



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

Area  
**[HOWARD SHOCKEY&SONS]**  
 Machine Id  
**MMG125 C190080 (S/N 083083)**  
 Component  
**Diesel Engine**  
 Fluid  
**{not provided} (--- GAL)**

### RECOMMENDATION

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>JR0195613</b>   | JR0104257   | JR0097363   |
| Sample Date    |     | Client Info |           | <b>07 Feb 2024</b> | 27 Oct 2021 | 02 Aug 2021 |
| Machine Age    | hrs | Client Info |           | <b>23438</b>       | 19645       | 18944       |
| Oil Age        | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | 0           | 0           |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | NORMAL      | NORMAL      |

### WEAR

Cylinder, crank, or cam shaft wear is indicated.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >100 | <b>▲ 206</b> | 11   | 31   |
| Chromium     | ppm    | ASTM D5185m | >20  | <b>▲ 23</b>  | <1   | 2    |
| Nickel       | ppm    | ASTM D5185m | >4   | <b>4</b>     | 1    | 1    |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | <1   | <1   |
| Silver       | ppm    | ASTM D5185m | >3   | <b>0</b>     | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >20  | <b>11</b>    | 3    | 6    |
| Lead         | ppm    | ASTM D5185m | >40  | <b>36</b>    | 7    | 19   |
| Copper       | ppm    | ASTM D5185m | >330 | <b>14</b>    | <1   | 1    |
| Tin          | ppm    | ASTM D5185m | >15  | <b>5</b>     | 1    | 0    |
| Vanadium     | ppm    | ASTM D5185m |      | <b>0</b>     | <1   | 0    |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | NONE | NONE |

### CONTAMINATION

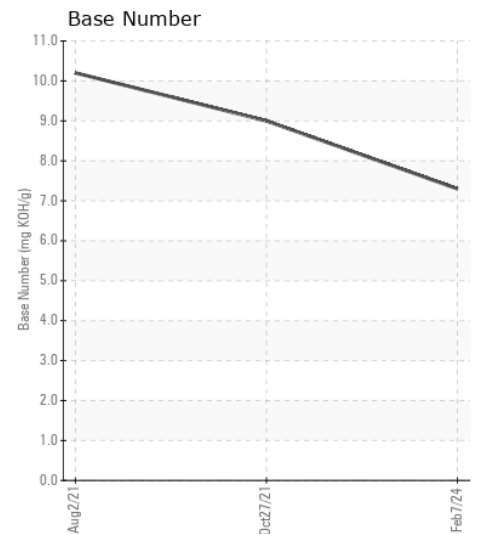
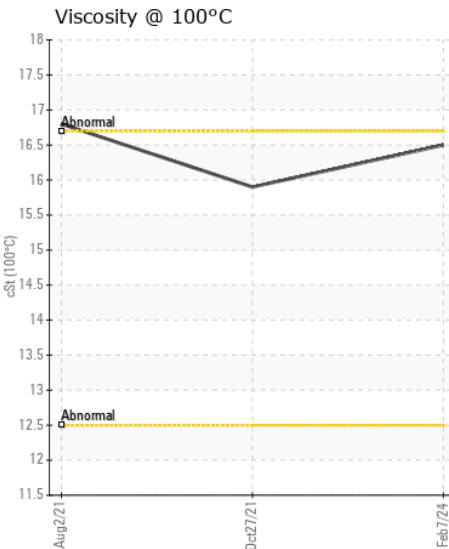
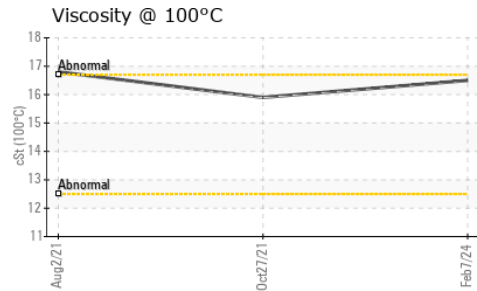
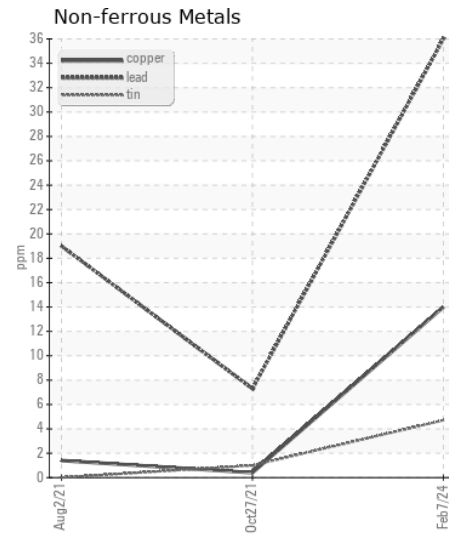
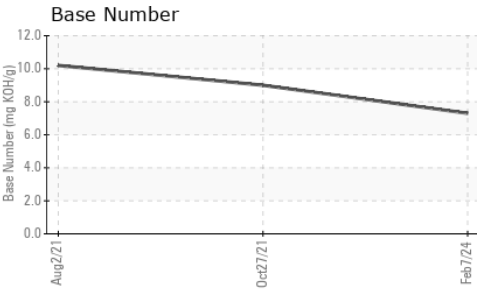
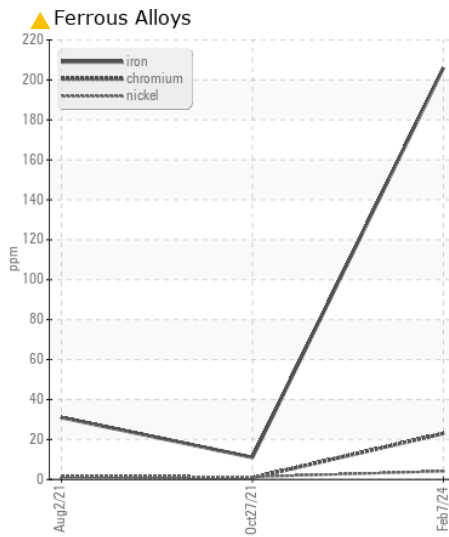
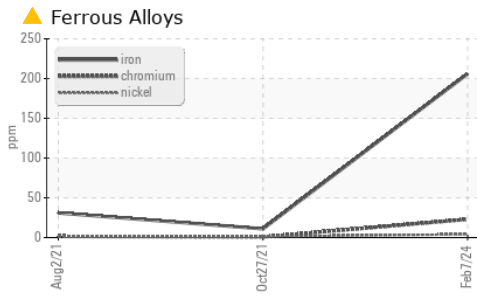
There is no indication of any contamination in the oil.

|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >25   | <b>13</b>      | 7     | 8     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>2</b>       | 2     | 6     |
| Fuel             |          | WC Method   | >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>0.4</b>     | 0.1   | 0.2   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>13.3</b>    | 12    | 14.1  |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>27.9</b>    | 24.2  | 30.2  |
| 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 result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

|                  |          |             |     |             |      |      |
|------------------|----------|-------------|-----|-------------|------|------|
| Sodium           | ppm      | ASTM D5185m |     | <b>0</b>    | 3    | 3    |
| Boron            | ppm      | ASTM D5185m |     | <b>145</b>  | 126  | 167  |
| Barium           | ppm      | ASTM D5185m |     | <b>0</b>    | <1   | 0    |
| Molybdenum       | ppm      | ASTM D5185m |     | <b>230</b>  | 189  | 314  |
| Manganese        | ppm      | ASTM D5185m |     | <b>2</b>    | <1   | <1   |
| Magnesium        | ppm      | ASTM D5185m |     | <b>461</b>  | 540  | 1191 |
| Calcium          | ppm      | ASTM D5185m |     | <b>2576</b> | 1867 | 2159 |
| Phosphorus       | ppm      | ASTM D5185m |     | <b>1063</b> | 941  | 1055 |
| Zinc             | ppm      | ASTM D5185m |     | <b>1512</b> | 1317 | 1381 |
| Sulfur           | ppm      | ASTM D5185m |     | <b>2977</b> | 2684 | 3136 |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25 | <b>31.3</b> | 22.6 | 30.8 |
| Base Number (BN) | mg KOH/g | ASTM D2896  |     | <b>7.3</b>  | 9    | 10.2 |
| Visc @ 100°C     | cSt      | ASTM D445   |     | <b>16.5</b> | 15.9 | 16.8 |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0195613 **Received** : 09 Feb 2024  
**Lab Number** : 06085341 **Tested** : 12 Feb 2024  
**Unique Number** : 10872786 **Diagnosed** : 12 Feb 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: TBN )

**JRE - STEPHENSON**  
 245 YARDMASTER COURT  
 STEPHENSON, VA  
 US 22656-1761  
 Contact: PHIL DAUGHERTY  
 pdaugherty@jamesriverequipment.com

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)

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