MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	SEVERE

Area
STEPHEN P VENABLE
Machine Id
[STEPHEN P VENABLE] 001 590046-1
Component
Port Main Engine
Fluid
CHEVRON DELO 400 LE 15W40 (55 GAL)

RECOMMENDATION

We advise that you check the fuel injection system. We recommend that you change the oil at the next available stoppage or outage. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

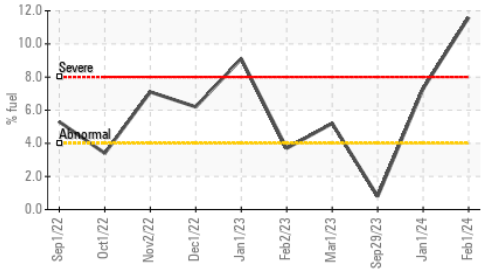
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

FLUID CONDITION

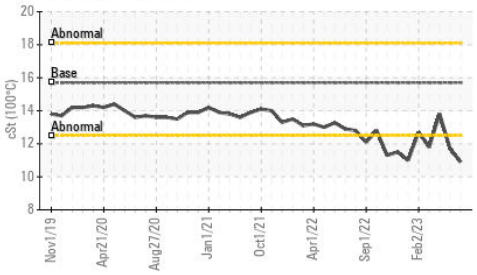
The BN result indicates that there is suitable alkalinity remaining in the oil. Fuel is present in the oil and is lowering the viscosity. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0063045	MW0062970	MW0051494
Sample Date		Client Info		01 Feb 2024	01 Jan 2024	29 Sep 2023
Machine Age	hrs	Client Info		4491	3771	1625
Oil Age	hrs	Client Info		1366	647	1625
Filter Age	hrs	Client Info		1366	647	1625
Oil Changed		Client Info		N/A	N/A	Changed
Filter Changed		Client Info		N/A	N/A	Changed
Sample Status				SEVERE	ABNORMAL	NORMAL
Iron	ppm	ASTM D5185m	>75	5	0	9
Chromium	ppm	ASTM D5185m	>8	0	0	0
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m	>3	0	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>15	3	2	3
Lead	ppm	ASTM D5185m	>18	7	2	3
Copper	ppm	ASTM D5185m	>80	9	8	15
Tin	ppm	ASTM D5185m	>14	<1	<1	<1
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	5	15
Potassium	ppm	ASTM D5185m	>20	<1	0	3
Fuel	%	ASTM D3524	>4.0	⬢ 11.6	▲ 7.3	0.8
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	8.9	7.7	6.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.9	22.8	23.1
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	<1	10
Boron	ppm	ASTM D5185m		273	295	291
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		108	106	114
Manganese	ppm	ASTM D5185m		<1	1	<1
Magnesium	ppm	ASTM D5185m		574	573	649
Calcium	ppm	ASTM D5185m		1294	1243	1411
Phosphorus	ppm	ASTM D5185m	1200	592	624	666
Zinc	ppm	ASTM D5185m	1300	704	705	793
Sulfur	ppm	ASTM D5185m	3200	2301	2100	2347
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.7	17.7	16.8
Base Number (BN)	mg KOH/g	ASTM D2896	9.6	6.45	8.2	9.61
Visc @ 100°C	cSt	ASTM D445	15.7	⬢ 10.9	▲ 11.7	13.8

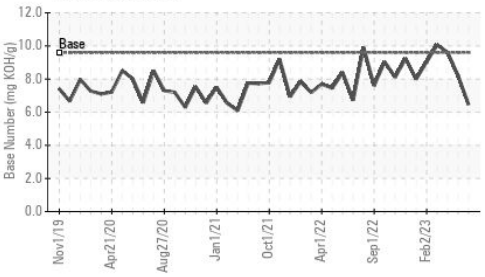
Fuel Dilution



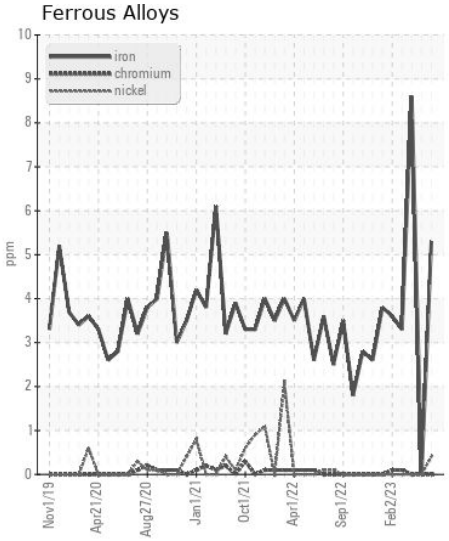
Viscosity @ 100°C



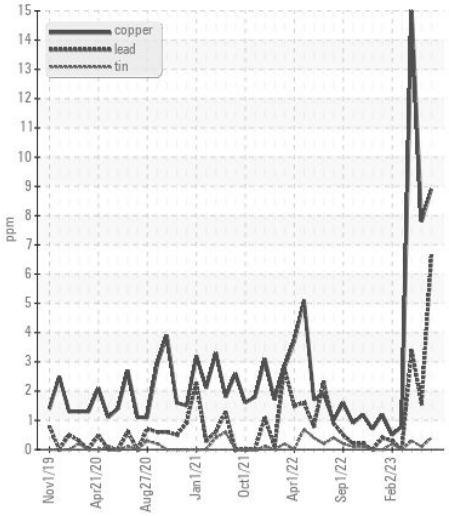
Base Number



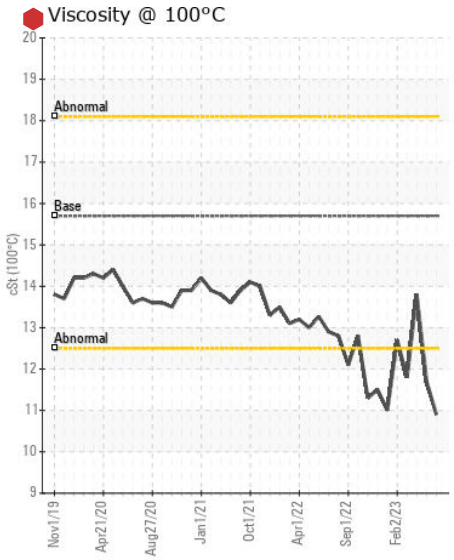
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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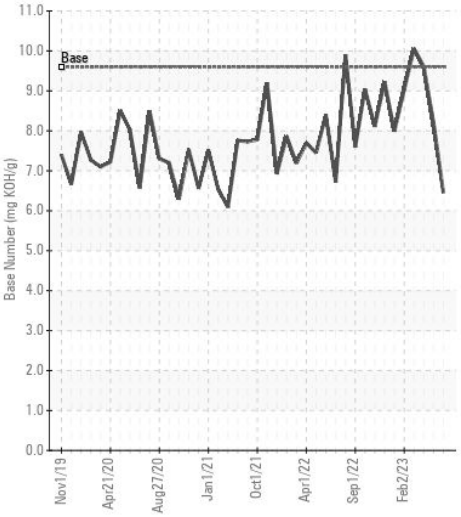

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0063045 **Received** : 13 Feb 2024
Lab Number : 06088350 **Tested** : 15 Feb 2024
Unique Number : 10875795 **Diagnosed** : 15 Feb 2024 - 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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