



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

Area

**PB SHAH**

Machine Id

**[PB SHAH] 008 566553-8**

Component

**Starboard Genset**

Fluid

**CHEVRON DELO 400 LE 15W40 (6 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0066046</b>	MW0065985	MW0052611
Sample Date		Client Info		<b>12 Jun 2024</b>	30 Dec 2023	29 Jul 2023
Machine Age	hrs	Client Info		<b>11559</b>	10172	8209
Oil Age	hrs	Client Info		<b>499</b>	465	377
Filter Age	hrs	Client Info		<b>499</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>	MARGINAL	MARGINAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	<b>6</b>	9	8
Chromium	ppm	ASTM D5185m	>4	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>12	<b>2</b>	2	2
Lead	ppm	ASTM D5185m	>17	<b>0</b>	0	0
Copper	ppm	ASTM D5185m	>70	<b>0</b>	<1	<1
Tin	ppm	ASTM D5185m	>15	<b>0</b>	0	<1
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.

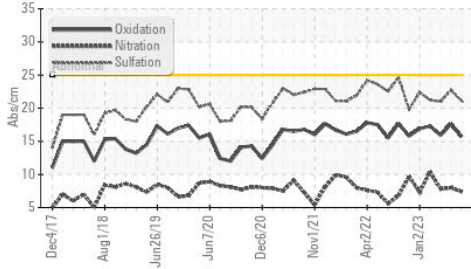
Silicon	ppm	ASTM D5185m	>25	<b>4</b>	6	6
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	<1	<1
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.4</b>	8.0	7.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.1</b>	22.7	21.0
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**

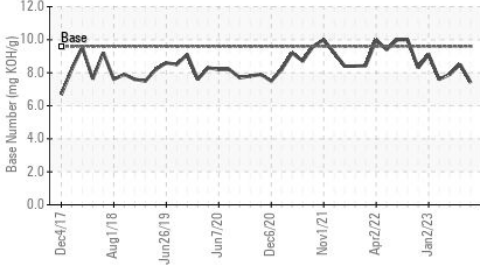
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>2</b>	<1	<1
Boron	ppm	ASTM D5185m		<b>300</b>	309	256
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>91</b>	128	112
Manganese	ppm	ASTM D5185m		<b>3</b>	1	<1
Magnesium	ppm	ASTM D5185m		<b>424</b>	670	623
Calcium	ppm	ASTM D5185m		<b>1670</b>	1700	1914
Phosphorus	ppm	ASTM D5185m	1200	<b>941</b>	728	605
Zinc	ppm	ASTM D5185m	1300	<b>1086</b>	866	780
Sulfur	ppm	ASTM D5185m	3200	<b>3378</b>	2582	2994
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>15.7</b>	17.6	15.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	<b>7.4</b>	8.5	7.9
Visc @ 100°C	cSt	ASTM D445	15.7	<b>12.5</b>	▲ 12.3	▲ 12.4

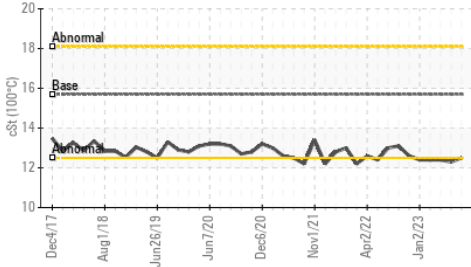
**FT-IR (Direct Trend)**



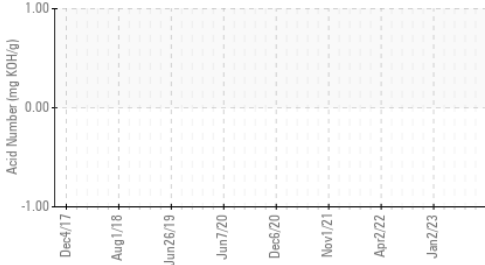
**Base Number**



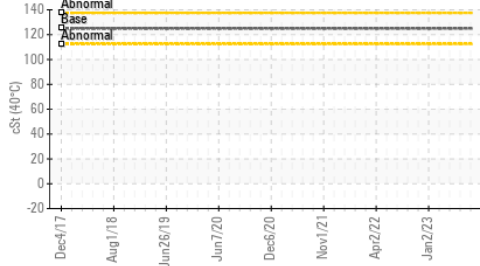
**Viscosity @ 100°C**



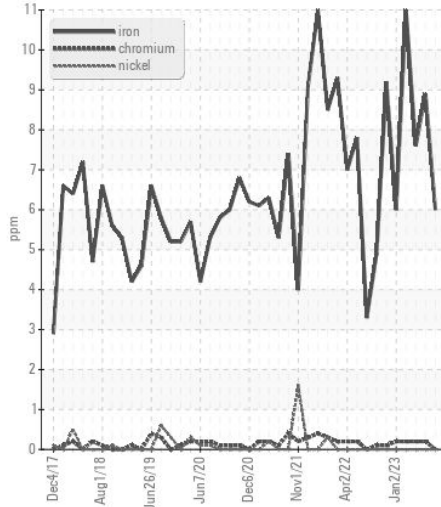
**Acid Number**



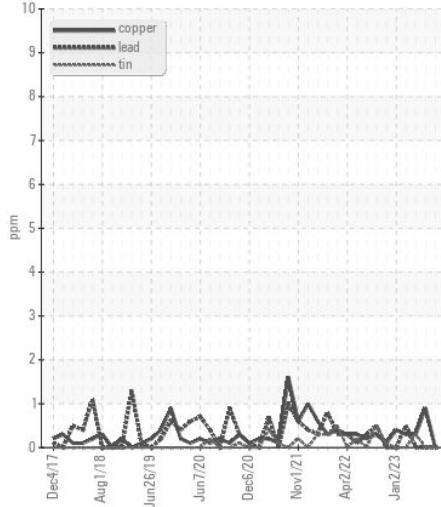
**Viscosity @ 40°C**



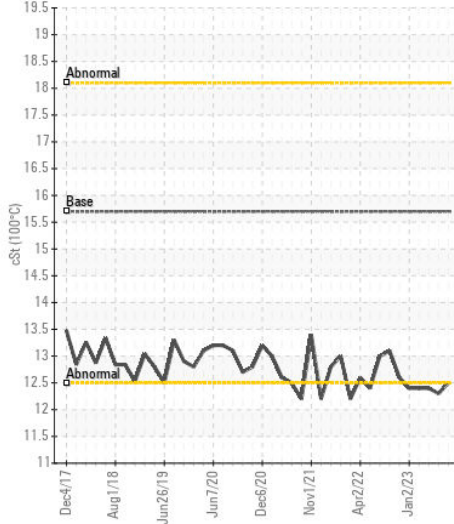
**Ferrous Alloys**



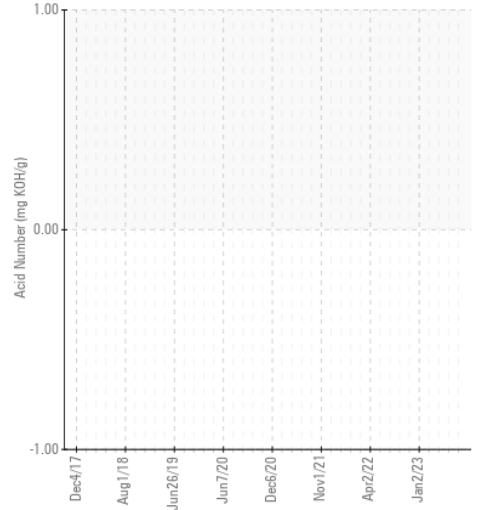
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Acid Number**



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : MW0066046 **Received** : 11 Jul 2024  
**Lab Number** : 06234265 **Tested** : 16 Jul 2024  
**Unique Number** : 11123099 **Diagnosed** : 16 Jul 2024 - Jonathan Hester  
**Test Package** : MAR 2 ( Additional Tests: KV40, PrtCount, TAN Man )

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)

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