



TRAAP
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CATERPILLAR MT865 CHALLENGER

Component
Diesel Engine

Fluid
TRC PRO-SPEC III SYNTHETIC BLEND 15W40 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06101168	TR05871650	TR05502613
Sample Date		Client Info		22 Feb 2024	27 Apr 2023	14 Mar 2022
Machine Age	hrs	Client Info		4490	4197	3707
Oil Age	hrs	Client Info		300	225	190
Filter Age	hrs	Client Info		300	225	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	2	12	13
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>2	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	3	2	3
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	<1	4	4
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

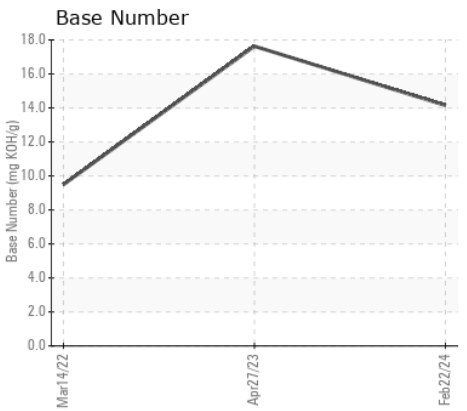
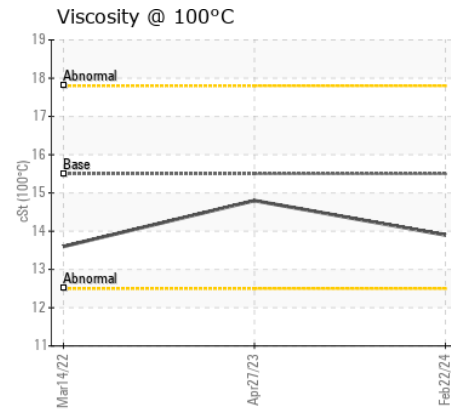
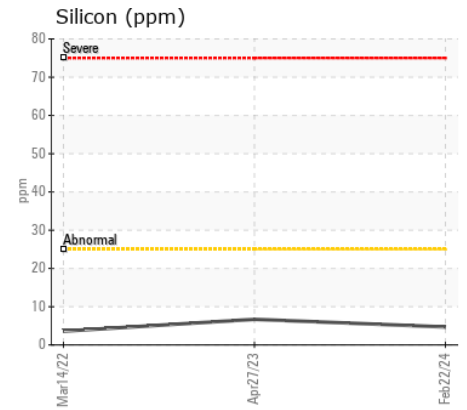
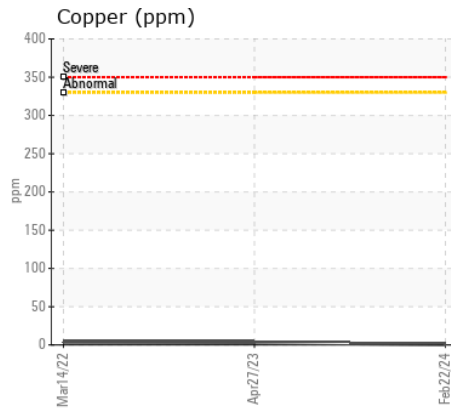
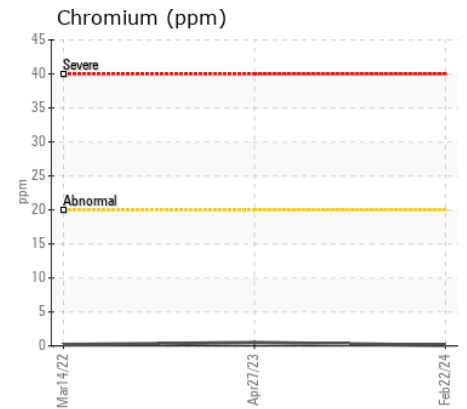
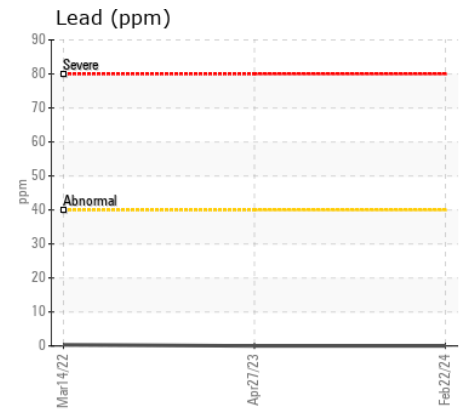
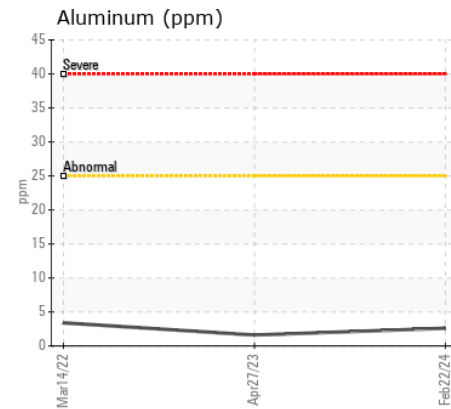
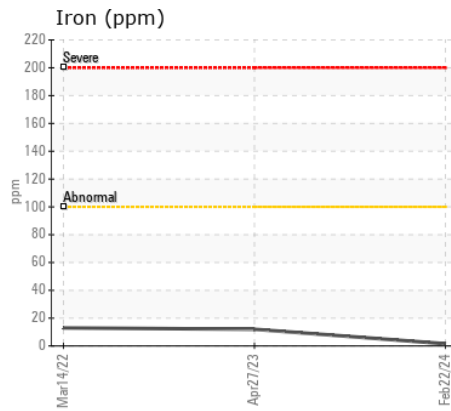
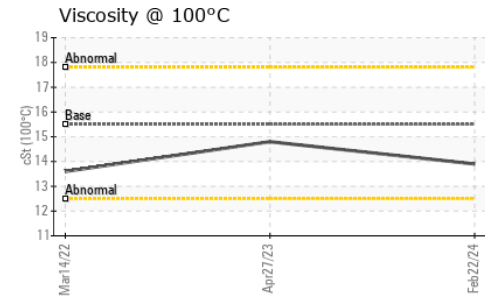
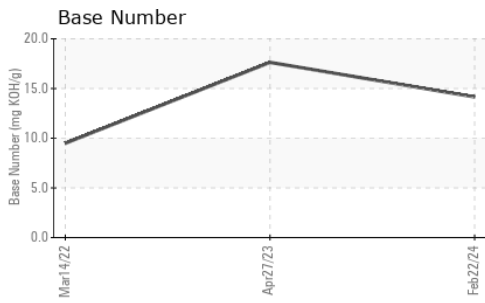
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	5	7	4
Potassium	ppm	ASTM D5185m	>20	0	2	3
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	9.4	11.5	11.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.3	20.1	20.7
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

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		0	1	2
Boron	ppm	ASTM D5185m		0	5	78
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		125	126	80
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		17	20	27
Calcium	ppm	ASTM D5185m		3632	4326	2479
Phosphorus	ppm	ASTM D5185m		610	909	1027
Zinc	ppm	ASTM D5185m		769	1100	1240
Sulfur	ppm	ASTM D5185m		3199	5272	4206
Oxidation	Abs/.1mm	*ASTM D7414	>25	9.7	12.6	16.3
Base Number (BN)	mg KOH/g	ASTM D2896		14.15	17.63	9.49
Visc @ 100°C	cSt	ASTM D445	15.5	13.9	14.8	13.6



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06101168
Lab Number : 06101168
Unique Number : 10899398
Test Package : MOB 2
Received : 26 Feb 2024
Tested : 28 Feb 2024
Diagnosed : 28 Feb 2024 - Sean Felton

MAC FARMS JV
 S 35708 WELLS RD
 CHENEY, WA
 US 99004
 Contact: RONALD GROGAN

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: