MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	ABNORMAL

Machine Id
CAIRO (S/N 60346927)
Component
Starboard Genset
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (6 GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

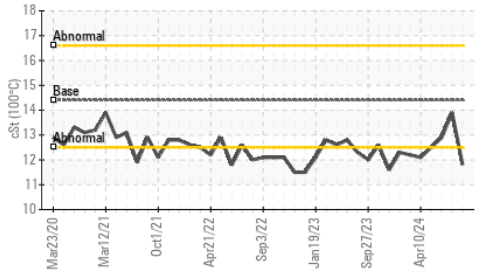
Light fuel dilution occurring.

FLUID CONDITION

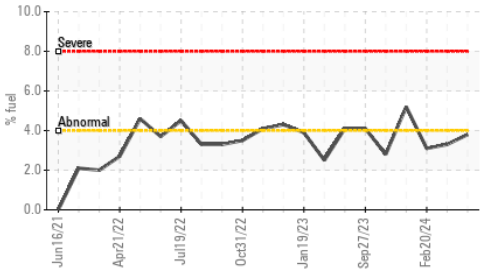
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0062453	MW0062423	MW0062416
Sample Date		Client Info		11 Jun 2024	31 May 2024	19 May 2024
Machine Age	hrs	Client Info		12686	12427	12296
Oil Age	hrs	Client Info		271	12	120
Filter Age	hrs	Client Info		271	12	120
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>50	4	2	3
Chromium	ppm	ASTM D5185m	>4	0	<1	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		14	16	15
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	1	4	1
Lead	ppm	ASTM D5185m	>17	0	0	0
Copper	ppm	ASTM D5185m	>70	0	<1	0
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	3	4	4
Potassium	ppm	ASTM D5185m	>20	4	4	2
Fuel	%	ASTM D3524	>4.0	▲ 3.8	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.7	0.7
Nitration	Abs/cm	*ASTM D7624	>20	8.7	7.7	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.1	19.2	19.5
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
Sodium	ppm	ASTM D5185m		4	0	2
Boron	ppm	ASTM D5185m	151	● 73	109	103
Barium	ppm	ASTM D5185m	0.4	0	1	0
Molybdenum	ppm	ASTM D5185m	250	● 26	28	27
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m	0	724	684	733
Calcium	ppm	ASTM D5185m	2046	1466	1455	1446
Phosphorus	ppm	ASTM D5185m	1043	733	678	707
Zinc	ppm	ASTM D5185m	943	812	803	791
Sulfur	ppm	ASTM D5185m	5012	3432	3199	3433
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	13.1	13.7
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	7.3	8.4	8.4
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 11.8	13.9	12.9

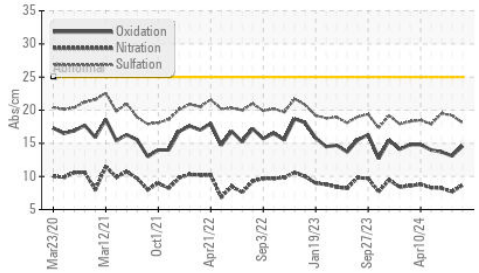
Viscosity @ 100°C



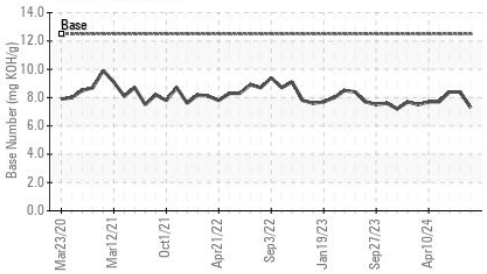
Fuel Dilution



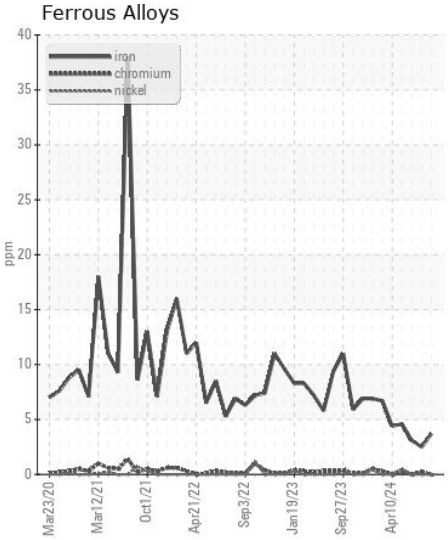
FT-IR (Direct Trend)



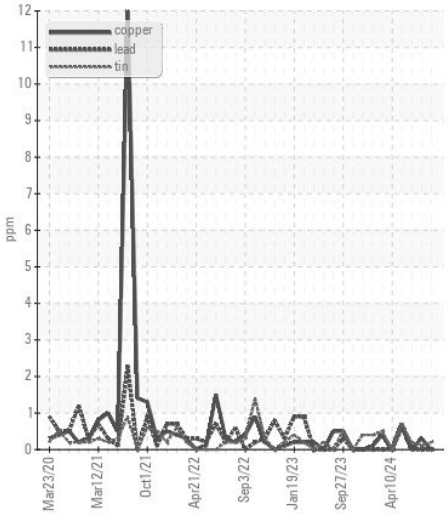
Base Number



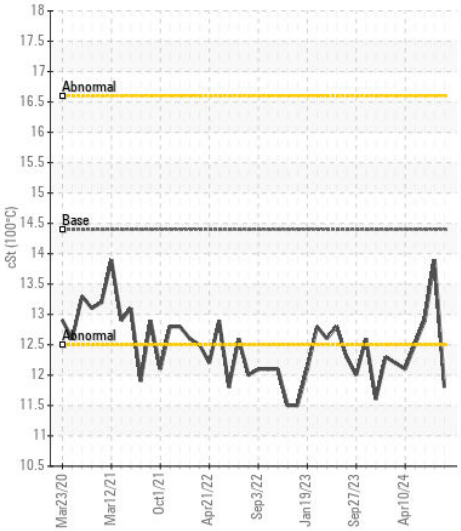
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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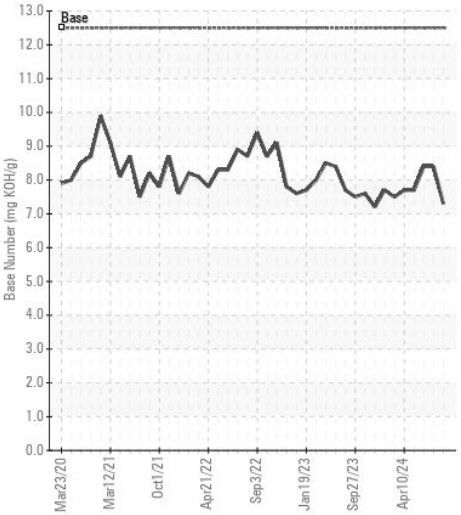

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0062453
Lab Number : 06216698
Unique Number : 11089562
Test Package : MAR 2 (Additional Tests: FuelDilution, PercentFuel)

Received : 21 Jun 2024
Tested : 25 Jun 2024
Diagnosed : 25 Jun 2024 - Wes Davis

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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