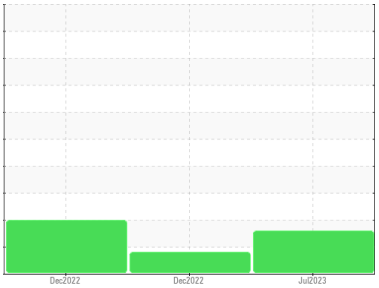
# PROBLEM SUMMARY

Area
**Store 8 - Pikeville [141015]**
Machine Id
**JOHN DEERE 210G 1FF210GXCNF530286**
Component
**Diesel Engine**
Fluid
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (6 GAL)**

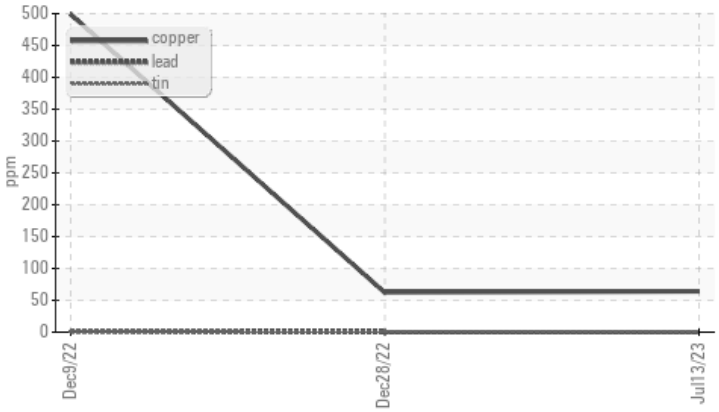
Sample Rating Trend



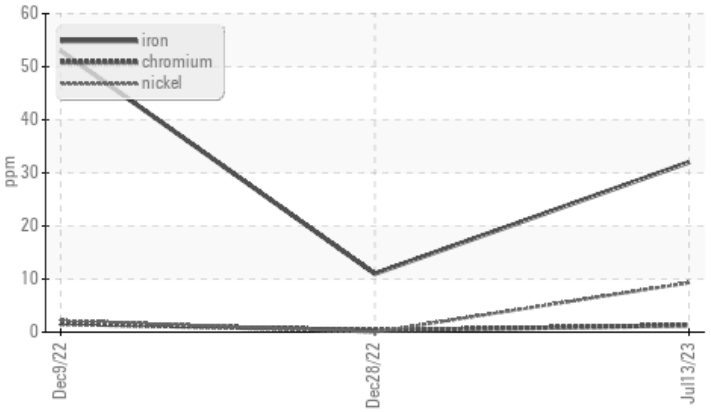

**WEAR**

## COMPONENT CONDITION SUMMARY

▲ Non-ferrous Metals




▲ Ferrous Alloys




## 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.

## PROBLEMATIC TEST RESULTS

| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |
|---|---|---|---|---|---|---|
| Nickel | ppm | ASTM D5185m | >5 | ▲ **9** | 0 | 2 |
| Copper | ppm | ASTM D5185m | >26 | ▲ **64** | ▲ 62 | ▲ 499 |

**Customer Id:** LESMAROH
**Sample No.:** LEC0041073
**Lab Number:** 05901122
**Test Package:** CONST

*To manage this report scan the QR code*

*To discuss the diagnosis or test data:*
Don Baldridge +1
don.b505@comcast.net

*To change component or sample information:*
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

## RECOMMENDED ACTIONS

| Action | Status | Date | Done By | Description |
|---|---|---|---|---|
| Change Fluid | --- | --- | ? | Oil and filter change at the time of sampling has been noted. |
| Change Filter | --- | --- | ? | Oil and filter change at the time of sampling has been noted. |

## HISTORICAL DIAGNOSIS

**28 Dec 2022 Diag: Doug Bogart**

WEAR

No corrective action is recommended at this time. Resample at the next service interval to monitor.The copper level has decreased, but is still abnormal. All other component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

view report

**09 Dec 2022 Diag: Don Baldridge**

WEAR

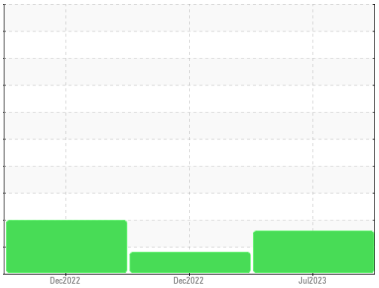
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other metal levels are typical for a new component breaking in. Light fuel dilution occurring. The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

view report

LESLIE EQUIPMENT CO.

# OIL ANALYSIS REPORT

Sample Rating Trend




**WEAR**

Area
## Store 8 - Pikeville [141015]
Machine Id
## JOHN DEERE 210G 1FF210GXCNF530286
Component
**Diesel Engine**
Fluid
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (6 GAL)**

## DIAGNOSIS

**▲ 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.

**▲ Wear**

The copper level is abnormal. Valve wear is indicated.

**Contamination**

There is no indication of any contamination in the oil.

**Fluid Condition**

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

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **LEC0041073** | LEC0037835 | LEC0037102 |
| Sample Date | | Client Info | | **13 Jul 2023** | 28 Dec 2022 | 09 Dec 2022 |
| Machine Age | hrs | Client Info | | **1083** | 612 | 581 |
| Oil Age | hrs | Client Info | | **502** | 31 | 581 |
| Oil Changed | | Client Info | | **Changed** | Not Changd | Changed |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | ABNORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Fuel | | WC Method | >2.1 | **<1.0** | <1.0 | ▲ 3.3 |
| Glycol | | WC Method | | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Iron | ppm | ASTM D5185m | >51 | **32** | 11 | 53 |
| Chromium | ppm | ASTM D5185m | >11 | **1** | <1 | 2 |
| Nickel | ppm | ASTM D5185m | >5 | ▲ **9** | 0 | 2 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Silver | ppm | ASTM D5185m | >3 | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >31 | **4** | 2 | 4 |
| Lead | ppm | ASTM D5185m | >26 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >26 | ▲ **64** | ▲ 62 | ▲ 499 |
| Tin | ppm | ASTM D5185m | >4 | **0** | <1 | 2 |
| Vanadium | ppm | ASTM D5185m | | **<1** | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **113** | 276 | 108 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **231** | 237 | 256 |
| Manganese | ppm | ASTM D5185m | | **2** | <1 | 4 |
| Magnesium | ppm | ASTM D5185m | | **852** | 786 | 768 |
| Calcium | ppm | ASTM D5185m | | **1572** | 1417 | 1731 |
| Phosphorus | ppm | ASTM D5185m | | **921** | 923 | 894 |
| Zinc | ppm | ASTM D5185m | | **1175** | 998 | 1090 |
| Sulfur | ppm | ASTM D5185m | | **3289** | 3386 | 3039 |

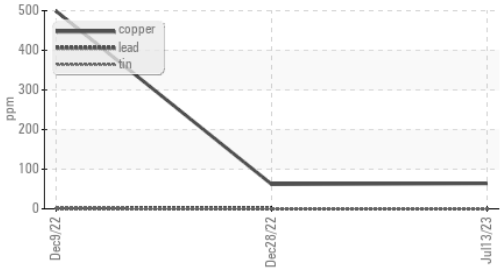
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >!20 | **7** | 8 | 13 |
| Sodium | ppm | ASTM D5185m | >31 | **3** | 3 | 4 |
| Potassium | ppm | ASTM D5185m | >20 | **2** | 0 | 4 |

| INFRA-RED | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Soot % | % | *ASTM D7844 | >3 | **0.7** | 0.2 | 0.8 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | **10.2** | 7.2 | 11.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | **24.0** | 21.6 | 27.7 |

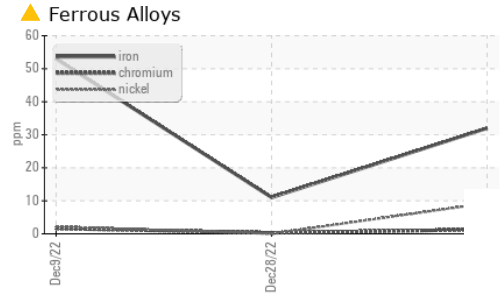
| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | **19.6** | 16.1 | 23.6 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 13.6 | **8.2** | 10.6 | 9.2 |

# OIL ANALYSIS REPORT

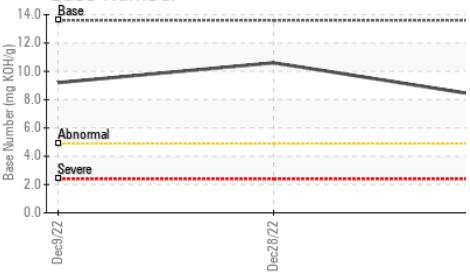
Non-ferrous Metals



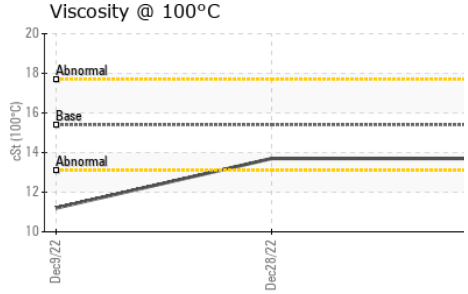

Ferrous Alloys




Base Number




Viscosity @ 100°C

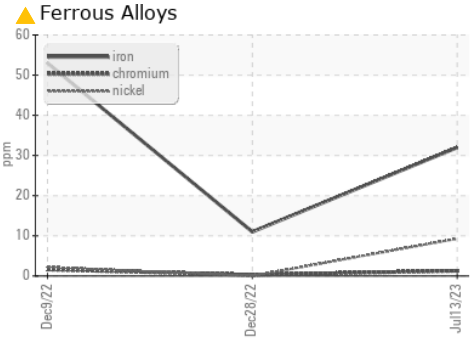



| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Precipitate | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Silt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Debris | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Sand/Dirt | scalar | *Visual | NONE | **NONE** | NONE | NONE |
| Appearance | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Odor | scalar | *Visual | NORML | **NORML** | NORML | NORML |
| Emulsified Water | scalar | *Visual | >0.21 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

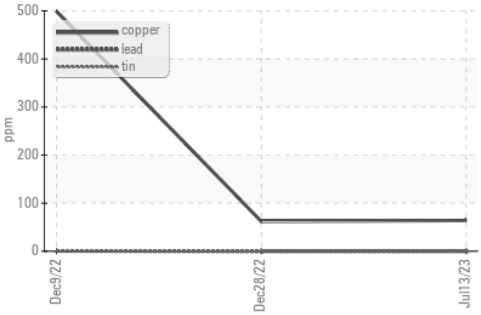
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | **13.7** | 13.7 | ▲ 11.2 |

## GRAPHS

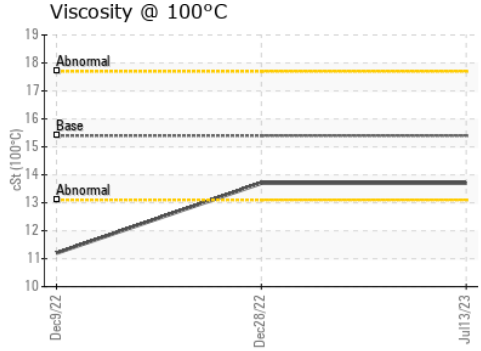
Ferrous Alloys



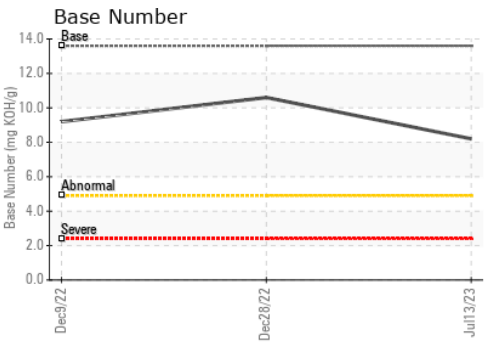

Non-ferrous Metals




Viscosity @ 100°C




Base Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : LEC0041073 **Received** : 18 Jul 2023
**Lab Number** : 05901122 **Diagnosed** : 19 Jul 2023
**Unique Number** : 10562478 **Diagnostician** : Don Baldridge
**Test Package** : CONST ( 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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