



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



Machine Id  
**JOHN DEERE 410E 1DW410EBTMF708636**

Component  
**Diesel Engine**

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

### RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0205486</b>	JR0188672	JR0170893
Sample Date		Client Info		<b>22 Apr 2024</b>	01 Nov 2023	27 Jun 2023
Machine Age	hrs	Client Info		<b>4644</b>	4077	3502
Oil Age	hrs	Client Info		<b>567</b>	575	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>ATTENTION</b>	ATTENTION	NORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	<b>13</b>	15	14
Chromium	ppm	ASTM D5185m	>11	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	1	3
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>31	<b>5</b>	6	4
Lead	ppm	ASTM D5185m	>26	<b>3</b>	5	5
Copper	ppm	ASTM D5185m	>26	<b>5</b>	6	5
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</b>	1	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</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.

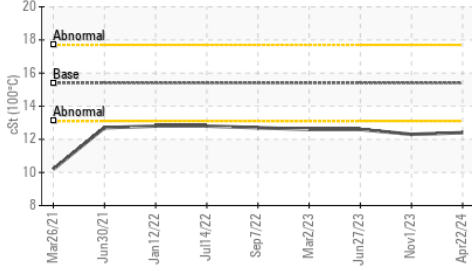
Silicon	ppm	ASTM D5185m	>22	<b>7</b>	10	6
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	2
Fuel		WC Method	>2.1	<b>&lt;1.0</b>	2.8	<1.0
Water		WC Method	>0.21	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.3</b>	0.3	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.5</b>	9.5	10.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.8</b>	24.3	24.6
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

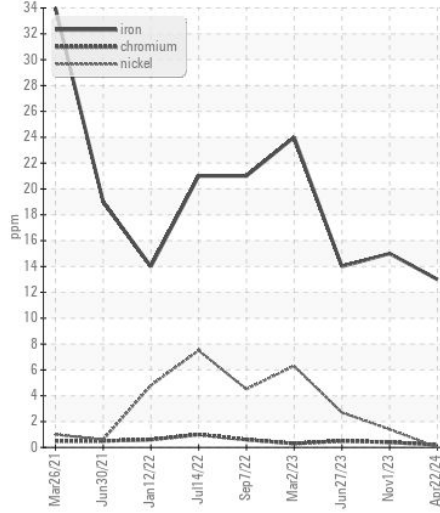
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m	>31	<b>6</b>	7	4
Boron	ppm	ASTM D5185m		<b>161</b>	90	115
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>238</b>	227	230
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>764</b>	719	831
Calcium	ppm	ASTM D5185m		<b>1383</b>	1348	1499
Phosphorus	ppm	ASTM D5185m		<b>907</b>	712	886
Zinc	ppm	ASTM D5185m		<b>1097</b>	921	1124
Sulfur	ppm	ASTM D5185m		<b>3428</b>	2599	3671
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>18.2</b>	19.1	19.9
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>7.7</b>	7.2	7.6
Visc @ 100°C	cSt	ASTM D445	15.4	<b>12.4</b>	12.3	12.6

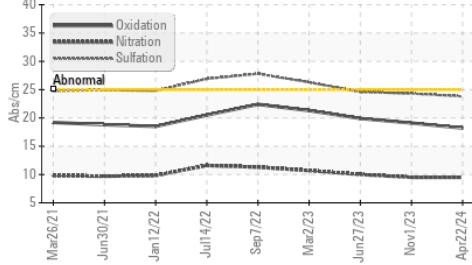
● Viscosity @ 100°C



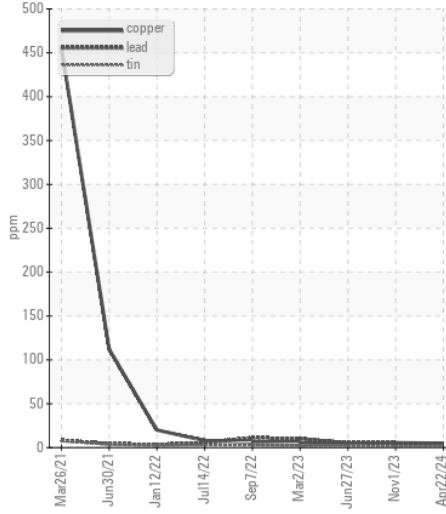
Ferrous Alloys



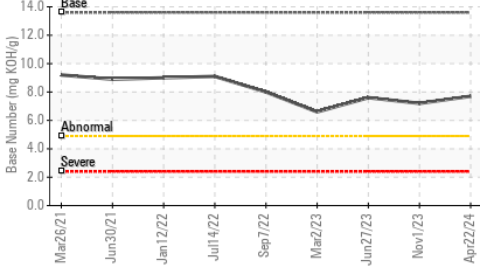
FT-IR (Direct Trend)



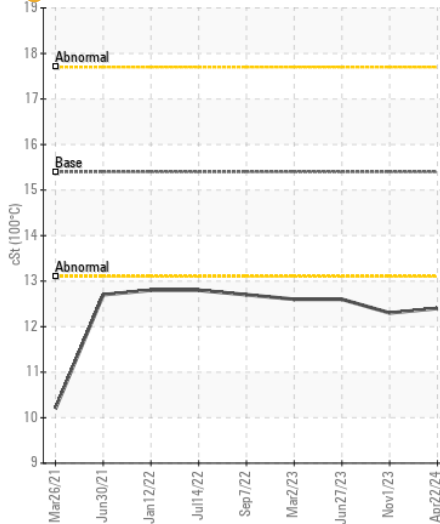
Non-ferrous Metals



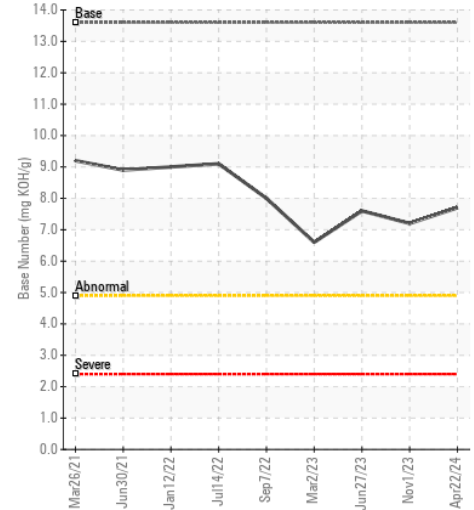
Base Number



● Viscosity @ 100°C



Base Number



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0205486 **Received** : 23 Apr 2024  
**Lab Number** : 06157420 **Tested** : 24 Apr 2024  
**Unique Number** : 10992843 **Diagnosed** : 25 Apr 2024 - Sean Felton  
**Test Package** : CONST ( Additional Tests: TBN )

**JRE - CHARLOTTE**  
 9550 STATESVILLE ROAD  
 CHARLOTTE, NC  
 US 28269

Contact: CHARLOTTE SHOP  
 myoung@jamesriverequipment.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)

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