



Machine Id
MACK 2658
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (7 GAL)

RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | GFL0116830 | GFL0116777 | GFL0116764 |
| Sample Date | | Client Info | | 10 Jul 2024 | 03 Jun 2024 | 24 May 2024 |
| Machine Age | hrs | Client Info | | 34101 | 34030 | 34029 |
| Oil Age | hrs | Client Info | | 1589 | 1518 | 1517 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | Not Changd | Not Changd |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | SEVERE | SEVERE | SEVERE |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|--------------|------|------|
| Iron | ppm | ASTM D5185m | >120 | 40 | 31 | 34 |
| Chromium | ppm | ASTM D5185m | >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >20 | 2 | 2 | 3 |
| Lead | ppm | ASTM D5185m | >40 | 0 | 0 | <1 |
| Copper | ppm | ASTM D5185m | >330 | 5 | 4 | 4 |
| Tin | ppm | ASTM D5185m | >15 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

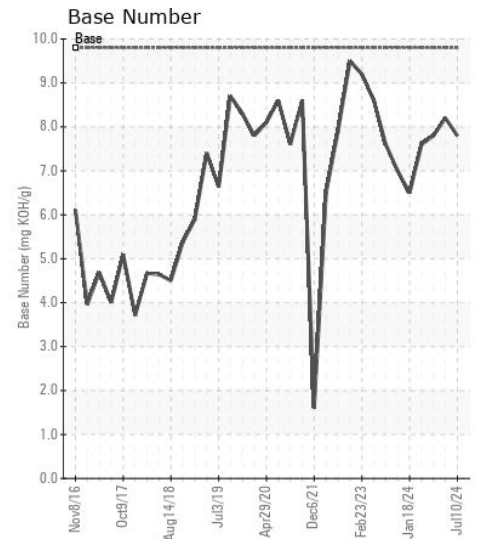
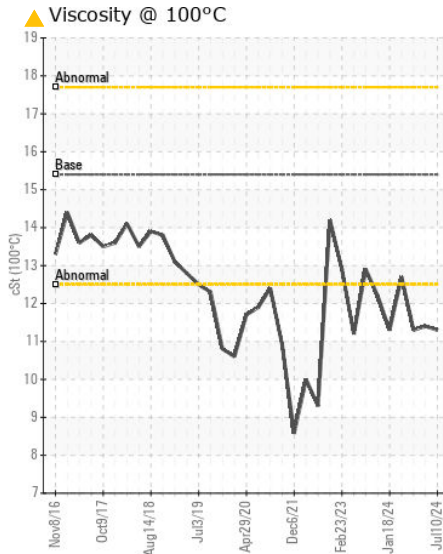
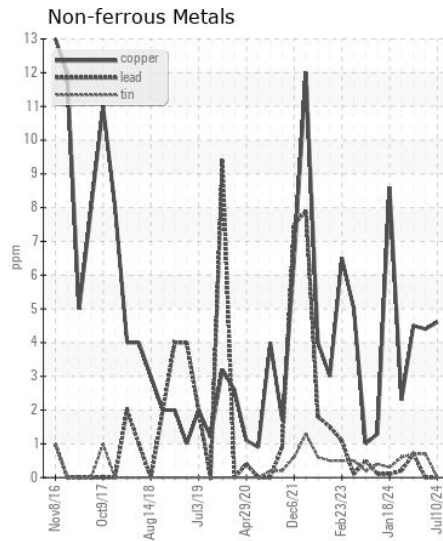
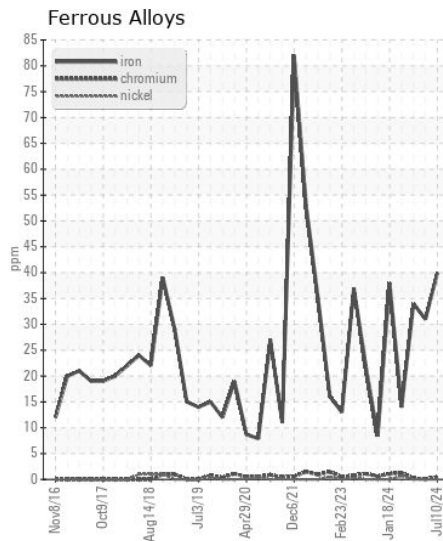
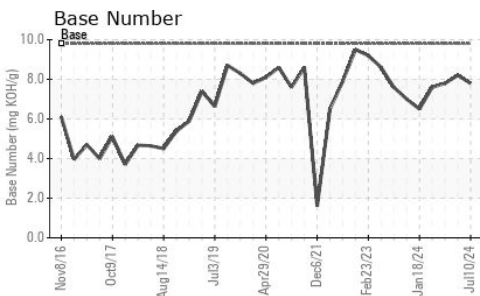
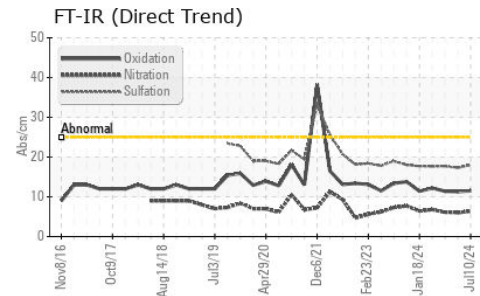
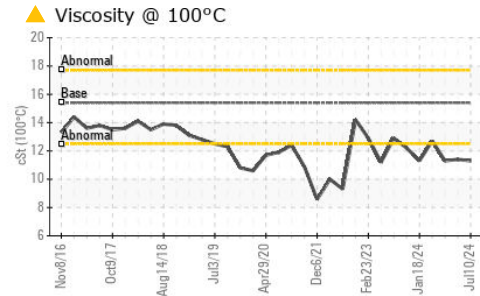
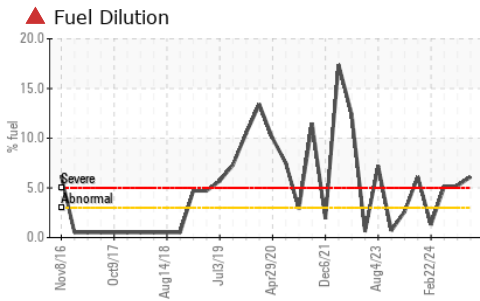
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >25 | 2 | 3 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | 2 | 2 |
| Fuel | % | ASTM D3524 | >3.0 | ▲ 6.1 | ▲ 5.2 | ▲ 5.1 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >4 | 1 | 0.9 | 0.9 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 6.4 | 6.0 | 6.1 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 18.0 | 17.3 | 17.7 |
| 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 |

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

| | | | | | | |
|------------------|----------|-------------|------|---------------|--------|--------|
| Sodium | ppm | ASTM D5185m | | 2 | <1 | 2 |
| Boron | ppm | ASTM D5185m | 0 | 13 | 18 | 18 |
| Barium | ppm | ASTM D5185m | 0 | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185m | 60 | 57 | 56 | 55 |
| Manganese | ppm | ASTM D5185m | 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | 1010 | 719 | 728 | 728 |
| Calcium | ppm | ASTM D5185m | 1070 | 1105 | 1058 | 1053 |
| Phosphorus | ppm | ASTM D5185m | 1150 | 915 | 925 | 906 |
| Zinc | ppm | ASTM D5185m | 1270 | 1037 | 1044 | 1052 |
| Sulfur | ppm | ASTM D5185m | 2060 | 3070 | 3027 | 3073 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 11.5 | 11.3 | 11.4 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 9.8 | 7.8 | 8.2 | 7.8 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | ▲ 11.3 | ▲ 11.4 | ▲ 11.3 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : GFL0116830 **Received** : 15 Jul 2024
Lab Number : 06235490 **Tested** : 16 Jul 2024
Unique Number : 11124324 **Diagnosed** : 16 Jul 2024 - Wes Davis
Test Package : FLEET (Additional Tests: PercentFuel)

GFL Environmental - 009 - Fairburn
 6905 Roosevelt Hwy
 Fairburn, GA
 US 30213
 Contact: Eric Jones
 erjones@gflenv.com
 T: (678)630-9927
 F:

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.

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