



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



Machine Id  
**JOHN DEERE 310E 1DW310EXCJF692990**

Component  
**Diesel Engine**

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

### RECOMMENDATION

Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0138191</b>	JR0114955	JRMC401642
Sample Date		Client Info		<b>13 Oct 2022</b>	27 Mar 2022	05 Jan 2021
Machine Age	hrs	Client Info		<b>2901</b>	2558	1475
Oil Age	hrs	Client Info		<b>343</b>	0	0
Filter Age	hrs	Client Info		<b>343</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	N/A	N/A
Filter Changed		Client Info		<b>Changed</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	ABNORMAL	ABNORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	<b>24</b>	▲ 64	37
Chromium	ppm	ASTM D5185m	>11	<b>0</b>	1	1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	1	2
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>31	<b>3</b>	7	5
Lead	ppm	ASTM D5185m	>26	<b>0</b>	<1	1
Copper	ppm	ASTM D5185m	>26	<b>&lt;1</b>	3	▲ 42
Tin	ppm	ASTM D5185m	>4	<b>0</b>	<1	2
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<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.

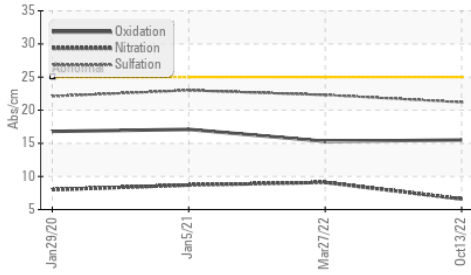
Silicon	ppm	ASTM D5185m	>22	<b>6</b>	6	6
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	0	3
Fuel		WC Method	>2.1	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.21	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.4	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.6</b>	9.1	8.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.2</b>	22.3	23
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

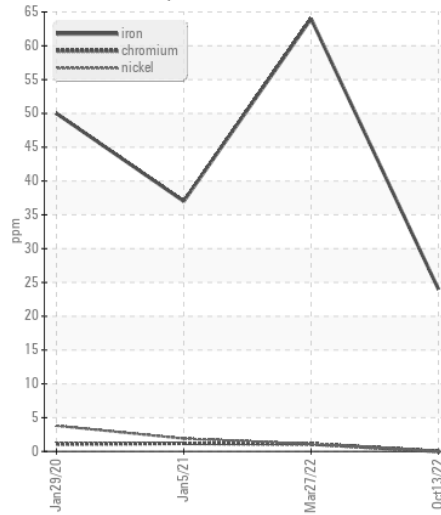
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>31	<b>0</b>	2	3
Boron	ppm	ASTM D5185m		<b>259</b>	237	198
Barium	ppm	ASTM D5185m		<b>3</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>258</b>	242	239
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	1	<1
Magnesium	ppm	ASTM D5185m		<b>748</b>	848	807
Calcium	ppm	ASTM D5185m		<b>1383</b>	1578	1436
Phosphorus	ppm	ASTM D5185m		<b>880</b>	895	867
Zinc	ppm	ASTM D5185m		<b>1038</b>	1085	1091
Sulfur	ppm	ASTM D5185m		<b>3527</b>	2657	2477
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.5</b>	15.3	17.1
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>11.5</b>	10.3	8.6
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.8</b>	13.6	13.0

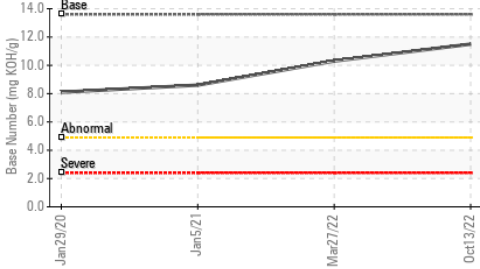
**FT-IR (Direct Trend)**



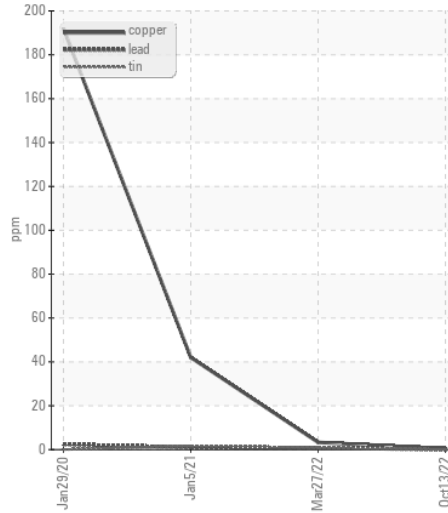
**Ferrous Alloys**



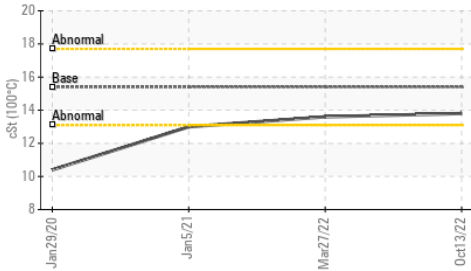
**Base Number**



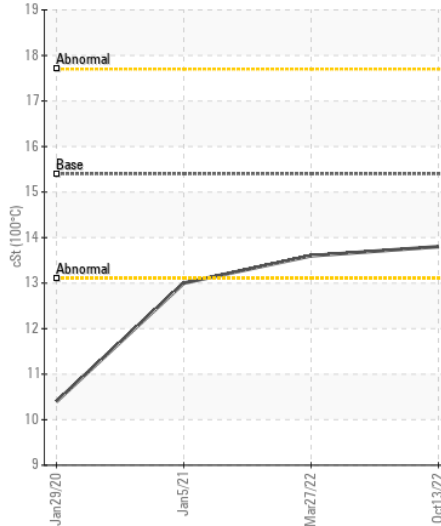
**Non-ferrous Metals**



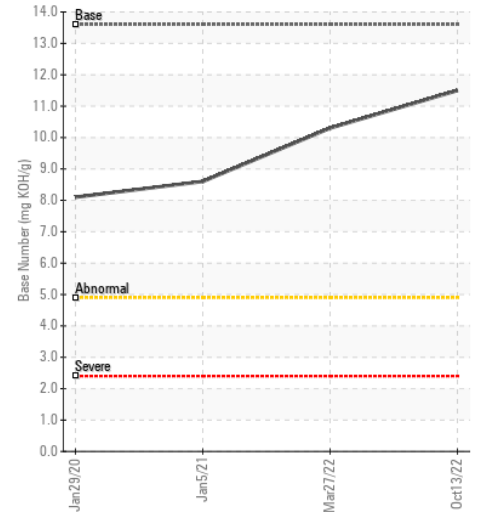
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0138191 **Received** : 17 Oct 2022  
**Lab Number** : 05668013 **Tested** : 18 Oct 2022  
**Unique Number** : 10177583 **Diagnosed** : 18 Oct 2022 - Wes Davis  
**Test Package** : CONST ( Additional Tests: TBN )

**L2 CONSTRUCTION**  
 1950 BELLWOOD RD  
 RICHMOND, VA  
 US 23237

Contact: DANIEL LIPFORD  
 daniell@l2constructionservices.com

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)

T: (804)275-2428

F: