MAR II

WEAR CHECK
Inland Marine Oil Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
SANDY LOU
Component
Starboard Genset
Fluid
CHEVRON DELO 400 SDE SAE 15W40 (3 GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. We recommend an early resample to monitor this condition.

WEAR

All component wear rates are normal.

CONTAMINATION

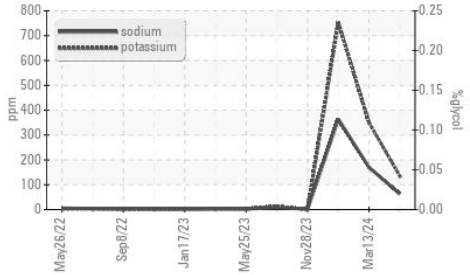
Sodium and/or potassium levels are high.

FLUID CONDITION

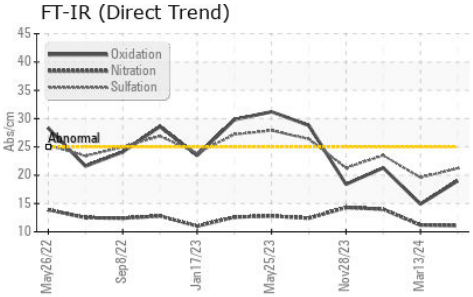
The BN result indicates that there is suitable alkalinity remaining in the oil.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0047377	MW0047383	MW0047397
Sample Date		Client Info		15 Apr 2024	13 Mar 2024	30 Jan 2024
Machine Age	hrs	Client Info		26841	26554	26389
Oil Age	hrs	Client Info		287	170	551
Filter Age	hrs	Client Info		287	170	551
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Filter Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>50	9	13	28
Chromium	ppm	ASTM D5185m	>4	<1	<1	2
Nickel	ppm	ASTM D5185m	>2	0	<1	<1
Titanium	ppm	ASTM D5185m		14	14	13
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	2	5	7
Lead	ppm	ASTM D5185m	>17	2	3	15
Copper	ppm	ASTM D5185m	>70	1	2	4
Tin	ppm	ASTM D5185m	>15	<1	<1	1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	4	6	9
Potassium	ppm	ASTM D5185m	>20	▲ 136	▲ 350	▲ 754
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		0.1	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	11.1	11.2	14.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.2	19.6	23.5
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		▲ 63	▲ 170	▲ 364
Boron	ppm	ASTM D5185m		34	34	21
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		46	72	116
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		684	705	640
Calcium	ppm	ASTM D5185m		1501	1453	1429
Phosphorus	ppm	ASTM D5185m	760	597	795	665
Zinc	ppm	ASTM D5185m	800	758	886	817
Sulfur	ppm	ASTM D5185m	3000	3316	3324	2985
Oxidation	Abs/.1mm	*ASTM D7414	>25	19.0	14.9	21.3
Base Number (BN)	mg KOH/g	ASTM D2896	10	7.2	8.7	6.6
Visc @ 100°C	cSt	ASTM D445	14.6	15.2	14.8	15.4

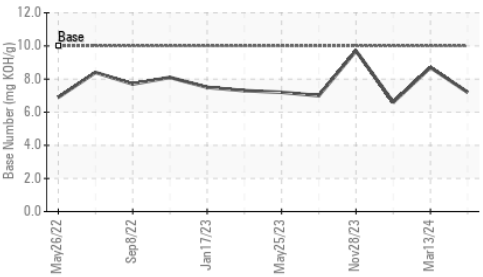
Glycol Contamination



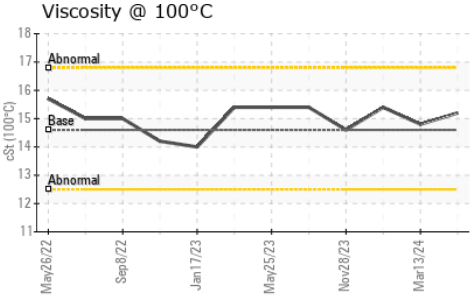
FT-IR (Direct Trend)



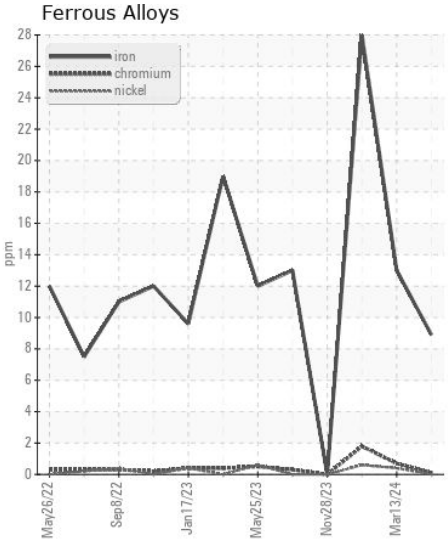
Base Number



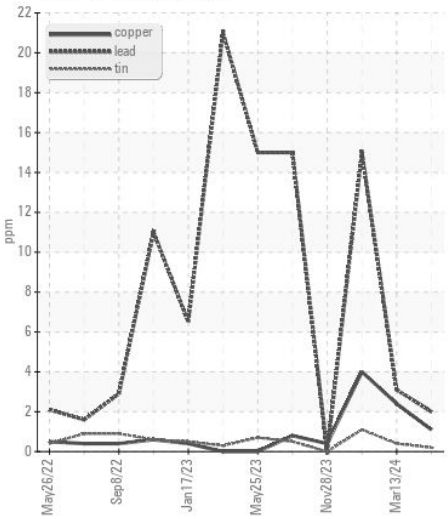
Viscosity @ 100°C



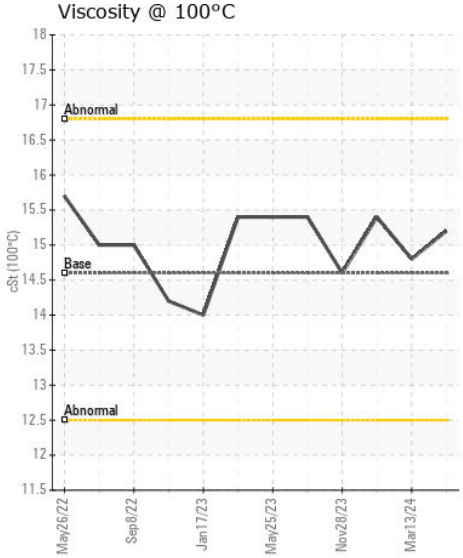
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



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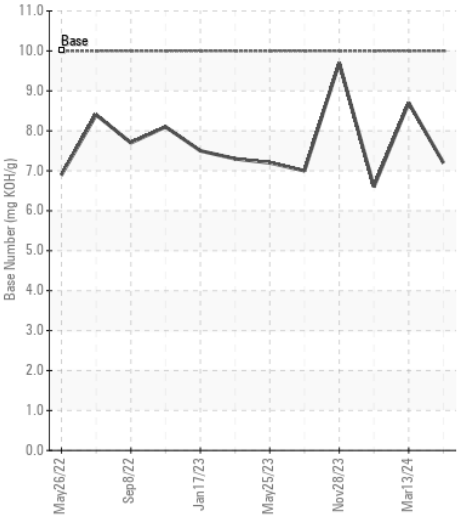

Certificate L2367

Laboratory	: WearCheck USA - 501 Madison Ave., Cary, NC 27513		
Sample No.	: MW0047377	**Received**	: 22 Apr 2024
Lab Number	: 06155586	**Tested**	: 23 Apr 2024
Unique Number	: 10991009	**Diagnosed**	: 24 Apr 2024 - Jonathan Hester
Test Package	: MAR 2		

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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