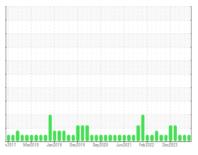


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
3729
Component
Diesel Engine

PETRO CANADA DURON SHP 15W40 (600 GAL)

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.

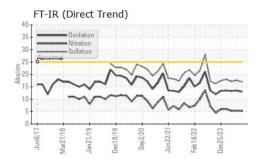
Fluid Condition

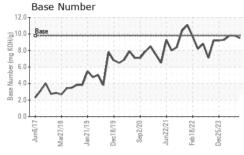
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

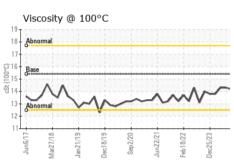
| SAMPLE INFORMATION method fimit/base current history1 history2 | GAL) | | n 2017 Mar 20 | 118 Jan 2019 Dec 2019 | Sep2020 Jun2021 Feb2022 | Dec2023 | |
|--|------------------|----------|---------------|-----------------------|-------------------------|-------------|-------------|
| Sample Date | SAMPLE INFOR | MATION | method | limit/base | current | history1 | history2 |
| Machine Age hrs Client Info 18320 18318 0 Oil Age hrs Client Info 200 200 600 Oil Changed Client Info Not Changd Not Changd Changed Changed Sample Status Image: Control of the Image: Control | Sample Number | | Client Info | | GFL0118658 | GFL0118642 | GFL0100267 |
| Oil Age hrs Client Info 200 200 600 Oil Changed Client Info Not Changed Not Changed Changed Changed Sample Status Client Info Not Changed NoRMAL NoRMAL NoRMAL CONTAMINATION method limit base current history2 Fuel WC Method >3.0 <1.0 | Sample Date | | Client Info | | 07 May 2024 | 15 Apr 2024 | 25 Jan 2024 |
| Oil Changed Sample Status Client Info Not Changd NORMAL Not Changd NORMAL Changed NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 | Machine Age | hrs | Client Info | | 18320 | 18318 | 0 |
| Sample Status MCRMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 | Oil Age | hrs | Client Info | | 200 | 200 | 600 |
| CONTAMINATION method limit/base current history1 history2 Fuel WC Method >3.0 <1.0 | Oil Changed | | Client Info | | Not Changd | Not Changd | Changed |
| Fuel | Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Water Glycol WC Method >0.2 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >75 8 9 5 Chromium ppm ASTM D5185m >5 <1 1 0 Nickel ppm ASTM D5185m >4 0 1 <1 0 Silver ppm ASTM D5185m >2 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 0 <1 0 | CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Second WC Method MEG NEG NEG | Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| WEAR METALS | Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Iron | Glycol | | WC Method | | NEG | NEG | NEG |
| Chromium ppm ASTM D5185m >5 <1 1 0 Nickel ppm ASTM D5185m >4 0 1 <1 | WEAR METAL | .S | method | limit/base | current | history1 | history2 |
| Nickel ppm ASTM D5185m >4 0 1 <1 Titanium ppm ASTM D5185m >2 0 <1 | Iron | ppm | ASTM D5185m | >75 | 8 | 9 | 5 |
| Titanium ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 <1 <1 0 Aluminum ppm ASTM D5185m >15 4 2 3 Lead ppm ASTM D5185m >25 0 1 0 Copper ppm ASTM D5185m >100 6 4 0 Tin ppm ASTM D5185m >4 <1 1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 <1 Cadmium ppm ASTM D5185m 0 1 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1 2 Cadmium ppm ASTM D5185m 0 0 0 0 Manganesium ppm ASTM D5185m 1010 947 | Chromium | ppm | ASTM D5185m | >5 | <1 | 1 | 0 |
| Silver | Nickel | ppm | ASTM D5185m | >4 | 0 | 1 | <1 |
| Aluminum ppm ASTM D5185m >15 4 2 3 Lead ppm ASTM D5185m >25 0 1 0 Copper ppm ASTM D5185m >100 6 4 0 Tin ppm ASTM D5185m >4 <1 | Titanium | ppm | ASTM D5185m | >2 | 0 | <1 | 0 |
| Lead ppm ASTM D5185m >25 0 1 0 Copper ppm ASTM D5185m >100 6 4 0 Tin ppm ASTM D5185m >4 <1 1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 <1 Cadmium ppm ASTM D5185m 0 1 0 <1 <1 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1 2 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 1 1 <1 <1 <1 Magnesium ppm ASTM D5185m 0 1 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 | Silver | ppm | ASTM D5185m | >2 | <1 | <1 | 0 |
| Copper ppm ASTM D5185m >100 6 4 0 Tin ppm ASTM D5185m >4 <1 | Aluminum | ppm | ASTM D5185m | >15 | 4 | 2 | 3 |
| Tin ppm ASTM D5185m >4 <1 1 <1 Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1 2 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 1 1 <1 <1 Manganese ppm ASTM D5185m 0 1 1 <1 <1 Magnesium ppm ASTM D5185m 1070 1026 1057 1000 Phosphorus ppm ASTM D5185m 1150 1043 1107 1028 Zinc ppm ASTM D5185m 2060 3595 3478 3142 CONTAMINANTS method limit/base | Lead | ppm | ASTM D5185m | >25 | 0 | 1 | 0 |
| Vanadium ppm ASTM D5185m 0 <1 <1 Cadmium ppm ASTM D5185m 0 1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1 2 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 62 59 Manganese ppm ASTM D5185m 1010 947 913 947 Calcium ppm ASTM D5185m 1070 1026 1057 1000 Phosphorus ppm ASTM D5185m 1270 1236 1182 1264 Sulfur ppm ASTM D5185m 2060 3595 3478 3142 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 | Copper | ppm | ASTM D5185m | >100 | 6 | 4 | 0 |
| Cadmium ppm ASTM D5185m 0 1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 2 <1 | Tin | ppm | ASTM D5185m | >4 | <1 | 1 | <1 |
| ADDITIVES | Vanadium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Boron ppm ASTM D5185m 0 2 <1 2 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 62 59 Manganese ppm ASTM D5185m 0 1 1 <1 <1 Magnesium ppm ASTM D5185m 1010 947 913 947 Calcium ppm ASTM D5185m 1070 1026 1057 1000 Phosphorus ppm ASTM D5185m 1150 1043 1107 1028 Zinc ppm ASTM D5185m 1270 1236 1182 1264 Sulfur ppm ASTM D5185m 2060 3595 3478 3142 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >225 5 6 5 Sodium ppm <th< td=""><td>Cadmium</td><td>ppm</td><td>ASTM D5185m</td><td></td><th>0</th><td>1</td><td>0</td></th<> | Cadmium | ppm | ASTM D5185m | | 0 | 1 | 0 |
| Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 59 62 59 Manganese ppm ASTM D5185m 0 1 1 <1 | ADDITIVES | | method | limit/base | current | history1 | history2 |
| Molybdenum ppm ASTM D5185m 60 59 62 59 Manganese ppm ASTM D5185m 0 1 1 <1 Magnesium ppm ASTM D5185m 1010 947 913 947 Calcium ppm ASTM D5185m 1070 1026 1057 1000 Phosphorus ppm ASTM D5185m 1150 1043 1107 1028 Zinc ppm ASTM D5185m 1270 1236 1182 1264 Sulfur ppm ASTM D5185m 2060 3595 3478 3142 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 6 5 Sodium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >6 </td <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>2</th> <td><1</td> <td>2</td> | Boron | ppm | ASTM D5185m | 0 | 2 | <1 | 2 |
| Manganese ppm ASTM D5185m 0 1 1 <1 Magnesium ppm ASTM D5185m 1010 947 913 947 Calcium ppm ASTM D5185m 1070 1026 1057 1000 Phosphorus ppm ASTM D5185m 1150 1043 1107 1028 Zinc ppm ASTM D5185m 1270 1236 1182 1264 Sulfur ppm ASTM D5185m 2060 3595 3478 3142 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 6 5 Sodium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.1 Nitration Abs/cm *ASTM D78 | Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Magnesium ppm ASTM D5185m 1010 947 913 947 Calcium ppm ASTM D5185m 1070 1026 1057 1000 Phosphorus ppm ASTM D5185m 1150 1043 1107 1028 Zinc ppm ASTM D5185m 1270 1236 1182 1264 Sulfur ppm ASTM D5185m 2060 3595 3478 3142 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 6 5 Sodium ppm ASTM D5185m >20 5 5 3 Potassium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 5.2 5.4 5.3 Sulfation Abs/.1mm *ASTM | Molybdenum | ppm | ASTM D5185m | 60 | 59 | 62 | 59 |
| Calcium ppm ASTM D5185m 1070 1026 1057 1000 Phosphorus ppm ASTM D5185m 1150 1043 1107 1028 Zinc ppm ASTM D5185m 1270 1236 1182 1264 Sulfur ppm ASTM D5185m 2060 3595 3478 3142 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 6 5 Sodium ppm ASTM D5185m >20 5 5 3 Potassium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION *ASTM D | Manganese | ppm | ASTM D5185m | 0 | 1 | 1 | <1 |
| Phosphorus ppm ASTM D5185m 1150 1043 1107 1028 Zinc ppm ASTM D5185m 1270 1236 1182 1264 Sulfur ppm ASTM D5185m 2060 3595 3478 3142 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 6 5 Sodium ppm ASTM D5185m >20 5 5 3 Potassium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION *ASTM D7414 >25 13.0 13.5 13.3 | Magnesium | ppm | ASTM D5185m | 1010 | 947 | 913 | 947 |
| Zinc ppm ASTM D5185m 1270 1236 1182 1264 Sulfur ppm ASTM D5185m 2060 3595 3478 3142 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 6 5 Sodium ppm ASTM D5185m >20 5 5 3 Potassium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.2 5.4 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm | Calcium | ppm | ASTM D5185m | 1070 | 1026 | 1057 | 1000 |
| Sulfur ppm ASTM D5185m 2060 3595 3478 3142 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 6 5 Sodium ppm ASTM D5185m >20 5 5 3 Potassium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.2 5.4 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.0 13.5 13.3 | Phosphorus | ppm | ASTM D5185m | 1150 | 1043 | 1107 | 1028 |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 5 6 5 Sodium ppm ASTM D5185m 48 60 43 Potassium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.2 5.4 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.0 13.5 13.3 | Zinc | ppm | ASTM D5185m | 1270 | 1236 | 1182 | 1264 |
| Silicon ppm ASTM D5185m >25 5 6 5 Sodium ppm ASTM D5185m 48 60 43 Potassium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.2 5.4 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.0 13.5 13.3 | Sulfur | ppm | ASTM D5185m | 2060 | 3595 | 3478 | 3142 |
| Sodium ppm ASTM D5185m 48 60 43 Potassium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.2 5.4 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.0 13.5 13.3 | CONTAMINAN | ITS | method | limit/base | current | history1 | history2 |
| Potassium ppm ASTM D5185m >20 5 5 3 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >6 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.2 5.4 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.0 13.5 13.3 | Silicon | ppm | ASTM D5185m | >25 | 5 | 6 | 5 |
| INFRA-RED | Sodium | ppm | ASTM D5185m | | 48 | 60 | 43 |
| Soot % % *ASTM D7844 >6 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 5.2 5.4 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.0 13.5 13.3 | Potassium | ppm | ASTM D5185m | >20 | 5 | 5 | 3 |
| Nitration Abs/cm *ASTM D7624 >20 5.2 5.4 5.3 Sulfation Abs/.1mm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.0 13.5 13.3 | INFRA-RED | | method | limit/base | current | history1 | history2 |
| Sulfation Abs/.1mm *ASTM D7415 >30 17.0 17.6 17.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.0 13.5 13.3 | Soot % | % | *ASTM D7844 | >6 | 0.2 | 0.2 | 0.1 |
| FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 13.0 13.5 13.3 | Nitration | Abs/cm | *ASTM D7624 | >20 | 5.2 | 5.4 | 5.3 |
| Oxidation Abs/.1mm *ASTM D7414 >25 13.0 13.5 13.3 | Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 17.0 | 17.6 | 17.2 |
| | FLUID DEGRA | AOITAC | method | limit/base | current | history1 | history2 |
| Base Number (BN) mg KOH/g ASTM D2896 9.8 9.5 9.8 9.8 | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 13.0 | 13.5 | 13.3 |
| | Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 9.5 | 9.8 | 9.8 |



OIL ANALYSIS REPORT



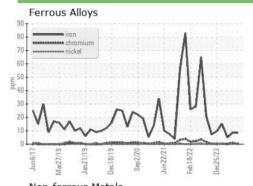


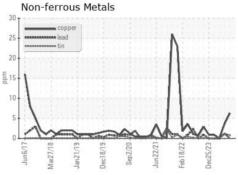


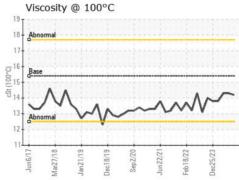
| VISUAL | | method | limit/base | current | history1 | history2 |
|-------------------------|--------|---------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate |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

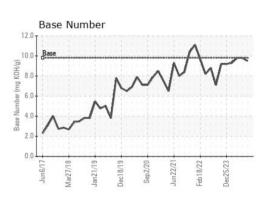
| FLUID PROPI | ERTIES | method | | | | history2 |
|--------------|--------|-----------|------|------|------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.2 | 14.3 | 14.3 |

GRAPHS













Certificate 12367

Laboratory Sample No. Unique Number : 11022756

Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Lab Number : 06176703

: GFL0118658

To discuss this sample report, contact Customer Service at 1-800-237-1369.

Received : 13 May 2024 **Tested** : 14 May 2024 Diagnosed

: 14 May 2024 - Wes Davis

GFL Environmental - 166 - Phenix City

18 Old Brickyard Rd Phenix City, AL US 36869

Contact: DEAN PEACE JR dean.peace@gflenv.com

* - 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) T:

F: