



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area

[LEOTERRA SITE WORKS]

Machine Id

JOHN DEERE 310E 1DW310EXANF714390

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		JR0182739	JR0194219	---
Sample Date		Client Info		24 Jun 2024	19 Nov 2023	---
Machine Age	hrs	Client Info		1768	2810	---
Oil Age	hrs	Client Info		200	0	---
Filter Age	hrs	Client Info		200	0	---
Oil Changed		Client Info		Not Chngd	N/A	---
Filter Changed		Client Info		Not Chngd	N/A	---
Sample Status				NORMAL	ABNORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	36	▲ 163	---
Chromium	ppm	ASTM D5185m	>11	2	▲ 15	---
Nickel	ppm	ASTM D5185m	>5	1	6	---
Titanium	ppm	ASTM D5185m		<1	2	---
Silver	ppm	ASTM D5185m	>3	<1	<1	---
Aluminum	ppm	ASTM D5185m	>31	6	● 21	---
Lead	ppm	ASTM D5185m	>26	1	<1	---
Copper	ppm	ASTM D5185m	>26	3	24	---
Tin	ppm	ASTM D5185m	>4	<1	<1	---
Vanadium	ppm	ASTM D5185m		<1	<1	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

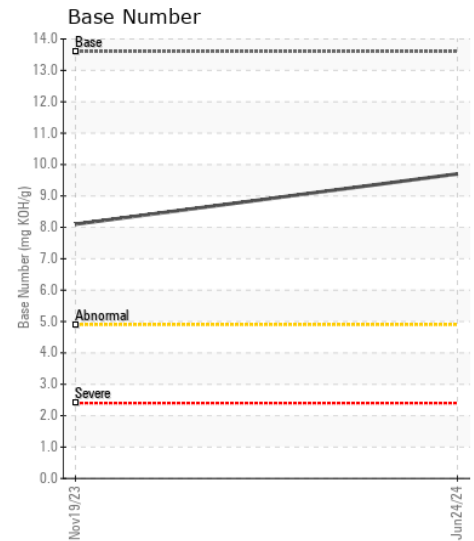
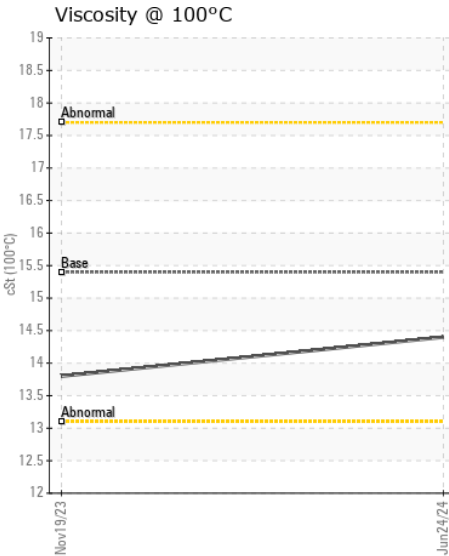
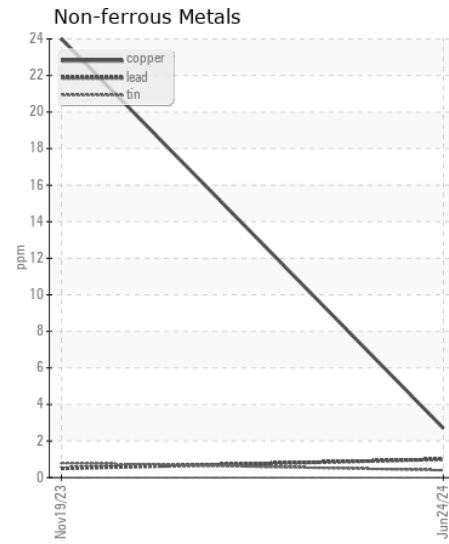
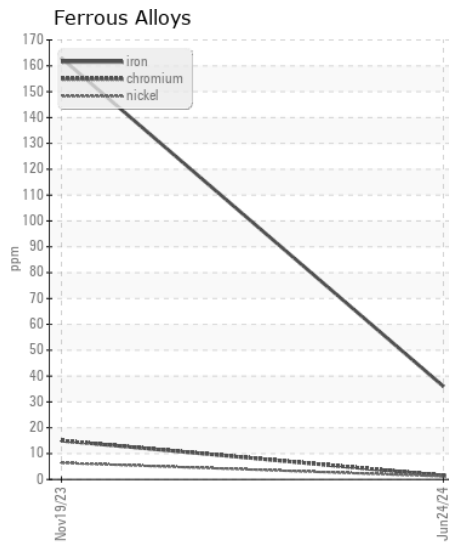
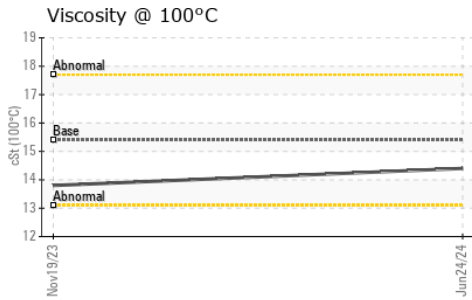
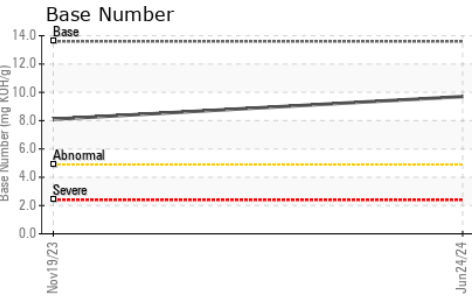
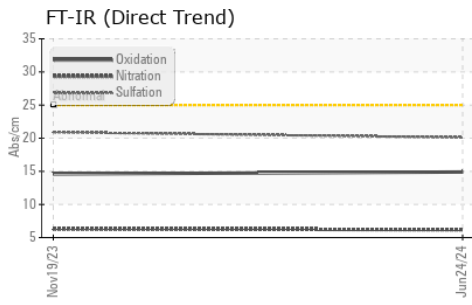
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>22	16	▲ 71	---
Potassium	ppm	ASTM D5185m	>20	3	4	---
Fuel		WC Method	>2.1	<1.0	<1.0	---
Water		WC Method	>0.21	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.1	0.2	---
Nitration	Abs/cm	*ASTM D7624	>20	6.2	6.3	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.1	20.9	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.21	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	<1	5	---
Boron	ppm	ASTM D5185m		264	354	---
Barium	ppm	ASTM D5185m		2	0	---
Molybdenum	ppm	ASTM D5185m		226	80	---
Manganese	ppm	ASTM D5185m		1	1	---
Magnesium	ppm	ASTM D5185m		685	307	---
Calcium	ppm	ASTM D5185m		1370	1478	---
Phosphorus	ppm	ASTM D5185m		809	1055	---
Zinc	ppm	ASTM D5185m		1025	1252	---
Sulfur	ppm	ASTM D5185m		2836	3463	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.9	14.6	---
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	9.7	8.1	---
Visc @ 100°C	cSt	ASTM D445	15.4	14.4	13.8	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0182739 **Received** : 25 Jun 2024
Lab Number : 06219490 **Tested** : 26 Jun 2024
Unique Number : 11097687 **Diagnosed** : 26 Jun 2024 - Wes Davis
Test Package : CONST (Additional Tests: TBN)

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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)