

# **OIL ANALYSIS REPORT**

Sample Rating Trend





Machine Id JOHN DEERE 350DLC JOHNDEERE350DLC Left Final Drive Fluid

{not provided} (--- GAL)

### DIAGNOSIS

#### Recommendation

We advise that you check for the source of water entry. We advise that you check all areas where dirt can enter the system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is SAE 90 Gear Oil. Please confirm the oil type and grade, and specify the brand of the oil on your next sample.

#### Wear

Aluminum ppm levels are noted. All other component wear rates are normal.

### Contamination

There is a moderate concentration of water present in the oil. Free water present. Elemental levels of silicon (Si) and aluminum (Al) indicate aluminasilicate (coarse dirt) ingress.

#### Fluid Condition

The oil is no longer serviceable due to the presence of contaminants.

| SAMPLE INFORM  |  | method   | limit/base        | current   | history1   | history2                                 |
|--|--|--|-------------------|---|--|--|
| Sample Number  |  | Client Info  |                   | WC0763265   |  |  |
| Sample Date  |  | Client Info  |                   | 11 Jul 2024   |  |  |
| Machine Age  | hrs  | Client Info  |                   | 10673   |  |  |
| Oil Age  | hrs  | Client Info  |                   | 0   |  |  |
| Oil Changed  |  | Client Info  |                   | Not Changd  |  |  |
| Sample Status  |  |  |                   | ABNORMAL  |  |  |
| CONTAMINATION  |  | method   | limit/base        | current   | history1   | history2                                 |
| Water  |  | WC Method  | >0.075            | NEG   |  |  |
| WEAR METALS  |  | method   | limit/base        | current   | history1   | history2                                 |
| PQ   |  | ASTM D8184*  | >1250             | 40  |  |  |
| Iron   | ppm  | ASTM D5185(m)  | >750              | 382   |  |  |
| Chromium   | ppm  | ASTM D5185(m)  | >9                | 2   |  |  |
| Nickel   | ppm  | ASTM D5185(m)  | >10               | <1  |  |  |
| Titanium   | ppm  | ASTM D5185(m)  |                   | 3   |  |  |
| Silver   | ppm  | ASTM D5185(m)  |                   | <1  |  |  |
| Aluminum   | ppm  | ASTM D5185(m)  | >40               | 9 39  |  |  |
| Lead   | ppm  | ASTM D5185(m)  | >15               | 0   |  |  |
| Copper   | ppm  | ASTM D5185(m)  | >40               | 5   |  |  |
| Tin  | ppm  | ASTM D5185(m)  | >10               | 0   |  |  |
| Antimony   | ppm  | ASTM D5185(m)  | >5                | 0   |  |  |
| Vanadium   | ppm  | ASTM D5185(m)  |                   | 0   |  |  |
| Beryllium  | ppm  | ASTM D5185(m)  |                   | 0   |  |  |
| Cadmium  | ppm  | ASTM D5185(m)  |                   | 0   |  |  |
| ADDITIVES  |  | method   | limit/base        | current   | history1   | history2                                 |
| Boron  | ppm  | ASTM D5185(m)  |                   | 42  |  |  |
| Barium   | ppm  | ASTM D5185(m)  |                   | <1  |  |  |
| Molybdenum   | ppm  | ASTM D5185(m)  |                   | 0   |  |  |
| Manganese  | ppm  | ASTM D5185(m)  |                   | 4   |  |  |
| Magnesium  |  |  |                   | -   |  |  |
| 0.1.1  | ppm  | ASTM D5185(m)  |                   | 22  |  |  |
| Calcium  | ppm<br>ppm   | ASTM D5185(m)<br>ASTM D5185(m)   |                   |   |  |  |
| Calcium<br>Phosphorus  |  | ,  |                   | 22  |  |  |
|  | ppm  | ASTM D5185(m)  |                   | 22<br>61  |  |  |
| Phosphorus<br>Zinc<br>Sulfur   | ppm<br>ppm   | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   |                   | 22<br>61<br>989   |  |  |
| Phosphorus<br>Zinc   | ppm<br>ppm<br>ppm  | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  |                   | 22<br>61<br>989<br>31   |  |  |
| Phosphorus<br>Zinc<br>Sulfur   | ppm<br>ppm<br>ppm<br>ppm   | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   | limit/base        | 22<br>61<br>989<br>31<br>18434  |  |  |
| Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS  | ppm<br>ppm<br>ppm<br>ppm   | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  | limit/base >75    | 22<br>61<br>989<br>31<br>18434<br><1  |  |  |
| Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon   | ppm<br>ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>method  |                   | 22<br>61<br>989<br>31<br>18434<br><1<br>current                                   | <br><br><br><br>history1                                 | <br><br><br><br>history2                 |
| Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon   | ppm<br>ppm<br>ppm<br>ppm<br>ppm                                    | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)   | >75               | 22<br>61<br>989<br>31<br>18434<br><1<br><u>current</u><br>▲ 156                   | <br><br><br><br>history1                                 | <br><br><br>history2                     |
| Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium                                     | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)  | >75<br>>51        | 22<br>61<br>989<br>31<br>18434<br><1<br><i>current</i><br>156<br>7                | <br><br><br><br>history1<br>                             | <br><br><br>history2                     |
| Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium                        | ppm<br>ppm<br>ppm<br>ppm<br>ppm<br>ppm                             | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                                   | >75<br>>51<br>>20 | 22<br>61<br>989<br>31<br>18434<br><1<br><u>current</u><br>156<br>7<br>16          | <br><br><br>history1<br>                                 | <br><br><br>history2<br><br>             |
| Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium                        | ppm                            | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)                  | >75<br>>51<br>>20 | 22<br>61<br>989<br>31<br>18434<br><1<br>current<br>156<br>7<br>16<br>current      | <br><br><br>history1<br><br><br>history1                 | <br><br><br>history2<br><br>history2     |
| Phosphorus<br>Zinc<br>Sulfur<br>Lithium<br>CONTAMINANTS<br>Silicon<br>Sodium<br>Potassium<br>INFRA-RED<br>Soot % | ppm  <br>ppm  <br>ppm  <br>ppm  <br>ppm  <br>ppm  <br>ppm  <br>ppm | ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m)<br>ASTM D5185(m) | >75<br>>51<br>>20 | 22<br>61<br>989<br>31<br>18434<br><1<br>current<br>156<br>7<br>16<br>current<br>0 | <br><br><br>history1<br><br><br>history1<br><br>history1 | <br><br><br>history2<br><br><br>history2 |



Silicon (ppm)

Aluminum (ppm)

FT-IR (Direct Trend)

Oxidation

Ilfatio

> 60 50

20 10

35

30

mp/sqp 40/sqp 10

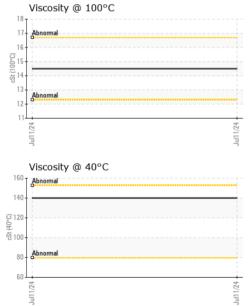
# **OIL ANALYSIS REPORT**

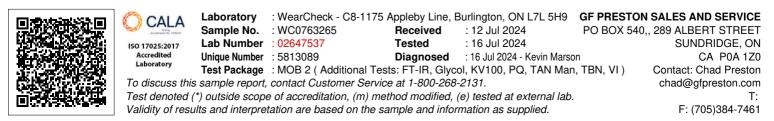
Jul11/24

74

Ξ

| FLUID DEGRADA        | TION     | method        | limit/base | current | history1 | history2 |
|----------------------|----------|---------------|------------|---------|----------|----------|
| Oxidation            | Abs/.1mm | ASTM D7414*   |            | 5.6     |          |          |
| Acid Number (AN)     | mg KOH/g | ASTM D974*    |            | 2.11    |          |          |
| Base Number (BN)     | mg KOH/g | ASTM D2896*   |            | 2.56    |          |          |
| VISUAL               |          | method        | limit/base | current | history1 | history2 |
| White Metal          | scalar   | Visual*       | NONE       | LIGHT   |          |          |
| Yellow Metal         | scalar   | Visual*       | NONE       | NONE    |          |          |
| Precipitate          | scalar   | Visual*       | NONE       | NONE    |          |          |
| Silt                 | scalar   | Visual*       | NONE       | NONE    |          |          |
| Debris               | scalar   | Visual*       | NONE       | NONE    |          |          |
| Sand/Dirt            | scalar   | Visual*       | NONE       | NONE    |          |          |
| Appearance           | scalar   | Visual*       | NORML      | NORML   |          |          |
| Odor                 | scalar   | Visual*       | NORML      | NORML   |          |          |
| Emulsified Water     | scalar   | Visual*       | >0.075     | .2%     |          |          |
| Free Water           | scalar   | Visual*       | 4          | 1%      |          |          |
| FLUID PROPERT        | IES      | method        | limit/base | current | history1 | history2 |
| Visc @ 40°C          | cSt      | ASTM D7279(m) |            | 140     |          |          |
| Visc @ 100°C         | cSt      | ASTM D7279(m) |            | 14.5    |          |          |
| Viscosity Index (VI) | Scale    | ASTM D2270*   |            | 102     |          |          |
| SAMPLE IMAGES        |          | method        | limit/base | current | history1 | history2 |
| Color                |          |               |            |         | no image | no image |
| Bottom               |          |               |            |         | no image | no image |





Report Id: GFPSUN [WCAMIS] 02647537 (Generated: 07/16/2024 09:44:02) Rev: 1

Contact/Location: Chad Preston - GFPSUN Page 2 of 2