



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

Area  
**MICHEAL J GRAINGER**  
Machine Id  
**003**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 710 LE (--- GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0068354</b>	MW0005792	MW0017868
Sample Date		Client Info		<b>01 Jul 2024</b>	01 Feb 2022	01 Dec 2021
Machine Age	hrs	Client Info		<b>78486</b>	41860	41419
Oil Age	hrs	Client Info		<b>78486</b>	41860	41419
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>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>15</b>	21	16
Chromium	ppm	ASTM D5185m	>8	<b>1</b>	2	1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	1	1
Lead	ppm	ASTM D5185m	>18	<b>5</b>	10	8
Copper	ppm	ASTM D5185m	>80	<b>31</b>	29	24
Tin	ppm	ASTM D5185m	>14	<b>5</b>	8	6
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**

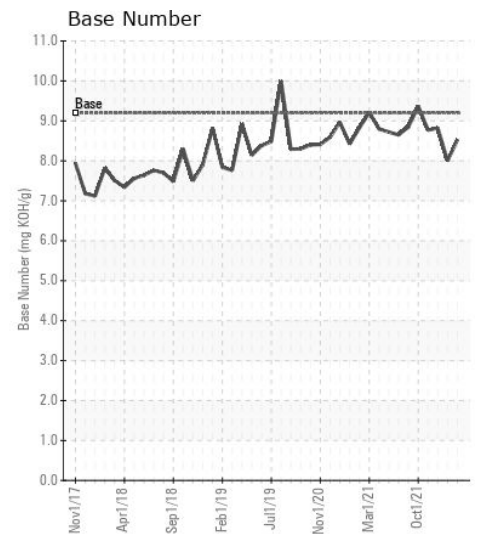
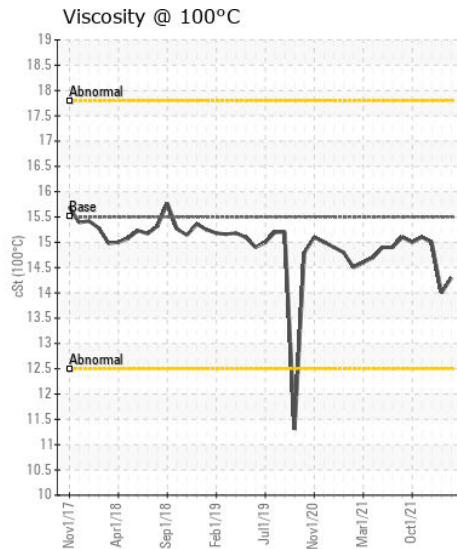
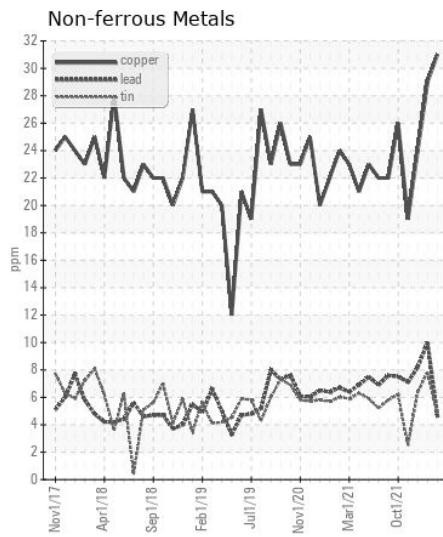
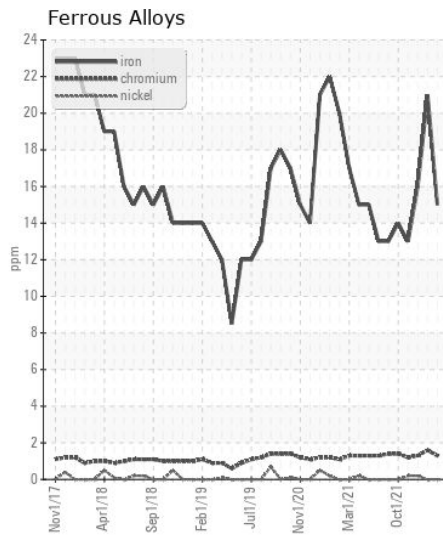
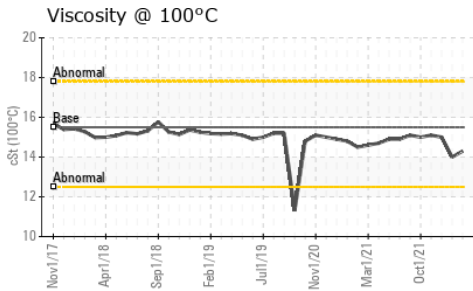
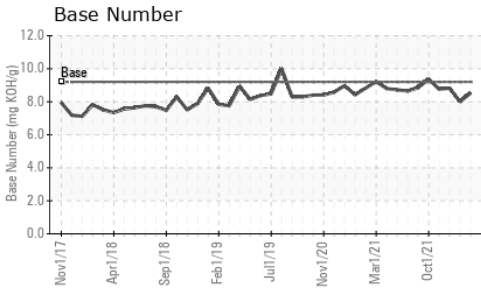
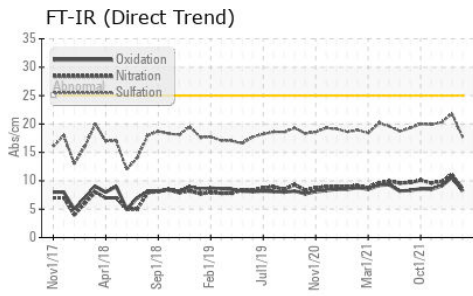
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	<b>4</b>	4	3
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	6	5
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>1.4</b>	2.7	2.7
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.6</b>	11.0	9.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>17.7</b>	21.8	20.3
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>	2	3
Boron	ppm	ASTM D5185m		<b>39</b>	35	34
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>46</b>	48	45
Manganese	ppm	ASTM D5185m		<b>3</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>13</b>	19	13
Calcium	ppm	ASTM D5185m		<b>3450</b>	3801	3635
Phosphorus	ppm	ASTM D5185m		<b>15</b>	26	11
Zinc	ppm	ASTM D5185m	10	<b>6</b>	6	0
Sulfur	ppm	ASTM D5185m		<b>2257</b>	1932	2000
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>8.2</b>	10.6	9.1
Base Number (BN)	mg KOH/g	ASTM D2896	9.2	<b>8.53</b>	8.00	8.82
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.3</b>	14.0	15.0



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0068354  
**Lab Number** : 06234031  
**Unique Number** : 11122865  
**Test Package** : MAR 2  
**Received** : 11 Jul 2024  
**Tested** : 12 Jul 2024  
**Diagnosed** : 12 Jul 2024 - Wes Davis

**INGRAM SOLD VESSELS**  
 UNUSED COMPONENTS

US  
 Contact:

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)

T:  
 F: