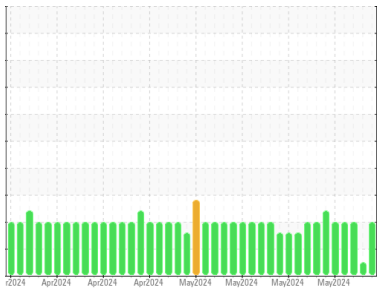
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
QC230801HY
Component
Hydraulic System
Fluid
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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0939651**	WC0939650	WC0939646
Sample Date		Client Info		**29 May 2024**	28 May 2024	24 May 2024
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				**ABNORMAL**	---	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184	>47	**42**	▲ 91	63
Iron	ppm	ASTM D5185m	>78	**64**	▲ 102	83
Chromium	ppm	ASTM D5185m	>2	**<1**	1	1
Nickel	ppm	ASTM D5185m	>3	**1**	<1	<1
Titanium	ppm	ASTM D5185m	>2	**<1**	0	<1
Silver	ppm	ASTM D5185m	>2	**<1**	0	<1
Aluminum	ppm	ASTM D5185m	>5	**2**	● 3	3
Lead	ppm	ASTM D5185m	>11	**11**	8	9
Copper	ppm	ASTM D5185m	>84	**75**	82	77
Tin	ppm	ASTM D5185m	>4	**3**	▲ 4	2
Vanadium	ppm	ASTM D5185m		**<1**	0	<1
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	6	**95**	100	106
Barium	ppm	ASTM D5185m	0	**<1**	1	0
Molybdenum	ppm	ASTM D5185m	0	**<1**	0	<1
Manganese	ppm	ASTM D5185m		**16**	▲ 29	20
Magnesium	ppm	ASTM D5185m	145	**22**	▲ 41	10
Calcium	ppm	ASTM D5185m	3570	**3534**	3433	3547
Phosphorus	ppm	ASTM D5185m	1290	**1214**	1229	1186
Zinc	ppm	ASTM D5185m	1640	**1399**	1432	1371
Sulfur	ppm	ASTM D5185m		**3944**	3720	3736

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>11	**8**	▲ 11	10
Sodium	ppm	ASTM D5185m	>23	**18**	22	20
Potassium	ppm	ASTM D5185m	>20	**2**	0	<1
Water	%	ASTM D6304	>0.1669	**0.065**	▲ 0.317	0.089
ppm Water	ppm	ASTM D6304	>1669	**657**	▲ 3170	898

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **225722**	---	▲ 287186
Particles >6µm		ASTM D7647	>1300	▲ **147334**	---	▲ 193475
Particles >14µm		ASTM D7647	>160	▲ **4358**	---	▲ 8156
Particles >21µm		ASTM D7647	>40	▲ **202**	---	▲ 520
Particles >38µm		ASTM D7647	>10	**3**	---	9
Particles >71µm		ASTM D7647	>3	**0**	---	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **25/24/19**	---	▲ 25/25/20

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.8	**0.89**	0.87	0.91

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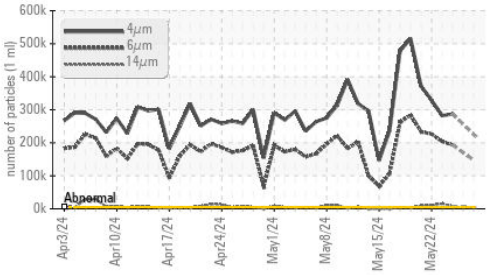
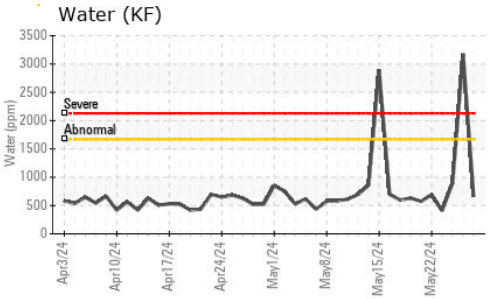
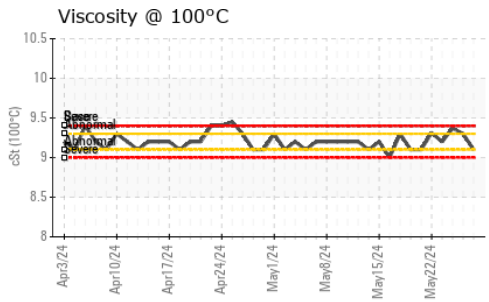
Particle Trend



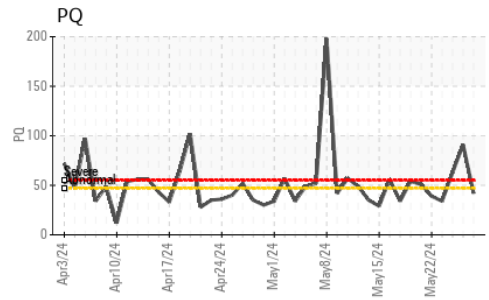
Water (KF)



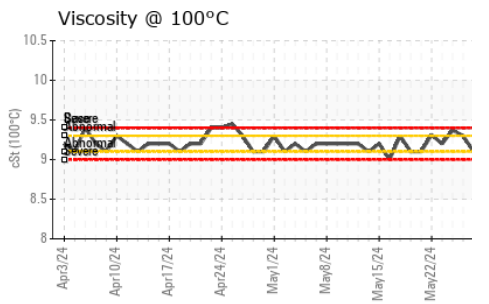
Viscosity @ 100°C



PQ



Viscosity @ 100°C



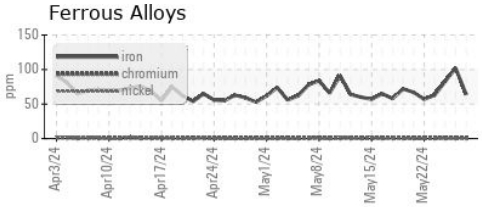
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	▲ MODER	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**MODER**	▲ MODER	MODER
Debris	scalar	*Visual	NONE	**NONE**	NONE	MODER
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	>0.1669	**NEG**	▲ 0.2%	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	57.0	**62.42**	▲ 63.72	62.8
Visc @ 100°C	cSt	ASTM D445	9.4	**9.1**	9.3	9.37
Viscosity Index (VI)	Scale	ASTM D2270	147	**123**	124	128

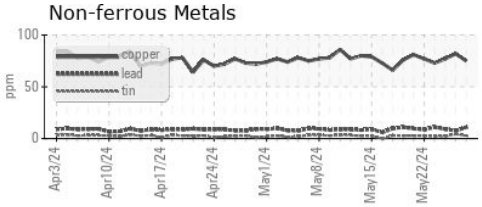
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

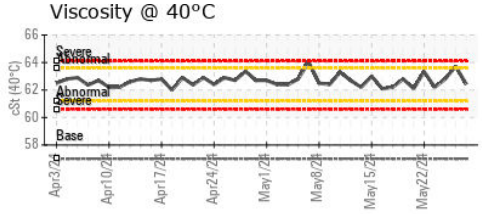
Ferrous Alloys



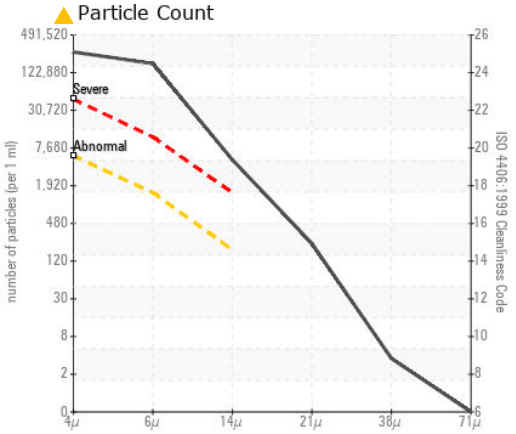
Non-ferrous Metals



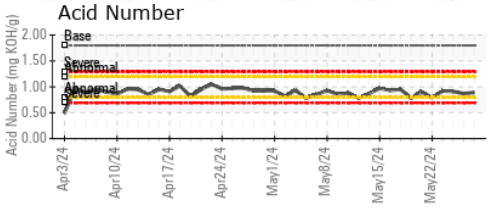
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0939651
Lab Number : 06193969
Unique Number : 11056092
Test Package : IND 2 (Additional Tests: KF, KV100, PQ, VI)

Received : 29 May 2024
Tested : 03 Jun 2024
Diagnosed : 03 Jun 2024 - Jonathan Hester

WEARCHECK LUBRICATION SERVICES QA ACCOUNT
501 Madison Ave
Cary, NC
US 27513
Contact: WCLS CARY NC
T: (919)379-4102
F: (919)379-4050

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)