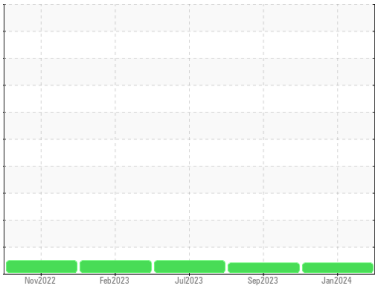
# OIL ANALYSIS REPORT

Sample Rating Trend




**ADDITIVES**

Machine Id
## JOHN DEERE 300G 1FF300GXHNF732039
Component
**Hydraulic System**
Fluid
**HITACHI HYDRAULIC SUPER EX 46HN (--- GAL)**

## DIAGNOSIS

**Recommendation**
Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil.

**Wear**
All component wear rates are normal.

**Contamination**
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

**Fluid Condition**
Zinc level above manufacturer's recommendations. The AN level is acceptable for this fluid.

| SAMPLE INFORMATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Sample Number | | Client Info | | **JR0200234** | JR0180149 | JR0164905 |
| Sample Date | | Client Info | | **04 Jan 2024** | 12 Sep 2023 | 11 Jul 2023 |
| Machine Age | hrs | Client Info | | **2459** | 1943 | 1662 |
| Oil Age | hrs | Client Info | | **2459** | 0 | 1662 |
| Oil Changed | | Client Info | | **Not Changd** | Not Changd | Not Changd |
| Sample Status | | | | **ABNORMAL** | ABNORMAL | NORMAL |

| CONTAMINATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Water | | WC Method | >0.075 | **NEG** | NEG | NEG |

| WEAR METALS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| PQ | | ASTM D8184 | >50 | **14** | 16 | 10 |
| Iron | ppm | ASTM D5185m | >32 | **4** | 2 | 2 |
| Chromium | ppm | ASTM D5185m | >9 | **0** | 0 | 0 |
| Nickel | ppm | ASTM D5185m | >5 | **0** | 0 | 0 |
| Titanium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Silver | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >9 | **0** | <1 | <1 |
| Lead | ppm | ASTM D5185m | >28 | **0** | 0 | <1 |
| Copper | ppm | ASTM D5185m | >50 | **5** | 4 | 3 |
| Tin | ppm | ASTM D5185m | >5 | **0** | 0 | 0 |
| Vanadium | ppm | ASTM D5185m | | **0** | 0 | <1 |
| Cadmium | ppm | ASTM D5185m | | **0** | 0 | 0 |

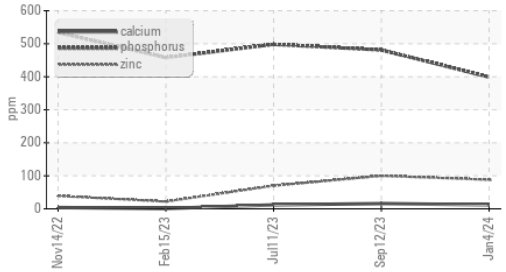
| ADDITIVES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Boron | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Barium | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Manganese | ppm | ASTM D5185m | | **0** | 0 | 0 |
| Magnesium | ppm | ASTM D5185m | | **0** | 0 | 2 |
| Calcium | ppm | ASTM D5185m | | **12** | 16 | 12 |
| Phosphorus | ppm | ASTM D5185m | 827 | **399** | 481 | 498 |
| Zinc | ppm | ASTM D5185m | 0 | ▲ **88** | ▲ 100 | 70 |
| Sulfur | ppm | ASTM D5185m | 13 | **61** | 390 | 278 |

| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Silicon | ppm | ASTM D5185m | >11 | **<1** | 1 | <1 |
| Sodium | ppm | ASTM D5185m | >21 | **<1** | <1 | 1 |
| Potassium | ppm | ASTM D5185m | >20 | **0** | 0 | 4 |

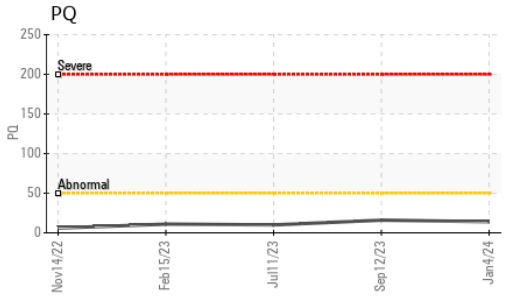
| FLUID CLEANLINESS | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Particles >4µm | | ASTM D7647 | >80000 | **20739** | 5206 | 5964 |
| Particles >6µm | | ASTM D7647 | >20000 | **857** | 116 | 186 |
| Particles >14µm | | ASTM D7647 | >640 | **18** | 2 | 7 |
| Particles >21µm | | ASTM D7647 | >160 | **4** | 1 | 2 |
| Particles >38µm | | ASTM D7647 | >40 | **0** | 0 | 0 |
| Particles >71µm | | ASTM D7647 | >10 | **0** | 0 | 0 |
| Oil Cleanliness | | ISO 4406 (c) | >23/21/16 | **22/17/11** | 20/14/9 | 20/15/10 |

# OIL ANALYSIS REPORT

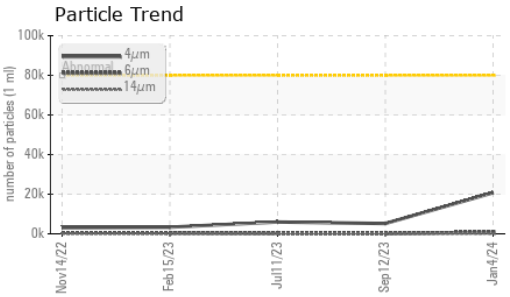
Additives



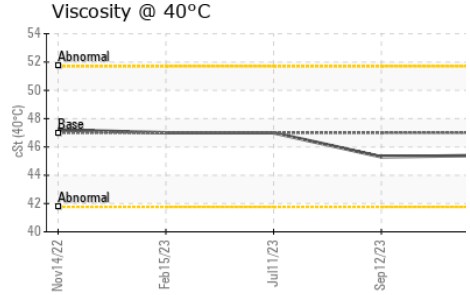

PQ



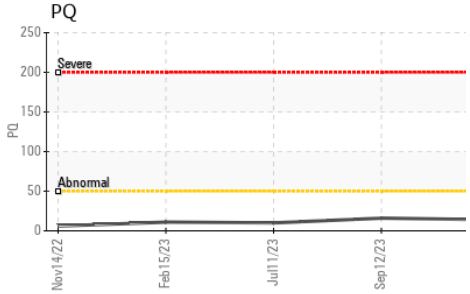

Particle Trend




Viscosity @ 40°C




PQ

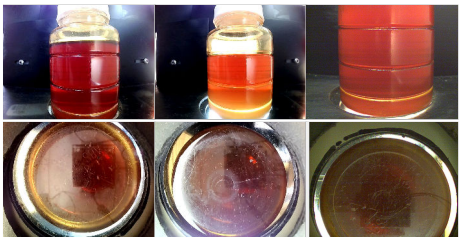



| FLUID DEGRADATION | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 0.06 | **0.24** | 0.24 | 0.20 |

| VISUAL | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| White Metal | scalar | *Visual | NONE | **LIGHT** | 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 | LIGHT |
| 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 | >0.075 | **NEG** | NEG | NEG |
| Free Water | scalar | *Visual | | **NEG** | NEG | NEG |

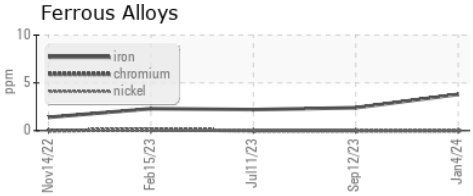
| FLUID PROPERTIES | | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|---|
| Visc @ 40°C | cSt | ASTM D445 | 47 | **45.4** | 45.3 | 47.0 |

| SAMPLE IMAGES | method | limit/base | current | history1 | history2 |
|---|---|---|---|---|---|
| Color | | | | | |
| Bottom | | | | | |

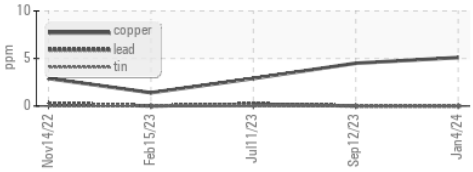


## GRAPHS

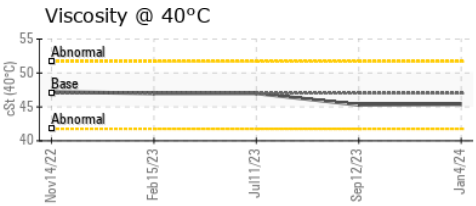
Ferrous Alloys



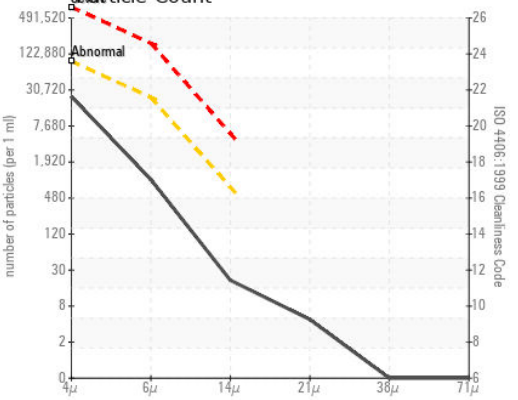

Non-ferrous Metals



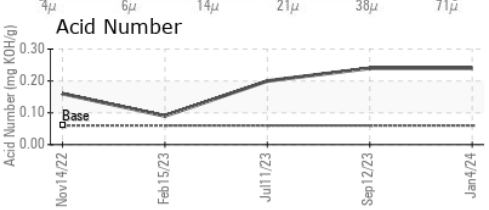

Viscosity @ 40°C




Particle Count




Acid Number




Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513
**Sample No.** : JR0200234 **Recieved** : 09 Jan 2024
**Lab Number** : 06055323 **Diagnosed** : 10 Jan 2024
**Unique Number** : 10821272 **Diagnostician** : Angela Borella
**Test Package** : CONST ( Additional Tests: PQ )

*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)*


**JRE - ASHLAND**
11047 LEADBETTER RD
ASHLAND, VA
US 23005
Contact: DAVID ZIEG
dzieg@jamesriverequipment.com
T: (804)798-6001
F: (804)798-0292