

OIL ANALYSIS REPORT

Sample Rating Trend



We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this

There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the

All component wear rates are normal.

DIAGNOSIS

Contamination

Fluid Condition

presence of contaminants.

condition. Wear Machine Id 901014 Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (26 LTR)

| SAMPLE INFOR | MATION | method | limit/base | current | history1 | history2 |
|---|--|---|---|---|---|---|
| Sample Number | | Client Info | | GFL0091033 | GFL0086490 | GFL0086497 |
| Sample Date | | Client Info | | 14 Aug 2023 | 17 Jul 2023 | 26 Jun 2023 |
| Machine Age | hrs | Client Info | | 247017 | 14794 | 14378 |
| Oil Age | hrs | Client Info | | 232223 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | Changed | Changed |
| Sample Status | | | | ABNORMAL | NORMAL | ABNORMAL |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Glycol | | WC Method | | NEG | NEG | NEG |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185(m) | >120 | 3 | 2 | 4 |
| Chromium | ppm | ASTM D5185(m) | >20 | 0 | 0 | 0 |
| Nickel | ppm | ASTM D5185(m) | >5 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185(m) | >2 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | <1 | <1 | 1 |
| Lead | ppm | ASTM D5185(m) | >40 | <1 | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >330 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185(m) | >15 | 0 | 0 | 0 |
| Antimony | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| O | | | | | | |
| Cadmium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| | ppm | ASTM D5185(m) method | limit/base | 0 current | 0 history1 | 0 history2 |
| ADDITIVES Boron | ppm ppm | ASTM D5185(m) method ASTM D5185(m) | limit/base 0 | 0 current 6 | 0 history1 7 | 0 history2 6 |
| ADDITIVES Boron Barium | ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) | limit/base 0 0 | 0 current 6 0 | 0 history1 7 0 | 0 history2 6 0 |
| ADDITIVES Boron Barium Molybdenum | ppm ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | limit/base 0 0 60 | 0 current 6 0 58 | 0 history1 7 0 57 | 0 history2 6 0 58 |
| ADDITIVES Boron Barium Molybdenum Manganese | ppm ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | limit/base 0 0 60 0 | 0 current 6 0 58 0 | 0 history1 7 0 57 0 | 0 history2 6 0 58 <1 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | limit/base 0 0 60 0 1010 | 0 current 6 0 58 0 945 | 0 history1 7 0 57 0 938 | 0 history2 6 0 58 <1 957 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | limit/base 0 0 60 0 1010 1070 | 0 current 6 0 58 0 945 1040 | 0 history1 7 0 57 0 938 1033 | 0 history2 6 0 58 <1 957 998 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | limit/base 0 0 60 0 1010 1070 1150 | 0 current 6 0 58 0 945 1040 1012 | 0 history1 7 0 57 0 938 1033 1027 | 0 history2 6 0 58 <1 957 998 1036 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | limit/base 0 60 0 1010 1070 1150 1270 | 0 current 6 0 58 0 945 1040 1012 1152 | 0 history1 7 0 57 0 938 1033 1027 1146 | 0 history2 6 0 58 <1 957 998 1036 1176 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) Method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | limit/base 0 60 0 1010 1070 1150 1270 2060 | 0 current 6 0 58 0 945 1040 1012 1152 2448 | 0 history1 7 0 57 0 938 1033 1027 1146 2506 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | limit/base 0 60 0 1010 1070 1150 1270 2060 | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | limit/base 0 60 0 1010 1070 1150 1270 2060 limit/base | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 current | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 kistory1 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 kistory2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) Method ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) ASTM D5185(m) | limit/base 0 60 0 1010 1070 1150 1270 2060 limit/base >25 | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 current 3 | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 <1 history1 3 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 <1 history2 3 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) | limit/base 0 60 0 1010 1070 1150 1270 2060 limit/base >25 | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 current 3 3 | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 kistory1 3 3 3 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 <1 history2 3 3 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) Method ASTM D5185(m) ASTM D5185(m) | limit/base 0 60 0 1010 1070 1150 1270 2060 limit/base >25 | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 2448 <1 2448 <1 2448 <1 2448 | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 2506 <1 history1 3 3 3 <1 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 2427 <1 history2 3 3 3 <1 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) Method ASTM D5185(m) ASTM D5185(m) | limit/base 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >20 >3.0 | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 current 3 3 <1 ▲ 3.3 | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 2506 <1 history1 3 3 3 <1 2.6 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 ×1 history2 3 3 3 <1 ×1 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) method ASTM D5185(m) ASTM D5185(m) | limit/base 0 0 0 1010 1070 1150 1270 2060 2060 limit/base >25 20 >20 >3.0 | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 current 3 3 <1 ▲ 3.3 current | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 kistory1 3 3 3 <1 2.6 history1 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 kistory2 3 3 3 <1 ▲ 4.5 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D7593* | limit/base 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 current 3 3 <1 ▲ 3.3 current 0 | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 1146 2506 <1 Nistory1 3 3 3 <1 2.6 history1 0 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 ×1 history2 3 3 3 <1 ×1 ↓5 history2 0 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D7593* | limit/base 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 current 3 3 <1 ▲ 3.3 current 0 7.5 | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 kistory1 3 3 3 <1 2.6 history1 0 6.0 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 kistory2 3 3 3 <1 ▲ 4.5 history2 0 8.4 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D7593* method ASTM D7624* ASTM D7624* ASTM D7624* | limit/base 0 60 0 1010 1070 1150 1270 2060 2060 limit/base >25 -20 >3.0 limit/base >4 >20 >30 | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 current 3 3 <1 ▲ 3.3 current 0 7.5 20.4 | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 * history1 3 3 3 <1 2.6 history1 0 6.0 18.7 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 kistory2 3 3 3 <1 kistory2 0 8.4 19.5 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D7593* | limit/base 0 60 0 1010 1070 1150 1270 2060 limit/base >25 >20 >3.0 limit/base >4 >20 >30 | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 current 3 3 <1 3 3 <1 ▲ 3.3 current 0 7.5 20.4 current | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 2506 <1 3 3 3 <1 2.6 history1 0 6.0 18.7 history1 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 176 2427 <1 Nistory2 3 3 3 <1 ▲ 4.5 history2 0 8.4 19.5 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur Lithium CONTAMINAN Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE Oxidation | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185(m) ASTM D7624 ASTM D7414* | limit/base 0 60 0 1010 1070 1150 1270 2060 2060 limit/base >20 >3.0 limit/base >4 >20 >30 limit/base | 0 current 6 0 58 0 945 1040 1012 1152 2448 <1 current 3 3 <1 ▲ 3.3 current 0 7.5 20.4 current 15.3 | 0 history1 7 0 57 0 938 1033 1027 1146 2506 <1 | 0 history2 6 0 58 <1 957 998 1036 1176 2427 <1 × istory2 3 3 3 <1 ▲ 4.5 × history2 0 8.4 19.5 × history2 0 8.4 19.5 |



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OIL ANALYSIS REPORT



14131 BAYVIEW AVE, AURORA YARD AURORA, ON CA L4G 0K6 Contact: Mike Havens MHavens@gflenv.com T: F: (905)713-2445

ISO 17025:2017 Accredited Laboratory

Lab Number

Unique Number

: 02579049

To discuss this sample report, contact Customer Service at 1-800-268-2131.

: 5632109

Diagnosed

Test Package : MOB 1 (Additional Tests: FUELDILUTION, PercentFuel)

Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.

Validity of results and interpretation are based on the sample and information as supplied.

Diagnostician : Wes Davis

: 30 Aug 2023

Submitted By: Scott Ewan Page 2 of 2

history2

history2

14/73

n14/73

Aug14/23

n76/73

lul6/21

NEG

NEG

12.2