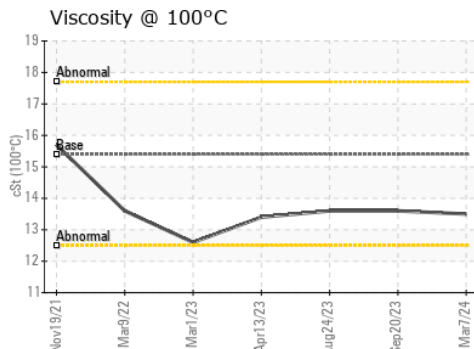
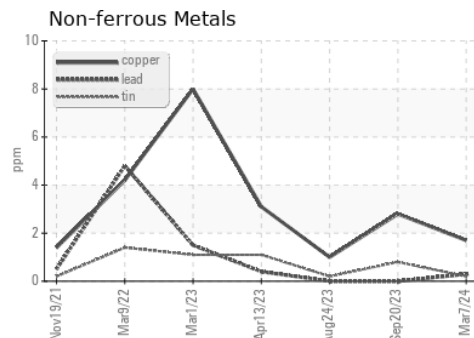
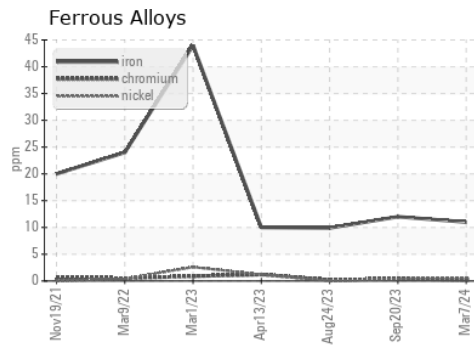
# OIL ANALYSIS REPORT



| 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    | <b>13.5</b> | 13.6     |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0106093  
**Lab Number** : 06117700  
**Unique Number** : 10926533  
**Test Package** : FLEET  
**Received** : 13 Mar 2024  
**Tested** : 14 Mar 2024  
**Diagnosed** : 14 Mar 2024 - Wes Davis

**GFL Environmental - 152 - Jacksonville**  
 7580 PHILIPS HWY  
 Jacksonville, FL  
 US 32256  
 Contact: GRANVILLE CARROLL  
 gcarroll@gflenv.com  
 T: 1(904)252-6815  
 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)