



# OIL ANALYSIS REPORT

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



Area  
**Store 1 - Cowen [RO#124297]**  
Machine Id  
**JOHN DEERE 350G 1FF350GXEDE809595**  
Component  
**Diesel Engine**  
Fluid  
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (29 QTS)**

## RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

| Test           | UOM | Method      | Limit/Abn | Current            | History1    | History2    |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number  |     | Client Info |           | <b>LEC0026558</b>  | LECP193293  | LECP179997  |
| Sample Date    |     | Client Info |           | <b>20 Jan 2022</b> | 22 May 2019 | 10 Jul 2018 |
| Machine Age    | hrs | Client Info |           | <b>8215</b>        | 5168        | 4427        |
| Oil Age        | hrs | Client Info |           | <b>3047</b>        | 741         | 500         |
| Filter Age     | hrs | Client Info |           | <b>3047</b>        | 741         | 500         |
| Oil Changed    |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Filter Changed |     | Client Info |           | <b>Changed</b>     | Changed     | Changed     |
| Sample Status  |     |             |           | <b>ABNORMAL</b>    | NORMAL      | MARGINAL    |

## WEAR

Cylinder, crank, or cam shaft wear is indicated. All other component wear rates are normal.

|              |        |             |      |              |      |      |
|--------------|--------|-------------|------|--------------|------|------|
| Iron         | ppm    | ASTM D5185m | >51  | <b>▲ 89</b>  | 30   | ▲ 89 |
| Chromium     | ppm    | ASTM D5185m | >11  | <b>1</b>     | <1   | 2    |
| Nickel       | ppm    | ASTM D5185m | >5   | <b>0</b>     | <1   | 4    |
| Titanium     | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | <1   |
| Silver       | ppm    | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0    |
| Aluminum     | ppm    | ASTM D5185m | >31  | <b>3</b>     | 3    | 7    |
| Lead         | ppm    | ASTM D5185m | >26  | <b>&lt;1</b> | 0    | 2    |
| Copper       | ppm    | ASTM D5185m | >26  | <b>1</b>     | 2    | 3    |
| Tin          | ppm    | ASTM D5185m | >4   | <b>&lt;1</b> | <1   | 0    |
| Vanadium     | ppm    | ASTM D5185m |      | <b>0</b>     | 0    | 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.

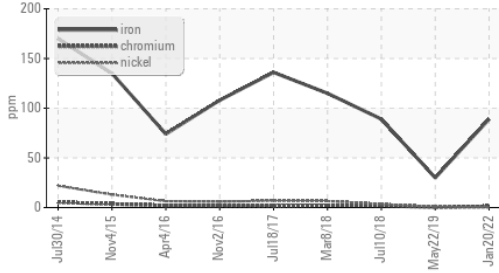
|                  |          |             |       |                |       |       |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon          | ppm      | ASTM D5185m | >120  | <b>14</b>      | 6     | 9     |
| Potassium        | ppm      | ASTM D5185m | >20   | <b>1</b>       | 5     | <1    |
| Fuel             |          | WC Method   | >2.1  | <b>&lt;1.0</b> | <1.0  | <1.0  |
| Water            |          | WC Method   | >0.21 | <b>NEG</b>     | NEG   | NEG   |
| Glycol           |          | WC Method   |       | <b>NEG</b>     | NEG   | NEG   |
| Soot %           | %        | *ASTM D7844 | >3    | <b>0.5</b>     | 0.2   | 0.5   |
| Nitration        | Abs/cm   | *ASTM D7624 | >20   | <b>7.6</b>     | 5.8   | 8.    |
| Sulfation        | Abs/.1mm | *ASTM D7415 | >30   | <b>20.7</b>    | 23.1  | 21.   |
| 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     | >0.21 | <b>NEG</b>     | NEG   | NEG   |

## FLUID CONDITION

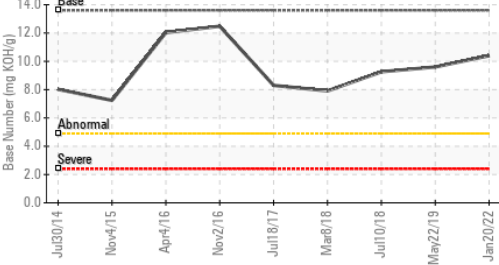
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

|                  |          |             |      |              |      |       |
|------------------|----------|-------------|------|--------------|------|-------|
| Sodium           | ppm      | ASTM D5185m | >31  | <b>3</b>     | 0    | 5     |
| Boron            | ppm      | ASTM D5185m |      | <b>64</b>    | 332  | 73    |
| Barium           | ppm      | ASTM D5185m |      | <b>&lt;1</b> | 0    | 0     |
| Molybdenum       | ppm      | ASTM D5185m |      | <b>30</b>    | 140  | 271   |
| Manganese        | ppm      | ASTM D5185m |      | <b>&lt;1</b> | <1   | 1     |
| Magnesium        | ppm      | ASTM D5185m |      | <b>641</b>   | 675  | 961   |
| Calcium          | ppm      | ASTM D5185m |      | <b>1306</b>  | 1492 | 1487  |
| Phosphorus       | ppm      | ASTM D5185m |      | <b>941</b>   | 584  | 917   |
| Zinc             | ppm      | ASTM D5185m |      | <b>1148</b>  | 843  | 1075  |
| Sulfur           | ppm      | ASTM D5185m |      | <b>3098</b>  | 2266 | 2652  |
| Oxidation        | Abs/.1mm | *ASTM D7414 | >25  | <b>13.9</b>  | 16.1 | 13.   |
| Base Number (BN) | mg KOH/g | ASTM D2896  | 13.6 | <b>10.4</b>  | 9.6  | 9.26  |
| Visc @ 100°C     | cSt      | ASTM D445   | 15.4 | <b>14.3</b>  | 13.8 | 14.59 |

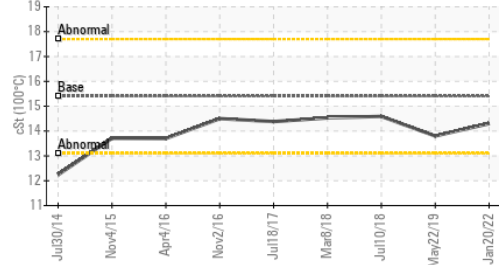
▲ Ferrous Alloys



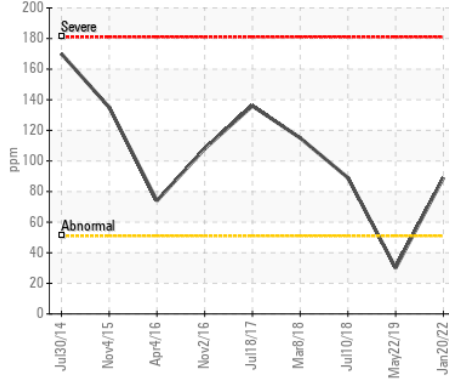
Base Number



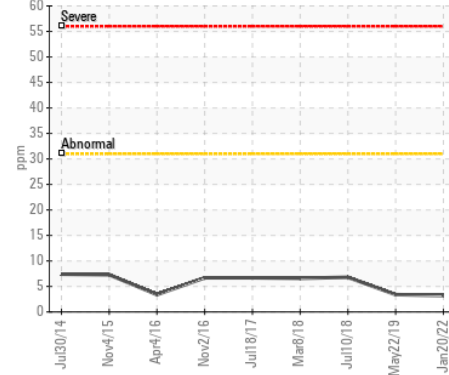
Viscosity @ 100°C



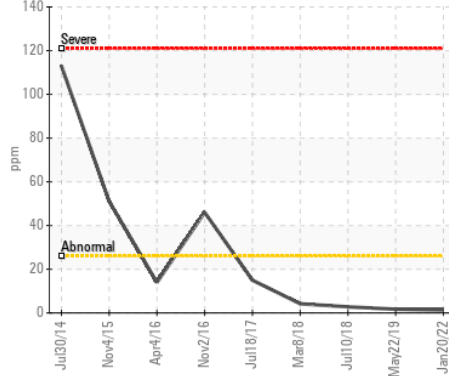
▲ Iron (ppm)



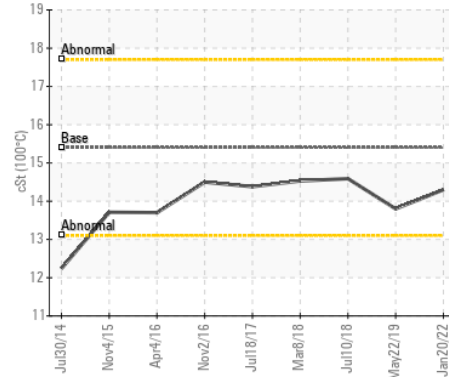
Aluminum (ppm)



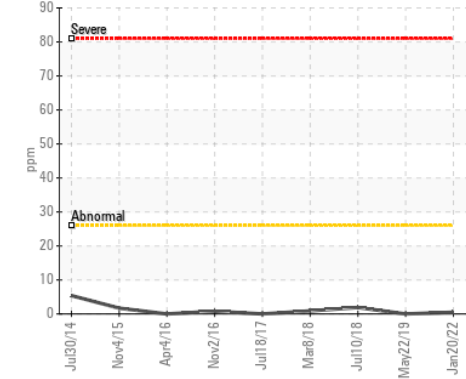
Copper (ppm)



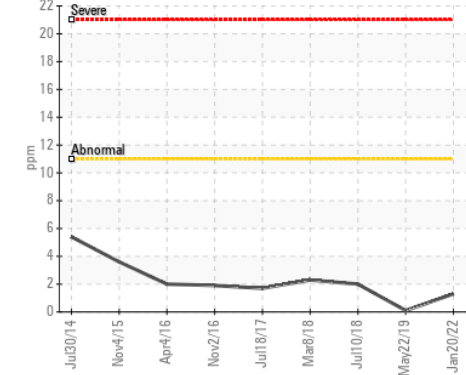
Viscosity @ 100°C



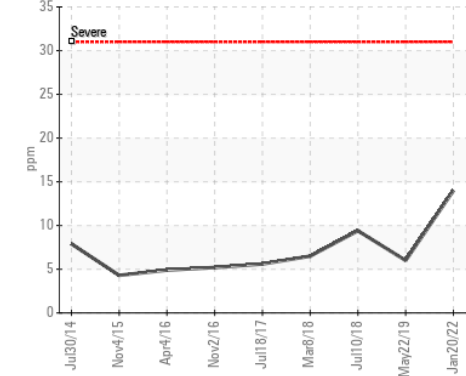
Lead (ppm)



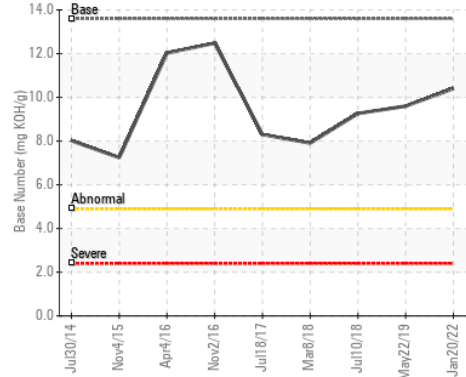
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : LEC0026558 **Received** : 27 Jan 2022  
**Lab Number** : 05453266 **Diagnosed** : 28 Jan 2022  
**Unique Number** : 9827461 **Diagnostician** : Don Baldrige  
**Test Package** : MOBCE ( Additional Tests: TBN )

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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