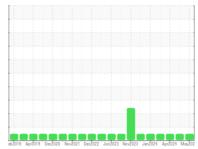


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id 929081-260352

Diesel Engine

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

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

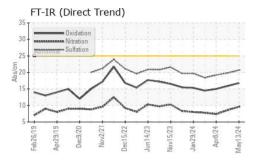
Fluid Condition

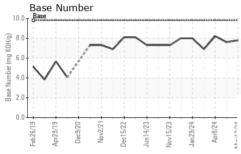
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

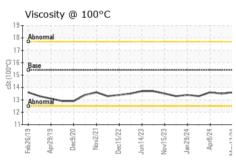
| SAMPLE INFORMATION method limit/base current history1 history2 | āAL) | | eb2019 Apr201 | 19 Dec2020 Nov2021 Dec20 | 022 Junž023 Novž023 Janž024 Ap | r2024 May202 | |
|---|------------------|----------|---------------|--------------------------------|--------------------------------|--------------|-------------|
| Sample Date | SAMPLE INFORI | MATION | method | limit/base | current | history1 | history2 |
| Sample Date | Sample Number | | Client Info | | GFL0118180 | GFL0118185 | GFL0109196 |
| Machine Age hrs Client Info 15514 15408 15244 Oil Age hrs Client Info 700 300 600 Oil Changed Client Info Not Changd NoRMAL NORMAL CONTAMINATION method imitibase current historyt history2 Fuel WC Method >5 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG Glycol WC Method Imitibase current history1 history2 Iron MEG NEG NEG NEG NEG WEAR METALS method limil/base current history2 history2 Iron pm ASTM D5185m >100 21 12 6 Chromium ppm ASTM D5185m >20 2 <1 0 <1 1 0 <1 1 0 <1 <1 0 <1 <1 0 <1< | · | | Client Info | | 13 May 2024 | 25 Apr 2024 | 08 Apr 2024 |
| Oil Changed Sample Status Client Info Not Changd NORMAL Not Changd NORMAL Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL Changed NORMAL 1.0 < | | hrs | Client Info | | - | 15408 | |
| Sample Status | | hrs | Client Info | | 700 | 300 | 600 |
| 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 Okycol WC Method NEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 21 12 6 Chromium ppm ASTM D5185m >20 2 <1 0 Nickel ppm ASTM D5185m >4 <1 0 <1 0 Silver ppm ASTM D5185m >3 1 0 0 0 Silver ppm ASTM D5185m >20 2 <1 0 0 Silver ppm ASTM D5185m >330 2 <1 0 <1 0 <1 0 <1 0 <1 < | Oil Changed | | Client Info | | Not Changd | Not Changd | Changed |
| Fuel | | | | | NORMAL | NORMAL | NORMAL |
| Water Glycol WC Method >0.2 NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM D5185m >100 21 12 6 Chromium ppm ASTM D5185m >20 2 <1 | 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 2 <1 | WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Nickel | Iron | ppm | ASTM D5185m | >100 | 21 | 12 | 6 |
| Titanium | Chromium | ppm | ASTM D5185m | >20 | 2 | <1 | 0 |
| Silver | Nickel | ppm | ASTM D5185m | >4 | <1 | 0 | <1 |
| Altuminum ppm ASTM D5185m >20 2 <1 | Titanium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Lead ppm ASTM D5185m >40 3 2 1 Copper ppm ASTM D5185m >330 2 <1 | Silver | ppm | ASTM D5185m | >3 | 1 | 0 | 0 |
| Copper ppm ASTM D5185m >330 2 <1 | Aluminum | ppm | ASTM D5185m | >20 | 2 | <1 | 2 |
| Tin ppm ASTM D5185m >15 1 0 <1 | Lead | ppm | ASTM D5185m | >40 | 3 | 2 | 1 |
| Vanadium ppm ASTM D5185m <1 | Copper | ppm | ASTM D5185m | >330 | 2 | <1 | 0 |
| Cadmium ppm ASTM D5185m <1 | Tin | ppm | ASTM D5185m | >15 | 1 | 0 | <1 |
| Boron ppm ASTM D5185m 0 2 0 2 2 2 3 4 3 3 4 4 3 4 4 5 5 5 6 4 4 5 5 5 6 5 4 5 5 5 6 5 5 6 5 5 5 | Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Boron ppm ASTM D5185m 0 2 0 2 Barium ppm ASTM D5185m 0 <1 | Cadmium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Barium ppm ASTM D5185m 0 <1 | ADDITIVES | | method | limit/base | current | history1 | history2 |
| Molybdenum ppm ASTM D5185m 60 62 61 59 Manganese ppm ASTM D5185m 0 <1 | Boron | ppm | ASTM D5185m | 0 | 2 | 0 | 2 |
| Manganese ppm ASTM D5185m 0 <1 | Barium | ppm | ASTM D5185m | 0 | <1 | 0 | 0 |
| Magnesium ppm ASTM D5185m 1010 971 1058 976 Calcium ppm ASTM D5185m 1070 1105 1168 1073 Phosphorus ppm ASTM D5185m 1150 1022 1134 1074 Zinc ppm ASTM D5185m 1270 1257 1372 1314 Sulfur ppm ASTM D5185m 2060 3050 3735 3734 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 4 Sodium ppm ASTM D5185m >20 6 2 4 Potassium ppm ASTM D5185m >20 6 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *AST | Molybdenum | ppm | ASTM D5185m | 60 | 62 | 61 | 59 |
| Calcium ppm ASTM D5185m 1070 1105 1168 1073 Phosphorus ppm ASTM D5185m 1150 1022 1134 1074 Zinc ppm ASTM D5185m 1270 1257 1372 1314 Sulfur ppm ASTM D5185m 2060 3050 3735 3734 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 4 Sodium ppm ASTM D5185m >20 6 2 4 Potassium ppm ASTM D5185m >20 6 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION meth | Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | 0 |
| Phosphorus ppm ASTM D5185m 1150 1022 1134 1074 Zinc ppm ASTM D5185m 1270 1257 1372 1314 Sulfur ppm ASTM D5185m 2060 3050 3735 3734 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 4 Sodium ppm ASTM D5185m >25 6 4 4 Sodium ppm ASTM D5185m >20 6 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.3 Nitration Abs/.mm *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method | - | ppm | ASTM D5185m | 1010 | - | | |
| Zinc ppm ASTM D5185m 1270 1257 1372 1314 Sulfur ppm ASTM D5185m 2060 3050 3735 3734 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 4 Sodium ppm ASTM D5185m >20 6 2 4 Potassium ppm ASTM D5185m >20 6 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.3 Nitration Abs/.1mm *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm <th>Calcium</th> <th>ppm</th> <th>ASTM D5185m</th> <th>1070</th> <th></th> <th></th> <th></th> | Calcium | ppm | ASTM D5185m | 1070 | | | |
| Sulfur ppm ASTM D5185m 2060 3050 3735 3734 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 4 Sodium ppm ASTM D5185m >25 6 4 4 Potassium ppm ASTM D5185m >20 6 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9 15.0 | | | | | | | |
| CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 6 4 4 Sodium ppm ASTM D5185m 12 9 10 Potassium ppm ASTM D5185m >20 6 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9 15.0 | Zinc | ppm | ASTM D5185m | 1270 | 1257 | 1372 | 1314 |
| Silicon ppm ASTM D5185m >25 6 4 4 Sodium ppm ASTM D5185m 12 9 10 Potassium ppm ASTM D5185m >20 6 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9 15.0 | | | ASTM D5185m | 2060 | 3050 | 3735 | 3734 |
| Sodium ppm ASTM D5185m 12 9 10 Potassium ppm ASTM D5185m >20 6 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9 15.0 | CONTAMINAN | ITS | method | limit/base | current | history1 | history2 |
| Potassium ppm ASTM D5185m >20 6 2 4 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9 15.0 | | ppm | ASTM D5185m | >25 | 6 | 4 | 4 |
| INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >3 0.5 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9 15.0 | | ppm | ASTM D5185m | | 12 | 9 | 10 |
| Soot % % *ASTM D7844 >3 0.5 0.4 0.3 Nitration Abs/cm *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9 15.0 | Potassium | ppm | ASTM D5185m | >20 | 6 | 2 | 4 |
| Nitration Abs/cm *ASTM D7624 >20 9.6 8.6 7.4 Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9 15.0 | INFRA-RED | | method | limit/base | current | history1 | history2 |
| Sulfation Abs/.1mm *ASTM D7415 >30 20.7 19.8 19.2 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9 15.0 | Soot % | % | *ASTM D7844 | >3 | 0.5 | 0.4 | 0.3 |
| FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2516.815.915.0 | Nitration | Abs/cm | *ASTM D7624 | >20 | 9.6 | 8.6 | 7.4 |
| Oxidation Abs/.1mm *ASTM D7414 >25 16.8 15.9 15.0 | Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 20.7 | 19.8 | 19.2 |
| | FLUID DEGRA | NOITAC | method | limit/base | current | history1 | history2 |
| Base Number (BN) mg KOH/g ASTM D2896 9.8 7.8 7.6 8.2 | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 16.8 | 15.9 | 15.0 |
| | Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 7.8 | 7.6 | 8.2 |



OIL ANALYSIS REPORT



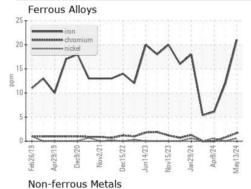


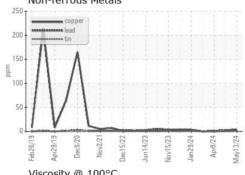


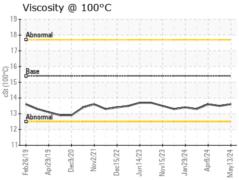
| VISUAL | | method | limit/base | current | history1 | history2 |
|-------------------------|--------|---------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate |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

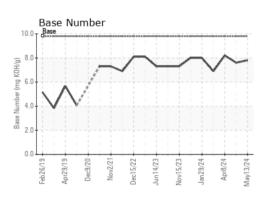
| FLUID PROPE | RHES | metnoa | ilmit/base | current | nistory i | nistory2 |
|--------------|------|-----------|------------|---------|-----------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.6 | 13.5 | 13.6 |

GRAPHS













Certificate 12367

Laboratory Sample No.

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0118180 Lab Number : 06191895 Unique Number : 11048647

Received : 28 May 2024 **Tested** : 29 May 2024 Diagnosed

: 29 May 2024 - Wes Davis

2120 West Bennett Street

GFL Environmental - 822 - Springfield Hauling

Springfield, MO US 65807 Contact: Dennis Moore dennis.moore@gflenv.com

Test Package : FLEET 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.

T: (417)403-3641

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