



Area
[W45163]
Machine Id
JOHN DEERE 310SJ 1T0310SJEBD212076
Component
Diesel Engine
Fluid
JOHN DEERE ENGINE OIL PLUS 50 II 15W40 (14 QTS)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.
NOTE: High solids (carbon/soot) in the sample have limited the accuracy of Infra-Red data including Total Base Number (TBN) value.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		JR0208176	JRMC405520	JRMC390166
Sample Date		Client Info		29 Feb 2024	13 Jun 2016	27 May 2015
Machine Age	hrs	Client Info		1797	962	873
Oil Age	hrs	Client Info		500	425	0
Filter Age	hrs	Client Info		500	425	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	NORMAL	NORMAL

WEAR

The copper level is abnormal. Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>51	▲ 95	13	44
Chromium	ppm	ASTM D5185m	>11	1	0	2
Nickel	ppm	ASTM D5185m	>5	<1	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	<1
Aluminum	ppm	ASTM D5185m	>31	7	5	8
Lead	ppm	ASTM D5185m	>26	4	1	7
Copper	ppm	ASTM D5185m	>26	▲ 49	11	6
Tin	ppm	ASTM D5185m	>4	1	0	0
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

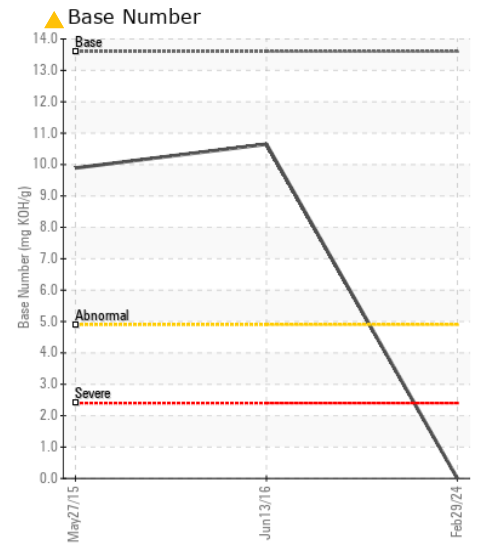
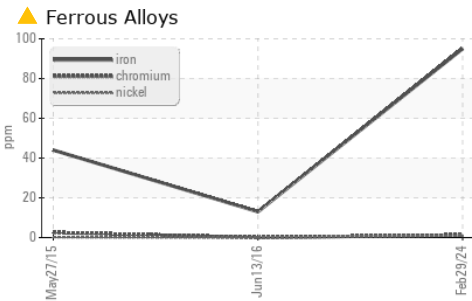
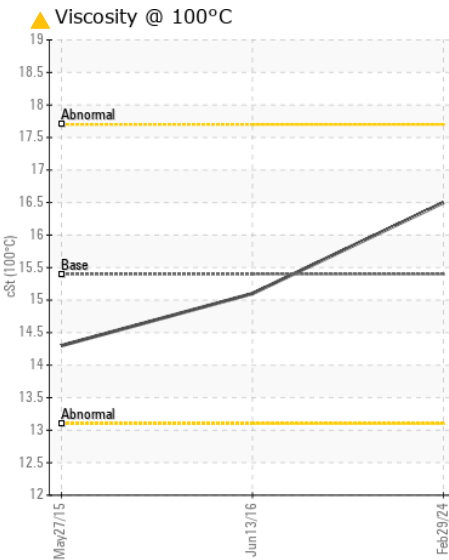
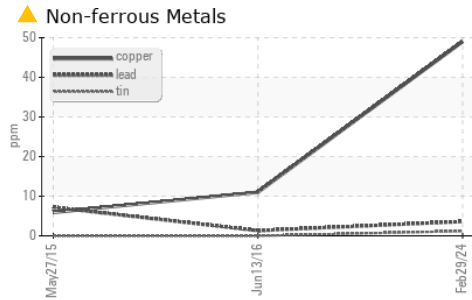
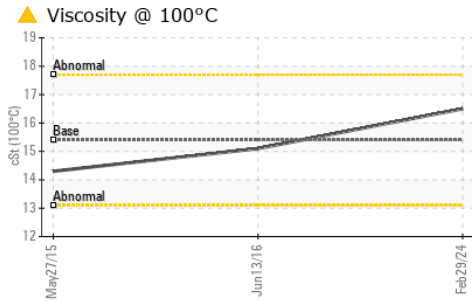
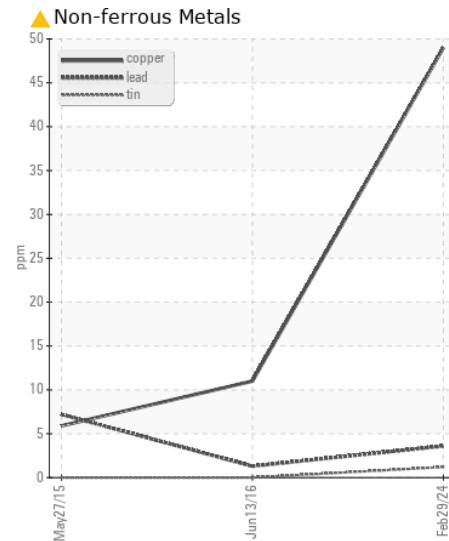
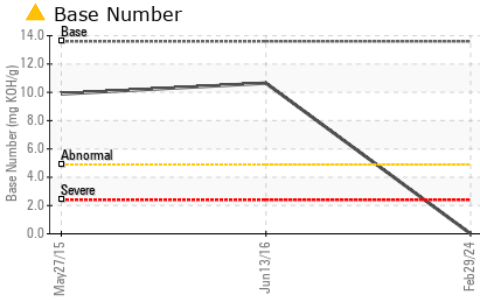
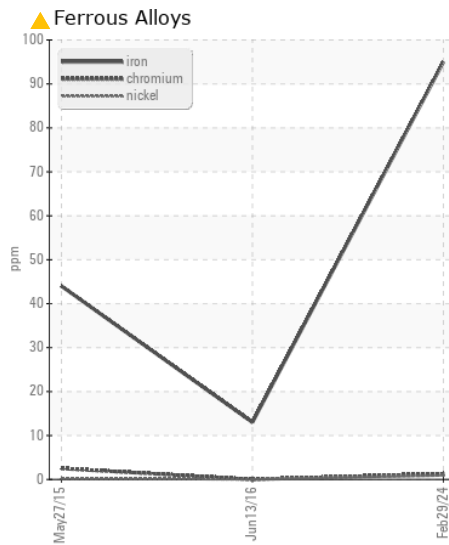
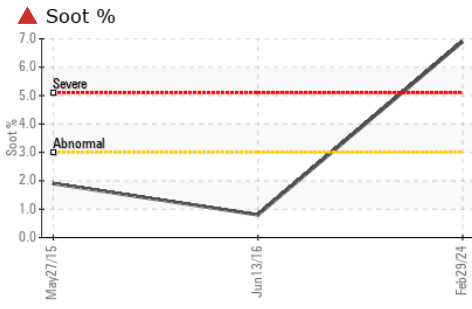
There is an abnormal amount of solids and carbon present in the oil.

Silicon	ppm	ASTM D5185m	>22	9	6	6
Potassium	ppm	ASTM D5185m	>20	2	0	0
Fuel	%	ASTM D3524	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	▲ 6.9	0.8	1.9
Nitration	Abs/cm	*ASTM D7624	>20	19.4	6.	7.
Sulfation	Abs/.1mm	*ASTM D7415	>30	42.3	19.	19.
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	>0.21	NEG	NEG	NEG

FLUID CONDITION

The oil viscosity is higher than normal. The BN level is low.

Sodium	ppm	ASTM D5185m	>31	3	1	2
Boron	ppm	ASTM D5185m		153	250	166
Barium	ppm	ASTM D5185m		0	0	<1
Molybdenum	ppm	ASTM D5185m		247	240	226
Manganese	ppm	ASTM D5185m		2	<1	1
Magnesium	ppm	ASTM D5185m		796	907	902
Calcium	ppm	ASTM D5185m		1352	1439	1368
Phosphorus	ppm	ASTM D5185m		866	939	932
Zinc	ppm	ASTM D5185m		1067	1063	1099
Sulfur	ppm	ASTM D5185m		3038	2821	1471
Oxidation	Abs/.1mm	*ASTM D7414	>25	32.4	13.	11.
Base Number (BN)	mg KOH/g	ASTM D2896	13.6	▲ 0.0	10.65	9.89
Visc @ 100°C	cSt	ASTM D445	15.4	▲ 16.5	15.1	14.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : JR0208176 **Received** : 01 Mar 2024
Lab Number : 06105887 **Tested** : 05 Mar 2024
Unique Number : 10909384 **Diagnosed** : 05 Mar 2024 - Jonathan Hester
Test Package : CONST (Additional Tests: FuelDilution, TBN)

JRE - MANASSAS PARK
 9107 OWENS DRIVE
 MANASSAS PARK, VA
 US 20111

Contact: MARC GAUTROIS
 mgautrois@jamesriverequipment.com

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)

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