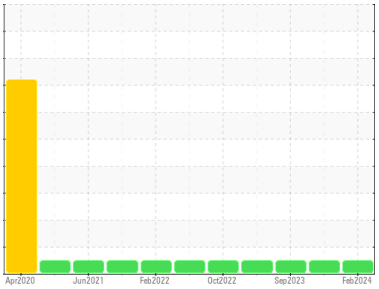
OIL DIAGNOSTICS

# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**T281**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON SHP 10W30 (36 hrs)**

## 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 INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **PCA0104208** | PCA0110868 | PCA0104164 |
| Sample Date | | Client Info | | **05 Feb 2024** | 30 Nov 2023 | 20 Sep 2023 |
| Machine Age | mls | Client Info | | **305233** | 135062 | 278334 |
| Oil Age | mls | Client Info | | **25000** | 0 | 25000 |
| 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 | >110 | **23** | 8 | 31 |
| Chromium | ppm | ASTM D5185m | >4 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | **<1** | 1 | <1 |
| Titanium | ppm | ASTM D5185m | | **<1** | 0 | <1 |
| Silver | ppm | ASTM D5185m | >2 | **<1** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >25 | **3** | 2 | 6 |
| Lead | ppm | ASTM D5185m | >45 | **8** | 2 | 4 |
| Copper | ppm | ASTM D5185m | >85 | **13** | 31 | 6 |
| Tin | ppm | ASTM D5185m | >4 | **2** | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **<1** | 0 | 0 |

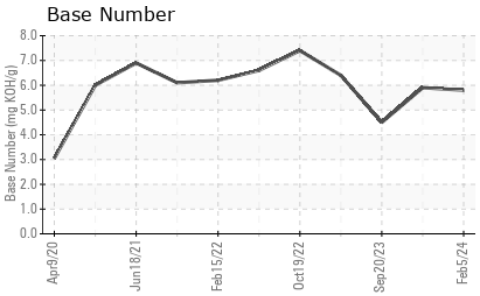
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | 2 | **5** | 0 | 0 |
| Barium | ppm | ASTM D5185m | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 50 | **61** | 61 | 66 |
| Manganese | ppm | ASTM D5185m | 0 | **<1** | 0 | <1 |
| Magnesium | ppm | ASTM D5185m | 950 | **911** | 963 | 940 |
| Calcium | ppm | ASTM D5185m | 1050 | **1111** | 1062 | 1133 |
| Phosphorus | ppm | ASTM D5185m | 995 | **1023** | 1069 | 1034 |
| Zinc | ppm | ASTM D5185m | 1180 | **1190** | 1236 | 1292 |
| Sulfur | ppm | ASTM D5185m | 2600 | **3027** | 3877 | 2631 |

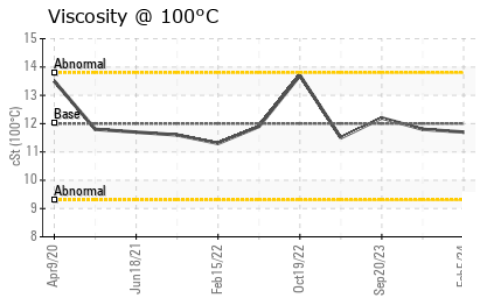
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >30 | **11** | 4 | 16 |
| Sodium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Potassium | ppm | ASTM D5185m | >20 | **6** | 1 | 8 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.6** | 0.8 | 0.6 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **9.8** | 9.6 | 11.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **22.5** | 22.2 | 24.1 |

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **19.6** | 18.4 | 21.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | **5.8** | 5.9 | 4.5 |

# OIL ANALYSIS REPORT

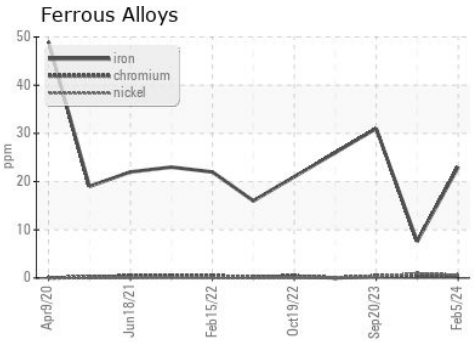


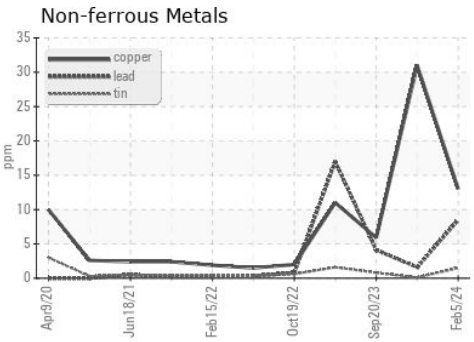



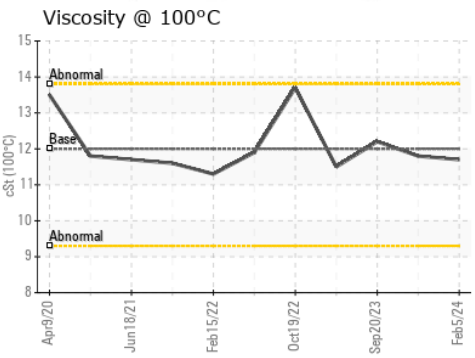

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
|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

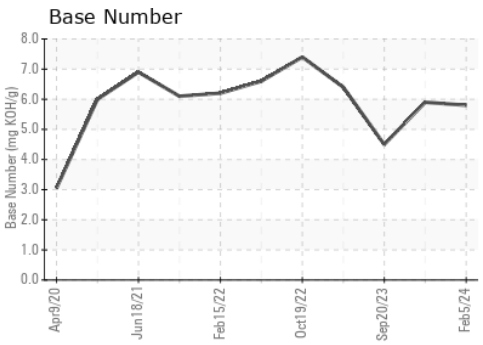
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 12.00 | **11.7** | 11.8 | 12.2 |

## GRAPHS




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : PCA0104208
**Lab Number** : 06090877
**Unique Number** : 10883730
**Test Package** : FLEET

**Received** : 15 Feb 2024
**Tested** : 19 Feb 2024
**Diagnosed** : 19 Feb 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)*

**NW WHITE & CO - SPECIAL SERVICE DIVISION**
100 INDEPENDENCE BLVD
COLUMBIA, SC
US 29210
Contact: George Edwards
gedwards@nwwhite.com
T:
F:

Report Id: NWWSSC [WUSCAR] 06090877 (Generated: 02/19/2024 23:58:39) Rev: 1

Submitted By: Paul Riddick