

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Area (89750X) Walgreens Machine Id [Walgreens] 136A67188 Component

Diesel Engine

PETRO CANADA DURON SHP 10W30 (11 GAL)

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

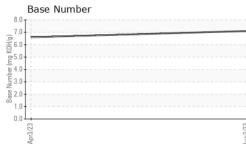
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

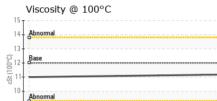
| SAMPLE INFORI | MATION | method | limit/base | current | history1 | history2 |
|---|---|---|---|--|---|--|
| Sample Number | | Client Info | | PCA0093572 | PCA0093588 | |
| Sample Date | | Client Info | | 03 Aug 2023 | 03 Apr 2023 | |
| Machine Age | mls | Client Info | | 621947 | 595988 | |
| Oil Age | mls | Client Info | | 25959 | 0 | |
| Oil Changed | | Client Info | | Changed | Changed | |
| Sample Status | | | | NORMAL | NORMAL | |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Fuel | | WC Method | >5 | <1.0 | <1.0 | |
| Glycol | | WC Method | 20 | NEG | NEG | |
| - | | | | | | |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >110 | 8 | 12 | |
| Chromium | ppm | ASTM D5185m | >4 | 0 | <1 | |
| Nickel | ppm | ASTM D5185m | >2 | 0 | 0 | |
| Titanium | ppm | ASTM D5185m | | 4 | 2 | |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | |
| Aluminum | ppm | ASTM D5185m | >25 | 3 | 5 | |
| Lead | ppm | ASTM D5185m | >45 | 0 | <1 | |
| Copper | ppm | ASTM D5185m | >85 | 1 | 2 | |
| Tin | ppm | ASTM D5185m | >4 | 0 | <1 | |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | |
| | | | | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185m | limit/base | current 3 | history1 3 | history2 |
| | ppm ppm | | | | | |
| Boron Barium | | ASTM D5185m | 2 | 3 | 3 | |
| Boron | ppm | ASTM D5185m ASTM D5185m | 2 0 | 3 0 | 3 0 | |
| Boron Barium Molybdenum Manganese | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 | 3 0 54 | 3 0 56 | |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 | 3 0 54 <1 | 3 0 56 <1 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 | 3 0 54 <1 879 | 3 0 56 <1 800 | |
| Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 | 3 0 54 <1 879 1147 | 3 0 56 <1 800 1031 | |
| 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 | 3 0 54 <1 879 1147 1027 | 3 0 56 <1 800 1031 978 | |
| 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 | 3 0 54 <1 879 1147 1027 1207 | 3 0 56 <1 800 1031 978 1209 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN | ppm 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 | 3 0 54 <1 879 1147 1027 1207 3516 current | 3 0 56 <1 800 1031 978 1209 3049 history1 | |
| 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 | 3 0 54 <1 879 1147 1027 1207 3516 current 5 | 3 0 56 <1 800 1031 978 1209 3049 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN | 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 | 2 0 50 950 1050 995 1180 2600 limit/base >30 | 3 0 54 <1 879 1147 1027 1207 3516 <u>current</u> 5 3 | 3 0 56 <1 800 1031 978 1209 3049 history1 5 | 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 0 950 1050 995 1180 2600 limit/base >30 | 3 0 54 <1 879 1147 1027 1207 3516 current 5 3 0 | 3 0 56 <1 800 1031 978 1209 3049 history1 5 4 2 | 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 0 950 1050 995 1180 2600 imit/base >30 -20 imit/base | 3 0 54 <1 879 1147 1027 1207 3516 current 5 3 0 0 | 3 0 56 <1 800 1031 978 1209 3049 history1 5 4 2 2 history1 | 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 0 950 1050 995 1180 2600 Imit/base >30 >20 Imit/base >3 | 3 0 54 <1 879 1147 1027 1207 3516 <u>current</u> 5 3 0 <u>current</u> 0.4 | 3 0 56 <1 800 1031 978 1209 3049 history1 5 4 2 history1 0.4 | 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 TS ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 2 0 50 0 950 1050 995 1180 2600 <i>limit/base</i> >30 20 <i>limit/base</i> >3 >20 | 3 0 54 <1 879 1147 1027 1207 3516 <i>current</i> 5 3 0 <i>current</i> 0.4 8.4 | 3 0 56 <1 800 1031 978 1209 3049 history1 5 4 2 history1 0.4 8.0 | 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 0 950 1050 995 1180 2600 Imit/base >30 >20 Imit/base >3 | 3 0 54 <1 879 1147 1027 1207 3516 <u>current</u> 5 3 0 <u>current</u> 0.4 | 3 0 56 <1 800 1031 978 1209 3049 history1 5 4 2 history1 0.4 | 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 0 950 1050 995 1180 2600 <i>limit/base</i> >30 20 <i>limit/base</i> >3 >20 | 3 0 54 <1 879 1147 1027 1207 3516 <i>current</i> 5 3 0 <i>current</i> 0.4 8.4 | 3 0 56 <1 800 1031 978 1209 3049 history1 5 4 2 history1 0.4 8.0 | 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 0 950 1050 995 1180 2600 imit/base >30 220 imit/base >3 220 30 imit/base | 3 0 54 <1 879 1147 1027 1207 3516 <u>current</u> 5 3 0 <u>current</u> 0.4 8.4 18.8 | 3 0 56 <1 800 1031 978 1209 3049 history1 5 4 2 <u>history1</u> 0.4 8.0 18.3 | history2 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 | 2 0 50 0 950 1050 995 1180 2600 imit/base >30 220 imit/base >3 220 30 imit/base | 3 0 54 <1 879 1147 1027 1207 3516 <i>current</i> 5 3 0 <i>current</i> 0.4 8.4 18.8 | 3 0 56 <1 800 1031 978 1209 3049 history1 5 4 2 history1 0.4 8.0 18.3 history1 | history2 history2 history2 history2 |



Apr3/23

OIL ANALYSIS REPORT





| | VISUAL | | method | limit/base | | | 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 | |
| Aug3/23 | Appearance | scalar | *Visual | NORML | NORML | NORML | |
| Aı | Cuol | scalar | *Visual | NORML | NORML | NORML | |
| | Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | |
| | Free Water | scalar | *Visual | | NEG | NEG | |
| | FLUID PROPE | RTIES | method | limit/base | current | history1 | history2 |
| | Visc @ 100°C | cSt | ASTM D445 | 12.00 | 11.2 | 11.0 | |
| | GRAPHS | | | | | | |
| | Ferrous Alloys | | | | | | |
| | iron | | | | | | |
| | 10 - chromium | | | | | | |
| | 8- | | | | | | |
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| | Apr3/23 | | | Aug3/23 | | | |
| | AI | | | Au | | | |
| | Non-ferrous Meta | ls | | | | | |
| | 10 copper | | | | | | |
| | 8 - sessessesses lead | | | | | | |
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| | u d | | | | | | |
| | 4- | | | | | | |
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| | 0++ | | | CO | | | |
| | 0++ | | | 183/23 | | | |
| | Apr3/23 + | | | Aug3/23 | | | |
| | 0++ | 2 | | Aug3/23 | Base Number | | |
| | Viscosity @ 100°C | | | 8.0 |] | | |
| | Viscosity @ 100°C | 2 | | 8.0 |] | | |
| | Viscosity @ 100°C | 2 | | 8.0 |] | | |
| | Viscosity @ 100°C | 2 | | 8.0 |] | | |
| | Viscosity @ 100°C | 2 | | 8.0 7.0 (b)6.0 (b)400 b) b 8 (mm) 3.0 3.0 | | | |
| | Viscosity @ 100°C | | | 2.8 7,7 1,0,0 1,0,0 1,0,0 1,0,0 1,0,0 1,0 1,0 1 | | | |
| | Viscosity @ 100°C | | | 8.0 7.0 (9)(6.0, 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 | | | |
| | Viscosity @ 100°C | | | 8.0 7.0 (b)(b)(b)(b)(b)(b)(b)(b)(b)(b)(b)(b)(b)(| | | |
| | Viscosity @ 100°C | | | 8.0 7.0 (9)(6.0, 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 5.0 | | | |
| Laboratory Sample No. Lab Number Unique Number Test Package | Viscosity @ 100°C | 501 Madia Received Diagnose | d : 22 / ed : 23 / tician : Wes | 8.0 7.0 (0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(| Api3/23 | Bat Contact: St | Chrisphalt Dri th Borough, I US 180 tephen Mack |
| Sample No. Lab Number Unique Number | Viscosity @ 100°C | 501 Madis Received Diagnose Diagnost | d : 22 / ed : 23 / tician : Wes | 8.0 7.0 (0)(0)(0)(0)(0,0) 80(0 | Api3/23 | 6813 C Bat Contact: Si smackes@ti | Chrisphalt Dri th Borough, I US 180 tephen Mack |