



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

Area  
**JOE B WYATT**  
Machine Id  
[**JOE B WYATT**] 003 647464-3  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 710 LS (345 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0064538</b>	MW0064481	MW0064483
Sample Date		Client Info		<b>01 Jun 2024</b>	01 May 2024	01 Apr 2024
Machine Age	hrs	Client Info		<b>5005</b>	4542	3800
Oil Age	hrs	Client Info		<b>5005</b>	4542	3800
Filter Age	hrs	Client Info		<b>38</b>	0	57
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>30</b>	16	10
Chromium	ppm	ASTM D5185m	>8	<b>&lt;1</b>	2	1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	0
Silver	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	2	1
Lead	ppm	ASTM D5185m	>18	<b>&lt;1</b>	7	5
Copper	ppm	ASTM D5185m	>80	<b>&lt;1</b>	15	11
Tin	ppm	ASTM D5185m	>14	<b>&lt;1</b>	7	6
Vanadium	ppm	ASTM D5185m		<b>0</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.

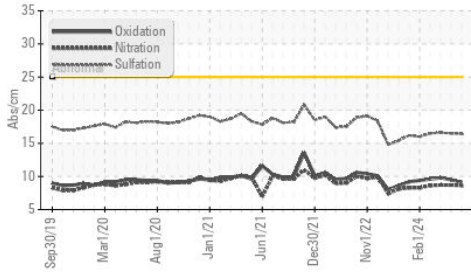
Silicon	ppm	ASTM D5185m	>20	<b>9</b>	5	3
Potassium	ppm	ASTM D5185m	>20	<b>1</b>	3	<1
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.4</b>	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>8.6</b>	8.7	8.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>16.4</b>	16.5	16.6
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**

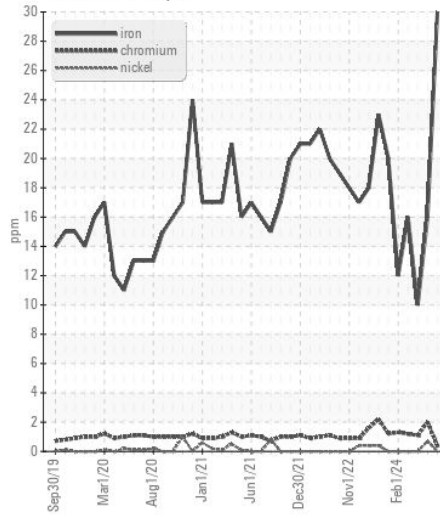
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>0</b>	3	3
Boron	ppm	ASTM D5185m		<b>3</b>	45	39
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>1</b>	51	45
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	2	1
Magnesium	ppm	ASTM D5185m		<b>16</b>	10	12
Calcium	ppm	ASTM D5185m		<b>2800</b>	3598	3484
Phosphorus	ppm	ASTM D5185m		<b>996</b>	12	0
Zinc	ppm	ASTM D5185m		<b>1172</b>	3	0
Sulfur	ppm	ASTM D5185m		<b>6981</b>	2415	2105
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.1</b>	9.5	9.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>9.38</b>	9.03	8.89
Visc @ 100°C	cSt	ASTM D445	15.5	<b>15.0</b>	15.1	15.1

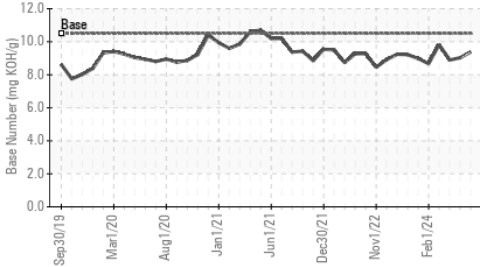
**FT-IR (Direct Trend)**



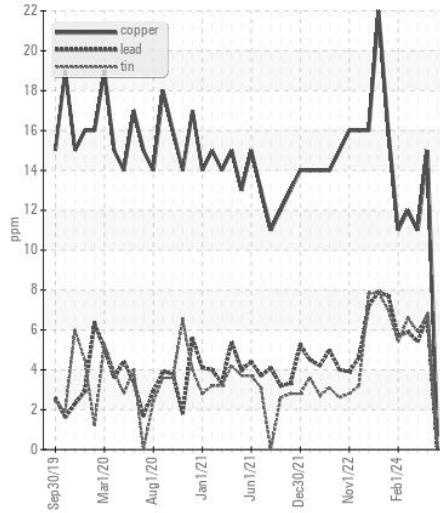
**Ferrous Alloys**



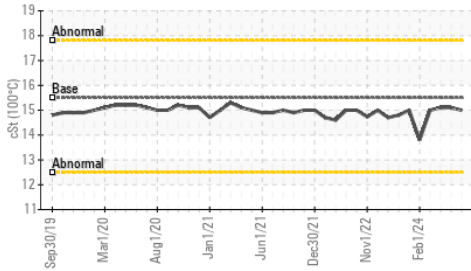
**Base Number**



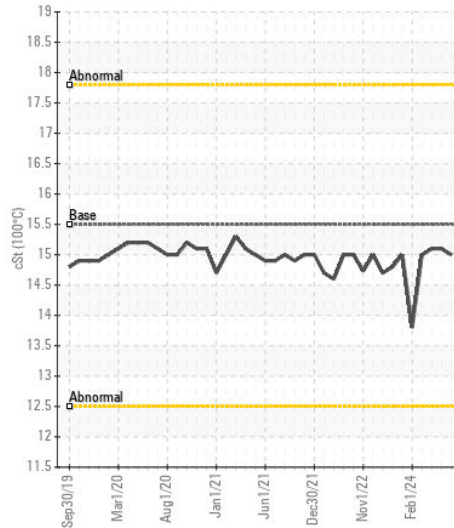
**Non-ferrous Metals**



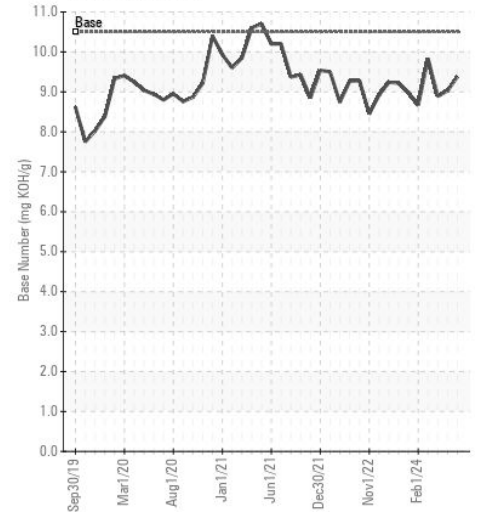
**Viscosity @ 100°C**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0064538  
**Lab Number** : 06218903  
**Unique Number** : 11097100  
**Test Package** : MAR 2  
**Received** : 24 Jun 2024  
**Tested** : 25 Jun 2024  
**Diagnosed** : 26 Jun 2024 - Sean Felton

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

Contact: JEFF BISHOP  
 jeff.bishop@ingrambargo.com

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: (615)695-3697