



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. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0059482	MW0047377	MW0047383
Sample Date		Client Info		16 May 2024	15 Apr 2024	13 Mar 2024
Machine Age	hrs	Client Info		26852	26841	26554
Oil Age	hrs	Client Info		298	287	170
Filter Age	hrs	Client Info		298	287	170
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	14	9	13
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	<1
Titanium	ppm	ASTM D5185m		15	14	14
Silver	ppm	ASTM D5185m	>5	<1	0	0
Aluminum	ppm	ASTM D5185m	>12	4	2	5
Lead	ppm	ASTM D5185m	>17	4	2	3
Copper	ppm	ASTM D5185m	>70	2	1	2
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

CONTAMINATION

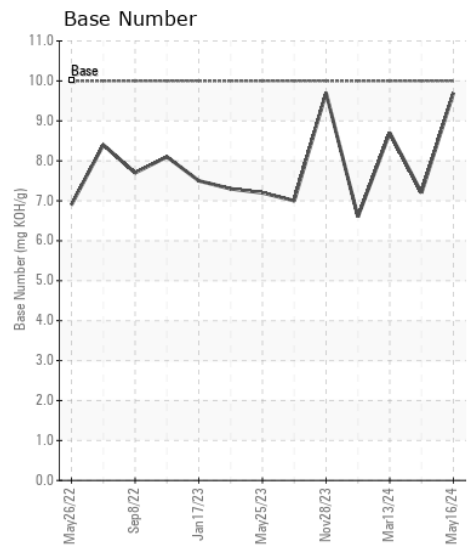
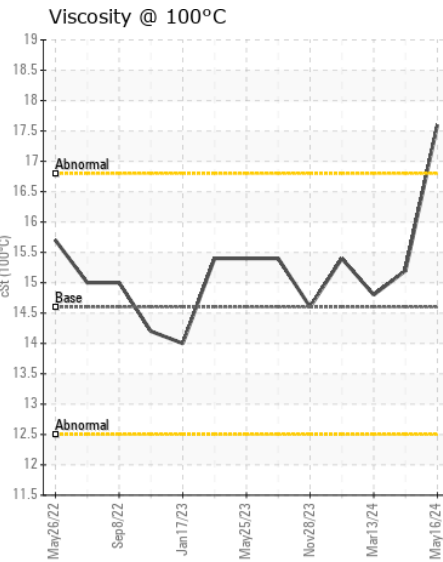
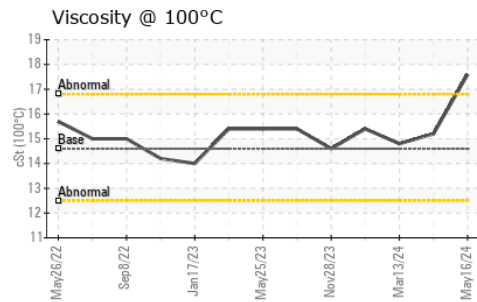
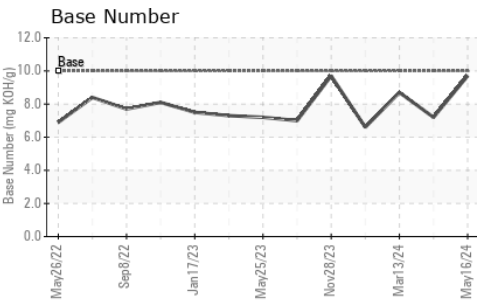
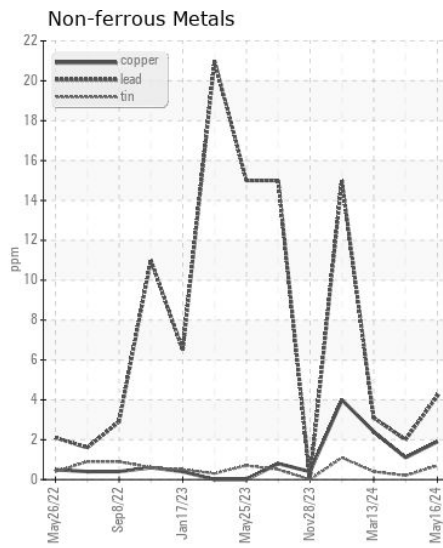
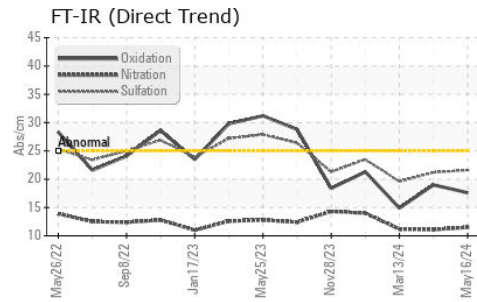
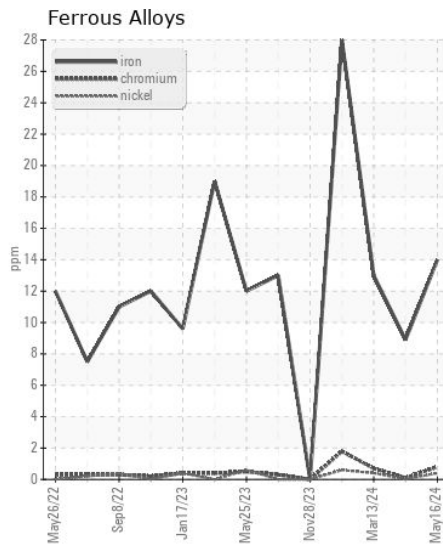
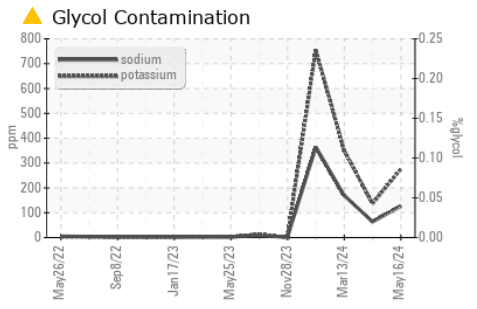
Sodium and/or potassium levels are high.

Silicon	ppm	ASTM D5185m	>25	8	4	6
Potassium	ppm	ASTM D5185m	>20	▲ 276	▲ 136	▲ 350
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	0.1
Nitration	Abs/cm	*ASTM D7624	>20	11.5	11.1	11.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.6	21.2	19.6
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

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		▲ 127	▲ 63	▲ 170
Boron	ppm	ASTM D5185m		46	34	34
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		59	46	72
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		677	684	705
Calcium	ppm	ASTM D5185m		1463	1501	1453
Phosphorus	ppm	ASTM D5185m	760	679	597	795
Zinc	ppm	ASTM D5185m	800	850	758	886
Sulfur	ppm	ASTM D5185m	3000	3071	3316	3324
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.6	19.0	14.9
Base Number (BN)	mg KOH/g	ASTM D2896	10	9.7	7.2	8.7
Visc @ 100°C	cSt	ASTM D445	14.6	17.6	15.2	14.8



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0059482
Lab Number : 06188694
Unique Number : 11045446
Test Package : MAR 2

Received : 23 May 2024
Tested : 24 May 2024
Diagnosed : 28 May 2024 - Jonathan Hester

OSAGE MARINE
 750 E DAVIS ST
 ST LOUIS, MO
 US 63111

Contact: MIKE KESSLER
 mike.kessler@osagemarine.com

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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F: