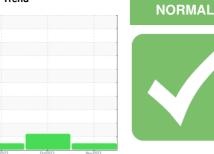


OIL ANALYSIS REPORT

Sample Rating Trend



Component Diesel Engine Fluid

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

DIAGNOSIS Recommendation

Resample at the next service interval to monitor.

Machine Id 834048

Wear

Metal levels are typical for a new component breaking in.

Contamination

There is no indication of any contamination in the oil.

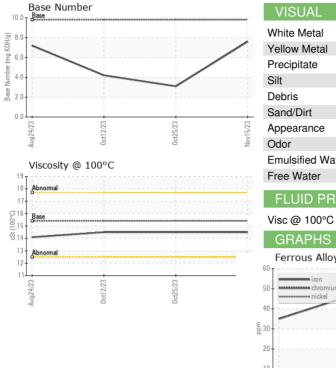
Fluid Condition

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 | | GFL0098664 | GFL0098668 | GFL0093705 |
| Sample Date | | Client Info | | 15 Nov 2023 | 25 Oct 2023 | 12 Oct 2023 |
| Machine Age | hrs | Client Info | | 765 | 599 | 500 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Sample Status | | | | NORMAL | ABNORMAL | NORMAL |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >80 | 17 | 51 | 46 |
| Chromium | ppm | ASTM D5185m | >5 | <1 | 1 | 1 |
| Nickel | ppm | ASTM D5185m | >2 | 1 | 1 | 1 |
| Titanium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185m | >3 | <1 | 0 | <1 |
| Aluminum | ppm | ASTM D5185m | >30 | 4 | 8 | 5 |
| Lead | ppm | ASTM D5185m | >30 | <1 | 2 | 2 |
| Copper | ppm | ASTM D5185m | >150 | 5 | 19 | 19 |
| Tin | ppm | ASTM D5185m | >5 | 1 | 2 | 2 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | 0 | <1 | <1 |
| | | | | - | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185m | limit/base | - | | history2 8 |
| | | | | current | history1 | |
| Boron | ppm | ASTM D5185m | 0 | current 26 | history1 5 | 8 |
| Boron Barium | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 0 | current 26 0 | history1 5 4 | 8 |
| Boron Barium Molybdenum | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 | current 26 0 44 4 595 | history1 5 4 53 | 8 8 51 14 726 |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 | current 26 0 44 4 595 1395 | history1 5 4 53 14 759 1118 | 8 8 51 14 726 1132 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 | current 26 0 44 4 595 1395 811 | history1 5 4 53 14 759 1118 705 | 8 8 51 14 726 1132 613 |
| 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 | 0 0 60 0 1010 1070 1150 1270 | current 26 0 44 4 595 1395 811 889 | history1 5 4 53 14 759 1118 705 884 | 8 8 51 14 726 1132 613 846 |
| 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 | 0 0 60 0 1010 1070 1150 | current 26 0 44 4 595 1395 811 | history1 5 4 53 14 759 1118 705 | 8 8 51 14 726 1132 613 |
| 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 | 0 0 60 0 1010 1070 1150 1270 | current 26 0 44 4 595 1395 811 889 | history1 5 4 53 14 759 1118 705 884 | 8 8 51 14 726 1132 613 846 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm 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 26 0 44 595 1395 811 889 2329 current 11 | history1 5 4 53 14 759 1118 705 884 2314 history1 37 | 8 8 51 14 726 1132 613 846 2039 history2 38 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm 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 ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 limit/base | current 26 0 44 595 1395 811 889 2329 current 11 4 | history1 5 4 53 14 759 1118 705 884 2314 history1 37 4 | 8 8 51 14 726 1132 613 846 2039 history2 38 5 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm 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 limit/base | current 26 0 44 595 1395 811 889 2329 current 11 | history1 5 4 53 14 759 1118 705 884 2314 history1 37 | 8 8 51 14 726 1132 613 846 2039 history2 38 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 220 220 | current 26 0 44 595 1395 811 889 2329 current 11 4 5 current | history1 5 4 53 14 759 1118 705 884 2314 history1 37 4 14 A 14 | 8 8 51 14 726 1132 613 846 2039 history2 38 5 11 11 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 TS ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 2060 220 20 20 20 20 20 | current 26 0 44 4 595 1395 811 889 2329 current 11 4 5 current 0 | history1 5 4 53 14 759 1118 705 884 2314 history1 37 4 14 ol | 8 8 51 14 726 1132 613 846 2039 history2 38 5 11 11 history2 0 |
| 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 TS ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200 | current 26 0 44 4 595 1395 811 889 2329 current 11 4 5 current 0 8.9 | history1 5 4 53 14 759 1118 705 884 2314 history1 37 4 14 0 12.4 | 8 8 51 14 726 1132 613 846 2039 history2 38 5 11 history2 0 0 11.7 |
| 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 TS ppm ppm | ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 2060 220 20 20 20 20 20 | current 26 0 44 4 595 1395 811 889 2329 current 11 4 5 current 0 | history1 5 4 53 14 759 1118 705 884 2314 history1 37 4 14 ol | 8 8 51 14 726 1132 613 846 2039 history2 38 5 11 11 history2 0 |
| 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 | 0 0 0 1010 1070 1150 1270 2060 2060 2060 200 200 200 200 200 200 | current 26 0 44 4 595 1395 811 889 2329 current 11 4 5 current 0 8.9 | history1 5 4 53 14 759 1118 705 884 2314 history1 37 4 14 0 12.4 | 8 8 51 14 726 1132 613 846 2039 history2 38 5 11 history2 0 0 11.7 |
| 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 | 0 0 0 1010 1070 1150 1270 2060 2060 220 20 20 320 320 33 220 330 | current 26 0 44 4 595 1395 811 889 2329 current 11 4 5 current 0 8.9 20.5 | history1 5 4 53 14 759 1118 705 884 2314 history1 37 4 14 0 12.4 23.4 | 8 8 51 14 726 1132 613 846 2039 history2 38 5 11 11 history2 0 11.7 21.8 |



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 |
| 23 - | 23 | Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| 0ct25/23 | Nov15/23 | Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| - | 2 | Emulsified Water | | | | | | |
| | | | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| | | Free Water | scalar | *Visual | | NEG | NEG | NEG |
| | | FLUID PROPE | | method | limit/base | current | history1 | history2 |
| | | Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.5 | 14.5 | 14.5 |
| | | GRAPHS | | | | | | |
| | | Ferrous Alloys | | | | | | |
| 23 - | | iron | | | | | | |
| 0ct25/23 | | 50 - chromium | | 7 | | | | |
| 0 | | 40 - | | | | | | |
| | E . | § 30 - | | | | | | |
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| | | 20 | | | | | | |
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| | | Aug24/23 0ct12/23 | | 0ct25/23 | Nov15/23 | | | |
| | | Aug2 | | 0ctž | Nov1 | | | |
| | | Non-ferrous Meta | ls | | | | | |
| | | 20 | | _ | | | | |
| | | copper | | | | | | |
| | | 15 - 15 - | | | | | | |
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| | | 툞 10- | | | | | | |
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| | | ug24/23 0ct12/23 | | 0ct25/23 | Nov15/23 | | | |
| | | | | 5 | 0 | | | |
| | | 4 | | 0 | 2 | | | |
| | | Viscosity @ 100°C | 2 | | | Base Number | | |
| | | Viscosity @ 100°C | 2 | | 2 10.0 | | | |
| | | Viscosity @ 100°C | 2 | | 10.0 | Base | | |
| | Ę | Viscosity @ 100°C | 5 | | 10.0 | Base | | / |
| | 199001 | Viscosity @ 100°C | | | 10.0 | Base | | / |
| | 00-1100-01 | Viscosity @ 100°C | 2 | | 10.0 | Base | | / |
| | 10-000 J. + 50* | Viscosity @ 100°C | 2 | | 10.0 (0, 8.0 (0, HO) (0, HO) (| Base | | |
| | 1000011-800 | Viscosity @ 100°C | | | 0.0 8.0 (HOX Bu Bu Bu | Base | | |
| | | Viscosity @ 100°C | | | 10.0 (0, 8.0 (0, HO) (0, HO) (0, HO) (0, HO) (0, 10, 10, 10, 10, 10, 10, 10, 10, 10, 1 | Base | | |
| | | Viscosity @ 100°C | | | 10.0 (0, 8.0 (0, HO) (0, HO) (| Base | 5/23 5/23 | |
| | 1 | Viscosity @ 100°C | | 0ct25/23 | 10.0 (0HO) Dul Ja gump see 2.0 | Base | 0ct1 2/23 | |
| | Laboratory Sample No. Lab Number | Viscosity @ 100°C | 501 Madia Received Diagnose | son Ave., Ca d : 24 l ed : 28 l | 10.0 (0)HOX DUI Ja Mump seeg 2.0 EZ/SI Nov | Ecut-Zonny | /ironmental - 83 22820 S S | tate Route 2 urrisonville, I |
| icate L2367 discuss this | Laboratory Sample No. Lab Number Unique Number Test Package | Viscosity @ 100°C | 501 Madia Received Diagnost | son Ave., Ca d : 24 l ed : 28 l tician : Sea | 10.0 (0,000 mu) and (0,000 mu) and | Ecut-Zonny | /ironmental - 83 22820 S S | tate Route 2 arrisonville, M US 647 AN SWANS |

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Contact/Location: BRYAN SWANSON - GFL837