

Area  
**[1236452]**  
Machine Id  
**816000**  
Component  
**Diesel Engine**  
Fluid  
**DIESEL ENGINE OIL SAE 40 (--- GAL)**

**RECOMMENDATION**

Check for low coolant level. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. Please specify the component make and model with your next sample.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>GFL0093961</b>  | GFL0062898  | GFL0062887  |
| Sample Date    |     | Client Info |           | <b>04 Mar 2024</b> | 27 Feb 2023 | 30 Dec 2022 |
| Machine Age    | hrs | Client Info |           | <b>0</b>           | 13307       | 13003       |
| Oil Age        | hrs | Client Info |           | <b>0</b>           | 13307       | 13003       |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 13307       | 13003       |
| Oil Changed    |     | Client Info |           | <b>N/A</b>         | N/A         | Changed     |
| Filter Changed |     | Client Info |           | <b>N/A</b>         | N/A         | Changed     |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | NORMAL      | NORMAL      |

**WEAR**

All component wear rates are normal.

|          |     |               |      |              |    |    |
|----------|-----|---------------|------|--------------|----|----|
| Iron     | ppm | ASTM D5185(m) | >100 | <b>40</b>    | 15 | 28 |
| Chromium | ppm | ASTM D5185(m) | >20  | <b>1</b>     | <1 | 1  |
| Nickel   | ppm | ASTM D5185(m) | >4   | <b>&lt;1</b> | <1 | <1 |
| Titanium | ppm | ASTM D5185(m) |      | <b>0</b>     | <1 | <1 |
| Silver   | ppm | ASTM D5185(m) | >3   | <b>0</b>     | 0  | 0  |
| Aluminum | ppm | ASTM D5185(m) | >20  | <b>6</b>     | 3  | 4  |
| Lead     | ppm | ASTM D5185(m) | >40  | <b>0</b>     | 0  | 0  |
| Copper   | ppm | ASTM D5185(m) | >330 | <b>1</b>     | <1 | 2  |
| Tin      | ppm | ASTM D5185(m) | >15  | <b>0</b>     | <1 | <1 |
| Vanadium | ppm | ASTM D5185(m) |      | <b>0</b>     | 0  | 0  |

**CONTAMINATION**

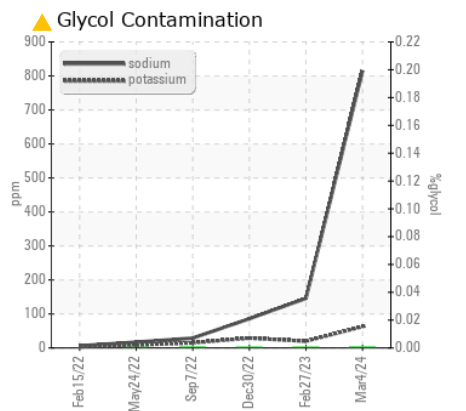
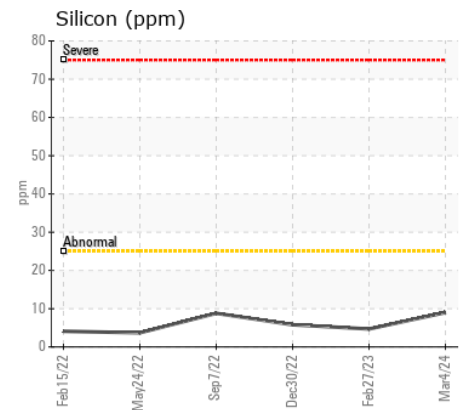
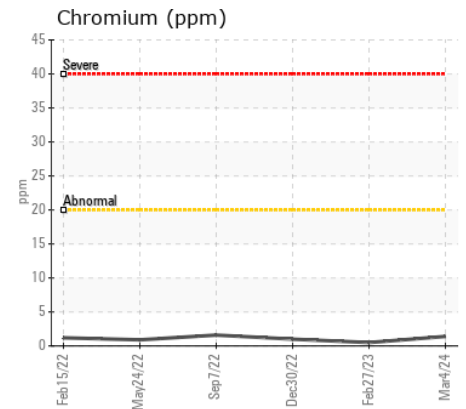
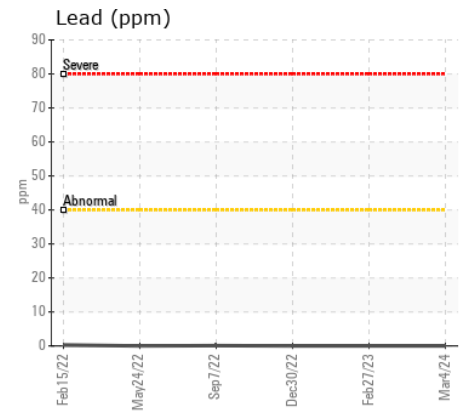
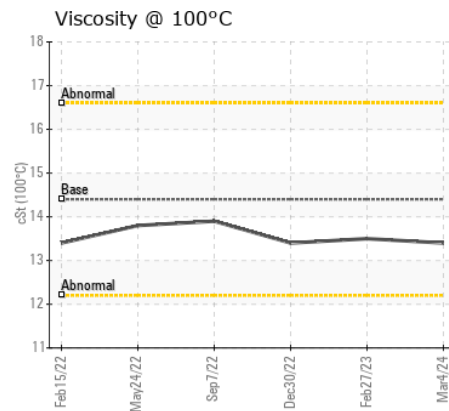
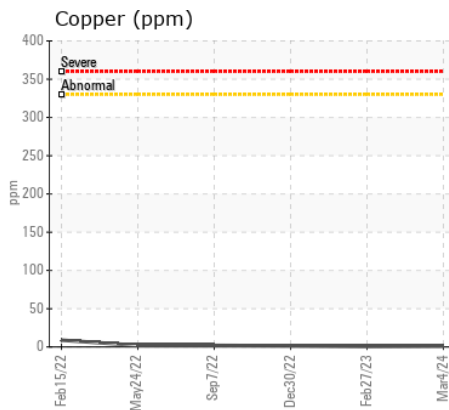
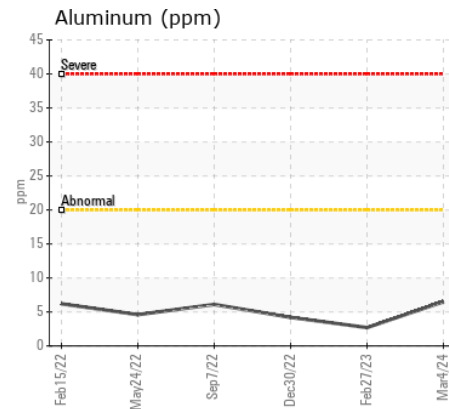
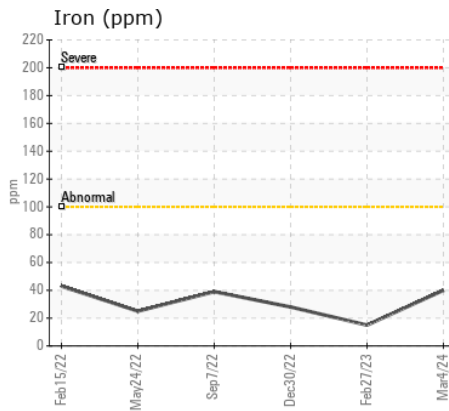
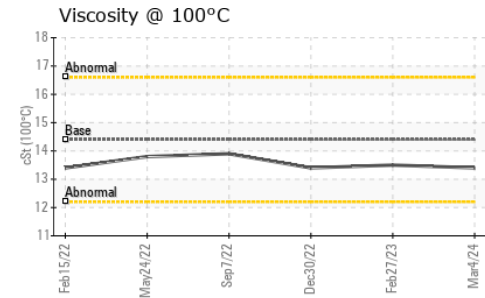
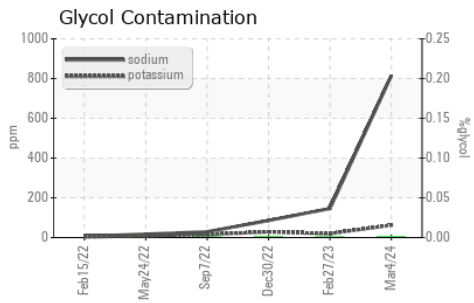
Water treatment chemicals present, indicating slow coolant leak. Test for glycol is negative.

|                  |          |               |      |                |      |      |
|------------------|----------|---------------|------|----------------|------|------|
| Silicon          | ppm      | ASTM D5185(m) | >25  | <b>9</b>       | 5    | 6    |
| Potassium        | ppm      | ASTM D5185(m) | >20  | <b>63</b>      | 20   | 29   |
| Fuel             |          | WC Method     | >5   | <b>&lt;1.0</b> | <1.0 | <1.0 |
| Water            |          | WC Method     | >0.2 | <b>NEG</b>     | NEG  | NEG  |
| Glycol           | %        | ASTM D7922*   |      | <b>0.0</b>     | 0.0  | 0.0  |
| Soot %           | %        | ASTM D7844*   | >3   | <b>0.7</b>     | 0.3  | 0.5  |
| Nitration        | Abs/cm   | ASTM D7624*   | >20  | <b>12.7</b>    | 9.5  | 10.2 |
| Sulfation        | Abs/.1mm | ASTM D7415*   | >30  | <b>23.1</b>    | 21.9 | 22.4 |
| Emulsified Water | scalar   | Visual*       | >0.2 | <b>NEG</b>     | NEG  | NEG  |

**FLUID CONDITION**

The condition of the oil is acceptable for the time in service (see recommendation).

|              |          |               |      |             |      |      |
|--------------|----------|---------------|------|-------------|------|------|
| Sodium       | ppm      | ASTM D5185(m) | >216 | <b>815</b>  | 146  | 86   |
| Boron        | ppm      | ASTM D5185(m) | 250  | <b>5</b>    | 5    | 5    |
| Barium       | ppm      | ASTM D5185(m) | 10   | <b>0</b>    | 0    | 0    |
| Molybdenum   | ppm      | ASTM D5185(m) | 100  | <b>82</b>   | 64   | 64   |
| Manganese    | ppm      | ASTM D5185(m) |      | <b>0</b>    | <1   | <1   |
| Magnesium    | ppm      | ASTM D5185(m) | 450  | <b>873</b>  | 944  | 964  |
| Calcium      | ppm      | ASTM D5185(m) | 3000 | <b>1078</b> | 1117 | 1134 |
| Phosphorus   | ppm      | ASTM D5185(m) | 1150 | <b>875</b>  | 1065 | 1051 |
| Zinc         | ppm      | ASTM D5185(m) | 1350 | <b>1097</b> | 1193 | 1183 |
| Sulfur       | ppm      | ASTM D5185(m) | 4250 | <b>2584</b> | 2564 | 2480 |
| Oxidation    | Abs/.1mm | ASTM D7414*   | >25  | <b>18.7</b> | 16.6 | 17.2 |
| Visc @ 100°C | cSt      | ASTM D7279(m) | 14.4 | <b>13.4</b> | 13.5 | 13.4 |



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : GFL0093961  
**Lab Number** : 02620743  
**Unique Number** : 5737853  
**Test Package** : MOB 1 ( Additional Tests: Glycol )  
**Received** : 08 Mar 2024  
**Tested** : 08 Mar 2024  
**Diagnosed** : 11 Mar 2024 - Kevin Marson

**GFL Environmental - 777 - Belleville-Municipal waste**  
 197 Putman Industrial Road  
 Belleville, ON  
 CA K8N 4Z6  
 Contact: Andrea Michael  
 amichael@gflenv.com  
 T: (613)962-7144  
 F: (613)962-1994

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.