



|                 |               |
|-----------------|---------------|
| WEAR            | <b>NORMAL</b> |
| CONTAMINATION   | <b>NORMAL</b> |
| FLUID CONDITION | <b>NORMAL</b> |



Machine Id  
**934035**  
Component  
**Natural Gas Engine**  
Fluid  
**{not provided} (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

**WEAR**

Metal levels are typical for a new component breaking in.

**CONTAMINATION**

There is no indication of any contamination 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.

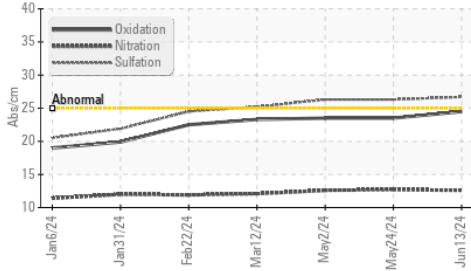
| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>GFL0122088</b>  | GFL0122053  | GFL0116604  |
| Sample Date    |     | Client Info |           | <b>13 Jun 2024</b> | 24 May 2024 | 02 May 2024 |
| Machine Age    | hrs | Client Info |           | <b>1214</b>        | 1054        | 901         |
| Oil Age        | hrs | Client Info |           | <b>1214</b>        | 1054        | 901         |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Not Changd  | Not Changd  |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Not Changd  | Not Changd  |
| Sample Status  |     |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >50  | <b>75</b>    | 71   | 81   |
| Chromium     | ppm    | ASTM D5185m | >4   | <b>2</b>     | 2    | 2    |
| Nickel       | ppm    | ASTM D5185m | >2   | <b>1</b>     | 2    | 1    |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | <1   | 0    |
| Silver       | ppm    | ASTM D5185m | >3   | <b>0</b>     | <1   | 0    |
| Aluminum     | ppm    | ASTM D5185m | >9   | <b>19</b>    | 18   | 20   |
| Lead         | ppm    | ASTM D5185m | >30  | <b>2</b>     | 2    | <1   |
| Copper       | ppm    | ASTM D5185m | >35  | <b>15</b>    | 15   | 18   |
| Tin          | ppm    | ASTM D5185m | >4   | <b>1</b>     | 2    | 2    |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

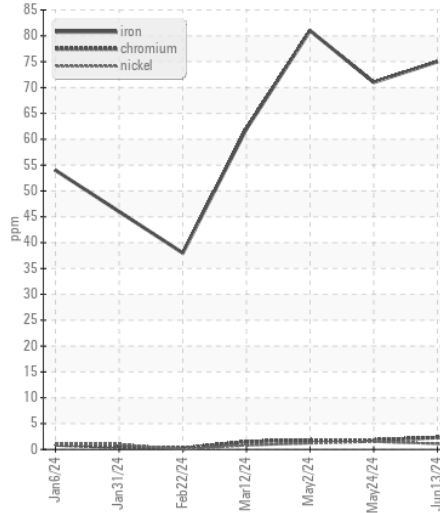
|                  |          |             |       |              |       |       |
|------------------|----------|-------------|-------|--------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >+100 | <b>22</b>    | 22    | 27    |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>21</b>    | 17    | 17    |
| Water            |          | WC Method   | >0.1  | <b>NEG</b>   | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 |       | <b>0.1</b>   | 0     | 0     |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>12.6</b>  | 12.7  | 12.6  |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>26.7</b>  | 26.3  | 26.3  |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>  | NONE  | NONE  |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>  | NONE  | NONE  |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>  | NONE  | NONE  |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b> | NORML | NORML |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b> | NORML | NORML |
| Emulsified Water | scalar   | *Visual     | >0.1  | <b>NEG</b>   | NEG   | NEG   |

|                  |          |             |     |              |      |      |
|------------------|----------|-------------|-----|--------------|------|------|
| Sodium           | ppm      | ASTM D5185m |     | <b>8</b>     | 7    | 7    |
| Boron            | ppm      | ASTM D5185m |     | <b>8</b>     | 7    | 10   |
| Barium           | ppm      | ASTM D5185m |     | <b>&lt;1</b> | 3    | <1   |
| Molybdenum       | ppm      | ASTM D5185m |     | <b>65</b>    | 56   | 65   |
| Manganese        | ppm      | ASTM D5185m |     | <b>11</b>    | 11   | 13   |
| Magnesium        | ppm      | ASTM D5185m |     | <b>727</b>   | 740  | 833  |
| Calcium          | ppm      | ASTM D5185m |     | <b>1388</b>  | 1316 | 1399 |
| Phosphorus       | ppm      | ASTM D5185m |     | <b>791</b>   | 814  | 845  |
| Zinc             | ppm      | ASTM D5185m |     | <b>1067</b>  | 983  | 1051 |
| Sulfur           | ppm      | ASTM D5185m |     | <b>2521</b>  | 2565 | 2733 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25 | <b>24.5</b>  | 23.5 | 23.5 |
| Base Number (BN) | mg KOH/g | ASTM D2896  |     | <b>3.2</b>   | 3.5  | 3.1  |
| Visc @ 100°C     | cSt      | ASTM D445   |     | <b>14.8</b>  | 14.7 | 14.6 |

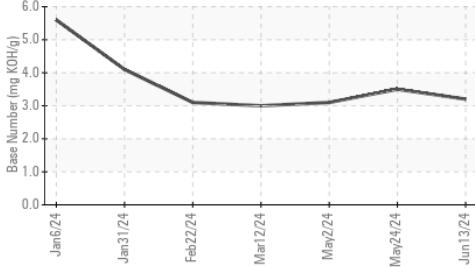
**FT-IR (Direct Trend)**



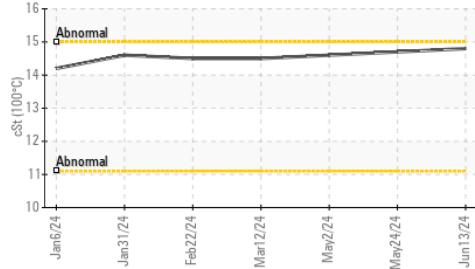
**Ferrous Alloys**



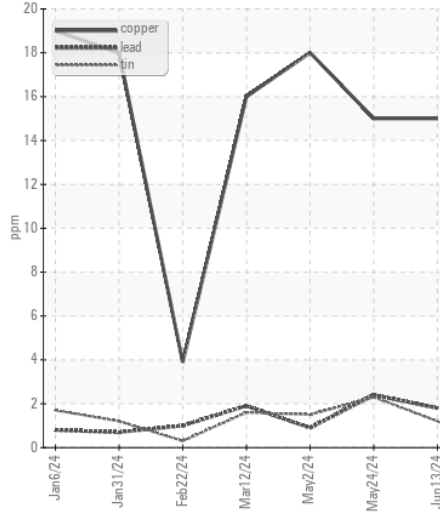
**Base Number**



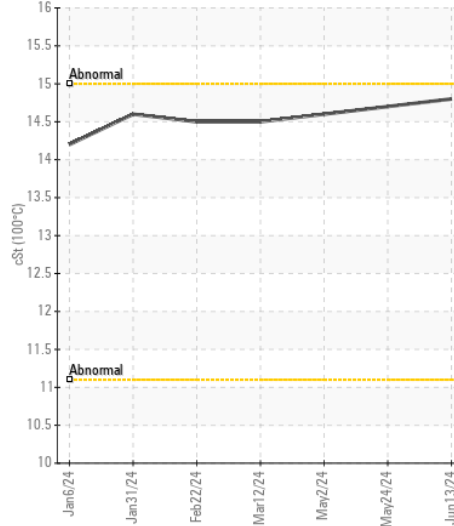
**Viscosity @ 100°C**



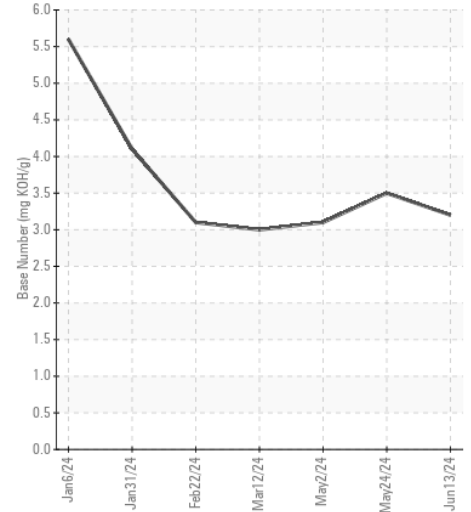
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : GFL0122088

**Lab Number** : 06211029

**Unique Number** : 11083893

**Test Package** : FLEET

**Received** : 14 Jun 2024

**Tested** : 18 Jun 2024

**Diagnosed** : 18 Jun 2024 - Angela Borella

**GFL Environmental - 652 - Fredericksburg Hauling**

10954 Houser Drive

Fredericksburg, VA

US 22408

Contact: WILLIAM MILO

wmilo@gflenv.com

T:

F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

\* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)