



# OIL ANALYSIS REPORT

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

Machine Id  
**8464547**  
 Component  
**Diesel Engine**  
 Fluid  
**{not provided} (--- GAL)**

## RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

## WEAR

All component wear rates are normal.

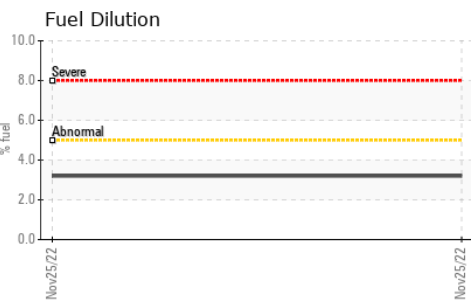
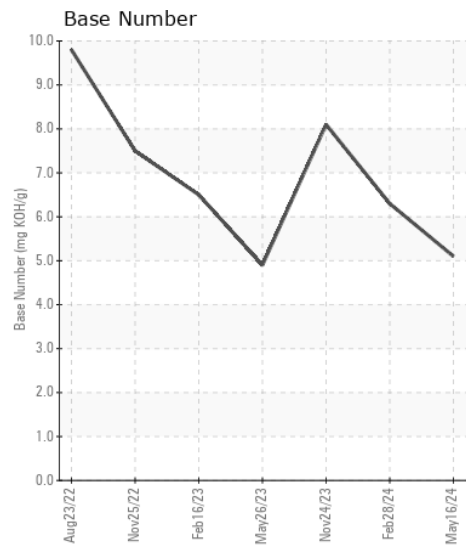
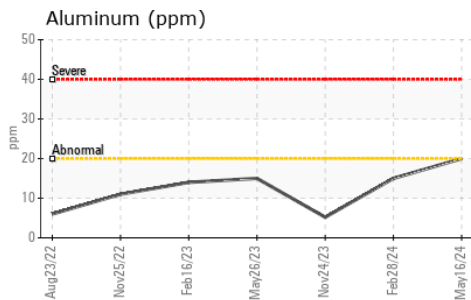
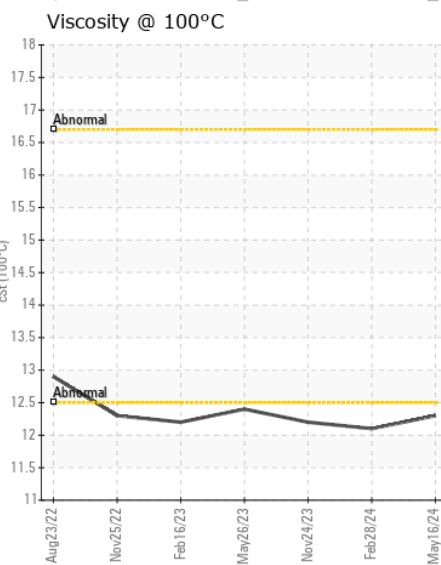
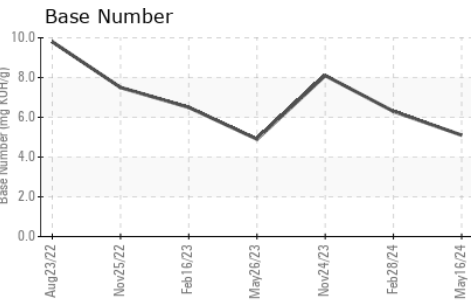
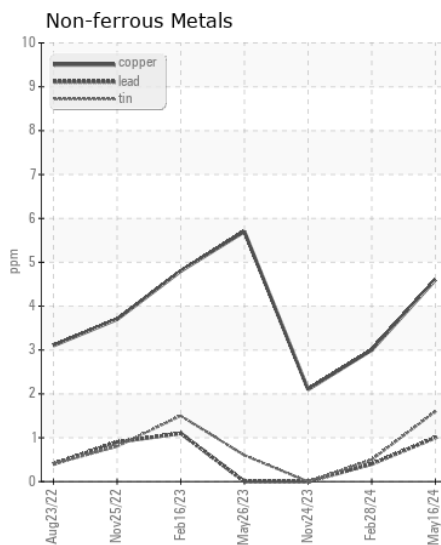
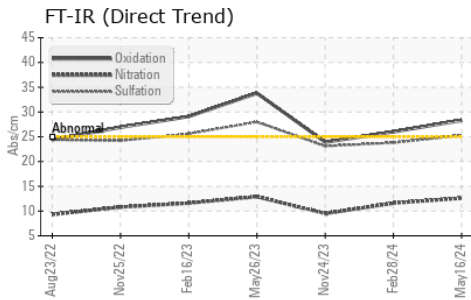
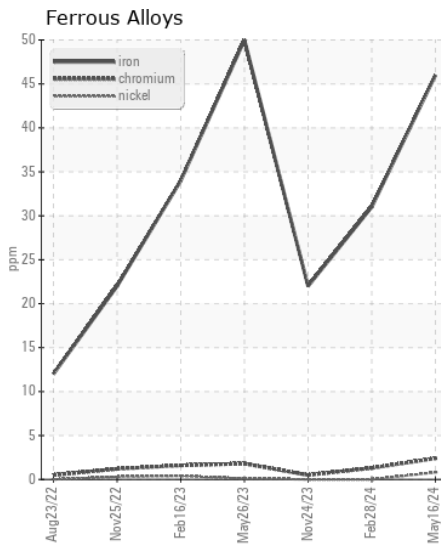
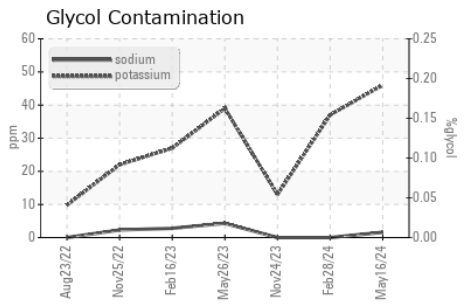
## CONTAMINATION

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. No other contaminants were detected in the oil.

## FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

| Test             | UOM      | Method      | Limit/Abn | Current            | History1    | History2    |
|------------------|----------|-------------|-----------|--------------------|-------------|-------------|
| Sample Number    |          | Client Info |           | <b>RPL0016976</b>  | RPL0016967  | RPL0015995  |
| Sample Date      |          | Client Info |           | <b>16 May 2024</b> | 28 Feb 2024 | 24 Nov 2023 |
| Machine Age      | mls      | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Age          | mls      | Client Info |           | <b>24203</b>       | 18410       | 30727       |
| Filter Age       | mls      | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed      |          | Client Info |           | <b>Changed</b>     | Not Changed | Not Changed |
| Filter Changed   |          | Client Info |           | <b>N/A</b>         | N/A         | N/A         |
| Sample Status    |          |             |           | <b>NORMAL</b>      | NORMAL      | NORMAL      |
| Iron             | ppm      | ASTM D5185m | >100      | <b>46</b>          | 31          | 22          |
| Chromium         | ppm      | ASTM D5185m | >20       | <b>2</b>           | 1           | <1          |
| Nickel           | ppm      | ASTM D5185m | >4        | <b>&lt;1</b>       | 0           | 0           |
| Titanium         | ppm      | ASTM D5185m |           | <b>&lt;1</b>       | 0           | 0           |
| Silver           | ppm      | ASTM D5185m | >3        | <b>1</b>           | 0           | 0           |
| Aluminum         | ppm      | ASTM D5185m | >20       | <b>20</b>          | 15          | 5           |
| Lead             | ppm      | ASTM D5185m | >40       | <b>1</b>           | <1          | 0           |
| Copper           | ppm      | ASTM D5185m | >330      | <b>5</b>           | 3           | 2           |
| Tin              | ppm      | ASTM D5185m | >15       | <b>2</b>           | <1          | 0           |
| 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 | >25       | <b>9</b>           | 8           | 6           |
| Potassium        | ppm      | ASTM D5185m | >20       | <b>46</b>          | 37          | 13          |
| Fuel             | %        | ASTM D3524  | >5        | <b>&lt;1.0</b>     | <1.0        | <1.0        |
| Water            |          | WC Method   | >0.2      | <b>NEG</b>         | NEG         | NEG         |
| Glycol           |          | WC Method   |           | <b>NEG</b>         | NEG         | NEG         |
| Soot %           | %        | *ASTM D7844 | >3        | <b>0.6</b>         | 0.5         | 0.3         |
| Nitration        | Abs/cm   | *ASTM D7624 | >20       | <b>12.6</b>        | 11.6        | 9.5         |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30       | <b>25.3</b>        | 23.8        | 23.1        |
| 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         |
| Sodium           | ppm      | ASTM D5185m |           | <b>2</b>           | 0           | 0           |
| Boron            | ppm      | ASTM D5185m |           | <b>22</b>          | 22          | 28          |
| Barium           | ppm      | ASTM D5185m |           | <b>0</b>           | 0           | 0           |
| Molybdenum       | ppm      | ASTM D5185m |           | <b>45</b>          | 43          | 44          |
| Manganese        | ppm      | ASTM D5185m |           | <b>1</b>           | <1          | 0           |
| Magnesium        | ppm      | ASTM D5185m |           | <b>506</b>         | 454         | 506         |
| Calcium          | ppm      | ASTM D5185m |           | <b>1694</b>        | 1517        | 1637        |
| Phosphorus       | ppm      | ASTM D5185m |           | <b>652</b>         | 664         | 778         |
| Zinc             | ppm      | ASTM D5185m |           | <b>973</b>         | 856         | 913         |
| Sulfur           | ppm      | ASTM D5185m |           | <b>2626</b>        | 2286        | 2771        |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25       | <b>28.3</b>        | 26.0        | 23.9        |
| Base Number (BN) | mg KOH/g | ASTM D2896  |           | <b>5.1</b>         | 6.3         | 8.1         |
| Visc @ 100°C     | cSt      | ASTM D445   |           | <b>12.3</b>        | 12.1        | 12.2        |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : RPL0016976 **Received** : 24 May 2024  
**Lab Number** : 06190279 **Tested** : 29 May 2024  
**Unique Number** : 11047031 **Diagnosed** : 29 May 2024 - Don Baldrige  
**Test Package** : FLEET ( Additional Tests: FuelDilution )

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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)