



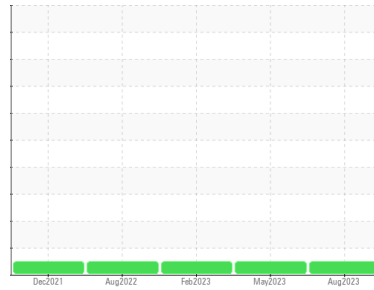
OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
801147
 Component
Natural Gas 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 | | GFL0084191 | GFL0073077 | GFL0063615 |
| Sample Date | Client Info | | 29 Aug 2023 | 05 May 2023 | 01 Feb 2023 |
| Machine Age | hrs | Client Info | 15146 | 14404 | 13816 |
| Oil Age | hrs | Client Info | 600 | 600 | 600 |
| Oil Changed | | Client Info | Changed | Changed | Changed |
| Sample Status | | | NORMAL | NORMAL | NORMAL |

WEAR METALS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|-------------------|--------------|----------|----------|
| Iron | ppm | ASTM D5185(m) >50 | 9 | 10 | 11 |
| Chromium | ppm | ASTM D5185(m) >4 | <1 | <1 | <1 |
| Nickel | ppm | ASTM D5185(m) >2 | 0 | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185(m) >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) >9 | 1 | 2 | 2 |
| Lead | ppm | ASTM D5185(m) >30 | <1 | <1 | 1 |
| Copper | ppm | ASTM D5185(m) >35 | 6 | 5 | 13 |
| Tin | ppm | ASTM D5185(m) >4 | 0 | 0 | <1 |
| 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 | 12 | 12 | 11 |
| Barium | ppm | ASTM D5185(m) 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) 60 | 51 | 52 | 53 |
| Manganese | ppm | ASTM D5185(m) 0 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) 1010 | 548 | 564 | 536 |
| Calcium | ppm | ASTM D5185(m) 1070 | 1569 | 1675 | 1672 |
| Phosphorus | ppm | ASTM D5185(m) 1150 | 687 | 730 | 732 |
| Zinc | ppm | ASTM D5185(m) 1270 | 892 | 889 | 913 |
| Sulfur | ppm | ASTM D5185(m) 2060 | 1965 | 2073 | 2077 |
| Lithium | ppm | ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

| | method | limit/base | current | history1 | history2 |
|-----------|--------|---------------------|----------|----------|----------|
| Silicon | ppm | ASTM D5185(m) >+100 | 3 | 3 | 3 |
| Sodium | ppm | ASTM D5185(m) | 7 | 7 | 3 |
| Potassium | ppm | ASTM D5185(m) >20 | 0 | <1 | <1 |

INFRA-RED

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-------------|---------------|----------|----------|
| Soot % | % | ASTM D7844* | 0 | 0 | 0 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 11.3 | 8.2 |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | 21.3 | 19.9 |

FLUID DEGRADATION

| | method | limit/base | current | history1 | history2 |
|-----------|----------|-------------|---------------|----------|----------|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | 18.4 | 13.2 |

VISUAL

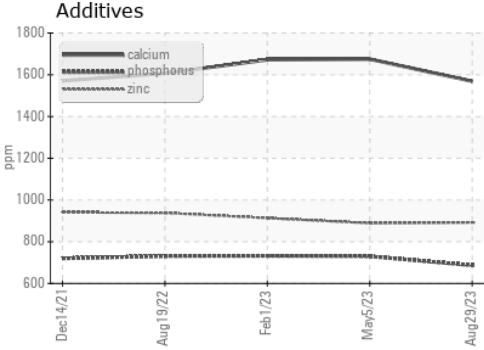
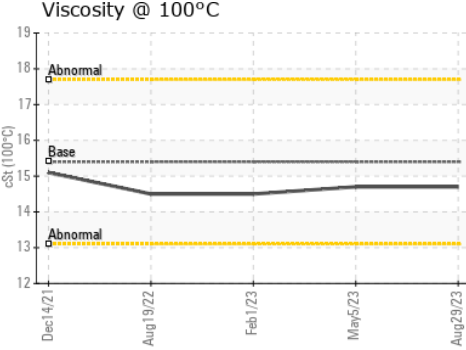
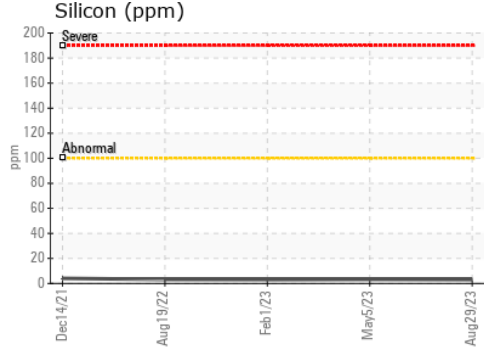
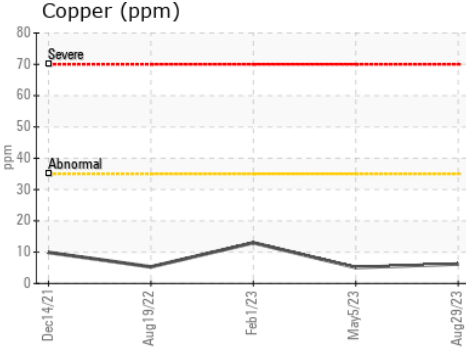
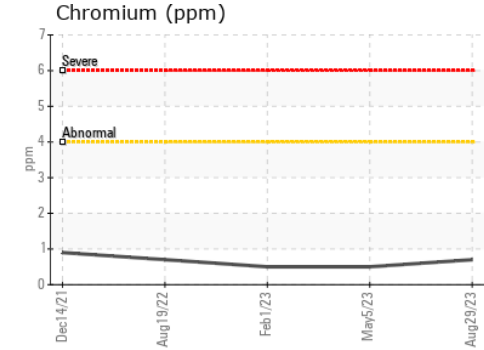
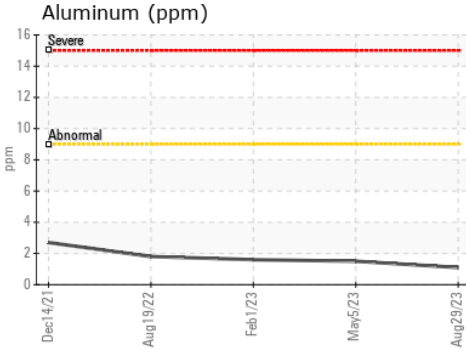
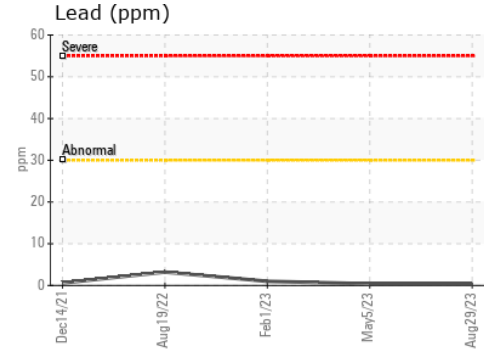
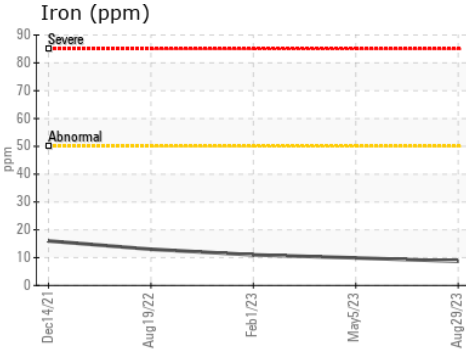
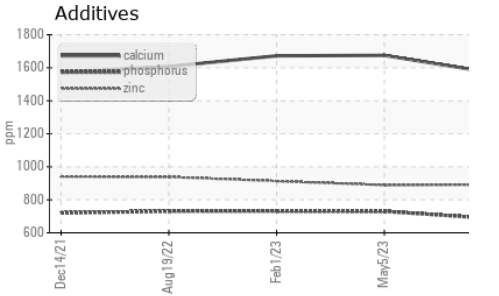
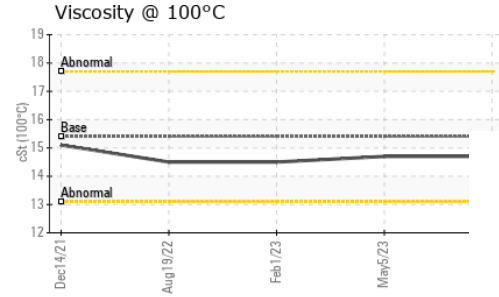
| | method | limit/base | current | history1 | history2 |
|------------------|--------|------------|----------------|----------|----------|
| Emulsified Water | scalar | Visual* | >0.1 | NEG | NEG |
| Free Water | scalar | Visual* | NEG | NEG | NEG |



OIL ANALYSIS REPORT

| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|------------------|-----|---------------|------------|---------|----------|----------|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.4 | 14.7 | 14.7 | 14.5 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 573 - Vancouver Hauling
Sample No. : GFL0084191 **Received** : 08 Sep 2023
Lab Number : 02581118 **Diagnosed** : 08 Sep 2023
Unique Number : 5642183 **Diagnostician** : Kevin Marson
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.

Contact: Catia Klagenberg Alves
 cklagenbergalves@gflenv.com

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