



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

Area  
**CLARENCE G FRAME**  
Machine Id  
[CLARENCE G FRAME] 003 574683-3  
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>MW06221860</b>	MW06176273	MW06140711
Sample Date		Client Info		<b>01 Jun 2024</b>	01 May 2024	01 Apr 2024
Machine Age	hrs	Client Info		<b>38080</b>	37325	36605
Oil Age	hrs	Client Info		<b>38080</b>	0	0
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>24</b>	20	18
Chromium	ppm	ASTM D5185m	>8	<b>2</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	1	2
Lead	ppm	ASTM D5185m	>18	<b>9</b>	8	7
Copper	ppm	ASTM D5185m	>80	<b>32</b>	27	24
Tin	ppm	ASTM D5185m	>14	<b>7</b>	6	6
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>LIGHT</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

There is no indication of any contamination in the oil.

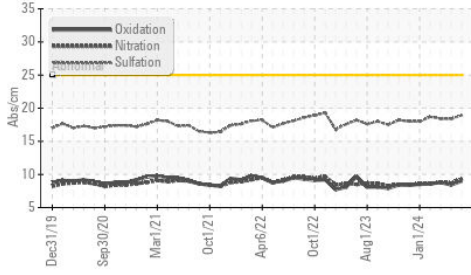
Silicon	ppm	ASTM D5185m	>20	<b>6</b>	5	5
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	1	2
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol	%	*ASTM D2982		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1.4</b>	1.3	1.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.3</b>	8.7	8.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.9</b>	18.4	18.4
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**

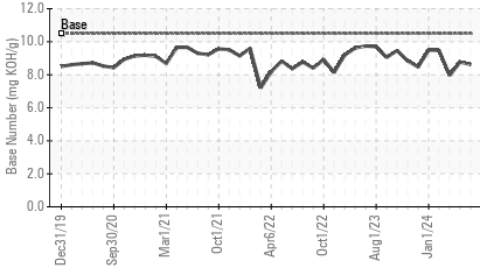
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>6</b>	9	9
Boron	ppm	ASTM D5185m		<b>38</b>	44	39
Barium	ppm	ASTM D5185m		<b>1</b>	<1	0
Molybdenum	ppm	ASTM D5185m		<b>51</b>	48	43
Manganese	ppm	ASTM D5185m		<b>4</b>	2	2
Magnesium	ppm	ASTM D5185m		<b>13</b>	14	16
Calcium	ppm	ASTM D5185m		<b>3582</b>	3566	3418
Phosphorus	ppm	ASTM D5185m		<b>17</b>	<1	5
Zinc	ppm	ASTM D5185m		<b>8</b>	14	0
Sulfur	ppm	ASTM D5185m		<b>2500</b>	2705	2758
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.0</b>	8.4	8.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>8.62</b>	8.77	7.96
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.5</b>	14.9	14.7

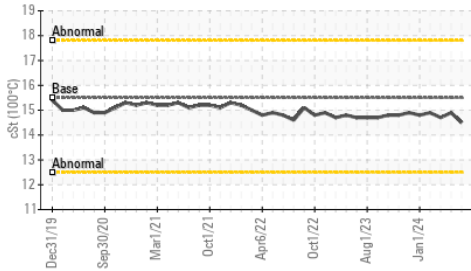
**FT-IR (Direct Trend)**



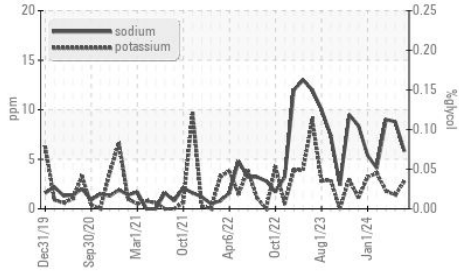
**Base Number**



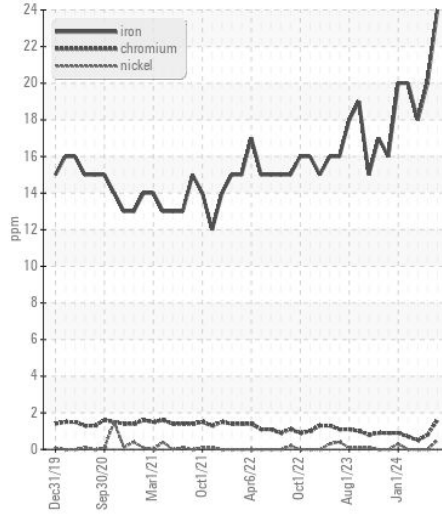
**Viscosity @ 100°C**



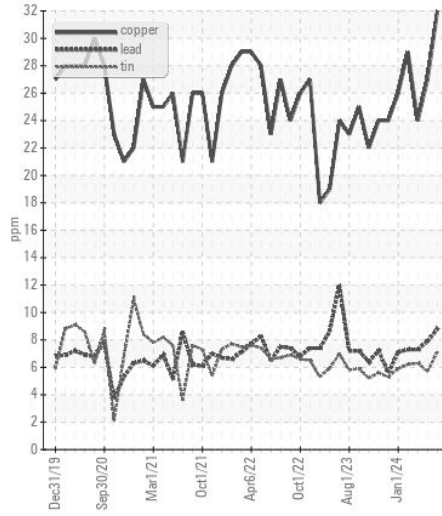
**Glycol Contamination**



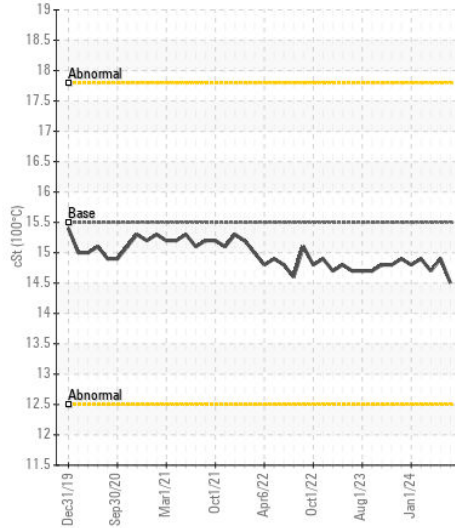
**Ferrous Alloys**



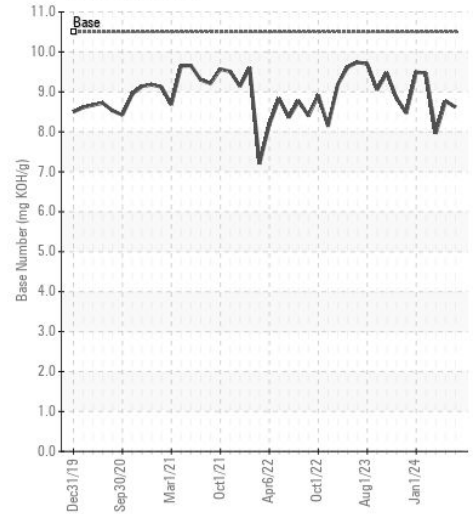
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW06221860 **Received** : 26 Jun 2024  
**Lab Number** : 06221860 **Tested** : 29 Jun 2024  
**Unique Number** : 11100057 **Diagnosed** : 29 Jun 2024 - Don Baldrige  
**Test Package** : MAR 2 ( Additional Tests: Glycol )

**INGRAM BARGE**  
 900 S 3RD ST  
 PADUCAH, KY  
 US 42003

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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)