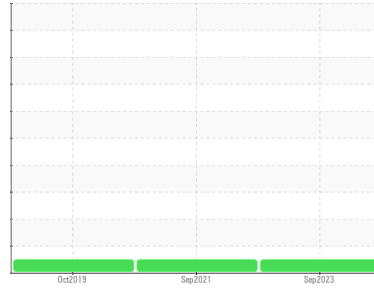




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Machine Id
OUT STANDING (S/N 46325037)
 Component
Starboard Main Engine
 Fluid
VALVOLINE PREMIUM BLUE 2000 15W40 (--- 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		WC0850536	WC0622726	WC04819553
Sample Date	Client Info		29 Sep 2023	21 Sep 2021	09 Oct 2019
Machine Age	hrs	Client Info	610	550	427
Oil Age	hrs	Client Info	60	100	0
Oil Changed	Client Info		N/A	Not Changd	N/A
Sample Status			NORMAL	NORMAL	NORMAL

CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<1.0	<1.0	<1.0
Glycol	WC Method		NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>75	45	51	43
Chromium	ppm	ASTM D5185m	>8	1	2	1
Nickel	ppm	ASTM D5185m	>2	2	2	1
Titanium	ppm	ASTM D5185m	>3	0	7	32
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>15	<1	6	2
Lead	ppm	ASTM D5185m	>18	<1	<1	<1
Copper	ppm	ASTM D5185m	>80	17	30	6
Tin	ppm	ASTM D5185m	>14	<1	<1	<1
Antimony	ppm	ASTM D5185m		---	0	4
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		66	40	5
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		56	54	61
Manganese	ppm	ASTM D5185m		<1	<1	1
Magnesium	ppm	ASTM D5185m		708	670	1186
Calcium	ppm	ASTM D5185m		1650	1467	1630
Phosphorus	ppm	ASTM D5185m		1077	980	1313
Zinc	ppm	ASTM D5185m		1339	1141	1477
Sulfur	ppm	ASTM D5185m		3172	2502	2545

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>20	7	6	6
Sodium	ppm	ASTM D5185m	>75	5	3	7
Potassium	ppm	ASTM D5185m	>20	2	<1	2

INFRA-RED

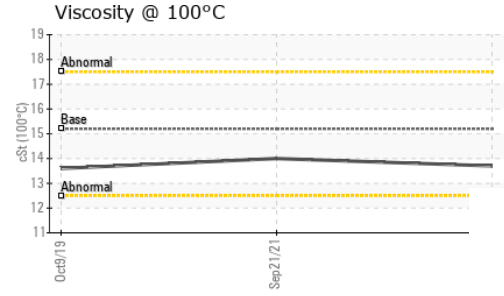
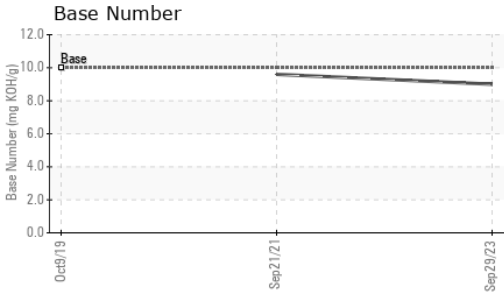
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		0.3	0.5	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.7	8.7	6.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.8	19.4	15.3

FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.4	15.8	11.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.0	9.0	9.6	---



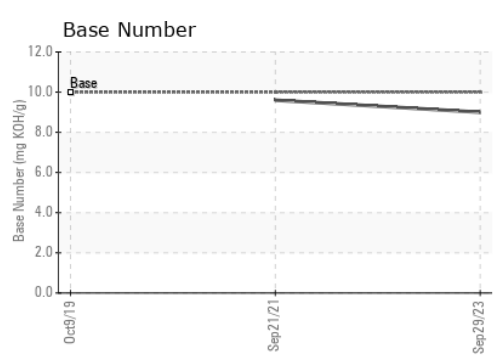
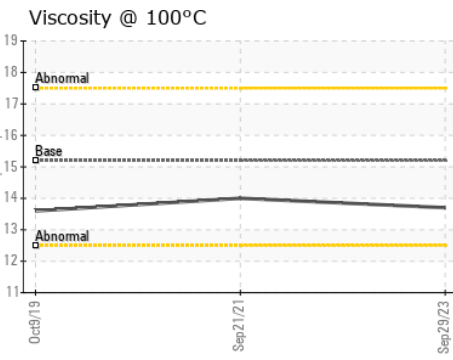
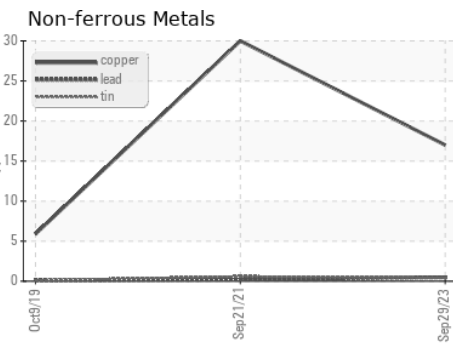
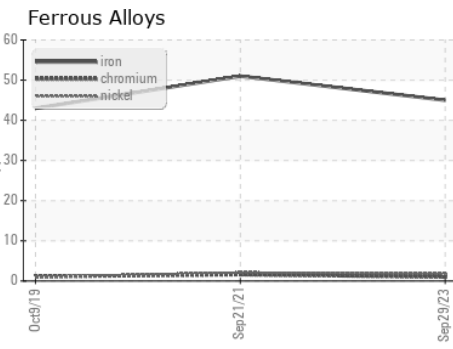
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.2	13.7	14.0	13.6

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0850536 **Received** : 04 Oct 2023
Lab Number : **05968567** **Diagnosed** : 05 Oct 2023
Unique Number : 10675118 **Diagnostician** : Don Baldrige
Test Package : MAR 2

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 jdidonato333@gmail.com
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 F:

Certificate L2367
 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)