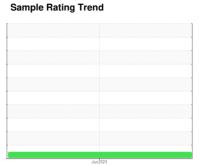


OIL ANALYSIS REPORT



NORMAL



Machine Id
326755
Component

Component
Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- QTS)

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

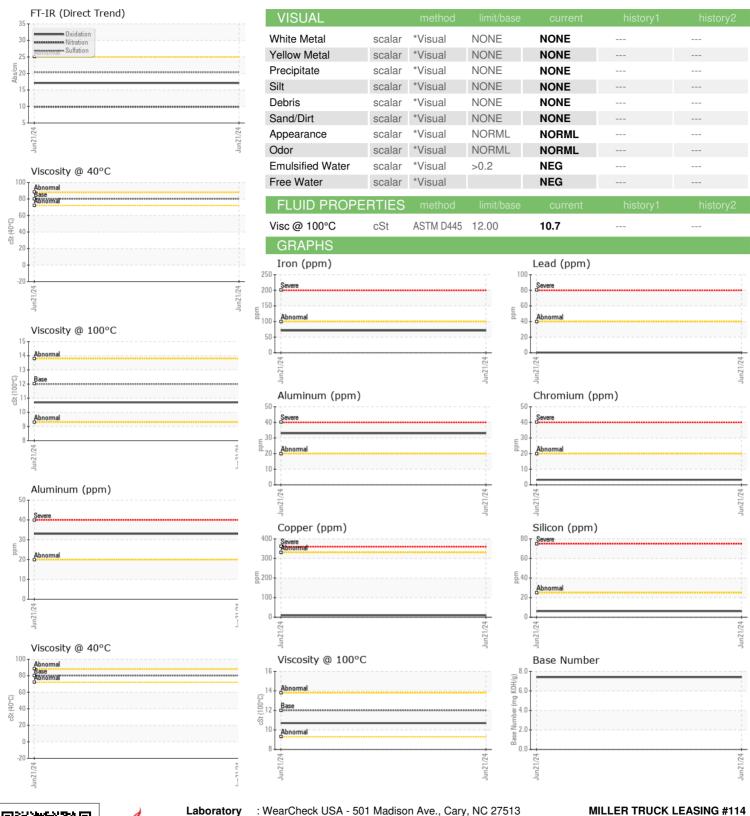
Fluid Condition

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

| Sample Number Client Info PCA0130011 | QTS) | | | | Jun2024 | | |
|---|---------------|---|-------------|------------|-------------|----------|----------|
| Sample Date Client Info 21 Jun 2024 | SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
| Machine Age mls Client Info 0 | Sample Number | | Client Info | | PCA0130011 | | |
| Oil Age mls Client Info Changed | Sample Date | | Client Info | | 21 Jun 2024 | | |
| Oil Changed Client Info Changed NORMAL Sample Status NORMAL CONTAMINATION method limit/base current history1 history2 Water WC Method >5 <1.0 Water WC Method >0.2 NEG Glycol WC Method NEG MEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 71 Chromium ppm ASTM D5185m >20 3 Nickel ppm ASTM D5185m >4 <1 Silver ppm ASTM D5185m >3 -1 Silver ppm ASTM D5185m >20 33 Silver ppm ASTM D5185m >20 33 Aluminum ppm ASTM D5185m >20 33 Copper ppm ASTM D5185m >40 <1 Copper ppm ASTM D5185m >10 Vanadium ppm ASTM D5185m >15 2 Vanadium ppm ASTM D5185m >15 2 ADDITIVES method limit/base current history1 history2 Barium ppm ASTM D5185m 50 66 Magnesium ppm ASTM D5185m 50 66 Magnesium ppm ASTM D5185m 50 904 CONTAMINANTS ppm ASTM D5185m 995 916 CONTAMINANTS method limit/base current history1 history2 CONTAMINANTS method limit/base current history1 history2 Sulfur ppm ASTM D5185m 20 58 CONTAMINANTS method limit/base current history1 history2 CONTAMINANTS method limit/base current history1 | Machine Age | mls | Client Info | | 0 | | |
| Sample Status | Oil Age | mls | Client Info | | 0 | | |
| CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 | Oil Changed | | Client Info | | Changed | | |
| Fuel | Sample Status | | | | NORMAL | | |
| Water WC Method >0.2 NEG Glycol WC Method NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 71 Chromium ppm ASTM D5185m >20 3 Nickel ppm ASTM D5185m >4 <1 | CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| WEAR METALS | Fuel | | WC Method | >5 | <1.0 | | |
| Iron | Water | | WC Method | >0.2 | NEG | | |
| Iron | Glycol | | WC Method | | NEG | | |
| Chromium ppm ASTM D5185m >20 3 Nickel ppm ASTM D5185m >4 <1 | WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Nickel | Iron | ppm | ASTM D5185m | >100 | | | |
| Titanium | Chromium | ppm | ASTM D5185m | >20 | 3 | | |
| Silver | Nickel | ppm | ASTM D5185m | >4 | <1 | | |
| Altuminum | Titanium | ppm | ASTM D5185m | | <1 | | |
| Lead ppm ASTM D5185m >40 <1 | Silver | ppm | ASTM D5185m | >3 | <1 | | |
| Copper ppm ASTM D5185m >330 10 Tin ppm ASTM D5185m >15 2 Vanadium ppm ASTM D5185m <1 | Aluminum | ppm | ASTM D5185m | >20 | 33 | | |
| Tin ppm ASTM D5185m >15 2 Vanadium ppm ASTM D5185m <1 Cadmium ppm ASTM D5185m <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 7 Barium ppm ASTM D5185m 0 <1 Molybdenum ppm ASTM D5185m 50 66 Manganese ppm ASTM D5185m 0 2 Magnesium ppm ASTM D5185m 950 904 Calcium ppm ASTM D5185m 1050 1153 Phosphorus ppm ASTM D5185m 1050 1144 Sulfur ppm ASTM D5185m 2600 2376 - | Lead | ppm | ASTM D5185m | >40 | | | |
| Vanadium ppm ASTM D5185m <1 Cadmium ppm ASTM D5185m <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 7 Barium ppm ASTM D5185m 0 <1 Molybdenum ppm ASTM D5185m 50 66 Manganese ppm ASTM D5185m 0 2 Magnesium ppm ASTM D5185m 950 904 Calcium ppm ASTM D5185m 950 916 Phosphorus ppm ASTM D5185m 995 916 Zinc ppm ASTM D5185m 2600 2376 Sulfur ppm ASTM D5185m >25 6 < | | ppm | | | | | |
| Cadmium ppm ASTM D5185m <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 7 Barium ppm ASTM D5185m 0 <1 | | | | >15 | | | |
| ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 2 7 Barium ppm ASTM D5185m 0 <1 | | ppm | | | | | |
| Boron ppm ASTM D5185m 2 7 | | ppm | ASTM D5185m | | <1 | | |
| Barium ppm ASTM D5185m 0 <1 Molybdenum ppm ASTM D5185m 50 66 Manganese ppm ASTM D5185m 0 2 Magnesium ppm ASTM D5185m 950 904 Calcium ppm ASTM D5185m 1050 1153 Phosphorus ppm ASTM D5185m 995 916 Zinc ppm ASTM D5185m 995 916 Sulfur ppm ASTM D5185m 2600 2376 Sulfur ppm ASTM D5185m 2600 2376 Solicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 | ADDITIVES | | method | | current | history1 | history2 |
| Molybdenum ppm ASTM D5185m 50 66 Manganese ppm ASTM D5185m 0 2 Magnesium ppm ASTM D5185m 950 904 Calcium ppm ASTM D5185m 1050 1153 Phosphorus ppm ASTM D5185m 995 916 Zinc ppm ASTM D5185m 995 916 Zinc ppm ASTM D5185m 2600 2376 Sulfur ppm ASTM D5185m 2600 2376 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m >20 58 INFRA-RED method | Boron | ppm | | _ | 7 | | |
| Manganese ppm ASTM D5185m 0 2 Magnesium ppm ASTM D5185m 950 904 Calcium ppm ASTM D5185m 1050 1153 Phosphorus ppm ASTM D5185m 995 916 Zinc ppm ASTM D5185m 1180 1144 Sulfur ppm ASTM D5185m 2600 2376 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m >20 58 Potassium ppm ASTM D5185m >20 58 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 | | ppm | ASTM D5185m | 0 | | | |
| Magnesium ppm ASTM D5185m 950 904 Calcium ppm ASTM D5185m 1050 1153 Phosphorus ppm ASTM D5185m 995 916 Zinc ppm ASTM D5185m 2600 2376 Sulfur ppm ASTM D5185m 2600 2376 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m >20 58 Potassium ppm ASTM D5185m >20 58 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7414 <td>-</td> <td>ppm</td> <td></td> <td></td> <th></th> <td></td> <td></td> | - | ppm | | | | | |
| Calcium ppm ASTM D5185m 1 050 1153 Phosphorus ppm ASTM D5185m 995 916 Zinc ppm ASTM D5185m 1180 1144 Sulfur ppm ASTM D5185m 2600 2376 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 58 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION **ASTM D7414 >25 | | ppm | | | _ | | |
| Phosphorus ppm ASTM D5185m 995 916 Zinc ppm ASTM D5185m 1180 1144 Sulfur ppm ASTM D5185m 2600 2376 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 58 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 | - | | | | | | |
| Zinc ppm ASTM D5185m 1180 1144 Sulfur ppm ASTM D5185m 2600 2376 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 58 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/.mm *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 | | ppm | | | | | |
| Sulfur ppm ASTM D5185m 2600 2376 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 58 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 | | • | | | | | |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 58 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 | - | | | | | | |
| Silicon ppm ASTM D5185m >25 6 Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 58 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 | | | | | | | |
| Sodium ppm ASTM D5185m 2 Potassium ppm ASTM D5185m >20 58 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 | | | | | | | , |
| Potassium ppm ASTM D5185m >20 58 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 | | • | | >25 | | | |
| INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 Nitration Abs/cm *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 | | | | >20 | | | |
| Nitration Abs/cm *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 | INFRA-RED | | method | limit/base | current | history1 | history2 |
| Nitration Abs/cm *ASTM D7624 >20 9.9 Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 | Soot % | % | *ASTM D7844 | >3 | 0.5 | | |
| Sulfation Abs/.1mm *ASTM D7415 >30 20.4 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 17.1 | | | | | | | |
| Oxidation | | | | >30 | | | |
| | FLUID DEGRAD | DATION | method | limit/base | current | history1 | history2 |
| | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 17.1 | | |
| | | | | | | | |



OIL ANALYSIS REPORT





Certificate 12367

Laboratory Sample No.

: PCA0130011

Lab Number : 06225981 Unique Number : 11109474

Tested

Received : 02 Jul 2024 : 05 Jul 2024 : 05 Jul 2024 - Jonathan Hester

Diagnosed Test Package : MOB 1 (Additional Tests: TBN, KV40)

To discuss this sample report, contact Customer Service at 1-800-237-1369. st - Denotes test methods that are outside of the ISO 17025 scope of accreditation. 63 REPAUPO STATION ROAD LOGAN TOWNSHIP, NJ

> US 08085 Contact: ED DAVIS

edavis@millertransgroup.com T: (856)214-3521

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Contact/Location: ED DAVIS - MILLOG

F: (856)214-3663