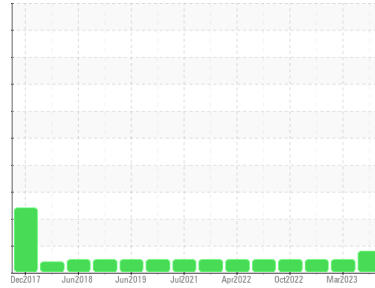




OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id
201043

Component
Diesel Engine

Fluid
PETRO CANADA DURON XL SYN BLEND 15W40 (--- GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

Fluid Condition

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

SAMPLE INFORMATION

| | method | limit/base | current | history 1 | history 2 |
|---------------|-------------|-------------|--------------------|-------------|-------------|
| Sample Number | Client Info | | GFL0077592 | GFL0070740 | GFL0063718 |
| Sample Date | Client Info | | 27 Jun 2023 | 07 Mar 2023 | 09 Jan 2023 |
| Machine Age | kms | Client Info | 373251 | 8806 | 8408 |
| Oil Age | kms | Client Info | 0 | 398 | 543 |
| Oil Changed | Client Info | | N/A | Changed | Changed |
| Sample Status | | | MARGINAL | NORMAL | NORMAL |

CONTAMINATION

| | method | limit/base | current | history 1 | history 2 |
|--------|-----------|------------|------------|-----------|-----------|
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history 1 | history 2 |
|-----------|--------|--------------------|--------------|-----------|-----------|
| Iron | ppm | ASTM D5185(m) >100 | 15 | 8 | 18 |
| Chromium | ppm | ASTM D5185(m) >20 | <1 | 0 | <1 |
| Nickel | ppm | ASTM D5185(m) >4 | 0 | 0 | <1 |
| Titanium | ppm | ASTM D5185(m) | 0 | <1 | 0 |
| Silver | ppm | ASTM D5185(m) >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185(m) >20 | 3 | 2 | 4 |
| Lead | ppm | ASTM D5185(m) >40 | 7 | 2 | 4 |
| Copper | ppm | ASTM D5185(m) >330 | <1 | <1 | <1 |
| Tin | ppm | ASTM D5185(m) >15 | <1 | <1 | <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 | history 1 | history 2 |
|------------|--------|--------------------|--------------|-----------|-----------|
| Boron | ppm | ASTM D5185(m) 1 | 2 | 2 | 3 |
| Barium | ppm | ASTM D5185(m) 1 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) 60 | 59 | 57 | 60 |
| Manganese | ppm | ASTM D5185(m) 1 | <1 | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) 1010 | 950 | 918 | 957 |
| Calcium | ppm | ASTM D5185(m) 1070 | 1045 | 1136 | 1114 |
| Phosphorus | ppm | ASTM D5185(m) 1150 | 1038 | 1069 | 1067 |
| Zinc | ppm | ASTM D5185(m) 1270 | 1184 | 1171 | 1183 |
| Sulfur | ppm | ASTM D5185(m) 2060 | 2397 | 2578 | 2487 |
| Lithium | ppm | ASTM D5185(m) | <1 | <1 | <1 |

CONTAMINANTS

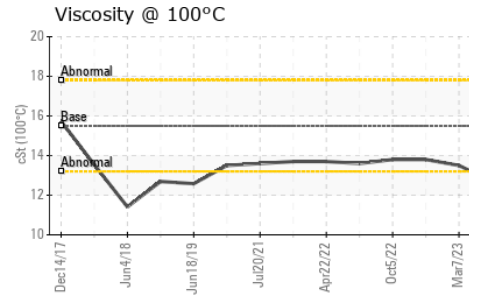
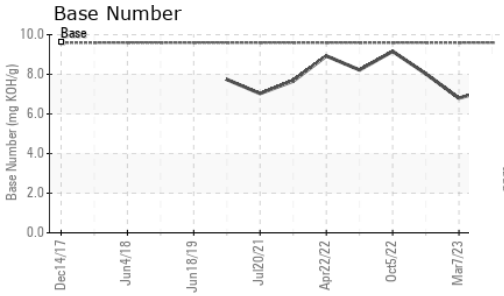
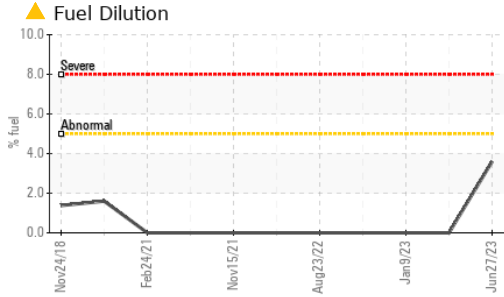
| | method | limit/base | current | history 1 | history 2 |
|-----------|--------|-------------------|--------------|-----------|-----------|
| Silicon | ppm | ASTM D5185(m) >25 | 6 | 4 | 4 |
| Sodium | ppm | ASTM D5185(m) | 2 | 2 | 2 |
| Potassium | ppm | ASTM D5185(m) >20 | 3 | <1 | 3 |
| Fuel | % | ASTM D7593* >5 | ▲ 3.6 | <1.0 | <1.0 |

INFRA-RED

| | method | limit/base | current | history 1 | history 2 |
|-----------|----------|-----------------|-------------|-----------|-----------|
| Soot % | % | ASTM D7844* >3 | 1.3 | 0.6 | 1.1 |
| Nitration | Abs/cm | ASTM D7624* >20 | 12.1 | 9.4 | 12.9 |
| Sulfation | Abs/.1mm | ASTM D7415* >30 | 24.6 | 23.2 | 24.4 |



OIL ANALYSIS REPORT

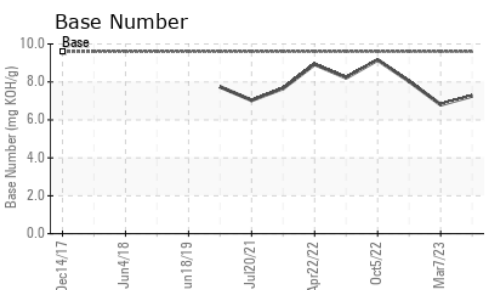
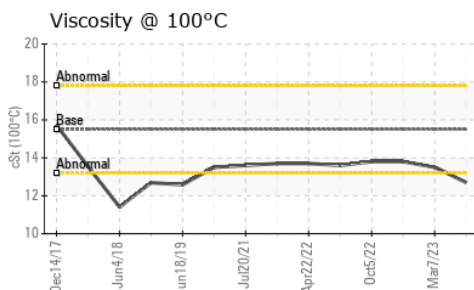
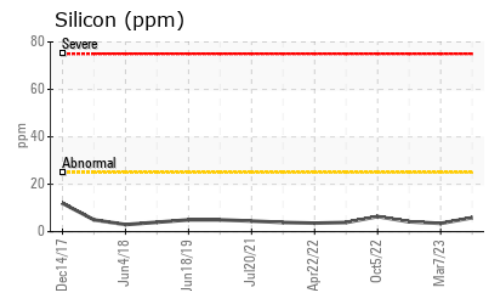
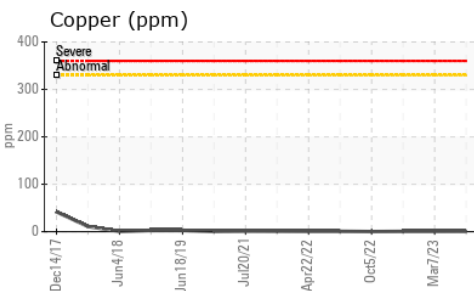
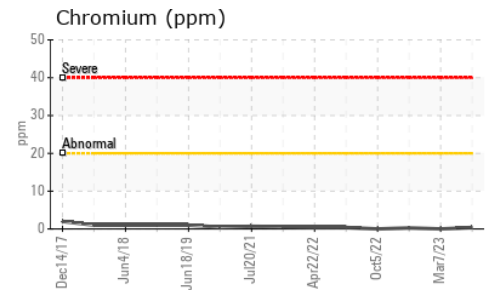
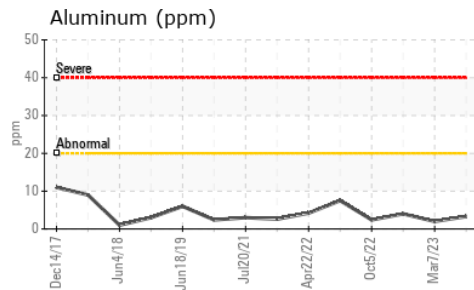
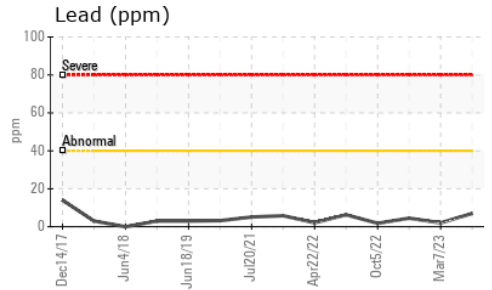
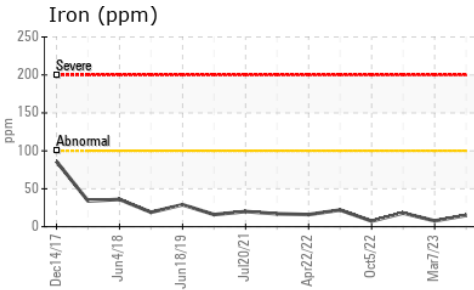


| FLUID DEGRADATION | | method | limit/base | current | history 1 | history 2 |
|-------------------|----------|-------------|------------|-------------|-----------|-----------|
| Oxidation | Abs./1mm | ASTM D7414* | >25 | 23.4 | 18.1 | 22.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896* | 9.6 | 7.26 | 6.80 | 8.03 |

| VISUAL | | method | limit/base | current | history 1 | history 2 |
|------------------|--------|---------|------------|------------|-----------|-----------|
| Emulsified Water | scalar | Visual* | >0.2 | NEG | NEG | NEG |
| Free Water | scalar | Visual* | | NEG | NEG | NEG |

| FLUID PROPERTIES | | method | limit/base | current | history 1 | history 2 |
|------------------|-----|---------------|------------|-------------|-----------|-----------|
| Visc @ 100°C | cSt | ASTM D7279(m) | 15.5 | 12.7 | 13.5 | 13.8 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 GFL Environmental - 550 - Rocky View County
Sample No. : GFL0077592 **Received** : 06 Jul 2023 220 Carmek Blvd
Lab Number : **02568175** **Diagnosed** : 07 Jul 2023 Rocky View County, AB
Unique Number : 5605221 **Diagnostician** : Wes Davis CA T1X 1X1
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel) Contact: GFL Calgary
 To discuss this sample report, contact Customer Service at 1-800-268-2131. calgarymaintenance@gflenv.com
 Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T:
 Validity of results and interpretation are based on the sample and information as supplied. F: (403)369-6163