



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

Area  
**LARRY DRUMMOND**  
Machine Id  
[LARRY DRUMMOND] 003 518412-3  
Component  
Starboard Main Engine  
Fluid  
CHEVRON DELO 710 LE (350 GAL)

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0068768</b>	MW0064372	MW0068773
Sample Date		Client Info		<b>01 Jun 2024</b>	01 May 2024	02 Apr 2024
Machine Age	hrs	Client Info		<b>12117</b>	11592	10856
Oil Age	hrs	Client Info		<b>12117</b>	11592	10856
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	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	<b>18</b>	17	34
Chromium	ppm	ASTM D5185m	>10	<b>&lt;1</b>	<1	1
Nickel	ppm	ASTM D5185m	>11	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Aluminum	ppm	ASTM D5185m	>5	<b>3</b>	2	3
Lead	ppm	ASTM D5185m	>10	<b>8</b>	8	22
Copper	ppm	ASTM D5185m	>20	<b>27</b>	24	44
Tin	ppm	ASTM D5185m	>1	<b>6</b>	6	12
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
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.

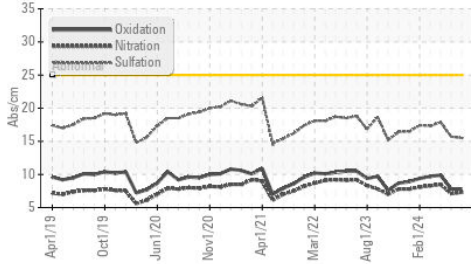
Silicon	ppm	ASTM D5185m	>5	<b>6</b>	6	9
Potassium	ppm	ASTM D5185m	>20	<b>5</b>	4	<1
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.3</b>	7.1	8.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>15.5</b>	15.7	17.9
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**

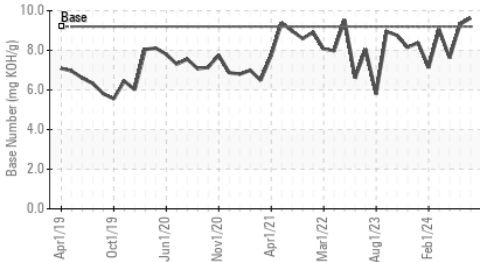
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>0</b>	1	0
Boron	ppm	ASTM D5185m		<b>42</b>	46	40
Barium	ppm	ASTM D5185m		<b>1</b>	0	<1
Molybdenum	ppm	ASTM D5185m		<b>51</b>	49	60
Manganese	ppm	ASTM D5185m		<b>4</b>	3	5
Magnesium	ppm	ASTM D5185m		<b>13</b>	13	22
Calcium	ppm	ASTM D5185m		<b>3336</b>	3381	4260
Phosphorus	ppm	ASTM D5185m		<b>27</b>	16	21
Zinc	ppm	ASTM D5185m	10	<b>10</b>	7	15
Sulfur	ppm	ASTM D5185m		<b>2519</b>	3026	3987
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>7.8</b>	7.8	9.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.2	<b>9.63</b>	9.31	7.62
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.3</b>	14.4	14.6

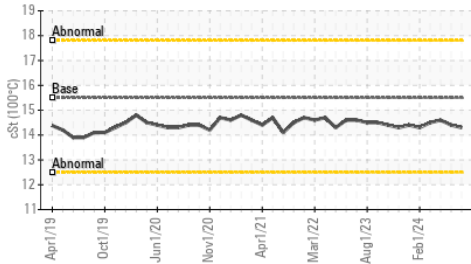
**FT-IR (Direct Trend)**



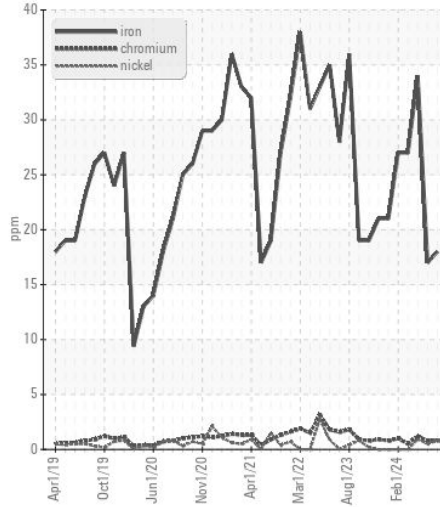
**Base Number**



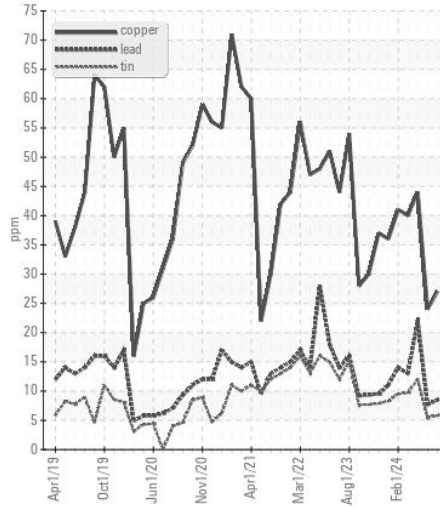
**Viscosity @ 100°C**



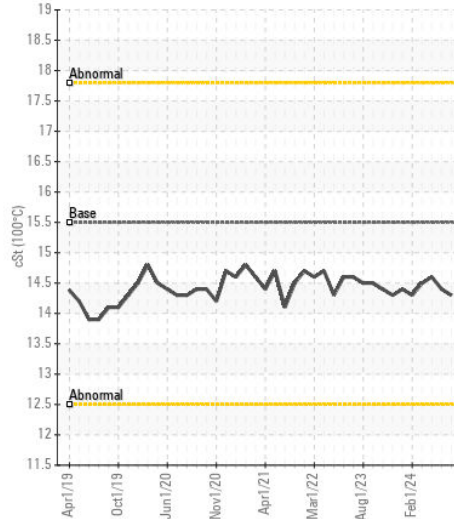
**Ferrous Alloys**



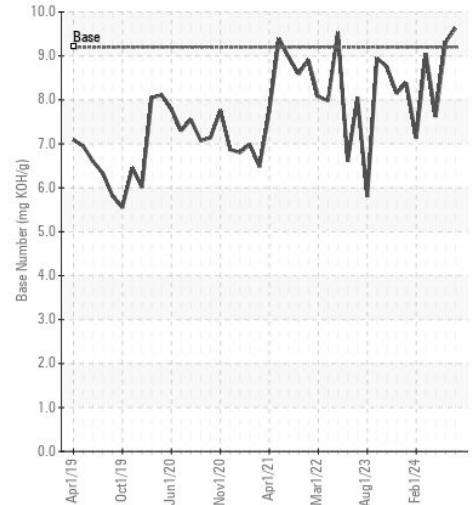
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0068768  
**Lab Number** : 06218880  
**Unique Number** : 11097077  
**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@ingrambarga.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