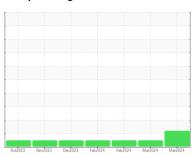


OIL ANALYSIS REPORT

Sample Rating Trend



GLYCOL



Machine Id **366M** Component

Diesel Engine

PETRO CANADA DURON SHP 15W40 (36 GAL)

DIAGNOSIS

Recommendation

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear

All component wear rates are normal.

Contamination

Sodium and/or potassium levels are high.

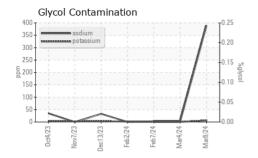
Fluid Condition

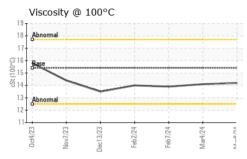
The BN result indicates that there is suitable alkalinity remaining in the oil.

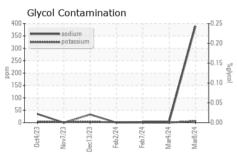
| GAL) | | 0ct2023 | Nov2023 Dec2023 | Feb 2024 Feb 2024 Mar 2024 | Mar2024 | |
|--|--|---|---|--|--|--|
| SAMPLE INFOR | MATION | method | limit/base | current | history1 | history2 |
| Sample Number | | Client Info | | GFL0104300 | GFL0104369 | GFL0110094 |
| Sample Date | | Client Info | | 08 Mar 2024 | 04 Mar 2024 | 07 Feb 2024 |
| Machine Age | hrs | Client Info | | 3750 | 3715 | 3519 |
| Oil Age | hrs | Client Info | | 600 | 600 | 600 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | ABNORMAL | 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 |
| WEAR METAL | S | method | limit/base | current | history1 | history2 |
| Iron | ppm | ASTM D5185m | >90 | 12 | 2 | 12 |
| Chromium | ppm | ASTM D5185m | >20 | 0 | 0 | <1 |
| Nickel | ppm | ASTM D5185m | >2 | 0 | <1 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 1 | <1 | 2 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | <1 |
| Copper | ppm | ASTM D5185m | >330 | 0 | 3 | 3 |
| Tin | ppm | ASTM D5185m | >15 | 0 | 0 | <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 0 | current 3 | history1 2 | history2 2 |
| | ppm | | | | | |
| Boron | | ASTM D5185m | 0 | 3 | 2 | 2 |
| Boron Barium | ppm | ASTM D5185m ASTM D5185m | 0 | 3 0 | 2 | 2 |
| Boron Barium Molybdenum | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 | 3 0 71 | 2 0 52 | 2 0 57 |
| Boron Barium Molybdenum Manganese | ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 | 3 0 71 0 | 2 0 52 0 | 2 0 57 <1 |
| Boron Barium Molybdenum Manganese Magnesium | ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 | 3 0 71 0 899 | 2 0 52 0 899 | 2 0 57 <1 903 |
| Boron Barium Molybdenum Manganese Magnesium Calcium | ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 | 3 0 71 0 899 963 | 2 0 52 0 899 985 | 2 0 57 <1 903 990 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus | ppm ppm ppm ppm ppm | ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m | 0 0 60 0 1010 1070 1150 | 3 0 71 0 899 963 847 | 2 0 52 0 899 985 990 | 2 0 57 <1 903 990 1028 |
| 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 ASTM D5185m | 0 0 60 0 1010 1070 1150 | 3 0 71 0 899 963 847 1132 | 2 0 52 0 899 985 990 1173 | 2 0 57 <1 903 990 1028 |
| 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 ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 | 3 0 71 0 899 963 847 1132 2821 | 2 0 52 0 899 985 990 1173 2830 | 2 0 57 <1 903 990 1028 1211 2796 |
| 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 ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 | 3 0 71 0 899 963 847 1132 2821 | 2 0 52 0 899 985 990 1173 2830 history1 | 2 0 57 <1 903 990 1028 1211 2796 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon | ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 | 3 0 71 0 899 963 847 1132 2821 current | 2 0 52 0 899 985 990 1173 2830 history1 | 2 0 57 <1 903 990 1028 1211 2796 history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 Iimit/base >25 | 3 0 71 0 899 963 847 1132 2821 current 9 ▲ 389 | 2 0 52 0 899 985 990 1173 2830 history1 3 | 2 0 57 <1 903 990 1028 1211 2796 history2 4 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 Iimit/base >25 | 3 0 71 0 899 963 847 1132 2821 current 9 ▲ 389 6 | 2 0 52 0 899 985 990 1173 2830 history1 3 2 | 2 0 57 <1 903 990 1028 1211 2796 history2 4 3 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol | ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m Method ASTM D5185m | 0 0 60 0 1010 1070 1150 1270 2060 limit/base >25 | 3 0 71 0 899 963 847 1132 2821 current 9 ▲ 389 6 NEG | 2 0 52 0 899 985 990 1173 2830 history1 3 2 0 | 2 0 57 <1 903 990 1028 1211 2796 history2 4 3 0 NEG |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m *ASTM D2982 method | 0 0 60 0 1010 1070 1150 1270 2060 Iimit/base >25 >20 | 3 0 71 0 899 963 847 1132 2821 current 9 ▲ 389 6 NEG | 2 0 52 0 899 985 990 1173 2830 history1 3 2 0 NEG | 2 0 57 <1 903 990 1028 1211 2796 history2 4 3 0 NEG |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % | ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm | ASTM D5185m *ASTM D7844 | 0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 | 3 0 71 0 899 963 847 1132 2821 current 9 ▲ 389 6 NEG current 0.4 | 2 0 52 0 899 985 990 1173 2830 history1 3 2 0 NEG | 2 0 57 <1 903 990 1028 1211 2796 history2 4 3 0 NEG history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration | ppm | ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7624 | 0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 | 3 0 71 0 899 963 847 1132 2821 current 9 ▲ 389 6 NEG current 0.4 8.3 | 2 0 52 0 899 985 990 1173 2830 history1 3 2 0 NEG history1 0.1 | 2 0 57 <1 903 990 1028 1211 2796 history2 4 3 0 NEG history2 |
| Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINAN Silicon Sodium Potassium Glycol INFRA-RED Soot % Nitration Sulfation | ppm | ASTM D5185m *ASTM D7844 *ASTM D7844 *ASTM D7624 *ASTM D7624 | 0 0 60 0 1010 1150 1270 2060 limit/base >25 >20 limit/base >6 >20 >30 | 3 0 71 0 899 963 847 1132 2821 current 9 ▲ 389 6 NEG current 0.4 8.3 19.3 | 2 0 52 0 899 985 990 1173 2830 history1 3 2 0 NEG history1 0.1 5.1 17.9 | 2 0 57 <1 903 990 1028 1211 2796 history2 4 3 0 NEG history2 0.4 7.4 19.2 |



OIL ANALYSIS REPORT



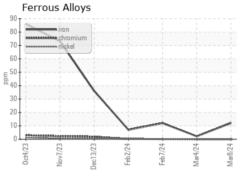


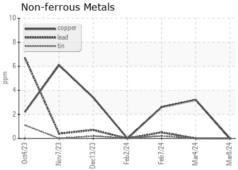


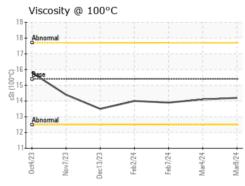
| VISUAL | | method | limit/base | current | history1 | history2 |
|-------------------------|--------|---------|------------|---------|----------|----------|
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Precipitate |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

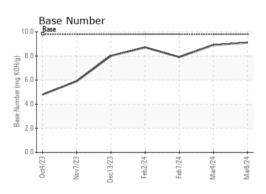
| FLUID FROFERITES | | memod | IIIIII/Dase | Current | HISTORY | HISTORYZ |
|------------------|-----|-----------|-------------|---------|---------|----------|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 14.2 | 14.1 | 13.9 |

GRAPHS











Laboratory Sample No. Lab Number : 06113872

Unique Number : 10922705

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : GFL0104300 Received

Tested Diagnosed

: 11 Mar 2024 : 13 Mar 2024

: 13 Mar 2024 - Jonathan Hester

GFL Environmental - 410 - Michigan West 39000 Van Born Rd Wayne, MI

US 48184 Contact: Belal Dgheish

bdgheish@gflenv.com T: (734)714-2340

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.

Test Package: FLEET (Additional Tests: Glycol)

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

Report Id: GFL410 [WUSCAR] 06113872 (Generated: 03/13/2024 21:02:45) Rev: 1

Submitted By: seel also GFL468 - Laura Wilson