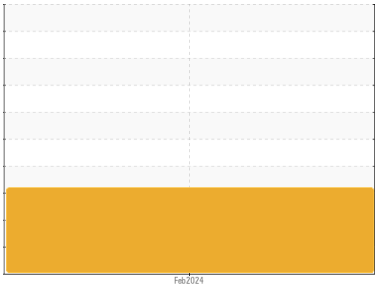
# OIL ANALYSIS REPORT

Sample Rating Trend




**DIRT**

Machine Id
## NO UNIT GFL0102599
Component
**Diesel Engine**
Fluid
**{not provided} (--- GAL)**

## DIAGNOSIS

**Recommendation**

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. The oil change at the time of sampling has been noted. We recommend you service the filters on this component. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is SAE 30 Diesel Engine Oil. Please confirm the oil type and grade, and specify the brand of the oil on your next sample.

**Wear**

Aluminum ppm levels are noted. All other component wear rates are normal.

**Contamination**

Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is a moderate amount of fuel present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. Tests confirm the presence of fuel in the oil.

**Fluid Condition**

The oil is no longer serviceable due to the presence of contaminants.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **GFL0102599** | --- | --- |
| Sample Date | | Client Info | | **19 Feb 2024** | --- | --- |
| Machine Age | hrs | Client Info | | **12166** | --- | --- |
| Oil Age | hrs | Client Info | | **0** | --- | --- |
| Oil Changed | | Client Info | | **Changed** | --- | --- |
| Sample Status | | | | **ABNORMAL** | --- | --- |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.2 | **NEG** | --- | --- |
| Glycol | | WC Method | | **NEG** | --- | --- |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185(m) | >80 | **73** | --- | --- |
| Chromium | ppm | ASTM D5185(m) | >5 | **2** | --- | --- |
| Nickel | ppm | ASTM D5185(m) | >2 | **2** | --- | --- |
| Titanium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Silver | ppm | ASTM D5185(m) | >3 | **0** | --- | --- |
| Aluminum | ppm | ASTM D5185(m) | >30 | ▲ **9** | --- | --- |
| Lead | ppm | ASTM D5185(m) | >30 | **3** | --- | --- |
| Copper | ppm | ASTM D5185(m) | >150 | **2** | --- | --- |
| Tin | ppm | ASTM D5185(m) | >5 | **<1** | --- | --- |
| Antimony | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Vanadium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Beryllium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Cadmium | ppm | ASTM D5185(m) | | **0** | --- | --- |

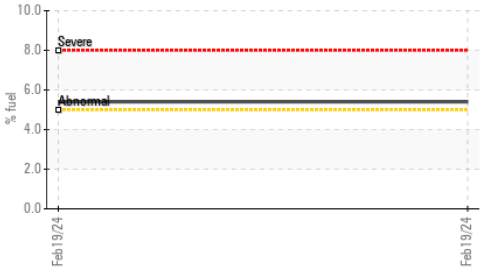
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185(m) | | **1** | --- | --- |
| Barium | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Molybdenum | ppm | ASTM D5185(m) | | **58** | --- | --- |
| Manganese | ppm | ASTM D5185(m) | | **0** | --- | --- |
| Magnesium | ppm | ASTM D5185(m) | | **927** | --- | --- |
| Calcium | ppm | ASTM D5185(m) | | **1034** | --- | --- |
| Phosphorus | ppm | ASTM D5185(m) | | **963** | --- | --- |
| Zinc | ppm | ASTM D5185(m) | | **1140** | --- | --- |
| Sulfur | ppm | ASTM D5185(m) | | **2456** | --- | --- |
| Lithium | ppm | ASTM D5185(m) | | **<1** | --- | --- |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185(m) | >20 | ▲ **29** | --- | --- |
| Sodium | ppm | ASTM D5185(m) | | **7** | --- | --- |
| Potassium | ppm | ASTM D5185(m) | >20 | **10** | --- | --- |
| Fuel | % | ASTM D7593* | >5 | ▲ **5.4** | --- | --- |

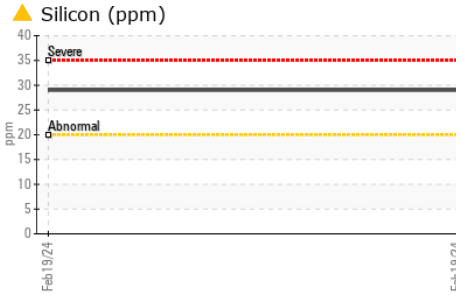
| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | ASTM D7844* | >3 | **1.2** | --- | --- |
| Nitration | Abs/cm | ASTM D7624* | >20 | **11.4** | --- | --- |
| Sulfation | Abs/.1mm | ASTM D7415* | >30 | **22.7** | --- | --- |

# OIL ANALYSIS REPORT

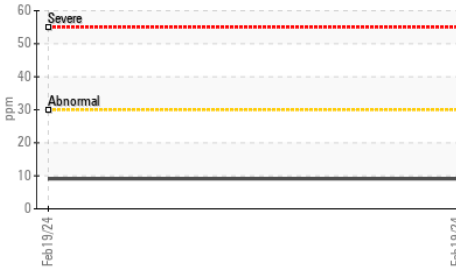
Fuel Dilution



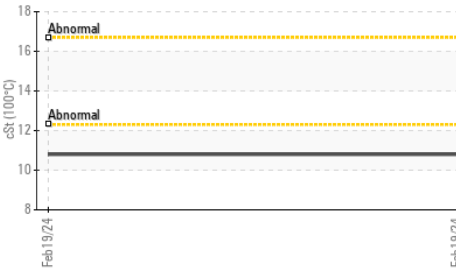

Silicon (ppm)




Aluminum (ppm)




Viscosity @ 100°C



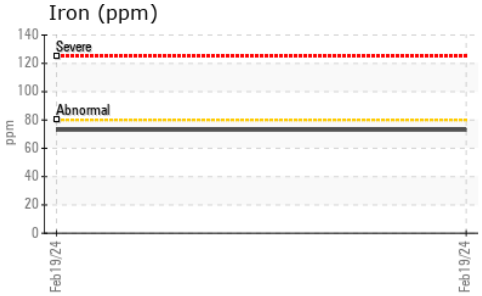

| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | ASTM D7414* | >25 | **20.0** | --- | --- |

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

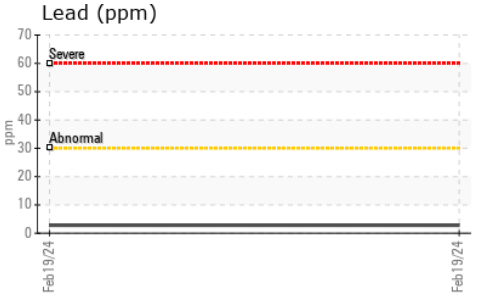
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D7279(m) | | **10.8** | --- | --- |

## GRAPHS

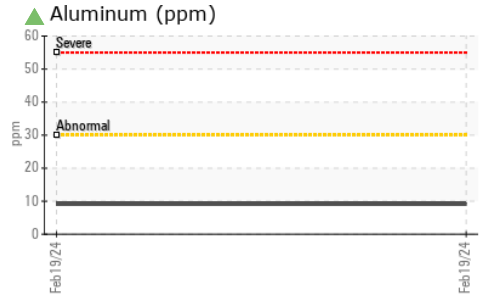
Iron (ppm)



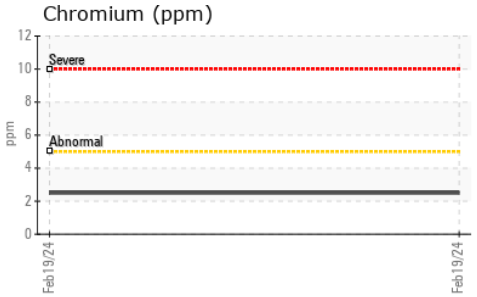

Lead (ppm)



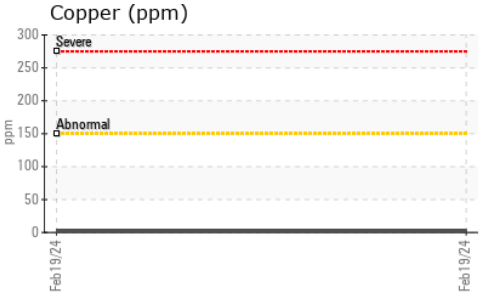

Aluminum (ppm)



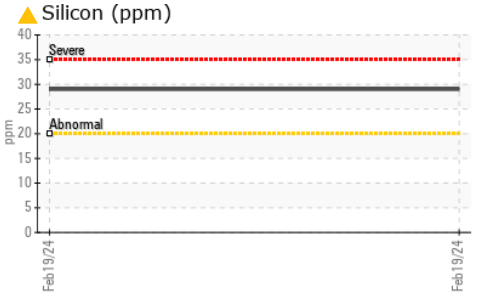

Chromium (ppm)




Copper (ppm)

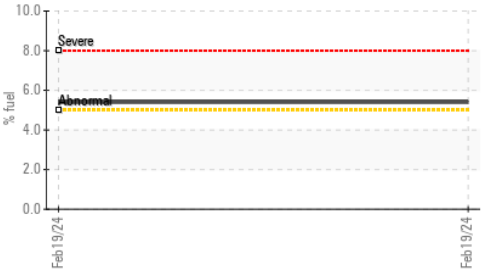



Silicon (ppm)




Viscosity @ 100°C


Fuel Dilution




ISO 17025:2017 Accredited Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
**Sample No.** : GFL0102599
**Lab Number** : 02616561
**Unique Number** : 5733671
**Test Package** : MOB 1 ( Additional Tests: FuelDilution, PercentFuel )

**Received** : 20 Feb 2024
**Tested** : 22 Feb 2024
**Diagnosed** : 22 Feb 2024 - Kevin Marson

*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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