



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Machine Id
CATERPILLAR 5604
Component
Diesel Engine
Fluid
SHELL ROTELLA T 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0900156	WC0900153	WC0840508
Sample Date		Client Info		14 May 2024	03 Apr 2024	26 Dec 2023
Machine Age	hrs	Client Info		9731	9441	8804
Oil Age	hrs	Client Info		298	271	317
Filter Age	hrs	Client Info		298	271	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	9	23	13
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	1	0
Titanium	ppm	ASTM D5185m	>2	0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>25	2	5	3
Lead	ppm	ASTM D5185m	>40	0	<1	2
Copper	ppm	ASTM D5185m	>330	0	14	1
Tin	ppm	ASTM D5185m	>15	0	3	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

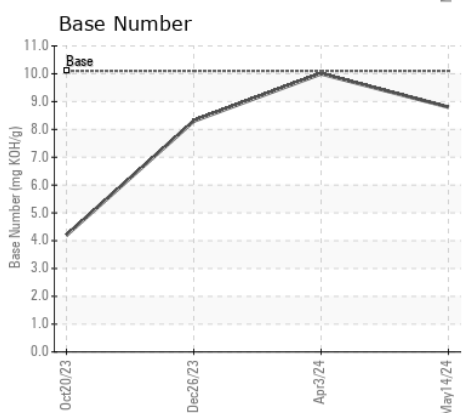
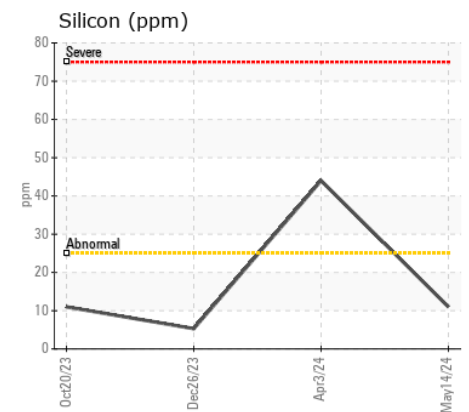
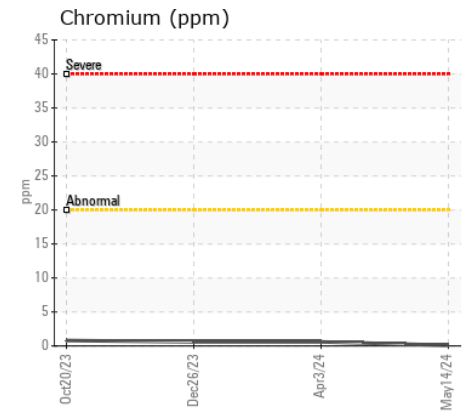
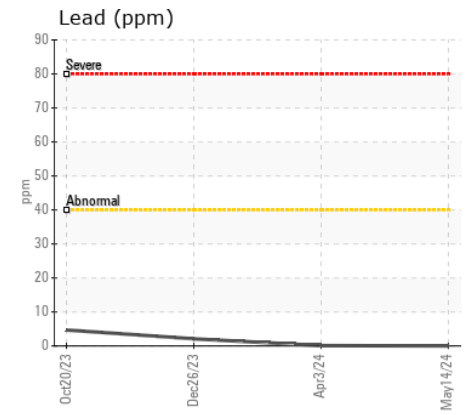
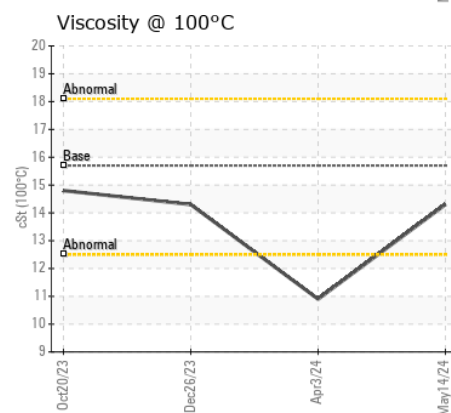
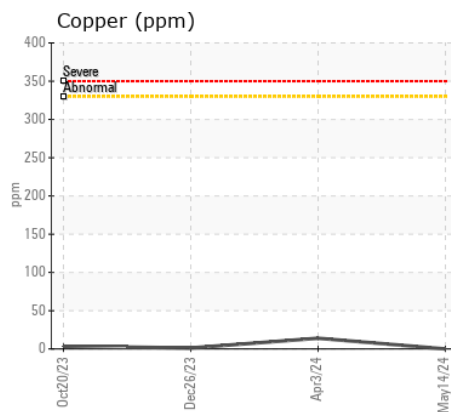
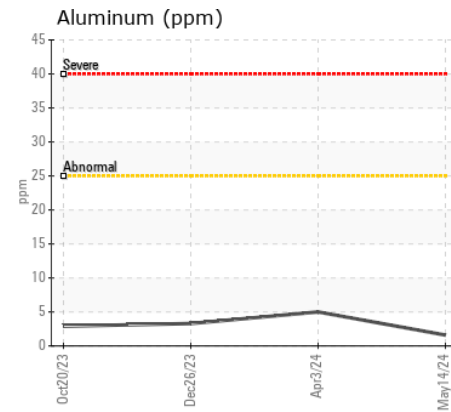
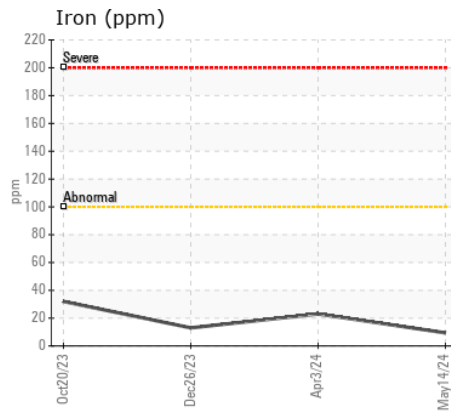
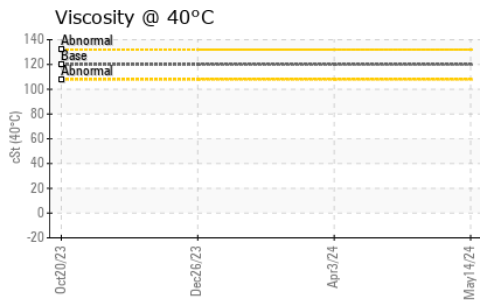
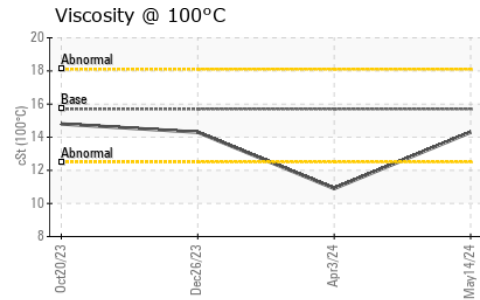
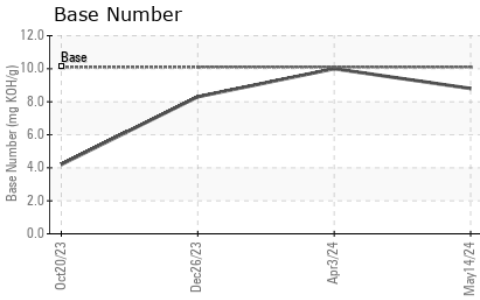
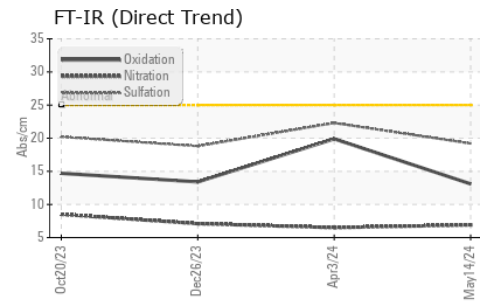
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	11	▲ 44	5
Potassium	ppm	ASTM D5185m	>20	<1	1	0
Fuel		WC Method	>5	<1.0	0.2	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	1	0.3	0.9
Nitration	Abs/cm	*ASTM D7624	>20	6.9	6.5	7.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.2	22.3	18.8
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		1	5	<1
Boron	ppm	ASTM D5185m	316	8	53	15
Barium	ppm	ASTM D5185m	0.0	0	3	0
Molybdenum	ppm	ASTM D5185m	1.2	55	40	66
Manganese	ppm	ASTM D5185m		<1	2	<1
Magnesium	ppm	ASTM D5185m	24	896	490	731
Calcium	ppm	ASTM D5185m	2292	1120	1783	1182
Phosphorus	ppm	ASTM D5185m	1064	1082	930	1001
Zinc	ppm	ASTM D5185m	1160	1271	1077	1142
Sulfur	ppm	ASTM D5185m	4996	3865	3229	3049
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.1	19.9	13.4
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	8.8	10.0	8.3
Visc @ 100°C	cSt	ASTM D445	15.7	14.3	● 10.9	14.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0900156 **Received** : 03 Jul 2024
Lab Number : 06227208 **Tested** : 05 Jul 2024
Unique Number : 11110701 **Diagnosed** : 05 Jul 2024 - Angela Borella
Test Package : MOB 1 (Additional Tests: KV40, TBN)

INTERSTATE WASTE-NEW BRUNSWICK
 986 JERSEY AVE
 NEW BRUNSWICK, NJ
 US 08901
 Contact: Service Manager

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - 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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