

# **OIL ANALYSIS REPORT**

Sample Rating Trend



Machine Id **731572** Component **Diesel Engine** Fluid **PETRO CANADA DURON SHP 10W30 (--- GAL)** 

# DIAGNOSIS

#### Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

## Wear

All component wear rates are normal.

#### Contamination

There is no indication of any contamination in the oil.

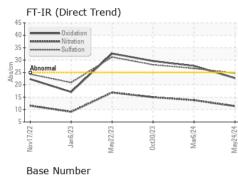
### Fluid Condition

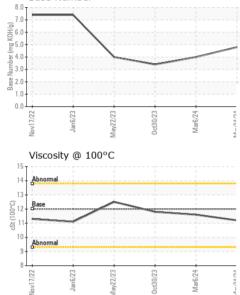
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

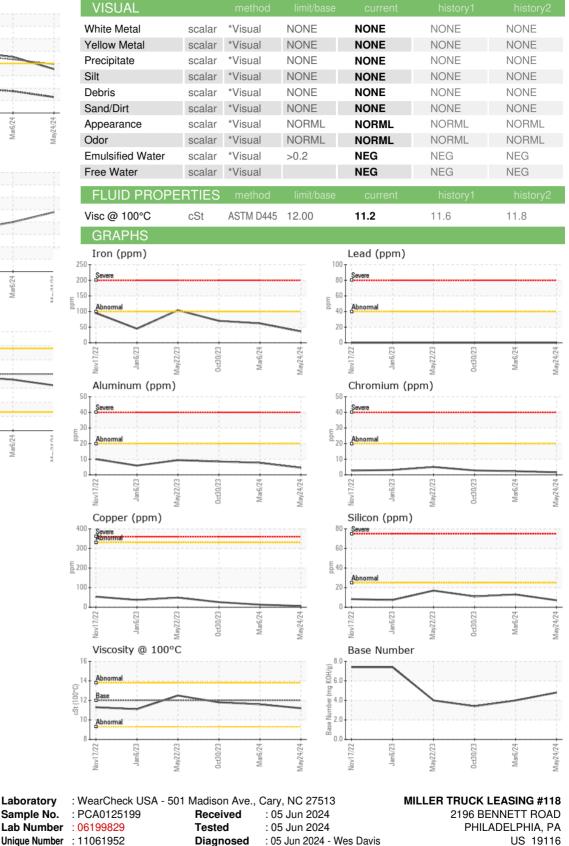
| SAMPLE INFOR   | MATION   | method   | limit/base  | current  | history1  | history2  |
|--|--|--|---|--|---|---|
| Sample Number  |  | Client Info  |   | PCA0125199   | PCA0118994  | PCA0108324  |
| Sample Date  |  | Client Info  |   | 24 May 2024  | 06 Mar 2024   | 30 Oct 2023   |
| Machine Age  | mls  | Client Info  |   | 390079   | 349965  | 282531  |
| Oil Age  | mls  | Client Info  |   | 390079   | 67434   | 282531  |
| Oil Changed  |  | Client Info  |   | Not Changd   | Changed   | Changed   |
| Sample Status  |  |  |   | NORMAL   | NORMAL  | NORMAL  |
| CONTAMINAT   | ION  | method   | limit/base  | current  | history1  | history2  |
| Fuel   |  | WC Method  | >5  | <1.0   | <1.0  | <1.0  |
| Water  |  | WC Method  | >0.2  | NEG  | NEG   | NEG   |
| Glycol   |  | WC Method  |   | NEG  | NEG   | NEG   |
| WEAR METAL   | S  | method   | limit/base  | current  | history1  | history2  |
| Iron   | ppm  | ASTM D5185m  | >100  | 36   | 62  | 70  |
| Chromium   | ppm  | ASTM D5185m  | >20   | 2  | 2   | 3   |
| Nickel   | ppm  | ASTM D5185m  | >4  | 0  | 0   | 0   |
| Titanium   | ppm  | ASTM D5185m  |   | 13   | 1   | 5   |
| Silver   | ppm  | ASTM D5185m  | >3  | 0  | 0   | 0   |
| Aluminum   | ppm  | ASTM D5185m  | >20   | 4  | 8   | 8   |
| Lead   | ppm  | ASTM D5185m  | >40   | 0  | 0   | 0   |
| Copper   | ppm  | ASTM D5185m  | >330  | 6  | 13  | 26  |
| Tin  | ppm  | ASTM D5185m  | >15   | <1   | 0   | 0   |
| Vanadium   | ppm  | ASTM D5185m  |   | 0  | 0   | 0   |
| <b>a</b>   |  |  |   |  |   |   |
| Cadmium  | ppm  | ASTM D5185m  |   | 0  | 0   | 0   |
| ADDITIVES  | ppm  | ASTM D5185m<br>method  | limit/base  | 0<br>current   | 0<br>history1   | 0<br>history2   |
|  | ppm<br>ppm   |  | limit/base  | -  | -   | -   |
| ADDITIVES  |  | method   |   | current  | history1  | history2  |
| ADDITIVES<br>Boron   | ppm  | method<br>ASTM D5185m  | 2   | current  | history1<br>4   | history2<br>2   |
| ADDITIVES<br>Boron<br>Barium   | ppm<br>ppm   | method<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50  | current<br>11<br><1  | history1<br>4<br>0  | history2<br>2<br>0  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum   | ppm<br>ppm<br>ppm  | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50  | current<br>11<br><1<br>54  | history1<br>4<br>0<br>65  | history2<br>2<br>0<br>58  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese  | ppm<br>ppm<br>ppm<br>ppm   | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m   | 2<br>0<br>50<br>0   | current<br>11<br><1<br>54<br>1   | history1<br>4<br>0<br>65<br>0   | history2<br>2<br>0<br>58<br><1  |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium   | ppm<br>ppm<br>ppm<br>ppm<br>ppm  | method<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m<br>ASTM D5185m  | 2<br>0<br>50<br>0<br>950  | current<br>11<br><1<br>54<br>1<br>884  | history1<br>4<br>0<br>65<br>0<br>987  | history2<br>2<br>0<br>58<br><1<br>854   |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                                   | method<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  | current     11     <1     54     1     884     1241  | history1<br>4<br>0<br>65<br>0<br>987<br>1279  | history2<br>2<br>0<br>58<br><1<br>854<br>1194   |
| ADDITIVES<br>Boron<br>Barium<br>Molybdenum<br>Manganese<br>Magnesium<br>Calcium<br>Phosphorus  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                                   | method<br>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   | current     11     <1     54     1     884     1241     1072   | history1<br>4<br>0<br>65<br>0<br>987<br>1279<br>1192  | history2<br>2<br>0<br>58<br><1<br>854<br>1194<br>940  |
| ADDITIVES<br>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<br>ppm                     | method<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  | current     11     <1     54     1     884     1241     1072     1242  | history1<br>4<br>0<br>65<br>0<br>987<br>1279<br>1192<br>1348  | history2     2     0     58     <1     854     1194     940     1178  |
| ADDITIVES<br>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                     | method<br>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  | current     11     <1     54     1     884     1241     1072     1242     3038     current     7                 | history1     4     0     65     0     987     1279     1192     1348     2786     history1     13                   | history2   2   0   58   <1   854   1194   940   1178   2126   history2   11   |
| ADDITIVES<br>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<br>ppm              | method<br>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  | current     11     <1     54     1     884     1241     1072     1242     3038     current     7     2           | history1<br>4<br>0<br>65<br>0<br>987<br>1279<br>1192<br>1348<br>2786<br>history1                                    | history2<br>2<br>0<br>58<br><1<br>854<br>1194<br>940<br>1178<br>2126<br>history2  |
| ADDITIVES<br>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>ppm<br>ppm       | method<br>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>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>limit/base</b>  | current     11     <1     54     1     884     1241     1072     1242     3038     current     7                 | history1     4     0     65     0     987     1279     1192     1348     2786     history1     13                   | history2   2   0   58   <1   854   1194   940   1178   2126   history2   11   |
| ADDITIVES<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>ppm<br>ppm       | method     ASTM D5185m   | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>limit/base</b>  | current     11     <1     54     1     884     1241     1072     1242     3038     current     7     2           | history1     4     0     65     0     987     1279     1192     1348     2786     history1     13     0             | history2   2   0   58   <1   854   1194   940   1178   2126   history2   11   4   11   4   11   history2                              |
| ADDITIVES<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  | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm       | method     ASTM D5185m   | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>limit/base</b><br>>25<br>>20<br><b>limit/base</b><br>>3 | current   11   <1   54   1   884   1241   1072   1242   3038   current   7   2   6   current   1.1               | history1   4   0   65   0   987   1279   1192   1348   2786   history1   13   0   14   history1   1.5               | history2   2   0   58   <1   854   1194   940   1178   2126   history2   11   4   11   4   11   4   11   4   11   4   11   15         |
| ADDITIVES<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>ppm<br><b>TS</b> | method     ASTM D5185m   | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>limit/base</b><br>>25<br>>20<br><b>limit/base</b><br>>3 | current   11   <1   54   1   884   1241   1072   1242   3038   current   7   2   6   current                     | history1   4   0   65   0   987   1279   1192   1348   2786   history1   13   0   14                                | history2   2   0   58   <1   854   1194   940   1178   2126   history2   11   4   11   4   11   history2                              |
| ADDITIVES<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<br>Soot %                           | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm       | method     ASTM D5185m   | 2<br>0<br>50<br>0<br>950<br>1050<br>995<br>1180<br>2600<br><b>limit/base</b><br>>25<br>>20<br><b>limit/base</b><br>>3 | current   11   <1   54   1   884   1241   1072   1242   3038   current   7   2   6   current   1.1               | history1   4   0   65   0   987   1279   1192   1348   2786   history1   13   0   14   history1   1.5               | history2   2   0   58   <1   854   1194   940   1178   2126   history2   11   4   11   4   11   4   11   4   11   4   11   4   11   5 |
| ADDITIVES<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<br>Soot %<br>Nitration              | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm       | method   ASTM D5185m   ASTM D7844   *ASTM D7624   *ASTM D7415   method   | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600<br><i>imit/base</i><br>>25<br>>20<br><i>imit/base</i><br>>3<br>>20 | current   11   <1   54   1   884   1241   1072   1242   3038   current   7   2   6   current   1.1   11.4        | history1   4   0   65   0   987   1279   1348   2786   history1   13   0   14   history1   13.8                     | history2   2   0   58   <1   854   1194   940   1178   2126   history2   11   4   11   4   11   history2   1.5   15.0                 |
| ADDITIVES<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<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       | method     ASTM D5185m     ASTM D5185m | 2<br>0<br>50<br>950<br>1050<br>995<br>1180<br>2600<br><b>imit/base</b><br>>25<br><b>imit/base</b><br>>3<br>>20        | current   11   <1   54   1   884   1241   1072   1242   3038   current   7   2   6   current   1.1   11.4   24.7 | history1   4   0   65   0   987   1279   1192   1348   2786   history1   13   0   14   history1   1.5   13.8   26.6 | history2   2   0   58   <1   854   1194   940   1178   2126   history2   11   4   11   4   11   4   15.0   28.1                       |



# **OIL ANALYSIS REPORT**







Unique Number : 11061952 Test Package : MOB 1 (Additional Tests: TBN) Certificate 12367

Laboratory

Sample No.

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)

Report Id: MILPHINE [WUSCAR] 06199829 (Generated: 06/05/2024 18:28:32) Rev: 1

-St (100°C)

ppm

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