



OIL ANALYSIS REPORT

| | |
|-----------------|-----------------|
| WEAR | ABNORMAL |
| CONTAMINATION | NORMAL |
| FLUID CONDITION | NORMAL |

Machine Id
JOHN DEERE 460P 1DW460PATPFB06235

Component
Diesel Engine

Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- QTS)

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 | | WE0006310 | WE0005027 | WE0004098 |
| Sample Date | | Client Info | | 06 Jan 2024 | 01 Sep 2023 | 09 May 2023 |
| Machine Age | hrs | Client Info | | 1430 | 927 | 431 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | Changed | Changed | Changed |
| Filter Changed | | Client Info | | Changed | Changed | Changed |
| Sample Status | | | | ABNORMAL | ABNORMAL | ABNORMAL |

WEAR

The copper level has decreased, but is still abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|-------------|--------------|--------------|
| Iron | ppm | ASTM D5185m | >51 | 10 | 16 | 29 |
| Chromium | ppm | ASTM D5185m | >11 | 0 | <1 | 0 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | 6 | 11 | 4 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >31 | 5 | 3 | 5 |
| Lead | ppm | ASTM D5185m | >26 | 6 | 3 | 14 |
| Copper | ppm | ASTM D5185m | >26 | ▲ 31 | ▲ 161 | ▲ 378 |
| Tin | ppm | ASTM D5185m | >4 | 3 | 4 | 10 |
| Vanadium | ppm | ASTM D5185m | | 0 | <1 | 0 |
| White Metal | scalar | *Visual | NONE | NONE | NONE | NONE |
| Yellow Metal | scalar | *Visual | NONE | NONE | NONE | NONE |

CONTAMINATION

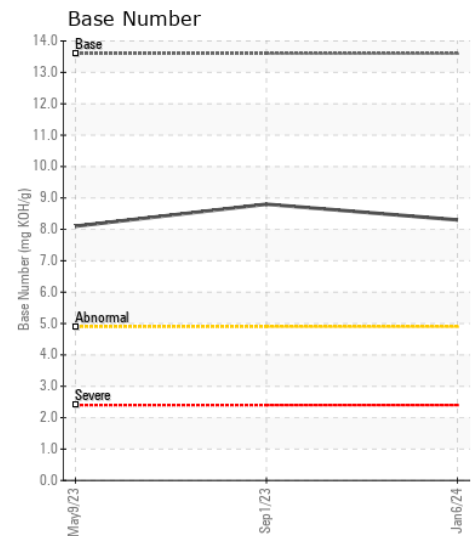
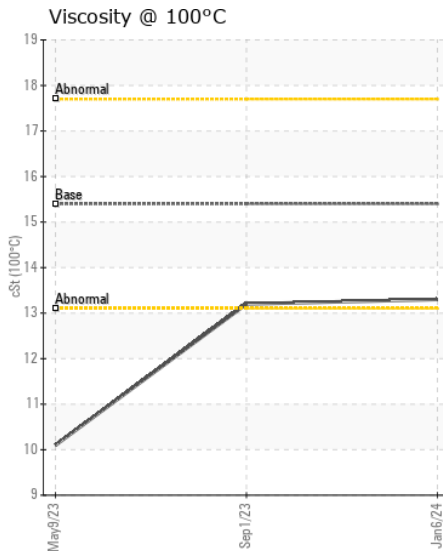
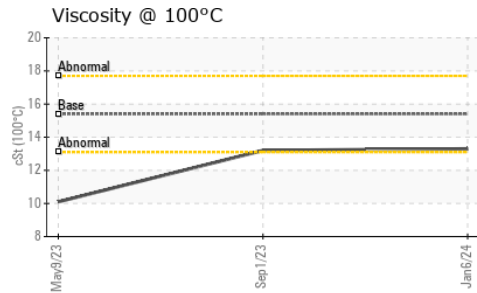
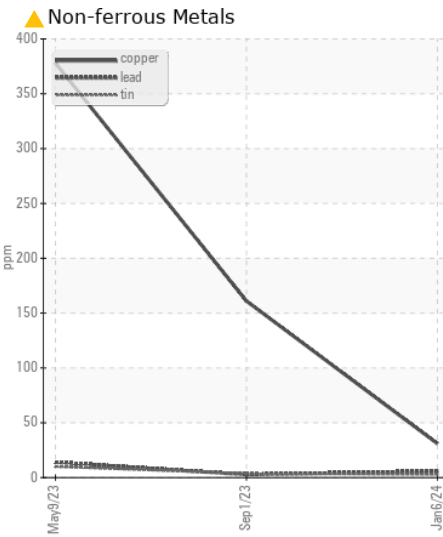
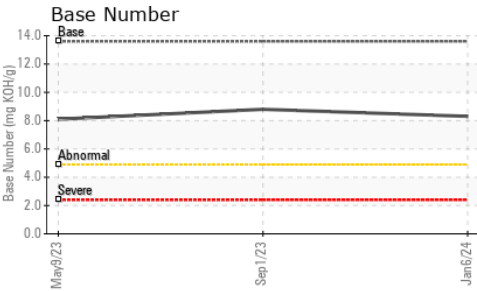
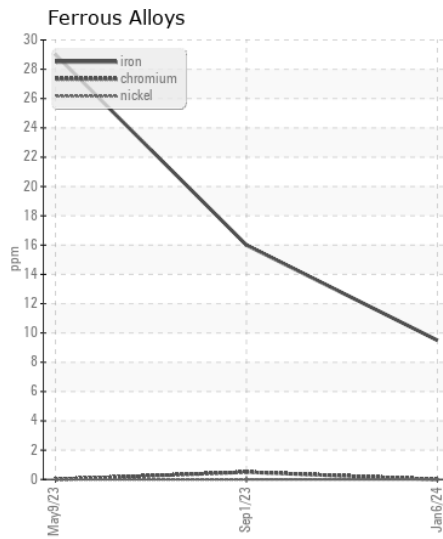
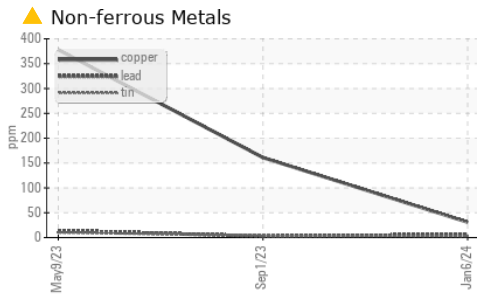
There is no indication of any contamination in the oil.

| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >22 | 4 | 8 | 12 |
| Potassium | ppm | ASTM D5185m | >20 | 1 | 2 | 4 |
| Fuel | | WC Method | >2.1 | <1.0 | <1.0 | 0.5 |
| Water | | WC Method | >0.21 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.3 | 0.3 | 0.3 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 9.3 | 9.2 | 8.8 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 23.3 | 22.7 | 22.3 |
| 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 |

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil.

| | | | | | | |
|------------------|----------|-------------|------|-------------|------|---------------|
| Sodium | ppm | ASTM D5185m | >31 | 4 | 5 | 8 |
| Boron | ppm | ASTM D5185m | | 168 | 180 | 162 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 235 | 234 | 245 |
| Manganese | ppm | ASTM D5185m | | 2 | 2 | 11 |
| Magnesium | ppm | ASTM D5185m | | 764 | 862 | 820 |
| Calcium | ppm | ASTM D5185m | | 1296 | 1568 | 1468 |
| Phosphorus | ppm | ASTM D5185m | | 843 | 958 | 912 |
| Zinc | ppm | ASTM D5185m | | 1033 | 1206 | 1096 |
| Sulfur | ppm | ASTM D5185m | | 2832 | 3904 | 3350 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 17.2 | 16.8 | 17.2 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | 13.6 | 8.3 | 8.8 | 8.1 |
| Visc @ 100°C | cSt | ASTM D445 | 15.4 | 13.3 | 13.2 | ▲ 10.1 |



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WE0006310 **Received** : 09 Feb 2024
Lab Number : 06084663 **Tested** : 12 Feb 2024
Unique Number : 10872108 **Diagnosed** : 12 Feb 2024 - Sean Felton
Test Package : CONST (Additional Tests: TBN)

WARRIOR TRACTOR AND EQUIPMENT - NORTHPORT
P.O. BOX 412
NORTHPORT, AL
US 35476
Contact: CRAIG ANDOE
serve01@warriortractor.com
T: (205)339-0300
F:

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)