



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

Machine Id  
**SIGNET MISCHIEF**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 400 LE 15W40 (70 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor. Please specify the component make and model with your next sample. ( Customer Sample Comment: Engine )

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0059749</b>	MW0059784	MW0045603
Sample Date		Client Info		<b>10 Jan 2024</b>	02 Oct 2023	05 Jul 2023
Machine Age	hrs	Client Info		<b>18488</b>	18164	17889
Oil Age	hrs	Client Info		<b>1255</b>	933	659
Filter Age	hrs	Client Info		<b>255</b>	433	159
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

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

**CONTAMINATION**

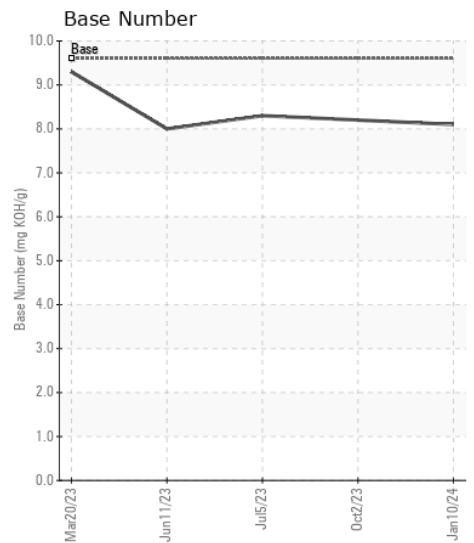
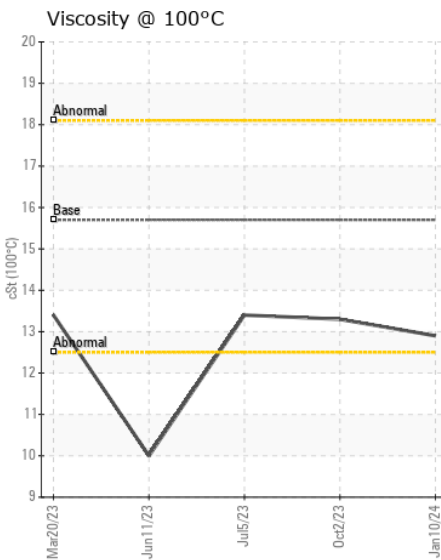
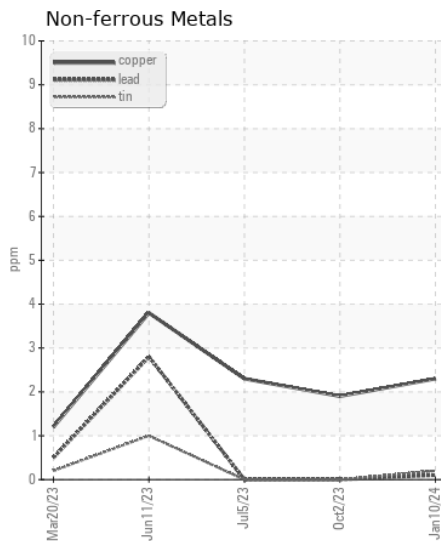
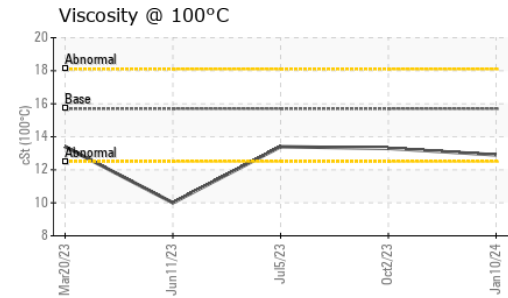
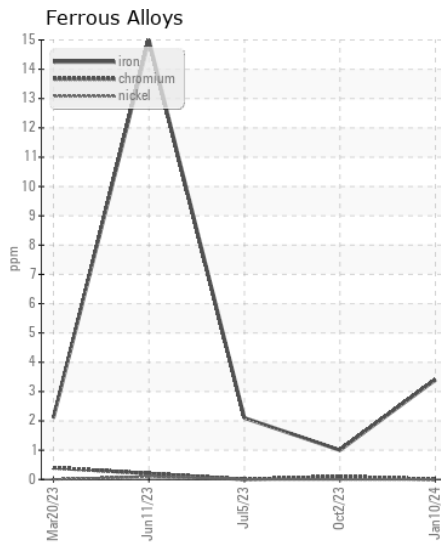
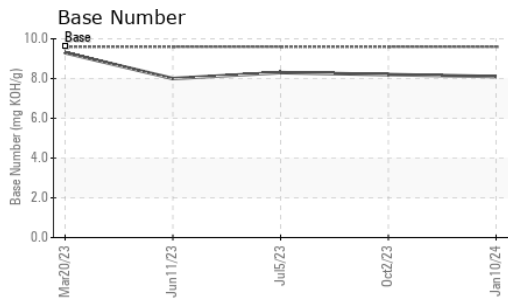
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>5</b>	4	3
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	<1	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		<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.1</b>	7.8	8.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>20.5</b>	20.2	19.4
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>	1	<1
Boron	ppm	ASTM D5185m		<b>212</b>	177	165
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>78</b>	69	60
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>695</b>	688	690
Calcium	ppm	ASTM D5185m		<b>1559</b>	1558	1650
Phosphorus	ppm	ASTM D5185m	1200	<b>813</b>	747	757
Zinc	ppm	ASTM D5185m	1300	<b>923</b>	884	907
Sulfur	ppm	ASTM D5185m	3200	<b>3043</b>	2939	3707
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.8</b>	14.9	14.5
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	<b>8.1</b>	8.2	8.3
Visc @ 100°C	cSt	ASTM D445	15.7	<b>12.9</b>	13.3	13.4



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0059749 **Received** : 19 Jan 2024  
**Lab Number** : 06065336 **Diagnosed** : 20 Jan 2024  
**Unique Number** : 10836718 **Diagnostician** : Wes Davis  
**Test Package** : MAR 2

**MARITIME COMPANY**  
 3802 PORT RIVER RD  
 PASCAGOULA, MS  
 US 39567  
 Contact: MARK KOPSYWA  
 mark.kopszywa@signetmaritime.com  
 T:  
 F: (228)769-0629

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)