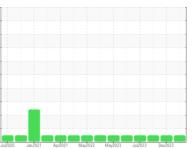


OIL ANALYSIS REPORT

Sample Rating Trend





NORMAL

| Sample Number Client Info GFL011275S GFL010129B GFL009178 amohine Age No Client Info 02 Mar 2024 27 Dec 2025 13 Oct 2021 mmal. Oil Age hirs Client Info 02 Mar 2024 27 Dec 2025 13 Oct 2023 itamination in the Oil Changed Client Info 0 19435 19010 attamination of the CONTAMINATION method Init/base current Nato Changed Not Changed | | _ , | | Jul2020 Ja | an2021 Apr2021 Ma | y2022 May2023 Jul2023 | Dec2023 | |
|---|-------------------|---------------|----------|-------------|-------------------|-----------------------|-------------|-------------|
| erval to monitor. Sample Date Client Info 192 Mar 2024 27 Dec 2023 13 Oct 2023 mmal. Oil Age hrs Client Info 19435 19435 19400 ormal. Oil Age hrs Client Info Not Changd Not Changd <t< th=""><th></th><th>SAMPLE INFORM</th><th>ATION</th><th>method</th><th>limit/base</th><th>current</th><th>history1</th><th>history2</th></t<> | | SAMPLE INFORM | ATION | method | limit/base | current | history1 | history2 |
| Machine Age hrs Client Info 19916 19435 19010 oll Age hrs Client Info 0 19435 0 tamination in the Sample Status I Not Changd Not Changd Not Changd e is suitable E E WC Method 3.0 <1.0 | | Sample Number | | Client Info | | GFL0112755 | GFL0101298 | GFL0091789 |
| Imal. Oil Aage hrs Client Info Not Changd | erval to monitor. | Sample Date | | Client Info | | 02 Mar 2024 | 27 Dec 2023 | 13 Oct 2023 |
| Dil Changed Client Info Not Changd NORMAL Not Changd NORMAL Not Changd NORMAL Not Changd NORMAL e is suitable e condition of the condition of the CONTAMINATION method Joint Changed NEG NEG NEG NEG P is suitable e condition of the Full WC Method >3.0 -1.0 <1.0 | | Machine Age | nrs | Client Info | | 19916 | 19435 | 19010 |
| Sample Status NORMAL NORMAL NORMAL NORMAL CONTAMINATION method limit/base current history1 history2 P is suitable Fuel WC Method >3.0 <1.0 | rmal. | Oil Age | nrs | Client Info | | 0 | 19435 | 0 |
| CONTAMINATION method limit/base current history1 history2 p is suitable o condition of the Fuel WC Method >3.0 <1.0 | | Oil Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| P is suitable Fuel WC Method >3.0 <1.0 <1.0 <1.0 <1.0 Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method >0.2 NEG NEG NEG NEG Iron ppm ASTU 05186m >120 2 5 2 Chromium ppm ASTU 05186m >20 0 <1 | tamination in the | Sample Status | | | | NORMAL | NORMAL | NORMAL |
| Water WC Method >0.2 NEG NEG NEG Bycol WC Method NEG NEG NEG NEG Water ppm ASTM 05185m >120 2 5 2 Iron ppm ASTM 05185m >20 0 <1 | | CONTAMINATIC | N | method | limit/base | current | history1 | history2 |
| Water WC Method >0.2 NEG NEG NEG NEG Glycol WC Method WEG NEG NEG NEG WEAR METALS method limit/base current history1 history2 Iron ppm ASTM 05185m >20 0 <1 | nic cuitable | Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 |
| Glycol WC Method NEG NEG NEG WEAR METALS renthod imit/base current history1 history2 Iron ppm ASTM D5186m >20 0 <1 | | Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Iron ppm ASTM D5185m >120 2 5 2 Chromium ppm ASTM D5185m >20 0 <1 | | Glycol | | WC Method | | NEG | NEG | NEG |
| Chromium ppm ASTM D5185m >20 0 <1 1 Nickel ppm ASTM D5185m >5 0 0 0 Silver ppm ASTM D5185m >2 0 <1 | | WEAR METALS | | method | limit/base | current | history1 | history2 |
| Nickel ppm ASTM D5185m >5 0 0 0 Titanium ppm ASTM D5185m >2 0 <1 | | Iron | opm | ASTM D5185m | >120 | 2 | 5 | 2 |
| Titanium ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >2 0 0 0 Auminum ppm ASTM D5185m >20 2 2 <1 | | Chromium | opm | ASTM D5185m | >20 | 0 | <1 | 1 |
| Titanium ppm ASTM D5185m >2 0 <1 0 Silver ppm ASTM D5185m >20 2 0 0 0 Auminum ppm ASTM D5185m >20 2 2 <1 | | Nickel | opm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Aluminum ppm ASTM D5185m >20 2 2 <1 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 0 2 <1 | | | | ASTM D5185m | >2 | 0 | <1 | 0 |
| Aluminum ppm ASTM D5185m >20 2 2 <1 Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 0 2 <1 | | | | ASTM D5185m | >2 | 0 | 0 | |
| Lead ppm ASTM D5185m >40 0 0 0 Copper ppm ASTM D5185m >330 0 2 <1 | | | | ASTM D5185m | >20 | 2 | 2 | <1 |
| Copper ppm ASTM D5185m >330 0 2 <1 Tin ppm ASTM D5185m >15 0 <1 | | | | ASTM D5185m | >40 | 0 | 0 | 0 |
| Tin ppm ASTM D5185m >15 0 <1 0 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 2 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 | | | | ASTM D5185m | >330 | 0 | 2 | <1 |
| Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 2 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum 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 0 2 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 0 <1 | | | | | | | 0 | 0 |
| Boron ppm ASTM D5185m 0 0 2 4 Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 59 55 Manganese ppm ASTM D5185m 0 <1 0 Magnesium ppm ASTM D5185m 1010 983 966 842 Calcium ppm ASTM D5185m 1010 983 966 842 Calcium ppm ASTM D5185m 1070 1069 1074 955 Zinc ppm ASTM D5185m 1270 1276 1318 1095 Sulfur ppm ASTM D5185m 2060 3049 3028 2857 Silicon ppm ASTM D5185m >20 3 4 3 Sodium ppm ASTM D5185m >20 0 3 1 INFRA-RED method limit/base current history | | | | | | 0 | | |
| Barium ppm ASTM D5185m 0 0 0 0 Molybdenum ppm ASTM D5185m 60 58 59 55 Manganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 983 966 842 Calcium ppm ASTM D5185m 1070 1069 1074 956 Phosphorus ppm ASTM D5185m 1570 1276 1318 1095 Sulfur ppm ASTM D5185m 1270 1276 1318 1095 Sulfur ppm ASTM D5185m 2060 3049 3028 2857 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >20 0 3 1 INFRA-RED method limit/base current history1 history2 Soot % % 'ASTM D7844 < | | ADDITIVES | | method | limit/base | current | history1 | history2 |
| Molybdenum ppm ASTM D5185m 60 58 59 55 Manganese ppm ASTM D5185m 0 <1 | | Boron | opm | ASTM D5185m | 0 | 0 | 2 | 4 |
| Marganese ppm ASTM D5185m 0 <1 <1 0 Magnesium ppm ASTM D5185m 1010 983 966 842 Calcium ppm ASTM D5185m 1070 1069 1074 956 Phosphorus ppm ASTM D5185m 1150 1050 971 955 Zinc ppm ASTM D5185m 1270 1276 1318 1095 Sulfur ppm ASTM D5185m 2060 3049 3028 2857 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m >20 0 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7824 | | Barium | opm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Magnesium ppm ASTM D5185m 1010 983 966 842 Calcium ppm ASTM D5185m 1070 1069 1074 956 Phosphorus ppm ASTM D5185m 1150 1050 971 955 Zinc ppm ASTM D5185m 1270 1276 1318 1095 Sulfur ppm ASTM D5185m 2060 3049 3028 2857 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m >20 0 3 1 NFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/lm *ASTM D7415 >30 17.8 18.7 17.0 FLUID DEGRADATION met | | Molybdenum | opm | ASTM D5185m | 60 | 58 | 59 | 55 |
| Calcium ppm ASTM D5185m 1070 1069 1074 956 Phosphorus ppm ASTM D5185m 1150 1050 971 955 Zinc ppm ASTM D5185m 1270 1276 1318 1095 Sulfur ppm ASTM D5185m 2060 3049 3028 2857 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m >20 0 2 0 Potassium ppm ASTM D5185m >20 0 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 17.0 FLUID DEGRADATION method | | Manganese | opm | ASTM D5185m | 0 | <1 | <1 | 0 |
| Phosphorus ppm ASTM D5185m 1150 1050 971 955 Zinc ppm ASTM D5185m 1270 1276 1318 1095 Sulfur ppm ASTM D5185m 2060 3049 3028 2857 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m >20 0 2 0 Potassium ppm ASTM D5185m >20 0 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7844 >4 0.2 0.2 0.1 Sulfation Abs/.tmm *ASTM D7844 2 | | Magnesium | opm | ASTM D5185m | 1010 | 983 | 966 | 842 |
| Zinc ppm ASTM D5185m 1270 1276 1318 1095 Sulfur ppm ASTM D5185m 2060 3049 3028 2857 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m >20 0 2 0 Potassium ppm ASTM D5185m >20 0 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 17.0 FLUID DEGRADATION method limit/base | | | | ASTM D5185m | 1070 | 1069 | 1074 | 956 |
| Zinc ppm ASTM D5185m 1270 1276 1318 1095 Sulfur ppm ASTM D5185m 2060 3049 3028 2857 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m >20 0 2 0 Potassium ppm ASTM D5185m >20 0 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/1mm *ASTM D7615 >30 17.8 18.7 17.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/1mm *ASTM D7414 <td></td> <td>Phosphorus</td> <td>opm</td> <td>ASTM D5185m</td> <td>1150</td> <th>1050</th> <td>971</td> <td>955</td> | | Phosphorus | opm | ASTM D5185m | 1150 | 1050 | 971 | 955 |
| SulfurppmASTM D5185m2060304930282857CONTAMINANTSmethodlimit/basecurrenthistory1history2SiliconppmASTM D5185m>25343SodiumppmASTM D5185m>20020PotassiumppmASTM D5185m>20031INFRA-REDmethodlimit/basecurrenthistory1history2Soot %%*ASTM D7844>40.20.20.1NitrationAbs/cm*ASTM D7624>206.48.35.4SulfationAbs/.1mm*ASTM D7415>3017.818.717.0FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2514.515.713.4 | | | | ASTM D5185m | 1270 | 1276 | 1318 | 1095 |
| Silicon ppm ASTM D5185m >25 3 4 3 Sodium ppm ASTM D5185m 0 2 0 Potassium ppm ASTM D5185m >20 0 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7624 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 17.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 15.7 13.4 | | Sulfur | opm | ASTM D5185m | 2060 | 3049 | 3028 | 2857 |
| Sodium ppm ASTM D5185m 0 2 0 Potassium ppm ASTM D5185m >20 0 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 17.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 15.7 13.4 | | CONTAMINANT | S | method | limit/base | current | history1 | history2 |
| Sodium ppm ASTM D5185m 0 2 0 Potassium ppm ASTM D5185m >20 0 3 1 INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 17.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 15.7 13.4 | | Silicon | opm | ASTM D5185m | >25 | 3 | 4 | 3 |
| INFRA-RED method limit/base current history1 history2 Soot % % *ASTM D7844 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 17.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 15.7 13.4 | | Sodium | opm | ASTM D5185m | | 0 | 2 | 0 |
| Soot % % *ASTM D7844 >4 0.2 0.2 0.1 Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 17.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 15.7 13.4 | | Potassium | opm | ASTM D5185m | >20 | 0 | 3 | 1 |
| Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 17.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 15.7 13.4 | | INFRA-RED | | method | limit/base | current | history1 | history2 |
| Nitration Abs/cm *ASTM D7624 >20 6.4 8.3 5.4 Sulfation Abs/.1mm *ASTM D7415 >30 17.8 18.7 17.0 FLUID DEGRADATION method limit/base current history1 history2 Oxidation Abs/.1mm *ASTM D7414 >25 14.5 15.7 13.4 | | Soot % | % | *ASTM D7844 | >4 | 0.2 | 0.2 | 0.1 |
| SulfationAbs/.1mm*ASTM D7415>3017.818.717.0FLUID DEGRADATIONmethodlimit/basecurrenthistory1history2OxidationAbs/.1mm*ASTM D7414>2514.515.713.4 | | Nitration | Abs/cm | *ASTM D7624 | >20 | | | 5.4 |
| Oxidation Abs/.1mm *ASTM D7414 >25 14.5 15.7 13.4 | | | Abs/.1mm | | | | | |
| | | FLUID DEGRADA | | method | limit/base | current | history1 | history2 |
| | | Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 14.5 | 15.7 | 13.4 |
| | | | ng KOH/g | | | 8.4 | 6.9 | 8.6 |

Machine Id 425017-415

Component **Diesel Engine**

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

DIAGNOSIS

Recommendation

Resample at the next service in

Wear

All component wear rates are no

Contamination

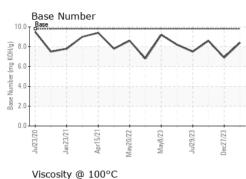
There is no indication of any co oil.

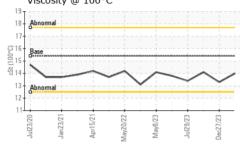
Fluid Condition

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

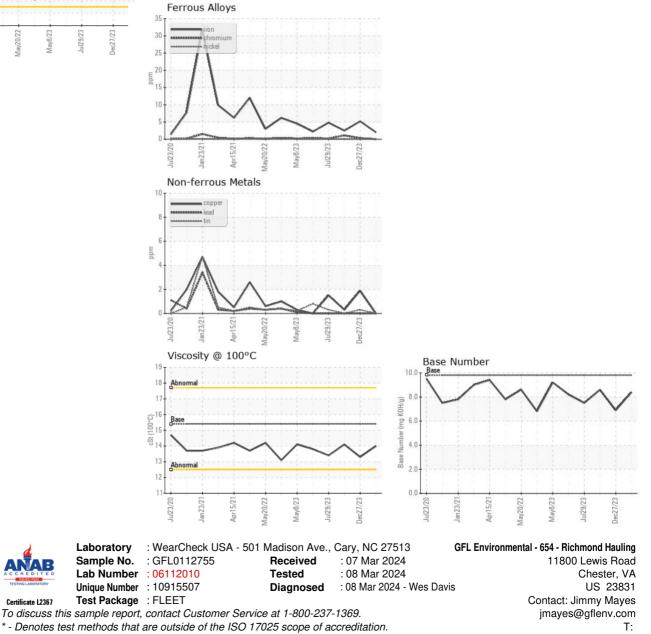


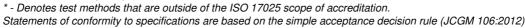
OIL ANALYSIS REPORT





| 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 | RTIES | method | limit/base | current | history1 | history2 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.0 | 13.3 | 14.1 |
| GRAPHS | | | | | | |





Certificate L2367

Submitted By: TECHNICIAN ACCOUNT

F: