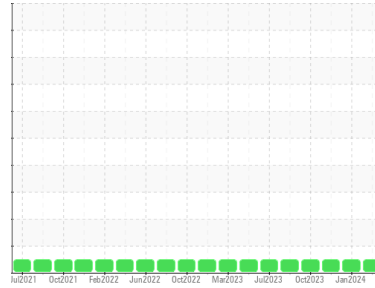




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**(68J1UN)**  
Machine Id  
**429050-402452**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (12 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>GFL0109234</b>  | GFL0098359  | GFL0098342  |
| Sample Date   | Client Info | <b>15 Feb 2024</b> | 10 Jan 2024 | 23 Dec 2023 |
| Machine Age   | hrs         | <b>15327</b>       | 15003       | 14882       |
| Oil Age       | hrs         | <b>700</b>         | 121         | 700         |
| Oil Changed   | Client Info | <b>Not Chngd</b>   | Not Chngd   | Changed     |
| 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 D5185m >165 | <b>16</b>    | 3        | 10       |
| Chromium | ppm ASTM D5185m >5   | <b>1</b>     | <1       | <1       |
| Nickel   | ppm ASTM D5185m >4   | <b>0</b>     | 0        | 0        |
| Titanium | ppm ASTM D5185m >2   | <b>&lt;1</b> | 0        | 0        |
| Silver   | ppm ASTM D5185m >2   | <b>0</b>     | 0        | 0        |
| Aluminum | ppm ASTM D5185m >20  | <b>1</b>     | <1       | 1        |
| Lead     | ppm ASTM D5185m >150 | <b>4</b>     | <1       | 4        |
| Copper   | ppm ASTM D5185m >90  | <b>2</b>     | <1       | <1       |
| Tin      | ppm ASTM D5185m >5   | <b>&lt;1</b> | <1       | <1       |
| Vanadium | ppm ASTM D5185m      | <b>0</b>     | <1       | 0        |
| Cadmium  | ppm ASTM D5185m      | <b>0</b>     | 0        | 0        |

## ADDITIVES

| method     | limit/base           | current      | history1 | history2 |
|------------|----------------------|--------------|----------|----------|
| Boron      | ppm ASTM D5185m 0    | <b>0</b>     | 1        | 2        |
| Barium     | ppm ASTM D5185m 0    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm ASTM D5185m 60   | <b>66</b>    | 61       | 60       |
| Manganese  | ppm ASTM D5185m 0    | <b>&lt;1</b> | 0        | <1       |
| Magnesium  | ppm ASTM D5185m 1010 | <b>995</b>   | 1024     | 938      |
| Calcium    | ppm ASTM D5185m 1070 | <b>1088</b>  | 1096     | 1048     |
| Phosphorus | ppm ASTM D5185m 1150 | <b>1069</b>  | 1117     | 1108     |
| Zinc       | ppm ASTM D5185m 1270 | <b>1288</b>  | 1310     | 1233     |
| Sulfur     | ppm ASTM D5185m 2060 | <b>3059</b>  | 3426     | 2953     |

## CONTAMINANTS

| method    | limit/base          | current   | history1 | history2 |
|-----------|---------------------|-----------|----------|----------|
| Silicon   | ppm ASTM D5185m >35 | <b>6</b>  | 3        | 5        |
| Sodium    | ppm ASTM D5185m     | <b>52</b> | 7        | 28       |
| Potassium | ppm ASTM D5185m >20 | <b>18</b> | <1       | 2        |

## INFRA-RED

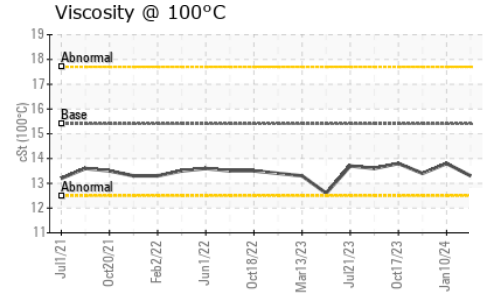
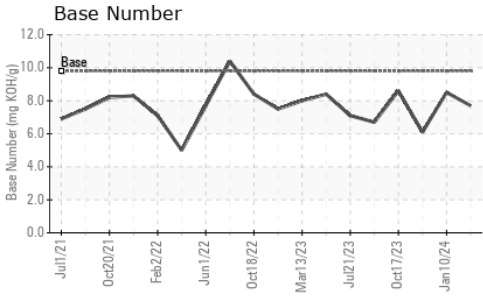
| method    | limit/base               | current     | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot %    | % *ASTM D7844 >7.5       | <b>0.5</b>  | 0.2      | 0.5      |
| Nitration | Abs/cm *ASTM D7624 >20   | <b>8.8</b>  | 6.6      | 9.3      |
| Sulfation | Abs/.1mm *ASTM D7415 >30 | <b>20.2</b> | 18.5     | 21.2     |

## FLUID DEGRADATION

| method           | limit/base               | current     | history1 | history2 |
|------------------|--------------------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm *ASTM D7414 >25 | <b>16.0</b> | 14.9     | 16.6     |
| Base Number (BN) | mg KOH/g ASTM D2896 9.8  | <b>7.7</b>  | 8.5      | 6.1      |



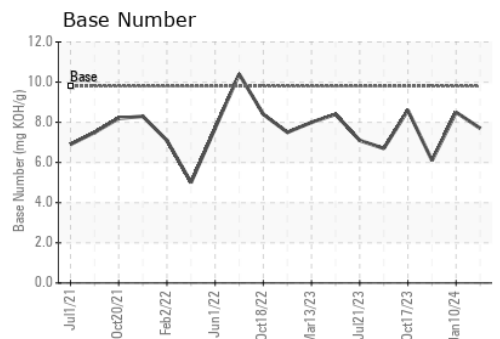
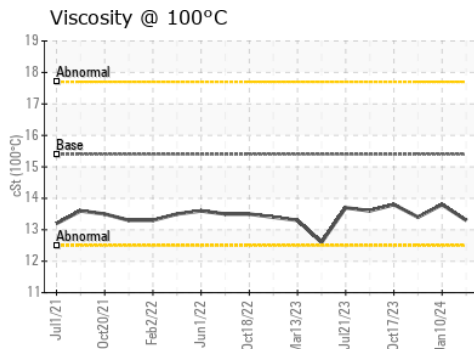
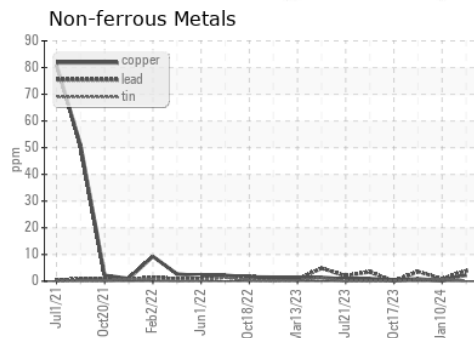
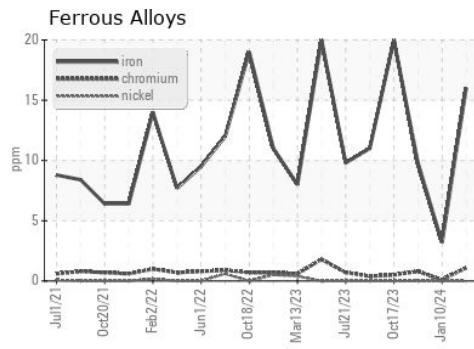
# OIL ANALYSIS REPORT



| 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    | >0.2    | NEG      | NEG      |
| Free Water       | scalar | *Visual    |         | NEG      | NEG      |

| FLUID PROPERTIES | method | limit/base | current | history1    | history2 |      |
|------------------|--------|------------|---------|-------------|----------|------|
| Visc @ 100°C     | cSt    | ASTM D445  | 15.4    | <b>13.3</b> | 13.8     | 13.4 |

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0109234 **Received** : 23 Feb 2024  
**Lab Number** : **06098998** **Tested** : 26 Feb 2024  
**Unique Number** : 10897228 **Diagnosed** : 26 Feb 2024 - Wes Davis  
**Test Package** : FLEET

**GFL Environmental - 822 - Springfield Hauling**  
 2120 West Bennett Street  
 Springfield, MO  
 US 65807  
 Contact: Dennis Moore  
 dennis.moore@gflenv.com  
 T: (417)403-3641  
 F:

Certificate L2367  
 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)