



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CHARLOTTE
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (165 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0056688	MW0056702	MW0056699
Sample Date		Client Info		10 Jan 2024	06 Nov 2023	13 Sep 2023
Machine Age	hrs	Client Info		12124	11673	11246
Oil Age	hrs	Client Info		1380	930	504
Filter Age	hrs	Client Info		690	228	504
Oil Changed		Client Info		Not Chngd	N/A	Changed
Filter Changed		Client Info		Not Chngd	N/A	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	13	10	6
Chromium	ppm	ASTM D5185m	>8	0	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	3	3	2
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	<1	<1	<1
Lead	ppm	ASTM D5185m	>18	2	2	<1
Copper	ppm	ASTM D5185m	>80	28	26	21
Tin	ppm	ASTM D5185m	>14	<1	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

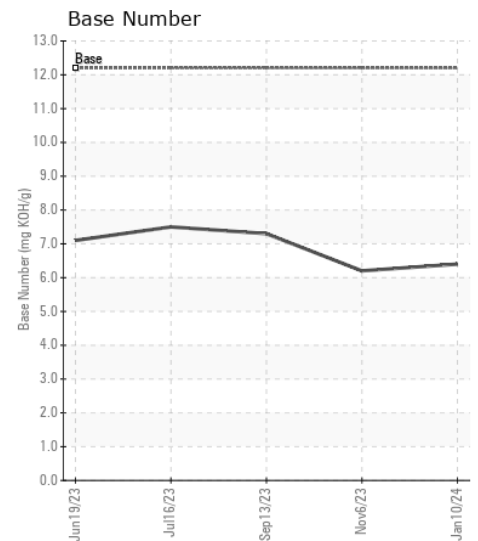
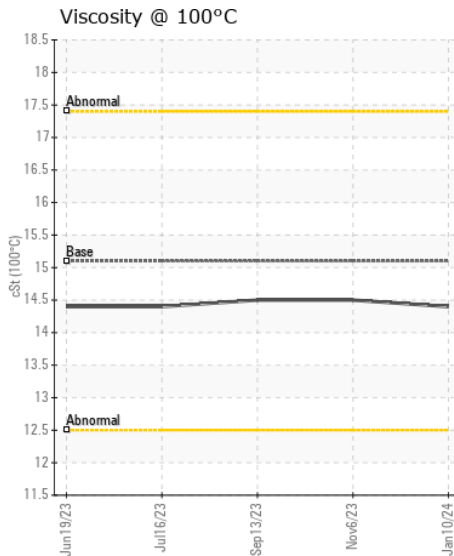
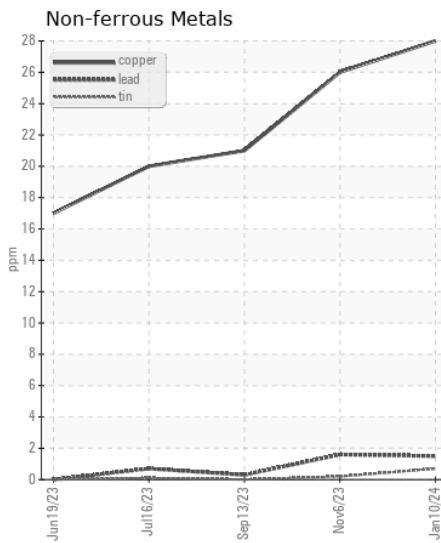
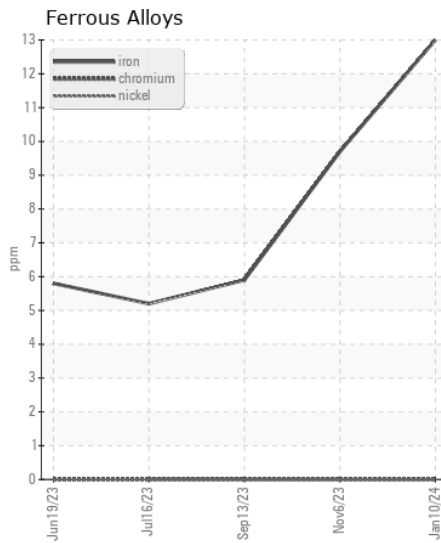
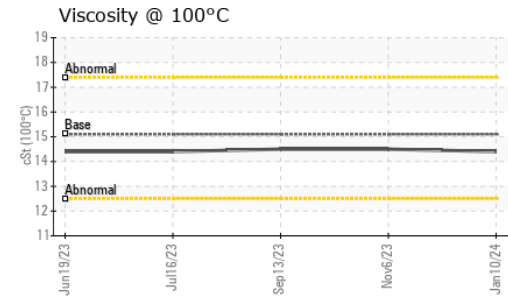
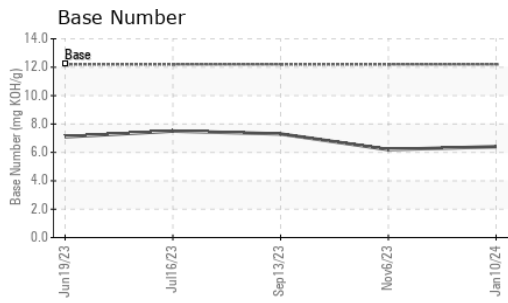
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	4	3	2
Potassium	ppm	ASTM D5185m	>20	4	5	4
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		0.4	0.2	0.3
Nitration	Abs/cm	*ASTM D7624	>20	9.3	9.6	8.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.3	16.6	21.3
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	>75	2	2	2
Boron	ppm	ASTM D5185m		128	150	130
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		15	14	11
Manganese	ppm	ASTM D5185m		<1	<1	0
Magnesium	ppm	ASTM D5185m		166	116	111
Calcium	ppm	ASTM D5185m		2321	2274	1932
Phosphorus	ppm	ASTM D5185m	1360	911	905	733
Zinc	ppm	ASTM D5185m	1480	1215	1195	946
Sulfur	ppm	ASTM D5185m		3356	3344	2796
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.5	11.4	16.3
Base Number (BN)	mg KOH/g	ASTM D2896	12.2	6.4	6.2	7.3
Visc @ 100°C	cSt	ASTM D445	15.1	14.4	14.5	14.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0056688 **Received** : 30 Jan 2024
Lab Number : 06074565 **Diagnosed** : 31 Jan 2024
Unique Number : 10856656 **Diagnostician** : Sean Felton
Test Package : MAR 2

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)

MAGNOLIA MARINE TRANSPORT
 697 HAINING ROAD
 VICKSBURG, MS
 US 39183
 Contact: MMT MAINTENANCE PLANNERS
 mmtmaintenanceplanners@ergon.com

T: x:
 F: (601)638-8028