



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

Machine Id  
**HITACHI 470 HCMJAA70K00030813**  
 Component  
**Diesel Engine**  
 Fluid  
**JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- QTS)**

### RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>JR0224437</b>	JR0200218	JR0180028
Sample Date		Client Info		<b>10 Jul 2024</b>	22 Jan 2024	26 Sep 2023
Machine Age	hrs	Client Info		<b>13968</b>	13446	12978
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	ABNORMAL

### WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>18</b>	18	19
Chromium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	1	1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	6	6
Lead	ppm	ASTM D5185m	>40	<b>3</b>	4	2
Copper	ppm	ASTM D5185m	>330	<b>2</b>	2	3
Tin	ppm	ASTM D5185m	>15	<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

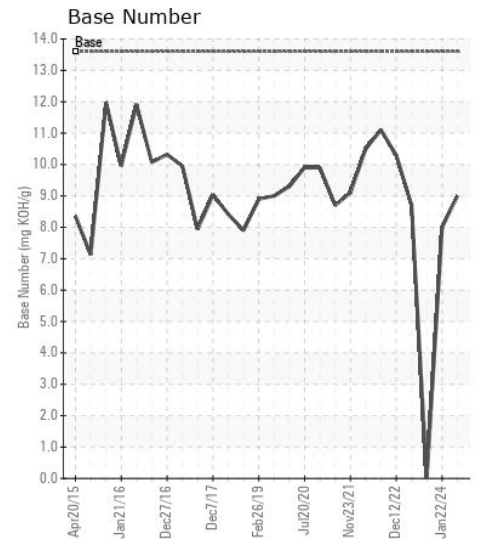
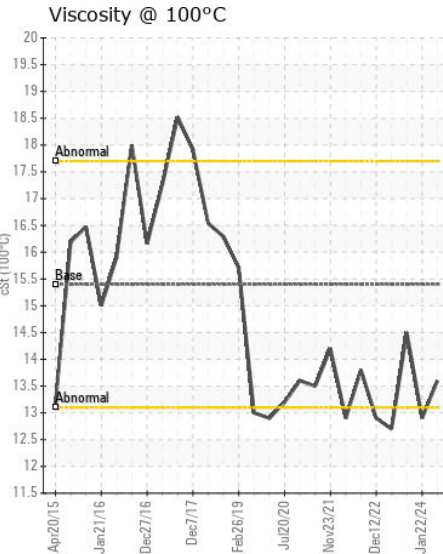
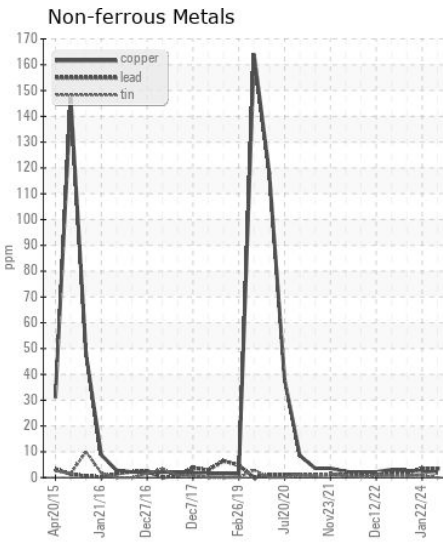
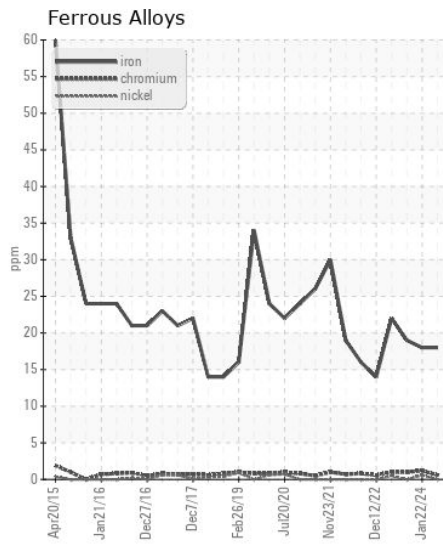
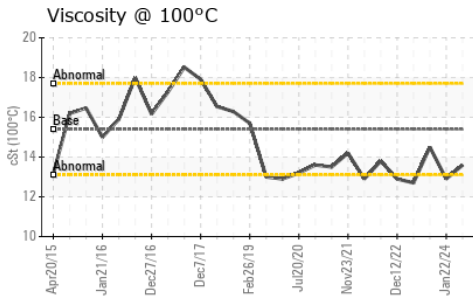
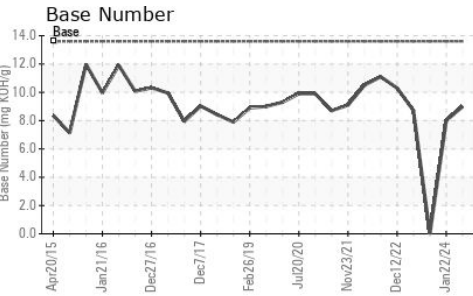
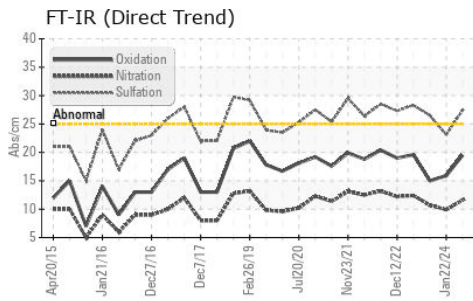
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>7</b>	8	7
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	<1
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>2.3</b>	1.8	▲ 3.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.6</b>	9.9	10.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>27.4</b>	23.1	26.5
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	>0.2	<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		<b>4</b>	4	1
Boron	ppm	ASTM D5185m		<b>102</b>	151	110
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>202</b>	232	257
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m		<b>711</b>	769	867
Calcium	ppm	ASTM D5185m		<b>1614</b>	1345	1512
Phosphorus	ppm	ASTM D5185m		<b>899</b>	868	885
Zinc	ppm	ASTM D5185m		<b>1012</b>	1072	1157
Sulfur	ppm	ASTM D5185m		<b>3210</b>	3013	3190
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>19.5</b>	15.9	15.0
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	<b>9.0</b>	8.0	▲ 0.0
Visc @ 100°C	cSt	ASTM D445	15.4	<b>13.6</b>	12.9	14.5



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : JR0224437  
**Lab Number** : 06234158  
**Unique Number** : 11122992  
**Test Package** : CONST ( Additional Tests: TBN )

**Received** : 11 Jul 2024  
**Tested** : 12 Jul 2024  
**Diagnosed** : 12 Jul 2024 - Wes Davis

**JRE - ASHLAND**  
 11047 LEADBETTER RD  
 ASHLAND, VA  
 US 23005

Contact: DAVID ZIEG  
 dzieg@jamesriverequipment.com

T: (804)798-6001  
 F: (804)798-0292

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)