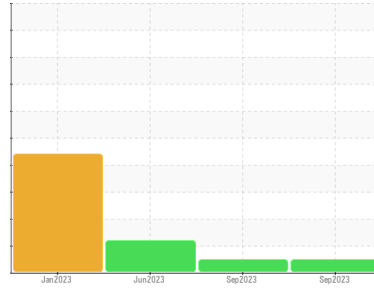




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
712055
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- 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 condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

| | method | limit/base | current | history1 | history2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | GFL0090848 | GFL0090861 | GFL0082567 |
| Sample Date | Client Info | | 12 Sep 2023 | 05 Sep 2023 | 08 Jun 2023 |
| Machine Age | hrs | Client Info | 0 | 0 | 19537 |
| Oil Age | hrs | Client Info | 1902 | 1839 | 0 |
| Oil Changed | Client Info | | N/A | N/A | N/A |
| Sample Status | | | NORMAL | NORMAL | ABNORMAL |

CONTAMINATION

| | method | limit/base | current | history1 | history2 |
|--------|-----------|------------|----------------|----------|----------|
| Fuel | WC Method | >3.0 | <1.0 | <1.0 | 0.8 |
| Glycol | WC Method | | NEG | 0.0 | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|--------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185(m) >120 | 11 | 19 | 17 |
| Chromium | ppm | ASTM D5185(m) >20 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) >5 | <1 | 3 | ▲ 10 |
| Titanium | ppm | ASTM D5185(m) >2 | <1 | 0 | <1 |
| Silver | ppm | ASTM D5185(m) >2 | <1 | <1 | <1 |
| Aluminum | ppm | ASTM D5185(m) >20 | <1 | 1 | 2 |
| Lead | ppm | ASTM D5185(m) >40 | <1 | 3 | <1 |
| Copper | ppm | ASTM D5185(m) >330 | 1 | 107 | 6 |
| Tin | ppm | ASTM D5185(m) >15 | <1 | 1 | 1 |
| Antimony | ppm | ASTM D5185(m) | 0 | 0 | <1 |
| Vanadium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Beryllium | ppm | ASTM D5185(m) | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185(m) | 0 | 0 | 0 |

ADDITIVES

| | method | limit/base | current | history1 | history2 |
|------------|--------|--------------------|--------------|----------|----------|
| Boron | ppm | ASTM D5185(m) 0 | 3 | 51 | 34 |
| Barium | ppm | ASTM D5185(m) 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) 60 | 59 | 5 | 45 |
| Manganese | ppm | ASTM D5185(m) 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) 1010 | 972 | 62 | 549 |
| Calcium | ppm | ASTM D5185(m) 1070 | 1035 | 2154 | 1754 |
| Phosphorus | ppm | ASTM D5185(m) 1150 | 1034 | 915 | 818 |
| Zinc | ppm | ASTM D5185(m) 1270 | 1186 | 1133 | 910 |
| Sulfur | ppm | ASTM D5185(m) 2060 | 2388 | 2392 | 2149 |
| Lithium | ppm | ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-------------------|----------|----------|----------|
| Silicon | ppm | ASTM D5185(m) >25 | 3 | 5 | 8 |
| Sodium | ppm | ASTM D5185(m) | 4 | 5 | 3 |
| Potassium | ppm | ASTM D5185(m) >20 | 1 | 6 | 2 |

INFRA-RED

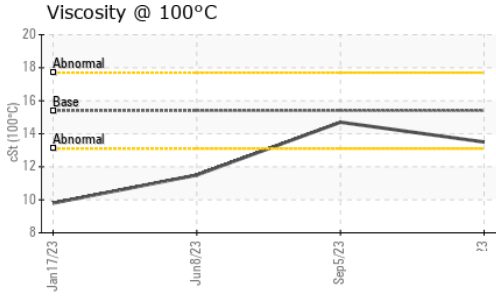
| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Soot % | % | ASTM D7844* >4 | 0.5 | 1 | 0.6 |
| Nitration | Abs/cm | ASTM D7624* >20 | 7.4 | 9.9 | 8.5 |
| Sulfation | Abs/.1mm | ASTM D7415* >30 | 19.8 | 25.1 | 23.7 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-----------------|-------------|----------|----------|
| Oxidation | Abs/.1mm | ASTM D7414* >25 | 14.7 | 18.8 | 20.7 |



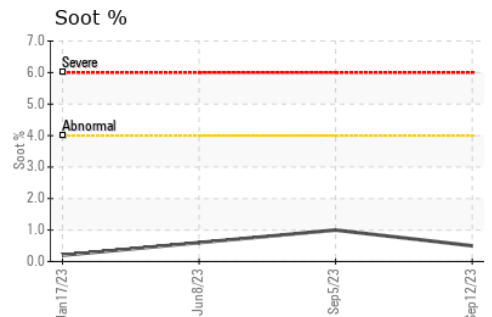
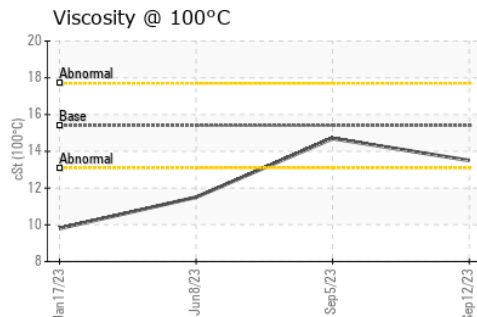
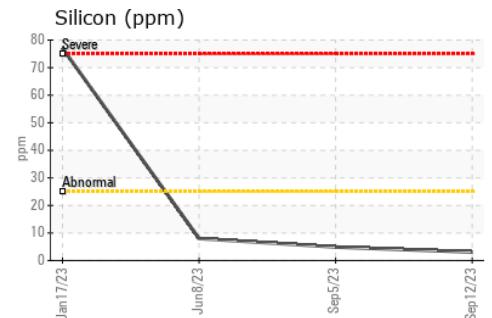
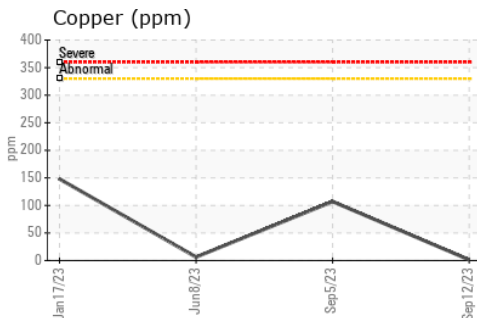
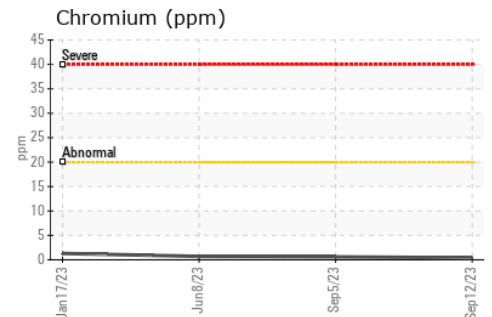
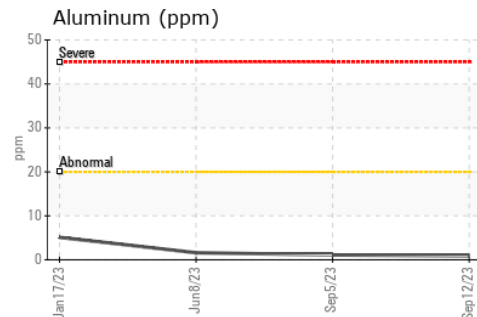
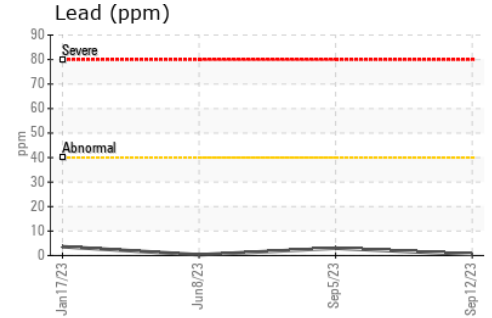
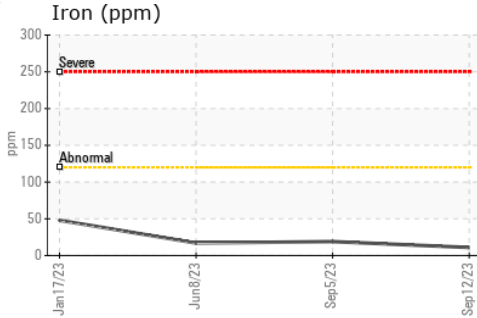
OIL ANALYSIS REPORT



| VISUAL | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG |
| Free Water | scalar | Visual* | | NEG | NEG |

| FLUID PROPERTIES | method | limit/base | current | history1 | history2 |
|------------------|--------|---------------|---------|----------|-------------|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.4 | 13.5 | 14.7 ▲ 11.5 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 246 - Windsor**
Sample No. : GFL0090848 **Received** : 13 Sep 2023 2700 Deziel Dr
Lab Number : 02581985 **Diagnosed** : 13 Sep 2023 Windsor, ON
Unique Number : 5643050 **Diagnostician** : Wes Davis CA N8W 5H8
Test Package : MOB 1

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.

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