



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Area

**[W68062]**

Machine Id

**HITACHI 470LC HCMJAG60J00061713**

Component

**Diesel Engine**

Fluid

**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (9 GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor. ( Customer Sample Comment: W68062 )

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0219752</b>	JR0203894	JR0192896
Sample Date		Client Info		<b>20 Jun 2024</b>	15 Feb 2024	04 Jan 2024
Machine Age	hrs	Client Info		<b>29877</b>	25477	6892
Oil Age	hrs	Client Info		<b>4400</b>	18585	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>27</b>	2	0
Chromium	ppm	ASTM D5185m	>20	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	2
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>20	<b>3</b>	3	2
Lead	ppm	ASTM D5185m	>40	<b>0</b>	0	<1
Copper	ppm	ASTM D5185m	>330	<b>3</b>	6	2
Tin	ppm	ASTM D5185m	>15	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

### CONTAMINATION

There is no indication of any contamination in the oil.

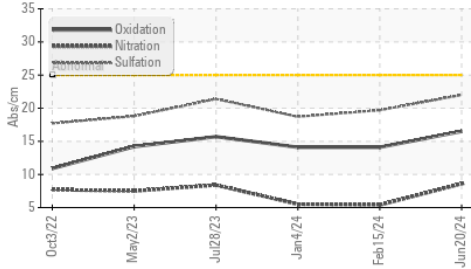
Silicon	ppm	ASTM D5185m	>25	<b>9</b>	7	3
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	3	0
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.3</b>	0	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.6</b>	5.4	5.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.0</b>	19.7	18.7
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

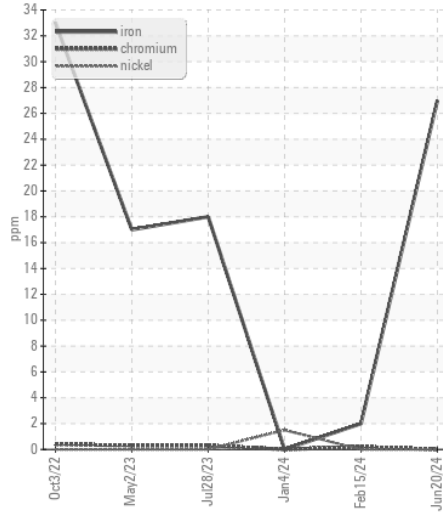
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	0	0
Boron	ppm	ASTM D5185m		<b>180</b>	273	8
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	4	0
Molybdenum	ppm	ASTM D5185m		<b>231</b>	224	69
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>821</b>	680	1030
Calcium	ppm	ASTM D5185m		<b>1577</b>	1201	1071
Phosphorus	ppm	ASTM D5185m		<b>947</b>	866	1052
Zinc	ppm	ASTM D5185m		<b>1179</b>	924	1354
Sulfur	ppm	ASTM D5185m		<b>3437</b>	3090	3376
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.5</b>	14.1	14.1
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>8.9</b>	9.8	10.0
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.5</b>	14.6	13.0

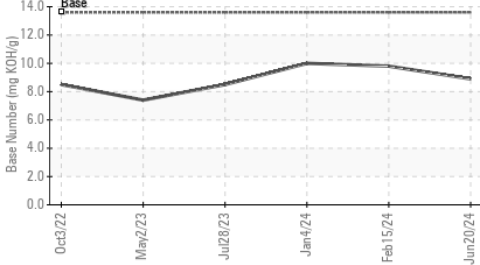
**FT-IR (Direct Trend)**



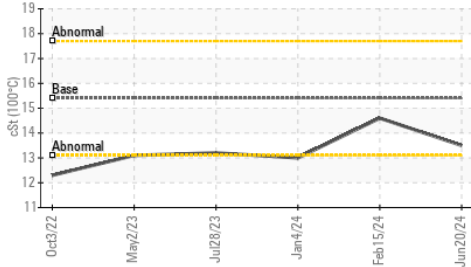
**Ferrous Alloys**



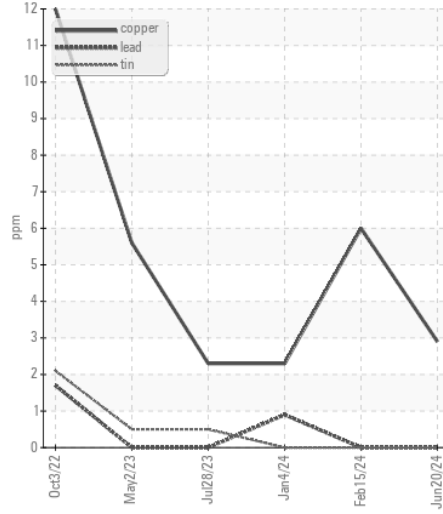
**Base Number**



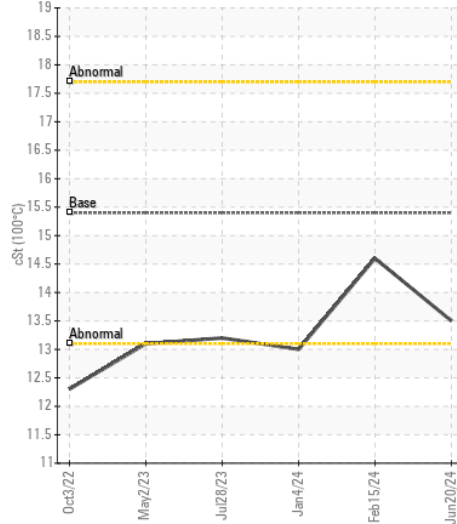
**Viscosity @ 100°C**



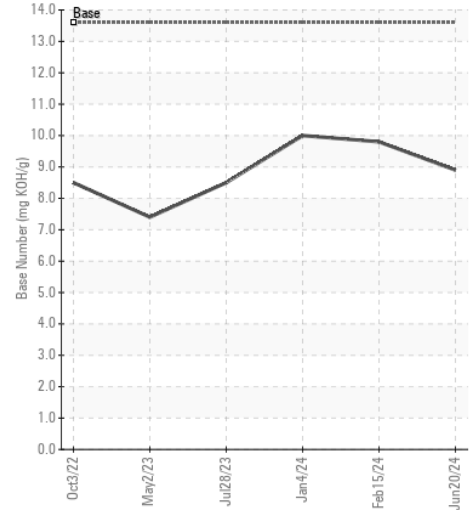
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0219752 **Received** : 24 Jun 2024  
**Lab Number** : 06218018 **Tested** : 25 Jun 2024  
**Unique Number** : 11096215 **Diagnosed** : 25 Jun 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: TBN )

**JRE - CHARLOTTE**  
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 F: (704)596-6198

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)