



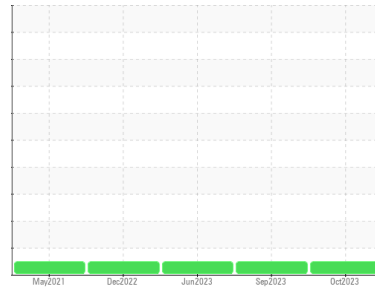
# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**1250M**  
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>GFL0092963</b>  | GFL0092942  | GFL0055938  |
| Sample Date   | Client Info |             | <b>20 Oct 2023</b> | 12 Sep 2023 | 23 Jun 2023 |
| Machine Age   | hrs         | Client Info | <b>12617</b>       | 12553       | 12076       |
| Oil Age       | hrs         | Client Info | <b>12076</b>       | 12076       | 596         |
| Oil Changed   | Client Info |             | <b>N/A</b>         | N/A         | 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     |
| Glycol | WC Method |            | <b>NEG</b>     | NEG      | NEG      |

## WEAR METALS

|          | method | limit/base       | current      | history1 | history2 |
|----------|--------|------------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >120 | <b>21</b>    | 17       | 24       |
| Chromium | ppm    | ASTM D5185m >20  | <b>1</b>     | 1        | 1        |
| Nickel   | ppm    | ASTM D5185m >5   | <b>&lt;1</b> | <1       | <1       |
| Titanium | ppm    | ASTM D5185m >2   | <b>&lt;1</b> | <1       | <1       |
| Silver   | ppm    | ASTM D5185m >2   | <b>0</b>     | 0        | 0        |
| Aluminum | ppm    | ASTM D5185m >20  | <b>10</b>    | 5        | 8        |
| Lead     | ppm    | ASTM D5185m >40  | <b>&lt;1</b> | 1        | 1        |
| Copper   | ppm    | ASTM D5185m >330 | <b>5</b>     | 3        | 9        |
| Tin      | ppm    | ASTM D5185m >15  | <b>1</b>     | 2        | 2        |
| Vanadium | ppm    | ASTM D5185m      | <b>&lt;1</b> | 0        | 0        |
| Cadmium  | ppm    | ASTM D5185m      | <b>&lt;1</b> | <1       | <1       |

## ADDITIVES

|            | method | limit/base       | current      | history1 | history2 |
|------------|--------|------------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185m 0    | <b>&lt;1</b> | <1       | <1       |
| Barium     | ppm    | ASTM D5185m 0    | <b>&lt;1</b> | 44       | <1       |
| Molybdenum | ppm    | ASTM D5185m 60   | <b>89</b>    | 57       | 67       |
| Manganese  | ppm    | ASTM D5185m 0    | <b>&lt;1</b> | 1        | <1       |
| Magnesium  | ppm    | ASTM D5185m 1010 | <b>1390</b>  | 894      | 967      |
| Calcium    | ppm    | ASTM D5185m 1070 | <b>1458</b>  | 989      | 1134     |
| Phosphorus | ppm    | ASTM D5185m 1150 | <b>1358</b>  | 889      | 970      |
| Zinc       | ppm    | ASTM D5185m 1270 | <b>1767</b>  | 1145     | 1268     |
| Sulfur     | ppm    | ASTM D5185m 2060 | <b>4317</b>  | 2842     | 3100     |

## CONTAMINANTS

|           | method | limit/base      | current   | history1 | history2 |
|-----------|--------|-----------------|-----------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >25 | <b>6</b>  | 8        | 6        |
| Sodium    | ppm    | ASTM D5185m     | <b>11</b> | 7        | 9        |
| Potassium | ppm    | ASTM D5185m >20 | <b>6</b>  | 5        | 5        |

## INFRA-RED

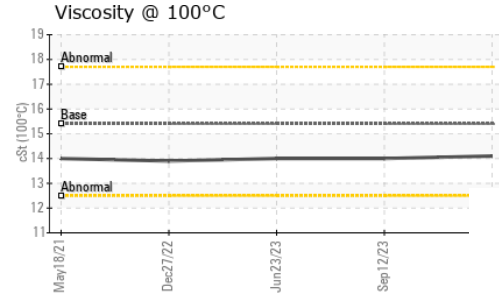
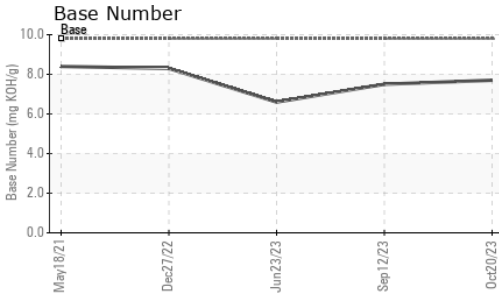
|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 >4  | <b>1.3</b>  | 1.1      | 1.4      |
| Nitration | Abs/cm   | *ASTM D7624 >20 | <b>9.2</b>  | 8.3      | 11.7     |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | <b>21.3</b> | 20.5     | 23.2     |

## FLUID DEGRADATION

|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm | *ASTM D7414 >25 | <b>16.0</b> | 15.0     | 17.6     |
| Base Number (BN) | mg KOH/g | ASTM D2896 9.8  | <b>7.7</b>  | 7.5      | 6.6      |



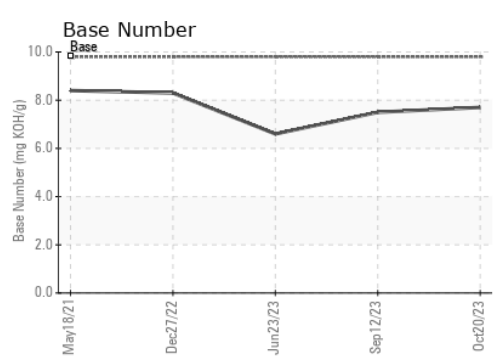
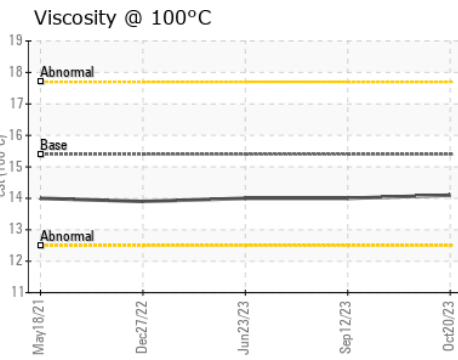
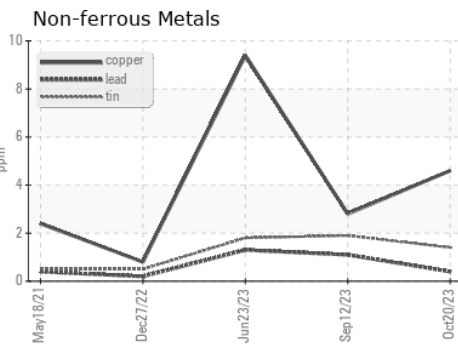
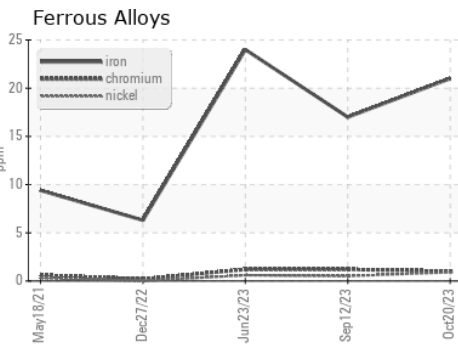
# OIL ANALYSIS REPORT



| 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    | <b>14.1</b> | 14.0     | 14.0 |

### GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0092963 **Received** : 01 Nov 2023  
**Lab Number** : **05995398** **Diagnosed** : 03 Nov 2023  
**Unique Number** : 10723758 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET

**GFL Environmental - 463 - Cheboygan**  
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 Cheboygan, MI  
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Certificate L2367  
 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)