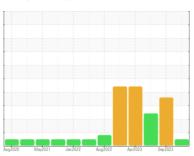


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id **725006-5006**

Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (--- LTR)

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.

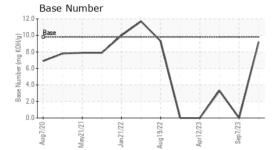
Fluid Condition

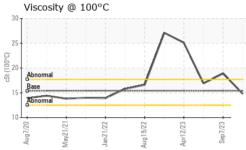
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| Sample Number Client Info GFL0100169 GFL0058032 GFL007090 Sample Date Client Info 07 Dec 2023 07 Sep 2023 20 Jun 2023 Machine Age hrs Client Info 128 548 7825 Oil Age hrs Client Info 128 548 7825 Oil Changed Client Info 128 548 7825 Oil Changed Client Info 128 548 7825 Oil Changed Client Info Not Changed Changed Changed Changed Changed Sample Status Contral McR Ned | .TR) | | Aug2020 | May2021 Jan2022 | Aug ² 022 Apr ² 023 Si | pp 2023 | |
|---|------------------|----------|-------------|-----------------|--|--------------|--------------|
| Sample Date | SAMPLE INFOR | MATION | method | limit/base | current | history1 | history2 |
| Machine Age hrs Client Info 8413 8676 7825 Oil Age hrs Client Info 128 548 7825 Oil Changed Client Info Not Changed Changed Changed Sample Status Contract NoRMAL SEVERE ABNORMA CONTAMINATION method Imitibase current history1 history1 Fuel WC Method >5 <1.0 | Sample Number | | Client Info | | GFL0100169 | GFL0058032 | GFL0070902 |
| Oil Age hrs Client Info 128 548 7825 Oil Changed Client Info Not Changed Changed Changed Sample Status NORMAL SEVERE ABNORMA CONTAMINATION method limit/base current inistory1 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <t< td=""><td>Sample Date</td><td></td><td>Client Info</td><td></td><th>07 Dec 2023</th><td>07 Sep 2023</td><td>20 Jun 2023</td></t<> | Sample Date | | Client Info | | 07 Dec 2023 | 07 Sep 2023 | 20 Jun 2023 |
| Oil Changed Sample Status Client Info Sample Status Not Changd NORMAL Changed ABNORMA Changed ABNORMA CONTAMINATION method limit/base current history1 history3 Fuel WC Method >5 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 <1.0 </td <td>Machine Age</td> <td>hrs</td> <td>Client Info</td> <td></td> <th>8413</th> <td>8676</td> <td>7825</td> | Machine Age | hrs | Client Info | | 8413 | 8676 | 7825 |
| Sample Status | Oil Age | hrs | Client Info | | 128 | 548 | 7825 |
| CONTAMINATION method limit/base current history1 history2 Fuel WC Method >5 <1.0 | Oil Changed | | Client Info | | Not Changd | Changed | Changed |
| Fuel | Sample Status | | | | NORMAL | SEVERE | ABNORMAL |
| Water Glycol WC Method >0.2 NEG NEG NEG NEG WEAR METALS method limit/base current history1 history1 Iron ppm ASTM D5185m >100 23 44 30 Chromium ppm ASTM D5185m >20 <1 1 <1 <1 Nickel ppm ASTM D5185m >20 <1 1 <1 0 Silver ppm ASTM D5185m >4 <1 0 0 0 Sliver ppm ASTM D5185m >3 0 0 0 0 Sliver ppm ASTM D5185m >40 0 0 0 0 Aluminum ppm ASTM D5185m >40 0 0 0 0 Copper ppm ASTM D5185m >40 0 0 0 0 Caddium ppm ASTM D5185m 0 <1 <1 <1 <t< td=""><td>CONTAMINAT</td><td>ION</td><td>method</td><td>limit/base</td><th>current</th><td>history1</td><td>history2</td></t<> | CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| WEAR METALS | Fuel | | WC Method | >5 | <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 >20 <1 1 <1 Nickel ppm ASTM D5185m >4 <1 | WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Nickel ppm ASTM D5185m >4 <1 <1 0 Titanium ppm ASTM D5185m <1 | Iron | ppm | ASTM D5185m | >100 | 23 | 44 | 30 |
| Titanium ppm ASTM D5185m <1 0 0 Silver ppm ASTM D5185m >3 0 0 0 Aluminum ppm ASTM D5185m >20 4 4 <1 | Chromium | ppm | ASTM D5185m | >20 | <1 | 1 | <1 |
| Silver | Nickel | ppm | ASTM D5185m | >4 | <1 | <1 | 0 |
| Aluminum ppm ASTM D5185m ≥20 4 4 <1 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 1 <1 | Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 1 <1 <1 Tin ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 0 <1 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 2 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 4 2 4 Barium ppm ASTM D5185m 0 4 1 1 1 Barium ppm ASTM D5185m 0 4 1 1 1 1 Magnesium ppm ASTM D5185m 1070 1040 <td>Silver</td> <td>ppm</td> <td></td> <td></td> <th>0</th> <td>0</td> <td>0</td> | Silver | ppm | | | 0 | 0 | 0 |
| Copper ppm ASTM D5185m >330 1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 | Aluminum | ppm | ASTM D5185m | >20 | 4 | 4 | <1 |
| Tin ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 2 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 4 2 4 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 927 1017 950 Calcium ppm ASTM D5185m 1070 1040 1197 1148 Phosphorus ppm ASTM D5185m 1270 1268 1351 1247 Sulfur ppm ASTM D5185m 2060 3038 3652 | Lead | ppm | | | 0 | 0 | 0 |
| Vanadium ppm ASTM D5185m 0 <1 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 2 4 Barium ppm ASTM D5185m 0 0 0 0 0 Molybdenum ppm ASTM D5185m 0 58 64 63 Manganese ppm ASTM D5185m 0 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 927 1017 950 Calcium ppm ASTM D5185m 1070 1040 1197 1148 Phosphorus ppm ASTM D5185m 1270 1268 1351 1247 Sulfur ppm ASTM D5185m 2060 3038 3652 3565 CONTAMINANTS method limit/base <td>Copper</td> <td>ppm</td> <td>ASTM D5185m</td> <td>>330</td> <th>1</th> <td></td> <td></td> | Copper | ppm | ASTM D5185m | >330 | 1 | | |
| Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 2 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 64 63 Manganese ppm ASTM D5185m 0 <1 | | ppm | ASTM D5185m | >15 | | | |
| ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 4 2 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 64 63 Manganese ppm ASTM D5185m 0 <1 | Vanadium | ppm | ASTM D5185m | | | | |
| Boron ppm ASTM D5185m 0 4 2 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 64 63 Manganese ppm ASTM D5185m 0 <1 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 927 1017 950 Calcium ppm ASTM D5185m 1070 1040 1197 1148 Phosphorus ppm ASTM D5185m 1270 1268 1351 1247 Sulfur ppm ASTM D5185m 2060 3038 3652 3565 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m >20 3 3 2 INFRA-RED method limit/base< | | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 64 63 Manganese ppm ASTM D5185m 0 <1 | ADDITIVES | | method | limit/base | current | history1 | history2 |
| Molybdenum ppm ASTM D5185m 60 58 64 63 Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 927 1017 950 Calcium ppm ASTM D5185m 1070 1040 1197 1148 Phosphorus ppm ASTM D5185m 1270 1268 1351 1247 Sulfur ppm ASTM D5185m 2060 3038 3652 3565 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m >20 3 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 > | Boron | ppm | | | - | | 4 |
| Manganese ppm ASTM D5185m 0 <1 <1 <1 Magnesium ppm ASTM D5185m 1010 927 1017 950 Calcium ppm ASTM D5185m 1070 1040 1197 1148 Phosphorus ppm ASTM D5185m 1150 1034 1070 1006 Zinc ppm ASTM D5185m 1270 1268 1351 1247 Sulfur ppm ASTM D5185m 2060 3038 3652 3565 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m 20 3 3 2 INFRA-RED method limit/base current history1 history2 Soot % *ASTM D7844 >3 1.2 6.1 4.6 Nitration Abs/.1mm *ASTM D7415 >30 <td>Barium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>0</td> <th>0</th> <td>0</td> <td>-</td> | Barium | ppm | ASTM D5185m | 0 | 0 | 0 | - |
| Magnesium ppm ASTM D5185m 1010 927 1017 950 Calcium ppm ASTM D5185m 1070 1040 1197 1148 Phosphorus ppm ASTM D5185m 1150 1034 1070 1006 Zinc ppm ASTM D5185m 1270 1268 1351 1247 Sulfur ppm ASTM D5185m 2060 3038 3652 3565 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m >20 3 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.2 6.1 4.6 Nitration Abs/cm *ASTM D7624 >20 8.4 18.3 12.3 Sulfation Abs/.1mm *AST | - | | | | | | |
| Calcium ppm ASTM D5185m 1070 1040 1197 1148 Phosphorus ppm ASTM D5185m 1150 1034 1070 1006 Zinc ppm ASTM D5185m 1270 1268 1351 1247 Sulfur ppm ASTM D5185m 2060 3038 3652 3565 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m 2 1 <1 | • | ppm | | | | | |
| Phosphorus ppm ASTM D5185m 1150 1034 1070 1006 Zinc ppm ASTM D5185m 1270 1268 1351 1247 Sulfur ppm ASTM D5185m 2060 3038 3652 3565 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m >2 1 <1 | | | | | | | |
| Zinc ppm ASTM D5185m 1270 1268 1351 1247 Sulfur ppm ASTM D5185m 2060 3038 3652 3565 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m 2 1 <1 | | ppm | | | | | |
| Sulfur ppm ASTM D5185m 2060 3038 3652 3565 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m 2 1 <1 | | | | | | | |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m 2 1 <1 | - | | | | | | |
| Silicon ppm ASTM D5185m >25 8 5 3 Sodium ppm ASTM D5185m 2 1 <1 Potassium ppm ASTM D5185m >20 3 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.2 6.1 △ 4.6 Nitration Abs/cm *ASTM D7624 >20 8.4 18.3 12.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 36.6 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 22.7 16.4 | | • • | | | | | |
| Sodium ppm ASTM D5185m 2 1 <1 Potassium ppm ASTM D5185m >20 3 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.2 6.1 4.6 Nitration Abs/cm *ASTM D7624 >20 8.4 18.3 12.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 36.6 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 22.7 16.4 | | | | | | | • |
| Potassium ppm ASTM D5185m >20 3 3 2 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.2 6.1 4.6 Nitration Abs/cm *ASTM D7624 >20 8.4 18.3 12.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 36.6 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 22.7 16.4 | | | | >25 | | | |
| INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 1.2 ● 6.1 ▲ 4.6 Nitration Abs/cm *ASTM D7624 >20 8.4 18.3 12.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 36.6 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 22.7 16.4 | | ppm | | | | | |
| Soot % % *ASTM D7844 >3 1.2 € 6.1 ▲ 4.6 Nitration Abs/cm *ASTM D7624 >20 8.4 18.3 12.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 36.6 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 22.7 16.4 | | ppm | | | 3 | | 2 |
| Nitration Abs/cm *ASTM D7624 >20 8.4 18.3 12.3 Sulfation Abs/.1mm *ASTM D7415 >30 19.9 36.6 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 22.7 16.4 | | | | | | • | history2 |
| Sulfation Abs/.1mm *ASTM D7415 >30 19.9 36.6 28.9 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 22.7 16.4 | | | | | | | |
| FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 15.1 22.7 16.4 | | | | | | | |
| Oxidation Abs/.1mm *ASTM D7414 >25 15.1 22.7 16.4 | | | | >30 | 19.9 | 36.6 | |
| | FLUID DEGRAI | NOITAC | method | limit/base | current | history1 | history2 |
| Base Number (BN) mg KOH/g ASTM D2896 9.8 9.2 ▲ 0.0 ▲ 3.3 | | Abs/.1mm | *ASTM D7414 | >25 | 15.1 | 22.7 | 16.4 |
| | Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 9.2 | △ 0.0 | △ 3.3 |



OIL ANALYSIS REPORT

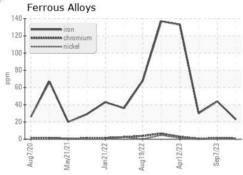


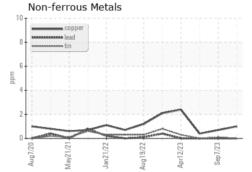


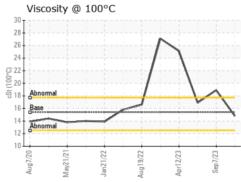
| VISUAL | | method | limit/base | current | history1 | history2 |
|-------------------------|--------|---------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate |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

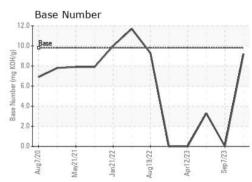
| I LOID I HOI LI | TILO | | | | | Thotol y |
|-----------------|------|-----------|------|------|---------------|---------------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.8 | ▲ 18.9 | △ 16.9 |

GRAPHS











Certificate L2367

Laboratory Sample No. Lab Number Test Package : FLEET

Unique Number : 10779061

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0100169 : 06029270

Received Diagnosed

: 08 Dec 2023 : 11 Dec 2023 Diagnostician : Wes Davis

GFL Environmental - 657 - Charlottesville Hauling

5498 Richmond Road Troy, VA US 22974

Contact: Brian Ulickas bulickas@gflenv.com

T: F:

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)