



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Area  
**OCEAN NAVIGATOR**  
Machine Id  
**[OCEAN NAVIGATOR] OCEAN NAVIGATOR MENG PT**  
Component  
**Port Main Engine**  
Fluid  
**FUCHS 15W40 (--- LTR)**

## RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>WC0824570</b>	WC0824577	WC0824511
Sample Date		Client Info		<b>23 Oct 2023</b>	24 Sep 2023	15 Aug 2023
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>30</b>	33	28
Chromium	ppm	ASTM D5185m	>8	<b>&lt;1</b>	1	1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>1</b>	2	2
Lead	ppm	ASTM D5185m	>18	<b>9</b>	10	7
Copper	ppm	ASTM D5185m	>80	<b>25</b>	26	29
Tin	ppm	ASTM D5185m	>14	<b>&lt;1</b>	1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

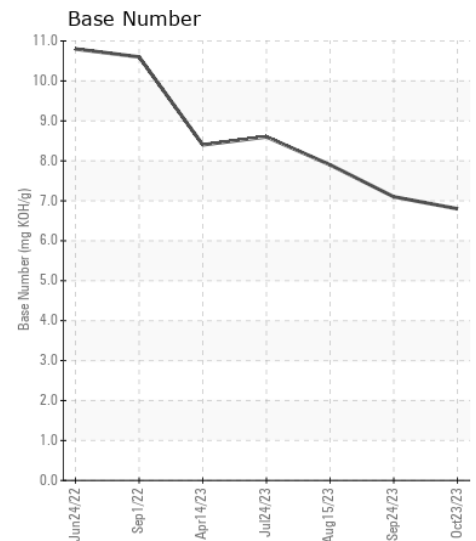
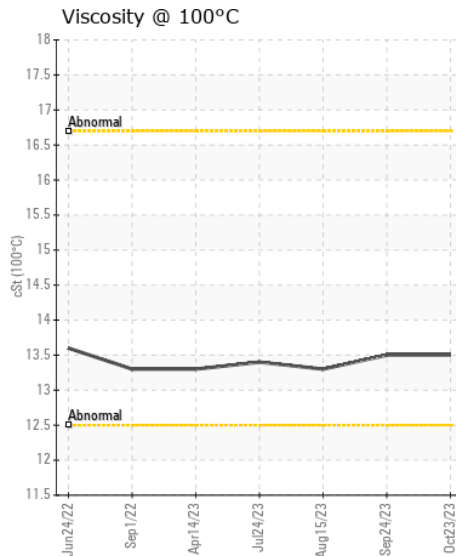
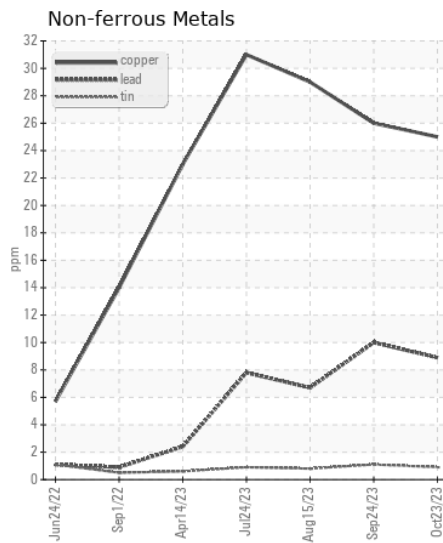
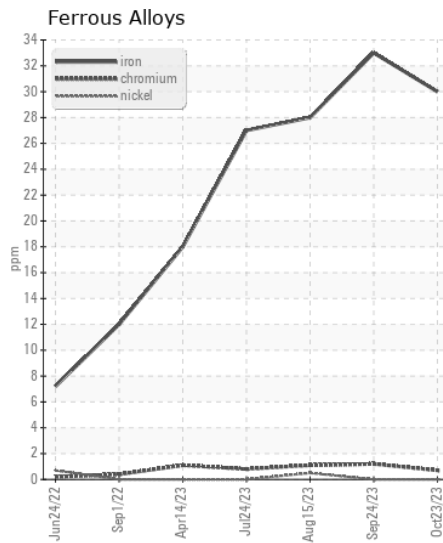
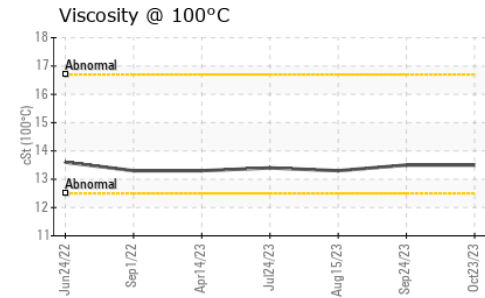
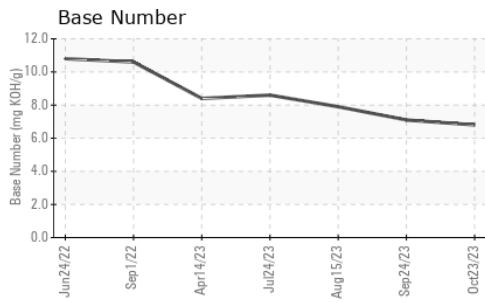
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>7</b>	7	7
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	2	4
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.3</b>	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.4</b>	9.5	8.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.1</b>	22.8	21.7
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	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	>75	<b>29</b>	30	30
Boron	ppm	ASTM D5185m		<b>41</b>	47	68
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>8</b>	9	11
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>28</b>	23	14
Calcium	ppm	ASTM D5185m		<b>3194</b>	3496	3262
Phosphorus	ppm	ASTM D5185m		<b>955</b>	1044	920
Zinc	ppm	ASTM D5185m		<b>1205</b>	1369	1169
Sulfur	ppm	ASTM D5185m		<b>3609</b>	4216	3893
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>17.6</b>	17.1	15.4
Base Number (BN)	mg KOH/g	ASTM D2896		<b>6.8</b>	7.1	7.9
Visc @ 100°C	cSt	ASTM D445		<b>13.5</b>	13.5	13.3



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0824570  
**Lab Number** : 05991970  
**Unique Number** : 10714632  
**Test Package** : MAR 2

**Received** : 27 Oct 2023  
**Tested** : 30 Oct 2023  
**Diagnosed** : 30 Oct 2023 - Wes Davis

**American Queen Voyages - Oceans**  
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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)