



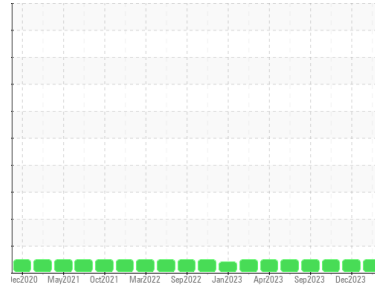
# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**928062**  
 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 condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>GFL0090386</b>  | GFL0090393  | GFL0090414  |
| Sample Date   | Client Info |             | <b>16 Jan 2024</b> | 21 Dec 2023 | 24 Nov 2023 |
| Machine Age   | kms         | Client Info | <b>308148</b>      | 305068      | 301953      |
| Oil Age       | kms         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info |             | <b>Changed</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     |
| 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 D5185(m) >120 | <b>3</b>     | 3        | 5        |
| Chromium  | ppm    | ASTM D5185(m) >20  | <b>0</b>     | 0        | 0        |
| Nickel    | ppm    | ASTM D5185(m) >5   | <b>&lt;1</b> | <1       | <1       |
| Titanium  | ppm    | ASTM D5185(m) >2   | <b>0</b>     | 0        | 0        |
| Silver    | ppm    | ASTM D5185(m) >2   | <b>0</b>     | 0        | <1       |
| Aluminum  | ppm    | ASTM D5185(m) >20  | <b>2</b>     | 2        | 2        |
| Lead      | ppm    | ASTM D5185(m) >40  | <b>0</b>     | 0        | <1       |
| Copper    | ppm    | ASTM D5185(m) >330 | <b>&lt;1</b> | <1       | <1       |
| Tin       | ppm    | ASTM D5185(m) >15  | <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>1</b>     | 2        | 2        |
| Barium     | ppm    | ASTM D5185(m) 0    | <b>0</b>     | 0        | <1       |
| Molybdenum | ppm    | ASTM D5185(m) 60   | <b>56</b>    | 58       | 59       |
| Manganese  | ppm    | ASTM D5185(m) 0    | <b>0</b>     | 0        | 0        |
| Magnesium  | ppm    | ASTM D5185(m) 1010 | <b>938</b>   | 980      | 967      |
| Calcium    | ppm    | ASTM D5185(m) 1070 | <b>1019</b>  | 1064     | 1040     |
| Phosphorus | ppm    | ASTM D5185(m) 1150 | <b>979</b>   | 1000     | 956      |
| Zinc       | ppm    | ASTM D5185(m) 1270 | <b>1124</b>  | 1173     | 1171     |
| Sulfur     | ppm    | ASTM D5185(m) 2060 | <b>2657</b>  | 2706     | 2256     |
| Lithium    | ppm    | ASTM D5185(m)      | <b>&lt;1</b> | <1       | <1       |

## CONTAMINANTS

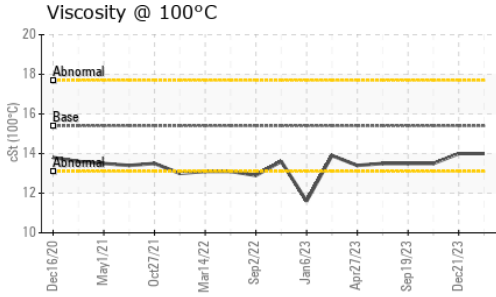
|           | method | limit/base        | current  | history1 | history2 |
|-----------|--------|-------------------|----------|----------|----------|
| Silicon   | ppm    | ASTM D5185(m) >25 | <b>2</b> | 3        | 2        |
| Sodium    | ppm    | ASTM D5185(m)     | <b>3</b> | 2        | 4        |
| Potassium | ppm    | ASTM D5185(m) >20 | <b>2</b> | 2        | 0        |

## INFRA-RED

|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | ASTM D7844* >4  | <b>0.1</b>  | 0.1      | 0.3      |
| Nitration | Abs/cm   | ASTM D7624* >20 | <b>6.0</b>  | 6.0      | 7.6      |
| Sulfation | Abs./1mm | ASTM D7415* >30 | <b>18.6</b> | 18.6     | 19.7     |



# OIL ANALYSIS REPORT

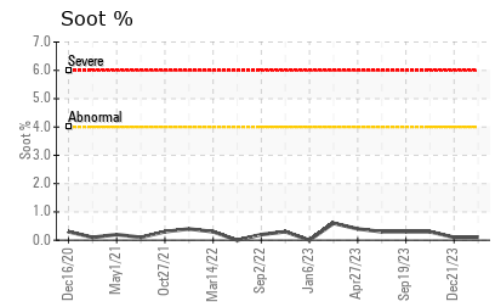
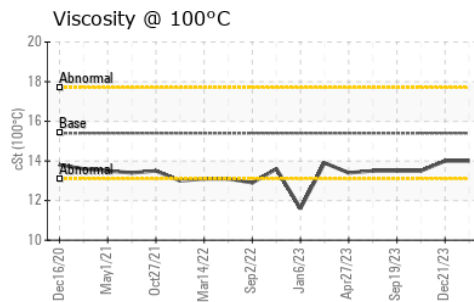
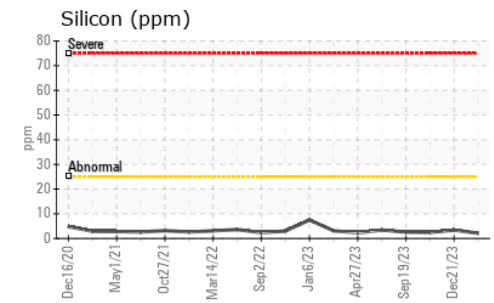
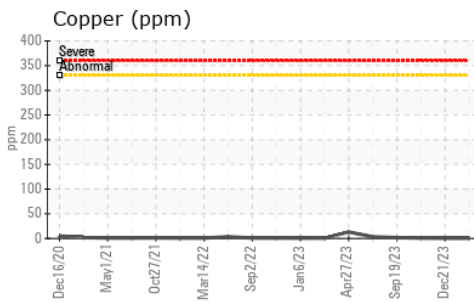
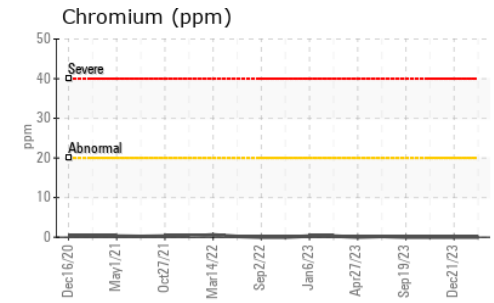
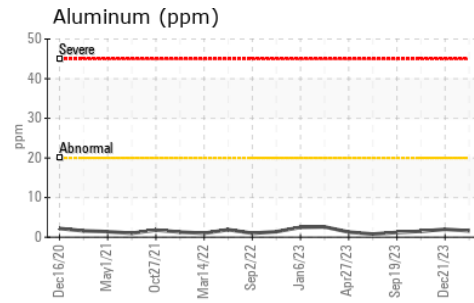
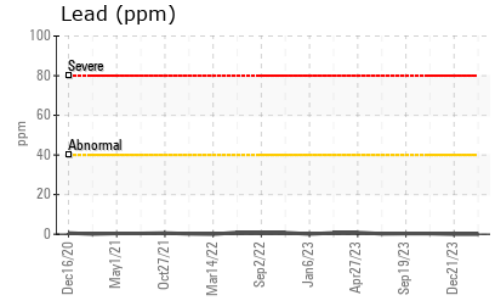
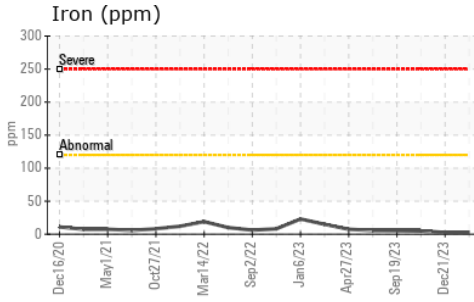


| FLUID DEGRADATION |         | method      | limit/base | current     | history1 | history2 |
|-------------------|---------|-------------|------------|-------------|----------|----------|
| Oxidation         | Abs/1mm | ASTM D7414* | >25        | <b>13.9</b> | 14.4     | 15.9     |

| VISUAL           |        | method  | limit/base | current    | history1 | history2 |
|------------------|--------|---------|------------|------------|----------|----------|
| Emulsified Water | scalar | Visual* | >0.2       | <b>NEG</b> | NEG      | NEG      |
| Free Water       | scalar | Visual* |            | <b>NEG</b> | NEG      | NEG      |

| FLUID PROPERTIES |     | method        | limit/base | current     | history1 | history2 |
|------------------|-----|---------------|------------|-------------|----------|----------|
| Visc @ 100°C     | cSt | ASTM D7279(m) | 15.4       | <b>14.0</b> | 14.0     | 13.5     |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0090386 **Received** : 18 Jan 2024  
**Lab Number** : **02609652** **Diagnosed** : 18 Jan 2024  
**Unique Number** : 5710738 **Diagnostician** : Wes Davis  
**Test Package** : MOB 1

**GFL Environmental - 216M**  
 2475 Beryl Drive  
 Oakville, ON  
 CA L6J 7X4  
 Contact: Matthew Gunness  
 mgunness@gflenv.com

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.

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F: