



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



Machine Id  
**JOHN DEERE 644K 1DW644KZLGF674754**  
Component  
**Diesel Engine**  
Fluid  
**SHELL ROTELLA T 15W40 (--- QTS)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0201395</b>	JR0201397	JR0201398
Sample Date		Client Info		<b>13 Feb 2024</b>	28 Jan 2024	10 Jan 2024
Machine Age	hrs	Client Info		<b>25748</b>	25548	25332
Oil Age	hrs	Client Info		<b>200</b>	216	215
Filter Age	hrs	Client Info		<b>200</b>	216	215
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	SEVERE	ATTENTION

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	<b>11</b>	21	15
Chromium	ppm	ASTM D5185m	>11	<b>0</b>	1	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	2	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>31	<b>3</b>	15	3
Lead	ppm	ASTM D5185m	>26	<b>0</b>	2	<1
Copper	ppm	ASTM D5185m	>26	<b>16</b>	156	3
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</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.

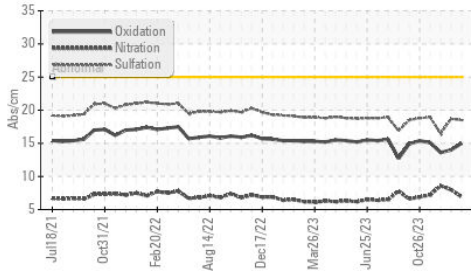
Silicon	ppm	ASTM D5185m	>22	<b>5</b>	6	8
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	25	12
Fuel		WC Method	>2.1	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.21	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.2</b>	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.9</b>	8.0	8.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.5</b>	18.7	16.5
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

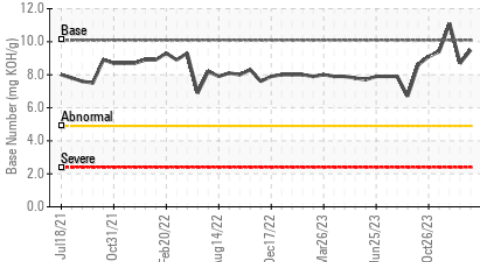
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>31	<b>29</b>	178	55
Boron	ppm	ASTM D5185m	316	<b>35</b>	64	91
Barium	ppm	ASTM D5185m	0.0	<b>0</b>	<1	<1
Molybdenum	ppm	ASTM D5185m	1.2	<b>52</b>	94	89
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	24	<b>477</b>	70	32
Calcium	ppm	ASTM D5185m	2292	<b>1622</b>	2310	2199
Phosphorus	ppm	ASTM D5185m	1064	<b>1086</b>	1224	1135
Zinc	ppm	ASTM D5185m	1160	<b>1249</b>	1307	1226
Sulfur	ppm	ASTM D5185m	4996	<b>3631</b>	4549	4266
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.0</b>	14.0	13.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	<b>9.5</b>	8.7	11.1
Visc @ 100°C	cSt	ASTM D445	15.7	<b>12.9</b>	13.1	13.5

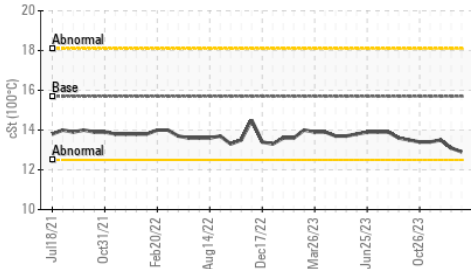
**FT-IR (Direct Trend)**



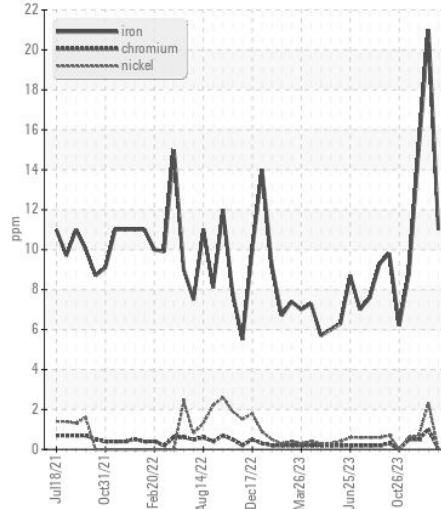
**Base Number**



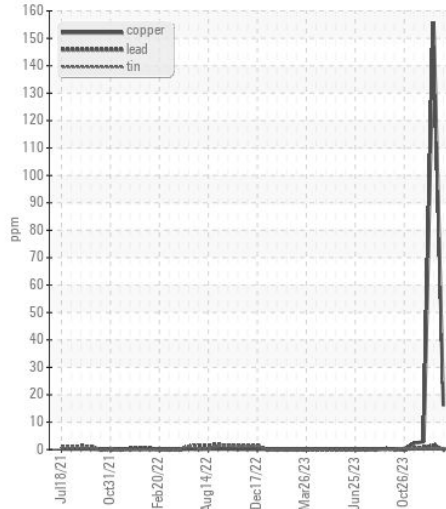
**Viscosity @ 100°C**



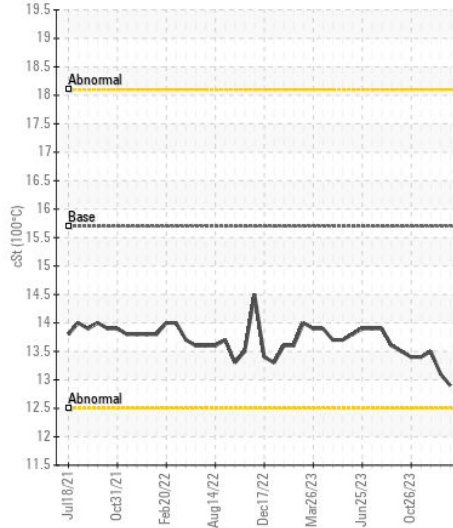
**Ferrous Alloys**



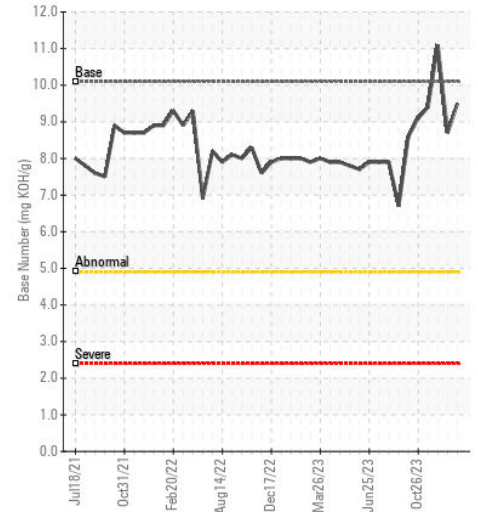
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0201395 **Received** : 31 May 2024  
**Lab Number** : 06196374 **Tested** : 03 Jun 2024  
**Unique Number** : 11058497 **Diagnosed** : 03 Jun 2024 - Don Baldrige  
**Test Package** : CONST ( Additional Tests: TBN )

**Baxter Healthcare - Wood Boiler Biomass**  
 2859 OLD LINVILLE RD  
 MARION, NC  
 US 28752  
 Contact: RICKY STYLES  
 ricky\_styles@baxter.com  
 T: (828)756-4946  
 F:

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)