



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
HITACHI 470 HCMJAA70C00030815

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		JR0200501	JR0179623	JR0164318
Sample Date		Client Info		26 Feb 2024	27 Nov 2023	18 Aug 2023
Machine Age	hrs	Client Info		17465	17018	16479
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	28	22	32
Chromium	ppm	ASTM D5185m	>20	1	<1	1
Nickel	ppm	ASTM D5185m	>4	<1	<1	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	5	4
Lead	ppm	ASTM D5185m	>40	3	2	7
Copper	ppm	ASTM D5185m	>330	2	4	4
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

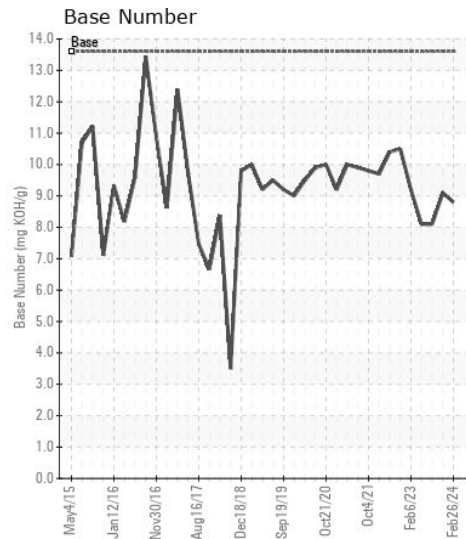
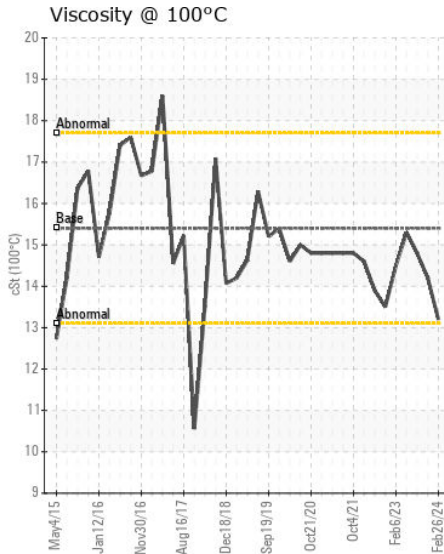
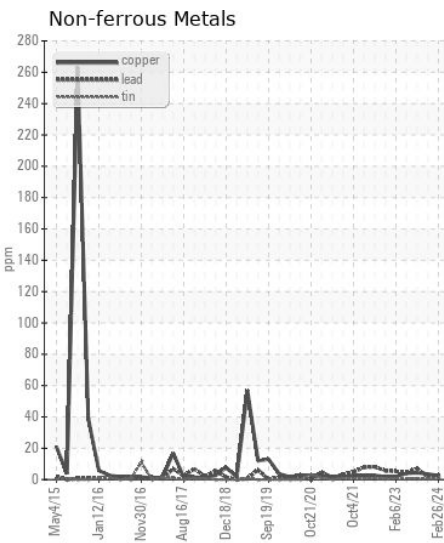
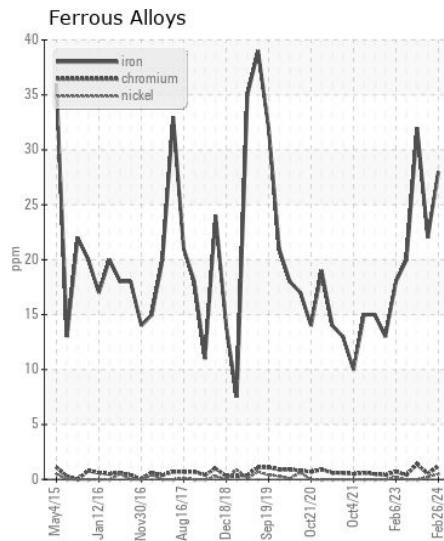
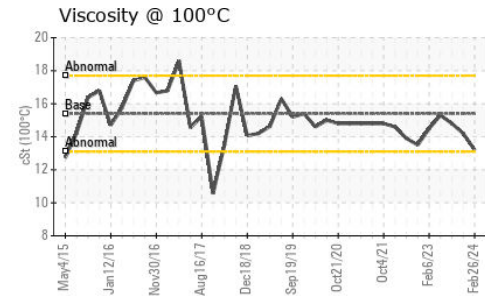
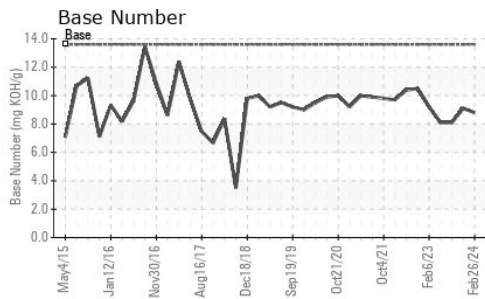
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	10	8	16
Potassium	ppm	ASTM D5185m	>20	13	6	▲ 20
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	0.0
Soot %	%	*ASTM D7844	>3	2.5	2.5	2.7
Nitration	Abs/cm	*ASTM D7624	>20	11.9	11.8	12.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.6	27.1	28.7
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	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		36	39	▲ 269
Boron	ppm	ASTM D5185m		154	120	97
Barium	ppm	ASTM D5185m		0	3	0
Molybdenum	ppm	ASTM D5185m		271	271	297
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		875	819	897
Calcium	ppm	ASTM D5185m		1479	1404	1503
Phosphorus	ppm	ASTM D5185m		970	877	1017
Zinc	ppm	ASTM D5185m		1187	1115	1210
Sulfur	ppm	ASTM D5185m		3233	3984	3009
Oxidation	Abs/.1mm	*ASTM D7414	>25	20.0	19.5	19.6
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	8.8	9.1	8.1
Visc @ 100°C	cSt	ASTM D445	15.4	13.2	14.2	14.8



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0200501 **Received** : 28 Feb 2024
Lab Number : 06102793 **Tested** : 29 Feb 2024
Unique Number : 10901023 **Diagnosed** : 29 Feb 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

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)