



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



Machine Id
JOHN DEERE 310E 1DW310EXVMF712233
Component
Diesel Engine
Fluid
{not provided} (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

| Test | UOM | Method | Limit/Abn | Current | History1 | History2 |
|----------------|-----|-------------|-----------|--------------------|-------------|-------------|
| Sample Number | | Client Info | | JR0213744 | JR0182562 | JR0157814 |
| Sample Date | | Client Info | | 21 May 2024 | 08 Nov 2023 | 03 May 2023 |
| Machine Age | hrs | Client Info | | 3934 | 3451 | 3065 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Filter Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Filter Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | NORMAL | NORMAL | NORMAL |

WEAR

All component wear rates are normal.

| | | | | | | |
|--------------|--------|-------------|------|-------------|------|------|
| Iron | ppm | ASTM D5185m | >51 | 14 | 40 | 26 |
| Chromium | ppm | ASTM D5185m | >11 | 0 | <1 | <1 |
| Nickel | ppm | ASTM D5185m | >5 | 0 | 3 | 2 |
| Titanium | ppm | ASTM D5185m | | 0 | 0 | <1 |
| Silver | ppm | ASTM D5185m | >3 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >31 | 2 | 5 | 3 |
| Lead | ppm | ASTM D5185m | >26 | 0 | 0 | 0 |
| Copper | ppm | ASTM D5185m | >26 | 3 | 4 | 3 |
| Tin | ppm | ASTM D5185m | >4 | 0 | <1 | <1 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 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.

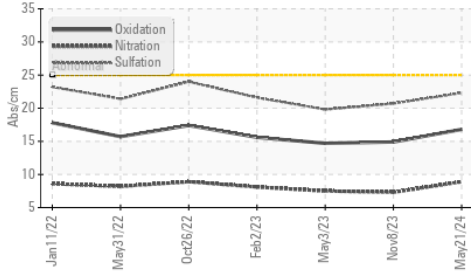
| | | | | | | |
|------------------|----------|-------------|-------|----------------|-------|-------|
| Silicon | ppm | ASTM D5185m | >22 | 6 | 8 | 9 |
| Potassium | ppm | ASTM D5185m | >20 | 0 | <1 | 2 |
| Fuel | | WC Method | >2.1 | <1.0 | <1.0 | <1.0 |
| Water | | WC Method | >0.21 | NEG | NEG | NEG |
| Glycol | | WC Method | | NEG | NEG | NEG |
| Soot % | % | *ASTM D7844 | >3 | 0.4 | 0.2 | 0.2 |
| Nitration | Abs/cm | *ASTM D7624 | >20 | 8.9 | 7.3 | 7.5 |
| Sulfation | Abs/.1mm | *ASTM D7415 | >30 | 22.3 | 20.7 | 19.8 |
| 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

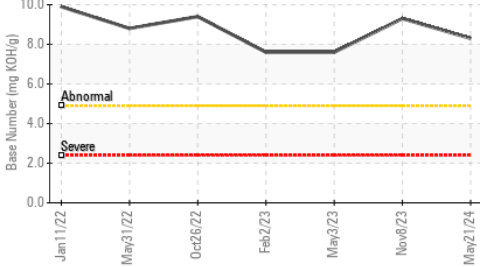
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

| | | | | | | |
|------------------|----------|-------------|-----|-------------|------|------|
| Sodium | ppm | ASTM D5185m | >31 | 2 | 1 | 0 |
| Boron | ppm | ASTM D5185m | | 230 | 250 | 231 |
| Barium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | 245 | 232 | 253 |
| Manganese | ppm | ASTM D5185m | | 0 | <1 | <1 |
| Magnesium | ppm | ASTM D5185m | | 798 | 824 | 753 |
| Calcium | ppm | ASTM D5185m | | 1524 | 1459 | 1438 |
| Phosphorus | ppm | ASTM D5185m | | 908 | 884 | 863 |
| Zinc | ppm | ASTM D5185m | | 1095 | 1107 | 1053 |
| Sulfur | ppm | ASTM D5185m | | 3308 | 2983 | 2927 |
| Oxidation | Abs/.1mm | *ASTM D7414 | >25 | 16.8 | 14.9 | 14.7 |
| Base Number (BN) | mg KOH/g | ASTM D2896 | | 8.3 | 9.3 | 7.6 |
| Visc @ 100°C | cSt | ASTM D445 | | 13.0 | 13.4 | 13.4 |

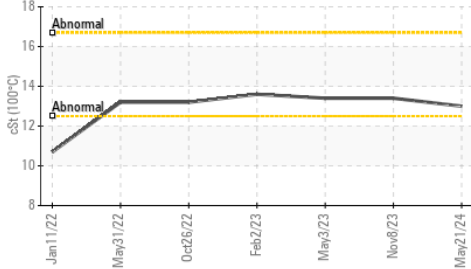
FT-IR (Direct Trend)



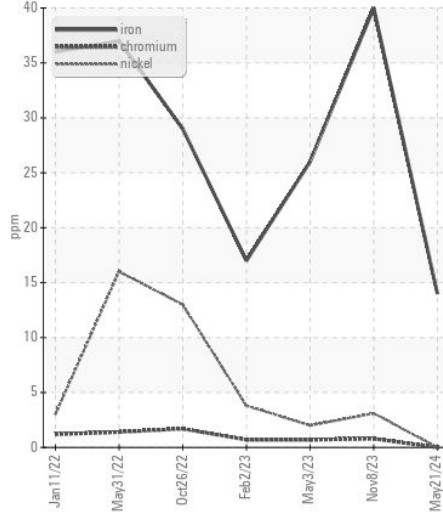
Base Number



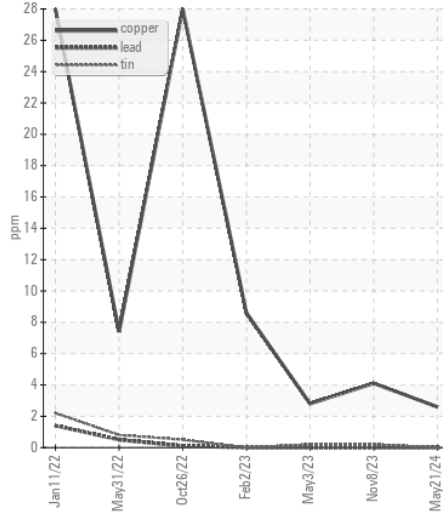
Viscosity @ 100°C



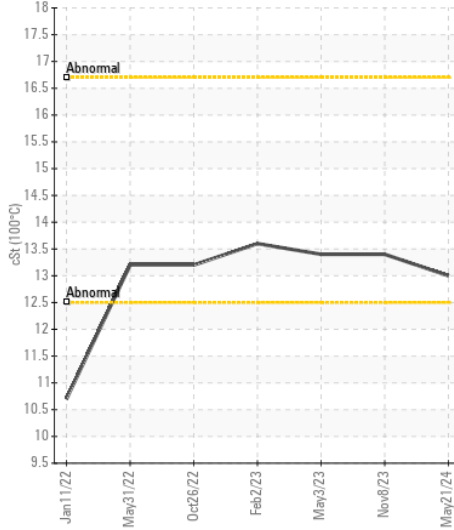
Ferrous Alloys



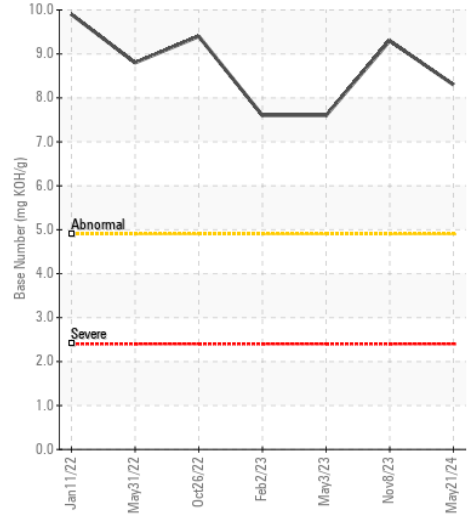
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0213744 **Received** : 22 May 2024
Lab Number : 06187451 **Tested** : 23 May 2024
Unique Number : 11044203 **Diagnosed** : 23 May 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

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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)