



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
KATHERINE BERRY
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 LE 15W40 (111 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0044144	MW0044141	MW0044136
Sample Date		Client Info		01 Jan 2024	07 Aug 2023	20 May 2023
Machine Age	hrs	Client Info		102679	0	36814
Oil Age	hrs	Client Info		500	601	371
Filter Age	hrs	Client Info		500	601	371
Oil Changed		Client Info		N/A	N/A	Not Changd
Filter Changed		Client Info		N/A	N/A	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	4	3	2
Chromium	ppm	ASTM D5185m	>8	<1	0	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	13	12	11
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	1	<1	<1
Lead	ppm	ASTM D5185m	>18	0	<1	0
Copper	ppm	ASTM D5185m	>80	2	2	3
Tin	ppm	ASTM D5185m	>14	<1	0	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

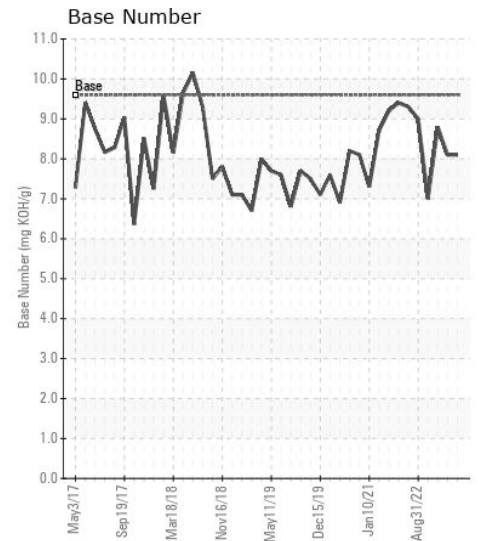
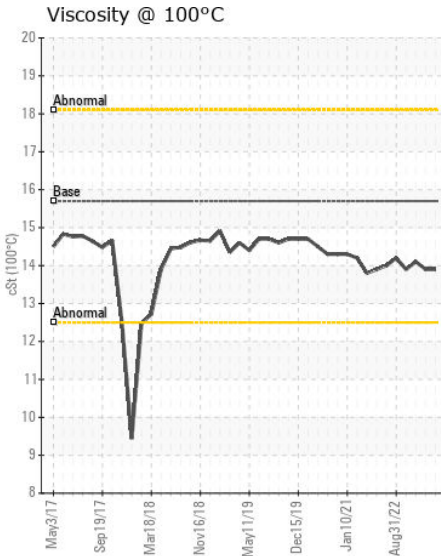
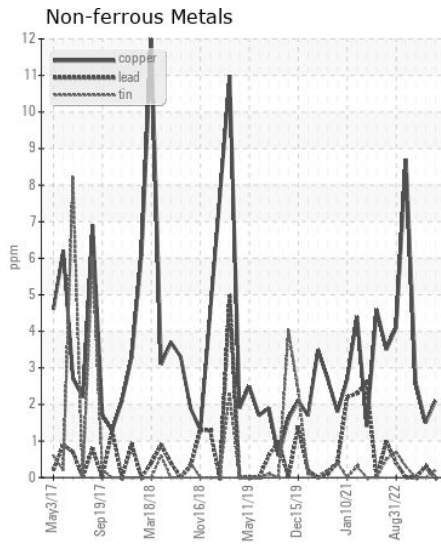
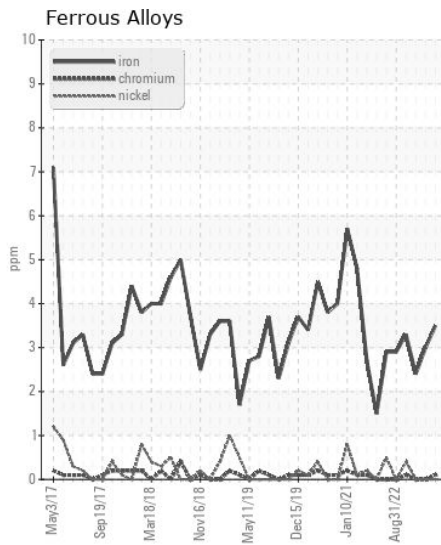
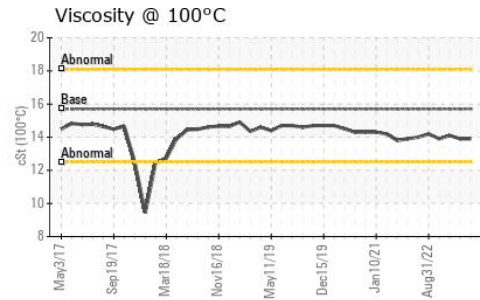
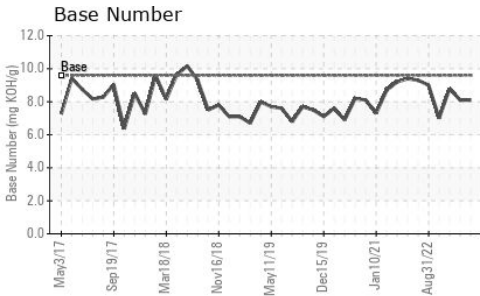
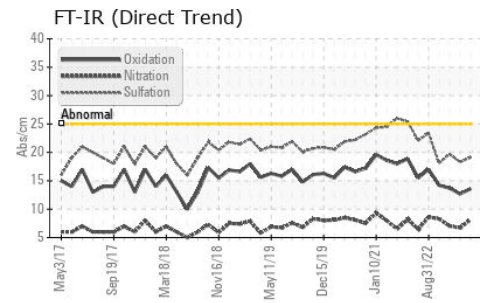
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	6	6	4
Potassium	ppm	ASTM D5185m	>20	3	3	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		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	8.2	6.7	7.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.1	18.3	19.7
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	20	3	1
Boron	ppm	ASTM D5185m		109	172	168
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		40	52	57
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		717	773	642
Calcium	ppm	ASTM D5185m		1540	1682	1513
Phosphorus	ppm	ASTM D5185m	1200	691	730	674
Zinc	ppm	ASTM D5185m	1300	816	887	803
Sulfur	ppm	ASTM D5185m	3200	3017	3849	3255
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.6	12.7	13.7
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	8.1	8.1	8.8
Visc @ 100°C	cSt	ASTM D445	15.7	13.9	13.9	14.1



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0044144
Lab Number : 06048162
Unique Number : 10808770
Test Package : MAR 2

Received : 29 Dec 2023
Tested : 02 Jan 2024
Diagnosed : 02 Jan 2024 - Wes Davis

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

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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