



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



Area

**[W68055]**

Machine Id

**JOHN DEERE 644K 1DW644KZKDE652005**

Component

**Diesel Engine**

Fluid

**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (5 GAL)**

### RECOMMENDATION

Resample at the next service interval to monitor. ( Customer Sample Comment: W68055 )

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0219730</b>	JR0198307	JR0171091
Sample Date		Client Info		<b>20 Jun 2024</b>	30 Jan 2024	30 Aug 2023
Machine Age	hrs	Client Info		<b>15382</b>	14513	14513
Oil Age	hrs	Client Info		<b>869</b>	14927	1042
Filter Age	hrs	Client Info		<b>0</b>	14927	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	ABNORMAL	ABNORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	<b>8</b>	▲ 54	▲ 85
Chromium	ppm	ASTM D5185m	>11	<b>0</b>	2	2
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	1	2
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>31	<b>2</b>	5	6
Lead	ppm	ASTM D5185m	>26	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>26	<b>&lt;1</b>	<1	3
Tin	ppm	ASTM D5185m	>4	<b>0</b>	<1	<1
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.

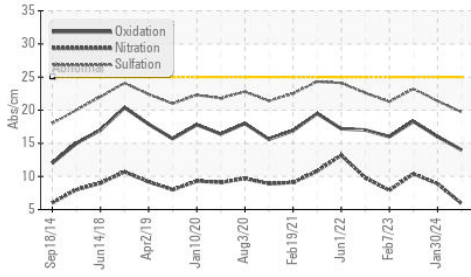
Silicon	ppm	ASTM D5185m	>22	<b>6</b>	9	13
Potassium	ppm	ASTM D5185m	>20	<b>7</b>	20	22
Fuel		WC Method	>2.1	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.21	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	0.0
Soot %	%	*ASTM D7844	>3	<b>0.1</b>	0.3	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.9</b>	8.9	10.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.7</b>	21.4	23.2
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

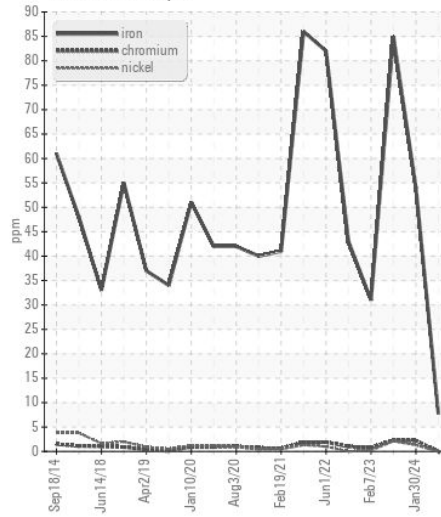
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>31	<b>6</b>	48	● 268
Boron	ppm	ASTM D5185m		<b>236</b>	199	102
Barium	ppm	ASTM D5185m		<b>0</b>	<1	0
Molybdenum	ppm	ASTM D5185m		<b>228</b>	249	281
Manganese	ppm	ASTM D5185m		<b>0</b>	1	1
Magnesium	ppm	ASTM D5185m		<b>796</b>	810	894
Calcium	ppm	ASTM D5185m		<b>1415</b>	1323	1600
Phosphorus	ppm	ASTM D5185m		<b>901</b>	874	842
Zinc	ppm	ASTM D5185m		<b>1081</b>	1043	1073
Sulfur	ppm	ASTM D5185m		<b>3502</b>	2843	3668
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.0</b>	16.0	18.3
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>9.5</b>	8.9	8.1
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.9</b>	13.4	13.6

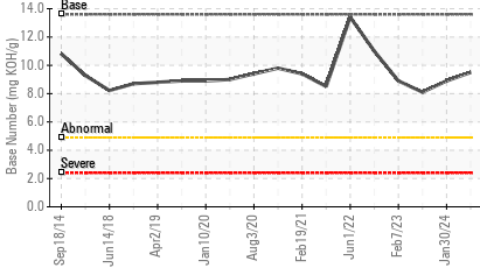
**FT-IR (Direct Trend)**



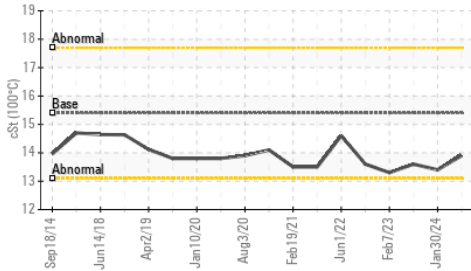
**Ferrous Alloys**



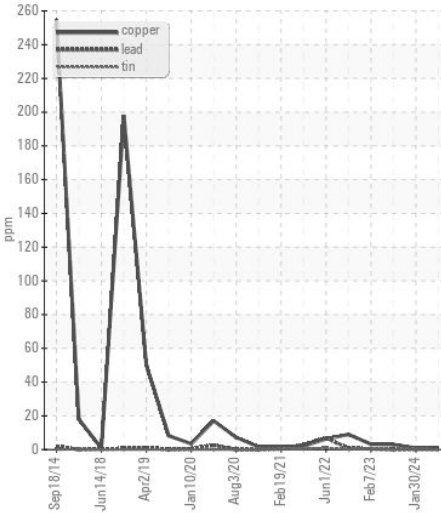
**Base Number**



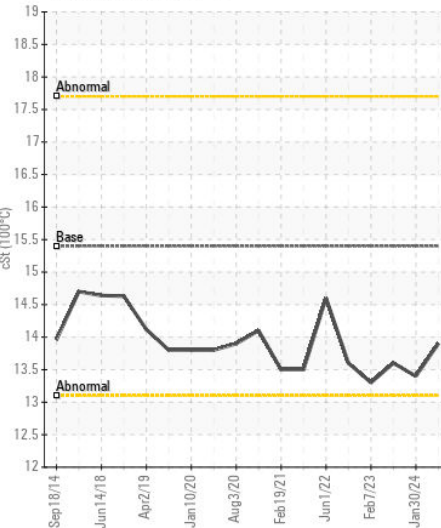
**Viscosity @ 100°C**



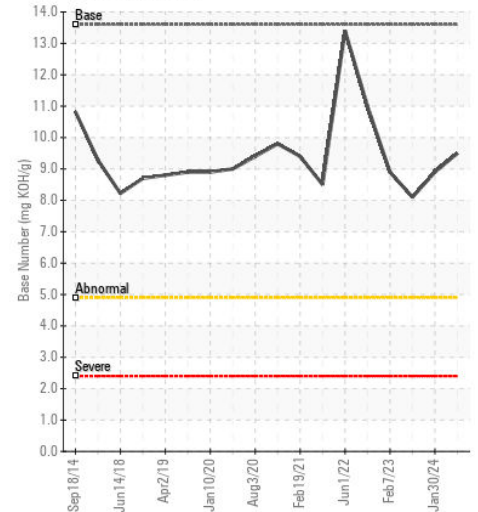
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0219730 **Received** : 24 Jun 2024  
**Lab Number** : 06218014 **Tested** : 25 Jun 2024  
**Unique Number** : 11096211 **Diagnosed** : 25 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)