



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

Area

**Y.S. CHI**

Machine Id

**[Y.S. CHI] 008 503877-8**

Component

**Starboard Genset**

Fluid

**CHEVRON DELO 400 XLE 15W40 (9 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0065964</b>	MW0065958	MW0061206
Sample Date		Client Info		<b>01 Apr 2024</b>	13 Mar 2024	01 Feb 2024
Machine Age	hrs	Client Info		<b>16528</b>	16320	15800
Oil Age	hrs	Client Info		<b>177</b>	419	250
Filter Age	hrs	Client Info		<b>177</b>	419	250
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	<b>9</b>	11	10
Chromium	ppm	ASTM D5185m	>4	<b>0</b>	2	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>3</b>	<1	2
Silver	ppm	ASTM D5185m	>5	<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>12	<b>4</b>	6	3
Lead	ppm	ASTM D5185m	>17	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185m	>70	<b>0</b>	2	1
Tin	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<1
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.

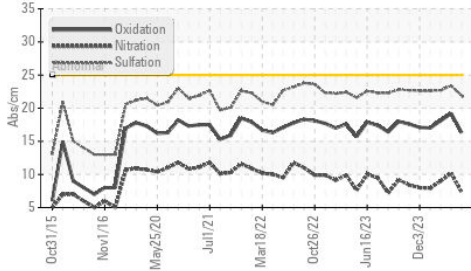
Silicon	ppm	ASTM D5185m	>25	<b>6</b>	9	6
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	4	<1
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.3</b>	0.6	0.5
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.3</b>	10.2	9.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.9</b>	23.4	22.7
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**

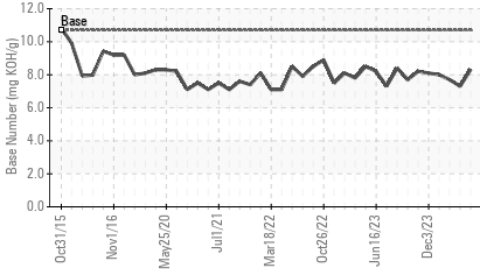
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	5	1
Boron	ppm	ASTM D5185m		<b>301</b>	181	189
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>117</b>	103	108
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>707</b>	629	665
Calcium	ppm	ASTM D5185m		<b>1575</b>	1252	1483
Phosphorus	ppm	ASTM D5185m	760	<b>755</b>	691	712
Zinc	ppm	ASTM D5185m	830	<b>831</b>	789	820
Sulfur	ppm	ASTM D5185m	2770	<b>2946</b>	2389	2454
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>16.3</b>	19.2	18.1
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	<b>8.3</b>	7.3	7.7
Visc @ 100°C	cSt	ASTM D445	14.9	<b>13.1</b>	13.5	13.1

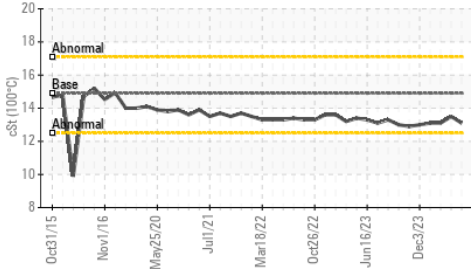
**FT-IR (Direct Trend)**



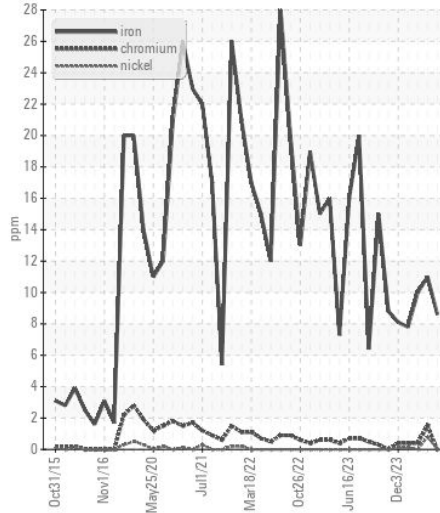
**Base Number**



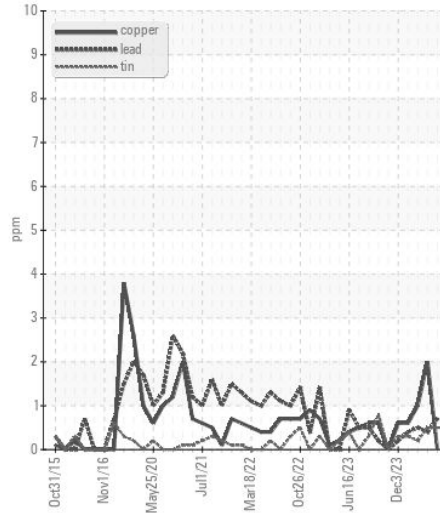
**Viscosity @ 100°C**



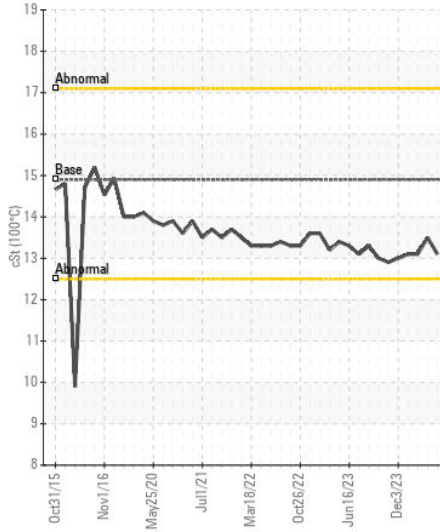
**Ferrous Alloys**



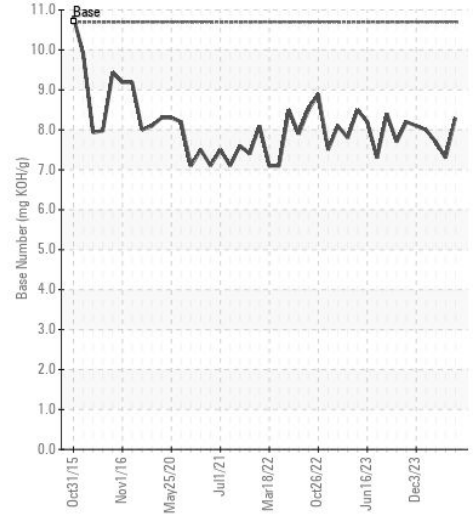
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

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

**Sample No.** : MW0065964

**Lab Number** : 06187153

**Unique Number** : 11043905

**Test Package** : MAR 2

**Received** : 21 May 2024

**Tested** : 23 May 2024

**Diagnosed** : 23 May 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)