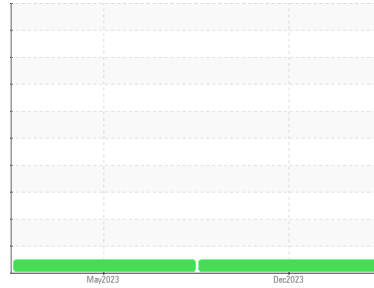




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**223036**

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

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. 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>GFL0104998</b>  | GFL0081478  | ---      |
| Sample Date   | Client Info | <b>28 Dec 2023</b> | 23 May 2023 | ---      |
| Machine Age   | hrs         | Client Info        | <b>0</b>    | 0        |
| Oil Age       | hrs         | Client Info        | <b>0</b>    | 650      |
| Oil Changed   | Client Info | <b>Changed</b>     | Changed     | ---      |
| Sample Status |             | <b>NORMAL</b>      | NORMAL      | ---      |

## CONTAMINATION

| method | limit/base     | current        | history1 | history2 |
|--------|----------------|----------------|----------|----------|
| Fuel   | WC Method >5   | <b>&lt;1.0</b> | <1.0     | ---      |
| Water  | WC Method >0.2 | <b>NEG</b>     | NEG      | ---      |
| Glycol | WC Method      | <b>NEG</b>     | NEG      | ---      |

## WEAR METALS

| method   | limit/base           | current      | history1 | history2 |
|----------|----------------------|--------------|----------|----------|
| Iron     | ppm ASTM D5185m >100 | <b>52</b>    | 46       | ---      |
| Chromium | ppm ASTM D5185m >20  | <b>2</b>     | 3        | ---      |
| Nickel   | ppm ASTM D5185m >2   | <b>&lt;1</b> | 1        | ---      |
| Titanium | ppm ASTM D5185m >2   | <b>&lt;1</b> | 2        | ---      |
| Silver   | ppm ASTM D5185m >2   | <b>&lt;1</b> | <1       | ---      |
| Aluminum | ppm ASTM D5185m >25  | <b>28</b>    | 11       | ---      |
| Lead     | ppm ASTM D5185m >40  | <b>&lt;1</b> | 0        | ---      |
| Copper   | ppm ASTM D5185m >330 | <b>2</b>     | 3        | ---      |
| Tin      | ppm ASTM D5185m >15  | <b>&lt;1</b> | <1       | ---      |
| Vanadium | ppm ASTM D5185m      | <b>0</b>     | <1       | ---      |
| Cadmium  | ppm ASTM D5185m      | <b>0</b>     | 0        | ---      |

## ADDITIVES

| method     | limit/base           | current     | history1 | history2 |
|------------|----------------------|-------------|----------|----------|
| Boron      | ppm ASTM D5185m 0    | <b>3</b>    | 4        | ---      |
| Barium     | ppm ASTM D5185m 0    | <b>0</b>    | 0        | ---      |
| Molybdenum | ppm ASTM D5185m 60   | <b>60</b>   | 69       | ---      |
| Manganese  | ppm ASTM D5185m 0    | <b>1</b>    | 1        | ---      |
| Magnesium  | ppm ASTM D5185m 1010 | <b>992</b>  | 1056     | ---      |
| Calcium    | ppm ASTM D5185m 1070 | <b>1063</b> | 1265     | ---      |
| Phosphorus | ppm ASTM D5185m 1150 | <b>1071</b> | 1021     | ---      |
| Zinc       | ppm ASTM D5185m 1270 | <b>1323</b> | 1406     | ---      |
| Sulfur     | ppm ASTM D5185m 2060 | <b>3008</b> | 3361     | ---      |

## CONTAMINANTS

| method    | limit/base          | current   | history1 | history2 |
|-----------|---------------------|-----------|----------|----------|
| Silicon   | ppm ASTM D5185m >25 | <b>9</b>  | 14       | ---      |
| Sodium    | ppm ASTM D5185m     | <b>5</b>  | 18       | ---      |
| Potassium | ppm ASTM D5185m >20 | <b>46</b> | 5        | ---      |

## INFRA-RED

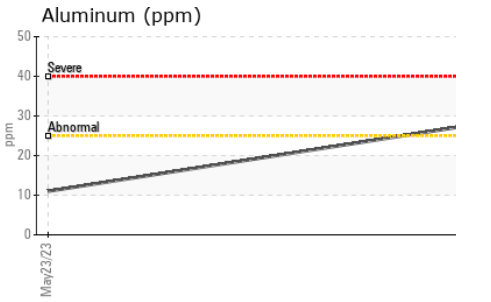
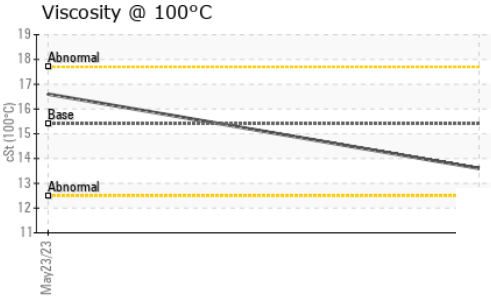
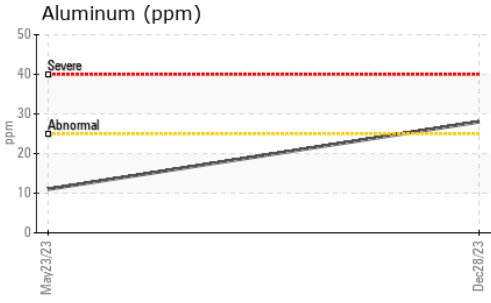
| method    | limit/base               | current     | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot %    | % *ASTM D7844 >3         | <b>1.4</b>  | 0.1      | ---      |
| Nitration | Abs/cm *ASTM D7624 >20   | <b>9.7</b>  | 17.5     | ---      |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | <b>21.3</b> | 34.5     | ---      |

## FLUID DEGRADATION

| method           | limit/base               | current     | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm *ASTM D7414 >25 | <b>15.3</b> | 34.5     | ---      |
| Base Number (BN) | mg KOH/g ASTM D2896 9.8  | <b>8.2</b>  | 5.2      | ---      |



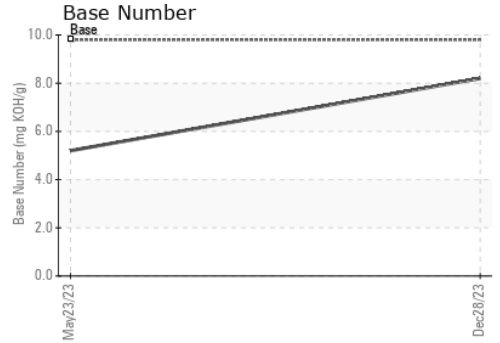
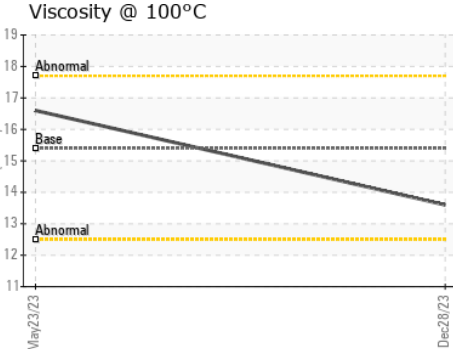
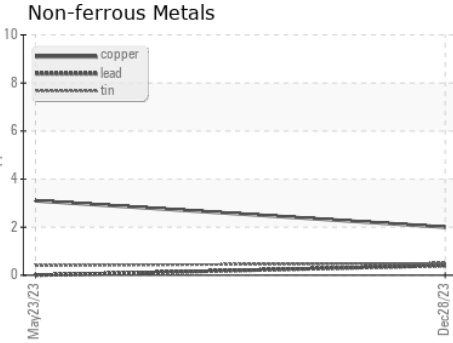
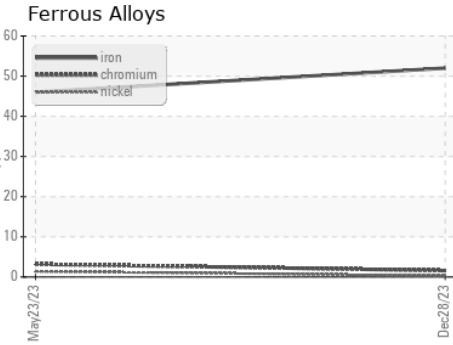
# OIL ANALYSIS REPORT



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

| FLUID PROPERTIES | method | limit/base | current | history1    | history2 |     |
|------------------|--------|------------|---------|-------------|----------|-----|
| Visc @ 100°C     | cSt    | ASTM D445  | 15.4    | <b>13.6</b> | 16.6     | --- |

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0104998 **Recieved** : 02 Jan 2024  
**Lab Number** : **06048714** **Diagnosed** : 03 Jan 2024  
**Unique Number** : 10809322 **Diagnostician** : Wes Davis  
**Test Package** : FLEET

**GFL Environmental - 893 - OK East Hauling**  
 2100 Lilly Street  
 Seminole, OK  
 US 74868  
 Contact: Roger Barlow  
 rbarlow@gflenv.com  
 T: (405)204-6183  
 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)