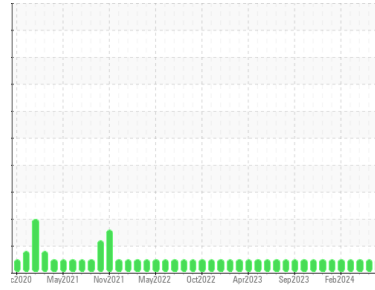




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

Nashville

Machine Id

[Nashville] Oil - Starboard Main Engine

Component

Starboard Main Engine

Fluid

MOBIL 15W40 (180 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

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.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0683379	WC0874906	WC0874893
Sample Date	Client Info		09 Jun 2024	13 May 2024	15 Apr 2024
Machine Age	hrs	Client Info	60425	59942	59508
Oil Age	hrs	Client Info	3738	3254	2127
Oil Changed	Client Info		Not Chngd	Not Chngd	Filtered
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >75	7	7	6
Chromium	ppm	ASTM D5185m >8	0	<1	<1
Nickel	ppm	ASTM D5185m >2	<1	<1	0
Titanium	ppm	ASTM D5185m >3	0	<1	<1
Silver	ppm	ASTM D5185m >2	0	<1	0
Aluminum	ppm	ASTM D5185m >15	2	2	2
Lead	ppm	ASTM D5185m >18	0	<1	0
Copper	ppm	ASTM D5185m >80	2	4	0
Tin	ppm	ASTM D5185m >14	0	<1	<1
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	0	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	36	40	45
Barium	ppm	ASTM D5185m	0	<1	0
Molybdenum	ppm	ASTM D5185m	46	49	45
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m	1097	1111	1101
Calcium	ppm	ASTM D5185m	1641	1576	1641
Phosphorus	ppm	ASTM D5185m	1082	1062	1070
Zinc	ppm	ASTM D5185m	1338	1305	1327
Sulfur	ppm	ASTM D5185m	3906	3299	3746

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >20	3	4	3
Sodium	ppm	ASTM D5185m >118	4	4	3
Potassium	ppm	ASTM D5185m >20	5	4	3

INFRA-RED

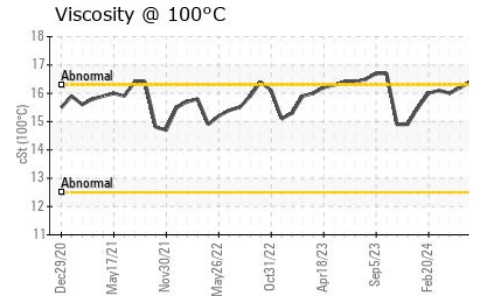
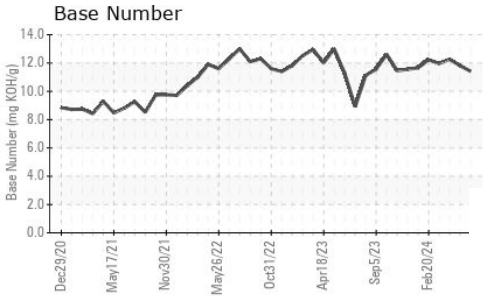
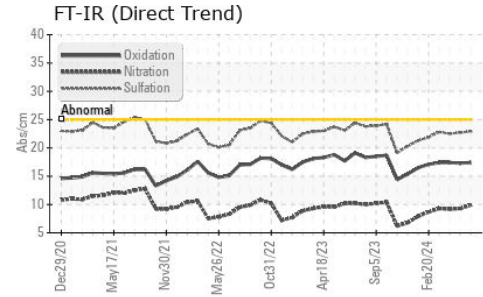
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	1.7	1.4	1.4
Nitration	Abs/cm	*ASTM D7624 >20	9.9	9.3	9.2
Sulfation	Abs/.1mm	*ASTM D7415 >30	22.9	22.7	22.5

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	17.4	17.3	17.4
Base Number (BN)	mg KOH/g	ASTM D2896	11.42	11.80	12.27



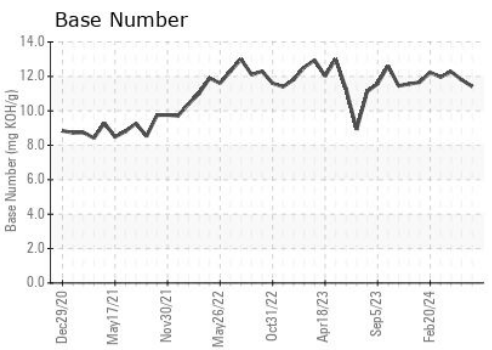
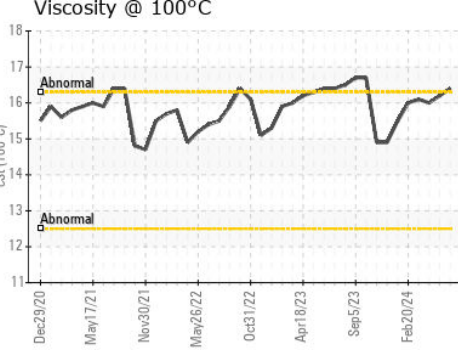
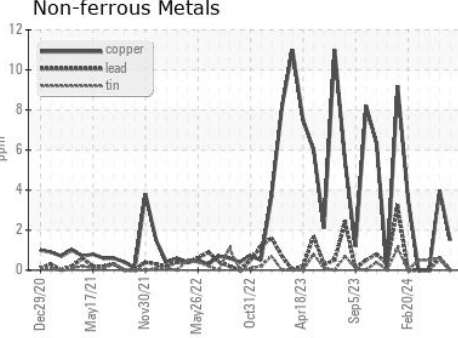
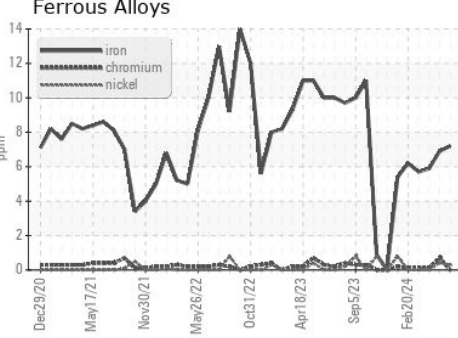
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	LIGHT	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
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
Free Water	scalar	*Visual		NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	16.4	16.2	16.0

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0683379 **Received** : 17 Jun 2024
Lab Number : **06211965** **Tested** : 18 Jun 2024
Unique Number : 11084829 **Diagnosed** : 18 Jun 2024 - Wes Davis
Test Package : IND 2

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 CATLETTSBURG, KY
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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)