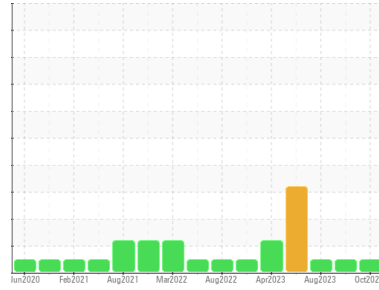




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
727003
Component
Diesel Engine
Fluid
PETRO CANADA DURON SHP 15W40 (--- GAL)

DIAGNOSIS

Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. 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

Additive levels indicate the addition of a different brand, or type of oil. The condition of the oil is acceptable for the time in service.

SAMPLE INFORMATION

| method | limit/base | current | history1 | history2 |
|---------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | GFL0057695 | GFL0090851 | GFL0090867 |
| Sample Date | Client Info | 04 Oct 2023 | 22 Aug 2023 | 02 Aug 2023 |
| Machine Age | hrs | 0 | 37451 | 0 |
| Oil Age | hrs | 37799 | 0 | 38853 |
| Oil Changed | Client Info | N/A | N/A | Changed |
| Sample Status | | NORMAL | NORMAL | NORMAL |

CONTAMINATION

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

WEAR METALS

| method | limit/base | current | history1 | history2 |
|-----------|------------------------|--------------|----------|----------|
| Iron | ppm ASTM D5185(m) >120 | 9 | 12 | 13 |
| Chromium | ppm ASTM D5185(m) >20 | 0 | <1 | <1 |
| Nickel | ppm ASTM D5185(m) >5 | 0 | 0 | 0 |
| Titanium | ppm ASTM D5185(m) >2 | 0 | 0 | 0 |
| Silver | ppm ASTM D5185(m) >2 | <1 | 0 | 0 |
| Aluminum | ppm ASTM D5185(m) >20 | 1 | <1 | 1 |
| Lead | ppm ASTM D5185(m) >40 | <1 | <1 | 3 |
| Copper | ppm ASTM D5185(m) >330 | 1 | 5 | 4 |
| Tin | ppm ASTM D5185(m) >15 | 0 | 0 | 0 |
| Antimony | ppm ASTM D5185(m) | 0 | 0 | 0 |
| 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 | 106 | 72 | 4 |
| Barium | ppm ASTM D5185(m) 0 | <1 | 0 | 0 |
| Molybdenum | ppm ASTM D5185(m) 60 | 2 | 11 | 52 |
| Manganese | ppm ASTM D5185(m) 0 | 0 | <1 | <1 |
| Magnesium | ppm ASTM D5185(m) 1010 | 29 | 119 | 856 |
| Calcium | ppm ASTM D5185(m) 1070 | 2037 | 1909 | 1004 |
| Phosphorus | ppm ASTM D5185(m) 1150 | 907 | 943 | 956 |
| Zinc | ppm ASTM D5185(m) 1270 | 1087 | 1060 | 1061 |
| Sulfur | ppm ASTM D5185(m) 2060 | 2735 | 2660 | 2316 |
| Lithium | ppm ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

| method | limit/base | current | history1 | history2 |
|-----------|-----------------------|------------|----------|----------|
| Silicon | ppm ASTM D5185(m) >25 | 3 | 2 | 2 |
| Sodium | ppm ASTM D5185(m) | 2 | 2 | 1 |
| Potassium | ppm ASTM D5185(m) >20 | 5 | 4 | <1 |
| Glycol | % ASTM D7922* | 0.0 | NEG | NEG |

INFRA-RED

| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Soot % | % ASTM D7844* >4 | 2.1 | 2.9 | 3.2 |
| Nitration | Abs/cm ASTM D7624* >20 | 8.4 | 10.2 | 10.1 |
| Sulfation | Abs/.1mm ASTM D7415* >30 | 23.6 | 26.8 | 24.9 |

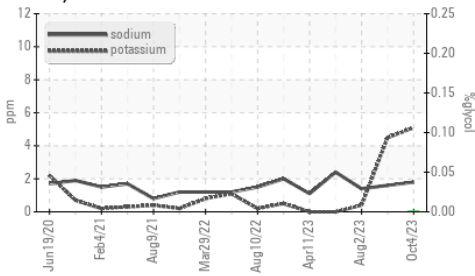
FLUID DEGRADATION

| method | limit/base | current | history1 | history2 |
|-----------|--------------------------|-------------|----------|----------|
| Oxidation | Abs/.1mm ASTM D7414* >25 | 15.0 | 17.1 | 15.3 |

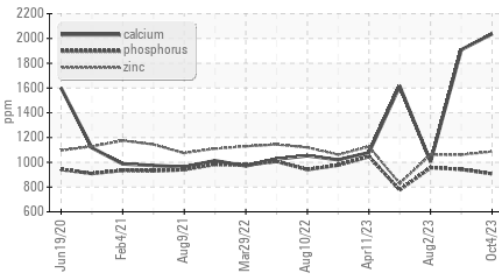


OIL ANALYSIS REPORT

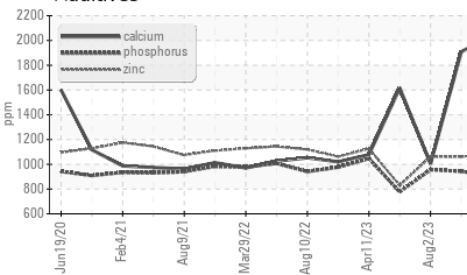
Glycol Contamination



Additives



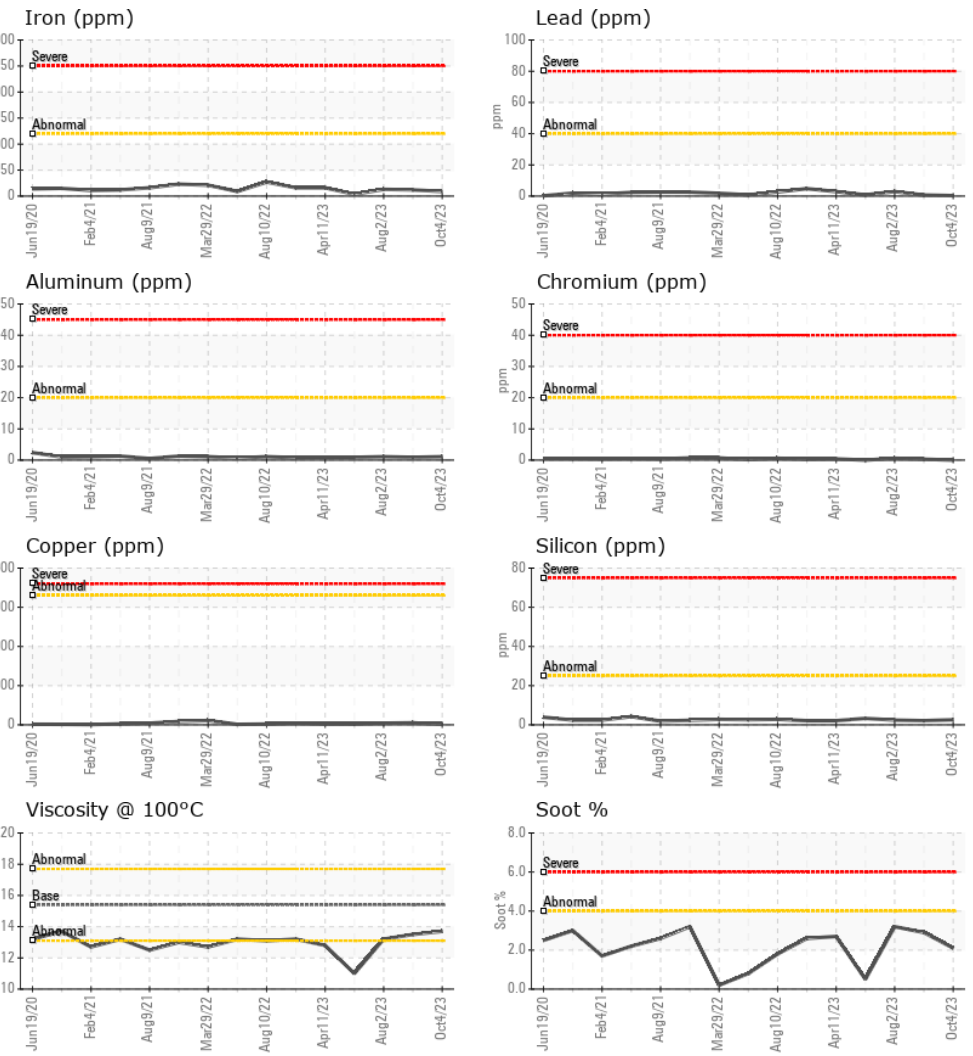
Additives



| PARAMETER | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|---------|----------|----------|
| White Metal | scalar | Visual* | NONE | --- | --- |
| Yellow Metal | scalar | Visual* | NONE | --- | --- |
| Precipitate | scalar | Visual* | NONE | --- | --- |
| Silt | scalar | Visual* | NONE | --- | --- |
| Debris | scalar | Visual* | NONE | --- | --- |
| Sand/Dirt | scalar | Visual* | NONE | --- | --- |
| Appearance | scalar | Visual* | NORML | --- | --- |
| Odor | scalar | Visual* | NORML | NORML | NORML |
| 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 | 13.7 | 13.5 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **GFL Environmental - 246 - Windsor**
Sample No. : GFL0057695 **Received** : 11 Oct 2023 2700 Deziel Dr
Lab Number : 02588160 **Diagnosed** : 11 Oct 2023 Windsor, ON
Unique Number : 5657226 **Diagnostician** : Wes Davis CA N8W 5H8
Test Package : MOB 1 (Additional Tests: Glycol, Visual)
 Contact: Dave Varga
 dvarga@gflenv.com
 T: (519)944-8009
 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.