



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

Machine Id  
**JOHN DEERE 644 P 1DW644PAEMLZ11990**  
 Component  
**Diesel Engine**  
 Fluid  
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0218752</b>	JR0185084	---
Sample Date		Client Info		<b>11 Jun 2024</b>	06 Oct 2023	---
Machine Age	hrs	Client Info		<b>1985</b>	1470	---
Oil Age	hrs	Client Info		<b>515</b>	578	---
Filter Age	hrs	Client Info		<b>515</b>	578	---
Oil Changed		Client Info		<b>Changed</b>	Changed	---
Filter Changed		Client Info		<b>Changed</b>	Changed	---
Sample Status				<b>NORMAL</b>	NORMAL	---

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	<b>9</b>	3	---
Chromium	ppm	ASTM D5185m	>11	<b>&lt;1</b>	1	---
Nickel	ppm	ASTM D5185m	>5	<b>2</b>	2	---
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	---
Aluminum	ppm	ASTM D5185m	>31	<b>4</b>	16	---
Lead	ppm	ASTM D5185m	>26	<b>0</b>	0	---
Copper	ppm	ASTM D5185m	>26	<b>1</b>	2	---
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	---
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	---
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.

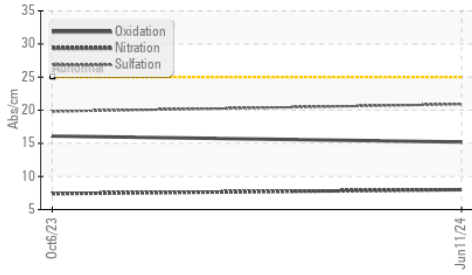
Silicon	ppm	ASTM D5185m	>22	<b>7</b>	4	---
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	4	---
Fuel		WC Method	>2.1	<b>&lt;1.0</b>	<1.0	---
Water		WC Method	>0.21	<b>NEG</b>	NEG	---
Glycol		WC Method		<b>NEG</b>	NEG	---
Soot %	%	*ASTM D7844	>3	<b>0.2</b>	0.2	---
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.0</b>	7.4	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.9</b>	19.8	---
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

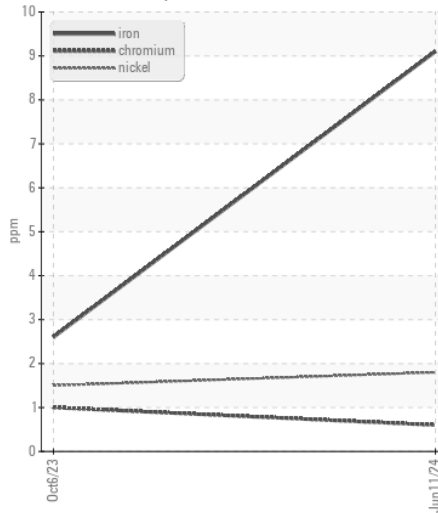
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>31	<b>&lt;1</b>	6	---
Boron	ppm	ASTM D5185m		<b>273</b>	220	---
Barium	ppm	ASTM D5185m		<b>0</b>	2	---
Molybdenum	ppm	ASTM D5185m		<b>232</b>	1	---
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	---
Magnesium	ppm	ASTM D5185m		<b>742</b>	113	---
Calcium	ppm	ASTM D5185m		<b>1424</b>	2482	---
Phosphorus	ppm	ASTM D5185m		<b>828</b>	1214	---
Zinc	ppm	ASTM D5185m		<b>1074</b>	1478	---
Sulfur	ppm	ASTM D5185m		<b>3261</b>	4748	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.2</b>	16.1	---
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>8.7</b>	6.5	---
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.4</b>	14.3	---

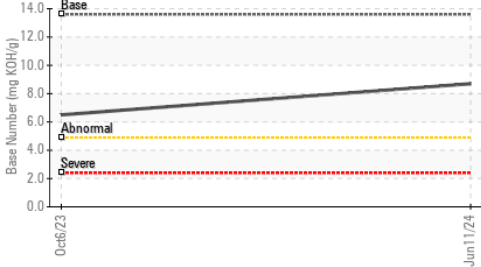
FT-IR (Direct Trend)



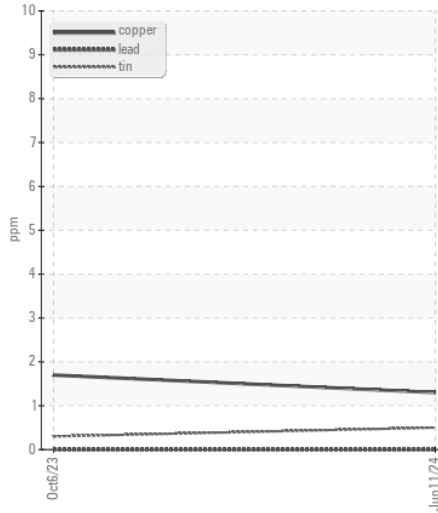
Ferrous Alloys



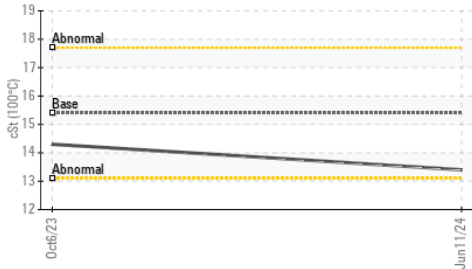
Base Number



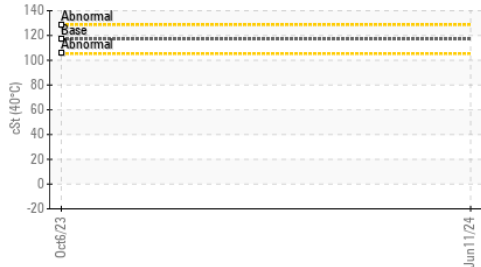
Non-ferrous Metals



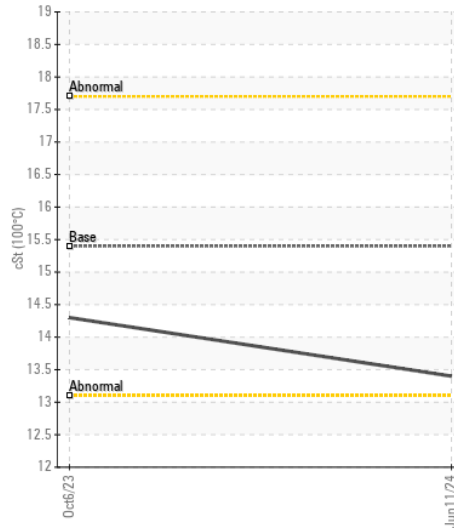
Viscosity @ 100°C



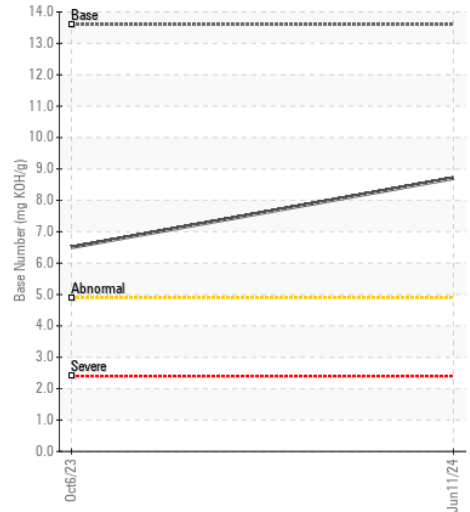
Viscosity @ 40°C



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
 Sample No. : JR0218752 Received : 14 Jun 2024  
 Lab Number : 06209914 Tested : 17 Jun 2024  
 Unique Number : 11082778 Diagnosed : 17 Jun 2024 - Don Baldrige  
 Test Package : CONST ( Additional Tests: KV40, TBN )

JRE - ASHEVILLE  
 101 BRUCE DRIVE  
 ASHEVILLE, NC  
 US 28806

Contact: Randy Warren  
 randy.warren@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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