



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
TODD BROWN
Machine Id
[TODD BROWN] 003 587214-3
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (55 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0055457	MW0042517	MW0042984
Sample Date		Client Info		01 Jan 2024	01 Nov 2023	01 May 2023
Machine Age	hrs	Client Info		48787	47333	44253
Oil Age	hrs	Client Info		2902	1428	2513
Filter Age	hrs	Client Info		1372	1428	92
Oil Changed		Client Info		N/A	Not Changd	N/A
Filter Changed		Client Info		N/A	Not Changd	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	1	1	3
Chromium	ppm	ASTM D5185m	>8	0	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	3	3	2
Lead	ppm	ASTM D5185m	>18	<1	<1	0
Copper	ppm	ASTM D5185m	>80	<1	1	<1
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

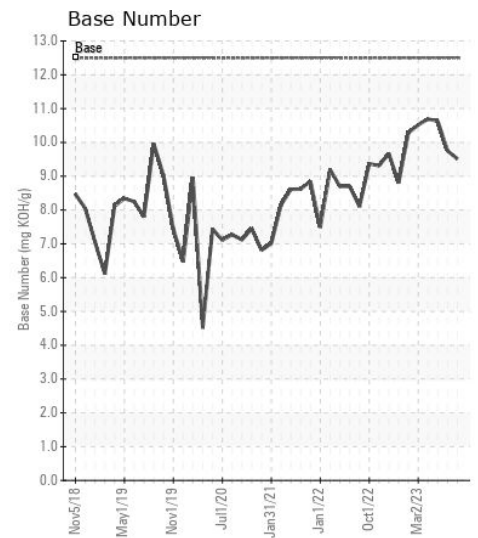
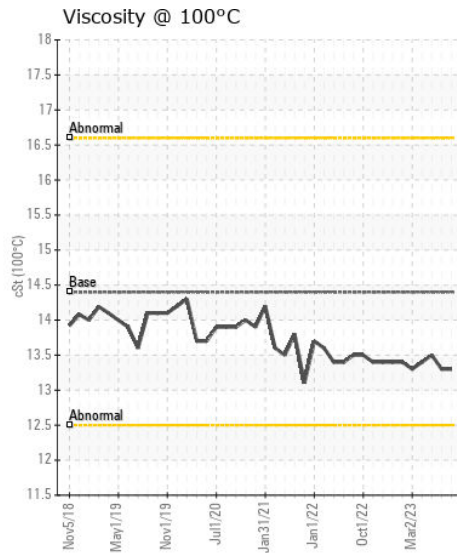
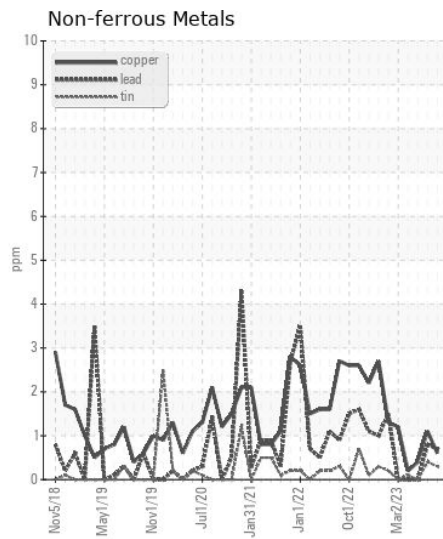
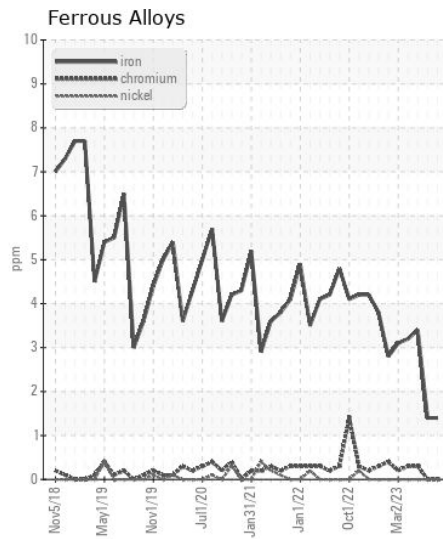
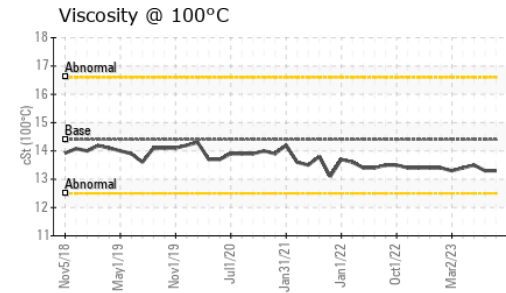
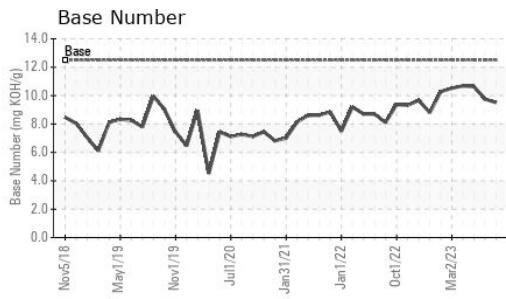
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	6	6	6
Potassium	ppm	ASTM D5185m	>20	<1	<1	<1
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		0.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	6.1	6.1	6.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.3	21.9	22.8
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	0	0	<1
Boron	ppm	ASTM D5185m	151	327	324	303
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	120	118	111
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	0	641	615	625
Calcium	ppm	ASTM D5185m	2046	1648	1685	1694
Phosphorus	ppm	ASTM D5185m	1043	691	682	647
Zinc	ppm	ASTM D5185m	943	781	763	766
Sulfur	ppm	ASTM D5185m	5012	2504	2483	2947
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.4	15.0	15.7
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	9.51	9.75	10.63
Visc @ 100°C	cSt	ASTM D445	14.4	13.3	13.3	13.5



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0055457 **Received** : 12 Jan 2024
Lab Number : 06060422 **Diagnosed** : 16 Jan 2024
Unique Number : 10831804 **Diagnostician** : Wes Davis
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)

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