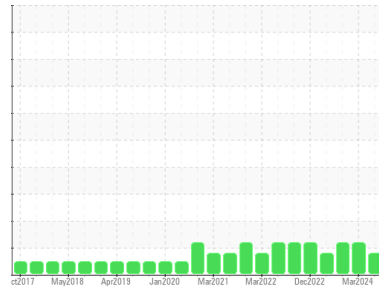




# OIL ANALYSIS REPORT

Sample Rating Trend



FUEL



Machine Id  
**SIGNET CHALLENGER**

Component  
**Starboard Main Engine**

Fluid  
**CHEVRON DELO 400 MULTIGRADE 15W40 (--- GAL)**

## DIAGNOSIS

### Recommendation

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. No other corrective action is recommended at this time.

### Wear

All component wear rates are normal.

### Contamination

Light fuel dilution occurring. No other contaminants were detected in the oil.

### 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.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>MW0051957</b>	MW0051873	MW0051866
Sample Date	Client Info		<b>22 May 2024</b>	05 Mar 2024	30 Dec 2023
Machine Age	hrs	Client Info	<b>27523</b>	27303	27150
Oil Age	hrs	Client Info	<b>28</b>	477	250
Oil Changed	Client Info		<b>Changed</b>	Not Changd	Not Changd
Sample Status			<b>MARGINAL</b>	ABNORMAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>120	<b>&lt;1</b>	4	3
Chromium	ppm	ASTM D5185m	>10	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	0
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>2</b>	3	2
Lead	ppm	ASTM D5185m	>40	<b>0</b>	2	<1
Copper	ppm	ASTM D5185m	>300	<b>1</b>	7	6
Tin	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	0
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	151	<b>362</b>	276	269
Barium	ppm	ASTM D5185m	0.4	<b>0</b>	2	5
Molybdenum	ppm	ASTM D5185m	250	<b>93</b>	109	109
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m	0	<b>568</b>	650	661
Calcium	ppm	ASTM D5185m	2046	<b>1331</b>	1436	1286
Phosphorus	ppm	ASTM D5185m	1043	<b>885</b>	757	674
Zinc	ppm	ASTM D5185m	943	<b>1003</b>	896	858
Sulfur	ppm	ASTM D5185m	5012	<b>3149</b>	2809	2428

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>25	<b>6</b>	6	5
Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	2	2
Fuel	%	ASTM D3524	>4.0	<b>▲ 3.2</b>	▲ 5.2	▲ 4.8

## INFRA-RED

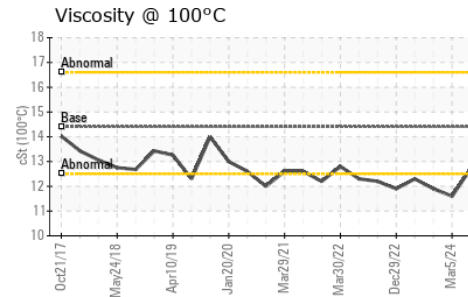
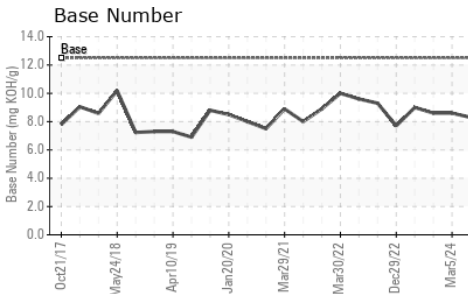
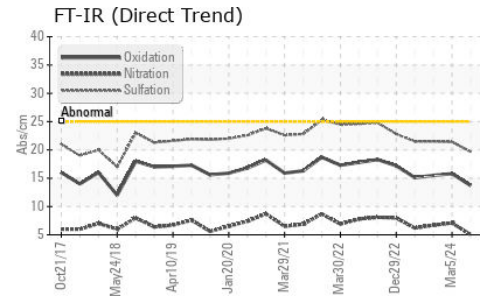
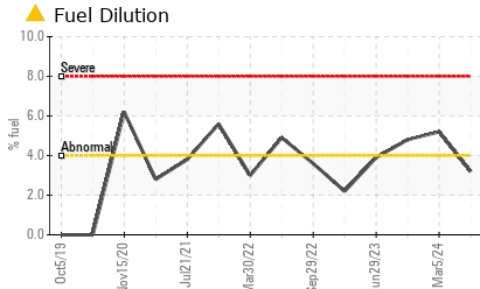
	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>5.0</b>	7.1	6.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.7</b>	21.4	21.5

## FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.7</b>	15.8	15.5
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	<b>8.3</b>	8.6	8.6



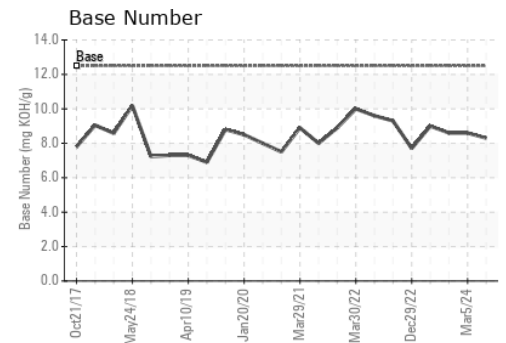
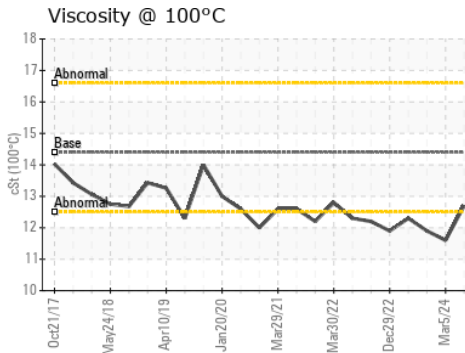
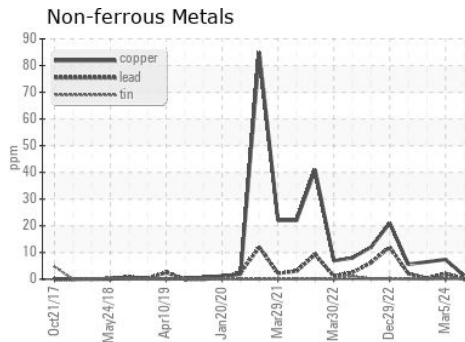
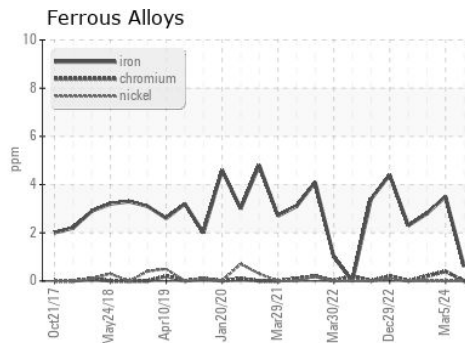
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	12.7	▲ 11.6 ▲ 11.9

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0051957 **Received** : 31 May 2024  
**Lab Number** : 06196271 **Tested** : 04 Jun 2024  
**Unique Number** : 11058394 **Diagnosed** : 04 Jun 2024 - Wes Davis  
**Test Package** : MAR 2 ( Additional Tests: PercentFuel )

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)

**MARITIME COMPANY**  
 3802 PORT RIVER RD  
 PASCAGOULA, MS  
 US 39567

Contact: TERRY SCUDDER  
 terry.scudder@signetmaritime.com

T:  
 F: (228)769-0629