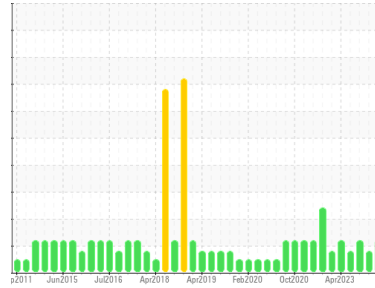




# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Area  
**(MB7753)**  
Machine Id  
**2410**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (42 QTS)**

## DIAGNOSIS

### Recommendation

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

### Wear

All component wear rates are normal.

### Contamination

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

### Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

## SAMPLE INFORMATION

|               | method      | limit/base  | current            | history1    | history2    |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info |             | <b>GFL0090129</b>  | GFL0075167  | GFL0061877  |
| Sample Date   | Client Info |             | <b>25 Jan 2024</b> | 19 Sep 2023 | 31 Jul 2023 |
| Machine Age   | hrs         | Client Info | <b>7701</b>        | 6972        | 6536        |
| Oil Age       | hrs         | Client Info | <b>7701</b>        | 6972        | 6536        |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Changed     | Changed     |
| Sample Status |             |             | <b>ABNORMAL</b>    | ABNORMAL    | ABNORMAL    |

## CONTAMINATION

|        | method    | limit/base | current    | history1 | history2 |
|--------|-----------|------------|------------|----------|----------|
| 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 >90  | <b>8</b>     | 8        | 12       |
| Chromium | ppm    | ASTM D5185m >20  | <b>&lt;1</b> | <1       | 0        |
| Nickel   | ppm    | ASTM D5185m >2   | <b>&lt;1</b> | <1       | <1       |
| Titanium | ppm    | ASTM D5185m >2   | <b>&lt;1</b> | 0        | <1       |
| Silver   | ppm    | ASTM D5185m >2   | <b>0</b>     | 0        | 0        |
| Aluminum | ppm    | ASTM D5185m >20  | <b>4</b>     | 3        | 5        |
| Lead     | ppm    | ASTM D5185m >40  | <b>&lt;1</b> | <1       | 0        |
| Copper   | ppm    | ASTM D5185m >330 | <b>1</b>     | 1        | 2        |
| Tin      | ppm    | ASTM D5185m >15  | <b>1</b>     | <1       | <1       |
| Vanadium | ppm    | ASTM D5185m      | <b>&lt;1</b> | 0        | <1       |
| Cadmium  | ppm    | ASTM D5185m      | <b>0</b>     | 0        | 0        |

## ADDITIVES

|            | method | limit/base       | current      | history1 | history2 |
|------------|--------|------------------|--------------|----------|----------|
| Boron      | ppm    | ASTM D5185m 0    | <b>&lt;1</b> | 0        | <1       |
| Barium     | ppm    | ASTM D5185m 0    | <b>0</b>     | 0        | 0        |
| Molybdenum | ppm    | ASTM D5185m 60   | <b>52</b>    | 62       | 54       |
| Manganese  | ppm    | ASTM D5185m 0    | <b>&lt;1</b> | <1       | <1       |
| Magnesium  | ppm    | ASTM D5185m 1010 | <b>808</b>   | 898      | 864      |
| Calcium    | ppm    | ASTM D5185m 1070 | <b>939</b>   | 1062     | 1003     |
| Phosphorus | ppm    | ASTM D5185m 1150 | <b>889</b>   | 1012     | 864      |
| Zinc       | ppm    | ASTM D5185m 1270 | <b>1043</b>  | 1214     | 1086     |
| Sulfur     | ppm    | ASTM D5185m 2060 | <b>2301</b>  | 3330     | 3108     |

## CONTAMINANTS

|           | method | limit/base      | current      | history1 | history2 |
|-----------|--------|-----------------|--------------|----------|----------|
| Silicon   | ppm    | ASTM D5185m >25 | <b>8</b>     | 4        | 4        |
| Sodium    | ppm    | ASTM D5185m     | <b>4</b>     | 2        | 4        |
| Potassium | ppm    | ASTM D5185m >20 | <b>6</b>     | 1        | 1        |
| Fuel      | %      | ASTM D3524 >3.0 | <b>▲ 5.4</b> | ▲ 5.2    | ▲ 5.6    |

## INFRA-RED

|           | method   | limit/base      | current     | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot %    | %        | *ASTM D7844 >6  | <b>0.4</b>  | 1        | 0.8      |
| Nitration | Abs/cm   | *ASTM D7624 >20 | <b>9.1</b>  | 7.9      | 9.8      |
| Sulfation | Abs/.1mm | *ASTM D7415 >30 | <b>19.4</b> | 18.9     | 20.3     |

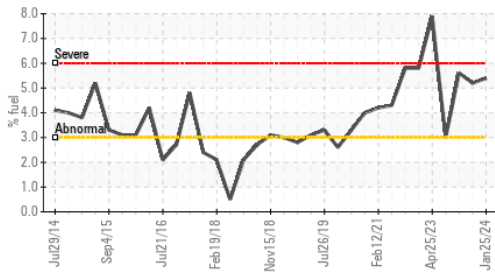
## FLUID DEGRADATION

|                  | method   | limit/base      | current     | history1 | history2 |
|------------------|----------|-----------------|-------------|----------|----------|
| Oxidation        | Abs/.1mm | *ASTM D7414 >25 | <b>15.9</b> | 13.9     | 16.1     |
| Base Number (BN) | mg KOH/g | ASTM D2896 9.8  | <b>6.2</b>  | 8.0      | 6.1      |

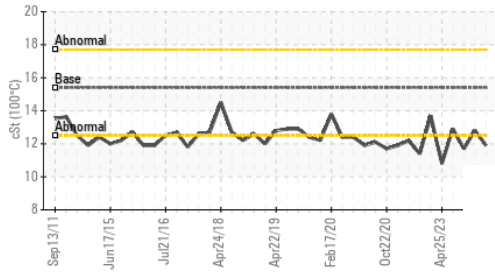


# OIL ANALYSIS REPORT

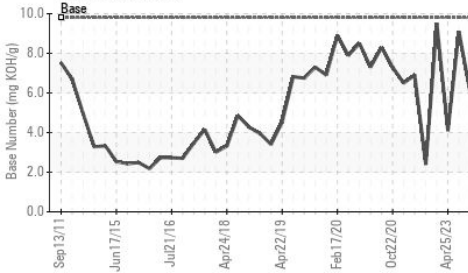
### ▲ Fuel Dilution



### ▲ Viscosity @ 100°C



### Base Number

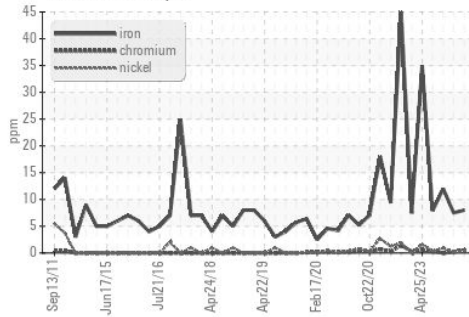


| VISUAL           | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal      | scalar | *Visual    | NONE    | NONE     | NONE     |
| Yellow Metal     | scalar | *Visual    | NONE    | NONE     | NONE     |
| 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      |

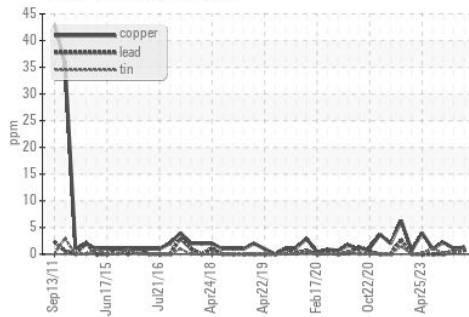
| FLUID PROPERTIES | method | limit/base | current     | history1 | history2 |
|------------------|--------|------------|-------------|----------|----------|
| Visc @ 100°C     | cSt    | ASTM D445  | 15.4 ▲ 11.9 | 12.8     | ▲ 11.7   |

### GRAPHS

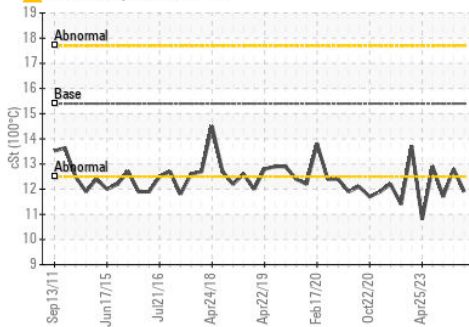
#### Ferrous Alloys



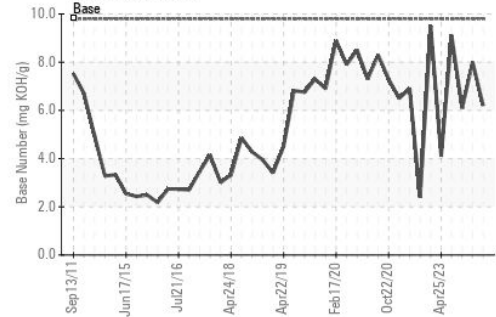
#### Non-ferrous Metals



### ▲ Viscosity @ 100°C



### Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0090129 **Received** : 26 Jan 2024  
**Lab Number** : 06071467 **Diagnosed** : 29 Jan 2024  
**Unique Number** : 10848144 **Diagnostician** : Wes Davis  
**Test Package** : FLEET ( Additional Tests: PercentFuel )

**GFL Environmental - 044 - Elizabeth City**  
 657 Old US 17  
 Elizabeth City, NC  
 US 27909  
 Contact: TOM BAIRD  
 tom.baird@gflenv.com  
 T: (252)562-2645  
 F: (252)264-4411

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)