



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
JOHN DEERE 5093EN TR-164
Component
Diesel Engine
Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (10 QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06224691	TR05661691	TR05299538
Sample Date		Client Info		26 Jun 2024	14 Sep 2022	03 Jul 2021
Machine Age	hrs	Client Info		5184	3973	2738
Oil Age	hrs	Client Info		500	500	600
Filter Age	hrs	Client Info		500	500	600
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

The iron level is abnormal. The lead level is abnormal.

Iron	ppm	ASTM D5185m	>51	▲ 64	61	41
Chromium	ppm	ASTM D5185m	>11	1	<1	<1
Nickel	ppm	ASTM D5185m	>5	2	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>31	7	6	0
Lead	ppm	ASTM D5185m	>26	▲ 28	25	11
Copper	ppm	ASTM D5185m	>26	4	3	6
Tin	ppm	ASTM D5185m	>4	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	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.

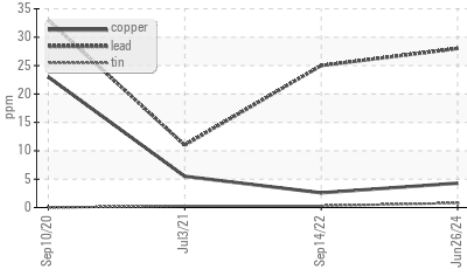
Silicon	ppm	ASTM D5185m	>22	9	6	9
Potassium	ppm	ASTM D5185m	>20	3	4	2
Fuel		WC Method	>2.1	<1.0	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.7	0.7	0.4
Nitration	Abs/cm	*ASTM D7624	>20	11.4	12.7	11.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.1	26.7	25.2
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

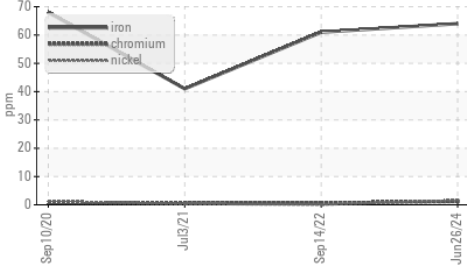
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>31	5	<1	3
Boron	ppm	ASTM D5185m		1	<1	2
Barium	ppm	ASTM D5185m		0	0	<1
Molybdenum	ppm	ASTM D5185m		156	138	115
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		544	17	81
Calcium	ppm	ASTM D5185m		2663	4548	4102
Phosphorus	ppm	ASTM D5185m		1061	868	884
Zinc	ppm	ASTM D5185m		1353	1100	1053
Sulfur	ppm	ASTM D5185m		4352	4720	3322
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.8	18.3	17.1
Base Number (BN)	mg KOH/g	ASTM D2896		9.18	10.5	10.9
Visc @ 100°C	cSt	ASTM D445		16.6	15.61	15.1

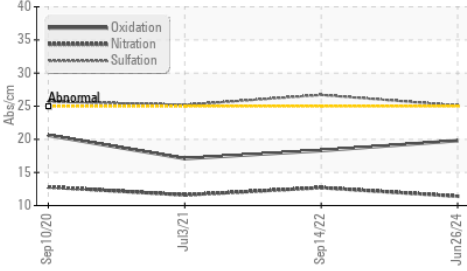
▲ Non-ferrous Metals



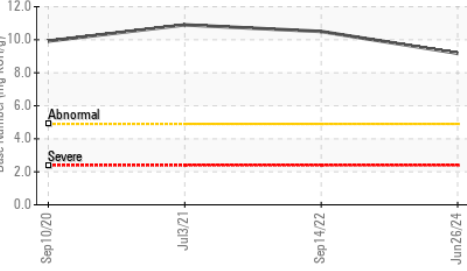
▲ Ferrous Alloys



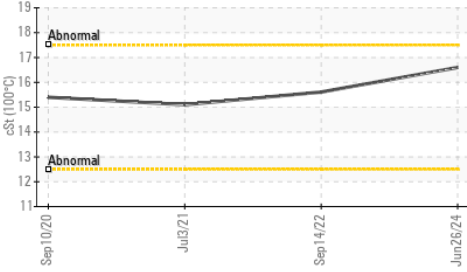
FT-IR (Direct Trend)



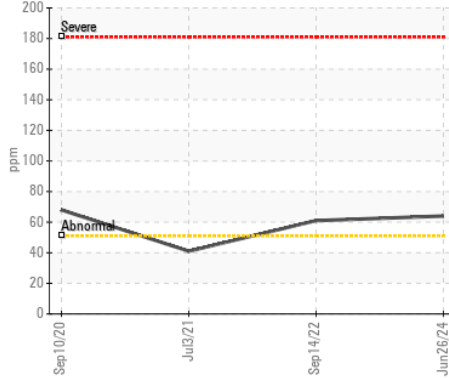
Base Number



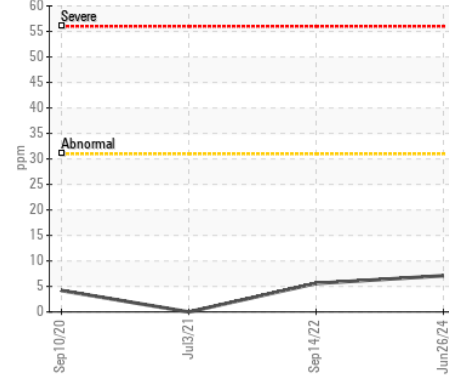
Viscosity @ 100°C



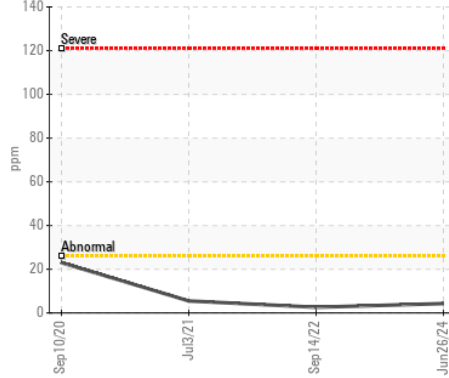
▲ Iron (ppm)



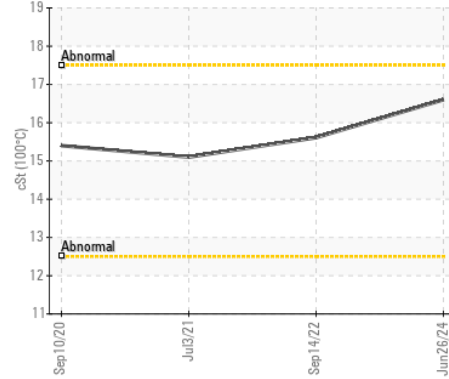
Aluminum (ppm)



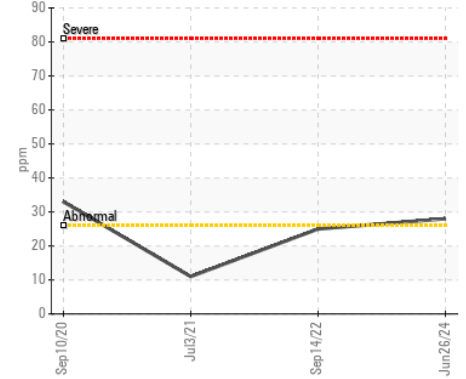
Copper (ppm)



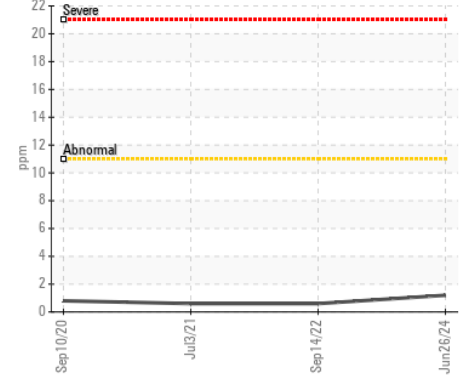
Viscosity @ 100°C



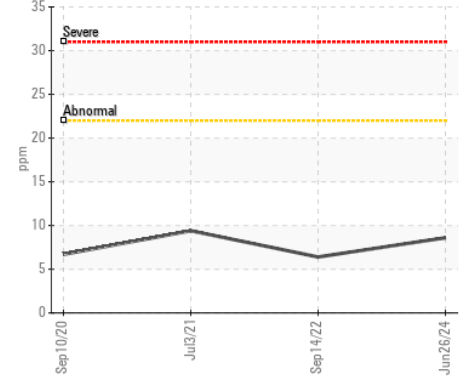
▲ Lead (ppm)



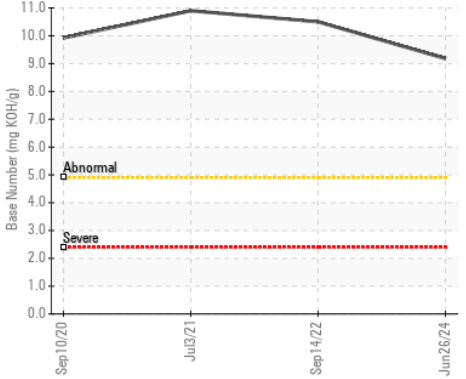
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06224691 **Received** : 01 Jul 2024
Lab Number : 06224691 **Tested** : 02 Jul 2024
Unique Number : 11102888 **Diagnosed** : 02 Jul 2024 - Don Baldrige
Test Package : MOB 2 (Additional Tests: KV40, TAN Man)

CHERRY HILL FARMS
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 SANTAQUIN, UT
 US 84655
 Contact: JOHN AAGARD

To discuss this sample report, contact Customer Service at 1-800-827-0711.

* - 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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F: