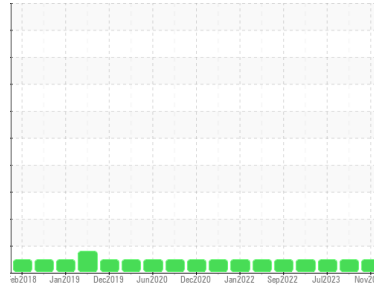




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**801046**  
 Component  
**Diesel Engine**  
 Fluid  
**PETRO CANADA DURON SHP 15W40 (22 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 condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>GFL0091075</b>  | GFL0091048  | GFL0086486  |
| Sample Date   | Client Info |             | <b>13 Nov 2023</b> | 02 Aug 2023 | 24 Jul 2023 |
| Machine Age   | hrs         | Client Info | <b>12929</b>       | 100344      | 12315       |
| Oil Age       | hrs         | Client Info | <b>544</b>         | 0           | 0           |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Changed     | Changed     |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >5         | <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 D5185(m) | >80     | <b>31</b>    | 6        | 24 |
| Chromium  | ppm    | ASTM D5185(m) | >5      | <b>&lt;1</b> | <1       | <1 |
| Nickel    | ppm    | ASTM D5185(m) | >2      | <b>&lt;1</b> | <1       | <1 |
| Titanium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Silver    | ppm    | ASTM D5185(m) | >3      | <b>&lt;1</b> | 0        | 0  |
| Aluminum  | ppm    | ASTM D5185(m) | >30     | <b>4</b>     | 1        | 3  |
| Lead      | ppm    | ASTM D5185(m) | >30     | <b>&lt;1</b> | 0        | 0  |
| Copper    | ppm    | ASTM D5185(m) | >150    | <b>2</b>     | <1       | <1 |
| Tin       | ppm    | ASTM D5185(m) | >5      | <b>0</b>     | 0        | 0  |
| Antimony  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Vanadium  | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Beryllium | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |
| Cadmium   | ppm    | ASTM D5185(m) |         | <b>0</b>     | 0        | 0  |

## ADDITIVES

|            | method | limit/base    | current | history1     | history2 |      |
|------------|--------|---------------|---------|--------------|----------|------|
| Boron      | ppm    | ASTM D5185(m) | 0       | <b>5</b>     | 9        | 8    |
| Barium     | ppm    | ASTM D5185(m) | 0       | <b>&lt;1</b> | 0        | 0    |
| Molybdenum | ppm    | ASTM D5185(m) | 60      | <b>60</b>    | 57       | 59   |
| Manganese  | ppm    | ASTM D5185(m) | 0       | <b>0</b>     | <1       | <1   |
| Magnesium  | ppm    | ASTM D5185(m) | 1010    | <b>934</b>   | 928      | 946  |
| Calcium    | ppm    | ASTM D5185(m) | 1070    | <b>1057</b>  | 1023     | 1026 |
| Phosphorus | ppm    | ASTM D5185(m) | 1150    | <b>951</b>   | 1028     | 1033 |
| Zinc       | ppm    | ASTM D5185(m) | 1270    | <b>1179</b>  | 1142     | 1196 |
| Sulfur     | ppm    | ASTM D5185(m) | 2060    | <b>2425</b>  | 2549     | 2425 |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1   |

## CONTAMINANTS

|           | method | limit/base    | current | history1     | history2 |    |
|-----------|--------|---------------|---------|--------------|----------|----|
| Silicon   | ppm    | ASTM D5185(m) | >20     | <b>8</b>     | 2        | 4  |
| Sodium    | ppm    | ASTM D5185(m) |         | <b>17</b>    | 9        | 17 |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>&lt;1</b> | <1       | 1  |

## INFRA-RED

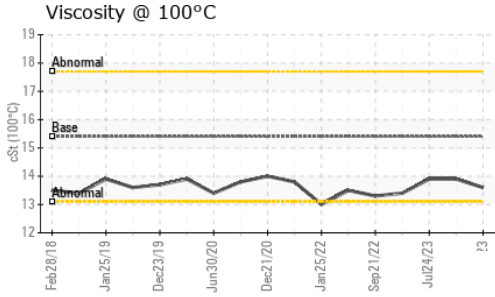
|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot %    | %        | ASTM D7844* | >3      | <b>0.7</b>  | 0.1      | 0.6  |
| Nitration | Abs/cm   | ASTM D7624* | >20     | <b>9.8</b>  | 6.1      | 9.8  |
| Sulfation | Abs/.1mm | ASTM D7415* | >30     | <b>20.7</b> | 19.1     | 21.0 |

## FLUID DEGRADATION

|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Oxidation | Abs/.1mm | ASTM D7414* | >25     | <b>16.0</b> | 13.6     | 15.6 |



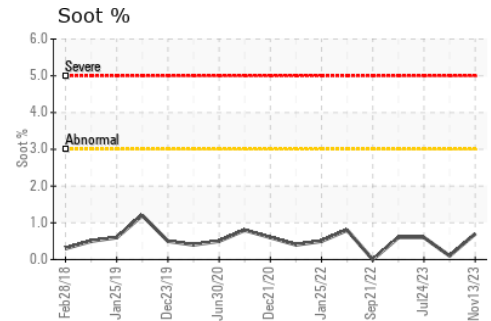
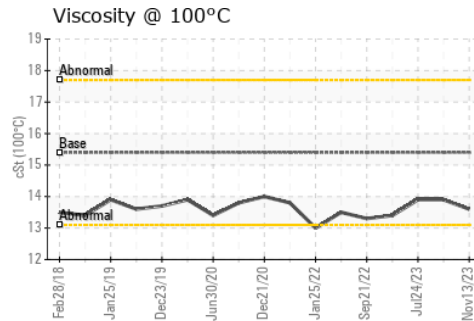
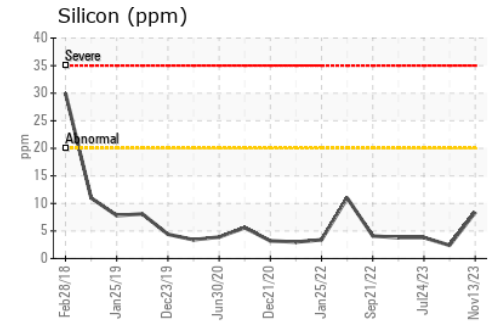
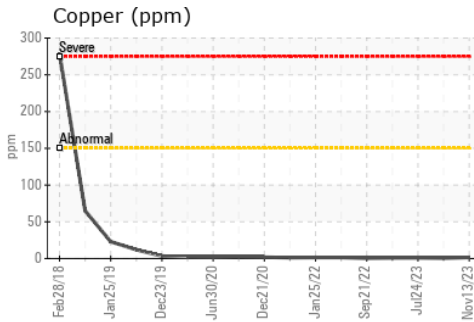
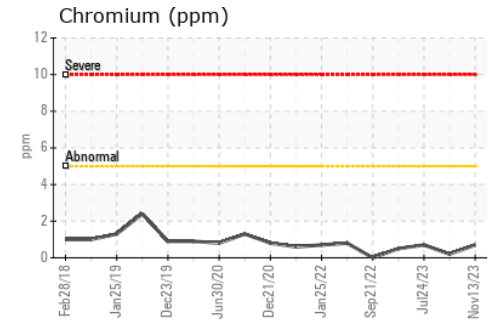
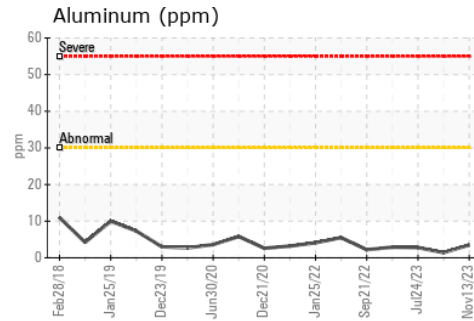
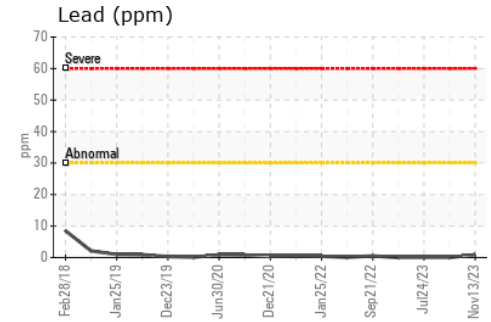
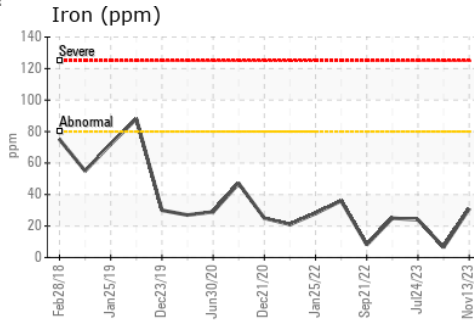
# OIL ANALYSIS REPORT



| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| 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 D7279(m) | 15.4    | 13.6     | 13.9     |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0091075 **Received** : 16 Nov 2023  
**Lab Number** : 02596792 **Diagnosed** : 16 Nov 2023  
**Unique Number** : 5681872 **Diagnostician** : Wes Davis  
**Test Package** : MOB 1

**GFL Environmental - 217 - Aurora**  
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 AURORA, ON  
 CA L4G 0K6  
 Contact: Mike Havens  
 MHavens@gflenv.com  
 T:  
 F: (905)713-2445

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.