TRAAP
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	NORMAL

Machine Id
FORD 194
Component
Diesel Engine
Fluid
TRC MOLY XL PRO-SPEC IV 15W40 (16 QTS)

RECOMMENDATION

We advise that you check the fuel injection system. The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

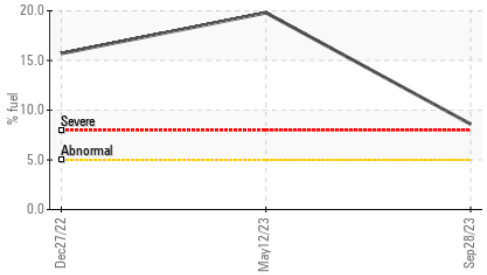
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

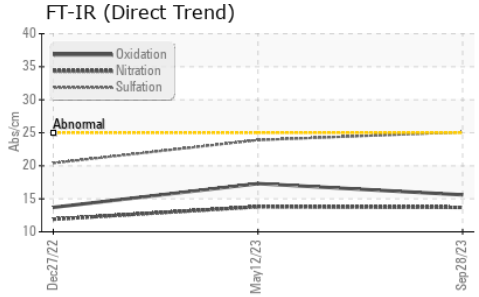
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06158492	TR05916266	TR05767351
Sample Date		Client Info		28 Sep 2023	12 May 2023	27 Dec 2022
Machine Age	mls	Client Info		184282	174429	164099
Oil Age	mls	Client Info		5000	5000	5000
Filter Age	mls	Client Info		5000	5000	5000
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				SEVERE	SEVERE	SEVERE
Iron	ppm	ASTM D5185m	>100	61	48	62
Chromium	ppm	ASTM D5185m	>20	2	1	2
Nickel	ppm	ASTM D5185m	>2	2	<1	2
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>25	7	7	10
Lead	ppm	ASTM D5185m	>40	2	3	13
Copper	ppm	ASTM D5185m	>330	2	2	8
Tin	ppm	ASTM D5185m	>15	1	<1	6
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	12	14	▲ 37
Potassium	ppm	ASTM D5185m	>20	4	3	3
Fuel	%	ASTM D3524	>5	▲ 8.6	▲ 19.8	▲ 15.7
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	2.3	1.6	0.9
Nitration	Abs/cm	*ASTM D7624	>20	13.7	13.8	11.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.1	23.9	20.4
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	>0.2	NEG	NEG	NEG
Sodium	ppm	ASTM D5185m		3	4	40
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		107	89	106
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		13	17	24
Calcium	ppm	ASTM D5185m	1300	3640	3238	3665
Phosphorus	ppm	ASTM D5185m		836	671	719
Zinc	ppm	ASTM D5185m	1300	922	817	932
Sulfur	ppm	ASTM D5185m		3917	3774	4011
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.6	17.3	13.7
Base Number (BN)	mg KOH/g	ASTM D2896	14	11.66	9.37	10.78
Visc @ 100°C	cSt	ASTM D445	15.5	13.6	▲ 11.1	▲ 10.9

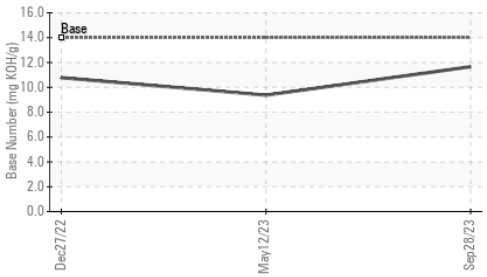
Fuel Dilution



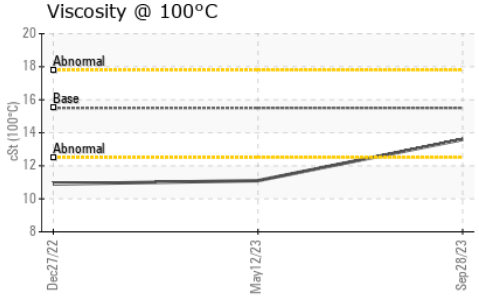
FT-IR (Direct Trend)



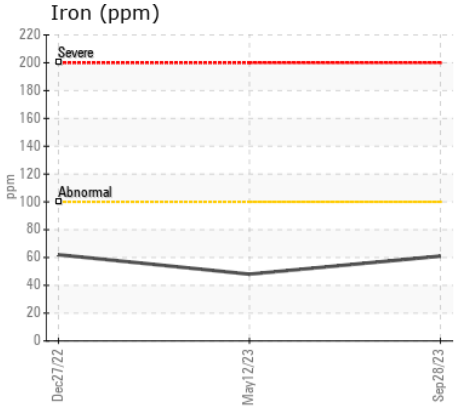
Base Number



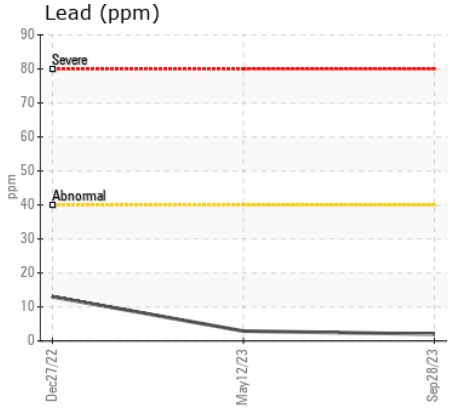
Viscosity @ 100°C



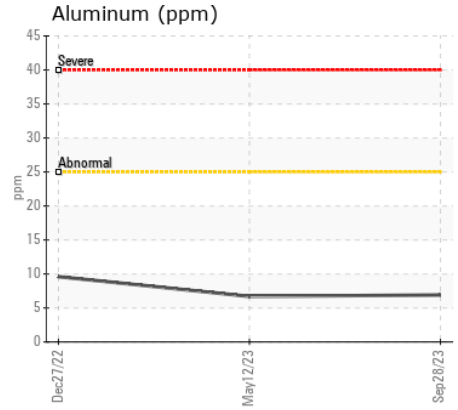
Iron (ppm)



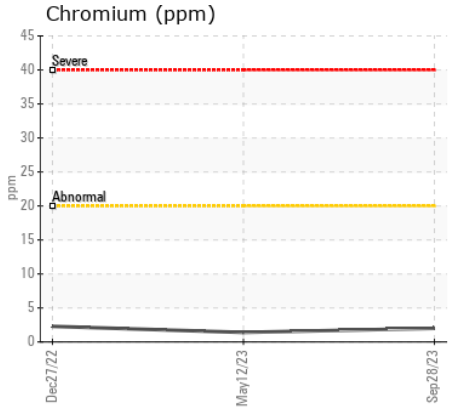
Lead (ppm)



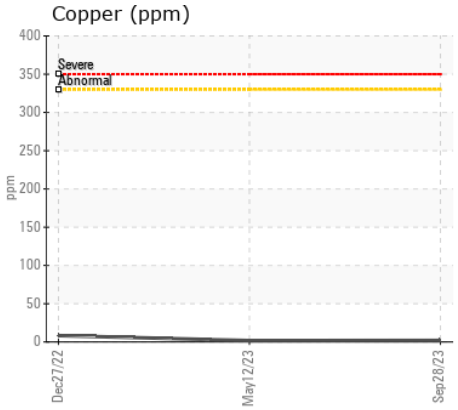
Aluminum (ppm)



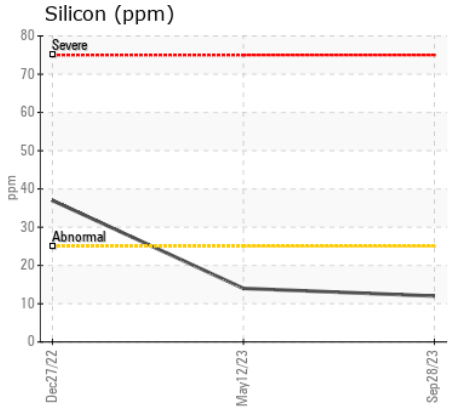
Chromium (ppm)



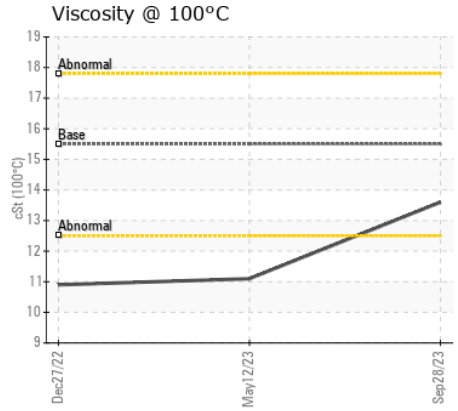
Copper (ppm)



Silicon (ppm)



Viscosity @ 100°C



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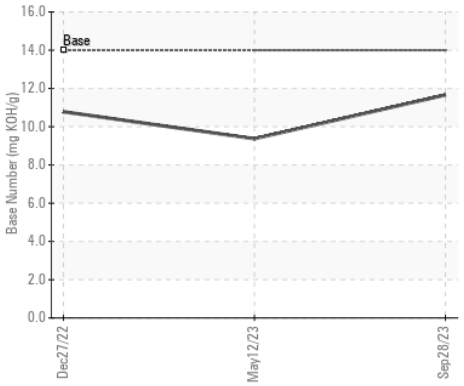

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06158492
Lab Number : 06158492
Unique Number : 10993915
Test Package : MOB 2 (Additional Tests: PercentFuel)

Received : 23 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 25 Apr 2024 - Wes Davis

DIGGING & RIGGING II
10 CHRISTINA COURT
SPARROWS POINT, MD
US 21219
Contact: Service Manager

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: