

# **OIL ANALYSIS REPORT**

Area [69192] **MG006** 

Component **Diesel Engine** 

PETRO CANADA DURON SHP 15W40 (--- GAL)

# Sample Rating Trend



# DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: PM-4 changed fluid and filters new purchase)

All component wear rates are normal.

## Contamination

There is no indication of any contamination in the oil.

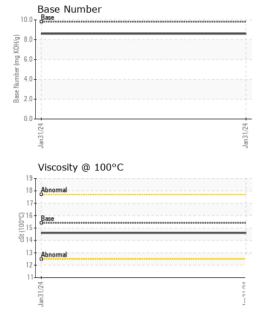
### **Fluid Condition**

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

| GAL)             |          |             |            | Jan 2024    |          |          |
|------------------|----------|-------------|------------|-------------|----------|----------|
| SAMPLE INFOR     | MATION   | method      | limit/base | current     | history1 | history2 |
| Sample Number    |          | Client Info |            | PCA0086502  |          |          |
| Sample Date      |          | Client Info |            | 31 Jan 2024 |          |          |
| Machine Age      | hrs      | Client Info |            | 13191       |          |          |
| Oil Age          | hrs      | Client Info |            | 13191       |          |          |
| Oil Changed      |          | Client Info |            | Changed     |          |          |
| Sample Status    |          |             |            | NORMAL      |          |          |
| CONTAMINAT       | ION      | method      | limit/base | current     | history1 | history2 |
| Fuel             |          | WC Method   | >5         | <1.0        |          |          |
| Water            |          | WC Method   | >0.2       | NEG         |          |          |
| Glycol           |          | WC Method   |            | NEG         |          |          |
| WEAR METAL       | S        | method      | limit/base | current     | history1 | history2 |
| Iron             | ppm      | ASTM D5185m | >100       | 6           |          |          |
| Chromium         | ppm      | ASTM D5185m | >20        | <1          |          |          |
| Nickel           | ppm      | ASTM D5185m | >4         | 0           |          |          |
| Titanium         | ppm      | ASTM D5185m |            | 0           |          |          |
| Silver           | ppm      | ASTM D5185m | >3         | 0           |          |          |
| Aluminum         | ppm      | ASTM D5185m | >20        | <1          |          |          |
| Lead             | ppm      | ASTM D5185m | >40        | 0           |          |          |
| Copper           | ppm      | ASTM D5185m | >330       | <1          |          |          |
| Tin              | ppm      | ASTM D5185m | >15        | <1          |          |          |
| Vanadium         | ppm      | ASTM D5185m |            | <1          |          |          |
| Cadmium          | ppm      | ASTM D5185m |            | 0           |          |          |
| ADDITIVES        |          | method      | limit/base | current     | history1 | history2 |
| Boron            | ppm      | ASTM D5185m | 0          | 182         |          |          |
| Barium           | ppm      | ASTM D5185m | 0          | 0           |          |          |
| Molybdenum       | ppm      | ASTM D5185m | 60         | 5           |          |          |
| Manganese        | ppm      | ASTM D5185m | 0          | <1          |          |          |
| Magnesium        | ppm      | ASTM D5185m | 1010       | 68          |          |          |
| Calcium          | ppm      | ASTM D5185m | 1070       | 2031        |          |          |
| Phosphorus       | ppm      | ASTM D5185m | 1150       | 895         |          |          |
| Zinc             | ppm      | ASTM D5185m | 1270       | 1122        |          |          |
| Sulfur           | ppm      | ASTM D5185m | 2060       | 3352        |          |          |
| CONTAMINAN       | ITS      | method      | limit/base | current     | history1 | history2 |
| Silicon          | ppm      | ASTM D5185m | >25        | 4           |          |          |
| Sodium           | ppm      | ASTM D5185m |            | 0           |          |          |
| Potassium        | ppm      | ASTM D5185m | >20        | 6           |          |          |
| INFRA-RED        |          | method      | limit/base | current     | history1 | history2 |
| Soot %           | %        | *ASTM D7844 | >3         | 0.1         |          |          |
| Nitration        | Abs/cm   | *ASTM D7624 | >20        | 5.8         |          |          |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30        | 20.3        |          |          |
| FLUID DEGRAI     | DATION   | method      | limit/base | current     | history1 | history2 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25        | 16.6        |          |          |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 9.8        | 8.6         |          |          |



# **OIL ANALYSIS REPORT**



| VISUAL                  |        | method    | limit/base | current | history1 | history2 |
|-------------------------|--------|-----------|------------|---------|----------|----------|
| White Metal             | scalar | *Visual   | NONE       | NONE    |          |          |
| Yellow Metal            | scalar | *Visual   | NONE       | NONE    |          |          |
| Precipitate             | scalar | *Visual   | NONE       | NONE    |          |          |
| Silt                    | scalar | *Visual   | NONE       | NONE    |          |          |
| Debris                  | scalar | *Visual   | NONE       | NONE    |          |          |
| Sand/Dirt               | scalar | *Visual   | NONE       | NONE    |          |          |
| Appearance              | scalar | *Visual   | NORML      | NORML   |          |          |
| Odor                    | scalar | *Visual   | NORML      | NORML   |          |          |
| <b>Emulsified Water</b> | scalar | *Visual   | >0.2       | NEG     |          |          |
| Free Water              | scalar | *Visual   |            | NEG     |          |          |
| FLUID PROPE             | RTIES  | method    | limit/base | current | history1 | history2 |
| Visc @ 100°C            | cSt    | ASTM D445 | 15.4       | 14.6    |          |          |

| Visc @ 100°C                                 | cSt | ASTM D445 | 15.4     | 14.6         |   |            |
|--|-----|-----------|----------|--------------|---|------------|
| GRAPHS                                       |     |           |          |              |   |            |
| Iron (ppm)                                   |     |           |          | Lead (ppm    | )                                       |            |
| 250 Severe                                   |     |           |          | 80 Severe    |   |            |
|  |     |           |          | co           |   |            |
| Abnormal                                     |     |           |          | Abnormal     | *************************************** |            |
| 50   |     |           |          | 20           |   |            |
| 0 + 50                                       |     |           | 24       | 0 7          |   | - +2       |
| Jan31/24                                     |     |           | Jan31/24 | Jan31/24     |   | Jan31/24   |
| Aluminum (ppm                                | )   |           |          | Chromium     | (ppm)                                   |            |
| 40 Severe                                    |     |           |          | Severe       |   |            |
| g 30   |     |           |          | Abnormal     |   |            |
| Abnormal                                     |     |           |          | 20 7         | *************************************** | -          |
| 10   |     |           |          | 10           |   |            |
| Jan31/24                                     |     |           | Jan31/24 | Jan31/24-    |   | Jan31/24 - |
|  |     |           | Jan      |              |   | Jan3       |
| Copper (ppm)                                 |     |           |          | Silicon (ppr | m)                                      |            |
| Severe Patriorinal                           |     |           |          | 60           |   |            |
| E 200  |     |           |          | E 40 -       |   |            |
|  |     |           |          | Abnormal     |   |            |
| 100  |     |           |          | 20           |   |            |
| Jan31/24                                     |     |           | Jan31/24 | Oan31/24     |   | Jan31/24   |
| Jan3   |     |           | Jan3     | Jan3         |   | Jan3       |
| Viscosity @ 100°                             | ,C  |           |          | Base Numb    | er                                      |            |
| 18 Abnormal                                  |     |           |          |              |   |            |
|  |     |           |          | 8.0          |   |            |
| (\$\frac{1}{0}\$ 16 - Base   Base   Abnormal |     |           |          | 4.0          |   |            |
| 12   |     |           |          | 2.0          |   |            |
| 10 + + 2/                                    |     |           | 1/24     | 0.0          |   | 1/24       |
| Jan31/24                                     |     |           | Jan31/24 | Jan31/24     |   | Jan31/24   |
|  |     |           |          |              |   |            |





Laboratory Sample No.

: PCA0086502 Lab Number : 06088099

Unique Number : 10875544

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

: 13 Feb 2024 **Tested** : 14 Feb 2024 Diagnosed

: 15 Feb 2024 - Don Baldridge

Kemp Quarries - Pryor Stone - Pryor 1050 E 520 Rd

Pryor, OK US 74361

Test Package: MOB 1 (Additional Tests: TBN) To discuss this sample report, contact Customer Service at 1-800-237-1369. Contact: PRYOR NOTIFICATIONS pryor@pryorstone.com T:

\* - 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)

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