



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



Machine Id  
**JOHN DEERE 644 P 1DW644PAEMLZ11990**  
Component  
**Front Differential**  
Fluid  
**JOHN DEERE HY-GARD HYD/TRANS (--- GAL)**

### RECOMMENDATION

The oil change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|----------|
| Sample Number  |     | Client Info |           | <b>JR0218748</b>   | JR0185096   | ---      |
| Sample Date    |     | Client Info |           | <b>11 Jun 2024</b> | 06 Oct 2023 | ---      |
| Machine Age    | hrs | Client Info |           | <b>1985</b>        | 1470        | ---      |
| Oil Age        | hrs | Client Info |           | <b>1985</b>        | 1470        | ---      |
| Filter Age     | hrs | Client Info |           | <b>515</b>         | 1470        | ---      |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Not Changed | ---      |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | ---      |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | ABNORMAL    | ---      |

### WEAR

Bearing and/or bushing wear is indicated.

| PQ           | UOM    | Method      | Limit/Abn | Current      | History1 | History2 |
|--------------|--------|-------------|-----------|--------------|----------|----------|
| PQ           |        | ASTM D8184  |           | <b>22</b>    | 24       | ---      |
| Iron         | ppm    | ASTM D5185m | >500      | <b>83</b>    | 70       | ---      |
| Chromium     | ppm    | ASTM D5185m | >10       | <b>&lt;1</b> | <1       | ---      |
| Nickel       | ppm    | ASTM D5185m | >10       | <b>&lt;1</b> | <1       | ---      |
| Titanium     | ppm    | ASTM D5185m |           | <b>&lt;1</b> | <1       | ---      |
| Silver       | ppm    | ASTM D5185m |           | <b>0</b>     | 0        | ---      |
| Aluminum     | ppm    | ASTM D5185m | >25       | <b>1</b>     | 1        | ---      |
| Lead         | ppm    | ASTM D5185m | >25       | <b>▲ 56</b>  | ▲ 52     | ---      |
| Copper       | ppm    | ASTM D5185m | >100      | <b>▲ 491</b> | ▲ 384    | ---      |
| Tin          | ppm    | ASTM D5185m | >10       | <b>1</b>     | 1        | ---      |
| Vanadium     | ppm    | ASTM D5185m |           | <b>0</b>     | 0        | ---      |
| White Metal  | scalar | *Visual     | NONE      | <b>NONE</b>  | NONE     | ---      |
| Yellow Metal | scalar | *Visual     | NONE      | <b>NONE</b>  | NONE     | ---      |

### CONTAMINATION

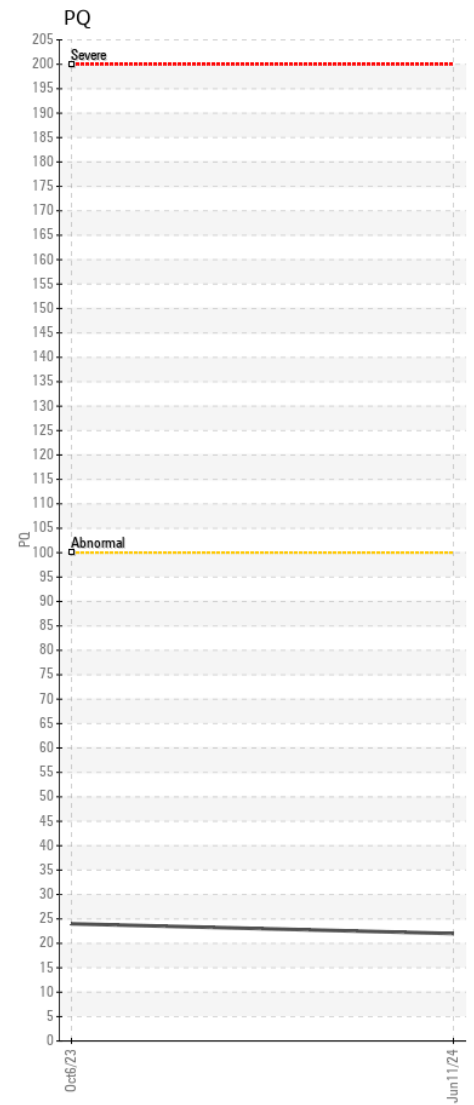
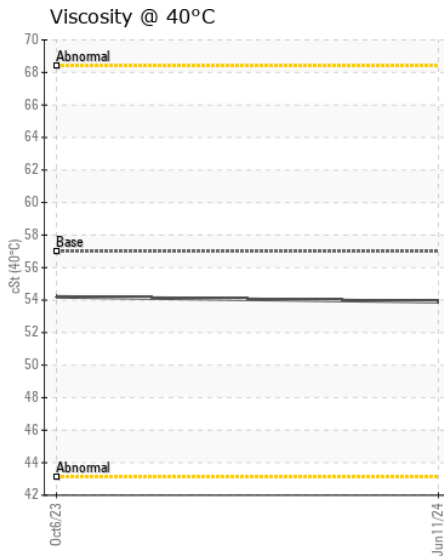
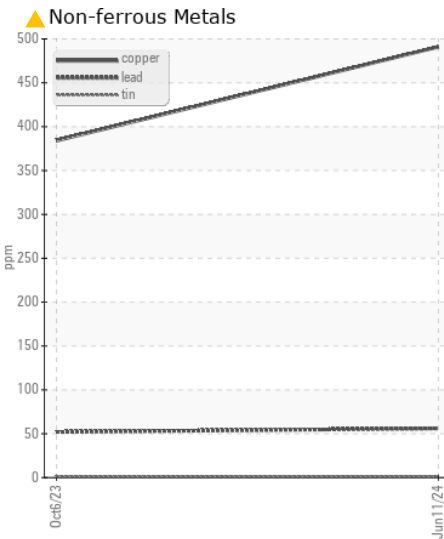
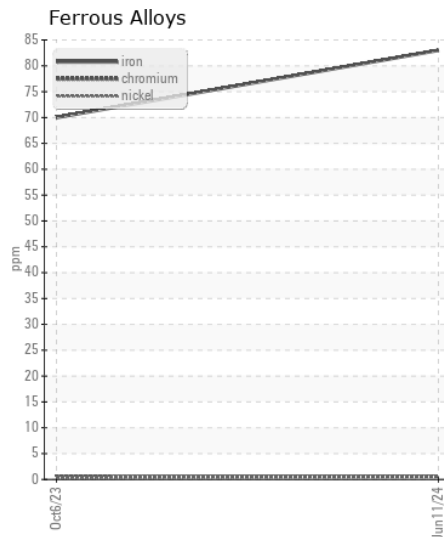
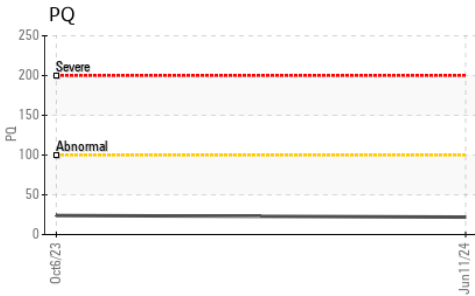
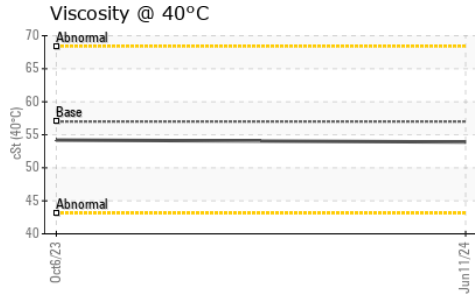
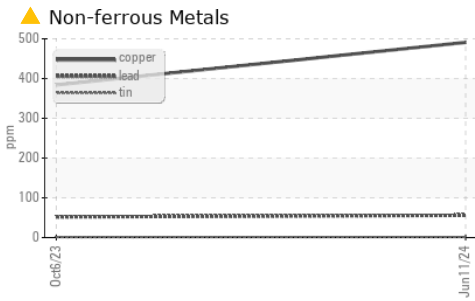
There is no indication of any contamination in the oil.

| Test             | UOM    | Method      | Limit/Abn | Current      | History1 | History2 |
|------------------|--------|-------------|-----------|--------------|----------|----------|
| Silicon          | ppm    | ASTM D5185m | >75       | <b>7</b>     | 7        | ---      |
| Potassium        | ppm    | ASTM D5185m | >20       | <b>4</b>     | 4        | ---      |
| Water            |        | WC Method   | >.2       | <b>NEG</b>   | NEG      | ---      |
| Silt             | scalar | *Visual     | NONE      | <b>NONE</b>  | NONE     | ---      |
| Debris           | scalar | *Visual     | NONE      | <b>NONE</b>  | NONE     | ---      |
| Sand/Dirt        | scalar | *Visual     | NONE      | <b>NONE</b>  | NONE     | ---      |
| Appearance       | scalar | *Visual     | NORML     | <b>NORML</b> | NORML    | ---      |
| Odor             | scalar | *Visual     | NORML     | <b>NORML</b> | NORML    | ---      |
| Emulsified Water | scalar | *Visual     | >.2       | <b>NEG</b>   | NEG      | ---      |

### FLUID CONDITION

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

| Test        | UOM | Method      | Limit/Abn | Current      | History1 | History2 |
|-------------|-----|-------------|-----------|--------------|----------|----------|
| Sodium      | ppm | ASTM D5185m |           | <b>5</b>     | 4        | ---      |
| Boron       | ppm | ASTM D5185m | 6         | <b>4</b>     | 3        | ---      |
| Barium      | ppm | ASTM D5185m | 0         | <b>4</b>     | 6        | ---      |
| Molybdenum  | ppm | ASTM D5185m | 0         | <b>&lt;1</b> | 0        | ---      |
| Manganese   | ppm | ASTM D5185m |           | <b>3</b>     | 3        | ---      |
| Magnesium   | ppm | ASTM D5185m | 145       | <b>92</b>    | 93       | ---      |
| Calcium     | ppm | ASTM D5185m | 3570      | <b>3412</b>  | 3175     | ---      |
| Phosphorus  | ppm | ASTM D5185m | 1290      | <b>1016</b>  | 1008     | ---      |
| Zinc        | ppm | ASTM D5185m | 1640      | <b>1218</b>  | 1210     | ---      |
| Sulfur      | ppm | ASTM D5185m |           | <b>3563</b>  | 3916     | ---      |
| Visc @ 40°C | cSt | ASTM D445   | 57.0      | <b>53.9</b>  | 54.2     | ---      |



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0218748 **Received** : 14 Jun 2024  
**Lab Number** : 06210450 **Tested** : 17 Jun 2024  
**Unique Number** : 11083314 **Diagnosed** : 18 Jun 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: PQ )

**JRE - ASHEVILLE**  
 101 BRUCE DRIVE  
 ASHEVILLE, NC  
 US 28806

Contact: Randy Warren  
 randy.warren@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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