PROBLEM SUMMARY

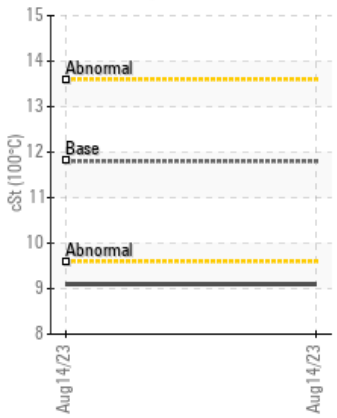
Sample Rating Trend

WEAR

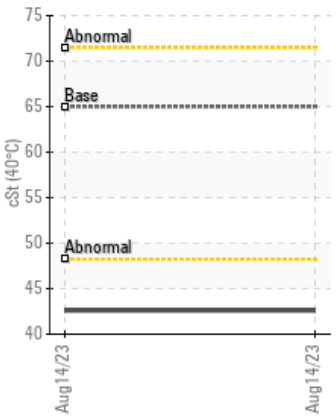
Machine Id
JOHN DEERE 51-21
Component
Hydraulic System
Fluid
JOHN DEERE HYDRAU (120 LTR)

COMPONENT CONDITION SUMMARY

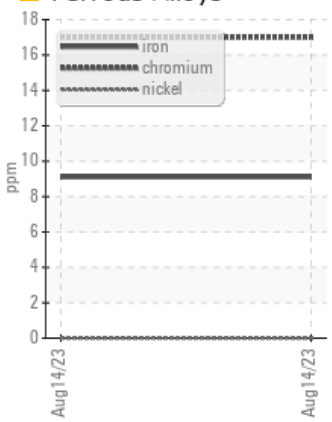
▲ Viscosity @ 100°C



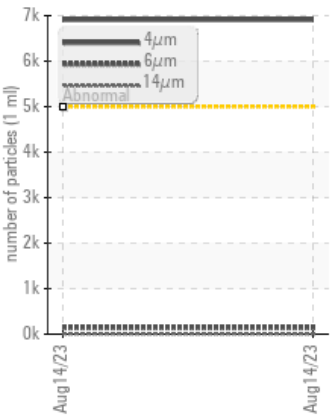
▲ Viscosity @ 40°C



▲ Ferrous Alloys



▲ Particle Trend



RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**ABNORMAL**	---	---
Chromium	ppm	ASTM D5185(m)	>10	▲ **17**	---	---
Particles >4µm		ASTM D7647	>5000	▲ **6910**	---	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **20/14/10**	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	65	▲ **42.6**	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	11.8	▲ **9.1**	---	---

Customer Id: EQUMID
Sample No.: PC0061420
Lab Number: 02576425
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

OIL ANALYSIS REPORT

Sample Rating Trend

WEAR

Machine Id
JOHN DEERE 51-21
Component
Hydraulic System
Fluid
JOHN DEERE HYDRAU (120 LTR)

DIAGNOSIS

Recommendation
We recommend that you drain the oil from the component if this has not already been done. The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
Chromium ppm levels are abnormal. Ring wear is indicated.

Contamination
There is a light amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition
Viscosity of sample indicates oil is within ISO 46 range, advise investigate. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC0061420**	---	---
Sample Date		Client Info		**14 Aug 2023**	---	---
Machine Age	hrs	Client Info		**3201**	---	---
Oil Age	hrs	Client Info		**3201**	---	---
Oil Changed		Client Info		**Not Changd**	---	---
Sample Status				**ABNORMAL**	---	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**9**	---	---
Chromium	ppm	ASTM D5185(m)	>10	▲ **17**	---	---
Nickel	ppm	ASTM D5185(m)	>10	**0**	---	---
Titanium	ppm	ASTM D5185(m)		**0**	---	---
Silver	ppm	ASTM D5185(m)		**0**	---	---
Aluminum	ppm	ASTM D5185(m)	>10	**<1**	---	---
Lead	ppm	ASTM D5185(m)	>10	**<1**	---	---
Copper	ppm	ASTM D5185(m)	>75	**2**	---	---
Tin	ppm	ASTM D5185(m)	>10	**0**	---	---
Antimony	ppm	ASTM D5185(m)		**0**	---	---
Vanadium	ppm	ASTM D5185(m)		**0**	---	---
Beryllium	ppm	ASTM D5185(m)		**0**	---	---
Cadmium	ppm	ASTM D5185(m)		**0**	---	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**<1**	---	---
Barium	ppm	ASTM D5185(m)		**0**	---	---
Molybdenum	ppm	ASTM D5185(m)		**<1**	---	---
Manganese	ppm	ASTM D5185(m)		**<1**	---	---
Magnesium	ppm	ASTM D5185(m)		**4**	---	---
Calcium	ppm	ASTM D5185(m)	87	**139**	---	---
Phosphorus	ppm	ASTM D5185(m)	727	**669**	---	---
Zinc	ppm	ASTM D5185(m)	900	**820**	---	---
Sulfur	ppm	ASTM D5185(m)	1500	**1587**	---	---
Lithium	ppm	ASTM D5185(m)		**<1**	---	---

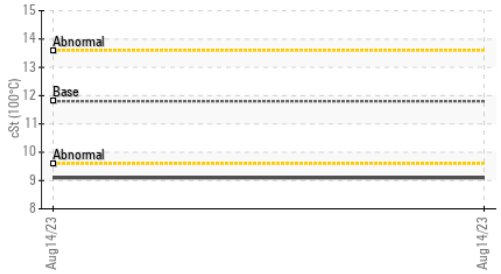
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	**2**	---	---
Sodium	ppm	ASTM D5185(m)		**2**	---	---
Potassium	ppm	ASTM D5185(m)	>20	**6**	---	---

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **6910**	---	---
Particles >6µm		ASTM D7647	>1300	**145**	---	---
Particles >14µm		ASTM D7647	>160	**8**	---	---
Particles >21µm		ASTM D7647	>40	**2**	---	---
Particles >38µm		ASTM D7647	>10	**0**	---	---
Particles >71µm		ASTM D7647	>3	**0**	---	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **20/14/10**	---	---

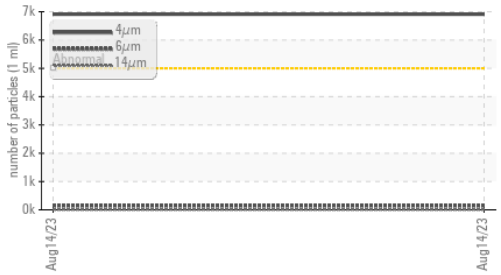
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	1.0	**0.84**	---	---

OIL ANALYSIS REPORT

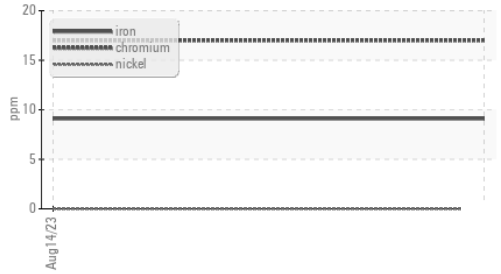
Viscosity @ 100°C



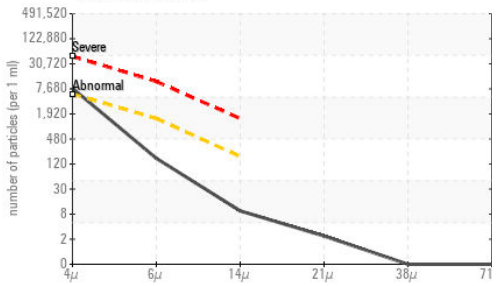
Particle Trend



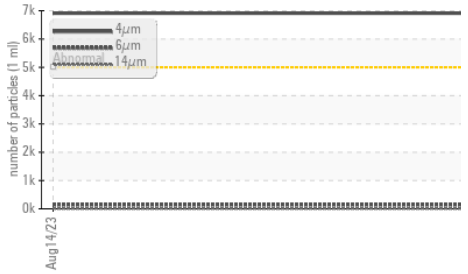
Ferrous Alloys



Particle Count

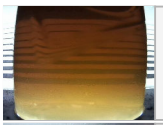


Particle Trend



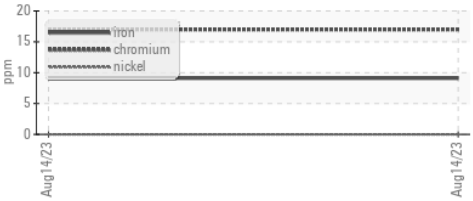
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**NONE**	---	---
Yellow Metal	scalar	Visual*	NONE	**NONE**	---	---
Precipitate	scalar	Visual*	NONE	**NONE**	---	---
Silt	scalar	Visual*	NONE	**NONE**	---	---
Debris	scalar	Visual*	NONE	**NONE**	---	---
Sand/Dirt	scalar	Visual*	NONE	**NONE**	---	---
Appearance	scalar	Visual*	NORML	**NORML**	---	---
Odor	scalar	Visual*	NORML	**NORML**	---	---
Emulsified Water	scalar	Visual*	>0.1	**NEG**	---	---
Free Water	scalar	Visual*		**NEG**	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	65	▲ **42.6**	---	---
Visc @ 100°C	cSt	ASTM D7279(m)	11.8	▲ **9.1**	---	---
Viscosity Index (VI)	Scale	ASTM D2270*	178	**202**	---	---

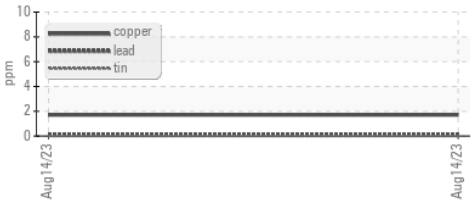
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color				*no image*	*no image*
Bottom				*no image*	*no image*

GRAPHS

Ferrous Alloys

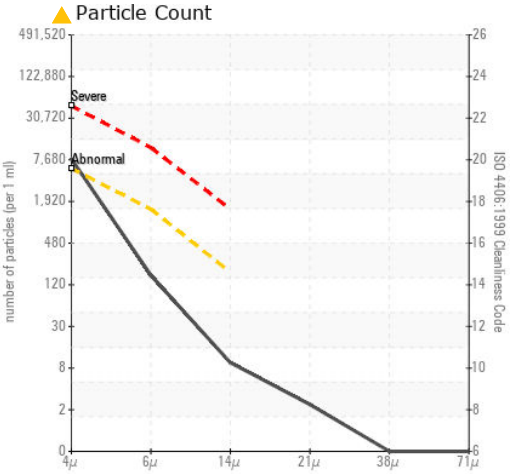


Non-ferrous Metals

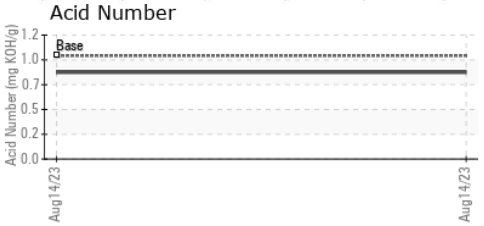


Viscosity @ 40°C

Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **TRUCK AND EQUIPMENT SOLUTION**
Sample No. : PC0061420 **Received** : 17 Aug 2023 2 BERTRAM INDUSTRIAL PKWY.
Lab Number : 02576425 **Diagnosed** : 23 Aug 2023 MIDHURST, ON
Unique Number : 5629485 **Diagnostician** : Kevin Marson CA L9X 1L2
Test Package : IND 2 (Additional Tests: KV100, TAN MAN, VI) Contact: John Irwin

To discuss this sample report, contact Customer Service at 1-800-268-2131. jirwin@arnottgroup.com
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab. T: (705)792-7620
Validity of results and interpretation are based on the sample and information as supplied. F: (705)725-5425