



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

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

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0067210	MW0067227	MW0056319
Sample Date		Client Info		17 Jun 2024	06 Apr 2024	12 Feb 2024
Machine Age	hrs	Client Info		13108	0	11970
Oil Age	hrs	Client Info		200	0	100
Filter Age	hrs	Client Info		200	0	100
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	5	7	4
Chromium	ppm	ASTM D5185m	>8	0	<1	0
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m	>3	9	8	8
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	1	2	1
Lead	ppm	ASTM D5185m	>18	0	<1	0
Copper	ppm	ASTM D5185m	>80	8	15	7
Tin	ppm	ASTM D5185m	>14	0	<1	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.

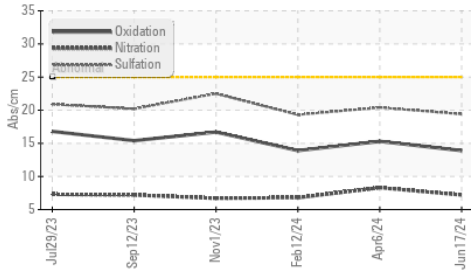
Silicon	ppm	ASTM D5185m	>20	3	4	3
Potassium	ppm	ASTM D5185m	>20	2	5	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.2	0.3	0.1
Nitration	Abs/cm	*ASTM D7624	>20	7.2	8.3	6.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4	20.4	19.3
Silt	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

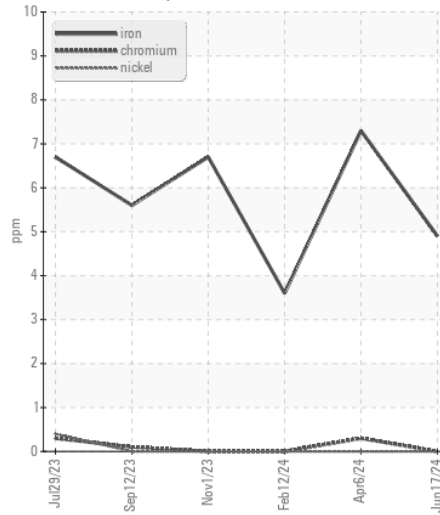
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	2	2	1
Boron	ppm	ASTM D5185m	151	122	160	138
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	37	39	37
Manganese	ppm	ASTM D5185m		<1	0	0
Magnesium	ppm	ASTM D5185m	0	563	469	564
Calcium	ppm	ASTM D5185m	2046	1768	1681	1708
Phosphorus	ppm	ASTM D5185m	1043	798	814	825
Zinc	ppm	ASTM D5185m	943	959	937	988
Sulfur	ppm	ASTM D5185m	5012	3683	3155	3399
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.9	15.3	13.9
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	7.9	7.6	7.9
Visc @ 100°C	cSt	ASTM D445	14.4	13.8	13.7	13.9

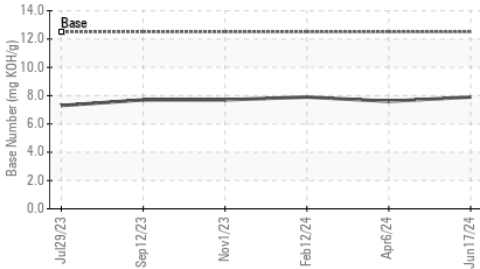
FT-IR (Direct Trend)



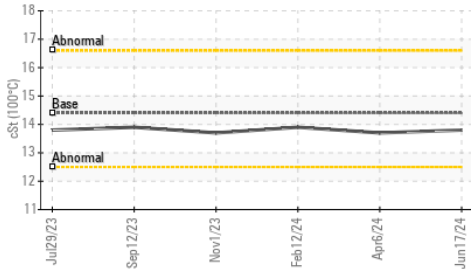
Ferrous Alloys



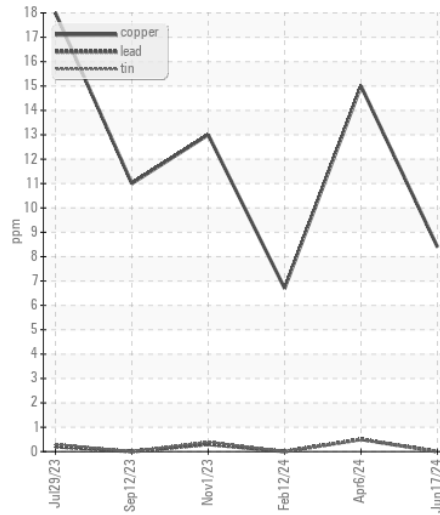
Base Number



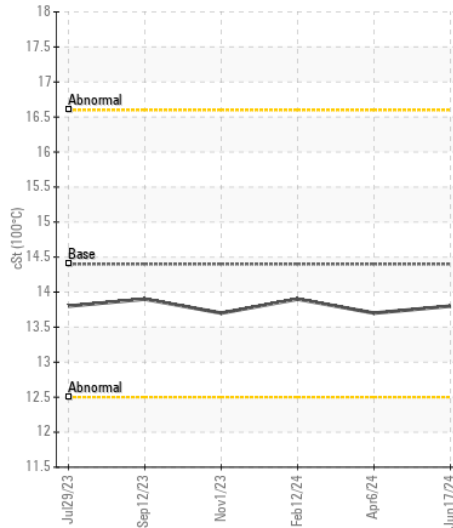
Viscosity @ 100°C



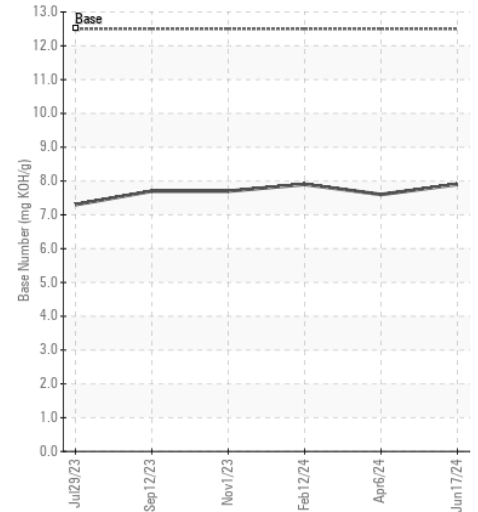
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0067210
Lab Number : 06219112
Unique Number : 11097309
Test Package : MAR 2

Received : 24 Jun 2024
Tested : 25 Jun 2024
Diagnosed : 25 Jun 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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