



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



Area  
**[W68111]**  
 Machine Id  
**JOHN DEERE 310E 1DW310EXKHF682023**  
 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: W68111 )

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0219754</b>	JR0205639	JR0161227
Sample Date		Client Info		<b>25 Jun 2024</b>	13 Mar 2024	03 May 2023
Machine Age	hrs	Client Info		<b>7837</b>	7306	5460
Oil Age	hrs	Client Info		<b>531</b>	1846	500
Filter Age	hrs	Client Info		<b>0</b>	0	500
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	>51	<b>20</b>	40	14
Chromium	ppm	ASTM D5185m	>11	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185m	>5	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>31	<b>9</b>	4	3
Lead	ppm	ASTM D5185m	>26	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>26	<b>1</b>	2	0
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
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.

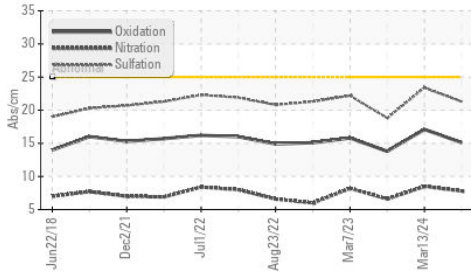
Silicon	ppm	ASTM D5185m	>22	<b>10</b>	8	6
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	0	<1
Fuel		WC Method	>2.1	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.21	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.3</b>	0.6	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.8</b>	8.5	6.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.3</b>	23.4	18.8
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	>0.21	<b>NEG</b>	NEG	NEG

### FLUID CONDITION

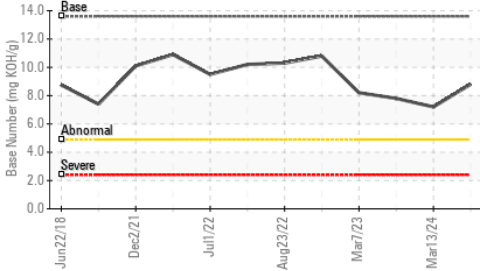
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>31	<b>5</b>	2	1
Boron	ppm	ASTM D5185m		<b>214</b>	96	265
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>250</b>	199	228
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>839</b>	728	789
Calcium	ppm	ASTM D5185m		<b>1462</b>	1480	1397
Phosphorus	ppm	ASTM D5185m		<b>937</b>	915	887
Zinc	ppm	ASTM D5185m		<b>1158</b>	1070	1068
Sulfur	ppm	ASTM D5185m		<b>3376</b>	3097	3484
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.1</b>	17.1	13.8
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>8.8</b>	7.2	7.8
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.2</b>	12.9	13.5

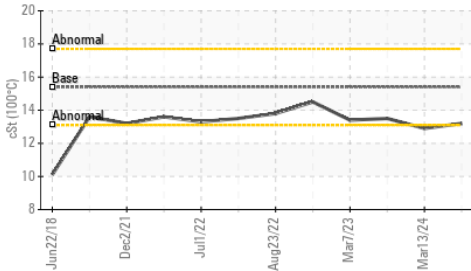
**FT-IR (Direct Trend)**



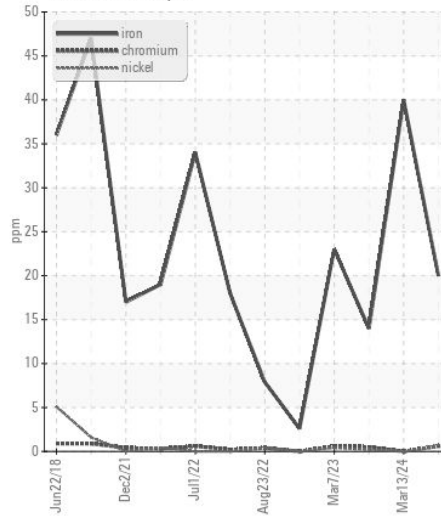
**Base Number**



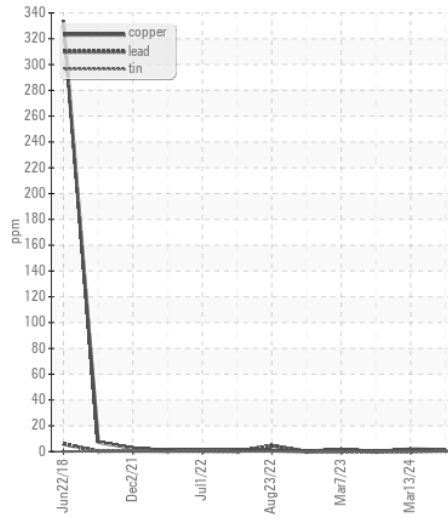
**Viscosity @ 100°C**



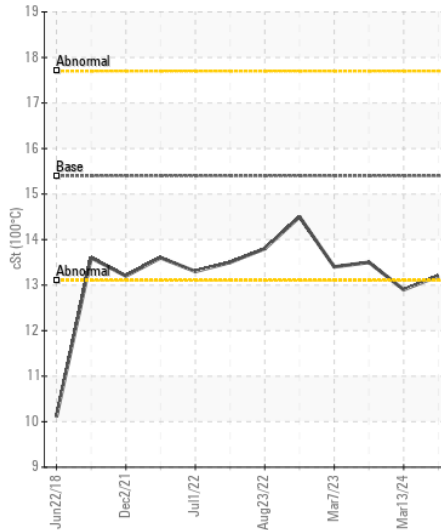
**Ferrous Alloys**



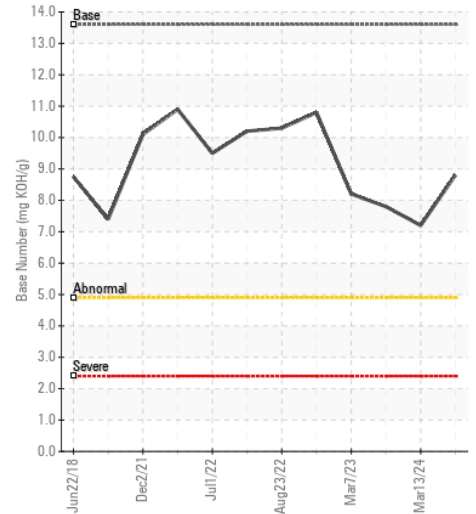
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0219754 **Received** : 27 Jun 2024  
**Lab Number** : 06222024 **Tested** : 27 Jun 2024  
**Unique Number** : 11100221 **Diagnosed** : 28 Jun 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: TBN )

**JRE - CHARLOTTE**  
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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)