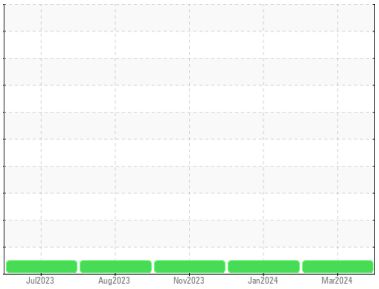
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Area
## Walgreens - Yard Horse
Machine Id
## [Walgreens - Yard Horse] 136A83002
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 10W30 (11 GAL)**

## DIAGNOSIS

**Recommendation**
Resample at the next service interval to monitor.

**Wear**
Metal levels are typical for a new component breaking in.

**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 | | **PCA0103656** | PCA0103627 | PCA0103684 |
| Sample Date | | Client Info | | **05 Mar 2024** | 12 Jan 2024 | 30 Nov 2023 |
| Machine Age | mls | Client Info | | **5583** | 4232 | 3418 |
| Oil Age | mls | Client Info | | **1351** | 814 | 2121 |
| Oil Changed | | Client Info | | **Changed** | Changed | Changed |
| Sample Status | | | | **NORMAL** | NORMAL | NORMAL |

| CONTAMINATION | | 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 METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >100 | **33** | 21 | 56 |
| Chromium | ppm | ASTM D5185m | >20 | **1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >4 | **<1** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **17** | <1 | 2 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | **4** | 1 | 2 |
| Lead | ppm | ASTM D5185m | >40 | **<1** | <1 | <1 |
| Copper | ppm | ASTM D5185m | >330 | **<1** | <1 | 2 |
| Tin | ppm | ASTM D5185m | >15 | **<1** | <1 | 0 |
| Vanadium | ppm | ASTM D5185m | | **<1** | <1 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

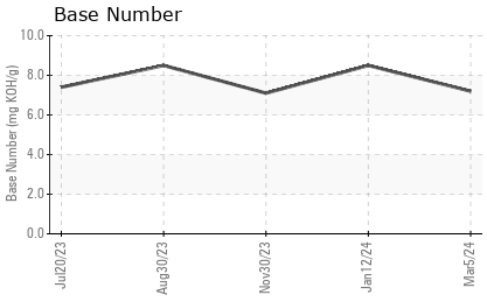
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 2 | **34** | 13 | 10 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **43** | 49 | 36 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 950 | **723** | 733 | 635 |
| Calcium | ppm | ASTM D5185m | 1050 | **1460** | 1230 | 1566 |
| Phosphorus | ppm | ASTM D5185m | 995 | **1056** | 948 | 1013 |
| Zinc | ppm | ASTM D5185m | 1180 | **1243** | 1123 | 1132 |
| Sulfur | ppm | ASTM D5185m | 2600 | **3715** | 2922 | 3589 |

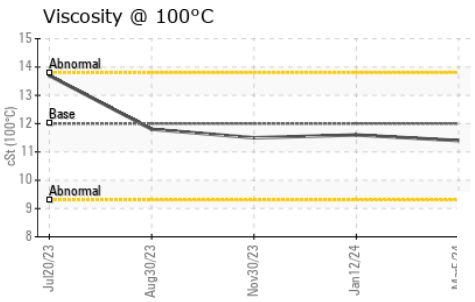
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >25 | **6** | 4 | 8 |
| Sodium | ppm | ASTM D5185m | | **2** | 1 | 0 |
| Potassium | ppm | ASTM D5185m | >20 | **4** | 2 | <1 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **1.2** | 0.8 | 1.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **9.4** | 7.5 | 8.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **19.6** | 18.3 | 19.2 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **14.9** | 13.5 | 13.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **7.2** | 8.5 | 7.1 |

# OIL ANALYSIS REPORT

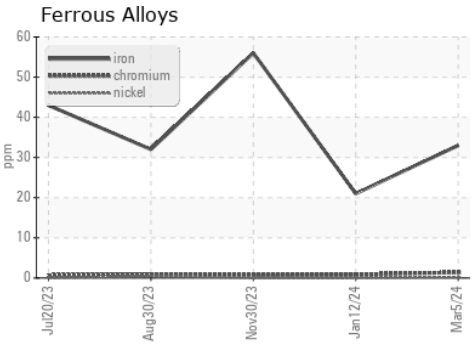


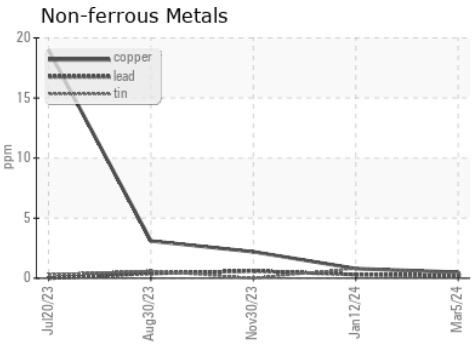



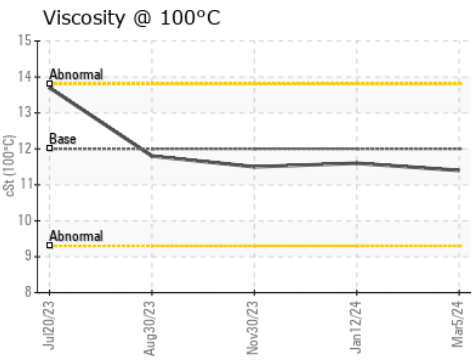

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

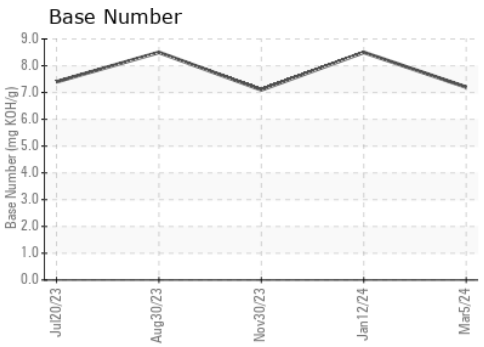
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | **11.4** | 11.6 | 11.5 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0103656
**Lab Number** : 06121410
**Unique Number** : 10930243
**Test Package** : FLEET

**Received** : 18 Mar 2024
**Tested** : 19 Mar 2024
**Diagnosed** : 19 Mar 2024 - Wes Davis

*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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