



WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
MRC
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 XLE 15W40 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW05823777	MW05765707	MW05745139
Sample Date		Client Info		18 Apr 2023	12 Feb 2023	19 Jan 2023
Machine Age	hrs	Client Info		6284	5677	5048
Oil Age	hrs	Client Info		607	2594	1964
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

Bearing wear is indicated. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	25	21	15
Chromium	ppm	ASTM D5185m	>8	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	2	2	2
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	0	2	2
Lead	ppm	ASTM D5185m	>18	▲ 75	▲ 57	▲ 38
Copper	ppm	ASTM D5185m	>80	● 56	● 65	● 67
Tin	ppm	ASTM D5185m	>14	2	2	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

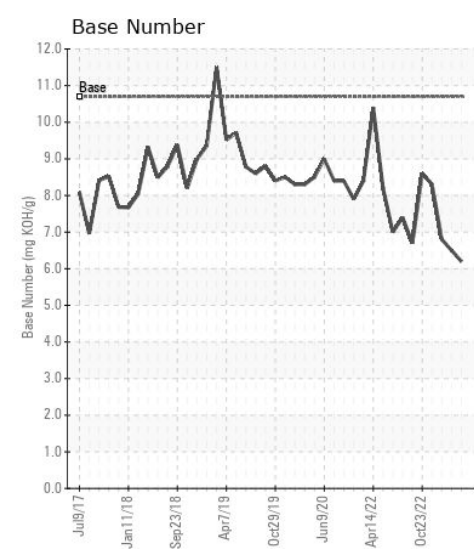
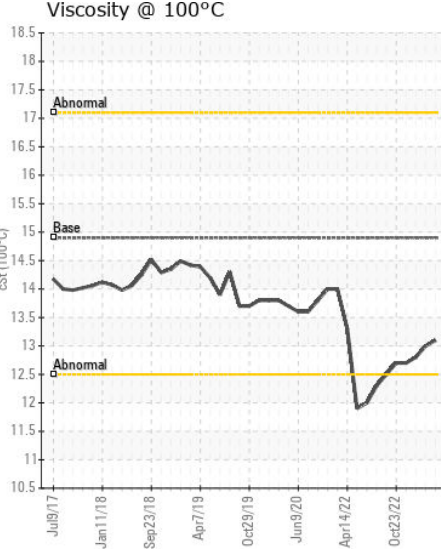
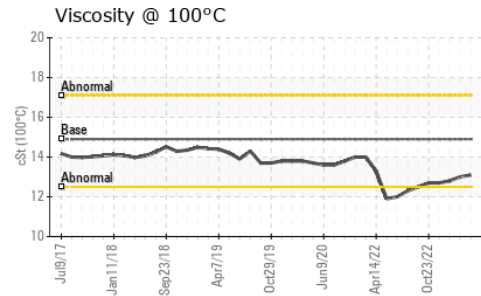
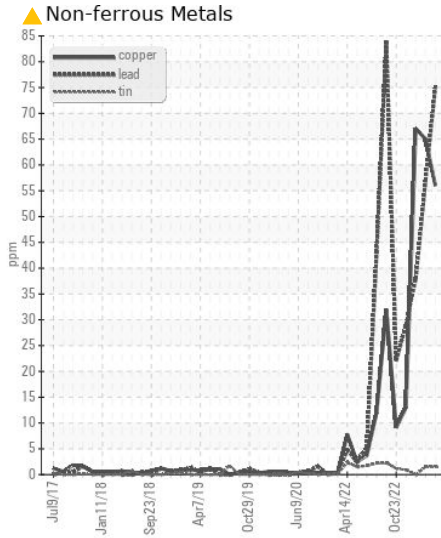
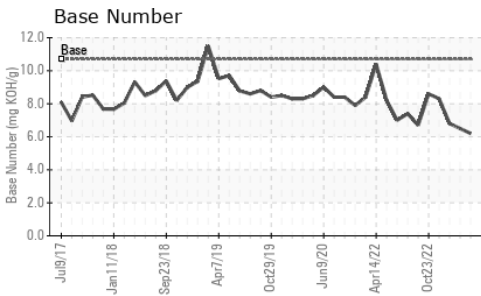
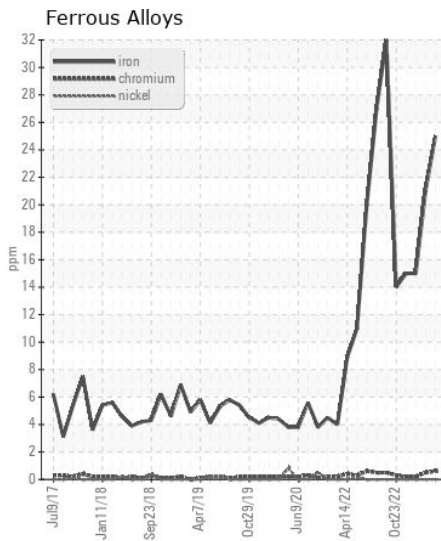
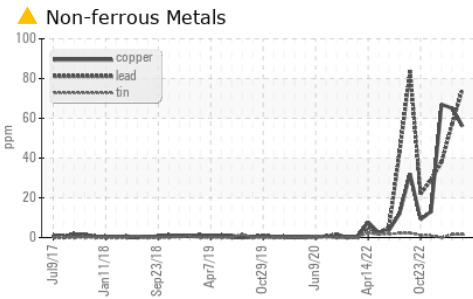
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	5	5	4
Potassium	ppm	ASTM D5185m	>20	2	0	0
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		0.9	0.8	0.7
Nitration	Abs/cm	*ASTM D7624	>20	10.2	9.9	9.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.8	25.3	24.4
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 acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>75	1	2	0
Boron	ppm	ASTM D5185m		143	169	184
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		104	101	95
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		571	565	512
Calcium	ppm	ASTM D5185m		1575	1579	1447
Phosphorus	ppm	ASTM D5185m	760	688	684	633
Zinc	ppm	ASTM D5185m	830	871	832	740
Sulfur	ppm	ASTM D5185m	2770	2574	3017	2629
Oxidation	Abs/.1mm	*ASTM D7414	>25	21.7	20.9	19.6
Base Number (BN)	mg KOH/g	ASTM D2896	10.7	6.2	6.5	6.8
Visc @ 100°C	cSt	ASTM D445	14.9	13.1	13.0	12.8



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW05823777
Lab Number : 05823777
Unique Number : 10431860
Test Package : MAR 2

Received : 19 Apr 2023
Tested : 20 Apr 2023
Diagnosed : 21 Apr 2023 - Don Baldrige

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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)