



Machine Id  
**JOHN DEERE 644 P 1DW644PATPLX19041**  
Component  
**Diesel Engine**  
Fluid  
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (30 QTS)**

### RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0225909</b>	JR0103228	---
Sample Date		Client Info		<b>14 Jul 2024</b>	17 Mar 2024	---
Machine Age	hrs	Client Info		<b>1013</b>	441	---
Oil Age	hrs	Client Info		<b>572</b>	441	---
Filter Age	hrs	Client Info		<b>0</b>	0	---
Oil Changed		Client Info		<b>Changed</b>	Changed	---
Filter Changed		Client Info		<b>Changed</b>	Changed	---
Sample Status				<b>ABNORMAL</b>	ABNORMAL	---

### WEAR

The copper level has decreased, but is still abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core). All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	<b>29</b>	25	---
Chromium	ppm	ASTM D5185m	>11	<b>2</b>	0	---
Nickel	ppm	ASTM D5185m	>5	<b>2</b>	2	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>31	<b>2</b>	2	---
Lead	ppm	ASTM D5185m	>26	<b>&lt;1</b>	3	---
Copper	ppm	ASTM D5185m	>26	<b>▲ 202</b>	<b>▲ 368</b>	---
Tin	ppm	ASTM D5185m	>4	<b>0</b>	0	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	---
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	---

### CONTAMINATION

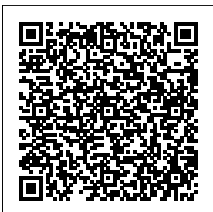
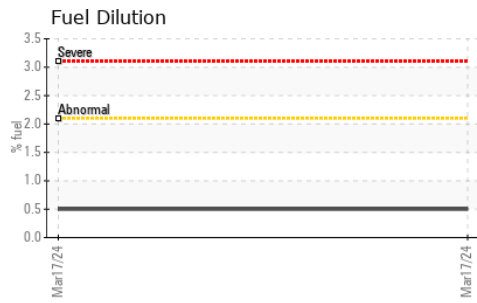
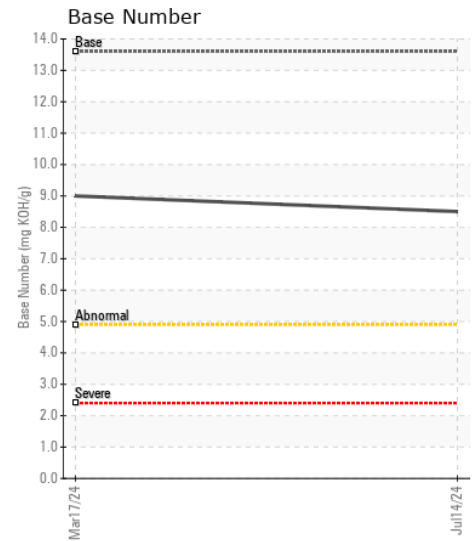
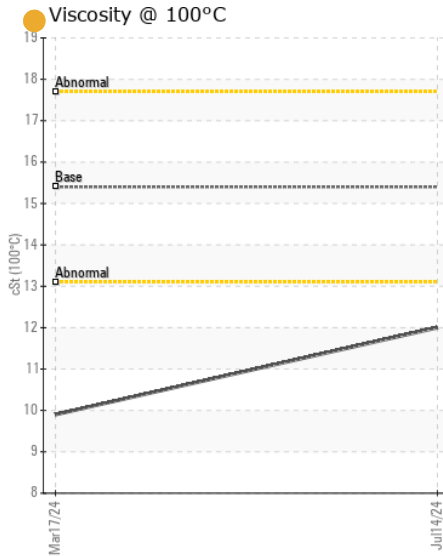
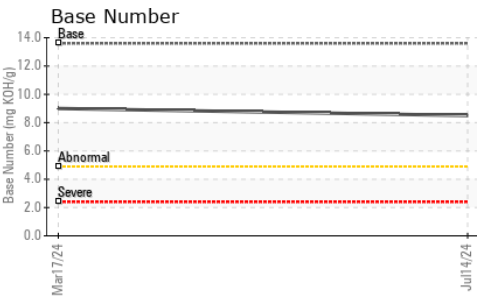
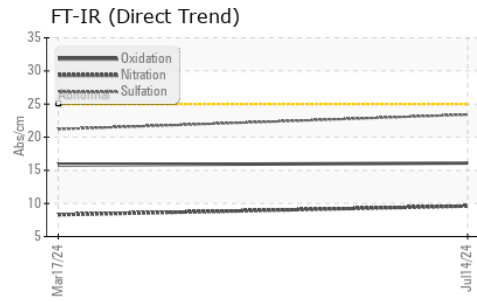
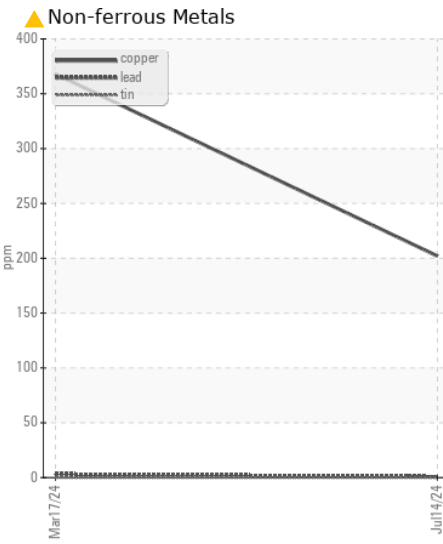
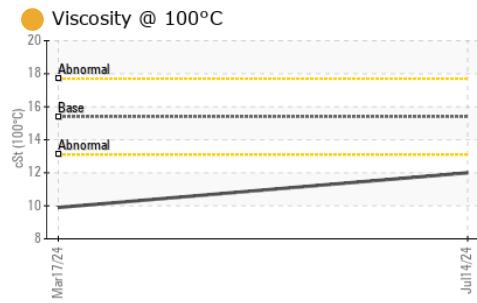
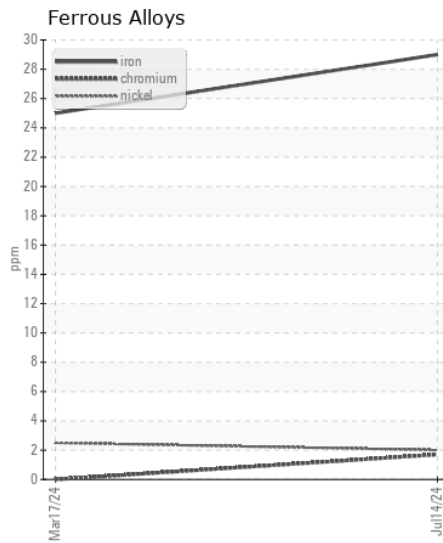
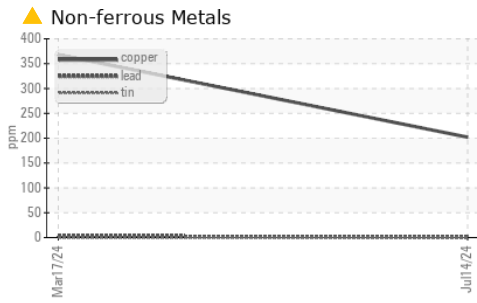
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>22	<b>7</b>	9	---
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	0	---
Fuel	%	ASTM D3524	>2.1	<b>&lt;1.0</b>	0.5	---
Water		WC Method	>0.21	<b>NEG</b>	NEG	---
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>3	<b>1.5</b>	0.3	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.6</b>	8.3	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.4</b>	21.2	---
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	---
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	---
Emulsified Water	scalar	*Visual	>0.21	<b>NEG</b>	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>4</b>	3	---
Boron	ppm	ASTM D5185m		<b>167</b>	229	---
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Molybdenum	ppm	ASTM D5185m		<b>224</b>	258	---
Manganese	ppm	ASTM D5185m		<b>2</b>	5	---
Magnesium	ppm	ASTM D5185m		<b>731</b>	849	---
Calcium	ppm	ASTM D5185m		<b>1380</b>	1453	---
Phosphorus	ppm	ASTM D5185m		<b>828</b>	912	---
Zinc	ppm	ASTM D5185m		<b>954</b>	1038	---
Sulfur	ppm	ASTM D5185m		<b>2962</b>	3434	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.1</b>	15.8	---
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>8.5</b>	9.0	---
Visc @ 100°C	cSt	ASTM D445	15.4	<b>● 12.0</b>	● 9.9	---



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0225909 **Received** : 16 Jul 2024  
**Lab Number** : 06237555 **Tested** : 18 Jul 2024  
**Unique Number** : 11126389 **Diagnosed** : 18 Jul 2024 - Sean Felton  
**Test Package** : CONST ( Additional Tests: FuelDilution, Glycol, TBN )

**JRE - GREENVILLE**  
 3604 HIGHWAY 264 E  
 GREENVILLE, NC  
 US 27834-5800

Contact: GREENVILLE SHOP  
 christopher.martin@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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F: