



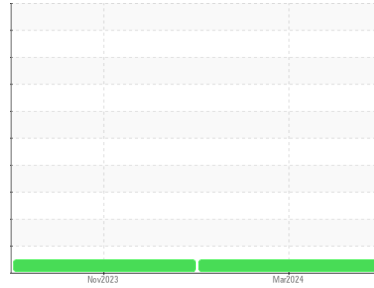
# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Machine Id  
**MACK 427116**  
 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>GFL0115517</b>  | GFL0096338  | ---      |
| Sample Date   | Client Info |             | <b>07 Mar 2024</b> | 21 Nov 2023 | ---      |
| Machine Age   | hrs         | Client Info | <b>13033</b>       | 12489       | ---      |
| Oil Age       | hrs         | Client Info | <b>600</b>         | 600         | ---      |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Changed     | ---      |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | ---      |

## CONTAMINATION

|        | method    | limit/base | current        | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel   | WC Method | >3.0       | <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 D5185(m) >120 | <b>8</b>     | 9        | ---      |
| Chromium  | ppm    | ASTM D5185(m) >20  | <b>0</b>     | 0        | ---      |
| Nickel    | ppm    | ASTM D5185(m) >5   | <b>&lt;1</b> | 0        | ---      |
| Titanium  | ppm    | ASTM D5185(m) >2   | <b>0</b>     | 0        | ---      |
| Silver    | ppm    | ASTM D5185(m) >2   | <b>0</b>     | 0        | ---      |
| Aluminum  | ppm    | ASTM D5185(m) >20  | <b>2</b>     | 2        | ---      |
| Lead      | ppm    | ASTM D5185(m) >40  | <b>&lt;1</b> | <1       | ---      |
| Copper    | ppm    | ASTM D5185(m) >330 | <b>1</b>     | 2        | ---      |
| Tin       | ppm    | ASTM D5185(m) >15  | <b>&lt;1</b> | 0        | ---      |
| Antimony  | ppm    | ASTM D5185(m)      | <b>0</b>     | <1       | ---      |
| Vanadium  | ppm    | ASTM D5185(m)      | <b>0</b>     | 0        | ---      |
| Beryllium | ppm    | ASTM D5185(m)      | <b>0</b>     | 0        | ---      |
| Cadmium   | ppm    | ASTM D5185(m)      | <b>0</b>     | 0        | ---      |

## ADDITIVES

|            | method | limit/base         | current      | history1 | history2 |
|------------|--------|--------------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185(m) 0    | <b>5</b>     | 5        | ---      |
| Barium     | ppm    | ASTM D5185(m) 0    | <b>0</b>     | <1       | ---      |
| Molybdenum | ppm    | ASTM D5185(m) 60   | <b>61</b>    | 57       | ---      |
| Manganese  | ppm    | ASTM D5185(m) 0    | <b>0</b>     | 0        | ---      |
| Magnesium  | ppm    | ASTM D5185(m) 1010 | <b>953</b>   | 904      | ---      |
| Calcium    | ppm    | ASTM D5185(m) 1070 | <b>1073</b>  | 1135     | ---      |
| Phosphorus | ppm    | ASTM D5185(m) 1150 | <b>992</b>   | 965      | ---      |
| Zinc       | ppm    | ASTM D5185(m) 1270 | <b>1180</b>  | 1165     | ---      |
| Sulfur     | ppm    | ASTM D5185(m) 2060 | <b>2655</b>  | 2488     | ---      |
| Lithium    | ppm    | ASTM D5185(m)      | <b>&lt;1</b> | <1       | ---      |

## CONTAMINANTS

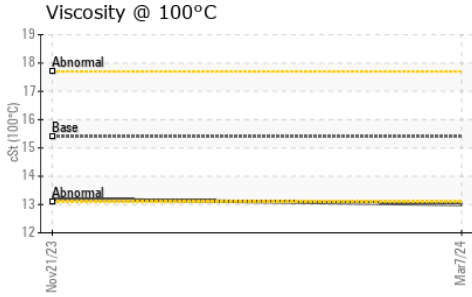
|           | method | limit/base        | current  | history1 | history2 |
|-----------|--------|-------------------|----------|----------|----------|
| Silicon   | ppm    | ASTM D5185(m) >25 | <b>3</b> | 4        | ---      |
| Sodium    | ppm    | ASTM D5185(m)     | <b>2</b> | 6        | ---    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

## INFRA-RED

|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | ASTM D7844* >4  | <b>0</b>    | 0.1      | ---      |
| Nitration | Abs/cm   | ASTM D7624* >20 | <b>9.7</b>  | 8.6      | ---      |
| Sulfation | Abs./1mm | ASTM D7415* >30 | <b>20.5</b> | 19.4     | ---      |



# OIL ANALYSIS REPORT



### FLUID DEGRADATION

| method    | limit/base           | current | history1 | history2 |     |
|-----------|----------------------|---------|----------|----------|-----|
| Oxidation | Abs./1mm ASTM D7414* | >25     | 18.0     | 15.9     | --- |

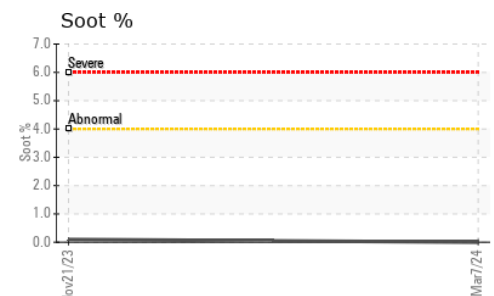
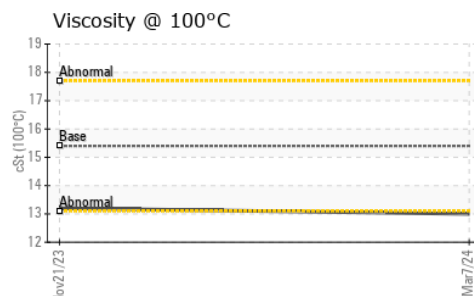
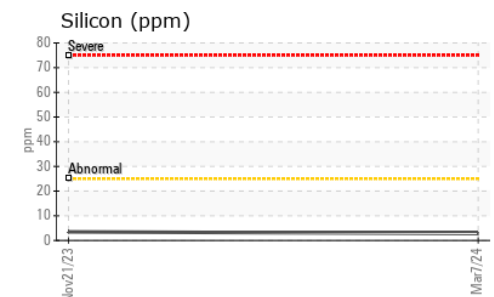
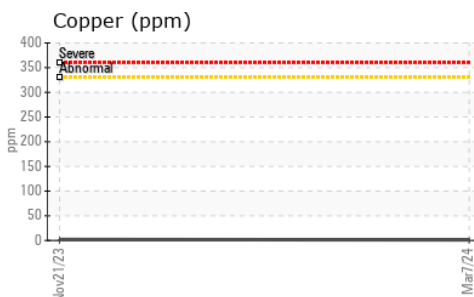
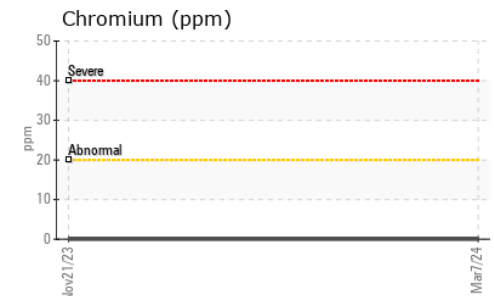
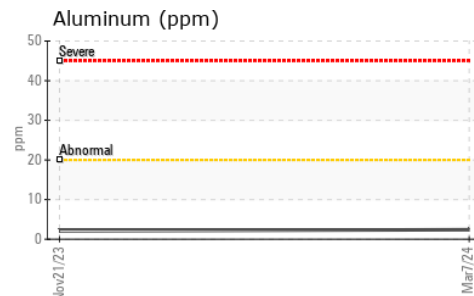
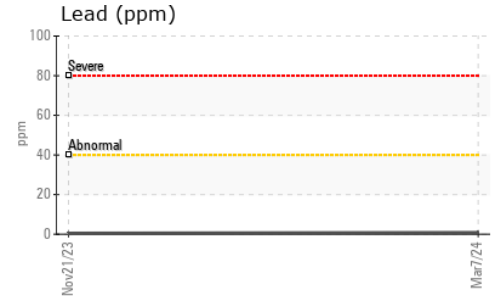
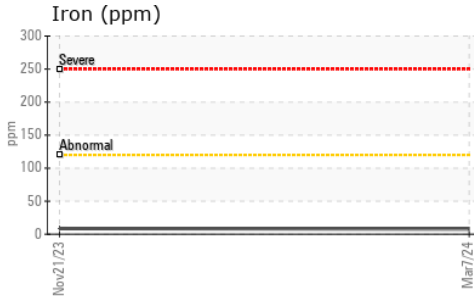
### VISUAL

| 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    | 13.0     | 13.2     | --- |

### GRAPHS



ISO 17025:2017  
Accredited  
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
 Sample No. : GFL0115517  
 Lab Number : 02621702  
 Unique Number : 5746821  
 Test Package : MOB 1  
 Received : 13 Mar 2024  
 Tested : 13 Mar 2024  
 Diagnosed : 13 Mar 2024 - Wes Davis

**GFL Environmental - 527**  
 740 Pine Street South  
 Timmins, ON  
 CA P4N 8S9  
 Contact: Martin St-Pierre  
 martinstpierre@gflenv.com  
 T: (705)264-8700  
 F: (705)264-8701

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.