



WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Area
[W11470]

Machine Id
JOHN DEERE 290G C046909 (S/N 1FF290GXCDE705934)

Component
Hydraulic System

Fluid
HITACHI HYDRAULIC SUPER EX 46HN (--- GAL)

RECOMMENDATION

Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil. (Customer Sample Comment: W11470)

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0136010	JR0094434	JR0046351
Sample Date		Client Info		09 Aug 2022	27 Jul 2021	13 Apr 2020
Machine Age	hrs	Client Info		7609	6509	5292
Oil Age	hrs	Client Info		3600	2500	292
Filter Age	hrs	Client Info		1400	450	292
Oil Changed		Client Info		Not Chngd	Not Chngd	Not Chngd
Filter Changed		Client Info		Changed	Not Chngd	Not Chngd
Sample Status				ABNORMAL	ABNORMAL	ATTENTION

WEAR

The aluminum level is abnormal. All other component wear rates are normal.

Test	UOM	Method	Limit/Abn	Current	History1	History2
PQ		ASTM D8184	>50	16	20	15
Iron	ppm	ASTM D5185m	>32	25	16	8
Chromium	ppm	ASTM D5185m	>9	3	1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m		0	0	<1
Aluminum	ppm	ASTM D5185m	>9	▲ 10	4	2
Lead	ppm	ASTM D5185m	>28	<1	<1	0
Copper	ppm	ASTM D5185m	>50	2	2	3
Tin	ppm	ASTM D5185m	>5	<1	0	<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

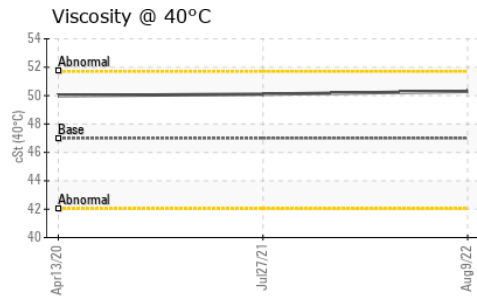
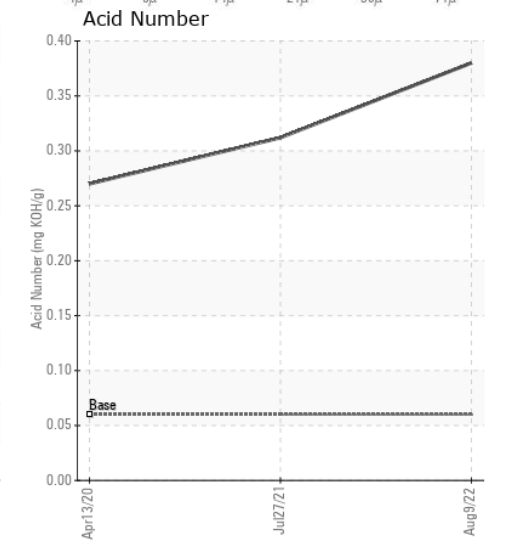
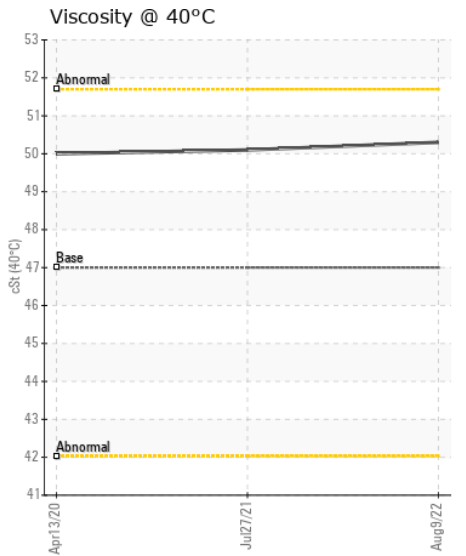
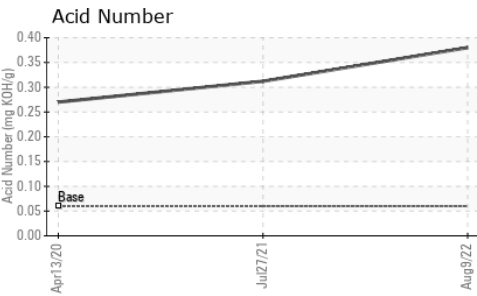
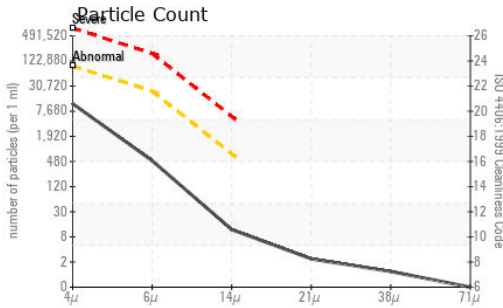
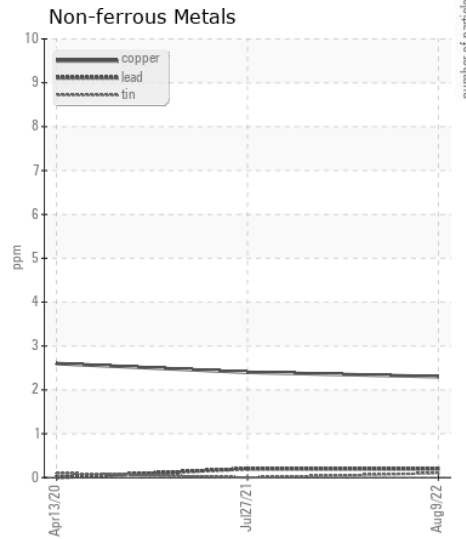
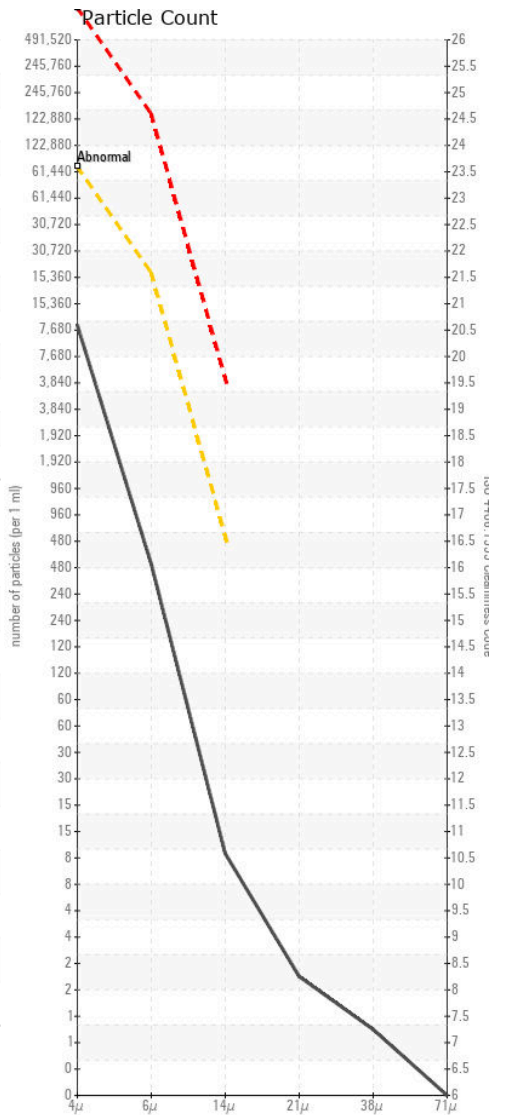
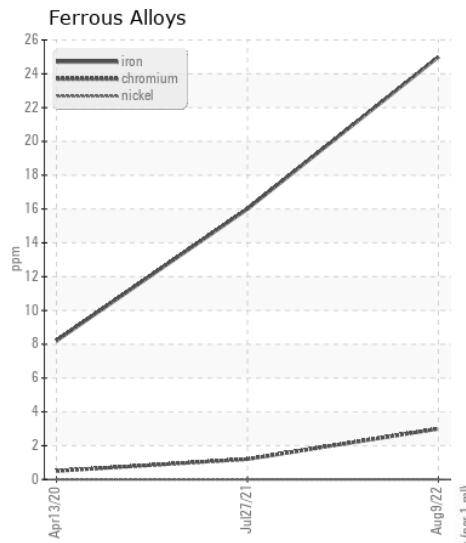
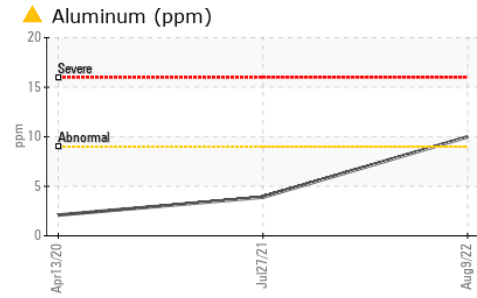
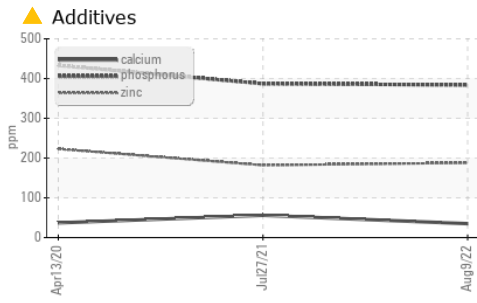
There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

Silicon	ppm	ASTM D5185m	>11	6	3	2
Potassium	ppm	ASTM D5185m	>20	3	2	1
Water		WC Method	>0.075	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>80000	10083	5241	● 8154
Particles >6µm		ASTM D7647	>20000	442	366	676
Particles >14µm		ASTM D7647	>640	10	20	25
Particles >21µm		ASTM D7647	>160	2	8	5
Particles >38µm		ASTM D7647	>40	1	0	0
Particles >71µm		ASTM D7647	>10	0	0	0
Oil Cleanliness		ISO 4406 (c)	>23/21/16	21/16/10	20/16/11	● 20/17/12
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	>0.075	NEG	NEG	NEG

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m	>21	0	<1	0
Boron	ppm	ASTM D5185m		1	2	2
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		<1	<1	<1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		2	2	2
Calcium	ppm	ASTM D5185m		35	56	37
Phosphorus	ppm	ASTM D5185m	827	384	387	433
Zinc	ppm	ASTM D5185m	0	▲ 188	▲ 182	223
Sulfur	ppm	ASTM D5185m	13	484	439	472
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	0.38	0.312	0.270
Visc @ 40°C	cSt	ASTM D445	47	50.3	50.1	50.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0136010 **Received** : 10 Aug 2022
Lab Number : 05613765 **Tested** : 11 Aug 2022
Unique Number : 10088259 **Diagnosed** : 12 Aug 2022 - Jonathan Hester
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)

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