



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

Machine Id  
**ANN ELISE**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 400 LE 15W40 (150 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0062023</b>	MW0062025	MW0062020
Sample Date		Client Info		<b>25 Jan 2024</b>	21 Nov 2023	27 Oct 2023
Machine Age	hrs	Client Info		<b>4597</b>	3303	3235
Oil Age	hrs	Client Info		<b>467</b>	338	1500
Filter Age	hrs	Client Info		<b>467</b>	338	750
Oil Changed		Client Info		<b>Changed</b>	N/A	Changed
Filter Changed		Client Info		<b>Changed</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>7</b>	4	6
Chromium	ppm	ASTM D5185m	>8	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m	>3	<b>6</b>	6	6
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>3</b>	3	3
Lead	ppm	ASTM D5185m	>18	<b>3</b>	<1	1
Copper	ppm	ASTM D5185m	>80	<b>44</b>	10	12
Tin	ppm	ASTM D5185m	>14	<b>&lt;1</b>	0	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

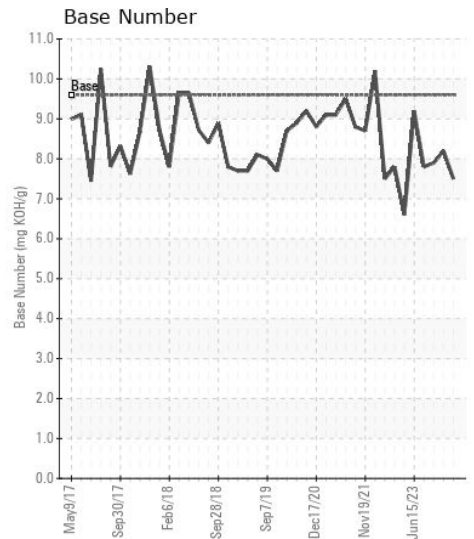
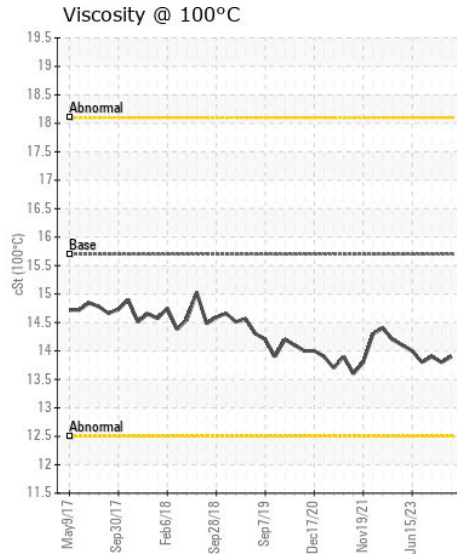
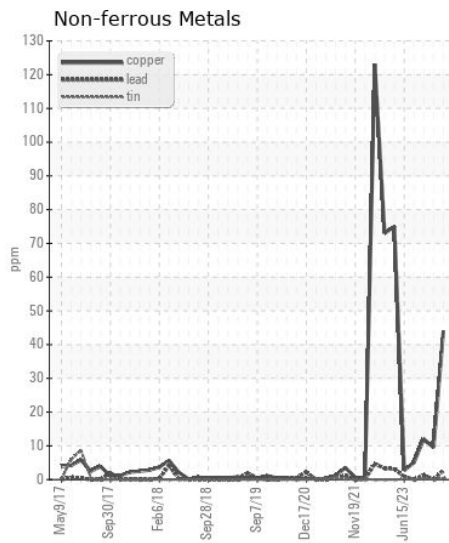
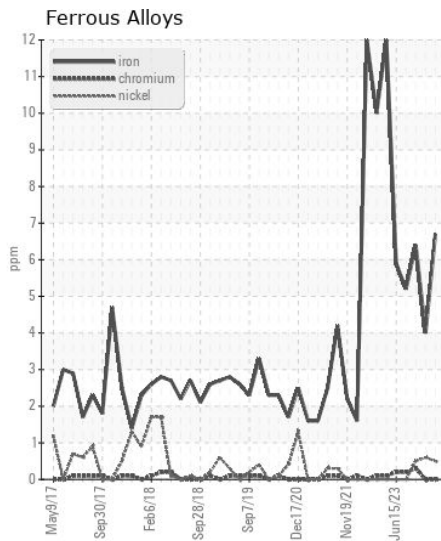
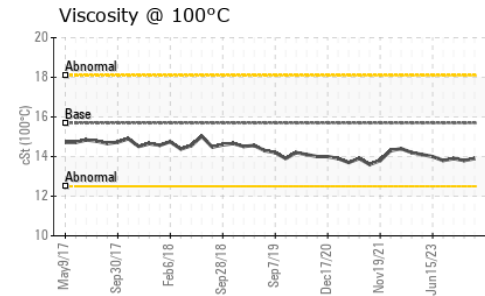
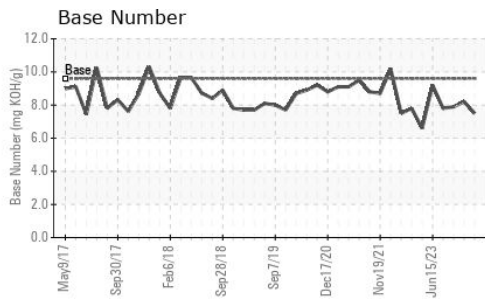
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>4</b>	4	6
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	2	3
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>0.2</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.0</b>	7.9	7.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.4</b>	21.8	22.0
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>2</b>	2	1
Boron	ppm	ASTM D5185m		<b>192</b>	203	218
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>81</b>	78	81
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>694</b>	656	611
Calcium	ppm	ASTM D5185m		<b>1522</b>	1480	1449
Phosphorus	ppm	ASTM D5185m	1200	<b>716</b>	713	594
Zinc	ppm	ASTM D5185m	1300	<b>849</b>	823	787
Sulfur	ppm	ASTM D5185m	3200	<b>2677</b>	2697	2764
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>17.8</b>	16.4	16.4
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	<b>7.5</b>	8.2	7.9
Visc @ 100°C	cSt	ASTM D445	15.7	<b>13.9</b>	13.8	13.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0062023  
**Lab Number** : 06087960  
**Unique Number** : 10875405  
**Test Package** : MAR 2  
**Received** : 13 Feb 2024  
**Tested** : 14 Feb 2024  
**Diagnosed** : 15 Feb 2024 - Don Baldrige

**MAGNOLIA MARINE TRANSPORT**  
 697 HAINING ROAD  
 VICKSBURG, MS  
 US 39183  
 Contact: MMT MAINTENANCE PLANNERS  
 mmtmaintenanceplanners@ergon.com

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) F: (601)638-8028