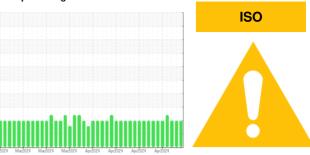


OIL ANALYSIS REPORT

Sample Rating Trend



Machine Id

QC230801HY

Hydraulic System

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

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates present in the oil.

Fluid Condition

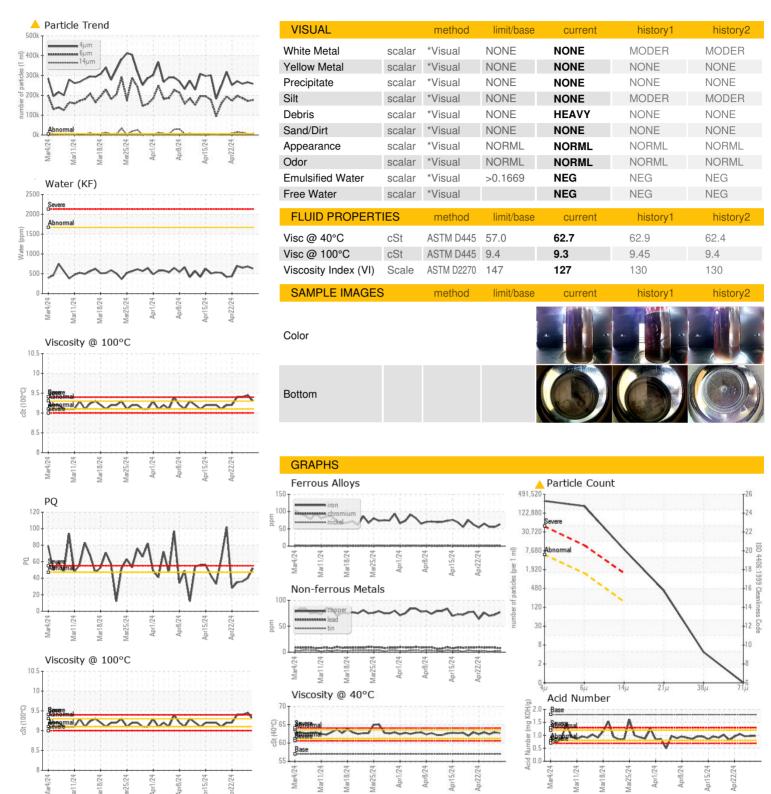
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Cample Date Client Info 26 Apr 2024 25 Apr 2024 24 Apr 2024	AL)		Irzuz4 Marzu	z4 Marzuz4 Marzuz4	APIZUZ4 APIZUZ4	Aprzuz4	
Sample Date Client Info Q6 Apr 2024 25 Apr 2024 24 Apr 2024 25 Apr 2024 26 Apr 2024 25 Apr 2024 25 Apr 2024 25 Apr 2024 25 Apr 2024 26 Apr 2024	SAMPLE INFORMA	ATION	method	limit/base	current	history1	history2
Machine Age hrs Client Info 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Sample Number		Client Info		WC0929410	WC0929409	WC0929408
Dil Changed	Sample Date		Client Info		26 Apr 2024	25 Apr 2024	24 Apr 2024
Dil Changed Client Info N/A ABNORMAL ABNORMA	Machine Age	hrs	Client Info		0	0	0
ABNORMAL ABNORMAL ABNORMAL ABNORMAL	Oil Age	hrs	Client Info		0	0	0
WEAR METALS method limit/base current history1 history2 PCQ ASTM D8184 >47 52 40 36 ron ppm ASTM D8186m >78 63 55 56 Chromium ppm ASTM D5185m >2 <1	Oil Changed		Client Info		N/A	N/A	N/A
PQ ASTM D8184 → 47 52 40 36 ron ppm ASTM D5185m > 78 63 55 56 Chromium ppm ASTM D5185m > 2 < 1 < 1 < 1 < 1	Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Post	WEAR METALS		method	limit/base	current	history1	history2
Chromium ppm ASTM D5185m >2 <1 <1 <1 Vickel ppm ASTM D5185m >3 0 <1 0 Titanium ppm ASTM D5185m >2 0 0 0 Siliver ppm ASTM D5185m >2 0 0 0 Aluminum ppm ASTM D5185m >2 2 2 2 2 Lead ppm ASTM D5185m >84 77 72 70 Copper ppm ASTM D5185m 0 0 0 0 Janadium ppm ASTM D5185m 0 0 0 0 Janadium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 ADroma ASTM D5185m 0 0 0 0 0 ADDITIVES method limit/base current history1 <td>PQ</td> <td></td> <td>ASTM D8184</td> <td>>47</td> <th>52</th> <td>40</td> <td>36</td>	PQ		ASTM D8184	>47	52	40	36
Nickel ppm ASTM D5185m >3 0 <1 0 0	Iron	ppm	ASTM D5185m	>78	63	55	56
District Distric	Chromium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver ppm ASTM D5185m >2 0 0 0 0 0 0	Nickel	ppm	ASTM D5185m	>3	0	<1	0
ASTM D5185m STM D5185m S	Titanium	ppm	ASTM D5185m	>2	0	0	0
Lead ppm ASTM D5185m >11 8 9 9 Copper ppm ASTM D5185m >84 77 72 70 Fin ppm ASTM D5185m >4 2 2 1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 0 0 <1 <1 Boron ppm ASTM D5185m 0 0 <1 <1 Boron ppm ASTM D5185m 0 0 <1 <1 Boron ppm ASTM D5185m 145 14 22 21 Boron ppm ASTM D5185m 145 14 22 21 Calcium ppm ASTM D5185m 1290 1123 1160 <t< td=""><td>Silver</td><td>ppm</td><td>ASTM D5185m</td><td>>2</td><th>0</th><td>0</td><td>0</td></t<>	Silver	ppm	ASTM D5185m	>2	0	0	0
Copper ppm ASTM D5185m >84 77 72 70 Fin ppm ASTM D5185m >4 2 2 1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 6 102 95 90 Barium ppm ASTM D5185m 0 0 <1	Aluminum	ppm	ASTM D5185m	>5	2	2	2
Copper ppm ASTM D5185m >84 77 72 70 Fin ppm ASTM D5185m >4 2 2 1 Vanadium ppm ASTM D5185m 0 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 0 Boron ppm ASTM D5185m 6 102 95 90 Barium ppm ASTM D5185m 0 0 <1	Lead	ppm	ASTM D5185m	>11	8	9	9
Vanadium ppm ASTM D5185m 0 0 0 Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Barium ppm ASTM D5185m 0 0 <1 <1 Molybdenum ppm ASTM D5185m 0 0 0 <1 <1 Magnesium ppm ASTM D5185m 145 14 22 21 Calcium ppm ASTM D5185m 145 14 22 21 Calcium ppm ASTM D5185m 1290 1123 1160 1067 Zinc ppm ASTM D5185m 1640 1382 1376 1288 Sulfur ppm ASTM D5185m 3633 3906 3545 CONTAMINANTS method limit/base current history1 history2 Solicon ppm ASTM D5185m >23 19 18	Copper	ppm		>84	77	72	70
Cadmium ppm ASTM D5185m 0 0 0 ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 6 102 95 90 Barium ppm ASTM D5185m 0 0 <1	Γin	ppm	ASTM D5185m	>4	2	2	1
ADDITIVES method limit/base current history1 history2 Boron ppm ASTM D5185m 6 102 95 90 Barium ppm ASTM D5185m 0 0 <1	Vanadium	ppm	ASTM D5185m		0	0	0
Boron ppm ASTM D5185m 6 102 95 90 Barium ppm ASTM D5185m 0 0 <1 <1 Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 145 14 22 21 Calcicium ppm ASTM D5185m 145 14 22 21 Calcicium ppm ASTM D5185m 150 3437 3402 3210 Phosphorus ppm ASTM D5185m 1290 1123 1160 1067 Zinc ppm ASTM D5185m 1290 1123 1160 1067 Zinc ppm ASTM D5185m 1640 1382 1376 1288 Sulfur ppm ASTM D5185m 11 9 10 7 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >	Cadmium	ppm	ASTM D5185m		0	0	0
Sarium	ADDITIVES		method	limit/base	current	history1	history2
Molybdenum ppm ASTM D5185m 0 0 0 0 Manganese ppm ASTM D5185m 145 14 22 21 Calcium ppm ASTM D5185m 145 14 22 21 Calcium ppm ASTM D5185m 3570 3437 3402 3210 Phosphorus ppm ASTM D5185m 1290 1123 1160 1067 Zinc ppm ASTM D5185m 1640 1382 1376 1288 Sulfur ppm ASTM D5185m 3633 3906 3545 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >23 19 18 17 Potassium ppm ASTM D5185m >20 0 <1 0 Nater % ASTM D5185m >20 0 <1 0 Potaticles > 4µm ASTM D6304 >0.1669 0.062 </td <td>Boron</td> <td>ppm</td> <td>ASTM D5185m</td> <td>6</td> <th>102</th> <td>95</td> <td>90</td>	Boron	ppm	ASTM D5185m	6	102	95	90
Manganese ppm ASTM D5185m 18 16 16 Magnesium ppm ASTM D5185m 145 14 22 21 Calcium ppm ASTM D5185m 3570 3437 3402 3210 Phosphorus ppm ASTM D5185m 1290 1123 1160 1067 Zinc ppm ASTM D5185m 1640 1382 1376 1288 Sulfur ppm ASTM D5185m 1640 1382 1376 1288 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >11 9 10 7 Godium ppm ASTM D5185m >23 19 18 17 Potatssium ppm ASTM D5185m >20 0 <1 0 Nater % ASTM D6304 >0.1669 0.062 0.068 0.064 Opm Water ppm ASTM D6304 >	Barium	ppm	ASTM D5185m	0	0	<1	<1
Magnesium ppm ASTM D5185m 145 14 22 21 Calcium ppm ASTM D5185m 3570 3437 3402 3210 Phosphorus ppm ASTM D5185m 1290 1123 1160 1067 Zinc ppm ASTM D5185m 1640 1382 1376 1288 Sulfur ppm ASTM D5185m 3633 3906 3545 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >11 9 10 7 Sodium ppm ASTM D5185m >23 19 18 17 Potassium ppm ASTM D5185m >20 0 <1	Molybdenum	ppm	ASTM D5185m	0	0	0	0
Calcium ppm ASTM D5185m 3570 3437 3402 3210 Phosphorus ppm ASTM D5185m 1290 1123 1160 1067 Zinc ppm ASTM D5185m 1640 1382 1376 1288 Sulfur ppm ASTM D5185m 3633 3906 3545 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >11 9 10 7 Podiassium ppm ASTM D5185m >23 19 18 17 Potassium ppm ASTM D5185m >20 0 <1 0 Nater % ASTM D6304 >0.1669 0.062 0.068 0.064 opm Water ppm ASTM D6304 >1669 630 682 649 Particles >4μm ASTM D7647 >5000 258373 266076 258350 Particles >6μm ASTM D7647 >1300	Manganese	ppm	ASTM D5185m		18	16	16
Phosphorus ppm ASTM D5185m 1290 1123 1160 1067 Zinc ppm ASTM D5185m 1640 1382 1376 1288 Sulfur ppm ASTM D5185m 1640 1382 1376 1288 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >11 9 10 7 Sodium ppm ASTM D5185m >23 19 18 17 Potassium ppm ASTM D5185m >20 0 <1 0 Water % ASTM D5185m >20 0 <1 0 Vater % ASTM D6304 >0.1669 0.062 0.068 0.064 Opm Water ppm ASTM D6304 >1669 630 682 649 Particles >4µm ASTM D7647 >5000 258373 266076 258350 Particles >6µm ASTM D7647 >1300 <td>Magnesium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>145</td> <th>14</th> <td>22</td> <td>21</td>	Magnesium	ppm	ASTM D5185m	145	14	22	21
Zinc ppm ASTM D5185m 1640 1382 1376 1288 Sulfur ppm ASTM D5185m 3633 3906 3545 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >11 9 10 7 Sodium ppm ASTM D5185m >23 19 18 17 Potassium ppm ASTM D5185m >20 0 <1 0 Water % ASTM D6304 >0.1669 0.062 0.068 0.064 opm Water ppm ASTM D6304 >1669 630 682 649 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4µm ASTM D7647 >5000 258373 ≥ 266076 ≥ 258350 Particles >14µm ASTM D7647 >160 7432 4899 ≥ 12408 Particles >21µm ASTM D7647 >10 4 <td>Calcium</td> <td>ppm</td> <td>ASTM D5185m</td> <td>3570</td> <th>3437</th> <td>3402</td> <td>3210</td>	Calcium	ppm	ASTM D5185m	3570	3437	3402	3210
Sulfur ppm ASTM D5185m 3633 3906 3545 CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >11 9 10 7 Sodium ppm ASTM D5185m >23 19 18 17 Potassium ppm ASTM D5185m >20 0 <1	Phosphorus	ppm	ASTM D5185m	1290	1123	1160	1067
CONTAMINANTS method limit/base current history1 history2 Silicon ppm ASTM D5185m >11 9 10 7 Sodium ppm ASTM D5185m >23 19 18 17 Potassium ppm ASTM D5185m >20 0 <1	Zinc	ppm	ASTM D5185m	1640	1382	1376	1288
Solition ppm ASTM D5185m >11 9 10 7 7 7 7 7 7 7 7 7	Sulfur	ppm	ASTM D5185m		3633	3906	3545
Sodium ppm ASTM D5185m >23 19 18 17 Otassium ppm ASTM D5185m >20 0 <1 0 Otassium ppm ASTM D5185m >20 0 <1 0 Otassium ppm ASTM D6304 >0.1669 0.062 0.068 0.064 Otassium ppm ASTM D6304 >1669 630 682 649 Otassium Ot	CONTAMINANTS		method	limit/base	current	history1	history2
Potassium ppm ASTM D5185m >20 0 <1 0 Mater % ASTM D6304 >0.1669 0.062 0.068 0.064 opm Water ppm ASTM D6304 >1669 630 682 649 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 Δ 258373 Δ 266076 Δ 258350 Particles >6μm ASTM D7647 >1300 Δ 176277 Δ 171394 Δ 185898 Particles >14μm ASTM D7647 >160 Δ 7432 Δ 4899 Δ 12408 Particles >21μm ASTM D7647 >40 Δ 363 Δ 213 Δ 708 Particles >38μm ASTM D7647 >10 4 2 9 Particles >71μm ASTM D7647 >3 0 0 1 Dil Cleanliness ISO 4406 (c) >19/17/14 Δ 25/25/20 Δ 25/25/19 Δ 25/25/21	Silicon	ppm	ASTM D5185m	>11	9	10	7
Water % ASTM D6304 > 0.1669 0.062 0.068 0.064 0.064 opm Water ppm ASTM D6304 > 1669 630 682 649 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 > 5000 Δ 258373 Δ 266076 Δ 258350 Particles >6μm ASTM D7647 > 1300 Δ 176277 Δ 171394 Δ 185898 Particles >14μm ASTM D7647 > 160 Δ 7432 Δ 4899 Δ 12408 Particles >21μm ASTM D7647 > 40 Δ 363 Δ 213 Δ 708 Particles >38μm ASTM D7647 > 10 4 2 9 Particles >71μm ASTM D7647 > 3 0 0 1 Dil Cleanliness ISO 4406 (c) >19/17/14 Δ 25/25/20 Δ 25/25/19 Δ 25/25/21	Sodium	ppm	ASTM D5185m	>23	19	18	17
opm Water ppm ASTM D6304 >1669 630 682 649 FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 Δ 258373 Δ 266076 Δ 258350 Particles >6μm ASTM D7647 >1300 Δ 176277 Δ 171394 Δ 185898 Particles >14μm ASTM D7647 >160 Δ 7432 Δ 4899 Δ 12408 Particles >21μm ASTM D7647 >40 Δ 363 Δ 213 Δ 708 Particles >38μm ASTM D7647 >10 4 2 9 Particles >71μm ASTM D7647 >3 0 0 1 Dil Cleanliness ISO 4406 (c) >19/17/14 Δ 25/25/20 Δ 25/25/19 Δ 25/25/21	Potassium	ppm	ASTM D5185m	>20	0	<1	0
FLUID CLEANLINESS method limit/base current history1 history2 Particles >4μm ASTM D7647 >5000 Δ 258373 Δ 266076 Δ 258350 Particles >6μm ASTM D7647 >1300 Δ 176277 Δ 171394 Δ 185898 Particles >14μm ASTM D7647 >160 Δ 7432 Δ 4899 Δ 12408 Particles >21μm ASTM D7647 >40 Δ 363 Δ 213 Δ 708 Particles >38μm ASTM D7647 >10 4 2 9 Particles >71μm ASTM D7647 >3 0 0 1 Dil Cleanliness ISO 4406 (c) >19/17/14 Δ 25/25/20 Δ 25/25/19 Δ 25/25/21			ASTM D6304	>0.1669	0.062	0.068	0.064
Particles >4μm ASTM D7647 >5000 \$\frac{258373}{258373}\$ \$\frac{2}{266076}\$ \$\frac{258350}{258350}\$ Particles >6μm ASTM D7647 >1300 \$\frac{176277}{4}\$ \$\frac{171394}{171394}\$ \$\frac{185898}{185898}\$ Particles >14μm ASTM D7647 >160 \$\frac{7432}{432}\$ \$\frac{4899}{4899}\$ \$\frac{12408}{12408}\$ Particles >21μm ASTM D7647 >40 \$\frac{363}{363}\$ \$\frac{213}{213}\$ \$\frac{708}{708}\$ Particles >38μm ASTM D7647 >10 4 2 9 Particles >71μm ASTM D7647 >3 0 0 1 Dil Cleanliness ISO 4406 (c) >19/17/14 \$\frac{25/25/20}{25/250}\$ \$\frac{25/25/19}{25/25/19}\$ \$\frac{25/25/21}{25/25/20}\$	opm Water	ppm	ASTM D6304	>1669	630	682	649
Particles >6μm ASTM D7647 >1300 176277 171394 185898 Particles >14μm ASTM D7647 >160 7432 4899 12408 Particles >21μm ASTM D7647 >40 363 213 708 Particles >38μm ASTM D7647 >10 4 2 9 Particles >71μm ASTM D7647 >3 0 0 1 Dil Cleanliness ISO 4406 (c) >19/17/14 25/25/20 25/25/19 25/25/21	FLUID CLEANLINE	ESS	method	limit/base	current	history1	history2
Particles >14μm ASTM D7647 >160 7432 4899 12408 Particles >21μm ASTM D7647 >40 363 213 708 Particles >38μm ASTM D7647 >10 4 2 9 Particles >71μm ASTM D7647 >3 0 0 1 Dil Cleanliness ISO 4406 (c) >19/17/14 25/25/20 25/25/19 25/25/21	Particles >4μm						
Particles >21μm ASTM D7647 >40 ▲ 363 ▲ 213 ▲ 708 Particles >38μm ASTM D7647 >10 4 2 9 Particles >71μm ASTM D7647 >3 0 0 1 Dil Cleanliness ISO 4406 (c) >19/17/14 ▲ 25/25/20 ▲ 25/25/19 ▲ 25/25/21	Particles >6µm						
Particles >38μm ASTM D7647 >10 4 2 9 Particles >71μm ASTM D7647 >3 0 0 1 Dil Cleanliness ISO 4406 (c) >19/17/14 25/25/20 △ 25/25/19 △ 25/25/21	Particles >14µm						
Particles >71μm ASTM D7647 >3 0 0 1 Dil Cleanliness ISO 4406 (c) >19/17/14 ▲ 25/25/20 ▲ 25/25/19 ▲ 25/25/21	Particles >21µm		ASTM D7647	>40	△ 363		△ 708
Dil Cleanliness ISO 4406 (c) >19/17/14 ▲ 25/25/20 ▲ 25/25/19 ▲ 25/25/21	Particles >38µm			>10			
	Particles >71μm		ASTM D7647	>3	0		
FLUID DEGRADATION method limit/base current history1 history2	Oil Cleanliness		ISO 4406 (c)	>19/17/14	<u>\$\text{\scale}\$ 25/25/20</u>	<u>\$\text{\Delta}\$ 25/25/19</u>	<u>\$\text{25}/25/21\$</u>
	FLUID DEGRADAT	TION	method	limit/base	current	history1	history2

0.98



OIL ANALYSIS REPORT







Laboratory Sample No.

: WC0929410 Lab Number : 06161428 Unique Number: 10996851

: WearCheck USA - 501 Madison Ave., Cary, NC 27513

Received : 26 Apr 2024 **Tested** Diagnosed

: 02 May 2024 : 02 May 2024 - Jonathan Hester

WEARCHECK LUBRICATION SERVICES QA ACCOUNT

501 Madison Ave Cary, NC US 27513 Contact: WCLS CARY NC

T: (919)379-4102

Test Package : IND 2 (Additional Tests: KF, KV100, PQ, VI) Certificate 12367 To discuss this sample report, contact Customer Service at 1-800-237-1369.

 st - 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)