

OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL

Machine Id

727099-361672

Component Diesel Engine

Fluid PETRO CANADA DURON SHP 15W40 (12 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.

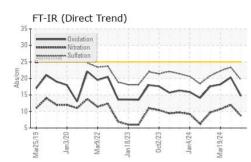
Fluid Condition

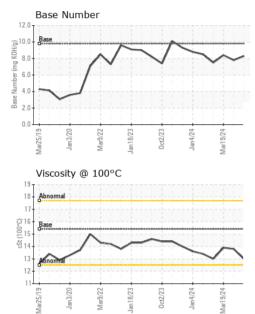
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFOR | MATION | method | limit/base | current | history1 | history2 | | |
|--|--|--|---|---|--|--|--|--|
| Sample Number | | Client Info | | GFL0118218 | GFL0118177 | GFL0109160 | | |
| Sample Date | | Client Info | | 10 Jun 2024 | 08 Apr 2024 | 19 Mar 2024 | | |
| Machine Age | hrs | Client Info | | 7435 | 6991 | 6896 | | |
| Oil Age | hrs | Client Info | | 700 | 600 | 150 | | |
| Oil Changed | | Client Info | | N/A | Changed | Not Changd | | |
| Sample Status | | | | NORMAL | NORMAL | 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 METALS method limit/base current history1 history2 | | | | | | | | |
| Iron | ppm | ASTM D5185m | >100 | 19 | 29 | 25 | | |
| Chromium | ppm | ASTM D5185m | >20 | 1 | <1 | 1 | | |
| Nickel | ppm | ASTM D5185m | >4 | 0 | <1 | <1 | | |
| Titanium | ppm | ASTM D5185m | | <1 | 0 | <1 | | |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 | | |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | 5 | 5 | | |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | 1 | | |
| Copper | ppm | ASTM D5185m | >330 | <1 | 0 | 1 | | |
| Tin | ppm | ASTM D5185m | >15 | <1 | <1 | 1 | | |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | <1 | | |
| Codmium | 0.00 | AOTH DELOF | | | | 4 | | |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | <1 | | |
| ADDITIVES | ррпі | method | limit/base | 0 current | 0 history1 | <1 history2 | | |
| | ppm | method | limit/base | - | - | | | |
| ADDITIVES | | method | 0 | current | history1 | history2 | | |
| ADDITIVES Boron | ppm | method ASTM D5185m | 0 | current 2 | history1 | history2 0 | | |
| ADDITIVES Boron Barium | ppm ppm | method ASTM D5185m ASTM D5185m | 0 | current 2 0 | history1 1 0 | history2 0 1 | | |
| ADDITIVES Boron Barium Molybdenum | ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 | current 2 0 59 | history1 1 0 60 | history2 0 1 63 | | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 | current 2 0 59 <1 | history1 1 0 60 <1 | history2 0 1 63 <1 | | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 | current 2 0 59 <1 1047 | history1 1 0 60 <1 991 | history2 0 1 63 <1 939 | | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 | Current 2 0 59 <1 1047 1215 | history1 1 0 60 <1 991 1072 | history2 0 1 63 <1 939 1164 | | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 | Current 2 0 59 <1 1047 1215 1141 | history1 1 0 60 <1 991 1072 1078 | history2 0 1 63 <1 939 1164 1093 | | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc | ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 | Current 2 0 59 <1 1047 1215 1141 1406 | history1 1 0 60 <1 991 1072 1078 1328 | history2 0 1 63 <1 939 1164 1093 1260 | | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur | ppm ppm ppm ppm ppm ppm ppm ppm | method 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 2 0 59 <1 1047 1215 1141 1406 3937 | history1 1 0 60 <1 991 1072 1078 1328 3542 | history2 0 1 63 <1 939 1164 1093 1260 3207 | | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 1010 1070 1150 1270 2060 | Current 2 0 59 <1 1047 1215 1141 1406 3937 Current | history1 1 0 60 <1 991 1072 1078 1328 3542 history1 | history2 0 1 63 <1 939 1164 1093 1260 3207 history2 | | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 1010 1070 1150 1270 2060 | current 2 0 59 <1 1047 1215 1141 1406 3937 current 3 | history1 1 0 60 <1 991 1072 1078 1328 3542 history1 5 | history2 0 1 63 <1 939 1164 1093 1260 3207 history2 7 | | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm TS | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 Limit/base >25 | current 2 0 59 <1 1047 1215 1141 1406 3937 current 3 4 | history1 1 0 60 <1 991 1072 1078 1328 3542 history1 5 6 | history2 0 1 63 <1 939 1164 1093 1260 3207 history2 7 3 | | |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm TS | method ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 limit/base >25 | current 2 0 59 <1 1047 1215 1141 1406 3937 current 3 4 0 | history1 1 0 60 <1 991 1072 1078 3542 history1 5 6 1 | history2 0 1 63 <1 939 1164 1093 1260 3207 history2 7 3 2 | | |
| ADDITIVES 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 | method ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 2060 225 >25 | current 2 0 59 <1 1047 1215 1141 1406 3937 current 3 4 0 current | history1 1 0 60 <1 991 1072 1078 1328 3542 history1 5 6 1 5 6 1 history1 | history2 0 1 63 <1 939 1164 1093 1260 3207 history2 7 3 2 history2 | | |
| ADDITIVES 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 | method ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 limit/base >25 >20 limit/base >3 | current 2 0 59 <1 1047 1215 1141 1406 3937 current 3 4 0 current 0.7 | history1 1 0 60 <1 991 1072 1078 1328 3542 history1 5 6 1 | history2 0 1 63 <1 939 1164 1093 1260 3207 history2 7 3 2 history2 1.3 | | |
| ADDITIVES 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 | method ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 imit/base >25 >20 imit/base >3 >20 | current 2 0 59 <1 1047 1215 1141 1406 3937 current 3 4 0 current 0.7 8.7 | history1 1 0 60 <1 991 1072 1078 3542 history1 5 6 1 history1 1.4 12.0 | history2 0 1 63 <1 939 1164 1093 1260 3207 history2 7 3 2 history2 1.3 10.7 | | |
| ADDITIVES 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 | method ASTM D5185m ASTM D5185m | 0 0 0 1010 1070 1150 1270 2060 imit/base >25 imit/base >3 >20 | current 2 0 59 <1 1047 1215 1141 1406 3937 current 3 4 0 current 0.7 8.7 19.6 | history1 1 0 60 <1 991 1072 1078 3542 history1 5 6 1 history1 1.4 12.0 23.4 | history2 0 1 63 <1 939 1164 1093 1260 3207 history2 7 3 2 history2 1.3 10.7 22.3 | | |



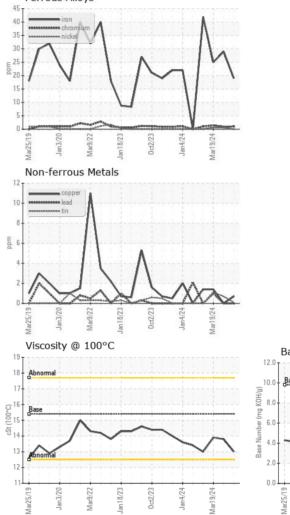
OIL ANALYSIS REPORT

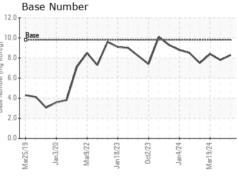




| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|-----------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *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 |
| Appearance | scalar | *Visual | NORML | NORML | NORML | NORML |
| Odor | scalar | *Visual | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.2 | NEG | NEG | NEG |
| Free Water | scalar | *Visual | | NEG | NEG | NEG |
| FLUID PROPE | RTIES | method | limit/base | current | history1 | history2 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.0 | 13.8 | 13.9 |
| GRAPHS | | | | | | |

Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 GFL Environmental - 822 - Springfield Hauling Sample No. : GFL0118218 Received : 01 Jul 2024 2120 West Bennett Street Lab Number : 06224336 Tested : 02 Jul 2024 Springfield, MO ŪS 65807 Unique Number : 11102533 Diagnosed : 02 Jul 2024 - Wes Davis Test Package : FLEET Contact: Dennis Moore Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. dennis.moore@gflenv.com T: (417)403-3641 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

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

Submitted By: Dennis Moore

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