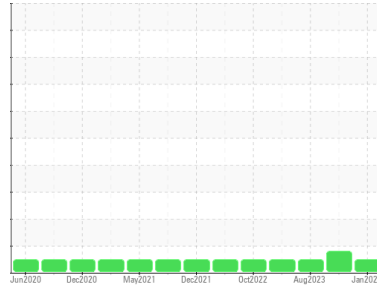




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**401198**  
 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 condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>GFL0090404</b>  | GFL0090417  | GFL0084132  |
| Sample Date   | Client Info |             | <b>22 Jan 2024</b> | 03 Nov 2023 | 28 Aug 2023 |
| Machine Age   | hrs         | Client Info | <b>430886</b>      | 18985       | 13249       |
| Oil Age       | hrs         | Client Info | <b>0</b>           | 0           | 0           |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Changed     | N/A         |
| Sample Status |             |             | <b>NORMAL</b>      | ABNORMAL    | 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>12</b>    | 27       | 7  |
| Chromium  | ppm    | ASTM D5185(m) | >20     | <b>&lt;1</b> | 2        | <1 |
| Nickel    | ppm    | ASTM D5185(m) | >15     | <b>&lt;1</b> | 2        | 0  |
| Titanium  | ppm    | ASTM D5185(m) | >2      | <b>0</b>     | 0        | 0  |
| Silver    | ppm    | ASTM D5185(m) | >3      | <b>0</b>     | 0        | 0  |
| Aluminum  | ppm    | ASTM D5185(m) | >20     | <b>8</b>     | 28       | 1  |
| Lead      | ppm    | ASTM D5185(m) | >40     | <b>&lt;1</b> | 2        | 0  |
| Copper    | ppm    | ASTM D5185(m) | >330    | <b>1</b>     | 2        | 3  |
| Tin       | ppm    | ASTM D5185(m) | >15     | <b>0</b>     | <1       | <1 |
| 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>4</b>     | 32       | 4    |
| Barium     | ppm    | ASTM D5185(m) | 0       | <b>0</b>     | <1       | 0    |
| Molybdenum | ppm    | ASTM D5185(m) | 60      | <b>59</b>    | 64       | 58   |
| Manganese  | ppm    | ASTM D5185(m) | 0       | <b>0</b>     | 0        | <1   |
| Magnesium  | ppm    | ASTM D5185(m) | 1010    | <b>955</b>   | 977      | 959  |
| Calcium    | ppm    | ASTM D5185(m) | 1070    | <b>1038</b>  | 1112     | 1026 |
| Phosphorus | ppm    | ASTM D5185(m) | 1150    | <b>1009</b>  | 966      | 1018 |
| Zinc       | ppm    | ASTM D5185(m) | 1270    | <b>1151</b>  | 1184     | 1159 |
| Sulfur     | ppm    | ASTM D5185(m) | 2060    | <b>2590</b>  | 2503     | 2447 |
| Lithium    | ppm    | ASTM D5185(m) |         | <b>&lt;1</b> | <1       | <1   |

## CONTAMINANTS

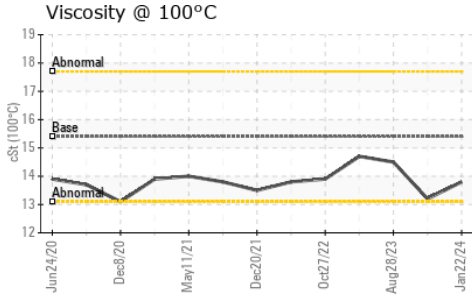
|           | method | limit/base    | current | history1 | history2 |    |
|-----------|--------|---------------|---------|----------|----------|----|
| Silicon   | ppm    | ASTM D5185(m) | >25     | <b>3</b> | 6        | 4  |
| Sodium    | ppm    | ASTM D5185(m) |         | <b>4</b> | 6        | 2  |
| Potassium | ppm    | ASTM D5185(m) | >20     | <b>2</b> | 2        | <1 |

## INFRA-RED

|           | method   | limit/base  | current | history1    | history2 |      |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot %    | %        | ASTM D7844* | >4      | <b>0.3</b>  | 0.4      | 0.1  |
| Nitration | Abs/cm   | ASTM D7624* | >20     | <b>9.6</b>  | 10.2     | 7.0  |
| Sulfation | Abs./1mm | ASTM D7415* | >30     | <b>20.3</b> | 23.2     | 20.7 |



# OIL ANALYSIS REPORT

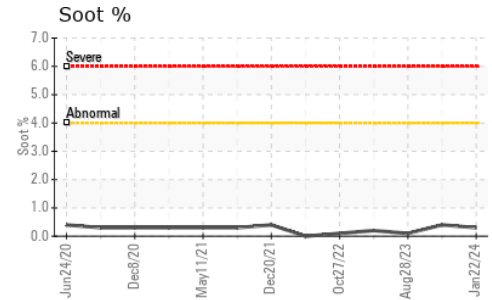
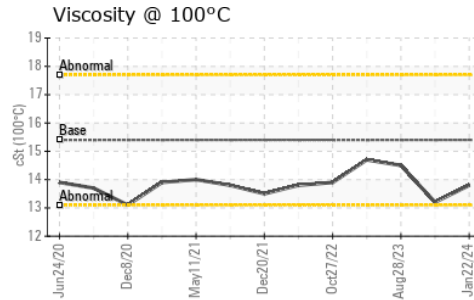
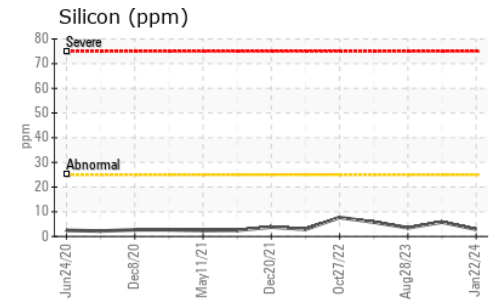
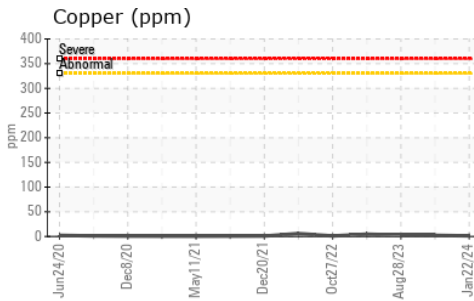
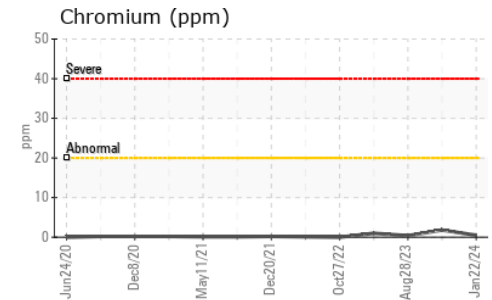
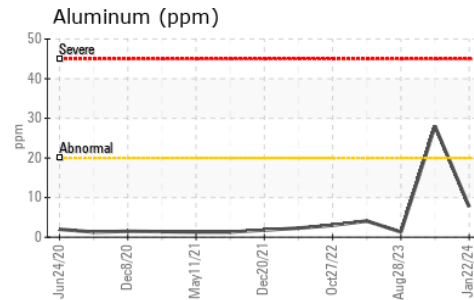
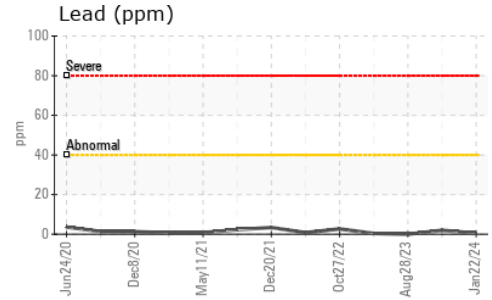
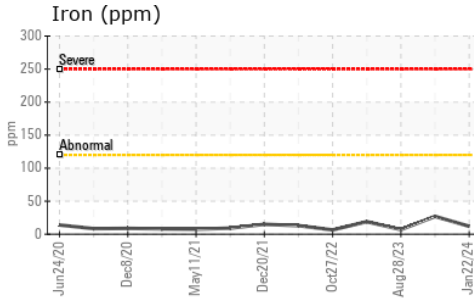


| FLUID DEGRADATION |          | method      | limit/base | current     | history1 | history2 |
|-------------------|----------|-------------|------------|-------------|----------|----------|
| Oxidation         | Abs./1mm | ASTM D7414* | >25        | <b>17.6</b> | 20.1     | 15.0     |

| 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>13.8</b> | 13.2     | 14.5     |

## GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0090404      **Received** : 23 Feb 2024  
**Lab Number** : **02617584**      **Tested** : 23 Feb 2024  
**Unique Number** : 5734694      **Diagnosed** : 23 Feb 2024 - Kevin Marson  
**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.

T:  
F: