



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

Area  
**ROBIN B INGRAM**  
Machine Id  
**[ROBIN B INGRAM] 003 617985-3**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 710 LE (250 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW06159858</b>	MW06159856	MW0053726
Sample Date		Client Info		<b>01 Apr 2024</b>	29 Feb 2024	01 Feb 2024
Machine Age	hrs	Client Info		<b>64749</b>	63958	63411
Oil Age	hrs	Client Info		<b>0</b>	0	63411
Filter Age	hrs	Client Info		<b>0</b>	0	900
Oil Changed		Client Info		<b>N/A</b>	N/A	Not Changed
Filter Changed		Client Info		<b>N/A</b>	N/A	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>15</b>	17	17
Chromium	ppm	ASTM D5185m	>8	<b>2</b>	1	0
Nickel	ppm	ASTM D5185m	>2	<b>1</b>	1	0
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	2	1
Lead	ppm	ASTM D5185m	>18	<b>5</b>	6	6
Copper	ppm	ASTM D5185m	>80	<b>17</b>	18	16
Tin	ppm	ASTM D5185m	>14	<b>3</b>	3	2
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
White Metal	scalar	*Visual	NONE	<b>LIGHT</b>	LIGHT	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

There is no indication of any contamination in the oil.

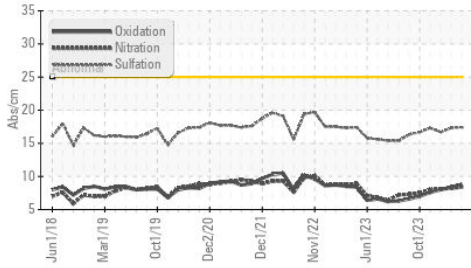
Silicon	ppm	ASTM D5185m	>20	<b>8</b>	9	7
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	4	2
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.9</b>	0.9	1
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.4</b>	8.2	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>17.4</b>	17.3	16.7
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**

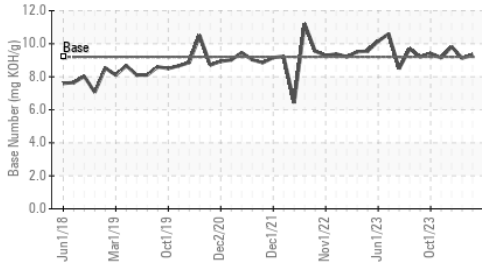
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>36</b>	43	53
Boron	ppm	ASTM D5185m		<b>46</b>	44	43
Barium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Molybdenum	ppm	ASTM D5185m		<b>48</b>	47	43
Manganese	ppm	ASTM D5185m		<b>3</b>	2	<1
Magnesium	ppm	ASTM D5185m		<b>22</b>	27	34
Calcium	ppm	ASTM D5185m		<b>3511</b>	3359	3528
Phosphorus	ppm	ASTM D5185m		<b>13</b>	13	0
Zinc	ppm	ASTM D5185m	10	<b>6</b>	7	0
Sulfur	ppm	ASTM D5185m		<b>2809</b>	2688	2803
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>8.8</b>	8.4	8.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.2	<b>9.34</b>	9.12	9.82
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.6</b>	14.5	14.4

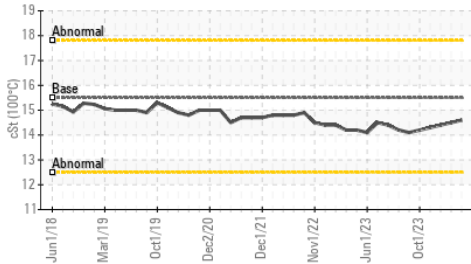
**FT-IR (Direct Trend)**



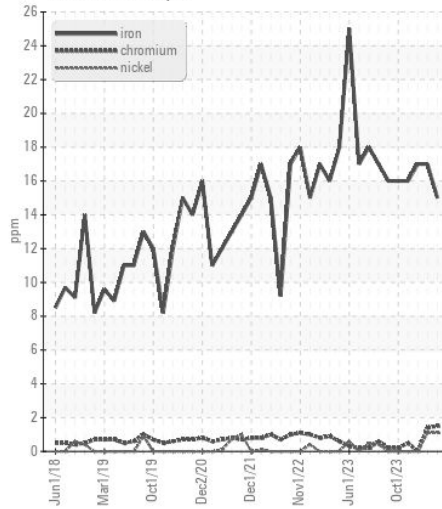
**Base Number**



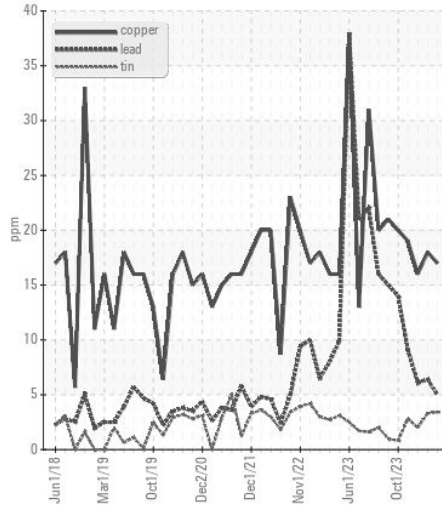
**Viscosity @ 100°C**



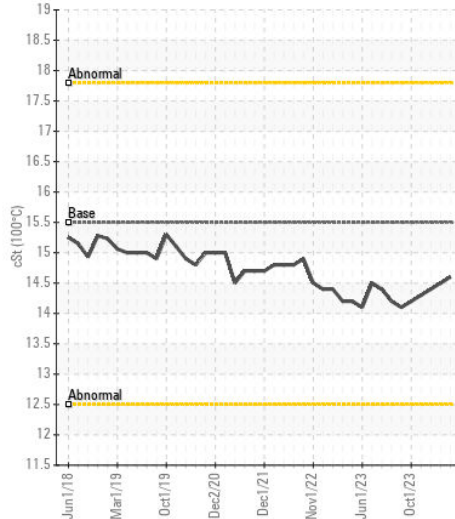
**Ferrous Alloys**



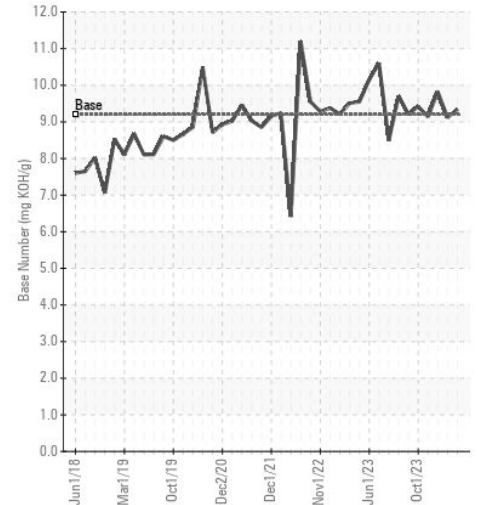
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513

**Sample No.** : MW06159858

**Lab Number** : 06159858

**Unique Number** : 10995281

**Test Package** : MAR 2

**Received** : 24 Apr 2024

**Tested** : 25 Apr 2024

**Diagnosed** : 25 Apr 2024 - Wes Davis

**INGRAM BARGE**

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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)