



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



Machine Id  
**829014-1088**  
Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (--- LTR)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>GFL0119279</b>  | GFL0070946  | GFL0070947  |
| Sample Date    |     | Client Info |           | <b>01 Jul 2024</b> | 18 Apr 2024 | 11 Apr 2024 |
| Machine Age    | hrs | Client Info |           | <b>12344</b>       | 12191       | 12147       |
| Oil Age        | hrs | Client Info |           | <b>292</b>         | 139         | 95          |
| Filter Age     | hrs | Client Info |           | <b>292</b>         | 139         | 95          |
| Oil Changed    |     | Client Info |           | <b>Not Changd</b>  | Not Changd  | Not Changd  |
| Filter Changed |     | Client Info |           | <b>Not Changd</b>  | Not Changd  | Not Changd  |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | ABNORMAL    |

**WEAR**

All component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >120 | <b>10</b>    | 4    | 22   |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>&lt;1</b> | <1   | <1   |
| Nickel       | ppm    | ASTM D5185m | >5   | <b>&lt;1</b> | <1   | 0    |
| Titanium     | ppm    | ASTM D5185m | >2   | <b>&lt;1</b> | <1   | <1   |
| Silver       | ppm    | ASTM D5185m | >2   | <b>&lt;1</b> | <1   | 0    |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>3</b>     | 3    | 2    |
| Lead         | ppm    | ASTM D5185m | >40  | <b>&lt;1</b> | <1   | 1    |
| Copper       | ppm    | ASTM D5185m | >330 | <b>1</b>     | 1    | 20   |
| Tin          | ppm    | ASTM D5185m | >15  | <b>&lt;1</b> | <1   | 0    |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | <1   | <1   |
| 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.

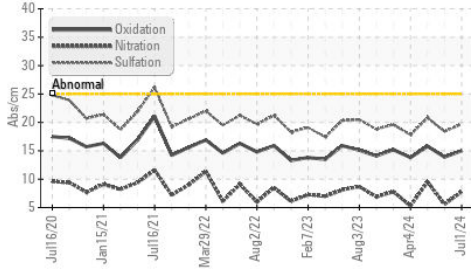
|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>7</b>       | 4     | 8     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>9</b>       | 2     | ▲ 49  |
| 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>     | 0.2   | 0.5   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>7.8</b>     | 5.6   | 9.5   |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>19.7</b>    | 18.4  | 20.8  |
| 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**

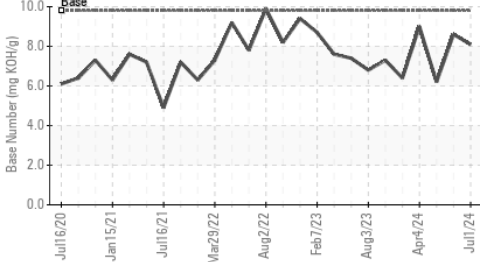
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

|                  |          |             |      |              |      |       |
|------------------|----------|-------------|------|--------------|------|-------|
| Sodium           | ppm      | ASTM D5185m |      | <b>6</b>     | 1    | ▲ 171 |
| Boron            | ppm      | ASTM D5185m | 0    | <b>4</b>     | 2    | <1    |
| Barium           | ppm      | ASTM D5185m | 0    | <b>3</b>     | 0    | 0     |
| Molybdenum       | ppm      | ASTM D5185m | 60   | <b>59</b>    | 57   | 73    |
| Manganese        | ppm      | ASTM D5185m | 0    | <b>&lt;1</b> | <1   | <1    |
| Magnesium        | ppm      | ASTM D5185m | 1010 | <b>874</b>   | 903  | 1024  |
| Calcium          | ppm      | ASTM D5185m | 1070 | <b>1086</b>  | 1069 | 1150  |
| Phosphorus       | ppm      | ASTM D5185m | 1150 | <b>956</b>   | 1098 | 1055  |
| Zinc             | ppm      | ASTM D5185m | 1270 | <b>1166</b>  | 1219 | 1284  |
| Sulfur           | ppm      | ASTM D5185m | 2060 | <b>2610</b>  | 3464 | 3694  |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>15.0</b>  | 13.9 | 15.8  |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 9.8  | <b>8.1</b>   | 8.6  | 6.2   |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.4 | <b>12.9</b>  | 14.2 | 14.1  |

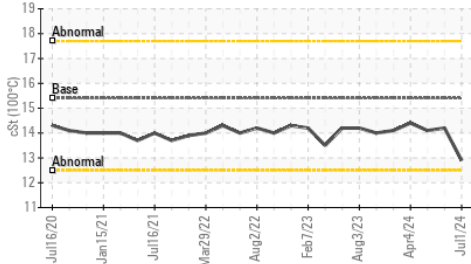
**FT-IR (Direct Trend)**



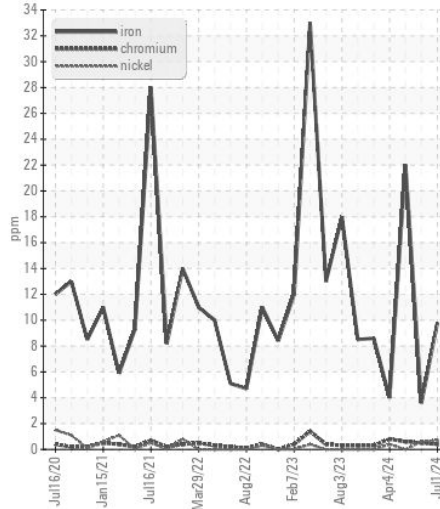
**Base Number**



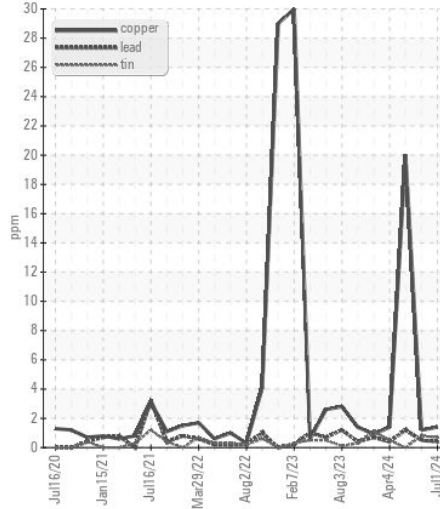
**Viscosity @ 100°C**



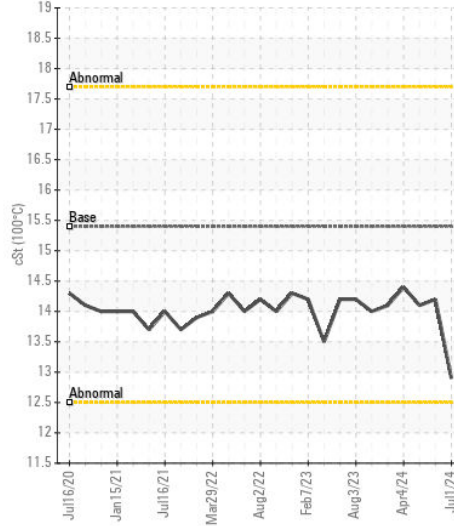
**Ferrous Alloys**



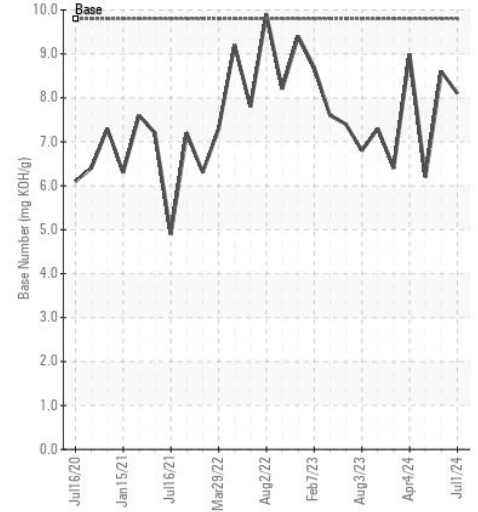
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : GFL0119279  
**Lab Number** : 06226050  
**Unique Number** : 11109543  
**Test Package** : FLEET

**Received** : 02 Jul 2024  
**Tested** : 03 Jul 2024  
**Diagnosed** : 03 Jul 2024 - Wes Davis

**GFL Environmental - 657 - Charlottesville Hauling**  
 5498 Richmond Road  
 Troy, VA  
 US 22974  
 Contact: Brian Ulickas  
 bulickas@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: