

OIL ANALYSIS REPORT

Sample Rating Trend



(TLR6451) Machine Id 734013

Component 1 Natural Gas Engine

Fluid PETRO CANADA DURON GEO LD 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Engine oil sample)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

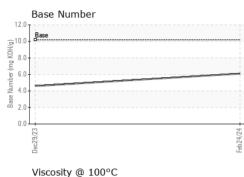
Fluid Condition

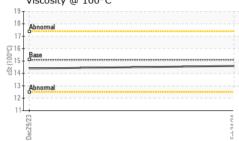
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | Dec2023 | Feb2024 | | |
|--|--|--|---|---|--|--|
| SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
| Sample Number | | Client Info | | GFL0114494 | GFL0100545 | |
| Sample Date | | Client Info | | 24 Feb 2024 | 29 Dec 2023 | |
| Machine Age | hrs | Client Info | | 970 | 585 | |
| Oil Age | hrs | Client Info | | 970 | 585 | |
| Oil Changed | | Client Info | | Not Changd | Changed | |
| Sample Status | | | | NORMAL | NORMAL | |
| CONTAMINAT | ION | method | limit/base | current | history1 | history2 |
| Water | | WC Method | >0.1 | NEG | NEG | |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >50 | 13 | 42 | |
| Chromium | ppm | ASTM D5185m | >4 | 0 | <1 | |
| Nickel | ppm | ASTM D5185m | >2 | <1 | 0 | |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | |
| Aluminum | ppm | ASTM D5185m | >9 | 2 | 5 | |
| Lead | ppm | ASTM D5185m | >30 | 0 | <1 | |
| Copper | ppm | ASTM D5185m | >35 | 2 | 13 | |
| Tin | ppm | ASTM D5185m | >4 | 0 | <1 | |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| _ | | | 50 | 15 | 10 | |
| Boron | ppm | ASTM D5185m | 50 | 15 | 19 | |
| | ppm ppm | ASTM D5185m ASTM D5185m | 5 | 0 | 19 | |
| Barium | | | | | | |
| Barium Molybdenum | ppm | ASTM D5185m | 5 | 0 | 1 | |
| Barium Molybdenum Manganese | ppm ppm | ASTM D5185m ASTM D5185m | 5 50 | 0 54 | 1 54 | |
| Barium Molybdenum Manganese Magnesium | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 5 50 0 | 0 54 1 | 1 54 12 | |
| Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 5 50 0 560 | 0 54 1 715 | 1 54 12 736 | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 5 50 0 560 1510 | 0 54 1 715 1808 | 1 54 12 736 1293 | |
| 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 | 5 50 0 560 1510 780 | 0 54 1 715 1808 938 | 1 54 12 736 1293 700 | |
| 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 | 5 50 0 560 1510 780 870 | 0 54 1 715 1808 938 1158 | 1 54 12 736 1293 700 963 | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN | ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 5 50 0 560 1510 780 870 2040 limit/base | 0 54 1 715 1808 938 1158 3017 | 1 54 12 736 1293 700 963 2443 | |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 5 50 0 560 1510 780 870 2040 limit/base | 0 54 1 715 1808 938 1158 3017 current | 1 54 12 736 1293 700 963 2443 history1 | |
| 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 method | 5 50 0 560 1510 780 870 2040 limit/base | 0 54 1 715 1808 938 1158 3017 current 6 | 1 54 12 736 1293 700 963 2443 history1 26 | |
| 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 method ASTM D5185m | 5 50 0 560 1510 780 870 2040 limit/base >+100 | 0 54 1 715 1808 938 1158 3017 current 6 4 | 1 54 12 736 1293 700 963 2443 history1 26 6 | |
| 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 | 5 50 0 560 1510 780 870 2040 limit/base >+100 | 0 54 1 715 1808 938 1158 3017 current 6 4 9 | 1 54 12 736 1293 700 963 2443 <u>history1</u> 26 6 35 | history2 |
| 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 | 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base | 0 54 1 715 1808 938 1158 3017 current 6 4 9 9 | 1 54 12 736 1293 700 963 2443 history1 26 6 35 history1 | history2 history2 |
| Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm | ASTM D5185m ASTM D5185m | 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base | 0 54 1 715 1808 938 1158 3017 current 6 4 9 9 current 0 | 1 54 12 736 1293 700 963 2443 history1 26 6 35 history1 0 | history2 history2 history2 |
| Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration | ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base | 0 54 1 715 1808 938 1158 3017 <u>current</u> 6 4 9 9 <u>current</u> 0 9.4 | 1 54 12 736 1293 700 963 2443 history1 26 6 35 history1 0 11.5 | history2 history2 history2 |
| 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 TS ppm ppm ppm ppm | ASTM D5185m ASTM D5185m | 5 50 0 560 1510 780 870 2040 limit/base >+100 >20 limit/base >20 limit/base | 0 54 1 715 1808 938 1158 3017 <u>current</u> 6 4 9 <u>current</u> 0 9.4 19.9 | 1 54 12 736 1293 700 963 2443 history1 26 6 35 history1 0 11.5 21.7 | history2 history2 |

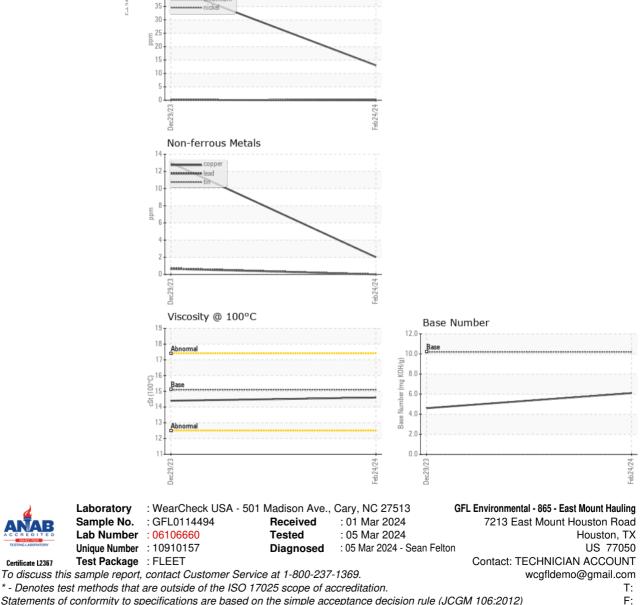


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| VISUAL | | method | limit/base | current | history1 | history2 |
|----------------------------|--------|-----------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | |
| Yellow Metal | scalar | *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 | |
| Appearance | scalar | *Visual | NORML | NORML | NORML | |
| Odor | scalar | *Visual | NORML | NORML | NORML | |
| Emulsified Water | scalar | *Visual | >0.1 | NEG | NEG | |
| Free Water | scalar | *Visual | | NEG | NEG | |
| FLUID PROPE | RTIES | method | limit/base | current | history1 | history2 |
| Visc @ 100°C | cSt | ASTM D445 | 15.1 | 14.6 | 14.4 | |
| GRAPHS | | | | | | |
| Ferrous Alloys | | | | | | |
| 45 | | | | | | |
| 40 - Iron 35 - Iron ium | | | | | | |
| 30 | | | | | | |



Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Submitted By: TECHNICIAN ACCOUNT