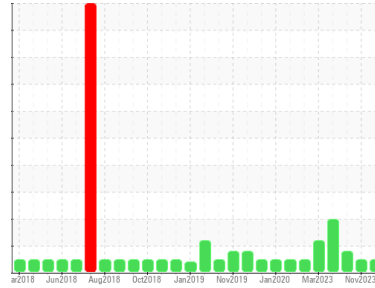


# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**Plymouth & Brockton**  
Machine Id  
**11403**

Component  
**Diesel Engine**  
Fluid  
**PETRO CANADA DURON SHP 15W40 (39 QTS)**

## 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>PCA0104705</b>  | PCA0104683  | PCA0090718  |
| Sample Date   | Client Info |             | <b>07 Dec 2023</b> | 01 Nov 2023 | 28 Oct 2023 |
| Machine Age   | mls         | Client Info | <b>762840</b>      | 757123      | 716613      |
| Oil Age       | mls         | Client Info | <b>6000</b>        | 12000       | 716613      |
| Oil Changed   | Client Info |             | <b>Changed</b>     | Not Changd  | Not Changd  |
| Sample Status |             |             | <b>NORMAL</b>      | NORMAL      | ABNORMAL    |

## 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 | >200    | <b>6</b>     | 21       | 55 |
| Chromium | ppm    | ASTM D5185m | >10     | <b>&lt;1</b> | 0        | 2  |
| 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 | >30     | <b>3</b>     | 2        | 13 |
| Lead     | ppm    | ASTM D5185m | >30     | <b>0</b>     | <1       | 3  |
| Copper   | ppm    | ASTM D5185m | >30     | <b>&lt;1</b> | 0        | <1 |
| Tin      | ppm    | ASTM D5185m | >4      | <b>0</b>     | 0        | 0  |
| 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 | 0       | <b>7</b>    | 6        | 7    |
| Barium     | ppm    | ASTM D5185m | 0       | <b>0</b>    | 0        | 0    |
| Molybdenum | ppm    | ASTM D5185m | 60      | <b>63</b>   | 57       | 56   |
| Manganese  | ppm    | ASTM D5185m | 0       | <b>0</b>    | 0        | <1   |
| Magnesium  | ppm    | ASTM D5185m | 1010    | <b>939</b>  | 968      | 810  |
| Calcium    | ppm    | ASTM D5185m | 1070    | <b>1080</b> | 1128     | 1005 |
| Phosphorus | ppm    | ASTM D5185m | 1150    | <b>1029</b> | 1110     | 821  |
| Zinc       | ppm    | ASTM D5185m | 1270    | <b>1184</b> | 1429     | 1100 |
| Sulfur     | ppm    | ASTM D5185m | 2060    | <b>3522</b> | 3319     | 2704 |

## CONTAMINANTS

|           | method | limit/base  | current | history1  | history2 |   |
|-----------|--------|-------------|---------|-----------|----------|---|
| Silicon   | ppm    | ASTM D5185m | >30     | <b>18</b> | 2        | 5 |
| Sodium    | ppm    | ASTM D5185m |         | <b>0</b>  | 1        | 3 |
| Potassium | ppm    | ASTM D5185m | >20     | <b>2</b>  | 0        | 0 |

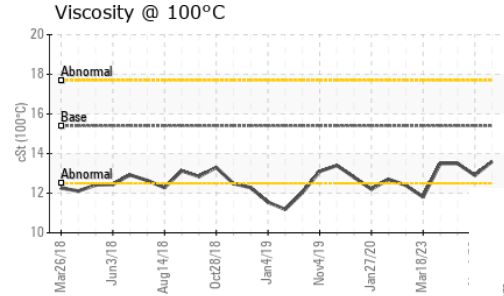
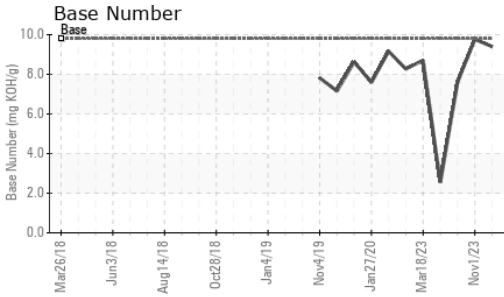
## INFRA-RED

|           | method   | limit/base  | current | history1    | history2 |       |
|-----------|----------|-------------|---------|-------------|----------|-------|
| Soot %    | %        | *ASTM D7844 | >3      | <b>0.4</b>  | 1.5      | ▲ 4.2 |
| Nitration | Abs/cm   | *ASTM D7624 | >20     | <b>5.4</b>  | 8.4      | 14.7  |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30     | <b>17.8</b> | 20.8     | 30.4  |

## FLUID DEGRADATION

|                  | method   | limit/base  | current | history1    | history2 |      |
|------------------|----------|-------------|---------|-------------|----------|------|
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25     | <b>13.0</b> | 14.5     | 23.0 |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 9.8     | <b>9.40</b> | 9.77     | 7.61 |

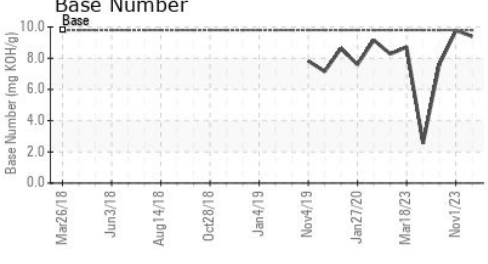
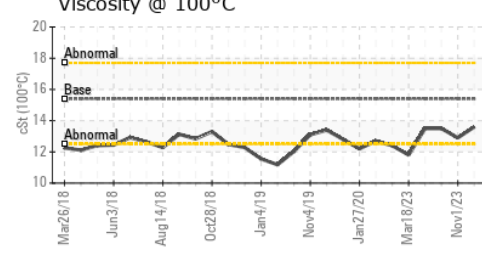
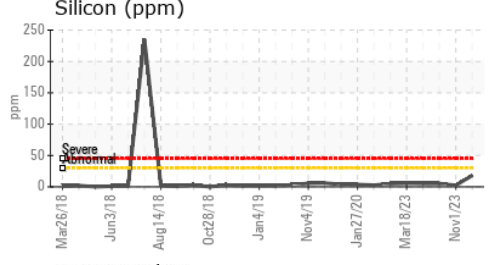
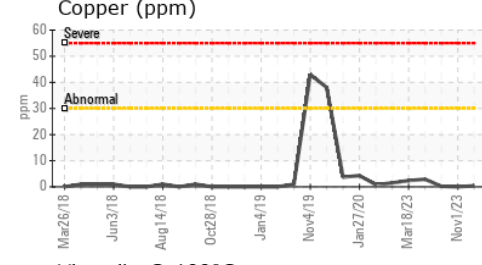
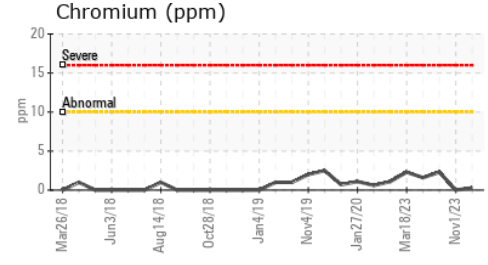
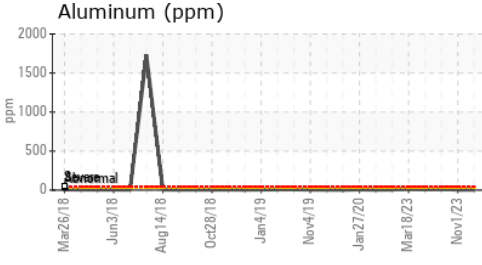
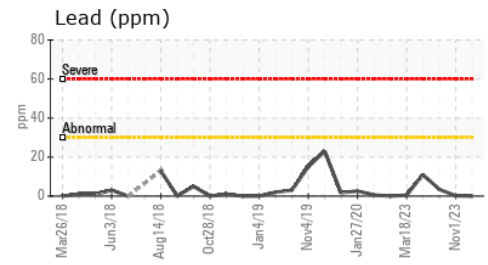
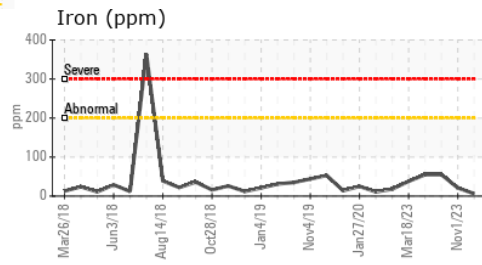
# OIL ANALYSIS REPORT



| 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>13.6</b> | 12.9     | 13.5 |

## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : PCA0104705 **Received** : 21 Dec 2023  
**Lab Number** : **06042310** **Diagnosed** : 22 Dec 2023  
**Unique Number** : 10802918 **Diagnostician** : Wes Davis  
**Test Package** : MOB 2

**PLYMOUTH & BROCKTON**  
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 PLYMOUTH, MA  
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 Contact: Donald Pelquin  
 Dpelquin@P-B.com  
 T: (508)732-6039  
 F: (508)732-6091

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)