



OIL ANALYSIS REPORT

Sample Rating Trend

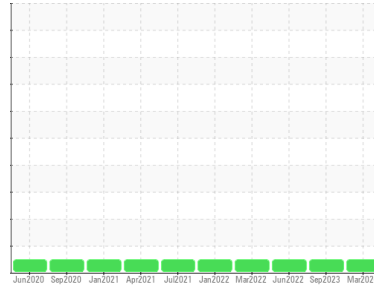
NORMAL



Machine Id
429009

Component
Diesel Engine
Fluid

DIESEL ENGINE OIL SAE 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 | | GFL0113259 | GFL0090853 | GFL0055369 |
| Sample Date | Client Info | | 06 Mar 2024 | 05 Sep 2023 | 24 Jun 2022 |
| Machine Age | hrs | Client Info | 6798 | 6568 | 5983 |
| Oil Age | hrs | Client Info | 0 | 0 | 604 |
| 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 |
| Water | WC Method | >0.2 | NEG | NEG | NEG |
| Glycol | WC Method | | NEG | NEG | NEG |

WEAR METALS

| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|--------------|----------|----|
| Iron | ppm | ASTM D5185(m) | >120 | 6 | 10 | 4 |
| Chromium | ppm | ASTM D5185(m) | >20 | 0 | <1 | 0 |
| Nickel | ppm | ASTM D5185(m) | >5 | <1 | 0 | 0 |
| Titanium | ppm | ASTM D5185(m) | >2 | 0 | <1 | <1 |
| Silver | ppm | ASTM D5185(m) | >2 | 0 | <1 | 0 |
| Aluminum | ppm | ASTM D5185(m) | >20 | 2 | 2 | 1 |
| Lead | ppm | ASTM D5185(m) | >40 | <1 | <1 | <1 |
| Copper | ppm | ASTM D5185(m) | >330 | 2 | 4 | 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 | history1 | history2 | |
|------------|--------|---------------|---------|--------------|----------|------|
| Boron | ppm | ASTM D5185(m) | 250 | 7 | 6 | 6 |
| Barium | ppm | ASTM D5185(m) | 10 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185(m) | 100 | 57 | 57 | 56 |
| Manganese | ppm | ASTM D5185(m) | | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185(m) | 450 | 902 | 929 | 917 |
| Calcium | ppm | ASTM D5185(m) | 3000 | 1022 | 1043 | 1081 |
| Phosphorus | ppm | ASTM D5185(m) | 1150 | 976 | 998 | 983 |
| Zinc | ppm | ASTM D5185(m) | 1350 | 1113 | 1154 | 1148 |
| Sulfur | ppm | ASTM D5185(m) | 4250 | 2661 | 2437 | 2598 |
| Lithium | ppm | ASTM D5185(m) | | <1 | <1 | <1 |

CONTAMINANTS

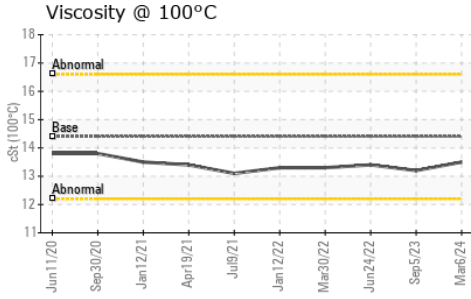
| | method | limit/base | current | history1 | history2 | |
|-----------|--------|---------------|---------|----------|----------|---|
| Silicon | ppm | ASTM D5185(m) | >25 | 3 | 4 | 3 |
| Sodium | ppm | ASTM D5185(m) | >158 | 2 | 3 | 2 |
| Potassium | ppm | ASTM D5185(m) | >20 | 2 | 3 | 1 |

INFRA-RED

| | method | limit/base | current | history1 | history2 | |
|-----------|----------|-------------|---------|-------------|----------|------|
| Soot % | % | ASTM D7844* | >4 | 0 | 0.2 | 0 |
| Nitration | Abs/cm | ASTM D7624* | >20 | 6.1 | 8.1 | 7.2 |
| Sulfation | Abs./1mm | ASTM D7415* | >30 | 17.9 | 20.2 | 20.5 |



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FLUID DEGRADATION

| method | limit/base | current | history1 | history2 | |
|-----------|----------------------|---------|----------|----------|------|
| Oxidation | Abs./1mm ASTM D7414* | >25 | 13.7 | 14.8 | 14.7 |

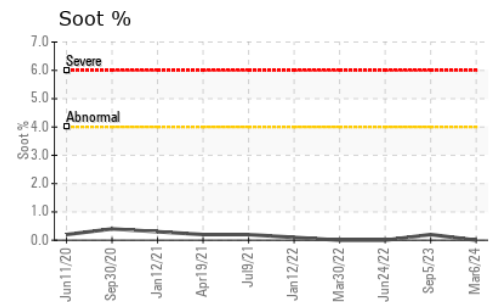
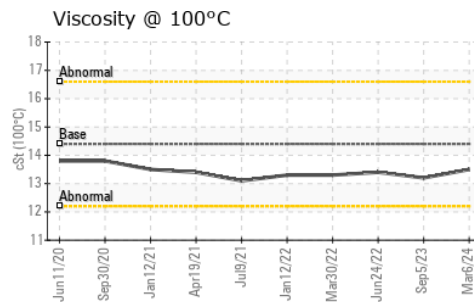
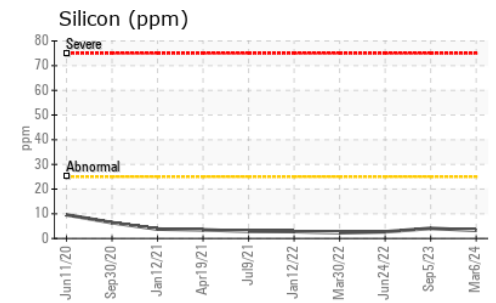
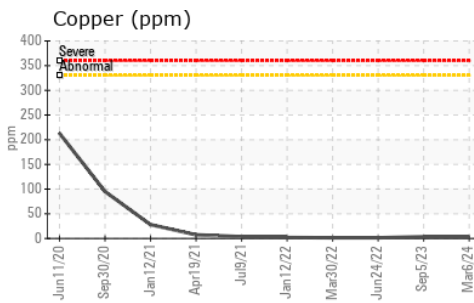
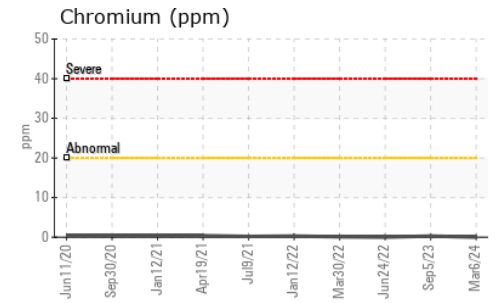
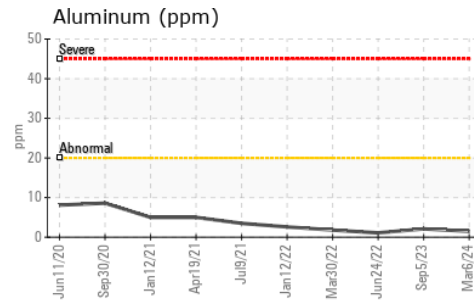
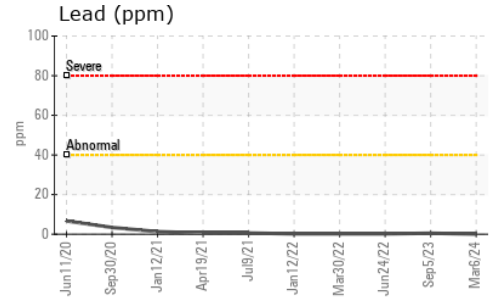
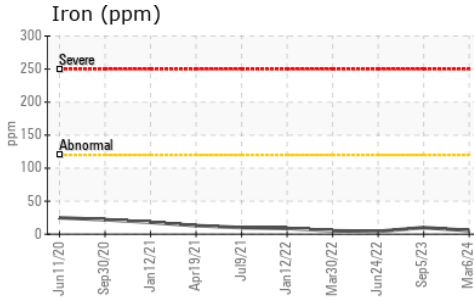
VISUAL

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

FLUID PROPERTIES

| method | limit/base | current | history1 | history2 | |
|--------------|-------------------|---------|----------|----------|------|
| Visc @ 100°C | cSt ASTM D7279(m) | 14.4 | 13.5 | 13.2 | 13.4 |

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
 Sample No. : GFL0113259
 Lab Number : 02620427
 Unique Number : 5737537
 Test Package : MOB 1

GFL Environmental - 246 - Windsor
 2700 Deziel Dr
 Windsor, ON
 CA N8W 5H8
 Contact: Dave Varga
 dvarga@gflenv.com
 T: (519)944-8009
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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.