



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

WILLIAM P MORELLI

Machine Id

[WILLIAM P MORELLI] 008 520785-8

Component

Starboard Genset

Fluid

CHEVRON DELO 400 MULTIGRADE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0020444	MW0067920	MW0059917
Sample Date		Client Info		03 Apr 2024	02 Mar 2024	29 Nov 2023
Machine Age	hrs	Client Info		9358	8956	7834
Oil Age	hrs	Client Info		377	0	300
Filter Age	hrs	Client Info		377	0	0
Oil Changed		Client Info		Not Changed	N/A	Changed
Filter Changed		Client Info		Not Changed	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	7	5	6
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		2	1	3
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	3	3	3
Lead	ppm	ASTM D5185m	>17	<1	0	0
Copper	ppm	ASTM D5185m	>70	<1	2	3
Tin	ppm	ASTM D5185m	>15	<1	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

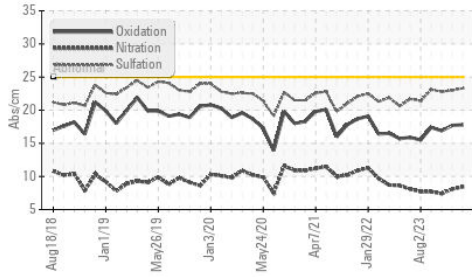
Silicon	ppm	ASTM D5185m	>25	7	5	6
Potassium	ppm	ASTM D5185m	>20	3	0	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.3	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.4	8.1	7.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.3	23.0	22.8
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG

FLUID CONDITION

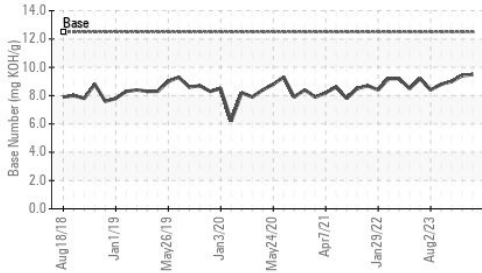
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		0	<1	2
Boron	ppm	ASTM D5185m	151	355	284	315
Barium	ppm	ASTM D5185m	0.4	2	0	0
Molybdenum	ppm	ASTM D5185m	250	134	106	111
Manganese	ppm	ASTM D5185m		2	1	<1
Magnesium	ppm	ASTM D5185m	0	632	619	668
Calcium	ppm	ASTM D5185m	2046	1749	1634	1672
Phosphorus	ppm	ASTM D5185m	1043	723	641	747
Zinc	ppm	ASTM D5185m	943	798	757	876
Sulfur	ppm	ASTM D5185m	5012	2885	2602	2955
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.8	17.7	16.9
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	9.5	9.4	9.0
Visc @ 100°C	cSt	ASTM D445	14.4	13.8	13.8	13.8

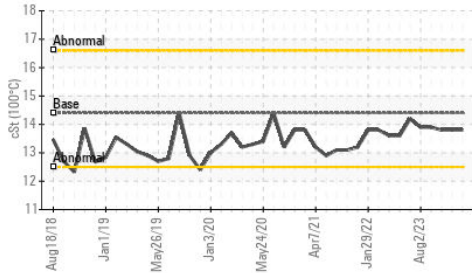
FT-IR (Direct Trend)



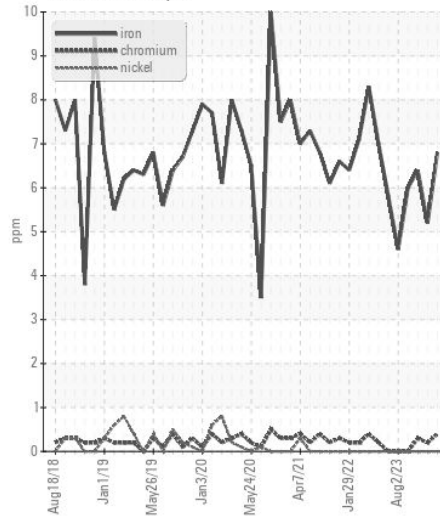
Base Number



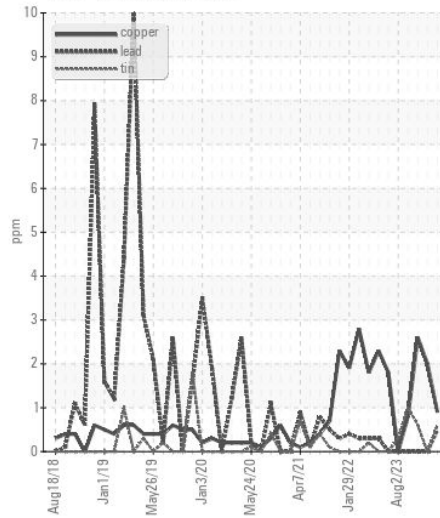
Viscosity @ 100°C



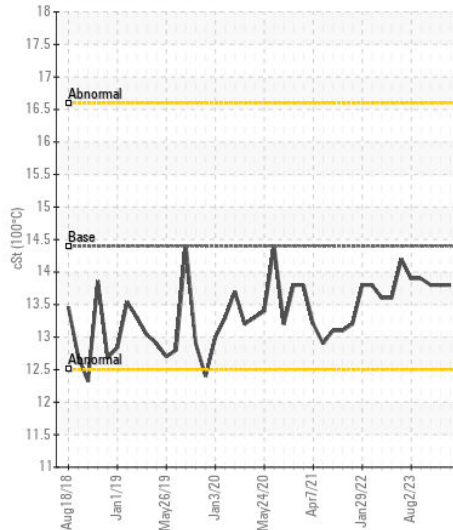
Ferrous Alloys



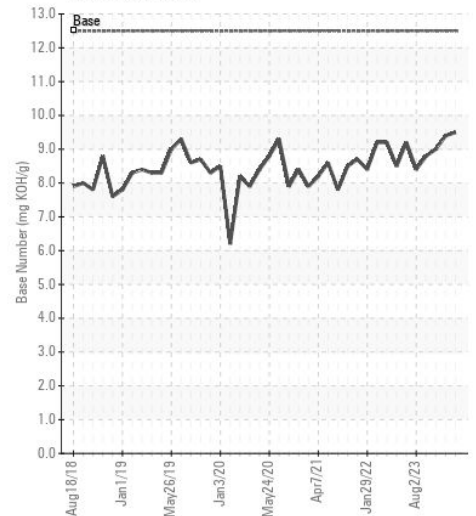
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : MW0020444

Lab Number : 06176604

Unique Number : 11022657

Test Package : MAR 2

Received : 10 May 2024

Tested : 13 May 2024

Diagnosed : 13 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)