



|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |



Machine Id  
**811001**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>GFL0113660</b>  | GFL0113651  | GFL0113649  |
| Sample Date    |     | Client Info |           | <b>21 May 2024</b> | 13 May 2024 | 03 May 2024 |
| Machine Age    | hrs | Client Info |           | <b>8841</b>        | 8784        | 59591       |
| Oil Age        | hrs | Client Info |           | <b>57</b>          | 385         | 9961        |
| Filter Age     | hrs | Client Info |           | <b>57</b>          | 385         | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | N/A         |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | N/A         |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

**WEAR**

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >120 | <b>5</b>     | 15   | 13   |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>&lt;1</b> | <1   | <1   |
| Nickel       | ppm    | ASTM D5185m | >5   | <b>&lt;1</b> | 0    | 0    |
| Titanium     | ppm    | ASTM D5185m | >2   | <b>&lt;1</b> | 0    | 0    |
| Silver       | ppm    | ASTM D5185m | >2   | <b>&lt;1</b> | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>2</b>     | 1    | 2    |
| Lead         | ppm    | ASTM D5185m | >40  | <b>&lt;1</b> | 0    | 1    |
| Copper       | ppm    | ASTM D5185m | >330 | <b>&lt;1</b> | 2    | <1   |
| Tin          | ppm    | ASTM D5185m | >15  | <b>1</b>     | <1   | <1   |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

**CONTAMINATION**

There is no indication of any contamination in the oil.

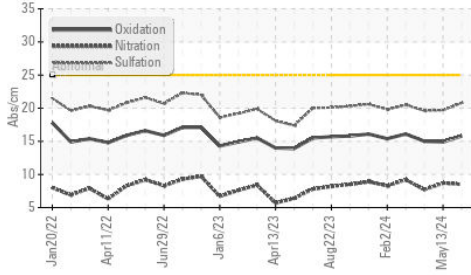
|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>4</b>       | 4     | 4     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>2</b>       | 0     | 2     |
| 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   |
| Soot %           | %        | *ASTM D7844 | >4    | <b>0.4</b>     | 0.8   | 0.7   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>8.5</b>     | 8.7   | 7.7   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>20.8</b>    | 19.7  | 19.6  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.2  | <b>NEG</b>     | NEG   | NEG   |

**FLUID CONDITION**

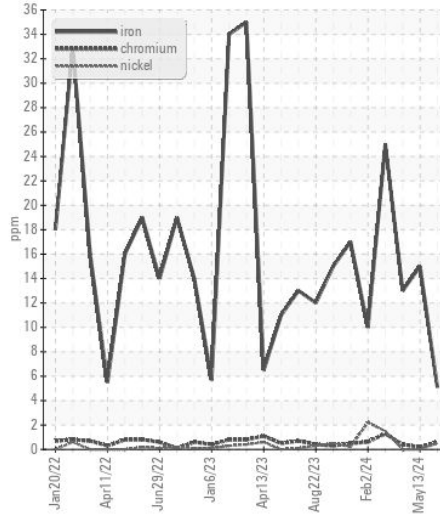
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             |      |              |      |      |
|------------------|----------|-------------|------|--------------|------|------|
| Sodium           | ppm      | ASTM D5185m |      | <b>2</b>     | 5    | 3    |
| Boron            | ppm      | ASTM D5185m | 0    | <b>5</b>     | 4    | 3    |
| Barium           | ppm      | ASTM D5185m | 0    | <b>0</b>     | 0    | 0    |
| Molybdenum       | ppm      | ASTM D5185m | 60   | <b>58</b>    | 61   | 57   |
| Manganese        | ppm      | ASTM D5185m | 0    | <b>&lt;1</b> | <1   | <1   |
| Magnesium        | ppm      | ASTM D5185m | 1010 | <b>971</b>   | 872  | 919  |
| Calcium          | ppm      | ASTM D5185m | 1070 | <b>1199</b>  | 1026 | 1046 |
| Phosphorus       | ppm      | ASTM D5185m | 1150 | <b>1067</b>  | 981  | 980  |
| Zinc             | ppm      | ASTM D5185m | 1270 | <b>1283</b>  | 1173 | 1217 |
| Sulfur           | ppm      | ASTM D5185m | 2060 | <b>3662</b>  | 3117 | 3389 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>15.8</b>  | 14.9 | 15.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 9.8  | <b>6.7</b>   | 7.4  | 7.9  |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.4 | <b>14.3</b>  | 14.2 | 14.1 |

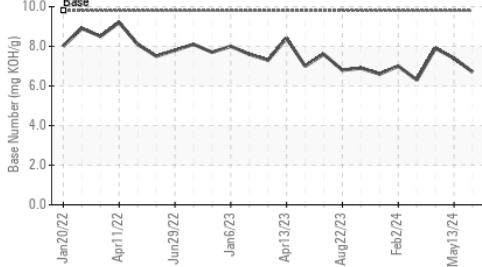
**FT-IR (Direct Trend)**



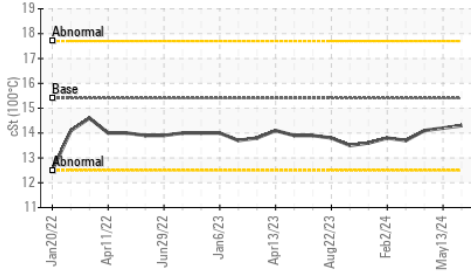
**Ferrous Alloys**



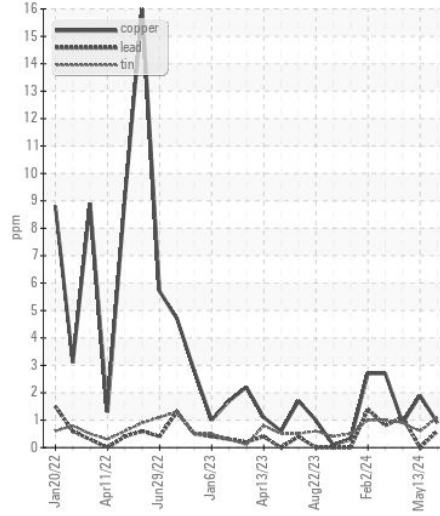
**Base Number**



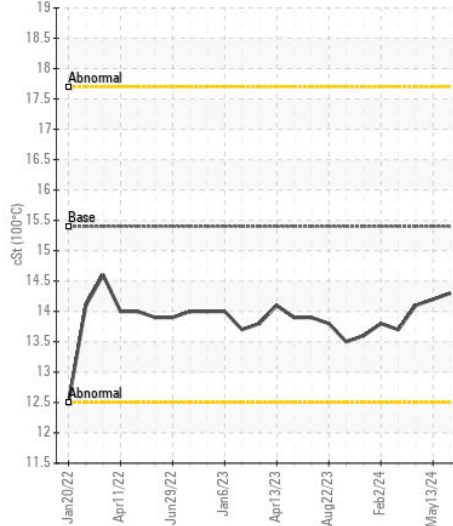
**Viscosity @ 100°C**



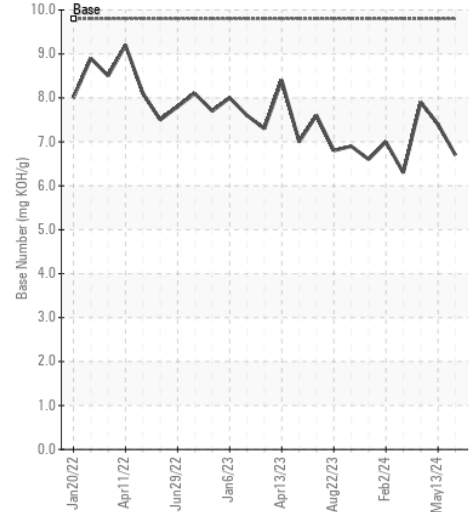
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0113660  
**Lab Number** : 06189936  
**Unique Number** : 11046688  
**Test Package** : FLEET

**Received** : 23 May 2024  
**Tested** : 25 May 2024  
**Diagnosed** : 29 May 2024 - Sean Felton

**GFL Environmental - 654S - Midlothian**  
 12230 Deergrove Road  
 Midlothian, VA  
 US 23112  
 Contact: Corbin Umphlet  
 cumphlet@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: