



# OIL ANALYSIS REPORT

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

Machine Id  
**846-4351**  
 Component  
**Diesel Engine**  
 Fluid  
**MOBIL DELVAC 1300 SUPER15W40 (--- GAL)**

## RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>RPL0016921</b>  | RPL0016101  | RPL0011368  |
| Sample Date    |     | Client Info |           | <b>27 Dec 2023</b> | 02 Nov 2023 | 09 Aug 2023 |
| Machine Age    | mls | Client Info |           | <b>123107</b>      | 119987      | 111285      |
| Oil Age        | mls | Client Info |           | <b>123107</b>      | 119987      | 102288      |
| Filter Age     | mls | Client Info |           | <b>123107</b>      | 119987      | 102288      |
| 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>ABNORMAL</b>    | ABNORMAL    | ABNORMAL    |

## WEAR

Cylinder, crank, or cam shaft wear is indicated.

|              |        |             |      |              |       |       |
|--------------|--------|-------------|------|--------------|-------|-------|
| Iron         | ppm    | ASTM D5185m | >100 | <b>▲ 169</b> | ▲ 162 | ▲ 121 |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>4</b>     | 4     | 3     |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>&lt;1</b> | <1    | <1    |
| Titanium     | ppm    | ASTM D5185m |      | <b>0</b>     | 0     | <1    |
| Silver       | ppm    | ASTM D5185m | >3   | <b>0</b>     | 0     | 0     |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>▲ 28</b>  | ▲ 29  | ▲ 26  |
| Lead         | ppm    | ASTM D5185m | >40  | <b>&lt;1</b> | <1    | <1    |
| Copper       | ppm    | ASTM D5185m | >330 | <b>16</b>    | 16    | 15    |
| Tin          | ppm    | ASTM D5185m | >15  | <b>&lt;1</b> | <1    | 1     |
| Vanadium     | ppm    | ASTM D5185m |      | <b>0</b>     | <1    | <1    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE  | NONE  |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE  | NONE  |

## CONTAMINATION

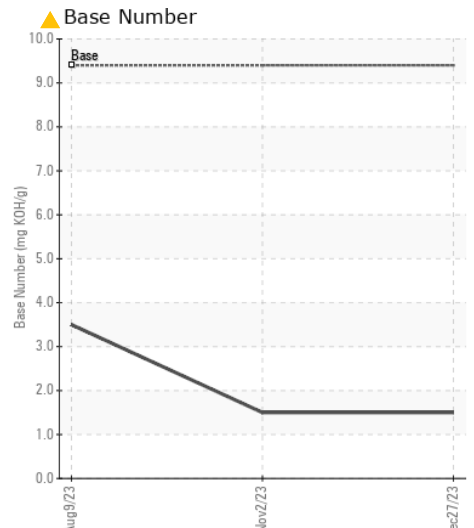
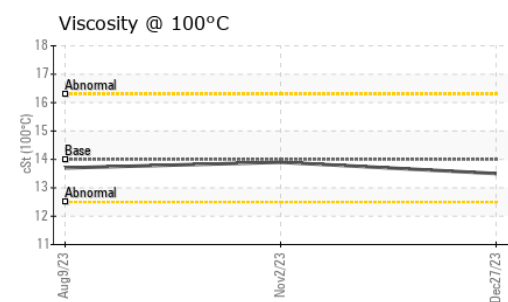
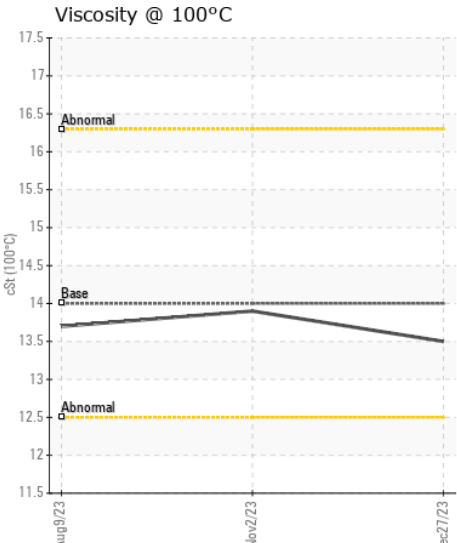
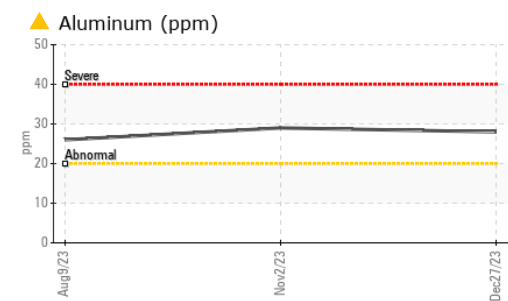
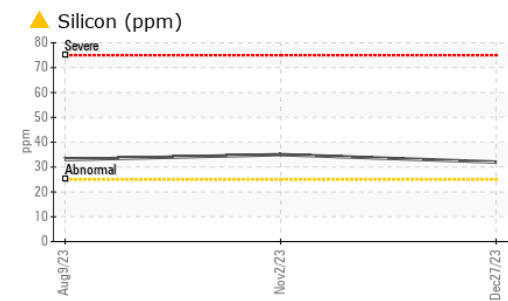
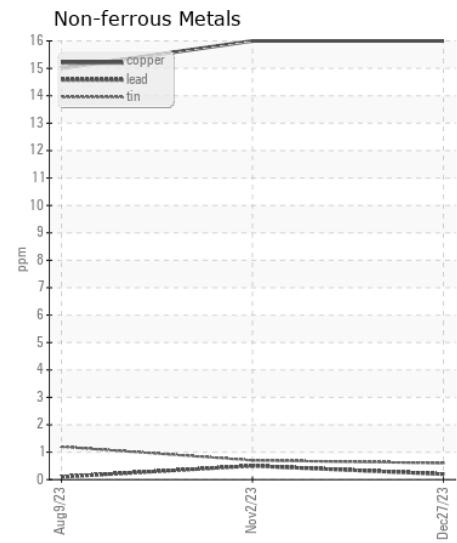
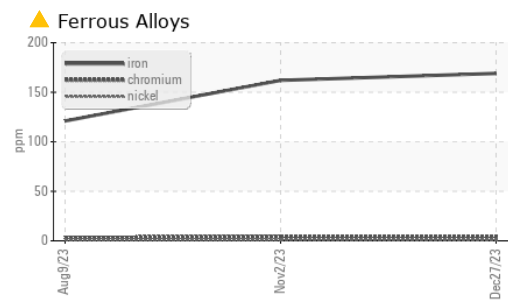
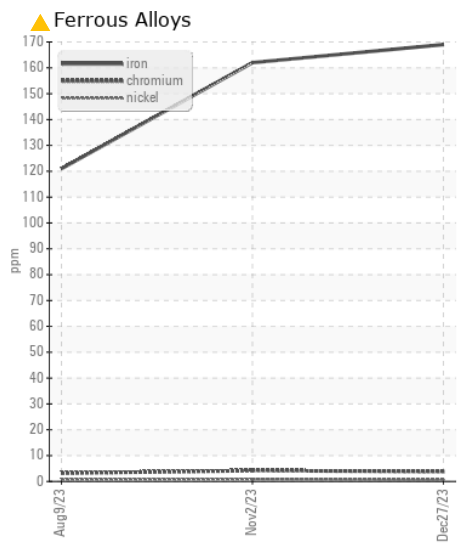
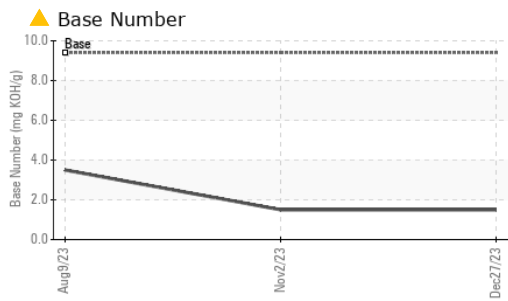
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>▲ 32</b>    | ▲ 35  | ▲ 33  |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>57</b>      | 57    | 52    |
| 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 D2982 |       | <b>NEG</b>     | 0.0   | 0.0   |
| Soot %           | %        | *ASTM D7844 | >3    | <b>1.6</b>     | 1.6   | 1.1   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>19.4</b>    | 18.6  | 15.4  |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>39.8</b>    | 39.2  | 31.5  |
| 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     | >0.2  | <b>NEG</b>     | NEG   | NEG   |

## FLUID CONDITION

The BN level is low. The condition of the oil is acceptable for the time in service.

|                  |          |             |     |              |       |       |
|------------------|----------|-------------|-----|--------------|-------|-------|
| Sodium           | ppm      | ASTM D5185m |     | <b>11</b>    | 11    | 11    |
| Boron            | ppm      | ASTM D5185m | 0   | <b>17</b>    | 17    | 22    |
| Barium           | ppm      | ASTM D5185m | 0   | <b>0</b>     | 0     | 0     |
| Molybdenum       | ppm      | ASTM D5185m | 0   | <b>10</b>    | 12    | 12    |
| Manganese        | ppm      | ASTM D5185m |     | <b>2</b>     | 2     | 2     |
| Magnesium        | ppm      | ASTM D5185m | 0   | <b>627</b>   | 679   | 683   |
| Calcium          | ppm      | ASTM D5185m |     | <b>1316</b>  | 1386  | 1503  |
| Phosphorus       | ppm      | ASTM D5185m |     | <b>628</b>   | 720   | 726   |
| Zinc             | ppm      | ASTM D5185m |     | <b>864</b>   | 924   | 872   |
| Sulfur           | ppm      | ASTM D5185m |     | <b>2393</b>  | 2676  | 3184  |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25 | <b>52.1</b>  | 50.1  | 35.4  |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 9.4 | <b>▲ 1.5</b> | ▲ 1.5 | ▲ 3.5 |
| Visc @ 100°C     | cSt      | ASTM D445   | 14  | <b>13.5</b>  | 13.9  | 13.7  |



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : RPL0016921 **Received** : 11 Jan 2024  
**Lab Number** : 06057796 **Diagnosed** : 15 Jan 2024  
**Unique Number** : 10829178 **Diagnostician** : Jonathan Hester  
**Test Package** : FLEET ( Additional Tests: Glycol )

**RTL PACLEASE - 7007 - Fontana**  
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Certificate L2367  
 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)