



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

Machine Id  
**JOHN DEERE 331G 1T0331GKCLF383841**

Component  
**Diesel Engine**

Fluid  
**{not provided} (--- GAL)**

### RECOMMENDATION

Oil and filter 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>JR0221969</b>   | ---      | ---      |
| Sample Date    |     | Client Info |           | <b>25 Jun 2024</b> | ---      | ---      |
| Machine Age    | hrs | Client Info |           | <b>1068</b>        | ---      | ---      |
| Oil Age        | hrs | Client Info |           | <b>1068</b>        | ---      | ---      |
| Filter Age     | hrs | Client Info |           | <b>0</b>           | ---      | ---      |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | ---      | ---      |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | ---      | ---      |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | ---      | ---      |

### WEAR

Cylinder, crank, or cam shaft wear is indicated. Bearing and/or bushing wear is indicated.

|              |        |             |      |              |     |     |
|--------------|--------|-------------|------|--------------|-----|-----|
| Iron         | ppm    | ASTM D5185m | >51  | <b>▲ 68</b>  | --- | --- |
| Chromium     | ppm    | ASTM D5185m | >11  | <b>1</b>     | --- | --- |
| Nickel       | ppm    | ASTM D5185m | >5   | <b>0</b>     | --- | --- |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | --- | --- |
| Silver       | ppm    | ASTM D5185m | >3   | <b>&lt;1</b> | --- | --- |
| Aluminum     | ppm    | ASTM D5185m | >31  | <b>8</b>     | --- | --- |
| Lead         | ppm    | ASTM D5185m | >26  | <b>&lt;1</b> | --- | --- |
| Copper       | ppm    | ASTM D5185m | >26  | <b>▲ 40</b>  | --- | --- |
| Tin          | ppm    | ASTM D5185m | >4   | <b>0</b>     | --- | --- |
| Vanadium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | --- | --- |
| White Metal  | scalar | *Visual     | NONE | <b>NONE</b>  | --- | --- |
| Yellow Metal | scalar | *Visual     | NONE | <b>NONE</b>  | --- | --- |

### CONTAMINATION

Elemental level of silicon (Si) above normal indicating ingress of seal material.

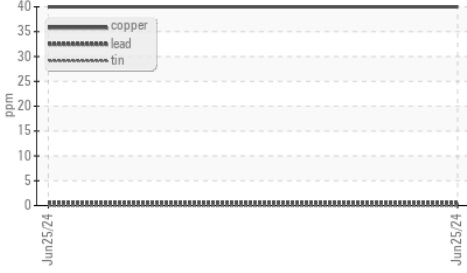
|                  |          |             |       |                |     |     |
|------------------|----------|-------------|-------|----------------|-----|-----|
| Silicon          | ppm      | ASTM D5185m | >22   | <b>▲ 24</b>    | --- | --- |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>2</b>       | --- | --- |
| Fuel             |          | WC Method   | >2.1  | <b>&lt;1.0</b> | --- | --- |
| Water            |          | WC Method   | >0.21 | <b>NEG</b>     | --- | --- |
| Glycol           |          | WC Method   |       | <b>NEG</b>     | --- | --- |
| Soot %           | %        | *ASTM D7844 | >3    | <b>0.5</b>     | --- | --- |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>11.7</b>    | --- | --- |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>28.1</b>    | --- | --- |
| Silt             | scalar   | *Visual     | NONE  | <b>NONE</b>    | --- | --- |
| Debris           | scalar   | *Visual     | NONE  | <b>NONE</b>    | --- | --- |
| Sand/Dirt        | scalar   | *Visual     | NONE  | <b>NONE</b>    | --- | --- |
| Appearance       | scalar   | *Visual     | NORML | <b>NORML</b>   | --- | --- |
| Odor             | scalar   | *Visual     | NORML | <b>NORML</b>   | --- | --- |
| Emulsified Water | scalar   | *Visual     | >0.21 | <b>NEG</b>     | --- | --- |

### FLUID CONDITION

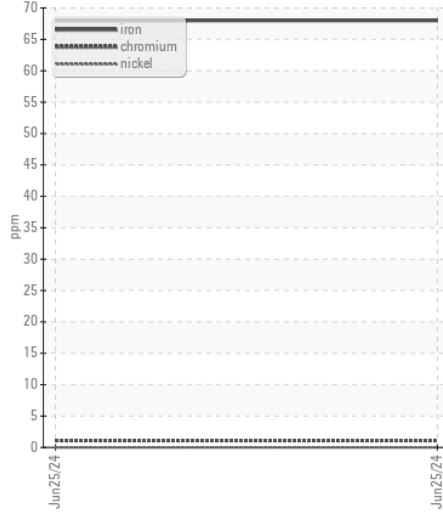
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

|                  |          |             |     |             |     |     |
|------------------|----------|-------------|-----|-------------|-----|-----|
| Sodium           | ppm      | ASTM D5185m | >31 | <b>6</b>    | --- | --- |
| Boron            | ppm      | ASTM D5185m |     | <b>78</b>   | --- | --- |
| Barium           | ppm      | ASTM D5185m |     | <b>1</b>    | --- | --- |
| Molybdenum       | ppm      | ASTM D5185m |     | <b>293</b>  | --- | --- |
| Manganese        | ppm      | ASTM D5185m |     | <b>2</b>    | --- | --- |
| Magnesium        | ppm      | ASTM D5185m |     | <b>948</b>  | --- | --- |
| Calcium          | ppm      | ASTM D5185m |     | <b>1904</b> | --- | --- |
| Phosphorus       | ppm      | ASTM D5185m |     | <b>1031</b> | --- | --- |
| Zinc             | ppm      | ASTM D5185m |     | <b>1308</b> | --- | --- |
| Sulfur           | ppm      | ASTM D5185m |     | <b>3600</b> | --- | --- |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25 | <b>24.8</b> | --- | --- |
| Base Number (BN) | mg KOH/g | ASTM D2896  |     | <b>7.4</b>  | --- | --- |
| Visc @ 100°C     | cSt      | ASTM D445   |     | <b>13.4</b> | --- | --- |

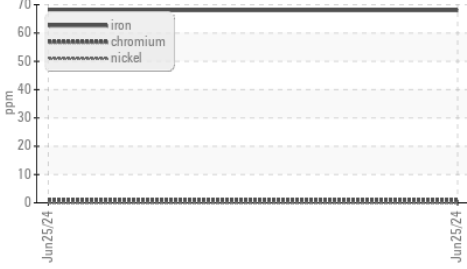
▲ Non-ferrous Metals



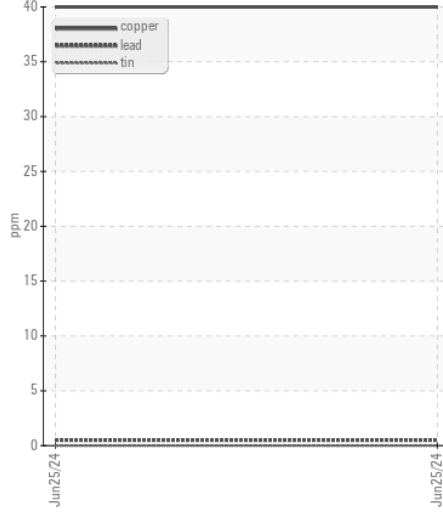
▲ Ferrous Alloys



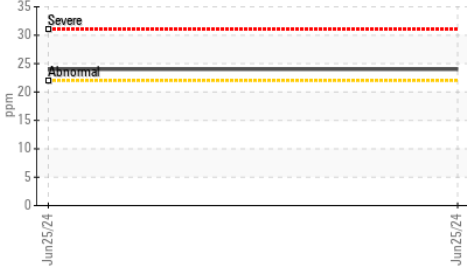
▲ Ferrous Alloys



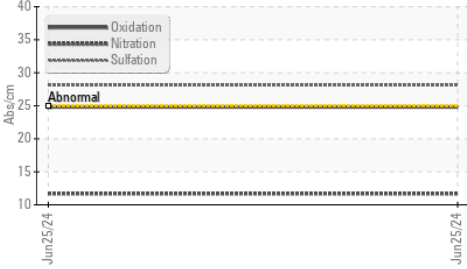
▲ Non-ferrous Metals



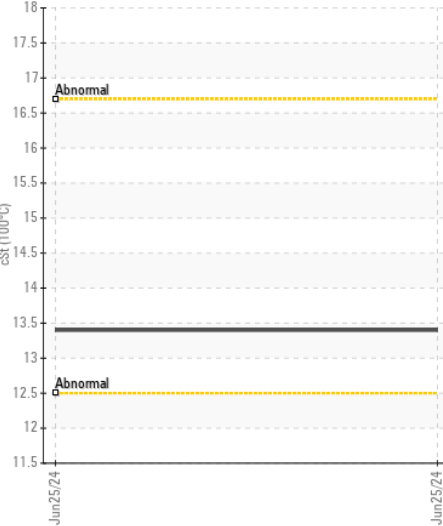
▲ Silicon (ppm)



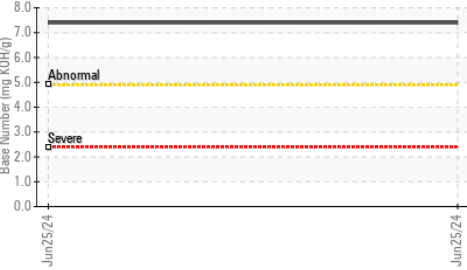
FT-IR (Direct Trend)



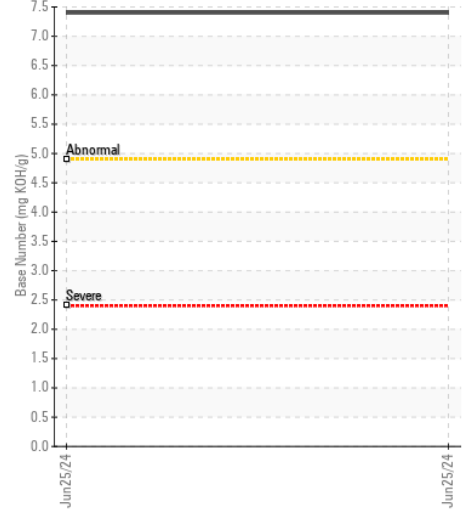
Viscosity @ 100°C



Base Number



Base Number



Certificate L2367

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

Sample No. : JR0221969

Lab Number : 06223256

Unique Number : 11101453

Test Package : CONST ( Additional Tests: TBN )

Received : 28 Jun 2024

Tested : 28 Jun 2024

Diagnosed : 30 Jun 2024 - Don Baldrige

JRE - GARNER

4161 AUBURN CHURCH RD

GARNER, NC

US 27529

Contact: RALEIGH SHOP

sean.betts@jamesriverequipment.com; catherine.anastasio@wearcheck.com

T: (919)614-2260

F: (919)779-5432

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)