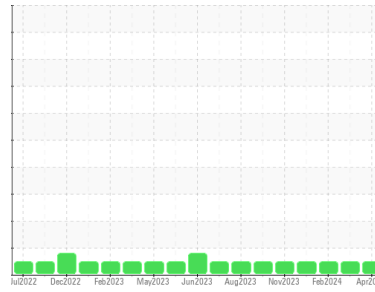




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id

**731122**

Component

**Natural Gas Engine**

Fluid

**PETRO CANADA DURON GEO LD 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>GFL0117193</b>  | GFL0114026  | GFL0109772  |
| Sample Date   | Client Info |             | <b>18 Apr 2024</b> | 14 Mar 2024 | 09 Feb 2024 |
| Machine Age   | hrs         | Client Info | <b>4467</b>        | 4335        | 0           |
| Oil Age       | hrs         | Client Info | <b>1200</b>        | 0           | 0           |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Not Changd  | Not Changd  |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | NORMAL      |

## CONTAMINATION

|       | method    | limit/base | current    | history1 | history2 |
|-------|-----------|------------|------------|----------|----------|
| Water | WC Method | >0.1       | <b>NEG</b> | NEG      | NEG      |

## WEAR METALS

|          | method | limit/base      | current      | history1 | history2 |
|----------|--------|-----------------|--------------|----------|----------|
| Iron     | ppm    | ASTM D5185m >50 | <b>12</b>    | 11       | 12       |
| Chromium | ppm    | ASTM D5185m >4  | <b>&lt;1</b> | 0        | 1        |
| Nickel   | ppm    | ASTM D5185m >2  | <b>0</b>     | 0        | 0        |
| Titanium | ppm    | ASTM D5185m     | <b>0</b>     | 0        | <1       |
| Silver   | ppm    | ASTM D5185m >3  | <b>0</b>     | 0        | 0        |
| Aluminum | ppm    | ASTM D5185m >9  | <b>2</b>     | <1       | 6        |
| Lead     | ppm    | ASTM D5185m >30 | <b>0</b>     | <1       | 7        |
| Copper   | ppm    | ASTM D5185m >35 | <b>2</b>     | 11       | 12       |
| Tin      | ppm    | ASTM D5185m >4  | <b>&lt;1</b> | 0        | 1        |
| Vanadium | ppm    | ASTM D5185m     | <b>0</b>     | 0        | 0        |
| Cadmium  | ppm    | ASTM D5185m     | <b>0</b>     | 0        | 0        |

## ADDITIVES

|            | method | limit/base       | current      | history1 | history2 |
|------------|--------|------------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185m 50   | <b>10</b>    | 13       | 5        |
| Barium     | ppm    | ASTM D5185m 5    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m 50   | <b>56</b>    | 51       | 59       |
| Manganese  | ppm    | ASTM D5185m 0    | <b>&lt;1</b> | 0        | <1       |
| Magnesium  | ppm    | ASTM D5185m 560  | <b>605</b>   | 517      | 581      |
| Calcium    | ppm    | ASTM D5185m 1510 | <b>1734</b>  | 1541     | 1461     |
| Phosphorus | ppm    | ASTM D5185m 780  | <b>790</b>   | 762      | 720      |
| Zinc       | ppm    | ASTM D5185m 870  | <b>1056</b>  | 945      | 965      |
| Sulfur     | ppm    | ASTM D5185m 2040 | <b>2961</b>  | 2795     | 2261     |

## CONTAMINANTS

|           | method | limit/base        | current  | history1 | history2 |
|-----------|--------|-------------------|----------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >+100 | <b>4</b> | 3        | 17       |
| Sodium    | ppm    | ASTM D5185m       | <b>6</b> | 3        | 1        |
| Potassium | ppm    | ASTM D5185m >20   | <b>0</b> | 0        | 5        |

## INFRA-RED

|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844     | <b>0.1</b>  | 0        | 0        |
| Nitration | Abs/cm   | *ASTM D7624 >20 | <b>11.4</b> | 10.4     | 11.8     |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | <b>22.8</b> | 19.6     | 25.6     |

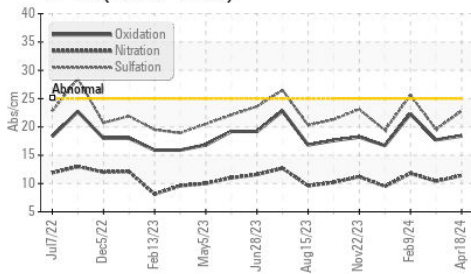
## FLUID DEGRADATION

|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm | *ASTM D7414 >25 | <b>18.4</b> | 17.7     | 22.3     |
| Base Number (BN) | mg KOH/g | ASTM D2896 10.2 | <b>4.4</b>  | 5.5      | 2.6      |

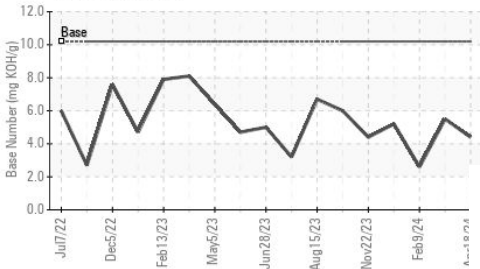


# OIL ANALYSIS REPORT

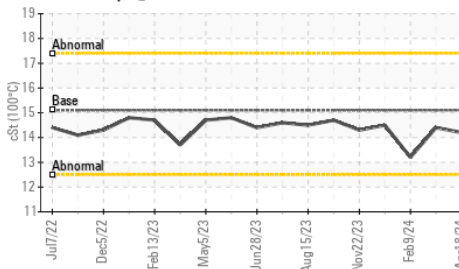
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C



## VISUAL

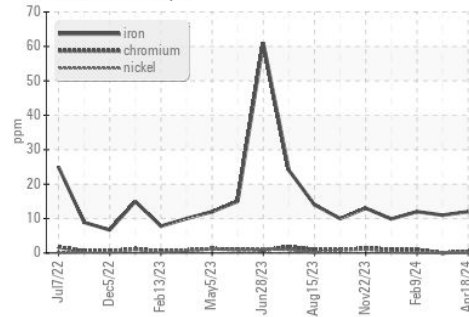
|                  | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
| 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    | >0.1    | NEG      | NEG      |
| Free Water       | scalar | *Visual    |         | NEG      | NEG      |

## FLUID PROPERTIES

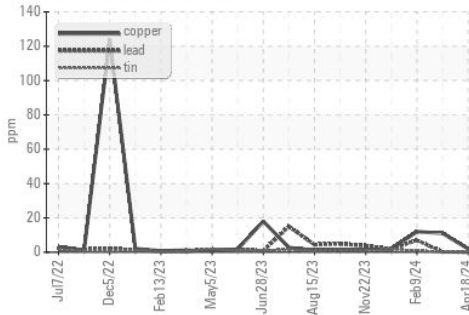
|              | method | limit/base | current | history1 | history2 |
|--------------|--------|------------|---------|----------|----------|
| Visc @ 100°C | cSt    | ASTM D445  | 15.1    | 14.2     | 14.4     |

## GRAPHS

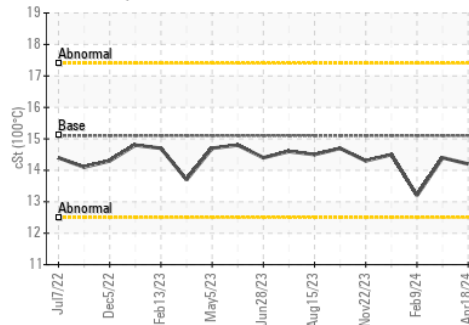
Ferrous Alloys



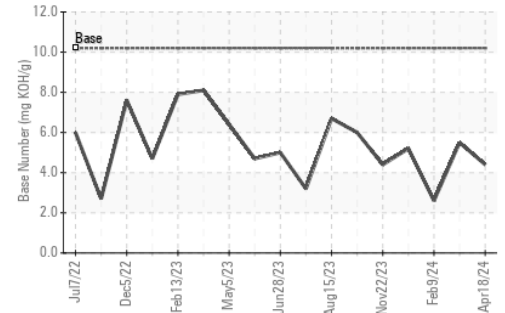
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : GFL0117193  
 Lab Number : 06158362  
 Unique Number : 10993785  
 Test Package : FLEET

GFL Environmental - 836 - Kansas City Hauling  
 7801 East Truman Road  
 Kansas City, MO  
 US 64126  
 Contact: Loyce Stewart  
 loyce.stewart@gflenv.com

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)

T:  
F: