MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
SIGNET VOLUNTEER
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

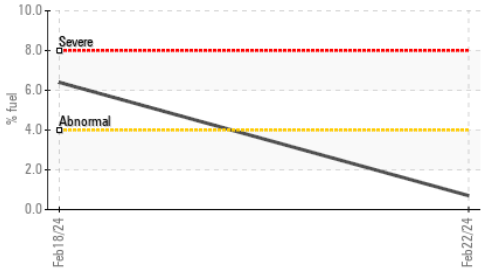
Fuel content negligible. There is no indication of any contamination in the oil.

FLUID CONDITION

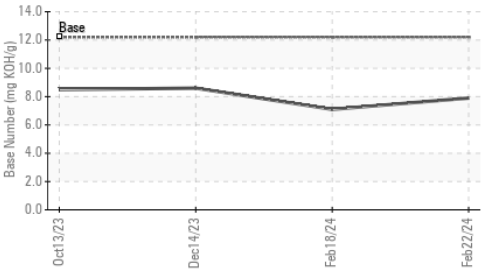
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0064148	MW0064154	MW0064065
Sample Date		Client Info		22 Feb 2024	18 Feb 2024	14 Dec 2023
Machine Age	hrs	Client Info		7893	7874	7709
Oil Age	hrs	Client Info		0	7874	655
Filter Age	hrs	Client Info		0	0	655
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	Changed
Sample Status				NORMAL	SEVERE	NORMAL
Iron	ppm	ASTM D5185m	>75	4	4	2
Chromium	ppm	ASTM D5185m	>8	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>3	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	2
Lead	ppm	ASTM D5185m	>18	<1	<1	<1
Copper	ppm	ASTM D5185m	>80	<1	6	0
Tin	ppm	ASTM D5185m	>14	<1	0	1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	5	▲ 147	3
Potassium	ppm	ASTM D5185m	>20	4	▲ 391	2
Fuel	%	ASTM D3524	>4.0	0.7	▲ 6.4	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	▲ 0.10	NEG
Soot %	%	*ASTM D7844		0.2	0.3	0.2
Nitration	Abs/cm	*ASTM D7624	>20	6.0	7.7	5.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.1	24.2	21.1
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	>75	1	● 180	<1
Boron	ppm	ASTM D5185m		219	550	232
Barium	ppm	ASTM D5185m		2	10	0
Molybdenum	ppm	ASTM D5185m		53	67	58
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		284	368	353
Calcium	ppm	ASTM D5185m		1608	844	2030
Phosphorus	ppm	ASTM D5185m	1360	785	857	958
Zinc	ppm	ASTM D5185m	1480	956	531	1089
Sulfur	ppm	ASTM D5185m		3222	2931	3429
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.2	19.7	16.4
Base Number (BN)	mg KOH/g	ASTM D2896	12.2	7.9	7.1	8.6
Visc @ 100°C	cSt	ASTM D445	15.1	13.7	▲ 11.3	14.0

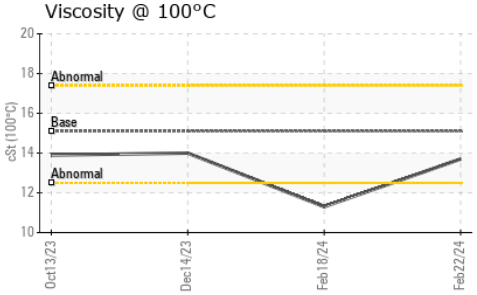
Fuel Dilution



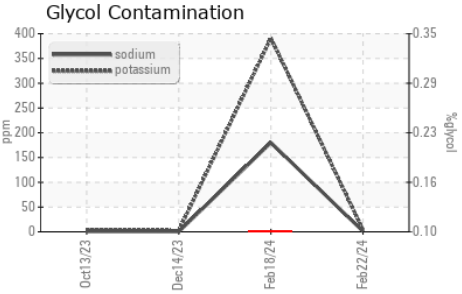
Base Number



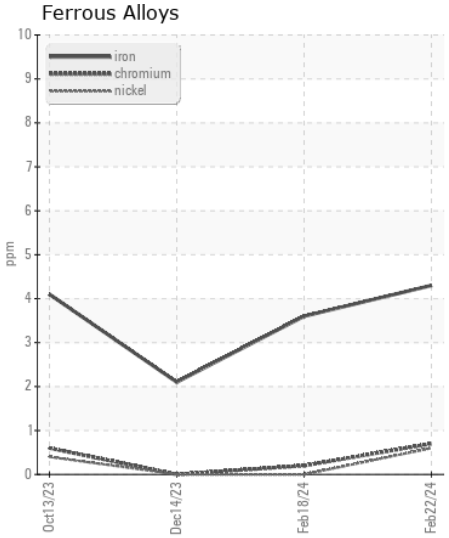
Viscosity @ 100°C



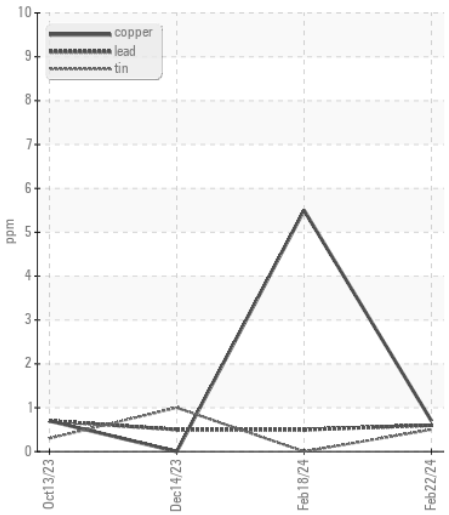
Glycol Contamination



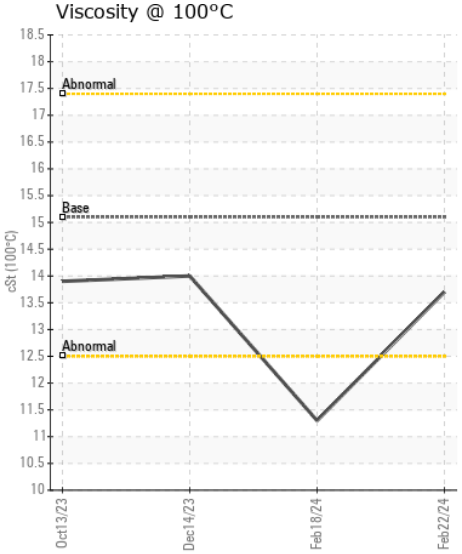
Ferrous Alloys



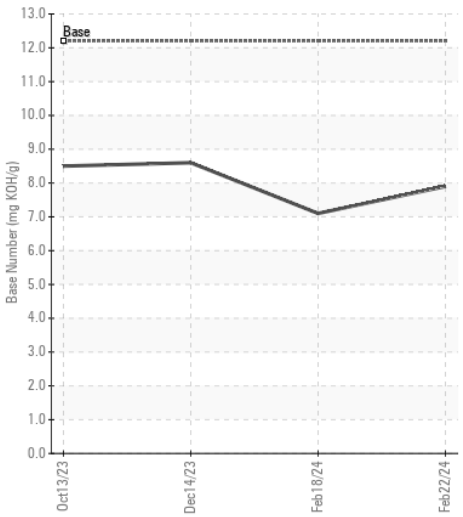
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0064148 **Received** : 27 Feb 2024
Lab Number : 06101476 **Tested** : 29 Feb 2024
Unique Number : 10899706 **Diagnosed** : 29 Feb 2024 - Jonathan Hester
Test Package : MAR 2 (Additional Tests: PercentFuel)

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)

MARITIME COMPANY
3802 PORT RIVER RD
PASCAGOULA, MS
US 39567
Contact: MARK KOPSZYWA
mark.kopszywa@signetmaritime.com
T:
F: (228)769-0629