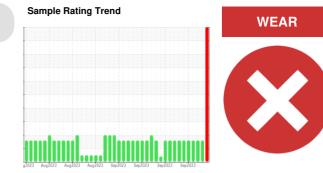


PROBLEM SUMMARY

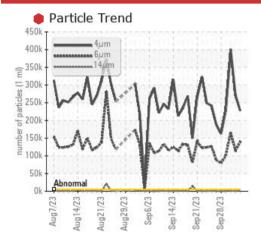
WCLSNC QC230801HY

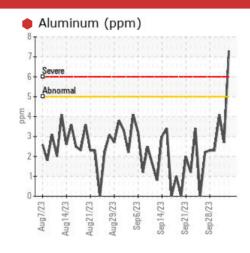
Component **Hydraulic System**

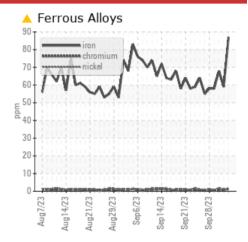
JOHN DEERE HY-GARD HYD/TRANS (--- GAL)



COMPONENT CONDITION SUMMARY







RECOMMENDATION

| PROBLEMATIC TEST RESULTS | | | | | | | | | |
|--------------------------|-------|--------------|-----------|-----------------|----------------------------|-----------------|--|--|--|
| Sample Status | | | | SEVERE | ABNORMAL | ABNORMAL | | | |
| Iron | ppm | ASTM D5185m | >78 | <u> </u> | 59 | 68 | | | |
| Aluminum | ppm | ASTM D5185m | >5 | 7 | 3 | 4 | | | |
| Manganese | ppm | ASTM D5185m | | <u>^</u> 21 | 17 | 18 | | | |
| Particles >4μm | | ASTM D7647 | >5000 | 227598 | <u>271801</u> | 4 00622 | | | |
| Particles >6µm | | ASTM D7647 | >1300 | 138880 | <u>▲</u> 115185 | <u>▲</u> 165733 | | | |
| Particles >14µm | | ASTM D7647 | >160 | 2169 | 480 | <u></u> 1512 | | | |
| Particles >21µm | | ASTM D7647 | >40 | △ 59 | 8 | 161 | | | |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | 25/24/18 | <u>\$\Delta\$ 25/24/16</u> | 26/25/18 | | | |
| Viscosity Index (VI) | Scale | ASTM D2270 | 147 | <u> </u> | 127 | 125 | | | |

Customer Id: WEACARQA Sample No.: WC0865951 Lab Number: 05968954 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data: System Automation +1 905-569-8600 x230 Kevin.Marson@wearcheck.com

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

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

03 Oct 2023 Diag: Jonathan Hester

ISO



We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



02 Oct 2023 Diag: Jonathan Hester

150



We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



29 Sep 2023 Diag: Jonathan Hester

ISO



We recommend you service the filters on this component. Resample at the next service interval to monitor.All component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



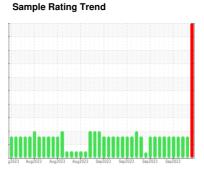


OIL ANALYSIS REPORT

WCLSNC QC230801HY

Hydraulic System Fluid

JOHN DEERE HY-GARD HYD/TRANS (--- GAL)





DIAGNOSIS

| SAMPLE INFORM | MATION | method | limit/base | current | history1 | history2 |
|------------------|----------|--------------------------|------------|------------------------------|-------------|-------------|
| Sample Number | | Client Info | | WC0865951 | WC0865950 | WC0865949 |
| Sample Date | | Client Info | | 04 Oct 2023 | 03 Oct 2023 | 02 Oct 2023 |
| Machine Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Age | hrs | Client Info | | 0 | 0 | 0 |
| Oil Changed | | Client Info | | N/A | N/A | N/A |
| Sample Status | | | | SEVERE | ABNORMAL | ABNORMAL |
| WEAR METALS | | method | limit/base | current | history1 | history2 |
| PQ | | ASTM D8184 | >47 | 44 | 30 | 43 |
| Iron | ppm | ASTM D5185m | >78 | <u>^</u> 87 | 59 | 68 |
| Chromium | ppm | ASTM D5185m | >2 | 1 | <1 | 1 |
| Nickel | ppm | ASTM D5185m | >3 | 2 | 1 | 2 |
| Titanium | ppm | ASTM D5185m | >2 | <1 | 0 | 0 |
| Silver | ppm | ASTM D5185m | >2 | 0 | 0 | 0 |
| Aluminum | ppm | ASTM D5185m | >5 | • 7 | 3 | 4 |
| Lead | ppm | ASTM D5185m | >11 | 9 | 10 | 9 |
| Copper | ppm | ASTM D5185m | >84 | 76 | 71 | 75 |
| Tin | ppm | ASTM D5185m | >4 | 3 | 3 | 2 |
| Vanadium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| Cadmium | ppm | ASTM D5185m | | 0 | 0 | 0 |
| ADDITIVES | | method | limit/base | current | history1 | history2 |
| Boron | ppm | ASTM D5185m | 6 | 108 | 96 | 110 |
| Barium | ppm | ASTM D5185m | 0 | 0 | 0 | 0 |
| Molybdenum | ppm | ASTM D5185m | 0 | <1 | 0 | <1 |
| Manganese | ppm | ASTM D5185m | | <u>^</u> 21 | 17 | 18 |
| Magnesium | ppm | ASTM D5185m | 145 | 22 | 25 | 22 |
| Calcium | ppm | ASTM D5185m | 3570 | 3355 | 3659 | 3382 |
| Phosphorus | ppm | ASTM D5185m | 1290 | 1142 | 1230 | 1138 |
| Zinc | ppm | ASTM D5185m | 1640 | 1431 | 1524 | 1461 |
| Sulfur | ppm | ASTM D5185m | | 3806 | 3597 | 3745 |
| CONTAMINANTS | | method | limit/base | current | history1 | history2 |
| Silicon | | ASTM D5185m | >11 | 10 | 9 | 9 |
| Sodium | ppm | ASTM D5185m | >23 | 18 | 17 | 16 |
| Potassium | | ASTM D5185m | >20 | 2 | <1 | 2 |
| Water | ppm % | ASTM D5165111 | >0.1669 | 0.058 | 0.064 | 0.079 |
| ppm Water | ppm | ASTM D6304 ASTM D6304 | >1669 | 580.7 | 646.5 | 790.1 |
| FLUID CLEANLIN | • • | method | limit/base | current | history1 | history2 |
| Particles >4µm | | ASTM D7647 | >5000 | 227598 | △ 271801 | ▲ 400622 |
| Particles >4µm | | ASTM D7647 | >1300 | 138880 | ▲ 115185 | ▲ 165733 |
| Particles >6µm | | ASTM D7647 ASTM D7647 | >160 | 2169 | ▲ 480 | ▲ 1512 |
| Particles >14μm | | ASTM D7647 | | <u>→ 2109</u> <u>→ 59</u> | 8 | 161 |
| Particles >38µm | | ASTM D7647 | >10 | 1 | 0 | 12 |
| Particles >71μm | | ASTM D7647 | | 1 | 0 | 3 |
| Oil Cleanliness | | ISO 4406 (c) | >19/17/14 | 25/24/18 | △ 25/24/16 | △ 26/25/18 |
| FLUID DEGRADA | ATION _ | method | limit/base | current | history1 | history2 |
| | | | | | · · | |
| Acid Number (AN) | mg KOH/g | ASTM D8045 | 1.8 | 0.79 | 0.97 | 0.92 |



OIL ANALYSIS REPORT





Certificate L2367

Lab Number **Unique Number**

: 05968954

: 10675505

Diagnosed : 04 Dec 2023 Diagnostician : System

Test Package : IND 2 (Additional Tests: KF, KV100, PQ, VI)

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)

Cary, NC US 27513

Contact: WCLS CARY NC

T: (919)379-4102 F: (919)379-4050