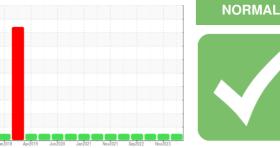


OIL ANALYSIS REPORT



SAMPLE INFORMATION method limit/base



Machine Id **PETERBILT 29**

Component Diesel Engine

Fluid PETRO CANADA DURON HP 15W40 (7 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.

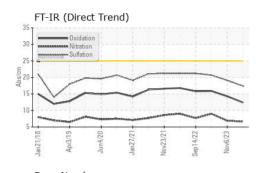
Fluid Condition

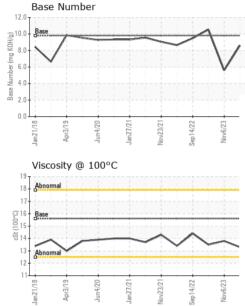
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | motory | | |
|---|--|---|--|---|---|---|--|
| Sample Number | | Client Info | | PCA0104391 | PCA0098380 | PCA0071902 | |
| Sample Date | | Client Info | | 29 Mar 2024 | 06 Nov 2023 | 06 Aug 2023 | |
| Machine Age | mls | Client Info | 284270 282153 27 | | 278272 | | |
| Oil Age | mls | Client Info | | 2017 | 4500 | 9690 | |
| Oil Changed | | Client Info | | Changed | Changed | Changed | |
| Sample Status | | | | NORMAL | NORMAL | NORMAL | |
| | | | | Nonimae | NOTIWITE | NOTIWITE | |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 | |
| Fuel | | WC Method | >3.0 | <1.0 | <1.0 | <1.0 | |
| Water | | WC Method | >0.2 | NEG | NEG | NEG | |
| Glycol | | WC Method | | NEG | NEG | NEG | |
| WEAR METALS | | method | limit/base | current | history1 | history2 | |
| Iron | ppm | ASTM D5185m | >90 | 15 | 22 | 45 | |
| Chromium | ppm | ASTM D5185m | >20 | <1 | 1 | 2 | |
| Nickel | ppm | ASTM D5185m | >2 | <1 | <1 | 1 | |
| Titanium | | ASTM D5185m | | 0 | 0 | <1 | |
| Silver | ppm | ASTM D5185m | >2 | ۰ <1 | <1 | <1 | |
| Aluminum | ppm | | >20 | 2 | 2 | 4 | |
| | ppm | | | _ | | | |
| Lead | ppm | ASTM D5185m | >40 | <1 | 0 | 2 | |
| Copper | ppm | | >330 | 0 | 0 | 2 | |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | <1 | |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 | |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 | |
| | | | | | | | |
| ADDITIVES | | method | limit/base | current | history1 | history2 | |
| ADDITIVES Boron | ppm | method ASTM D5185m | limit/base | current 18 | history1 10 | history2 0 | |
| | ppm ppm | | limit/base | | | | |
| Boron | | ASTM D5185m | limit/base | 18 | 10 | 0 | |
| Boron Barium | ppm | ASTM D5185m ASTM D5185m | limit/base | 18 0 | 10 0 | 0 | |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 18 0 40 | 10 0 60 | 0 0 65 | |
| Boron Barium Molybdenum Manganese | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 18 0 40 <1 | 10 0 60 <1 | 0 0 65 <1 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 18 0 40 <1 626 | 10 0 60 <1 955 1047 | 0 0 65 <1 1058 1195 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 18 0 40 <1 626 1357 945 | 10 0 60 <1 955 1047 1041 | 0 0 65 <1 1058 1195 1105 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | limit/base | 18 0 40 <1 626 1357 945 1132 | 10 0 60 <1 955 1047 | 0 0 65 <1 1058 1195 | |
| 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 | | 18 0 40 <1 626 1357 945 1132 3670 | 10 0 60 <1 955 1047 1041 1267 3117 | 0 0 65 <1 1058 1195 1105 1367 3811 | |
| 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 ASTM D5185m | limit/base | 18 0 40 <1 626 1357 945 1132 3670 current | 10 0 60 <1 955 1047 1041 1267 3117 history1 | 0 0 65 <1 1058 1195 1105 1367 3811 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 | | 18 0 40 <1 626 1357 945 1132 3670 current 4 | 10 0 60 <1 955 1047 1047 1041 1267 3117 history1 6 | 0 0 65 <1 1058 1195 1105 1367 3811 history2 5 | |
| 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 method ASTM D5185m | limit/base >25 | 18 0 40 <1 626 1357 945 1132 3670 current 4 2 | 10 0 60 <1 955 1047 1041 1267 3117 history1 6 0 | 0 0 65 <1 1058 1195 1105 1367 3811 history2 5 2 | |
| 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 ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method | limit/base | 18 0 40 <1 626 1357 945 1132 3670 current 4 | 10 0 60 <1 955 1047 1047 1041 1267 3117 history1 6 | 0 0 65 <1 1058 1195 1105 1367 3811 history2 5 | |
| 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 method ASTM D5185m | limit/base >25 | 18 0 40 <1 626 1357 945 1132 3670 current 4 2 | 10 0 60 <1 955 1047 1041 1267 3117 history1 6 0 | 0 0 65 <1 1058 1195 1105 1367 3811 history2 5 2 | |
| 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 | limit/base >25 >20 | 18 0 40 <1 626 1357 945 1132 3670 current 4 2 1 | 10 0 60 <1 955 1047 1041 1267 3117 history1 6 0 0 | 0 0 65 <1 1058 1195 1105 1367 3811 history2 5 2 0 | |
| 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 ASTM D5185m | limit/base >25 >20 limit/base | 18 0 40 <1 626 1357 945 1132 3670 current 4 2 1 1 current | 10 0 60 <1 955 1047 1041 1267 3117 history1 6 0 0 0 0 | 0 0 65 <1 1058 1195 1105 1367 3811 history2 5 2 0 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 ppm ppm | ASTM D5185m ASTM D5185m | limit/base >25 >20 limit/base >6 | 18 0 40 <1 626 1357 945 1132 3670 current 4 2 1 current 0.4 | 10 0 60 <1 955 1047 1041 1267 3117 history1 6 0 0 0 history1 0.7 | 0 0 65 <1 1058 1195 1105 1367 3811 history2 5 2 0 history2 1.1 | |
| 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 | limit/base >25 >20 limit/base >6 >20 | 18 0 40 <1 626 1357 945 1132 3670 current 4 2 1 2 1 current 0.4 6.6 | 10 0 60 <1 955 1047 1041 1267 3117 history1 6 0 0 0 history1 0.7 6.9 | 0 0 65 <1 1058 1195 1105 1367 3811 history2 5 2 0 history2 1.1 9.0 | |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAE | ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D7844 *ASTM D7624 | limit/base >25 >20 limit/base >6 >20 >30 limit/base | 18 0 40 <1 626 1357 945 1132 3670 current 4 2 1 current 0.4 6.6 17.4 current | 10 0 60 <1 955 1047 1041 1267 3117 history1 6 0 0 history1 0.7 6.9 19.1 history1 | 0 0 65 <1 1058 1195 1105 1367 3811 history2 5 2 0 history2 1.1 9.0 20.7 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 | limit/base >25 >20 limit/base >6 >20 >30 | 18 0 40 <1 626 1357 945 1132 3670 current 4 2 1 1 current 0.4 6.6 17.4 | 10 0 60 <1 955 1047 1041 1267 3117 history1 6 0 0 history1 0.7 6.9 19.1 | 0 0 65 <1 1058 1195 1105 1367 3811 history2 5 2 0 history2 1.1 9.0 20.7 | |



OIL ANALYSIS REPORT





| VICUA | | | | | | | | | |
|--|----------------|----------------------------------|--|--------------------------------|---------------------|-----------|-------------|---|--|
| VISUAL | | method | limit/base | | histo | | | story2 | |
| White Metal | scalar | *Visual | NONE | NONE | NON | | NO | | |
| Yellow Metal | scalar | *Visual | NONE | NONE | NON | | NO | | |
| Precipitate | scalar | *Visual | NONE | NONE | NON | | NO | | |
| Silt | scalar | *Visual | NONE | NONE | NON | _ | NO | NE | |
| Debris | scalar | *Visual | NONE | NONE | NON | - | NONE | | |
| Sand/Dirt | scalar | *Visual | NONE | NONE | NON | NONE | | NONE | |
| Appearance | scalar | *Visual | NORML | NORML | | NORML | | NORML | |
| Odor | scalar | *Visual | NORML | NORML | NORI | NORML NC | | RML | |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | | NEC | G | |
| Free Water | scalar | *Visual | | NEG | NEG | | NEC | G | |
| FLUID PROPE | RTIES | method | limit/base | e current | histe | ory1 | hi | story2 | |
| Visc @ 100°C | cSt | ASTM D445 | 15.6 | 13.3 | 13.8 | | 13.5 | 5 | |
| GRAPHS | | | | | | | | | |
| Iron (ppm) | | | ···· 1 | Lead (ppm) |) | | | | |
| 200 - Severe | | | | 80 - Severe | | | | - | |
| = 150- | | | F | 60- | | | | | |
| a 100 - Abnormal | | | bm | 40 Abnormal | | | | | |
| 50 | | \sim | | 20- | | | | | |
| | \checkmark | \sim | | | | - | | | |
| Jan 21/18 Apr3/19 Jun 4/20 | Jan 27/21 | Sep 14/22 | Nov6/23 | Jan 21/18 Apr3/19 | Jun4/20 Jan27/21 | Nov23/21 | Sep14/22 | Nov6/23 | |
| Ar | Jan | Sep | No | Jan | Jan Jan | Νον | Sep | No | |
| Aluminum (ppm) | | | (ppm) | | | | | | |
| 40 Severe | | | | 40 Severe | | | | | |
| 10 | | | | 10 | | | | | |
| e 30 20 Abnormal | | | E C C C C C C C C C C C C C C C C C C C | 20 Abnormal | | | | | |
| | | | | | | | | | |
| | | | | 0 | | | | | |
| Jan21/18 - Apr3/19 - | Jan 27/21- | Sep 14/22 | Nav6/23 - | Jan21/18 - Apr3/19 - | Jun4/20 - | Nov23/21- | Sep 14/22 - | Nov6/23 - | |
| 7 | Jan | Sep | No | ≓ ^ي Silicon (ppn | | Nov | Sep | No | |
| Copper (ppm) | | | n) | | | | | | |
| 300 | | | | 60- | | | | | |
| 틆 200- | | | E | 40 | | | | | |
| | | | | Abnormal | | | | | |
| 100- | | | | 20 | | - | | | |
| an21/18 + | Jan 27/21 | Sep14/22 | Nov6/23 | Jan21/18 | Jun4/20 - | 3/21 | 4/22 | Nov6/23 | |
| Jan21/18 Apr3/19 Jun4/20 | Jan27/21 | Sep 1 | Nov | Jan 2' Apri | Jun4/20 Jan27/21 | Nov23/21 | Sep 14/22 | Novi | |
| Viscosity @ 100°C | 12 0 - | | | | | | | | |
| 18 - Abnormal | | | Base Number (mg KOH/g) | 0.0 Base | | | | 1 | |
| | | | mg K | 8.0 | | | | \backslash | |
| 20 # 14 | | | nber | 6.0 | | | | V | |
| Abnorma | | ¥ ¥ | Se Nur | 4.0 | | | | | |
| 10 | | | B B | 0.0 | | | | | |
| Jan 21/18 Apr3/19 Jun 4/20 | Jan 27/21 | Sep 14/22 | Nav6/23 | Jan21/18 - Apr3/19 - | Jun4/20 Jan27/21 | Nov23/21- | Sep 14/22 - | Nov6/23 | |
| Janî Ap | Jan | Sep1 | Nov | Jan 2 Ap | Jan | Novi | Sep 1 | Nov | |
| y : WearCheck USA - 50 ⁻ o. : PCA0104391 per : 06140696 ber : 10965504 | Recei Teste | ved : 05 d : 08 | , NC 27513 5 Apr 2024 8 Apr 2024 6 Apr 2024 - V | | | | PLEAS | PRICE ANT ST TH, MA 02189 | |



Report Id: JFPEWE [WUSCAR] 06140696 (Generated: 04/08/2024 11:38:15) Rev: 1

Certificate L2367

Test Package : MOB 2

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.

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