MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	MARGINAL
FLUID CONDITION	NORMAL

Area
CPT OA FRANKS
Machine Id
[CPT OA FRANKS] 003 586734-3
Component
Starboard Main Engine
Fluid
CHEVRON DELO 400 LE 15W40 (41 GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

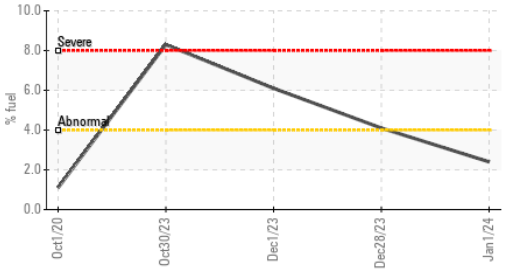
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Light fuel dilution occurring. No other contaminants were detected in the oil.

FLUID CONDITION

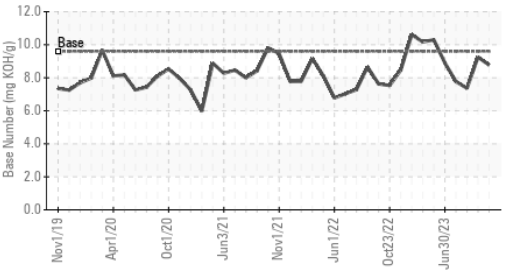
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW06063801	MW06063805	MW06063803
Sample Date		Client Info		01 Jan 2024	28 Dec 2023	01 Dec 2023
Machine Age	hrs	Client Info		22650	22565	21436
Oil Age	hrs	Client Info		0	0	0
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				MARGINAL	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>75	2	4	4
Chromium	ppm	ASTM D5185m	>8	0	0	0
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	2	2	2
Lead	ppm	ASTM D5185m	>18	10	▲ 22	16
Copper	ppm	ASTM D5185m	>80	1	2	2
Tin	ppm	ASTM D5185m	>14	0	0	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	5	7	4
Potassium	ppm	ASTM D5185m	>20	3	3	2
Fuel	%	ASTM D3524	>4.0	▲ 2.4	▲ 4.1	▲ 6.1
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.1	7.2	8.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.4	21.6	21.9
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	<1	<1	<1
Boron	ppm	ASTM D5185m		268	243	238
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		94	89	88
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		635	615	598
Calcium	ppm	ASTM D5185m		1524	1468	1471
Phosphorus	ppm	ASTM D5185m	1200	708	693	686
Zinc	ppm	ASTM D5185m	1300	829	799	780
Sulfur	ppm	ASTM D5185m	3200	2858	2778	2735
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.2	16.4	16.9
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	8.77	9.25	7.36
Visc @ 100°C	cSt	ASTM D445	15.7	13.0	12.6	▲ 11.6

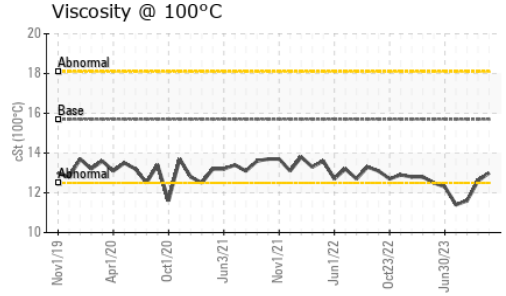
Fuel Dilution



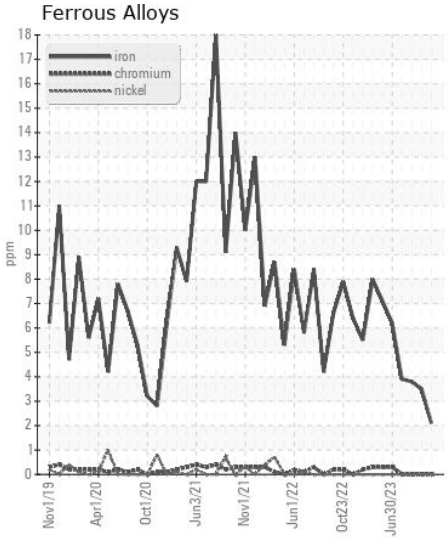
Base Number



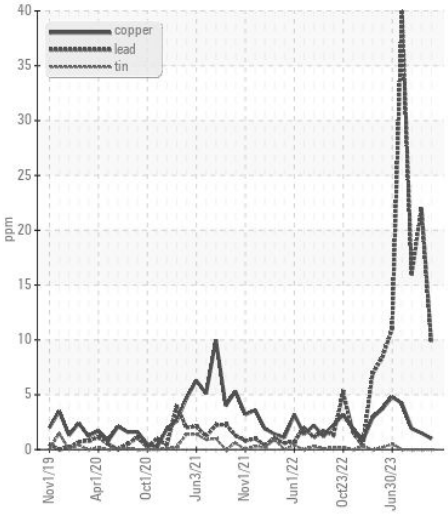
Viscosity @ 100°C



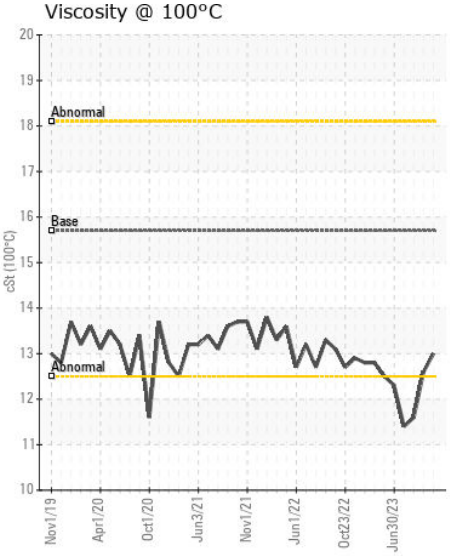
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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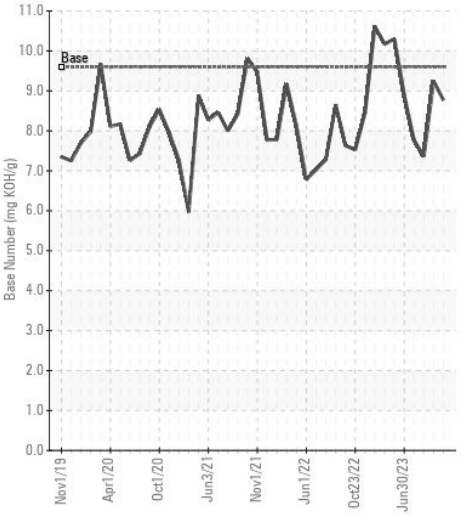

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW06063801 **Recieved** : 17 Jan 2024
Lab Number : 06063801 **Diagnosed** : 19 Jan 2024
Unique Number : 10835183 **Diagnostician** : Wes Davis
Test Package : MAR 2 (Additional Tests: PercentFuel)

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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