



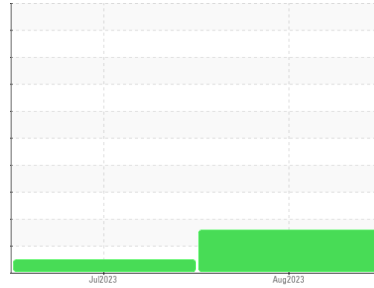
PROBLEM SUMMARY

Sample Rating Trend

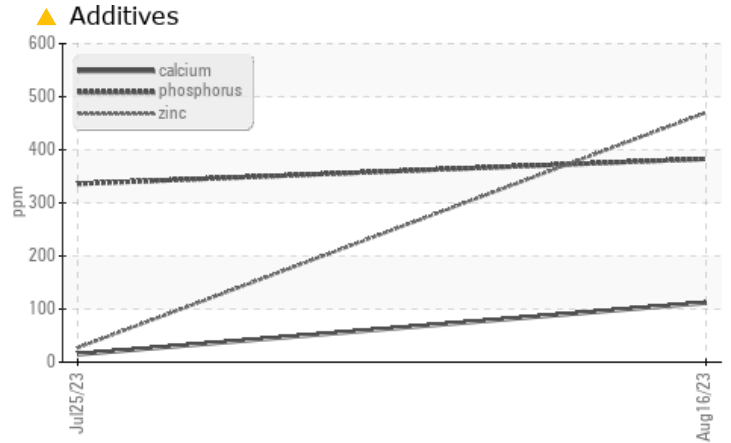
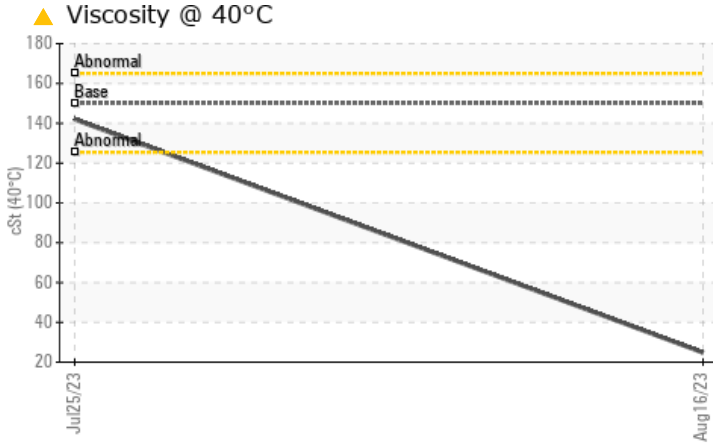
VISCOSITY



Area
OCEAN NAVIGATOR
 Machine Id
[OCEAN NAVIGATOR] OCEAN NAVIGATOR - Z-DRIVE
 Component
Port Gearbox
 Fluid
CASTROL ALPHA SP150 (--- LTR)



COMPONENT CONDITION SUMMARY



RECOMMENDATION

Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				ATTENTION	NORMAL	---
Calcium	ppm	ASTM D5185m		▲ 112	15	---
Zinc	ppm	ASTM D5185m		▲ 470	27	---
Sulfur	ppm	ASTM D5185m		▲ 4056	10891	---
Visc @ 40°C	cSt	ASTM D445	150.0	▲ 24.8	142	---

Customer Id: VICNEWIN
 Sample No.: WC0824505
 Lab Number: 05926809
 Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Don Baldrige +1
don.b505@comcast.net

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

25 Jul 2023 Diag: Angela Borella

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is acceptable for the time in service.

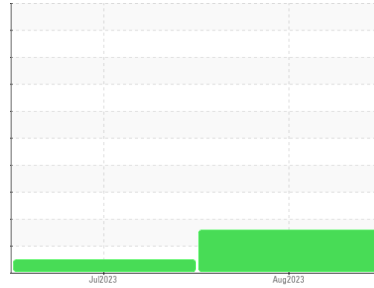
view report





OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area
OCEAN NAVIGATOR
 Machine Id
[OCEAN NAVIGATOR] OCEAN NAVIGATOR - Z-DRIVE
 Component
Port Gearbox
 Fluid
CASTROL ALPHA SP150 (--- LTR)

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 oil viscosity is lower than normal. This plus the additive levels indicates the addition of a different brand, or type of oil. Confirm oil type. The AN level is acceptable for this fluid.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0824505	WC0824528	---
Sample Date	Client Info		16 Aug 2023	25 Jul 2023	---
Machine Age	hrs	Client Info	0	0	---
Oil Age	hrs	Client Info	0	0	---
Oil Changed	Client Info		N/A	N/A	---
Sample Status			ATTENTION	NORMAL	---

WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>200	18	10	---
Chromium	ppm	ASTM D5185m	>10	<1	0	---
Nickel	ppm	ASTM D5185m	>10	0	0	---
Titanium	ppm	ASTM D5185m		<1	0	---
Silver	ppm	ASTM D5185m		0	0	---
Aluminum	ppm	ASTM D5185m	>25	<1	<1	---
Lead	ppm	ASTM D5185m	>50	<1	0	---
Copper	ppm	ASTM D5185m	>200	4	<1	---
Tin	ppm	ASTM D5185m	>10	0	0	---
Vanadium	ppm	ASTM D5185m		<1	0	---
Cadmium	ppm	ASTM D5185m		<1	0	---

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		0	<1	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		0	<1	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m		3	<1	---
Calcium	ppm	ASTM D5185m		▲ 112	15	---
Phosphorus	ppm	ASTM D5185m		383	336	---
Zinc	ppm	ASTM D5185m		▲ 470	27	---
Sulfur	ppm	ASTM D5185m		▲ 4056	10891	---

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>50	<1	1	---
Sodium	ppm	ASTM D5185m		1	4	---
Potassium	ppm	ASTM D5185m	>20	2	0	---

FLUID DEGRADATION

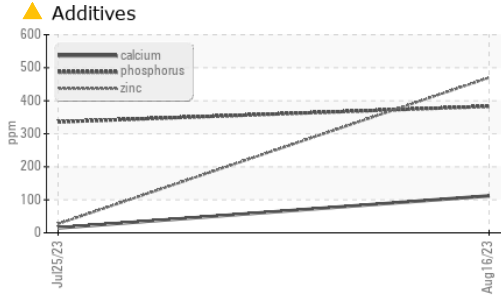
	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D8045		0.51	0.53	---

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	>0.2	NEG	NEG	---
Free Water	scalar	*Visual		NEG	NEG	---



OIL ANALYSIS REPORT

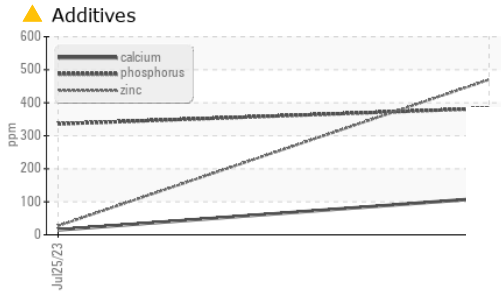


FLUID PROPERTIES	method	limit/base	current	history1	history2
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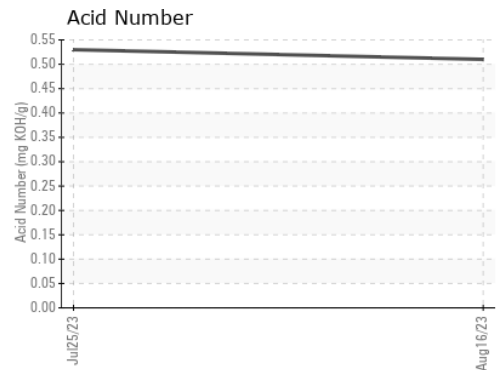
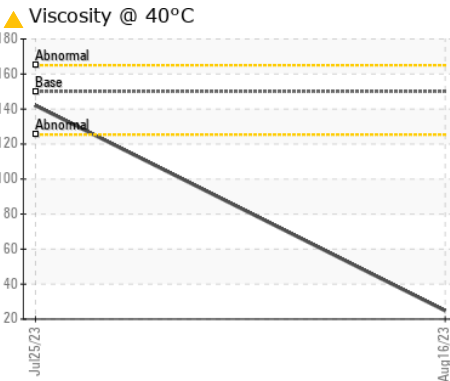
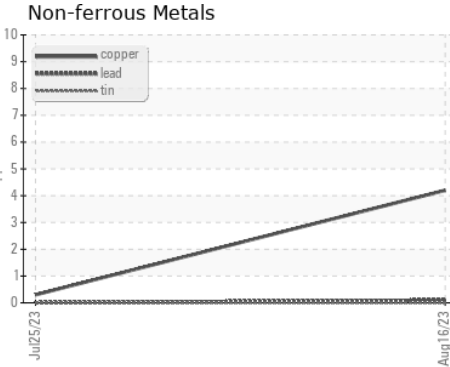
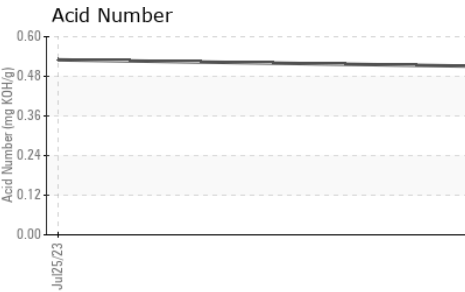
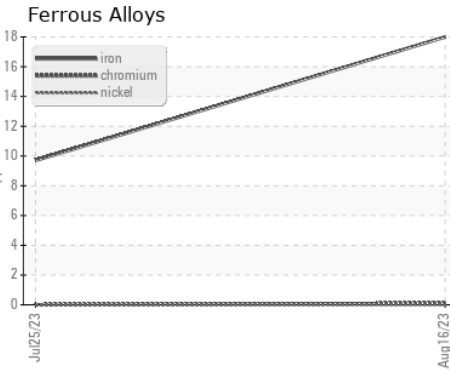
Visc @ 40°C	cSt	ASTM D445	150.0	▲ 24.8	142	---
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SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color	no image	no image	no image
Bottom	no image	no image	no image



GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0824505 **Received** : 16 Aug 2023
Lab Number : 05926809 **Diagnosed** : 18 Aug 2023
Unique Number : 10606756 **Diagnostician** : Don Baldrige
Test Package : MAR 2

American Queen Voyages - Oceans
 1201 Bridgeport Drive
 Jeffersonville, IN
 US 47130
 Contact: Dietrich Giles
 DIETRICH.GILES@AQVOYAGES.COM
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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)