



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
JOHN DEERE 460E DW460ET695529

Component
Diesel Engine

Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (--- QTS)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We advise that you check the fuel injection system. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WE0003154	WE0002035	---
Sample Date		Client Info		24 May 2023	08 Nov 2022	---
Machine Age	hrs	Client Info		0	5701	---
Oil Age	hrs	Client Info		500	0	---
Filter Age	hrs	Client Info		0	0	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				SEVERE	ABNORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>51	20	16	---
Chromium	ppm	ASTM D5185m	>11	<1	<1	---
Nickel	ppm	ASTM D5185m	>5	<1	1	---
Titanium	ppm	ASTM D5185m		<1	0	---
Silver	ppm	ASTM D5185m	>3	0	<1	---
Aluminum	ppm	ASTM D5185m	>31	4	5	---
Lead	ppm	ASTM D5185m	>26	7	4	---
Copper	ppm	ASTM D5185m	>26	7	5	---
Tin	ppm	ASTM D5185m	>4	1	1	---
Vanadium	ppm	ASTM D5185m		<1	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

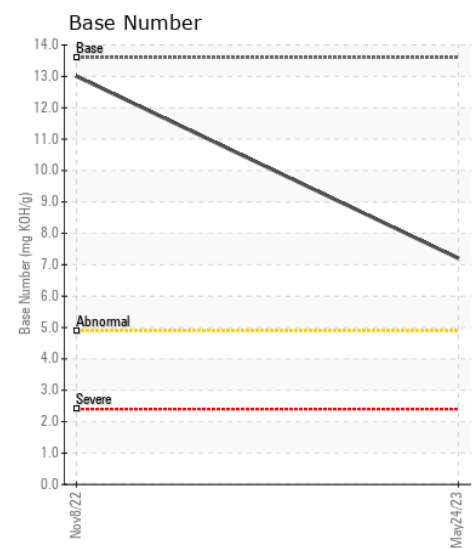
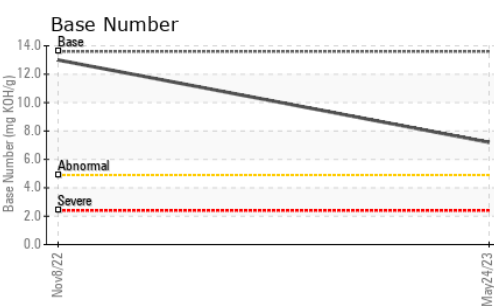
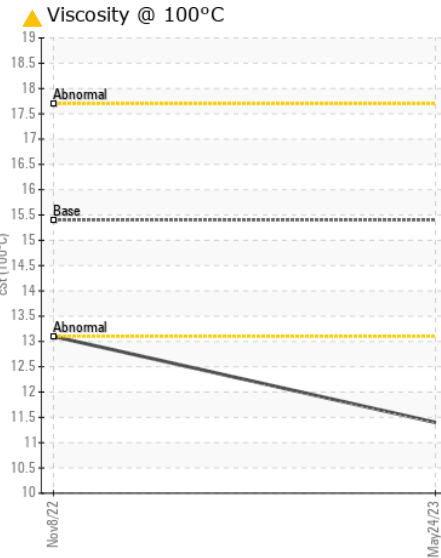
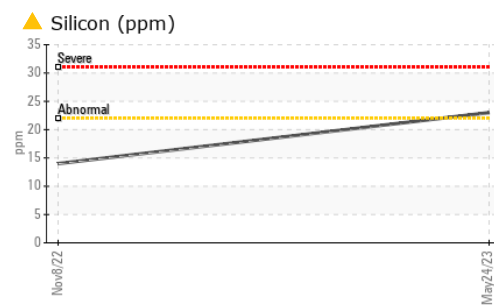
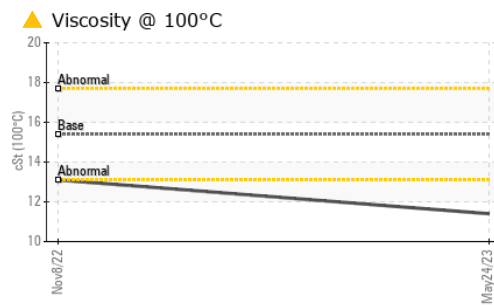
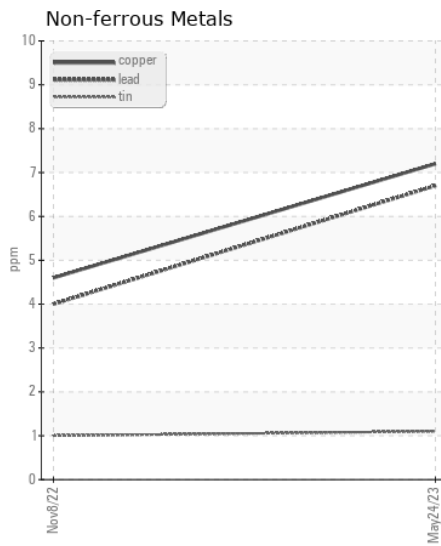
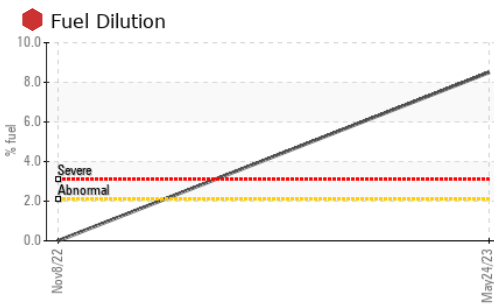
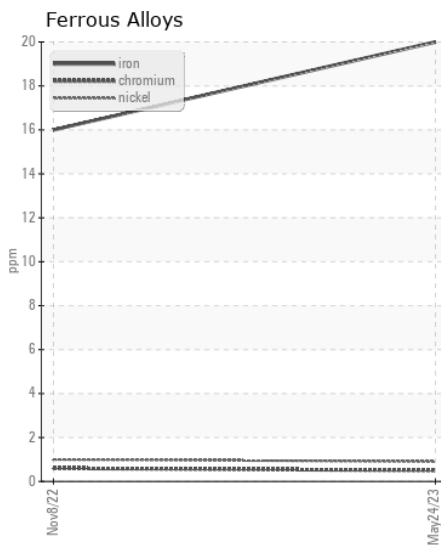
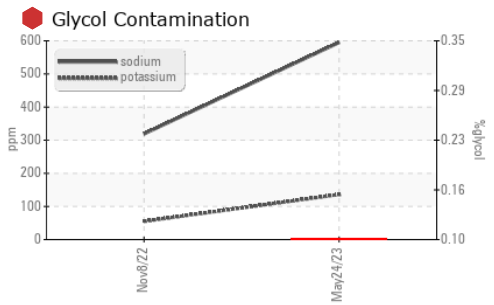
Sodium and/or potassium levels are high. Test for glycol is positive. There is a high amount of fuel present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>22	▲ 23	14	---
Potassium	ppm	ASTM D5185m	>20	▲ 136	▲ 55	---
Fuel	%	ASTM D3524	>2.1	● 8.5	<1.0	---
Water		WC Method	>0.21	NEG	NEG	---
Glycol	%	*ASTM D2982		● 0.10	NEG	---
Soot %	%	*ASTM D7844	>3	0.3	0.3	---
Nitration	Abs/cm	*ASTM D7624	>20	10.9	10.1	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.1	23.4	---
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

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Sodium	ppm	ASTM D5185m	>31	▲ 595	▲ 319	---
Boron	ppm	ASTM D5185m		48	185	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		245	214	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m		749	704	---
Calcium	ppm	ASTM D5185m		1279	1375	---
Phosphorus	ppm	ASTM D5185m		732	807	---
Zinc	ppm	ASTM D5185m		901	1007	---
Sulfur	ppm	ASTM D5185m		3580	3318	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.2	17.8	---
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	7.2	13	---
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 11.4	13.1	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WE0003154 **Received** : 31 May 2023
Lab Number : 05861317 **Diagnosed** : 02 Jun 2023
Unique Number : 10495782 **Diagnostician** : Jonathan Hester
Test Package : CONST (Additional Tests: FuelDilution, Glycol, PercentFuel, TBN)

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 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)