



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

Machine Id  
**KATHY AZLIN**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 400 SDE SAE 15W40 (165 GAL)**

**RECOMMENDATION**

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0067157</b>	MW0057992	MW0057986
Sample Date		Client Info		<b>13 Apr 2024</b>	19 Mar 2024	27 Feb 2024
Machine Age	hrs	Client Info		<b>62809</b>	62353	61857
Oil Age	hrs	Client Info		<b>453</b>	1382	934
Filter Age	hrs	Client Info		<b>453</b>	679	231
Oil Changed		Client Info		<b>Changed</b>	Not Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	ATTENTION	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>3</b>	6	0
Chromium	ppm	ASTM D5185m	>8	<b>0</b>	<1	0
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	>3	<b>11</b>	10	11
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>&lt;1</b>	2	1
Lead	ppm	ASTM D5185m	>18	<b>0</b>	<1	0
Copper	ppm	ASTM D5185m	>80	<b>4</b>	18	4
Tin	ppm	ASTM D5185m	>14	<b>0</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

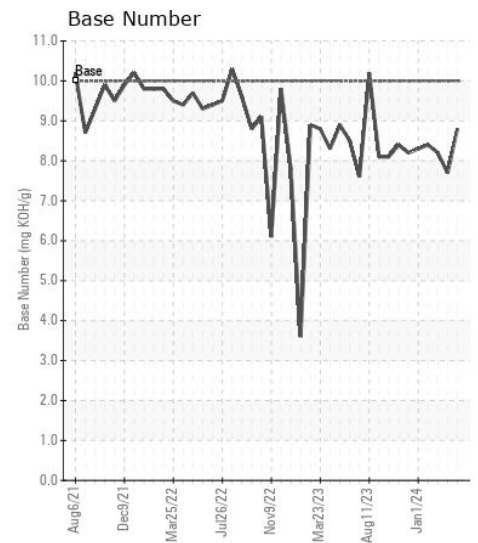
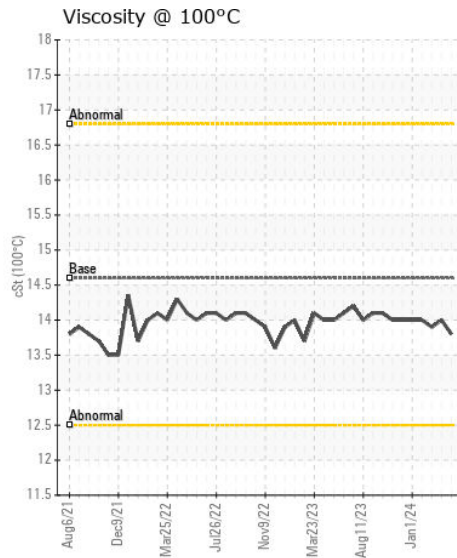
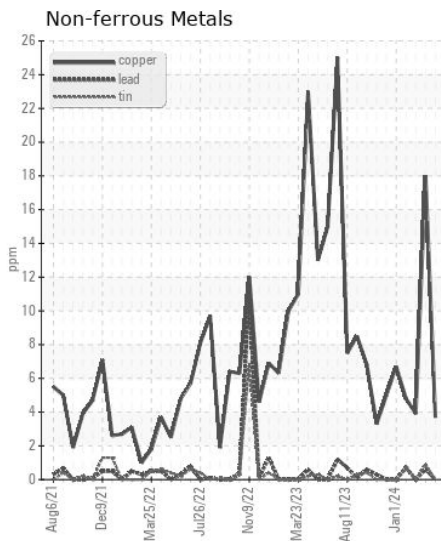
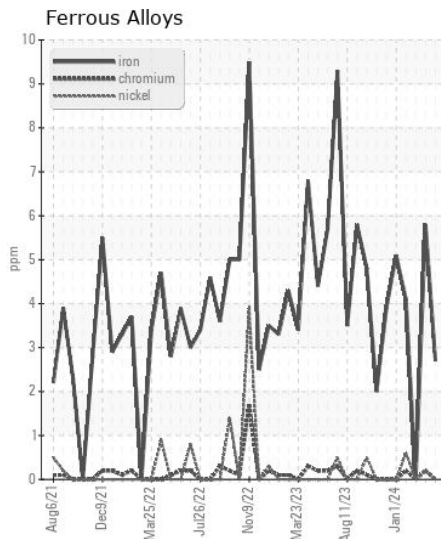
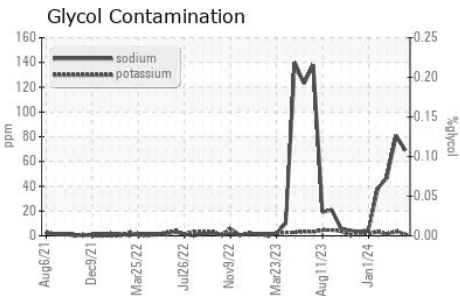
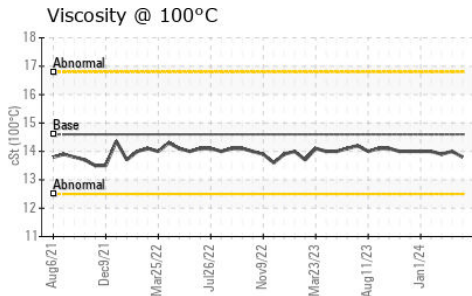
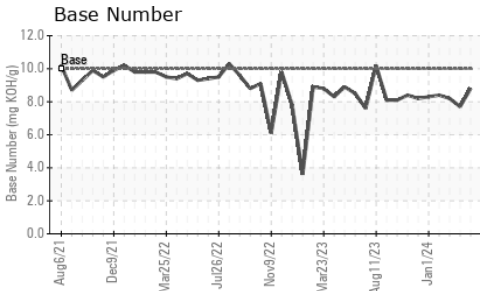
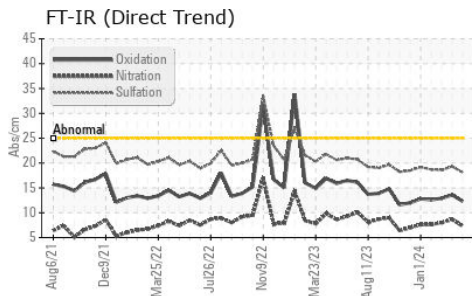
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>9</b>	12	8
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	3	2
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	%	*ASTM D2982		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.1</b>	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.3</b>	8.7	8.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.1</b>	19.3	18.6
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>69</b>	81	47
Boron	ppm	ASTM D5185m		<b>144</b>	193	210
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>32</b>	41	39
Manganese	ppm	ASTM D5185m		<b>0</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>670</b>	584	564
Calcium	ppm	ASTM D5185m		<b>1889</b>	2218	2123
Phosphorus	ppm	ASTM D5185m	760	<b>795</b>	827	799
Zinc	ppm	ASTM D5185m	800	<b>903</b>	978	925
Sulfur	ppm	ASTM D5185m	3000	<b>3905</b>	4041	3580
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>12.3</b>	13.6	12.9
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>8.8</b>	7.7	8.2
Visc @ 100°C	cSt	ASTM D445	14.6	<b>13.8</b>	14.0	13.9



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : MW0067157

Lab Number : 06159753

Unique Number : 10995176

Test Package : MAR 2 ( Additional Tests: Glycol )

Received : 24 Apr 2024

Tested : 26 Apr 2024

Diagnosed : 26 Apr 2024 - Sean Felton

MAGNOLIA MARINE TRANSPORT

697 HAINING ROAD

VICKSBURG, MS

US 39183

Contact: MMT MAINTENANCE PLANNERS

mmtmaintenanceplanners@ergon.com

T: x:

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