MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CHARLIE T
Component
Starboard Genset
Fluid
CHEVRON DELO 400 MULTIGRADE 15W40 (3 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

The lead level is abnormal. All other component wear rates are normal.

CONTAMINATION

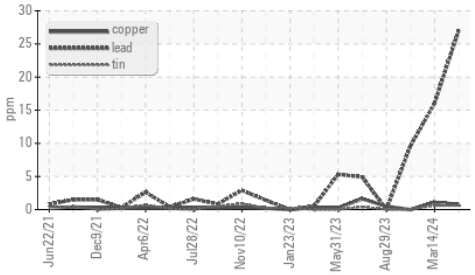
There is no indication of any contamination in the oil.

FLUID CONDITION

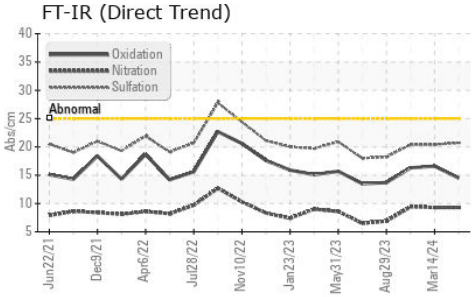
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0071506	MW0059565	MW0059553
Sample Date		Client Info		28 May 2024	14 Mar 2024	19 Nov 2023
Machine Age	hrs	Client Info		17026	0	0
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>50	13	12	12
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m		16	13	11
Silver	ppm	ASTM D5185m	>5	0	<1	0
Aluminum	ppm	ASTM D5185m	>12	2	3	2
Lead	ppm	ASTM D5185m	>17	▲ 27	16	10
Copper	ppm	ASTM D5185m	>70	<1	1	0
Tin	ppm	ASTM D5185m	>15	<1	<1	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	>25	6	6	6
Potassium	ppm	ASTM D5185m	>20	4	4	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		1.2	0.2	0.2
Nitration	Abs/cm	*ASTM D7624	>20	9.3	9.3	9.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.7	20.4	20.4
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		8	2	2
Boron	ppm	ASTM D5185m		73	99	100
Barium	ppm	ASTM D5185m		<1	0	0
Molybdenum	ppm	ASTM D5185m		36	40	44
Manganese	ppm	ASTM D5185m		2	<1	0
Magnesium	ppm	ASTM D5185m		718	665	701
Calcium	ppm	ASTM D5185m		1724	1665	2550
Phosphorus	ppm	ASTM D5185m	1360	753	733	745
Zinc	ppm	ASTM D5185m	1480	822	821	889
Sulfur	ppm	ASTM D5185m		3570	3147	4077
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.5	16.6	16.3
Base Number (BN)	mg KOH/g	ASTM D2896	12.2	6.9	8.8	9.4
Visc @ 100°C	cSt	ASTM D445	15.1	14.1	14.0	14.1

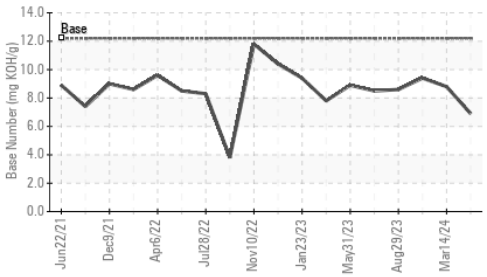
Non-ferrous Metals



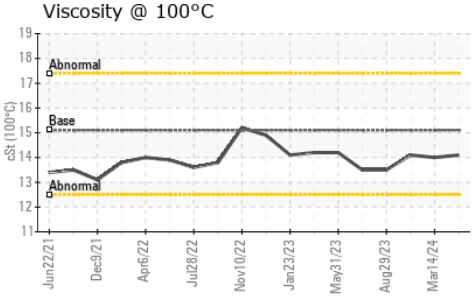
FT-IR (Direct Trend)



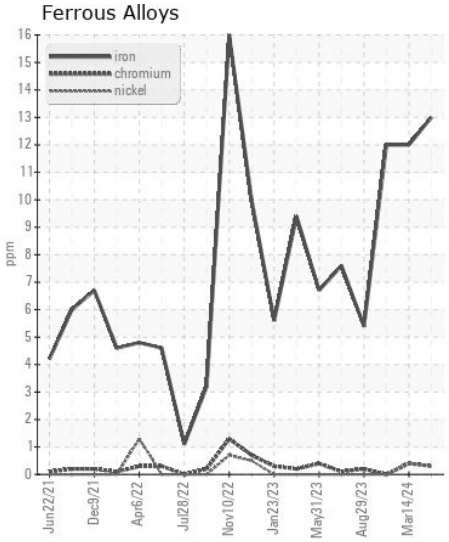
Base Number



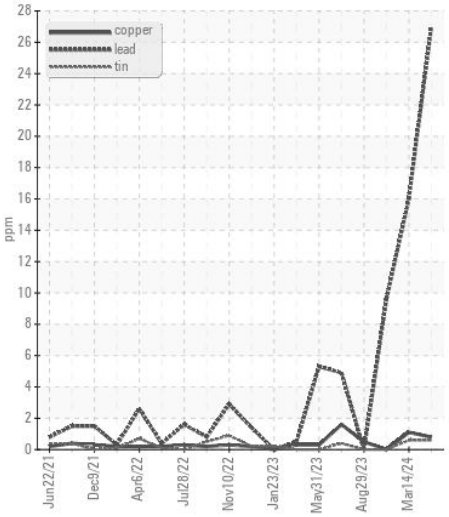
Viscosity @ 100°C



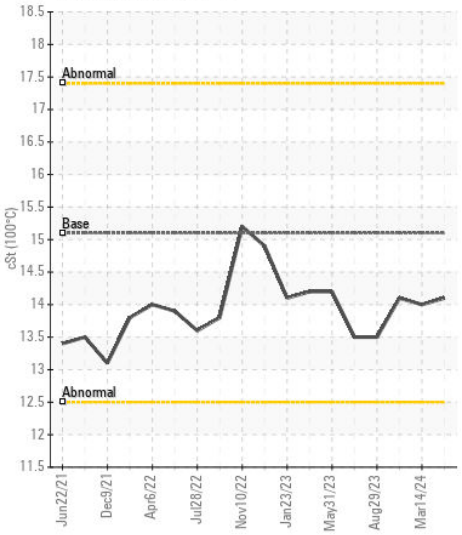
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Base Number

Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0071506
Lab Number : 06196320
Unique Number : 11058443
Test Package : MAR 2

Received : 31 May 2024
Tested : 03 Jun 2024
Diagnosed : 03 Jun 2024 - Don Baldridge

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)

OSAGE MARINE
750 E DAVIS ST
ST LOUIS, MO
US 63111
Contact: MIKE KESSLER
mike.kessler@osagemarine.com
T:
F: