MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ABNORMAL

Machine Id
MV PAPA FRED
Component
Port Main Engine
Fluid
CHEVRON DELO 400 SAE 40 (9 GAL)

RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

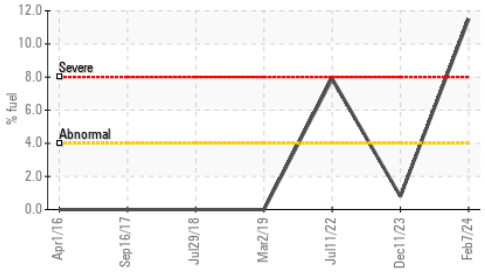
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

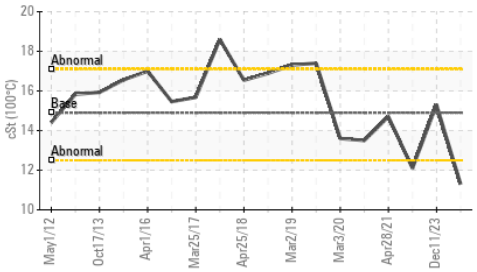
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0062624	MW0062616	MW0042025
Sample Date		Client Info		07 Feb 2024	11 Dec 2023	11 Jul 2022
Machine Age	hrs	Client Info		0	0	5084
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				SEVERE	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>75	44	29	49
Chromium	ppm	ASTM D5185m	>8	1	1	2
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>3	0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>15	2	1	4
Lead	ppm	ASTM D5185m	>18	4	3	5
Copper	ppm	ASTM D5185m	>80	5	6	5
Tin	ppm	ASTM D5185m	>14	3	2	3
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>20	4	5	9
Potassium	ppm	ASTM D5185m	>20	<1	0	0
Fuel	%	ASTM D3524	>4.0	⬢ 11.5	0.8	▲ 7.9
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.6	0.9	0.6
Nitration	Abs/cm	*ASTM D7624	>20	4.7	4.7	6.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	13.8	14.4	16.4
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	2	2	<1
Boron	ppm	ASTM D5185m		1	0	3
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		44	50	46
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		23	30	389
Calcium	ppm	ASTM D5185m		1599	1712	1430
Phosphorus	ppm	ASTM D5185m	1160	671	659	729
Zinc	ppm	ASTM D5185m	1270	779	841	924
Sulfur	ppm	ASTM D5185m		7495	8098	6802
Oxidation	Abs/.1mm	*ASTM D7414	>25	5.0	5.2	8.8
Base Number (BN)	mg KOH/g	ASTM D2896	10.2	5.5	6.4	7.8
Visc @ 100°C	cSt	ASTM D445	14.9	▲ 11.3	15.3	▲ 12.1

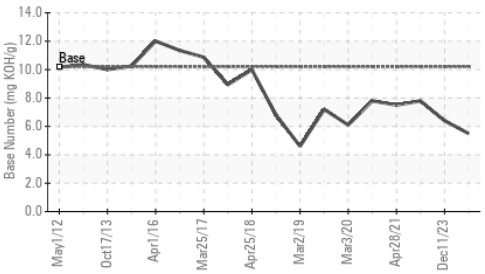
Fuel Dilution



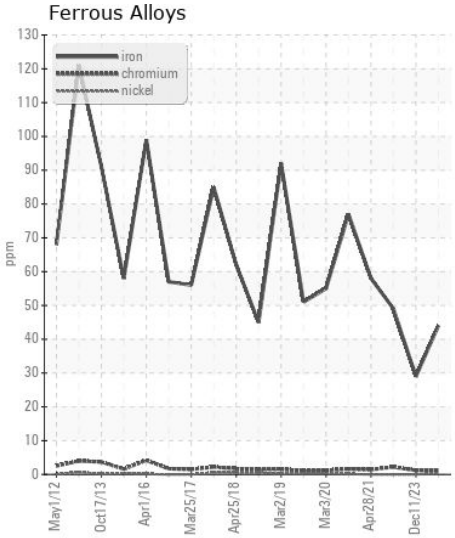
Viscosity @ 100°C



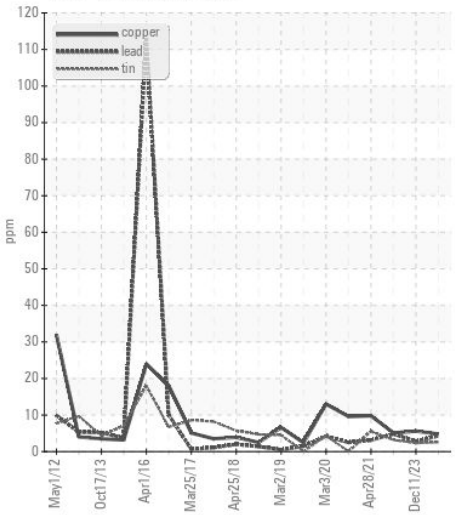
Base Number



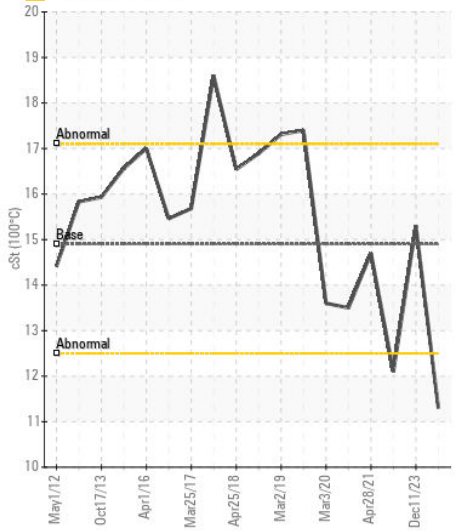
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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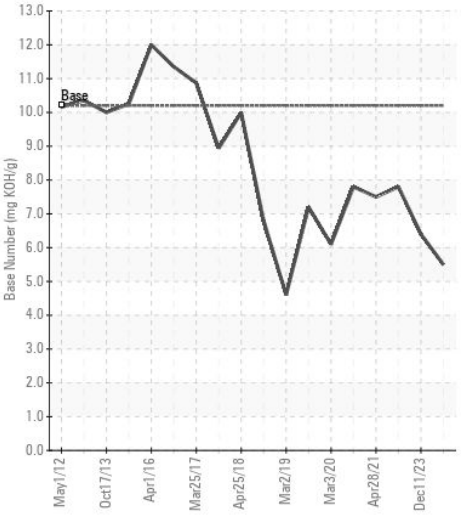

ANAB ACCREDITED ISO/IEC 17025 TESTING LABORATORY
Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0062624
Lab Number : 06087978
Unique Number : 10875423
Test Package : MAR 2 (Additional Tests: FuelDilution, PercentFuel)

Received : 13 Feb 2024
Tested : 15 Feb 2024
Diagnosed : 15 Feb 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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