

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
4570M
Component
Diesel Engine
Fluid

PETRO CANADA DURON SHP 15W40 (36 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

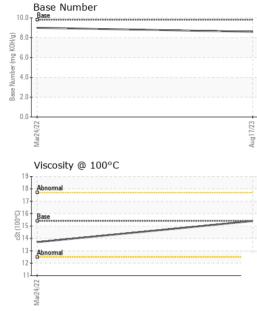
Fluid Condition

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

| SAMPLE INFORI | MATION | method | limit/base | current | history1 | history2 |
|---|--|---|--|--|--|------------------------------|
| Sample Number | | Client Info | | GFL0084864 | GFL0018495 | |
| Sample Date | | Client Info | | 17 Aug 2023 | 24 Mar 2022 | |
| Machine Age | hrs | Client Info | | 22350 | 18507 | |
| Oil Age | hrs | Client Info | | 22350 | 0 | |
| Oil Changed | | Client Info | | Changed | N/A | |
| Sample Status | | | | NORMAL | NORMAL | |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | |
| Glycol | | WC Method | | NEG | NEG | |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >90 | 31 | 53 | |
| Chromium | ppm | ASTM D5185m | >20 | 2 | 3 | |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 0 | |
| Titanium | ppm | ASTM D5185m | >2 | <1 | <1 | |
| Silver | | ASTM D5185m | >2 | 0 | 0 | |
| Aluminum | ppm | ASTM D5185m | >20 | 3 | 9 | |
| Lead | | ASTM D5185m | >40 | 4 | <1 | |
| | ppm | ASTM D5185m | >330 | 1 | 1 | |
| Copper Tin | ppm | | | - I <1 | <1 | |
| Vanadium | ppm | ASTM D5185m | >15 | | 0 | |
| | ppm | ASTM D5185m | | <1 0 | 0 | |
| Cadmium | ppm | ASTM D5185m | | () | () | |
| | | | | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185m | limit/base | current 2 | history1 | history2 |
| | | ASTM D5185m | | current | history1 | |
| Boron | ppm | ASTM D5185m | 0 | current 2 | history1 | |
| Boron Barium | ppm | ASTM D5185m ASTM D5185m | 0 0 60 | current 2 0 | history1 4 0 | |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 | current 2 0 71 | history1 4 0 61 | |
| Boron Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 | current 2 0 71 <1 | history1 4 0 61 <1 | |
| Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 | current 2 0 71 <1 1156 | history1 4 0 61 <1 1002 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 | current 2 0 71 <1 1156 1368 | history1 4 0 61 <1 1002 1149 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 | current 2 0 71 <1 1156 1368 1193 | history1 4 0 61 <1 1002 1149 1117 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 | current 2 0 71 <1 1156 1368 1193 1520 | history1 4 0 61 <1 1002 1149 1117 1361 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 | current 2 0 71 <1 1156 1368 1193 1520 3814 | history1 4 0 61 <1 1002 1149 1117 1361 2540 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 | current 2 0 71 <1 1156 1368 1193 1520 3814 current | history1 4 0 61 <1 1002 1149 1117 1361 2540 history1 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 | current 2 0 71 <1 1156 1368 1193 1520 3814 current 6 | history1 4 0 61 <1 1002 1149 1117 1361 2540 history1 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 | current 2 0 71 <1 1156 1368 1193 1520 3814 current 6 4 | history1 4 0 61 <1 1002 1149 1117 1361 2540 history1 11 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 | current 2 0 71 <1 1156 1368 1193 1520 3814 current 6 4 <1 | history1 4 0 61 <1 1002 1149 1117 1361 2540 history1 11 4 | history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base | current 2 0 71 <1 1156 1368 1193 1520 3814 current 6 4 <1 | history1 4 0 61 <1 1002 1149 1117 1361 2540 history1 11 4 history1 | history2 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m Method *ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base | current 2 0 71 <1 1156 1368 1193 1520 3814 current 6 4 <1 current 0.3 | history1 4 0 61 <1 1002 1149 1117 1361 2540 history1 11 4 history1 0.4 | history2 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m method *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145 | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 | current 2 0 71 <1 1156 1368 1193 1520 3814 current 6 4 <1 current 0.3 10.7 | history1 4 0 61 <1 1002 1149 1117 1361 2540 history1 11 4 history1 0.4 10.7 | history2 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m method *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D5185m *ASTM D7844 *ASTM D7624 *ASTM D76145 | 0 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30 | current 2 0 71 <1 1156 1368 1193 1520 3814 current 6 4 <1 current 0.3 10.7 22.1 | history1 4 0 61 <1 1002 1149 1117 1361 2540 history1 11 4 history1 0.4 10.7 22.0 | history2 history2 |



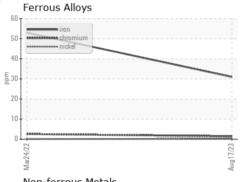
OIL ANALYSIS REPORT



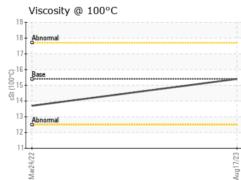
| VISUAL | | method | limit/base | current | history1 | history2 |
|-------------------------|--------|---------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | |
| Precipitate | scalar | *Visual | NONE | NONE | NONE | |
| Silt | scalar | *Visual | NONE | NONE | NONE | |
| Debris | scalar | *Visual | NONE | NONE | NONE | |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NONE | |
| Appearance | scalar | *Visual | NORML | NORML | NORML | |
| Odor | scalar | *Visual | NORML | NORML | NORML | |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | |
| Free Water | scalar | *Visual | | NEG | NEG | |
| | | | | | | |

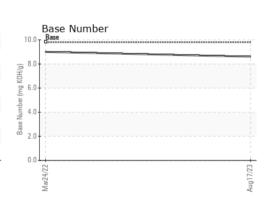
| FLUID PROPE | ERTIES | method | | | | history2 |
|--------------|--------|------------------|------|------|------|----------|
| Visc @ 100°C | cSt. | ASTM D445 | 15.4 | 15 4 | 13.7 | |

GRAPHS



| 10 - | Non-ferrous Metals |
|-------------------|--|
| 8- | copper |
| 6 - udd | |
| 2 - | No. of the Control of |
| 0 | And the state of t |
| | Mar24/22 |
| , | Viscosity @ 100°C |









Certificate L2367

Laboratory Sample No. Lab Number

Unique Number

: GFL0084864 : 05929183 : 10609130 Test Package : FLEET

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 Received Diagnosed Diagnostician : Wes Davis

: 21 Aug 2023 : 21 Aug 2023

GFL Environmental - 410 - Michigan West

39000 Van Born Rd Wayne, MI US 48184

Contact: Belal Dgheish bdgheish@gflenv.com T: (734)714-2340

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)