MAR II

WEAR CHECK Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ATTENTION

Machine Id
MRC
Component
Starboard Genset
Fluid
CHEVRON URSA SUPER PLUS 40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

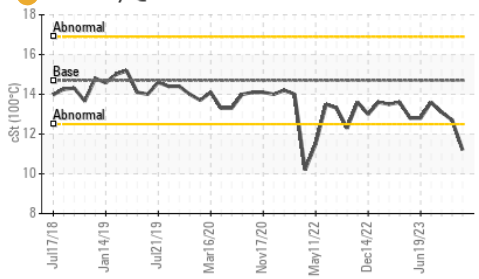
Fuel content negligible. There is no indication of any contamination in the oil.

FLUID CONDITION

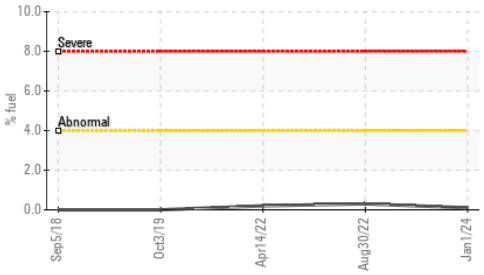
The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW06048293	MW06017169	MW05981734
Sample Date		Client Info		01 Jan 2024	23 Nov 2023	16 Oct 2023
Machine Age	hrs	Client Info		7310	6867	6433
Oil Age	hrs	Client Info		877	434	470
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				ATTENTION	NORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>50	5	3	10
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		<1	0	1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	1	3	3
Lead	ppm	ASTM D5185m	>17	<1	1	▲ 20
Copper	ppm	ASTM D5185m	>70	<1	1	22
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	3	4	4
Potassium	ppm	ASTM D5185m	>20	1	4	32
Fuel	%	ASTM D3524	>4.0	0.1	<1.0	<1.0
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	6.3	6.1	7.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.3	22.5	21.3
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		2	16	197
Boron	ppm	ASTM D5185m		87	327	305
Barium	ppm	ASTM D5185m		0	0	10
Molybdenum	ppm	ASTM D5185m		36	115	120
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		173	599	492
Calcium	ppm	ASTM D5185m		2152	1478	1614
Phosphorus	ppm	ASTM D5185m	1000	794	785	747
Zinc	ppm	ASTM D5185m	1090	1141	872	873
Sulfur	ppm	ASTM D5185m		3429	2564	2578
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.4	16.1	15.4
Base Number (BN)	mg KOH/g	ASTM D2896	7.4	7.3	8.6	8.9
Visc @ 100°C	cSt	ASTM D445	14.7	● 11.2	12.7	13.1

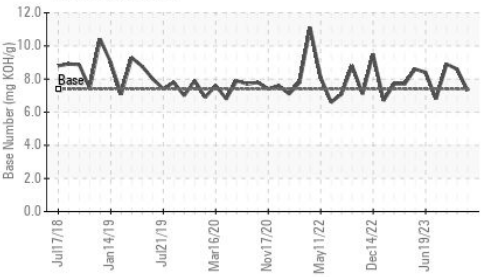
Viscosity @ 100°C



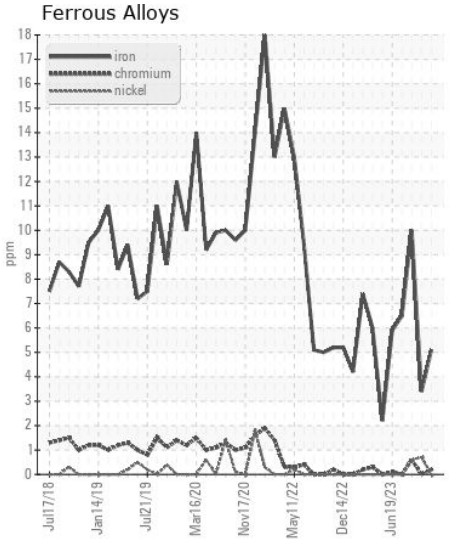
Fuel Dilution



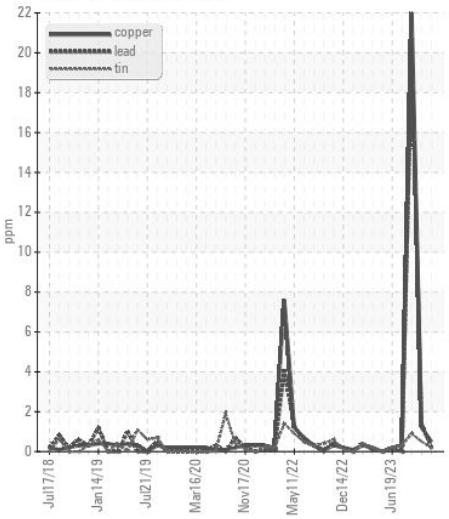
Base Number



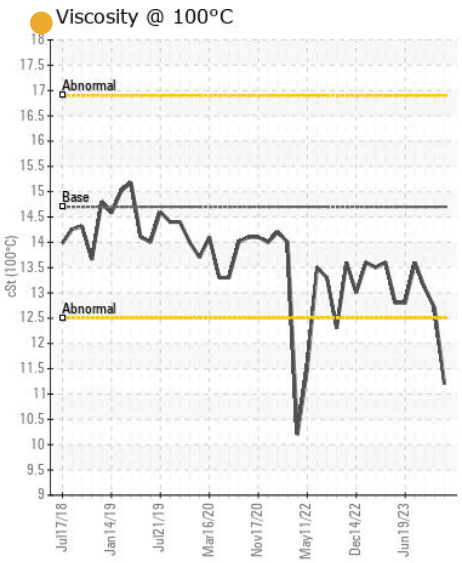
Ferrous Alloys



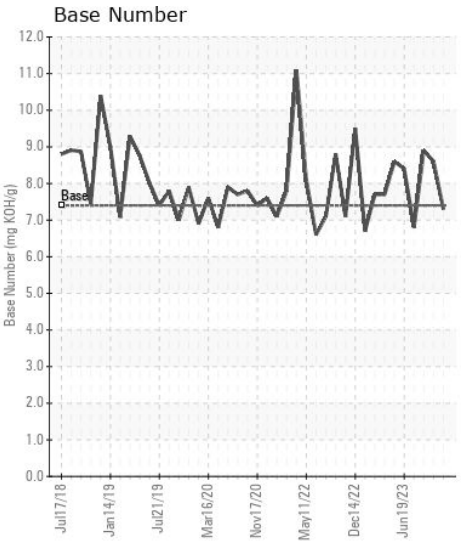
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW06048293 **Received** : 29 Dec 2023
Lab Number : 06048293 **Tested** : 03 Jan 2024
Unique Number : 10808901 **Diagnosed** : 03 Jan 2024 - Don Baldridge
Test Package : MAR 2 (Additional Tests: FuelDilution, 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)

ILLINOIS MARINE TOWING
PO BOX 391
LEMONT, IL
US 60439
Contact: RHETT DANIEL
rdaniel@imtowing.com
T: (630)280-4926
F: (630)739-2041