



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

Area  
**CHIP LACEY**  
Machine Id  
**[CHIP LACEY] 003 529830-3**  
Component  
**Starboard Main Engine**  
Fluid  
**CHEVRON DELO 710 LS (300 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0068908</b>	MW06207180	MW0068914
Sample Date		Client Info		<b>01 Jul 2024</b>	01 Jun 2024	01 May 2024
Machine Age	hrs	Client Info		<b>22475</b>	21755	21011
Oil Age	hrs	Client Info		<b>5384</b>	21755	3920
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>13</b>	12	11
Chromium	ppm	ASTM D5185m	>8	<b>1</b>	1	2
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	>3	<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>15	<b>3</b>	1	2
Lead	ppm	ASTM D5185m	>18	<b>3</b>	2	3
Copper	ppm	ASTM D5185m	>80	<b>17</b>	12	11
Tin	ppm	ASTM D5185m	>14	<b>4</b>	3	4
Vanadium	ppm	ASTM D5185m		<b>0</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.

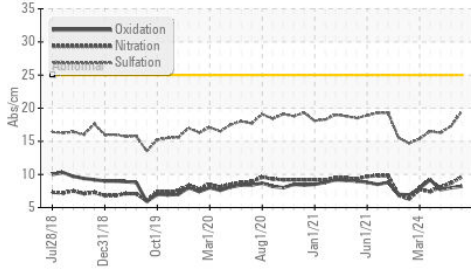
Silicon	ppm	ASTM D5185m	>20	<b>4</b>	3	5
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	1	4
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>2.6</b>	1.5	1.2
Nitration	Abs/cm	*ASTM D7624	>20	<b>9.6</b>	8.7	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>19.5</b>	17.3	16.3
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**

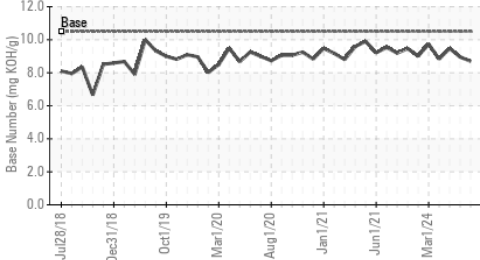
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>2</b>	2	2
Boron	ppm	ASTM D5185m		<b>47</b>	44	45
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>48</b>	47	48
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m		<b>32</b>	17	29
Calcium	ppm	ASTM D5185m		<b>3413</b>	3680	3453
Phosphorus	ppm	ASTM D5185m		<b>40</b>	15	27
Zinc	ppm	ASTM D5185m		<b>22</b>	15	19
Sulfur	ppm	ASTM D5185m		<b>2196</b>	2847	2501
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>8.2</b>	8.0	7.7
Base Number (BN)	mg KOH/g	ASTM D2896	10.5	<b>8.70</b>	8.95	9.48
Visc @ 100°C	cSt	ASTM D445	15.5	<b>15.8</b>	15.2	15.1

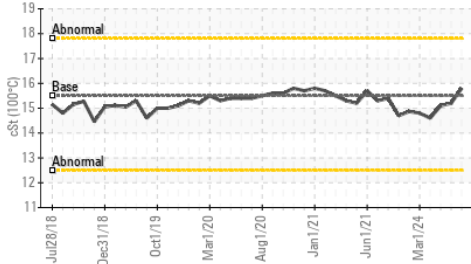
**FT-IR (Direct Trend)**



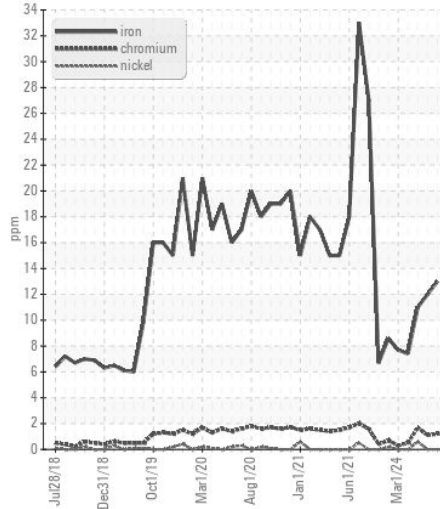
**Base Number**



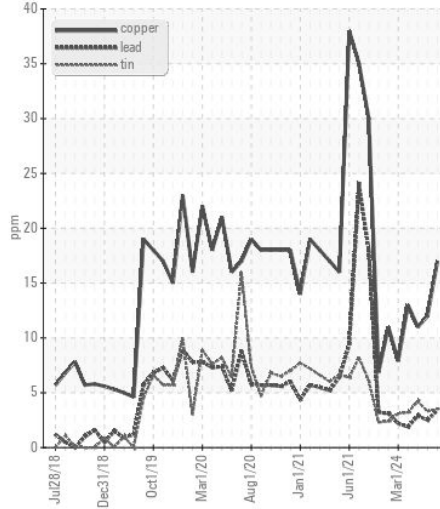
**Viscosity @ 100°C**



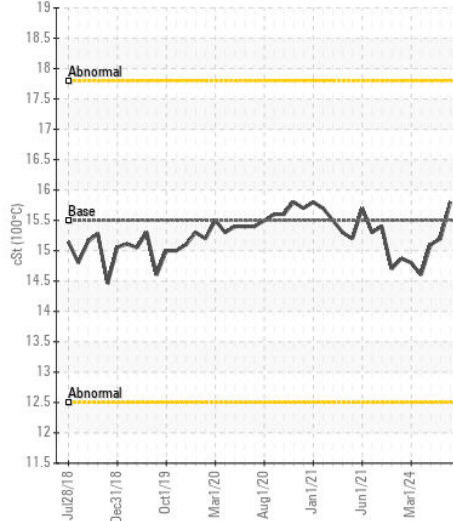
**Ferrous Alloys**



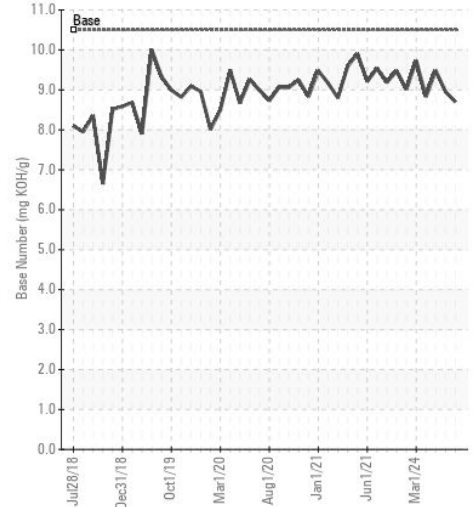
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

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

**Sample No.** : MW0068908

**Lab Number** : 06237057

**Unique Number** : 11125891

**Test Package** : MAR 2

**Received** : 15 Jul 2024

**Tested** : 17 Jul 2024

**Diagnosed** : 17 Jul 2024 - Wes Davis

**INGRAM BARGE**

900 S 3RD ST

PADUCAH, KY

US 42003

Contact: ANTHONY VAN CURA

anthony.vancura@ingrambarga.com

T: (270)415-4467

F: (615)695-3697

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)