



Machine Id  
**EIC**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 400 XLE 15W40 (--- GAL)**

**RECOMMENDATION**

We advise that you check the fuel injection system. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW06101487</b>	MW06071444	MW06028301
Sample Date		Client Info		<b>26 Feb 2024</b>	25 Jan 2024	06 Dec 2023
Machine Age	hrs	Client Info		<b>25089</b>	24169	23446
Oil Age	hrs	Client Info		<b>920</b>	723	912
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>SEVERE</b>	ABNORMAL	ABNORMAL

**WEAR**

The lead level is abnormal.

Iron	ppm	ASTM D5185m	>75	<b>11</b>	6	8
Chromium	ppm	ASTM D5185m	>8	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
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>&lt;1</b>	<1	2
Lead	ppm	ASTM D5185m	>18	<b>▲ 23</b>	11	13
Copper	ppm	ASTM D5185m	>80	<b>2</b>	2	4
Tin	ppm	ASTM D5185m	>14	<b>&lt;1</b>	<1	0
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**

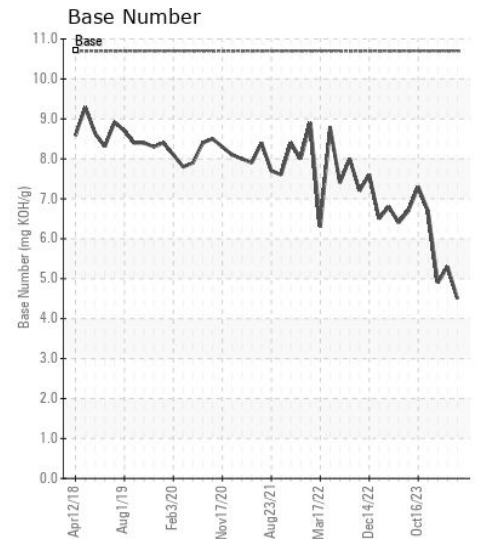
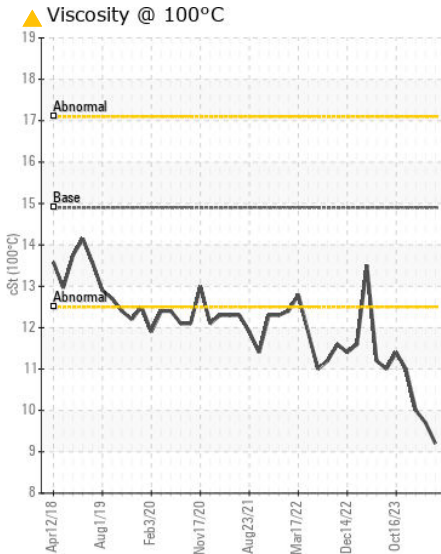
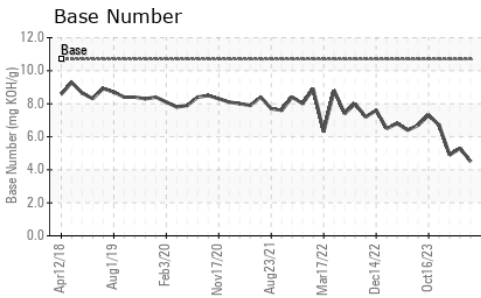
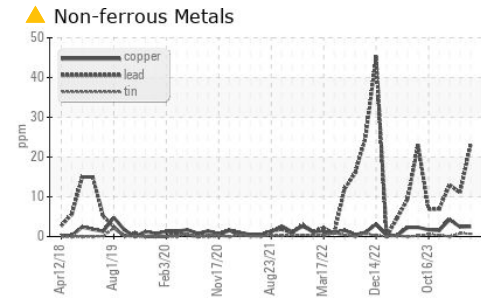
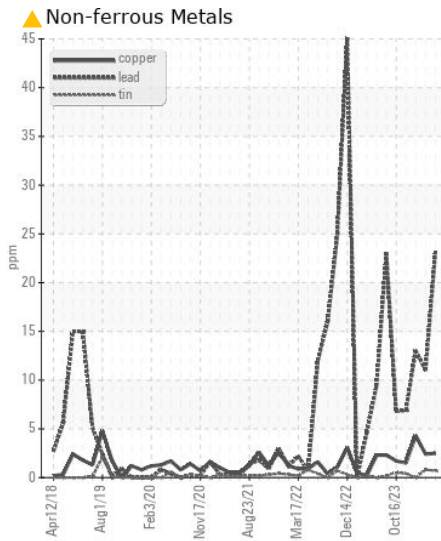
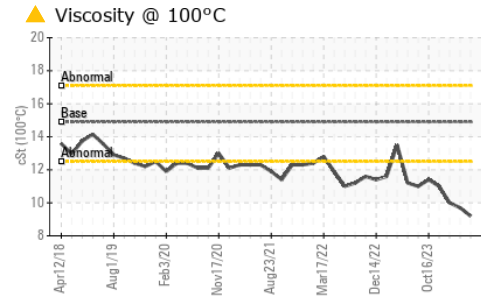
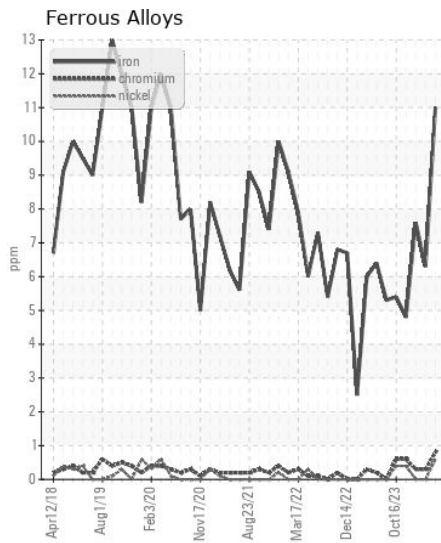
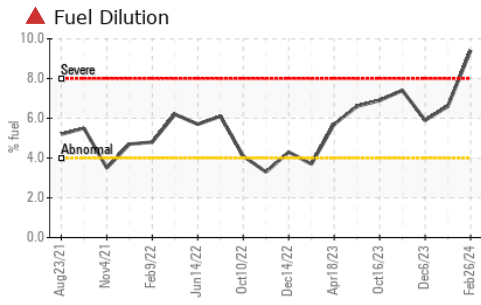
There is a high amount of fuel present in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>4</b>	3	4
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	0	2
Fuel	%	ASTM D3524	>4.0	<b>▲ 9.4</b>	▲ 6.6	▲ 5.9
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>	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.1</b>	7.9	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>22.9</b>	21.6	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**

Fuel is present in the oil and is lowering the viscosity. The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m	>75	<b>0</b>	1	0
Boron	ppm	ASTM D5185m		<b>63</b>	88	159
Barium	ppm	ASTM D5185m		<b>1</b>	0	5
Molybdenum	ppm	ASTM D5185m		<b>26</b>	32	49
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m		<b>109</b>	117	218
Calcium	ppm	ASTM D5185m		<b>1716</b>	1985	1886
Phosphorus	ppm	ASTM D5185m	760	<b>672</b>	783	854
Zinc	ppm	ASTM D5185m	830	<b>826</b>	897	991
Sulfur	ppm	ASTM D5185m	2770	<b>3134</b>	2653	3446
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>23.1</b>	20.3	20.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	<b>4.5</b>	5.3	4.9
Visc @ 100°C	cSt	ASTM D445	14.9	<b>▲ 9.2</b>	▲ 9.7	▲ 10.0



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW06101487  
**Lab Number** : 06101487  
**Unique Number** : 10899717  
**Test Package** : MAR 2 ( Additional Tests: PercentFuel )

**Received** : 27 Feb 2024  
**Tested** : 29 Feb 2024  
**Diagnosed** : 29 Feb 2024 - Jonathan Hester

**ILLINOIS MARINE TOWING**  
 PO BOX 391  
 LEMONT, IL  
 US 60439

Contact: RHETT DANIEL  
 rdaniel@imtowing.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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