

OIL ANALYSIS REPORT

Sample Rating Trend







Machine Id 876 Component Diesel Engine

PETRO CANADA DURON SHP 10W30 (--- QTS)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

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 INFOR | MATION | method | limit/base | current | history1 | history2 | |
|---|--|---|---|---|--|--|--|
| Sample Number | | Client Info | | PCA0099814 | | | |
| Sample Date | | Client Info | | 21 Aug 2023 | | | |
| Machine Age | mls | Client Info | | 91236 | | | |
| Oil Age | mls | Client Info | | 12036 | | | |
| Oil Changed | | Client Info | | Changed | | | |
| Sample Status | | | | NORMAL | | | |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 | |
| Fuel | | WC Method | >5 | <1.0 | | | |
| Glycol | | WC Method | | NEG | | | |
| WEAR METAL | S | method | limit/base | current | history1 | history2 | |
| | | | | | | motory | |
| Iron Chromium | ppm | ASTM D5185m | >100 | 51 2 | | | |
| Nickel | ppm | ASTM D5185m | >20 >4 | 2 <1 | | | |
| Titanium | ppm | ASTM D5185m ASTM D5185m | | <1 <1 | | | |
| Silver | ppm ppm | ASTM D5185m | >3 | < 1 0 | | | |
| Aluminum | ppm | ASTM D5185m | >20 | 7 | | | |
| Lead | ppm | ASTM D5185m | >40 | ، <1 | | | |
| Copper | ppm | ASTM D5185m | >330 | 3 | | | |
| Tin | ppm | ASTM D5185m | >15 | ۲ ۲ | | | |
| Vanadium | ppm | ASTM D5185m | 210 | <1 | | | |
| Cadmium | ppm | ASTM D5185m | | 0 | | | |
| ADDITIVES | | mathad | limit/base | | In the transmission | biotory 0 | |
| | | | | | | | |
| | | method | limit/base | current | history1 | history2 | |
| Boron | ppm | ASTM D5185m | 2 | 13 | nistory i | | |
| Boron Barium | ppm | ASTM D5185m ASTM D5185m | 2 0 | 13 0 | | | |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 | 13 0 59 | | | |
| Boron Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 | 13 0 59 <1 | | | |
| Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 | 13 0 59 <1 926 | | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 | 13 0 59 <1 926 1486 | | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 995 | 13 0 59 <1 926 1486 1162 | | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 995 1180 | 13 0 59 <1 926 1486 1162 1386 | | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 995 | 13 0 59 <1 926 1486 1162 | | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 995 1180 | 13 0 59 <1 926 1486 1162 1386 | | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 | 13 0 59 <1 926 1486 1162 1386 3845 | | | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | 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 | 2 0 50 950 1050 995 1180 2600 limit/base >25 | 13 0 59 <1 926 1486 1162 1386 3845 <u>current</u> 12 4 | history1 | history2 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method | 2 0 50 950 1050 995 1180 2600 | 13 0 59 <1 926 1486 1162 1386 3845 <u>current</u> 12 | history1 | history2 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 limit/base >25 | 13 0 59 <1 926 1486 1162 1386 3845 <u>current</u> 12 4 | history1 | history2 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 limit/base >25 | 13 0 59 <1 926 1486 1162 1386 3845 <u>current</u> 12 4 0 | history1 | history2 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm TS | ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 | 13 0 59 <1 926 1486 1162 1386 3845 current 12 4 0 0 | history1 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 TS ppm ppm | ASTM D5185m ASTM D5185m | 2 0 50 950 1050 995 1180 2600 limit/base >25 >20 limit/base >3 | 13 0 59 <1 926 1486 1162 1386 3845 current 12 4 0 0 current | history1 history1 | history2 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 ASTM D5185m | 2 0 50 950 1050 995 1180 2600 imit/base >25 20 imit/base >20 | 13 0 59 <1 926 1486 1162 1386 3845 <u>current</u> 12 4 0 <u>current</u> 0.7 11.3 | history1 history1 | history2 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 ASTM D5185m | 2 0 50 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20 >30 | 13 0 59 <1 926 1486 1162 1386 3845 <u>current</u> 12 4 0 <u>current</u> 0.7 11.3 20.6 | history1 history1 history1 | history2 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 ASTM D7844 *ASTM D7844 *ASTM D7844 | 2 0 0 50 0 950 1050 995 1180 2600 imit/base >25 imit/base >3 >20 >30 imit/base | 13 0 59 <1 926 1486 1162 1386 3845 current 12 4 0 current 0.7 11.3 20.6 | history1 history1 history1 history1 | history2 history2 history2 history2 | |



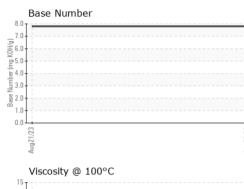
14 Abnorma

13 cSt (100°C) 11 Base

10 Abnormal

8. Aug21/23

OIL ANALYSIS REPORT



| | VISUAL | | method | limit/base | current | history1 | history2 |
|---|---------------------------------|----------------------|-------------------|---------------------------------|--------------------------|---------------|---------------------------|
| | White Metal | scalar | *Visual | NONE | NONE | | |
| | Yellow Metal | scalar | *Visual | NONE | NONE | | |
| | Precipitate | scalar | *Visual | NONE | NONE | | |
| | Silt | scalar | *Visual | NONE | NONE | | |
| | Debris | scalar | *Visual | NONE | NONE | | |
| | Sand/Dirt | scalar | *Visual | NONE | NONE | | |
| Aug21/23 | Appearance | scalar | *Visual | NORML | NORML | | |
| Aug | Odor | scalar | *Visual | NORML | NORML | | |
| 0°C | Emulsified Water | scalar | *Visual | >0.2 | NEG | | |
| | Free Water | scalar | *Visual | | NEG | | |
| | FLUID PROPE | RTIES | method | limit/base | current | history1 | history2 |
| | Visc @ 100°C | cSt | ASTM D445 | 12.00 | 13.4 | | |
| | GRAPHS | | | | | | |
| | Ferrous Alloys | | | | | | |
| | ⁶⁰ T | | | | | | |
| | 50 - chromium | | | | | | |
| | 40 | | | | | | |
| | Epo | | | | | | |
| | <u>5</u> 30- | | | | | | |
| | 20- | | | | | | |
| | 10- | | | | | | |
| | 0 | | | | | | |
| | Aug21/23 | | | Aug21/23 | | | |
| | | | | Aug | | | |
| | Non-ferrous Metal | s | | | | | |
| | copper | | | | | | |
| | 8 - tin | | | | | | |
| | 6 | | | | | | |
| | Ed. | | | | | | |
| | 4- | | | | | | |
| | 2 | | | | | | |
| | | | | | | | |
| | 0 | | | | | | |
| | Aug21/23 | | | Aug21/23 | | | |
| | Viscosity @ 100°C | | | Aı | | | |
| | ¹⁵ T | | | 8.0 | Base Number | | |
| | 14 - Abnormal | | | o.u 7.0 | | | - |
| | 13- | | | | | | |
| ζ. | | | | () HOX Bu Ja 4.0 W 3.0 | | | |
| | 112 - Base 112 - Base 111 | | | ے بے 4.0 | | | |
| ç | | | | E 3.0 | + | | |
| | 10 - Abnormal | | | 8 2.0 | + | | |
| | 9 | | | 1.0 | | | |
| | | | | 0.0 | 123 | | /23 |
| | Aug21/23 | | | Aug21/23 | Aug21/23 | | Aug21/23 - |
| | | | | | | | |
| Laboratory | : WearCheck USA - 5 | | | | 3 | GAS FIELD S | |
| Sample No. Lab Number | | Receiveo Diagnoso | a :05% ed :05% | Sep 2023 Sep 2023 | | MΔ | 114 PA-660 NSFIELD, PA |
| | | Diagnost | | s Davis | | | US 16933 |
| Certificate L2367 Test Package | : FLEET | - | | | | Contact: TAR/ | A MUIRHEAD |
| To discuss this sample report, o | | | | | | tara.muirhea | d@gfsinc.net |
| * - Denotes test methods that an Statements of conformity to speci | | | | | ICGM 106.2012) | | T: F: |
| | | | 2000010000 | | 2 2 3 M 1 00 . L 0 1 L) | | |

Contact/Location: TARA MUIRHEAD - GASMAN