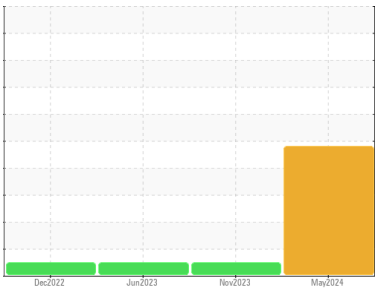
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
Store 8 - Pikeville [RO#149501]
Machine Id
JOHN DEERE 210G 1FF210GXANF530257
Component
Hydraulic System
Fluid
HITACHI HYDRAULIC SUPER EX 46HN (63 GAL)

DIAGNOSIS

Recommendation
We advise that you check all areas where dirt can enter the system. Recommend drain oil if not already done. Reduce drain interval to 2000 hours or drain and flush and use recommended zinc free oil. The filter change at the time of sampling has been noted.

Wear
The iron level is abnormal.

Contamination
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

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		**LEC0049944**	LEC0045385	LEC0037435
Sample Date		Client Info		**13 May 2024**	09 Nov 2023	29 Jun 2023
Machine Age	hrs	Client Info		**843**	532	412
Oil Age	hrs	Client Info		**431**	120	412
Oil Changed		Client Info		**Not Changd**	Not Changd	Changed
Sample Status				**ABNORMAL**	NORMAL	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	**29**	12	10
Iron	ppm	ASTM D5185m	>32	▲ **26**	<1	2
Chromium	ppm	ASTM D5185m	>9	**0**	0	0
Nickel	ppm	ASTM D5185m	>5	**0**	0	0
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m		**<1**	0	0
Aluminum	ppm	ASTM D5185m	>9	● **4**	0	<1
Lead	ppm	ASTM D5185m	>28	**0**	0	0
Copper	ppm	ASTM D5185m	>50	**16**	2	4
Tin	ppm	ASTM D5185m	>5	**0**	0	<1
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

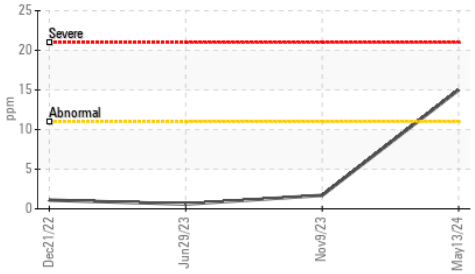
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**8**	0	0
Barium	ppm	ASTM D5185m		**<1**	0	0
Molybdenum	ppm	ASTM D5185m		**<1**	0	0
Manganese	ppm	ASTM D5185m		**<1**	<1	<1
Magnesium	ppm	ASTM D5185m		**14**	0	0
Calcium	ppm	ASTM D5185m		**878**	0	9
Phosphorus	ppm	ASTM D5185m	827	**545**	545	568
Zinc	ppm	ASTM D5185m	0	▲ **568**	9	51
Sulfur	ppm	ASTM D5185m	13	**2287**	0	240

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>11	▲ **15**	2	<1
Sodium	ppm	ASTM D5185m	>21	**7**	<1	<1
Potassium	ppm	ASTM D5185m	>20	**2**	1	2

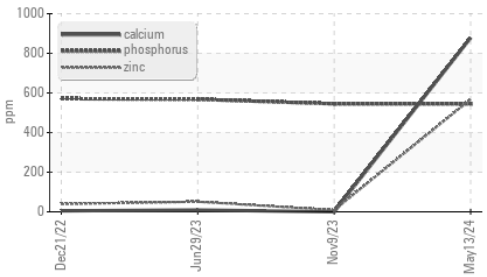
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>80000	● **114109**	2495	2784
Particles >6µm		ASTM D7647	>20000	● **31690**	166	244
Particles >14µm		ASTM D7647	>640	**301**	15	11
Particles >21µm		ASTM D7647	>160	**51**	4	2
Particles >38µm		ASTM D7647	>40	**1**	0	0
Particles >71µm		ASTM D7647	>10	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>23/21/16	● **24/22/15**	18/15/11	19/15/11

OIL ANALYSIS REPORT

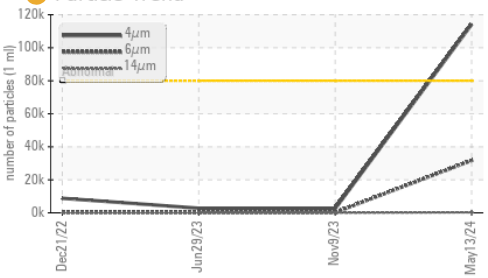
Silicon (ppm)



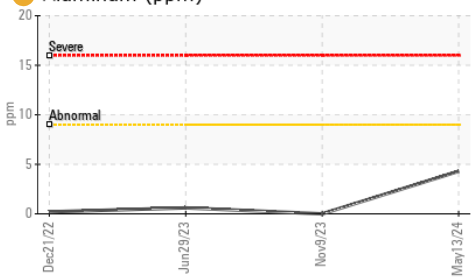
Additives



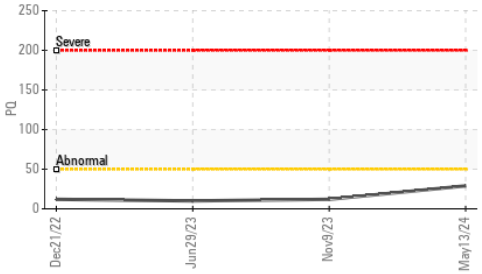
Particle Trend



Aluminum (ppm)



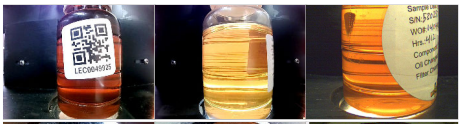
PQ



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.06	**0.68**	0.11	0.13

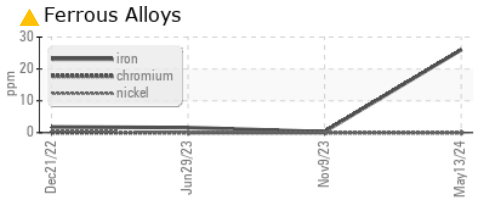
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**LIGHT**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	47	**42.0**	47.2	46.5

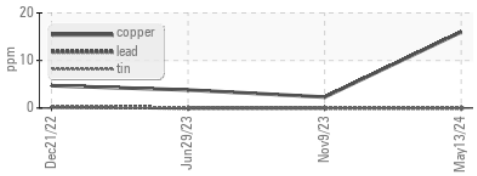
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

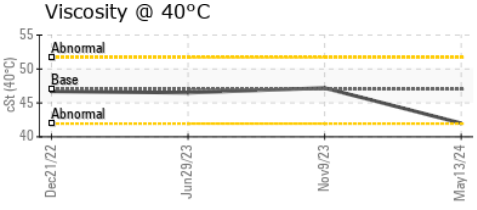
Ferrous Alloys



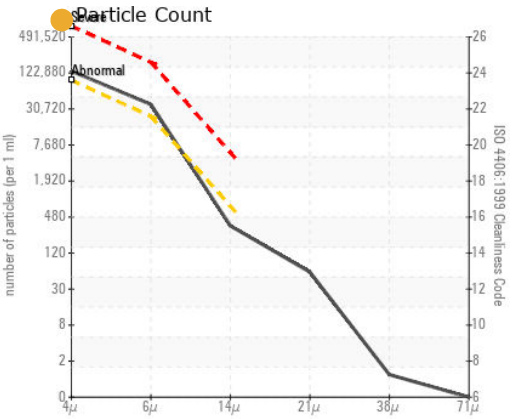
Non-ferrous Metals



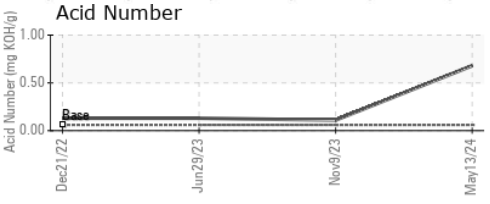
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LEC0049944
Lab Number : 06181250
Unique Number : 11032576
Test Package : CONST (Additional Tests: PQ)

Received : 16 May 2024
Tested : 17 May 2024
Diagnosed : 20 May 2024 - Jonathan Hester

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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