

OIL ANALYSIS REPORT

Sample Rating Trend



Area (27KM1B) 413116 Component Diesel Engine

PETRO CANADA DURON UHP 5W30 (--- QTS)

SAMPLE INFORMATION method

| 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.

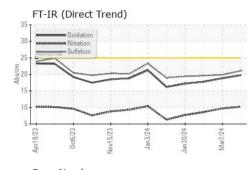
Fluid Condition

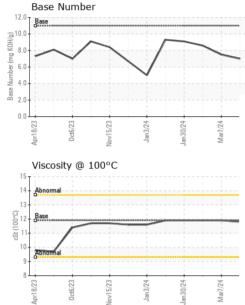
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| SAMPLE INFOR | | methoa | limit/base | current | nistory i | nistory∠ |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sample Number | | Client Info | | GFL0114182 | GFL0108036 | GFL0108032 |
| Sample Date | | Client Info | | 10 Apr 2024 | 07 Mar 2024 | 16 Feb 2024 |
| Machine Age | hrs | Client Info | | 2833 | 2699 | 2571 |
| Oil Age | hrs | Client Info | | 1827 | 1821 | 1693 |
| Oil Changed | | Client Info | | Not Changd | Not Changd | Not Changd |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |
| • | | | | - | | |
| 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 METAL | c | method | limit/base | current | history1 | history2 |
| | 3 | | | | | |
| Iron | ppm | ASTM D5185m | >120 | 14 | 10 | 8 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >15 | 1 | <1 | <1 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 3 | 2 | 3 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >330 | 16 | 13 | 12 |
| Tin | ppm | ASTM D5185m | >15 | <1 | 0 | <1 |
| Vanadium | ppm | ASTM D5185m | | <1 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Gadillian | ppm | AO INI DOTOSIII | | U | 0 | 0 |
| ADDITIVES | PPIII | method | limit/base | current | history1 | history2 |
| | ppm | method | limit/base | | - | - |
| ADDITIVES | | method ASTM D5185m | | current | history1 | history2 |
| ADDITIVES Boron | ppm | method ASTM D5185m | 0 | current 18 | history1 22 | history2 30 |
| ADDITIVES Boron Barium | ppm ppm | method ASTM D5185m ASTM D5185m | 0 0 64 | current 18 0 | history1 22 0 | history2 30 0 |
| ADDITIVES Boron Barium Molybdenum | ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 64 | current 18 0 56 | history1 22 0 55 | history2 30 0 52 |
| ADDITIVES Boron Barium Molybdenum Manganese | ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 64 0 | current 18 0 56 <1 | history1 22 0 55 <1 | history2 30 0 52 <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 64 0 1160 | current 18 0 56 <1 1038 | history1 22 0 55 <1 1113 | history2 30 0 52 <1 1112 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 64 0 1160 820 | current 18 0 56 <1 1038 838 | history1 22 0 55 <1 1113 853 | history2 30 0 52 <1 1112 860 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 64 0 1160 820 1160 | current 18 0 56 <1 1038 838 995 | history1 22 0 55 <1 1113 853 1047 | history2 30 0 52 <1 1112 860 983 |
| 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 64 0 1160 820 1160 1260 | current 18 0 56 <1 1038 838 995 1181 | history1 22 0 55 <1 1113 853 1047 1283 | history2 30 0 52 <1 1112 860 983 1236 |
| 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 64 0 1160 820 1160 1260 3000 | current 18 0 56 <1 1038 838 995 1181 3530 current | history1 22 0 55 <1 1113 853 1047 1283 3865 history1 | history2 30 0 52 <1 1112 860 983 1236 3299 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 0 0 64 0 1160 820 1160 1260 3000 | current 18 0 56 <1 1038 838 995 1181 3530 current 3 | history1 22 0 55 <1 1113 853 1047 1283 3865 history1 4 | history2 30 0 52 <1 1112 860 983 1236 3299 history2 5 |
| 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 64 0 1160 820 1160 1260 3000 limit/base >25 | current 18 0 56 <1 1038 838 995 1181 3530 current | history1 22 0 55 <1 1113 853 1047 1283 3865 history1 | history2 30 0 52 <1 1112 860 983 1236 3299 history2 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | method ASTM D5185m | 0 0 64 0 1160 820 1160 1260 3000 limit/base >25 | current 18 0 56 <1 1038 838 995 1181 3530 current 3 7 | history1 22 0 55 <1 1113 853 1047 1283 3865 history1 4 3 | history2 30 0 52 <1 1112 860 983 1236 3299 history2 5 5 5 5 |
| 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 | 0 0 64 0 1160 820 1160 1260 3000 limit/base >25 >20 | current 18 0 56 <1 1038 838 995 1181 3530 current 3 7 27 | history1 22 0 55 <1 1113 853 1047 1283 3865 history1 4 3 6 | history2 30 0 52 <1 1112 860 983 1236 3299 history2 5 5 5 5 5 8 |
| 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 64 0 1160 820 1160 1260 3000 Iimit/base >25 -20 Iimit/base | current 18 0 56 <1 1038 838 995 1181 3530 current 3 7 27 current | history1 22 0 55 <1 1113 853 1047 1283 3865 history1 4 3 6 history1 | history2 30 0 52 <1 1112 860 983 1236 3299 history2 5 5 8 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 TS ppm ppm | method ASTM D5185m | 0 0 64 0 1160 820 1160 1260 3000 Imit/base >25 >20 Imit/base >4 | current 18 0 56 <1 1038 838 995 1181 3530 current 3 7 27 current 0.3 | history1 22 0 55 <1 1113 853 1047 1283 3865 history1 4 3 6 history1 0.2 | history2 30 0 52 <1 1112 860 983 1236 3299 history2 5 5 5 5 5 5 5 5 5 5 60 983 1236 3299 history2 0 0.2 |
| 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 64 0 820 1160 1260 3000 imit/base >25 20 imit/base >4 >20 >30 | current 18 0 56 <1 1038 838 995 1181 3530 current 3 7 27 current 0.3 10.2 21.1 | history1 22 0 55 <1 1113 853 1047 1283 3865 history1 4 3 6 history1 0.2 9.7 19.9 | history2 30 0 52 <1 1112 860 983 1236 3299 history2 5 5 5 5 5 60 983 1236 3299 history2 0 0.2 8.6 19.6 |
| ADDITIVES Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium INFRA-RED Soot % Nitration Sulfation FLUID DEGRAD | ppm ppm ppm ppm ppm ppm ppm ppm ppm TS ppm ppm ppm ppm | method ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D7415 method | 0 0 64 0 1160 820 1160 1260 3000 imit/base >25 >20 imit/base >4 >20 >30 | current 18 0 56 <1 1038 838 995 1181 3530 current 3 7 27 current 0.3 10.2 21.1 current | history1 22 0 55 <1 1113 853 1047 1283 3865 history1 4 3 6 history1 0.2 9.7 19.9 history1 | history2 30 0 52 <1 1112 860 983 1236 3299 history2 5 5 8 history2 0.2 8.6 19.6 history2 |
| 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 64 0 820 1160 1260 3000 imit/base >25 20 imit/base >4 >20 >30 | current 18 0 56 <1 1038 838 995 1181 3530 current 3 7 27 current 0.3 10.2 21.1 | history1 22 0 55 <1 1113 853 1047 1283 3865 history1 4 3 6 history1 0.2 9.7 19.9 | history2 30 0 52 <1 1112 860 983 1236 3299 history2 5 5 5 5 5 5 60 983 1236 3299 history2 0 0.2 8.6 19.6 |



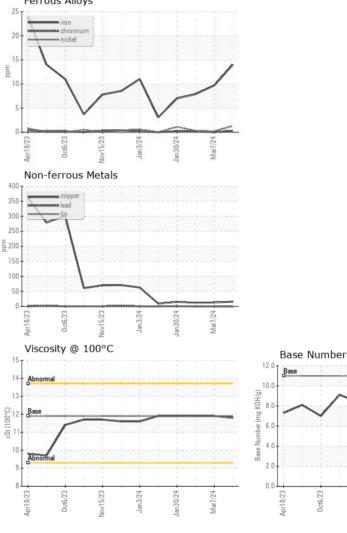
OIL ANALYSIS REPORT

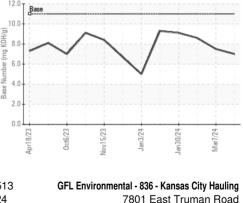




| VISUAL | | method | limit/base | current | history1 | history2 |
|------------------|--------|-----------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate | scalar | *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 | 11.9 | 11.8 | 11.9 | 11.9 |
| | | | | | | |

GRAPHS Ferrous Alloys





Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 Sample No. : GFL0114182 Received : 16 Apr 2024 7801 East Truman Road Lab Number : 06150939 Tested : 17 Apr 2024 Kansas City, MO Unique Number : 10981017 Diagnosed : 17 Apr 2024 - Wes Davis US 64126 Test Package : FLEET Contact: Loyce Stewart Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369. loyce.stewart@gflenv.com * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. T: F:

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

Report Id: GFL836 [WUSCAR] 06150939 (Generated: 04/17/2024 16:59:22) Rev: 1

Submitted By: JEREMY BROWN