



Machine Id
4524
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 10W30 (--- LTR)

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 | | GFL0101688 | GFL0097598 | GFL0101701 |
| Sample Date | | Client Info | | 04 Jan 2024 | 01 Nov 2023 | 23 Oct 2023 |
| Machine Age | hrs | Client Info | | 0 | 31249 | 31672 |
| Oil Age | hrs | Client Info | | 0 | 526 | 0 |
| Filter Age | hrs | Client Info | | 0 | 526 | 0 |
| Oil Changed | | Client Info | | N/A | Changed | Changed |
| Filter Changed | | Client Info | | N/A | Changed | Changed |
| Sample Status | | | | SEVERE | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|---------------|------|--------------|-----|-----|
| Iron | ppm | ASTM D5185(m) | >120 | 2 | 9 | 5 |
| Chromium | ppm | ASTM D5185(m) | >20 | 0 | <1 | 0 |
| Nickel | ppm | ASTM D5185(m) | >5 | <1 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | >2 | 0 | 0 | 0 |
| Silver | ppm | ASTM D5185(m) | >2 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | 1 | 4 | 4 |
| Lead | ppm | ASTM D5185(m) | >40 | 0 | <1 | 0 |
| Copper | ppm | ASTM D5185(m) | >330 | <1 | 3 | 2 |
| Tin | ppm | ASTM D5185(m) | >15 | 0 | <1 | 0 |
| Vanadium | ppm | ASTM D5185(m) | | 0 | 0 | 0 |
| White Metal | scalar | Visual* | NONE | NONE | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | NONE | --- | --- |

CONTAMINATION

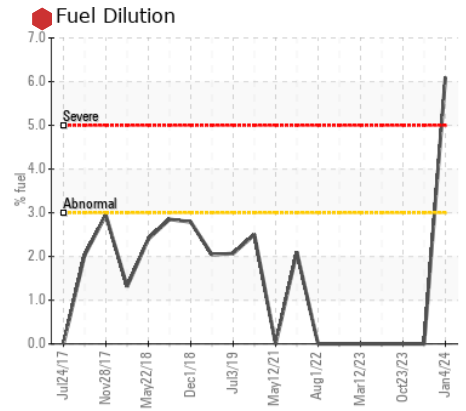
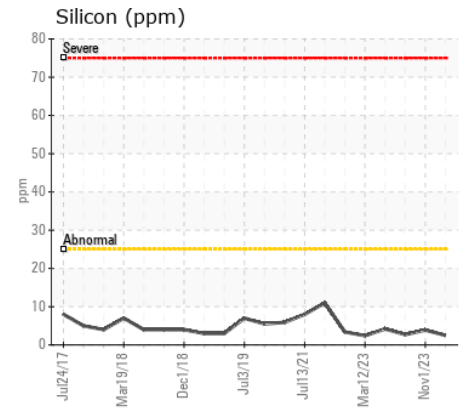
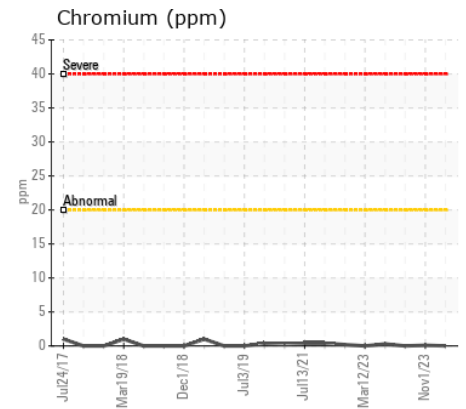
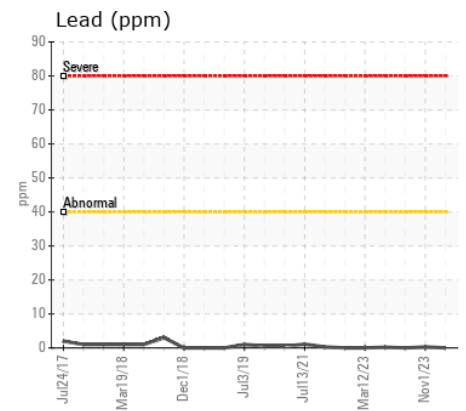
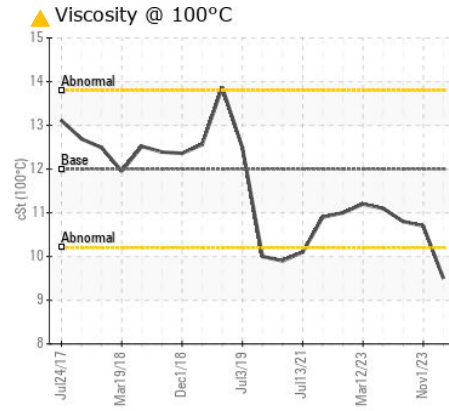
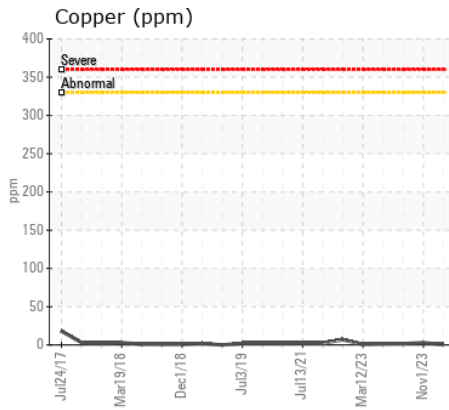
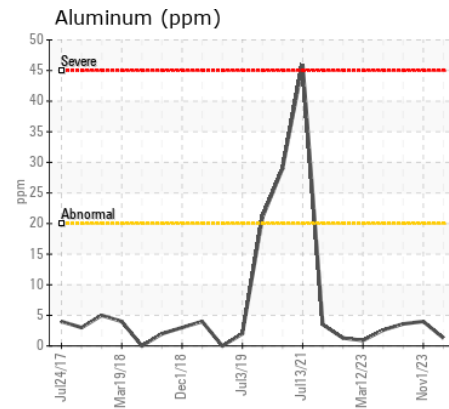
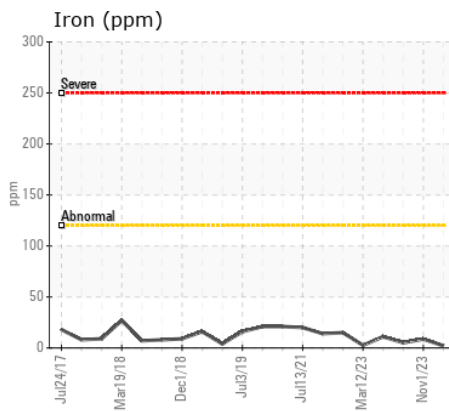
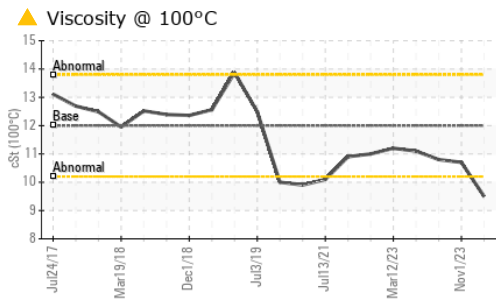
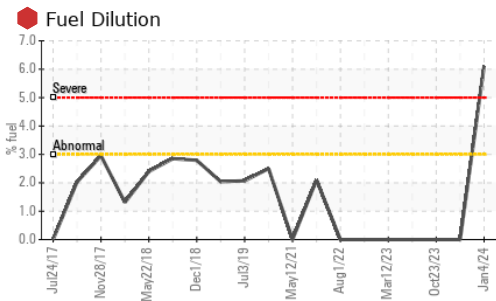
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

| | | | | | | |
|------------------|----------|---------------|-------|--------------|-------|-------|
| Silicon | ppm | ASTM D5185(m) | >25 | 2 | 4 | 3 |
| Potassium | ppm | ASTM D5185(m) | >20 | <1 | 4 | 5 |
| Fuel | % | ASTM D7593* | >3.0 | 6.1 | <1.0 | <1.0 |
| Water | | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | ASTM D7844* | >4 | 0 | 0.2 | 0.1 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 5.0 | 9.0 | 7.6 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 17.4 | 19.1 | 18.2 |
| Silt | scalar | Visual* | NONE | NONE | --- | --- |
| Debris | scalar | Visual* | NONE | NONE | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | NONE | --- | --- |
| Appearance | scalar | Visual* | NORML | NORML | --- | --- |
| Odor | scalar | Visual* | NORML | NORML | NORML | NORML |
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | NEG |

FLUID CONDITION

Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

| | | | | | | |
|--------------|----------|---------------|-------|-------------|------|------|
| Sodium | ppm | ASTM D5185(m) | | 3 | 3 | 2 |
| Boron | ppm | ASTM D5185(m) | 2 | 10 | 7 | 5 |
| Barium | ppm | ASTM D5185(m) | 0 | 0 | <1 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 50 | 55 | 61 | 57 |
| Manganese | ppm | ASTM D5185(m) | 0 | 0 | 0 | 0 |
| Magnesium | ppm | ASTM D5185(m) | 950 | 884 | 934 | 933 |
| Calcium | ppm | ASTM D5185(m) | 1050 | 990 | 1042 | 1047 |
| Phosphorus | ppm | ASTM D5185(m) | 995 | 938 | 979 | 996 |
| Zinc | ppm | ASTM D5185(m) | 1180 | 1077 | 1172 | 1138 |
| Sulfur | ppm | ASTM D5185(m) | 2600 | 2653 | 2594 | 2714 |
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 13.0 | 16.2 | 15.1 |
| Visc @ 100°C | cSt | ASTM D7279(m) | 12.00 | 9.5 | 10.7 | 10.8 |



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 554 - Edmonton SW
Sample No. : GFL0101688 **Received** : 05 Jan 2024
Lab Number : 02606690 **Diagnosed** : 08 Jan 2024
Unique Number : 5707776 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, Visual)

8409 -15th Street NW
Edmonton, AB
CA T6P 0B8
Contact: Tim Greig
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T: (780)231-0521
F:

To discuss this sample report, contact Customer Service at 1-800-268-2131.
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
 Validity of results and interpretation are based on the sample and information as supplied.