



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

Machine Id  
**COVINGTON**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 710 LS (200 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0069921</b>	MW0069917	MW0069951
Sample Date		Client Info		<b>01 Jul 2024</b>	01 Jun 2024	01 May 2024
Machine Age	hrs	Client Info		<b>5914</b>	5368	4835
Oil Age	hrs	Client Info		<b>5914</b>	0	4835
Filter Age	hrs	Client Info		<b>100</b>	0	0
Oil Changed		Client Info		<b>Not Changd</b>	Not Changd	Not Changd
Filter Changed		Client Info		<b>Changed</b>	Not Changd	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>11</b>	10	11
Chromium	ppm	ASTM D5185m	>8	<b>1</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	2	2
Lead	ppm	ASTM D5185m	>18	<b>2</b>	3	1
Copper	ppm	ASTM D5185m	>80	<b>10</b>	11	11
Tin	ppm	ASTM D5185m	>14	<b>4</b>	5	5
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

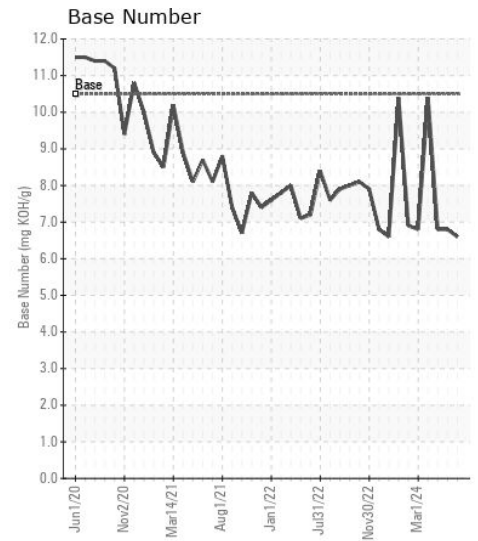
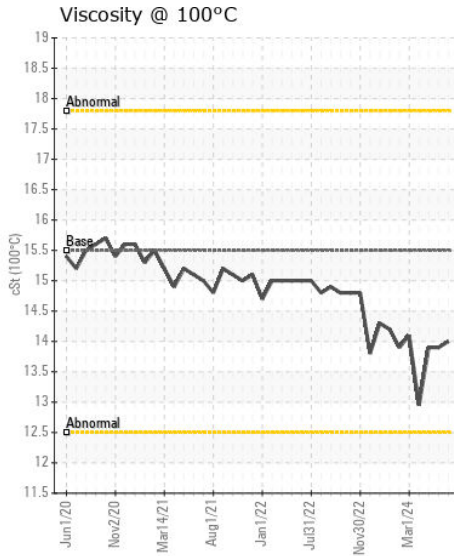
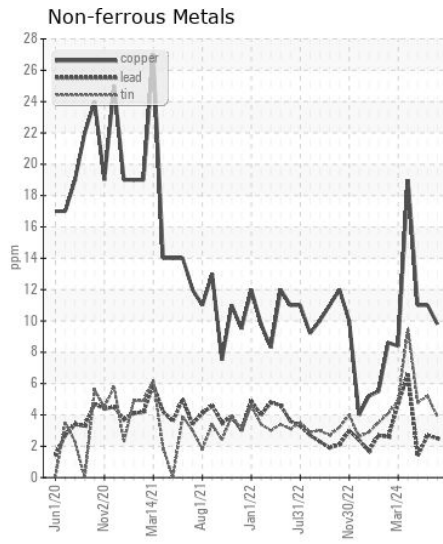
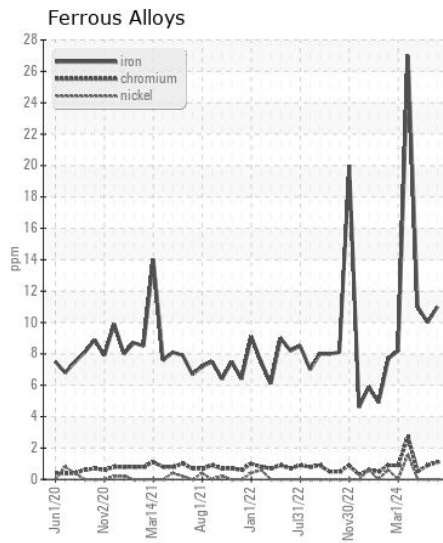
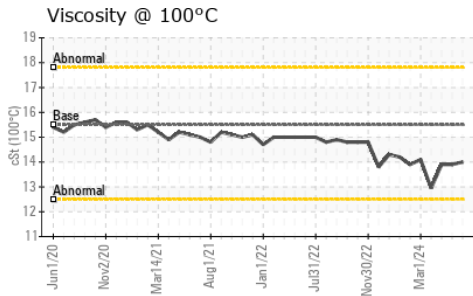
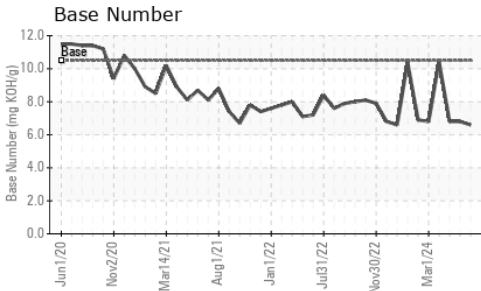
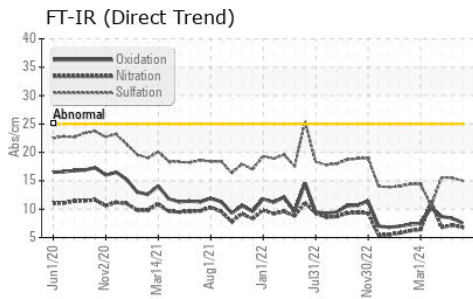
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>3</b>	4	4
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	1	0
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>0.5</b>	0.5	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>6.8</b>	7.2	6.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>15.0</b>	15.5	15.6
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>2</b>	1	1
Boron	ppm	ASTM D5185m		<b>38</b>	49	55
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>42</b>	41	46
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>14</b>	12	13
Calcium	ppm	ASTM D5185m		<b>3465</b>	3199	3379
Phosphorus	ppm	ASTM D5185m		<b>12</b>	7	10
Zinc	ppm	ASTM D5185m		<b>4</b>	0	0
Sulfur	ppm	ASTM D5185m		<b>2352</b>	2233	2379
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>7.5</b>	8.4	8.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>6.6</b>	6.8	6.8
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.0</b>	13.9	13.9



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0069921  
**Lab Number** : 06234288  
**Unique Number** : 11123122  
**Test Package** : MAR 2

**Received** : 11 Jul 2024  
**Tested** : 12 Jul 2024  
**Diagnosed** : 12 Jul 2024 - Wes Davis

**C & B MARINE**  
 50 E RIVERCENTER BLVD, SUITE 1180  
 COVINGTON, KY  
 US 41011

Contact: DAVID WESTRICH  
 dwestrich@carlislebray.com

T: (812)290-4063  
 F: (859)655-7504

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)