MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
SANDY LOU
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 SDE SAE 15W40 (18 GAL)

RECOMMENDATION

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

WEAR

All component wear rates are normal.

CONTAMINATION

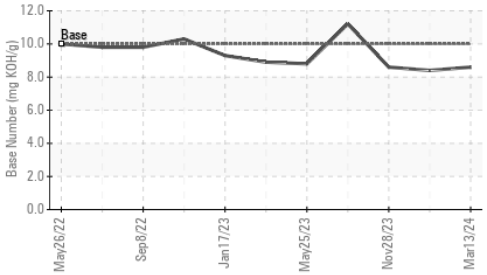
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. There is no indication of any contamination in the oil.

FLUID CONDITION

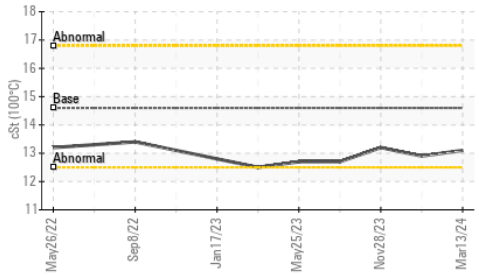
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0047384	MW0047400	MW0047390
Sample Date		Client Info		13 Mar 2024	30 Jan 2024	28 Nov 2023
Machine Age	hrs	Client Info		1294	961	349
Oil Age	hrs	Client Info		334	612	355
Filter Age	hrs	Client Info		334	612	355
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>75	5	8	7
Chromium	ppm	ASTM D5185m	>8	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>3	14	13	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	1	2
Lead	ppm	ASTM D5185m	>18	<1	1	0
Copper	ppm	ASTM D5185m	>80	2	6	2
Tin	ppm	ASTM D5185m	>14	<1	2	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	4	3	4
Potassium	ppm	ASTM D5185m	>20	3	2	<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		0.1	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	7.2	8.0	6.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.3	19.3	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
Sodium	ppm	ASTM D5185m	>75	3	3	5
Boron	ppm	ASTM D5185m		135	147	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		41	50	54
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		713	710	886
Calcium	ppm	ASTM D5185m		1517	1513	999
Phosphorus	ppm	ASTM D5185m	760	784	730	941
Zinc	ppm	ASTM D5185m	800	867	829	1168
Sulfur	ppm	ASTM D5185m	3000	3546	2981	2556
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.8	13.9	13.6
Base Number (BN)	mg KOH/g	ASTM D2896	10	8.6	8.4	8.6
Visc @ 100°C	cSt	ASTM D445	14.6	13.1	12.9	13.2

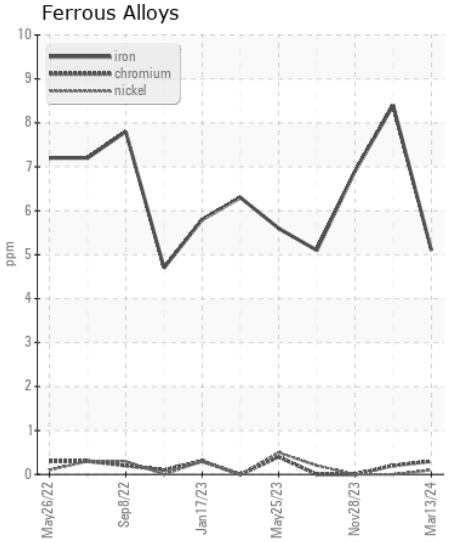
Base Number



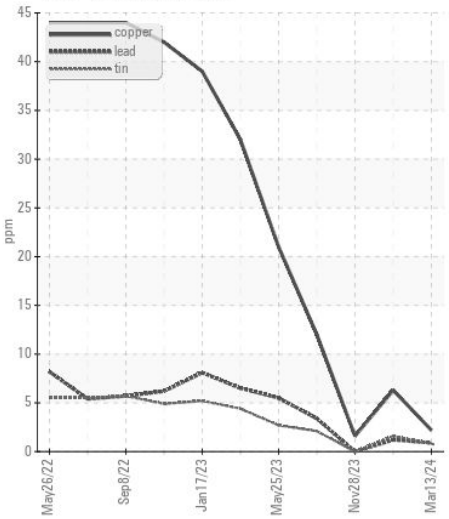
Viscosity @ 100°C



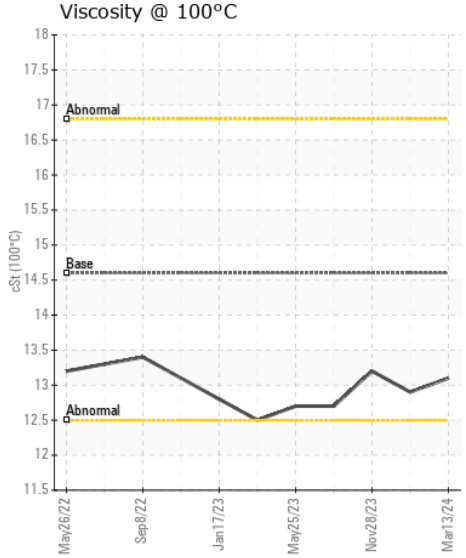
Ferrous Alloys



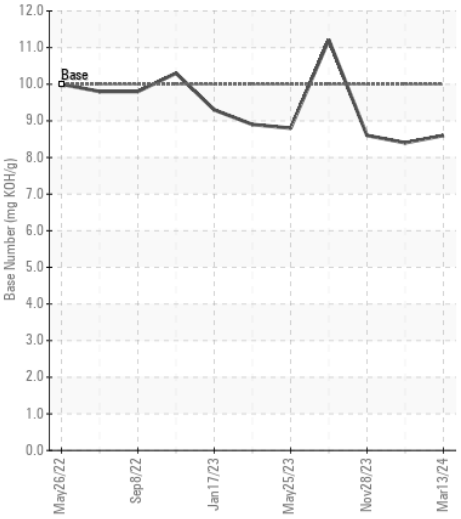
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0047384
Lab Number : 06121466
Unique Number : 10930299
Test Package : MAR 2

Received : 18 Mar 2024
Tested : 19 Mar 2024
Diagnosed : 19 Mar 2024 - Wes Davis

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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