



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION



Machine Id
CATERPILLAR CS56 VR33 (S/N C5S01174)
Component
Diesel Engine
Fluid
DURAMAX 15W40 (--- QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DC0034613	DC0021447	DC0004543
Sample Date		Client Info		05 Feb 2024	10 May 2022	27 Jan 2020
Machine Age	hrs	Client Info		3540	3108	2567
Oil Age	hrs	Client Info		500	541	534
Filter Age	hrs	Client Info		500	541	534
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ATTENTION	ATTENTION	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	20	16	18
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	1
Silver	ppm	ASTM D5185m	>2	0	1	0
Aluminum	ppm	ASTM D5185m	>25	2	2	2
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	6	42	▲ 479
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

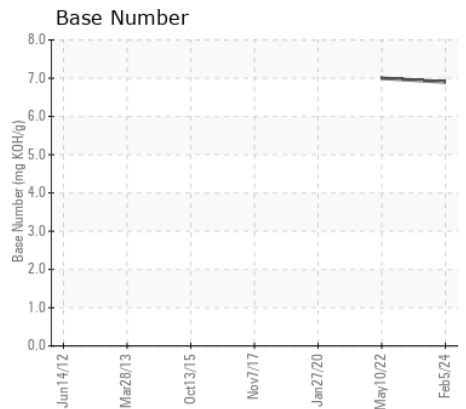
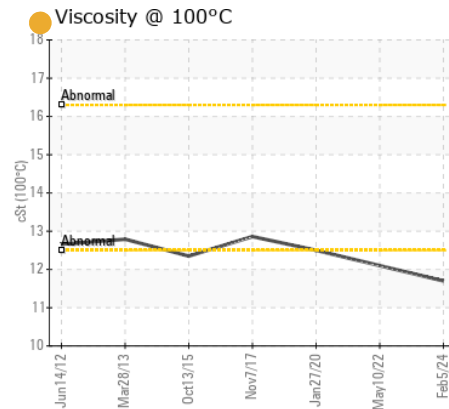
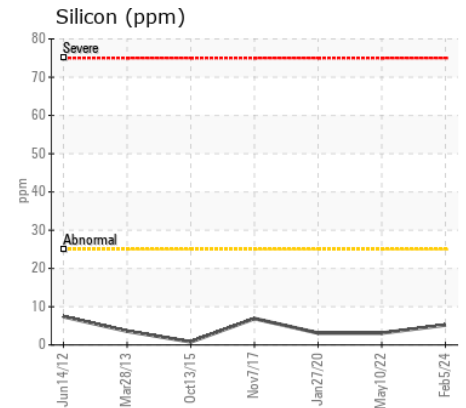
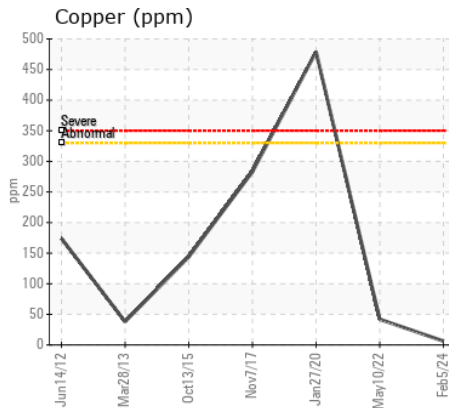
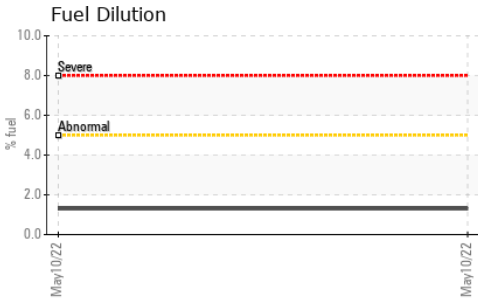
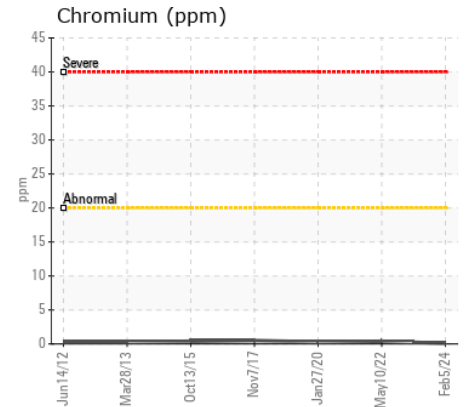
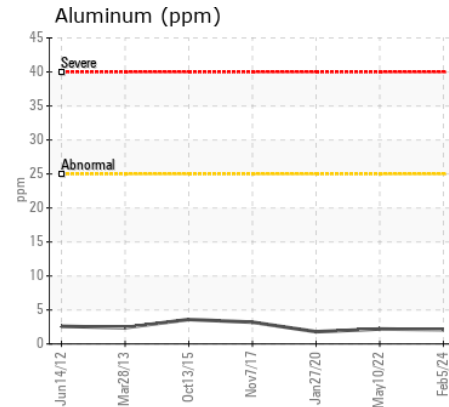
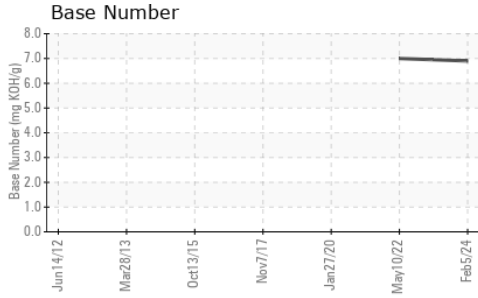
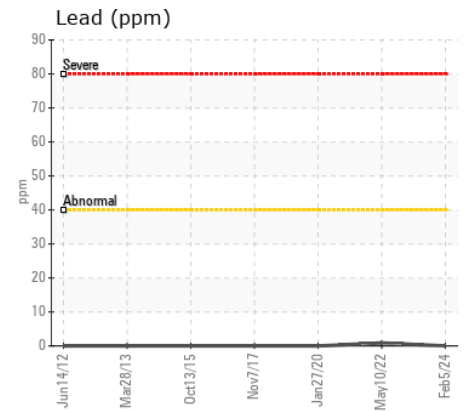
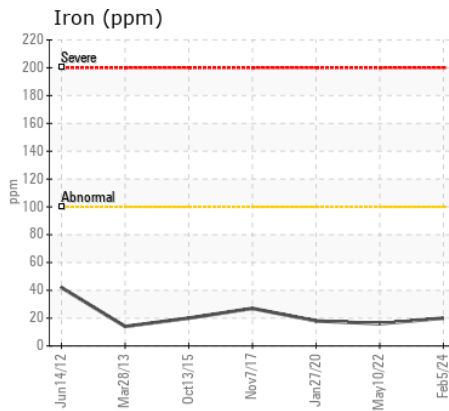
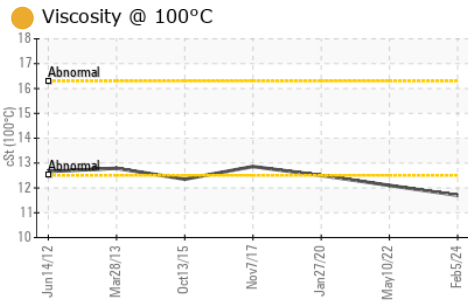
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	5	3	3
Potassium	ppm	ASTM D5185m	>20	<1	<1	2
Fuel	%	ASTM D3524	>5	<1.0	1.3	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.5	0.5	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.7	9.2	8.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.7	20.9	19.6
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 oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		2	2	4
Boron	ppm	ASTM D5185m		2	5	2
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		2	3	4
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		51	59	60
Calcium	ppm	ASTM D5185m		2528	2485	2516
Phosphorus	ppm	ASTM D5185m		1022	912	946
Zinc	ppm	ASTM D5185m		1170	1131	1070
Sulfur	ppm	ASTM D5185m		3964	3273	4071
Oxidation	Abs/.1mm	*ASTM D7414	>25	10.6	12.0	11.9
Base Number (BN)	mg KOH/g	ASTM D2896		6.9	7.0	---
Visc @ 100°C	cSt	ASTM D445		11.7	12.1	12.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DC0034613 **Received** : 28 Feb 2024
Lab Number : 06103466 **Tested** : 02 Mar 2024
Unique Number : 10901696 **Diagnosed** : 02 Mar 2024 - Don Baldrige
Test Package : MOB 1 (Additional Tests: FuelDilution, PercentFuel, TBN)

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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