



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

Machine Id  
**EMD KELLY LEE**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 710 LE (285 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0066967</b>	MW0057771	MW0057764
Sample Date		Client Info		<b>08 May 2024</b>	23 Mar 2024	03 Feb 2024
Machine Age	hrs	Client Info		<b>17140</b>	16647	15761
Oil Age	hrs	Client Info		<b>0</b>	2290	1410
Filter Age	hrs	Client Info		<b>0</b>	918	1500
Oil Changed		Client Info		<b>Changed</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Changed</b>	Not Changd	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>8</b>	10	5
Chromium	ppm	ASTM D5185m	>8	<b>&lt;1</b>	0	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	1	1
Lead	ppm	ASTM D5185m	>18	<b>1</b>	<1	1
Copper	ppm	ASTM D5185m	>80	<b>8</b>	9	6
Tin	ppm	ASTM D5185m	>14	<b>2</b>	2	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
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.

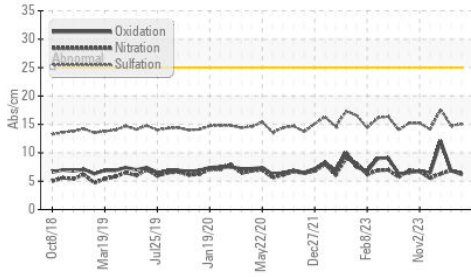
Silicon	ppm	ASTM D5185m	>20	<b>3</b>	2	3
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	0	2
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.9</b>	1.1	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.2</b>	6.9	6.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>15.0</b>	14.8	17.6
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**

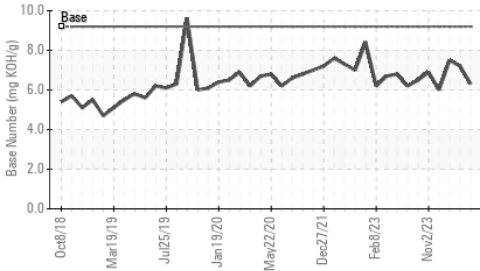
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>1</b>	1	0
Boron	ppm	ASTM D5185m		<b>50</b>	41	40
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>45</b>	43	41
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m		<b>22</b>	24	16
Calcium	ppm	ASTM D5185m		<b>3191</b>	3316	2898
Phosphorus	ppm	ASTM D5185m		<b>22</b>	16	0
Zinc	ppm	ASTM D5185m	10	<b>16</b>	12	5
Sulfur	ppm	ASTM D5185m		<b>2192</b>	2431	2093
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>6.4</b>	6.8	12.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.2	<b>6.3</b>	7.2	7.5
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.0</b>	13.0	13.6

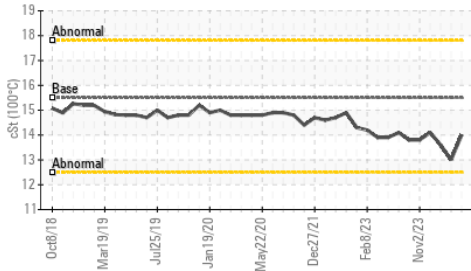
**FT-IR (Direct Trend)**



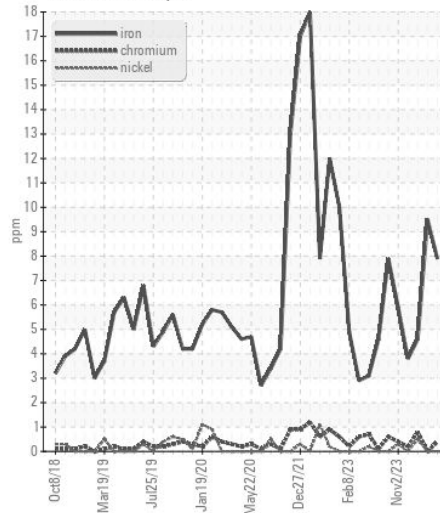
**Base Number**



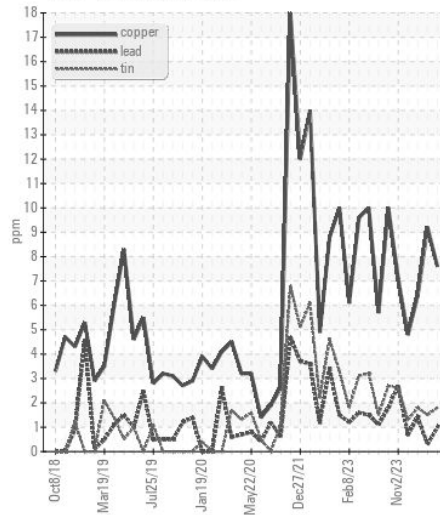
**Viscosity @ 100°C**



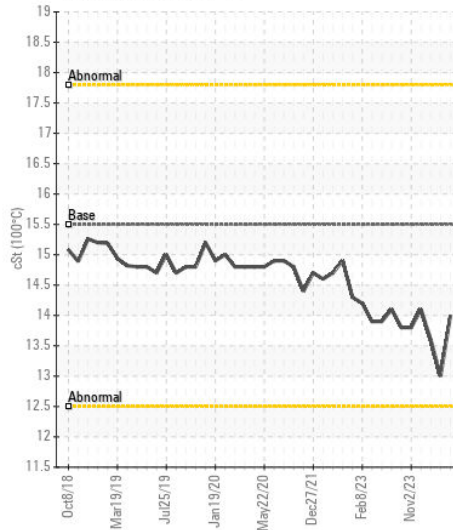
**Ferrous Alloys**



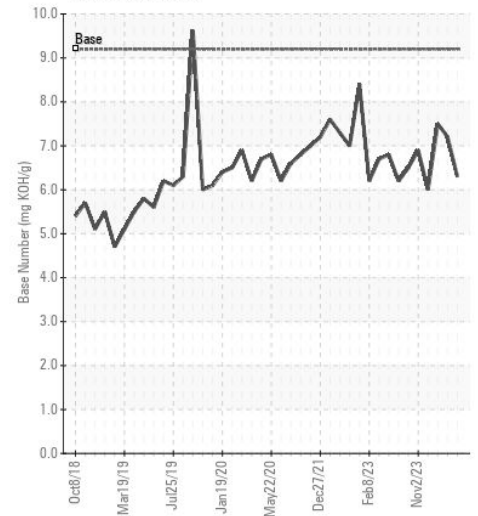
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0066967  
**Lab Number** : 06174907  
**Unique Number** : 11020960  
**Test Package** : MAR 2

**Received** : 09 May 2024  
**Tested** : 10 May 2024  
**Diagnosed** : 10 May 2024 - Wes Davis

**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)

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