MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
LOUISIANA HERITAGE
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (44 GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

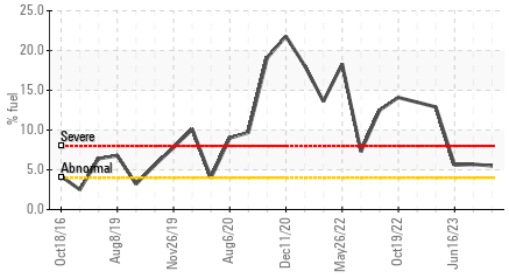
There is a moderate amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

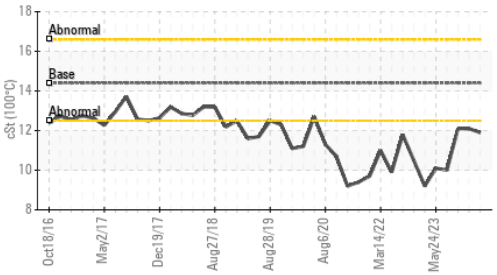
The BN result indicates that there is suitable alkalinity remaining in the oil. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0052250	MW0042769	MW0016519
Sample Date		Client Info		03 Jan 2024	17 Oct 2023	16 Jun 2023
Machine Age	hrs	Client Info		36130	34574	31894
Oil Age	hrs	Client Info		1556	1553	0
Filter Age	hrs	Client Info		1556	1553	0
Oil Changed		Client Info		Changed	Changed	N/A
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>75	11	11	6
Chromium	ppm	ASTM D5185m	>8	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m	>3	13	12	12
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	1	1	0
Lead	ppm	ASTM D5185m	>18	4	2	0
Copper	ppm	ASTM D5185m	>80	3	1	<1
Tin	ppm	ASTM D5185m	>14	1	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	4	4	4
Potassium	ppm	ASTM D5185m	>20	2	3	2
Fuel	%	ASTM D3524	>4.0	▲ 5.5	▲ 5.7	▲ 5.6
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.3	0.5	0.3
Nitration	Abs/cm	*ASTM D7624	>20	9.6	9.4	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4	18.9	18.7
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
Sodium	ppm	ASTM D5185m	>75	6	11	4
Boron	ppm	ASTM D5185m	151	74	54	100
Barium	ppm	ASTM D5185m	0.4	0	0	0
Molybdenum	ppm	ASTM D5185m	250	32	30	30
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m	0	691	578	607
Calcium	ppm	ASTM D5185m	2046	1767	1505	1586
Phosphorus	ppm	ASTM D5185m	1043	804	715	698
Zinc	ppm	ASTM D5185m	943	961	841	796
Sulfur	ppm	ASTM D5185m	5012	3444	2920	3353
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.9	15.0	13.5
Base Number (BN)	mg KOH/g	ASTM D2896	12.5	7.6	7.3	8.4
Visc @ 100°C	cSt	ASTM D445	14.4	▲ 11.9	▲ 12.1	▲ 12.1

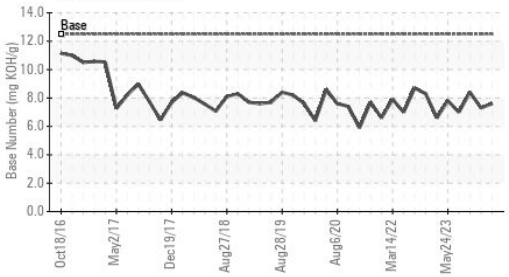
Fuel Dilution



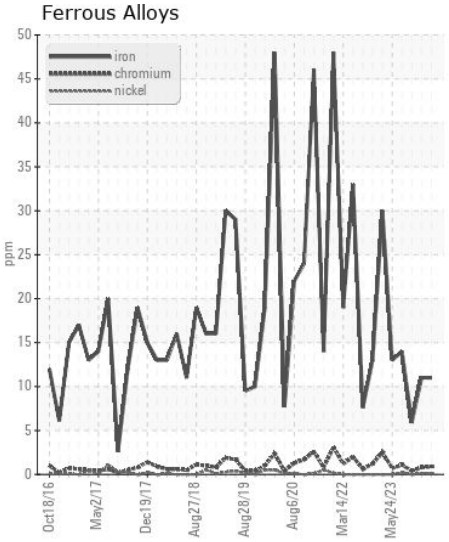
Viscosity @ 100°C



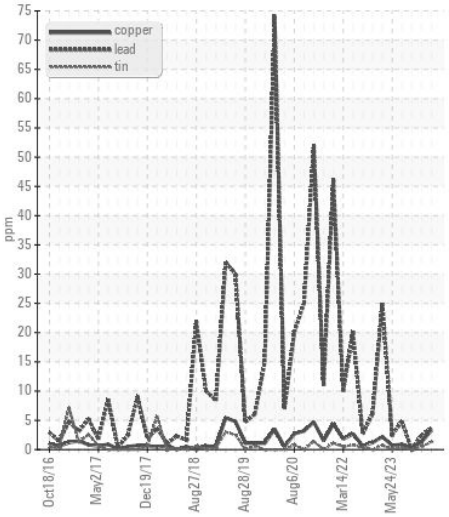
Base Number



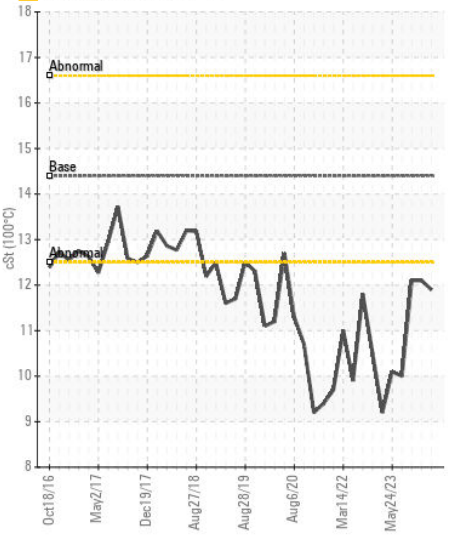
Ferrous Alloys



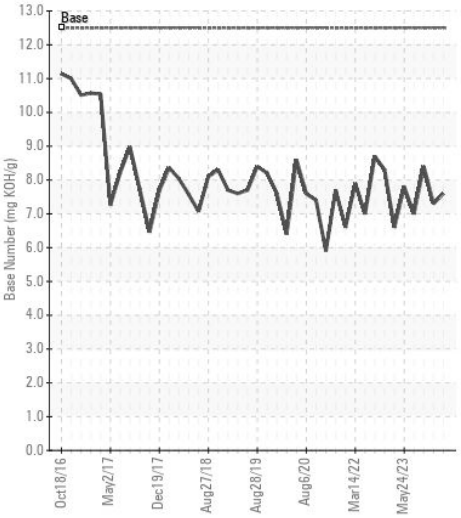
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0052250 **Recieved** : 12 Jan 2024
Lab Number : 06058940 **Diagnosed** : 16 Jan 2024
Unique Number : 10830322 **Diagnostician** : Wes Davis
Test Package : MAR 2 (Additional Tests: PercentFuel)

Certificate L2367

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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