



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
CATERPILLAR 140M ROAD GRADER 140M (S/N M9D01177)

Component
Diesel Engine

Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (--- GAL)

RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06156204	TR06038757	---
Sample Date		Client Info		06 Apr 2024	07 Dec 2023	---
Machine Age	hrs	Client Info		12281	11681	---
Oil Age	hrs	Client Info		600	300	---
Filter Age	hrs	Client Info		300	300	---
Oil Changed		Client Info		Not Changd	Not Changd	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				ABNORMAL	NORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	10	7	---
Chromium	ppm	ASTM D5185m	>20	<1	0	---
Nickel	ppm	ASTM D5185m	>2	0	0	---
Titanium	ppm	ASTM D5185m	>2	<1	<1	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>25	3	3	---
Lead	ppm	ASTM D5185m	>40	0	0	---
Copper	ppm	ASTM D5185m	>330	11	4	---
Tin	ppm	ASTM D5185m	>15	<1	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

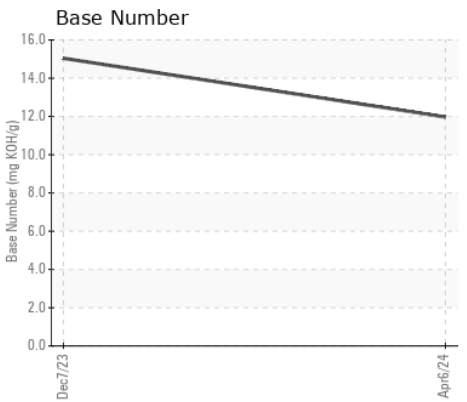
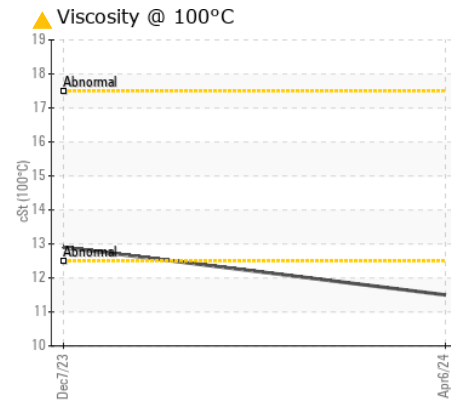
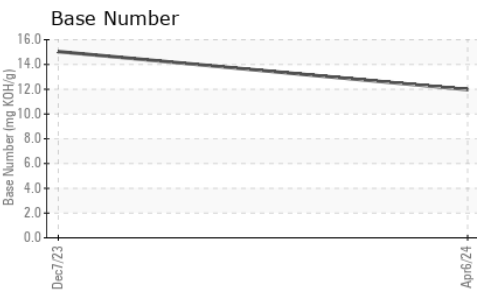
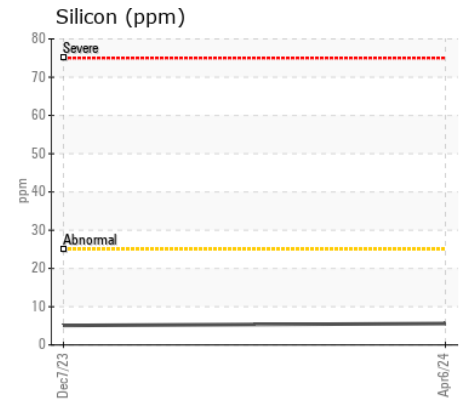
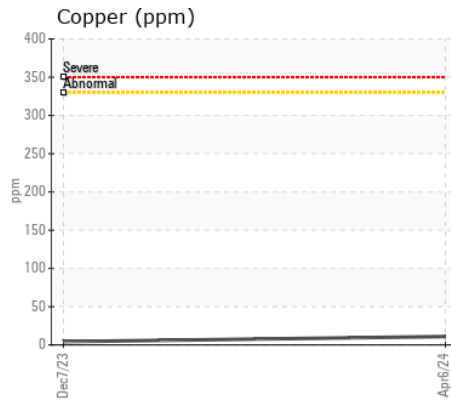
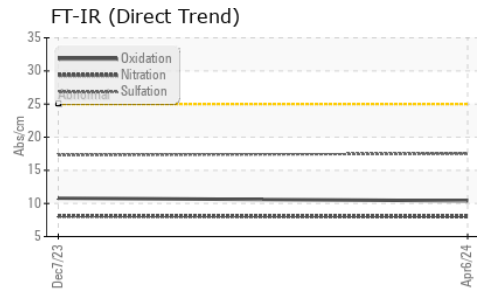
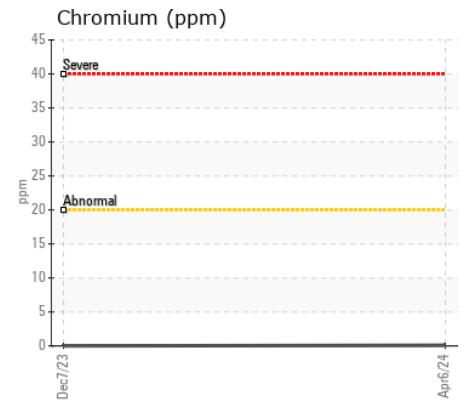
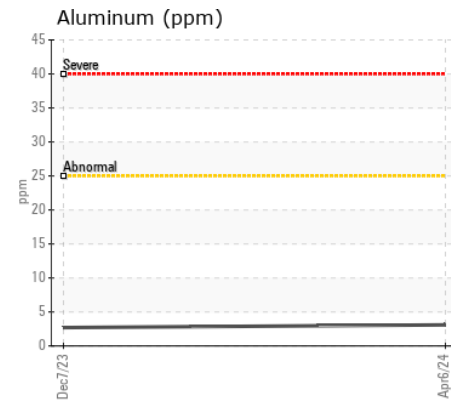
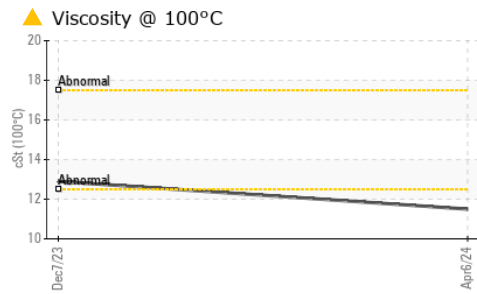
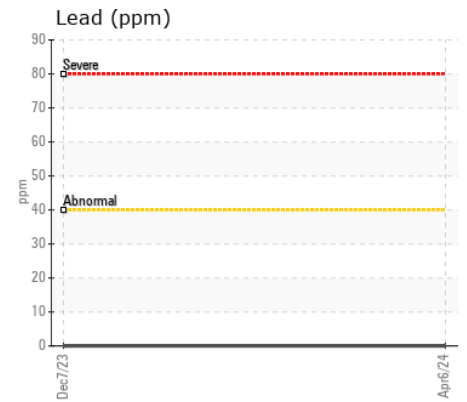
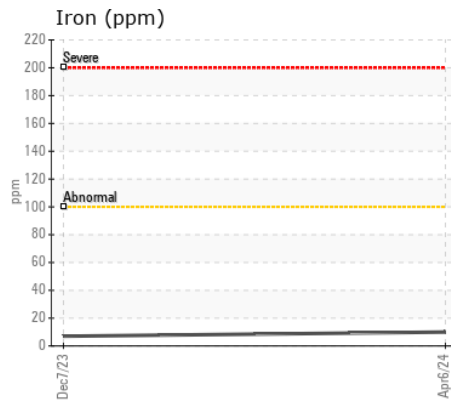
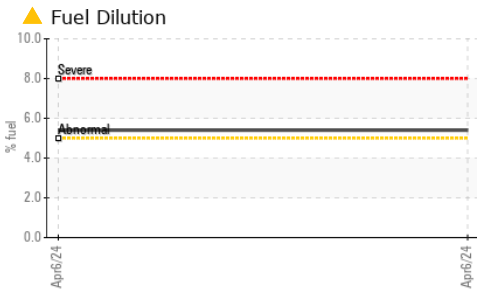
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185m	>25	6	5	---
Potassium	ppm	ASTM D5185m	>20	0	0	---
Fuel	%	ASTM D3524	>5	▲ 5.4	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.2	0.2	---
Nitration	Abs/cm	*ASTM D7624	>20	8.0	8.1	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.5	17.3	---
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	>0.2	NEG	NEG	---

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		3	1	---
Boron	ppm	ASTM D5185m		15	11	---
Barium	ppm	ASTM D5185m		2	0	---
Molybdenum	ppm	ASTM D5185m		84	103	---
Manganese	ppm	ASTM D5185m		1	<1	---
Magnesium	ppm	ASTM D5185m		73	89	---
Calcium	ppm	ASTM D5185m		3792	3659	---
Phosphorus	ppm	ASTM D5185m		894	780	---
Zinc	ppm	ASTM D5185m		1057	991	---
Sulfur	ppm	ASTM D5185m		4859	4226	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	10.4	10.8	---
Base Number (BN)	mg KOH/g	ASTM D2896		11.97	15.04	---
Visc @ 100°C	cSt	ASTM D445		▲ 11.5	12.9	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06156204 **Received** : 22 Apr 2024
Lab Number : 06156204 **Tested** : 25 Apr 2024
Unique Number : 10991627 **Diagnosed** : 25 Apr 2024 - Wes Davis
Test Package : MOB 2 (Additional Tests: FuelDilution, PercentFuel)

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)

RUNDELL INC
 2465 STATE HWY 38
 DRAIN, OR
 US 97435
 Contact: BOB RUNDELL
 bobrundell@rundellinc.com

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F: