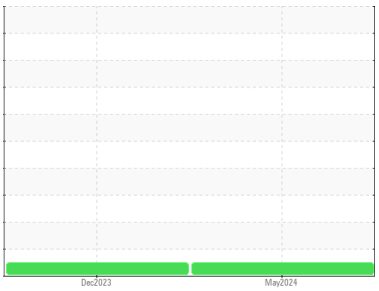
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**334684**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 10W30 (--- QTS)**

## DIAGNOSIS

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

**Wear**
Metal levels are typical for a components first oil change.

**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 | | **PCA0124078** | PCA0099712 | --- |
| Sample Date | | Client Info | | **23 May 2024** | 18 Dec 2023 | --- |
| Machine Age | mls | Client Info | | **30936** | 20206 | --- |
| Oil Age | mls | Client Info | | **30936** | 20206 | --- |
| Oil Changed | | Client Info | | **Changed** | Changed | --- |
| Sample Status | | | | **NORMAL** | NORMAL | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >5 | **<1.0** | <1.0 | --- |
| Water | | WC Method | >0.2 | **NEG** | NEG | --- |
| Glycol | | WC Method | | **NEG** | NEG | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **71** | 51 | --- |
| Chromium | ppm | ASTM D5185m | >20 | **2** | <1 | --- |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | 0 | --- |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | --- |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | --- |
| Aluminum | ppm | ASTM D5185m | >20 | **17** | 11 | --- |
| Lead | ppm | ASTM D5185m | >40 | **0** | 0 | --- |
| Copper | ppm | ASTM D5185m | >330 | **33** | 27 | --- |
| Tin | ppm | ASTM D5185m | >15 | **3** | 2 | --- |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | --- |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | --- |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 2 | **23** | 26 | --- |
| Barium | ppm | ASTM D5185m | 0 | **<1** | 1 | --- |
| Molybdenum | ppm | ASTM D5185m | 50 | **44** | 41 | --- |
| Manganese | ppm | ASTM D5185m | 0 | **11** | 10 | --- |
| Magnesium | ppm | ASTM D5185m | 950 | **567** | 514 | --- |
| Calcium | ppm | ASTM D5185m | 1050 | **1701** | 1523 | --- |
| Phosphorus | ppm | ASTM D5185m | 995 | **749** | 767 | --- |
| Zinc | ppm | ASTM D5185m | 1180 | **969** | 913 | --- |
| Sulfur | ppm | ASTM D5185m | 2600 | **2644** | 2186 | --- |

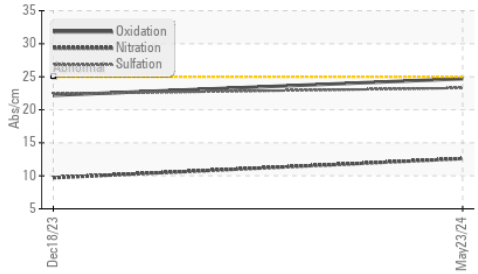
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **11** | 10 | --- |
| Sodium | ppm | ASTM D5185m | | **6** | 5 | --- |
| Potassium | ppm | ASTM D5185m | >20 | **30** | 16 | --- |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.6** | 0.4 | --- |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **12.6** | 9.7 | --- |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **23.3** | 22.4 | --- |

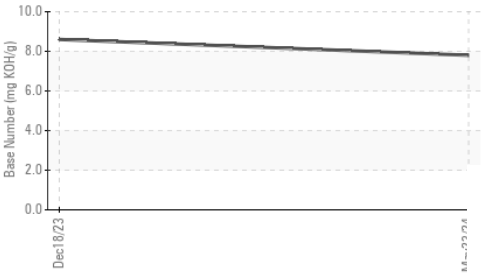
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **24.7** | 22.2 | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **7.8** | 8.6 | --- |

# OIL ANALYSIS REPORT

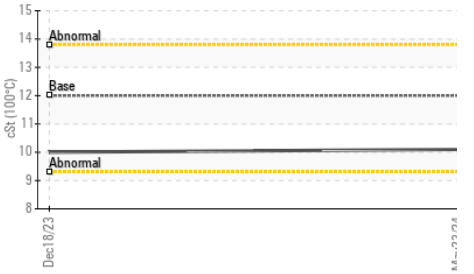
FT-IR (Direct Trend)




Base Number




Viscosity @ 100°C

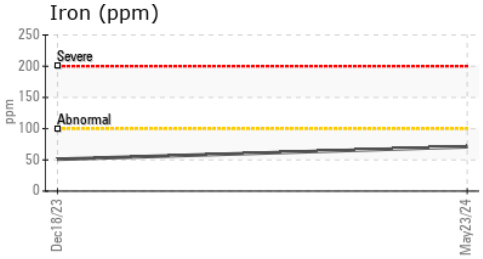



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | --- |
| Silt | 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 | --- |

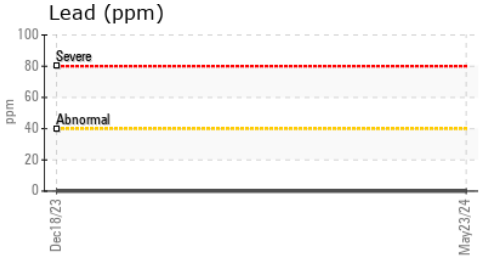
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | **10.1** | 10.0 | --- |

## GRAPHS

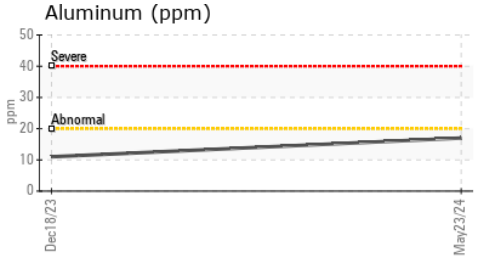
Iron (ppm)



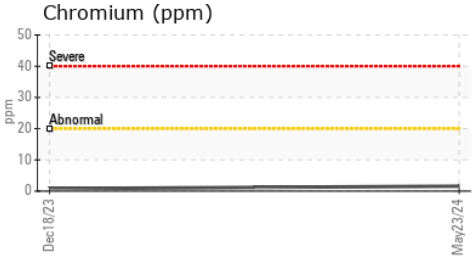

Lead (ppm)



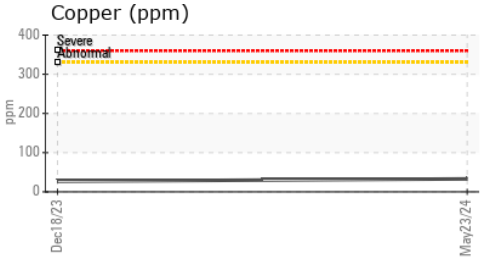

Aluminum (ppm)



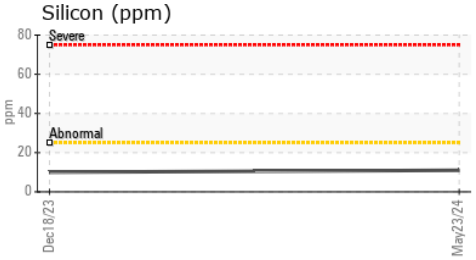

Chromium (ppm)



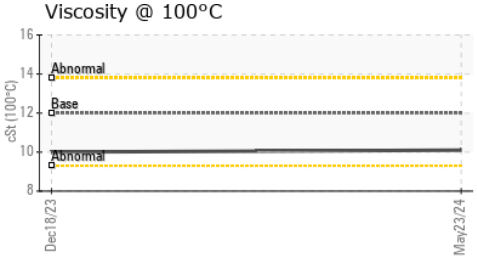

Copper (ppm)



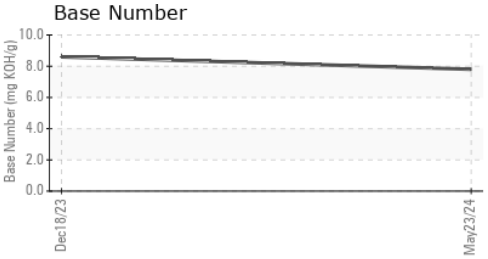

Silicon (ppm)




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0124078 **Received** : 26 Jun 2024
**Lab Number** : 06220697 **Tested** : 27 Jun 2024
**Unique Number** : 11098894 **Diagnosed** : 27 Jun 2024 - Angela Borella
**Test Package** : MOB 1 ( Additional Tests: TBN )

*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)*

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Report Id: MILNEW [WUSCAR] 06220697 (Generated: 06/30/2024 17:12:47) Rev: 1

Contact/Location: Anthony Cursi - MILNEW