



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Machine Id
JOHN DEERE 40344 ST28
 Component
Diesel Engine
 Fluid
TRC 106768-2050 10W30 (7 QTS)

RECOMMENDATION

We advise an early resample to confirm this situation.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06159331	TR04829415	TR04729200
Sample Date		Client Info		23 Apr 2024	21 Oct 2019	20 May 2019
Machine Age	hrs	Client Info		1610	894	798
Oil Age	hrs	Client Info		1064	348	200
Filter Age	hrs	Client Info		1064	348	200
Oil Changed		Client Info		Not Chngd	Not Chngd	Not Chngd
Filter Changed		Client Info		Not Chngd	Not Chngd	Not Chngd
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

Clutch and/or bushing/bearing wear is indicated.

Iron	ppm	ASTM D5185m	>51	14	13	10
Chromium	ppm	ASTM D5185m	>11	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	95	102
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>31	2	3	3
Lead	ppm	ASTM D5185m	>26	10	<1	<1
Copper	ppm	ASTM D5185m	>26	▲ 90	19	11
Tin	ppm	ASTM D5185m	>4	▲ 8	0	<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

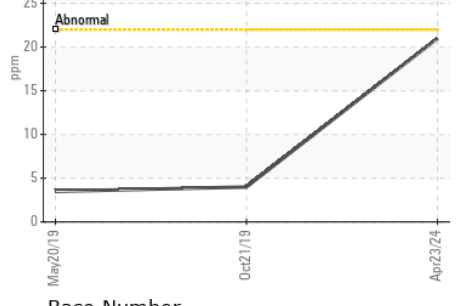
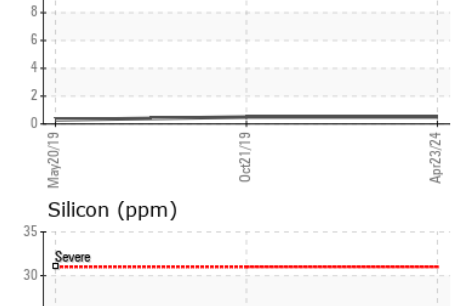
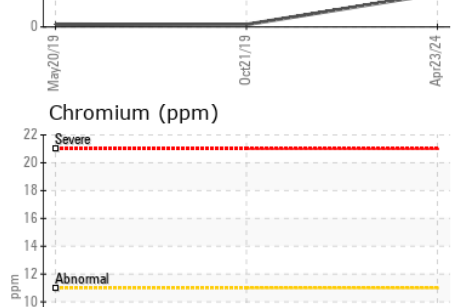
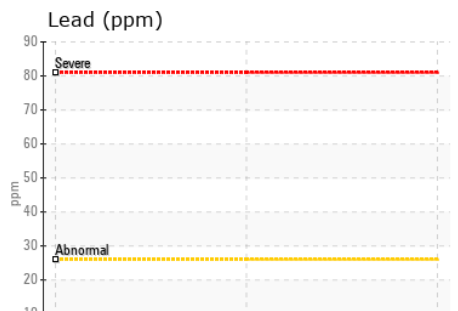
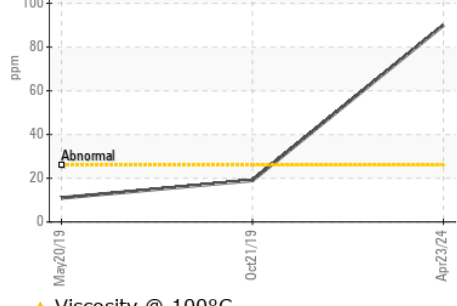
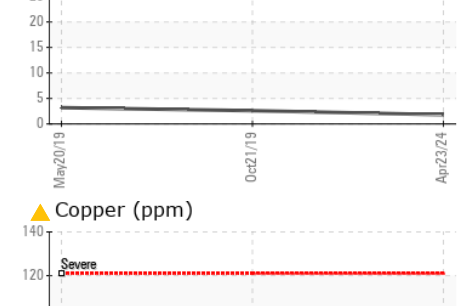
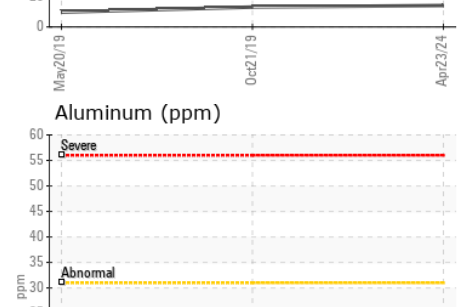
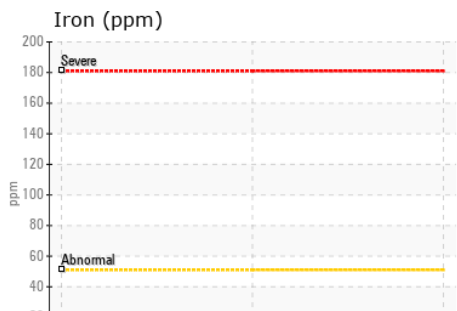
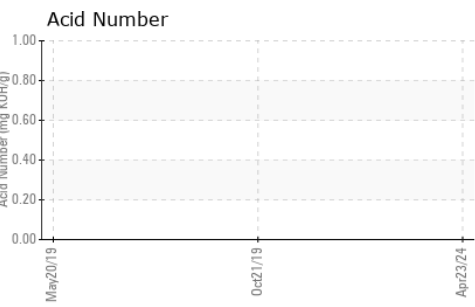
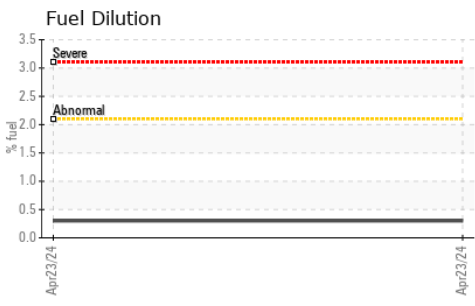
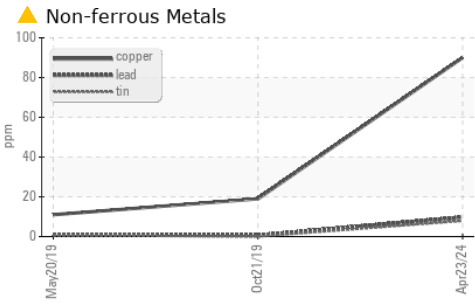
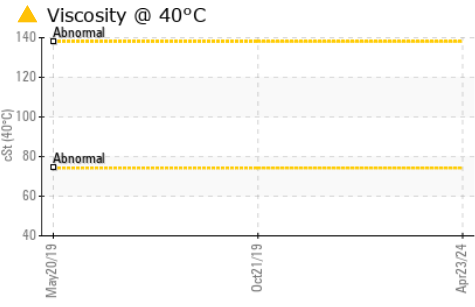
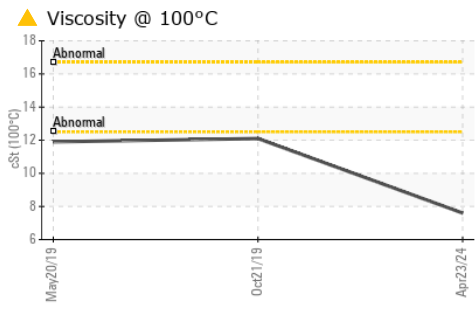
Appearance is a red non-engine oil. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>22	21	4	4
Potassium	ppm	ASTM D5185m	>20	2	<1	<1
Fuel	%	ASTM D3524	>2.1	0.3	<1.0	<1.0
Water		WC Method	>0.21	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	---	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	---	9.3	9
Sulfation	Abs/.1mm	*ASTM D7415	>30	---	20	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 lower than normal. Confirm oil type. The AN level is acceptable for this fluid.

Sodium	ppm	ASTM D5185m	>31	9	6	7
Boron	ppm	ASTM D5185m		119	64	76
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		<1	3	2
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		18	300	299
Calcium	ppm	ASTM D5185m		3849	1940	2052
Phosphorus	ppm	ASTM D5185m		1319	952	1030
Zinc	ppm	ASTM D5185m		1584	1127	1160
Sulfur	ppm	ASTM D5185m		4231	1976	3753
Oxidation	Abs/.1mm	*ASTM D7414	>25	---	19.8	18
Acid Number (AN)	mg KOH/g	ASTM D8045		0.87	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		11.02	8.30	8.58
Visc @ 40°C	cSt	ASTM D445		▲ 46.71	---	---
Visc @ 100°C	cSt	ASTM D445		▲ 7.6	12.1	11.9
Viscosity Index (VI)	Scale	ASTM D2270		128	---	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06159331 **Received** : 24 Apr 2024
Lab Number : 06159331 **Tested** : 09 May 2024
Unique Number : 10994754 **Diagnosed** : 09 May 2024 - Doug Bogart
Test Package : MOB 2 (Additional Tests: FuelDilution, KV40, PercentFuel, VI)

OVERLAND PARK GC CCD
 1801 S HURON ST
 DENVER, CO
 US 80223
 Contact: JAMES WEST

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: