

# **OIL ANALYSIS REPORT**

Sample Rating Trend



#### Area (16041Z) Walgreens Machine Id [Walgreens] 136A61398 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 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.

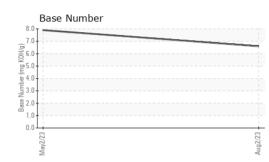
## Fluid Condition

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

| SAMPLE INFOR  | MATION   | method  | limit/base  | current   | history1  | history2   |
|---|--|---|---|---|---|--|
| Sample Number   |  | Client Info   |   | PCA0093830  | PCA0093775  |  |
| Sample Date   |  | Client Info   |   | 02 Aug 2023   | 02 May 2023   |  |
| Machine Age   | mls  | Client Info   |   | 271056  | 258329  |  |
| Oil Age   | mls  | Client Info   |   | 50000   | 25000   |  |
| Oil Changed   |  | Client Info   |   | Changed   | Not Changd  |  |
| Sample Status   |  |   |   | NORMAL  | NORMAL  |  |
| CONTAMINAT  | ION  | method  | limit/base  | current   | history1  | history2   |
| Fuel  |  | WC Method   | >5  | <1.0  | <1.0  |  |
| Glycol  |  | WC Method   |   | NEG   | NEG   |  |
| WEAR METAL  | S  | method  | limit/base  | current   | history1  | history2   |
| Iron  |  | ASTM D5185m   | >80   | 22  | 17  |  |
| Chromium  | ppm<br>ppm   | ASTM D5185m   | >ou<br>>5   | 1   | 1   |  |
| Nickel  | ppm  | ASTM D5185m   | >0  | 0   | 0   |  |
| Titanium  | ppm  | ASTM D5185m   | <i>&gt;L</i>  | 0   | 0   |  |
| Silver  |  | ASTM D5185m   | >3  | 0   | 0   |  |
| Aluminum  | ppm<br>ppm   | ASTM D5185m   | >30   | 4   | 2   |  |
| Lead  |  | ASTM D5185m   | >30   | 4   | 0   |  |
| Copper  | ppm<br>ppm   | ASTM D5185m   | >30   | 6   | 4   |  |
| Tin   |  | ASTM D5185m   | >150  | ہ<br><1   | 4<br><1   |  |
| Vanadium  | ppm<br>ppm   | ASTM D5185m   | >0  | 0   | 0   |  |
| Cadmium   |  | ASTM D5185m   |   | 0   | 0   |  |
|   | ppm  | ASTIVI DOTODIII   |   | U   | 0   |  |
|   |  |   |   |   |   |  |
| ADDITIVES   |  | method  | limit/base  | current   | history1  | history2   |
| ADDITIVES<br>Boron  | ppm  | ASTM D5185m   | 2   | 0   | 2   | history2   |
| Boron<br>Barium   | ppm<br>ppm   |   | 2<br>0  | 0<br>2  | 2<br>0  |  |
| Boron<br>Barium<br>Molybdenum   |  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50  | 0<br>2<br>68  | 2<br>0<br>63  |  |
| Boron<br>Barium<br>Molybdenum<br>Manganese  | ppm  | ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>0   | 0<br>2  | 2<br>0<br>63<br><1  |  |
| Boron<br>Barium<br>Molybdenum   | ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50  | 0<br>2<br>68  | 2<br>0<br>63  |  |
| Boron<br>Barium<br>Molybdenum<br>Manganese  | ppm<br>ppm<br>ppm  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>0   | 0<br>2<br>68<br><1  | 2<br>0<br>63<br><1  |  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus  | ppm<br>ppm<br>ppm<br>ppm   | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>0<br>950<br>1050<br>995   | 0<br>2<br>68<br><1<br>928   | 2<br>0<br>63<br><1<br>977<br>1138<br>993  |  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc  | ppm<br>ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>0<br>950<br>1050  | 0<br>2<br>68<br><1<br>928<br>1154   | 2<br>0<br>63<br><1<br>977<br>1138   | <br><br><br>   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>0<br>950<br>1050<br>995   | 0<br>2<br>68<br><1<br>928<br>1154<br>1019   | 2<br>0<br>63<br><1<br>977<br>1138<br>993  |  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>950<br>1050<br>995<br>1180  | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242   | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258  |  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                      | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600  | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242<br>2851   | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258<br>3259  |  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm               | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600  | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242<br>2851<br>current  | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258<br>3259<br>history1  |  |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>TS         | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600<br><b>limit/base</b><br>>20  | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242<br>2851<br>current<br>6   | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258<br>3259<br>history1<br>6   | <br><br><br><br><br>history2   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium   | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>TS  | ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br><b>method</b><br>ASTM D5185m   | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600<br><b>limit/base</b><br>>20  | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242<br>2851<br>current<br>6<br>0  | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258<br>3259<br>history1<br>6<br>2  | <br><br><br><br><br><br>history2   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>TS  | ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600<br><i>limit/base</i><br>>20  | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242<br>2851<br>current<br>6<br>0<br>9   | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258<br>3259<br>history1<br>6<br>2<br>7   | <br><br><br><br><br>history2<br><br>   |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED                                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>TS         | ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>Imit/base</b><br>>20<br><b>Imit/base</b><br>>20   | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242<br>2851<br>current<br>6<br>0<br>9   | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258<br>3259<br>history1<br>6<br>2<br>7<br>7<br>history1                              | <br><br><br><br><br>history2<br><br><br><br>history2                         |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %                           | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>TS         | ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>Imit/base</b><br>>20<br><b>Imit/base</b><br>>20   | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242<br>2851<br><i>current</i><br>6<br>0<br>9<br><i>current</i>                    | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258<br>3259<br>history1<br>6<br>2<br>7<br>7<br>history1<br>0.5                       | <br><br><br><br><br>history2<br><br><br><br>history2                         |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m<br>ASTM D5185m                              | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600<br><i>imit/base</i><br>>20<br><i>imit/base</i><br>>20  | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242<br>2851<br>current<br>6<br>0<br>9<br>current<br>0.6<br>8.6                    | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258<br>3259<br>history1<br>6<br>2<br>7<br>history1<br>0.5<br>8.1                     | <br><br><br><br><br><br>history2<br><br><br>history2<br><br>history2         |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration<br>Sulfation | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m<br>ASTM D7844<br>*ASTM D7624<br>*ASTM D7415                | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>imit/base</b><br>>20<br><b>imit/base</b><br>>3<br>>20<br>>30  | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242<br>2851<br>current<br>6<br>0<br>9<br>current<br>0.6<br>8.6<br>20.3            | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258<br>3259<br>history1<br>6<br>2<br>7<br>7<br>history1<br>0.5<br>8.1<br>19.6        | <br><br><br><br><br>history2<br><br>history2<br><br>history2<br><br>history2 |
| Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus<br>Zinc<br>Sulfur<br>CONTAMINAN<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot %<br>Nitration<br>Sulfation | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm | ASTM D5185m<br>ASTM D7844<br>*ASTM D7844<br>*ASTM D7844 | 2<br>0<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br>2600<br>20<br>20<br>20<br>20<br>20<br>3<br>20<br>20<br>20<br>3<br>3<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20<br>20 | 0<br>2<br>68<br><1<br>928<br>1154<br>1019<br>1242<br>2851<br>Current<br>6<br>0<br>9<br>Current<br>0.6<br>8.6<br>20.3<br>Current | 2<br>0<br>63<br><1<br>977<br>1138<br>993<br>1258<br>3259<br>history1<br>6<br>2<br>7<br>history1<br>0.5<br>8.1<br>19.6<br>history1 | <br><br><br><br><br>history2<br><br>history2<br><br>history2<br><br>history2 |



# **OIL ANALYSIS REPORT**



#### Viscosity @ 100°C





Base Number

8.

(b/H0) 5.0

1) 4.0 3.0 2.0

1.0·

SCICIMEN 3

Aug2/23

: 23 Aug 2023

: 24 Aug 2023



 Unique Number
 : 10617955
 Diagnostician
 : Wes Davis

 Certificate L2367
 Test Package
 : FLEET

 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)

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received

Diagnosed

Viscosity @ 100°C

14

13

8

Laboratory

Sample No.

Lab Number

Mav2/73

Abnorma

: PCA0093830

: 05932684

cSt (100°C)

Jg2/23