



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
500 YANMAR 35 CABO
 Component
Starboard Diesel Engine
 Fluid
SHELL ROTELLA T 15W40 (4 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0919938	WC0415755	WCMF109229
Sample Date		Client Info		08 Jul 2024	27 Nov 2019	25 Apr 2008
Machine Age	hrs	Client Info		2100	1750	898
Oil Age	hrs	Client Info		100	0	64
Filter Age	hrs	Client Info		100	150	64
Oil Changed		Client Info		Changed	Changed	Not Changd
Filter Changed		Client Info		N/A	N/A	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	7	9	29
Chromium	ppm	ASTM D5185m	>6	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	2	2	4
Lead	ppm	ASTM D5185m	>95	<1	10	4
Copper	ppm	ASTM D5185m	>85	<1	2	2
Tin	ppm	ASTM D5185m	>9	<1	0	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

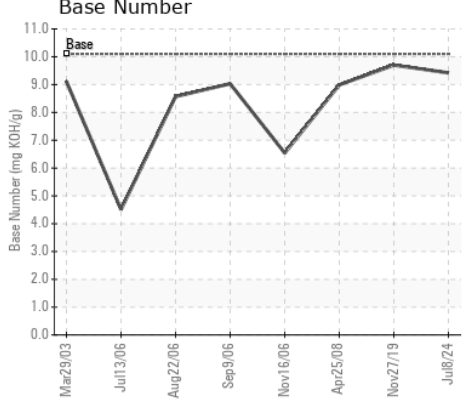
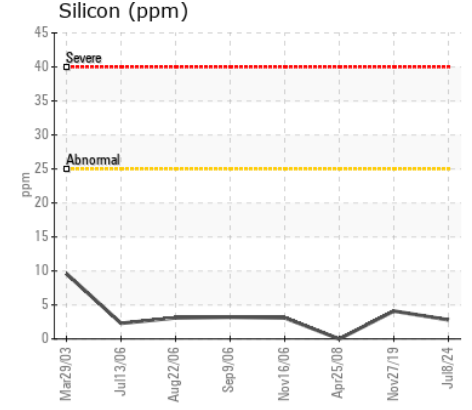
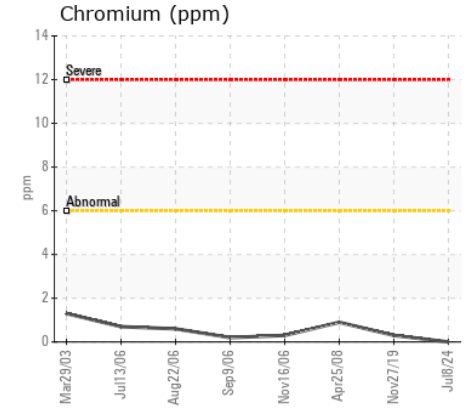
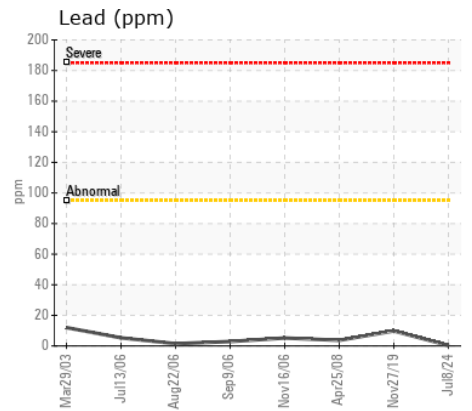
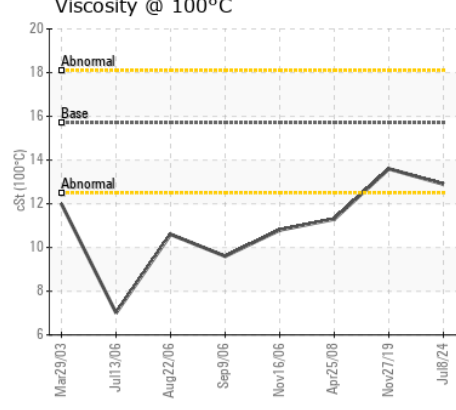
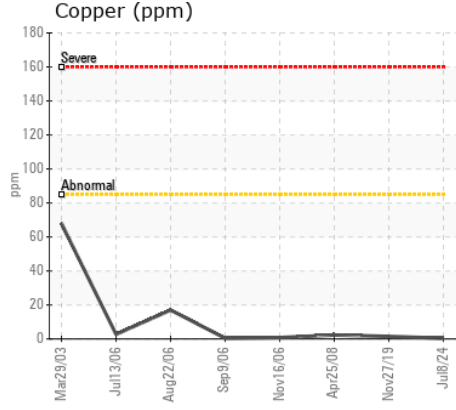
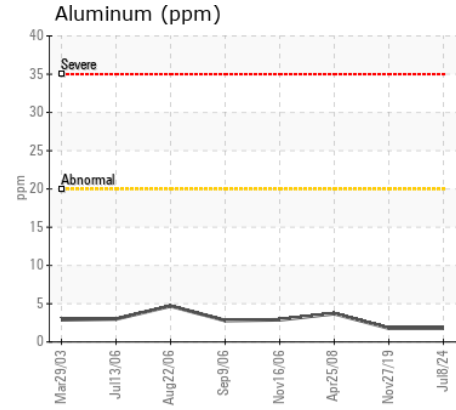
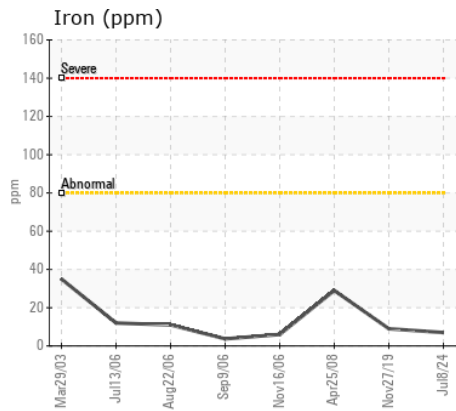
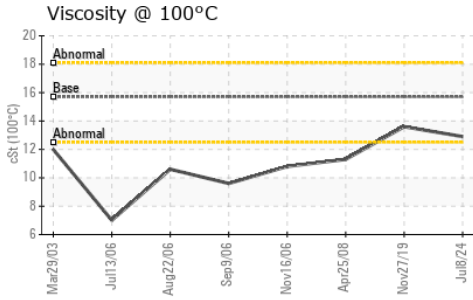
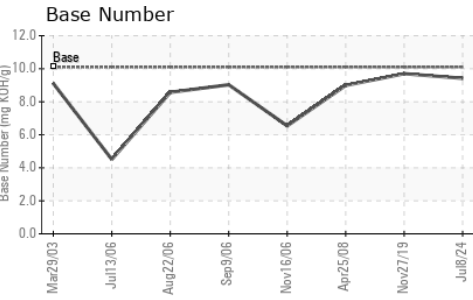
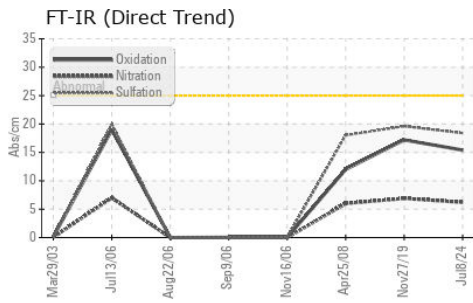
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	3	4	0
Potassium	ppm	ASTM D5185m	>20	<1	5	1
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.2	6.9	6.
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.4	19.6	18.
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	>0.1	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		2	1	4
Boron	ppm	ASTM D5185m	316	7	56	100
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	1.2	56	53	82
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	24	392	739	62
Calcium	ppm	ASTM D5185m	2292	1743	1301	2705
Phosphorus	ppm	ASTM D5185m	1064	1048	1032	1016
Zinc	ppm	ASTM D5185m	1160	1247	1134	1241
Sulfur	ppm	ASTM D5185m	4996	4127	2722	8112
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.4	17.2	12.
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	9.42	9.70	8.99
Visc @ 100°C	cSt	ASTM D445	15.7	12.9	13.6	11.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0919938
Lab Number : 06235144
Unique Number : 11123978
Test Package : MOB 2

Received : 12 Jul 2024
Tested : 15 Jul 2024
Diagnosed : 15 Jul 2024 - Wes Davis

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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)