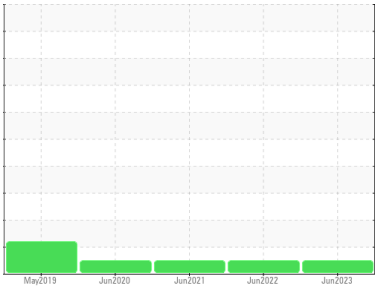
# OIL ANALYSIS REPORT

Sample Rating Trend




NORMAL

Machine Id
**2009**
Component
**Diesel Engine**
Fluid
**PETRO CANADA DURON HP 15W40 (--- LTR)**

## DIAGNOSIS

**Recommendation**
Échantillonner de nouveau l'équipement au prochain intervalle de vidange afin d'en surveiller la condition.

**Wear**
Les taux d'usure de tous les composants sont normaux.

**Contamination**
Il n`y a aucun indice de contamination dans l'huile.

**Fluid Condition**
Le résultat pour le BN indique que la réserve d'alcalinité est acceptable pour l'huile. Le AN est acceptable pour ce fluide. L'état de l'huile permet d'en prolonger l'utilisation.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **PC0073588** | PC0062901 | PC0041362 |
| Sample Date | | Client Info | | **30 Jun 2023** | 17 Jun 2022 | 23 Jun 2021 |
| Machine Age | hrs | Client Info | | **0** | 0 | 0 |
| Oil Age | hrs | Client Info | | **3880** | 2766 | 2869 |
| 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 |
| Glycol | | WC Method | | **NEG** | NEG | 0.0 |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >80 | **34** | 57 | 53 |
| Chromium | ppm | ASTM D5185(m) | >5 | **<1** | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) | >2 | **0** | 0 | <1 |
| Titanium | ppm | ASTM D5185(m) | | **0** | <1 | 0 |
| Silver | ppm | ASTM D5185(m) | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >30 | **5** | 8 | 9 |
| Lead | ppm | ASTM D5185(m) | >30 | **0** | 0 | 0 |
| Copper | ppm | ASTM D5185(m) | >150 | **<1** | 2 | 1 |
| Tin | ppm | ASTM D5185(m) | >5 | **0** | <1 | 0 |
| Antimony | ppm | ASTM D5185(m) | | **<1** | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | | **0** | 0 | 0 |

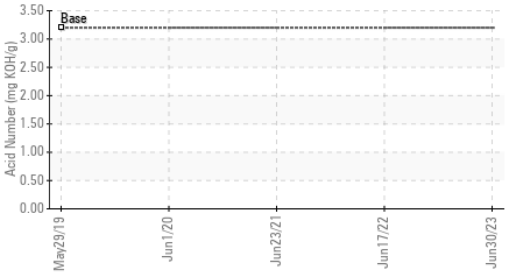
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | 0 | **1** | 2 | 2 |
| Barium | ppm | ASTM D5185(m) | 0 | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 60 | **58** | 57 | 56 |
| Manganese | ppm | ASTM D5185(m) | 0 | **<1** | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 1010 | **975** | 963 | 944 |
| Calcium | ppm | ASTM D5185(m) | 1070 | **1069** | 1080 | 1060 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | **1068** | 1020 | 1016 |
| Zinc | ppm | ASTM D5185(m) | 1270 | **1203** | 1211 | 1243 |
| Sulfur | ppm | ASTM D5185(m) | 2060 | **2621** | 2725 | 2716 |
| Lithium | ppm | ASTM D5185(m) | | **<1** | <1 | <1 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >20 | **4** | 5 | 6 |
| Sodium | ppm | ASTM D5185(m) | | **2** | 2 | 2 |
| Potassium | ppm | ASTM D5185(m) | >20 | **2** | 4 | 5 |

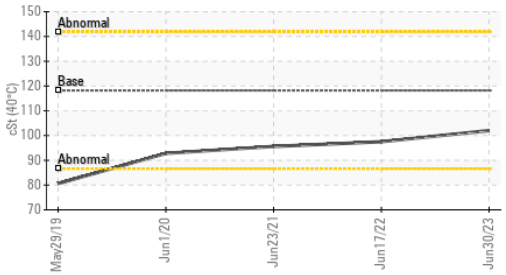
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >3 | **0.1** | 0 | 0.1 |
| Nitration | Abs/cm | ASTM D7624* | >20 | **6.9** | 7.2 | 7.4 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **18.6** | 19.2 | 19.0 |

# OIL ANALYSIS REPORT

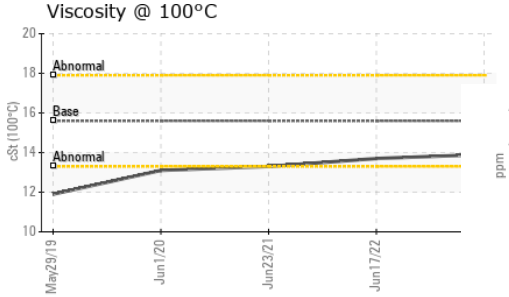
Acid Number



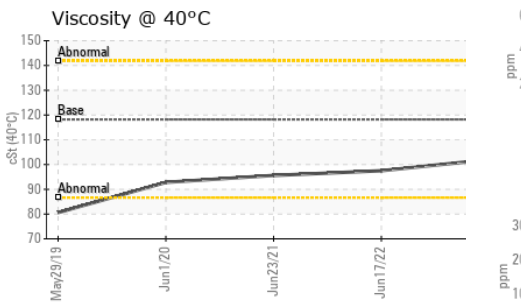

Viscosity @ 40°C




Viscosity @ 100°C




Viscosity @ 40°C



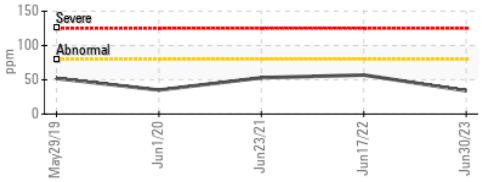

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **14.6** | 15.5 | 14.9 |
| Acid Number (AN) | mg KOH/g | ASTM D974* | 3.2 | **2.40** | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896* | 9.8 | **9.33** | 9.73 | 9.63 |

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | Visual* | NONE | **VLITE** | 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** | VLITE | --- |
| Appearance | scalar | Visual* | NORML | **NORML** | NORML | --- |
| Odor | scalar | Visual* | NORML | **NORML** | NORML | --- |
| Emulsified Water | scalar | Visual* | >0.2 | **NEG** | NEG | NEG |
| Free Water | scalar | Visual* | | **NEG** | NEG | NEG |

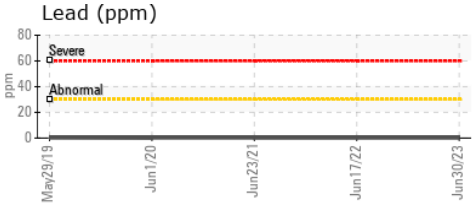
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D7279(m) | 118.2 | **102** | 97.5 | 95.6 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.6 | **13.9** | 13.7 | 13.3 |
| Viscosity Index (VI) | Scale | ASTM D2270* | 139 | **137** | 141 | 138 |

## GRAPHS

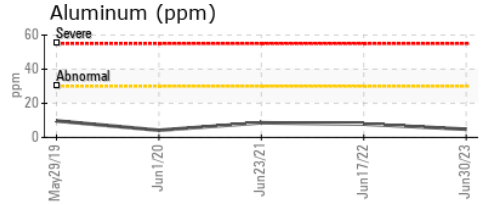
Iron (ppm)



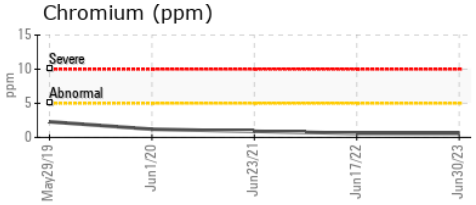

Lead (ppm)



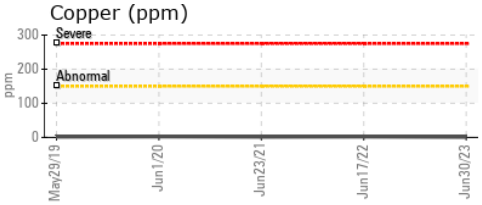

Aluminum (ppm)



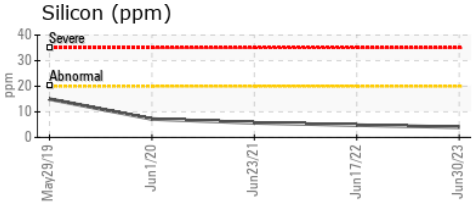

Chromium (ppm)



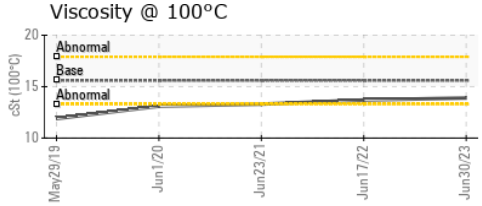

Copper (ppm)



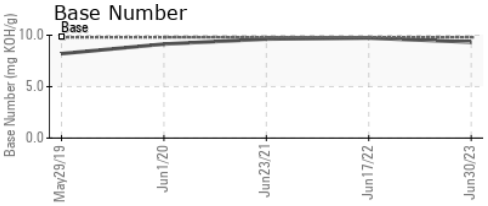

Silicon (ppm)




Viscosity @ 100°C




Base Number




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : PC0073588 **Received** : 18 Jul 2023
**Lab Number** : 02570563 **Diagnosed** : 19 Jul 2023
**Unique Number** : 5607609 **Diagnostician** : Wes Davis
**Test Package** : MOB 2 ( Additional Tests: KV40, TAN Auto, TAN Man, VI, Visual )

*To discuss this sample report, contact Customer Service at 1-800-268-2131.*
*Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.*
*Validity of results and interpretation are based on the sample and information as supplied.*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