



Area
SANDY B
Machine Id
[SANDY B] 008 562531-8
Component
Starboard Genset
Fluid
SHELL ROTELLA T 15W40 (--- 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. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		MW0061658	MW0061341	MW0061390
Sample Date		Client Info		02 Jan 2024	30 Nov 2023	01 Nov 2023
Machine Age	hrs	Client Info		23123	22743	22422
Oil Age	hrs	Client Info		265	408	74
Filter Age	hrs	Client Info		265	408	74
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				SEVERE	SEVERE	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>50	5	7	1
Chromium	ppm	ASTM D5185m	>4	0	<1	0
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>5	0	0	<1
Aluminum	ppm	ASTM D5185m	>12	<1	2	<1
Lead	ppm	ASTM D5185m	>17	0	<1	0
Copper	ppm	ASTM D5185m	>70	<1	<1	0
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

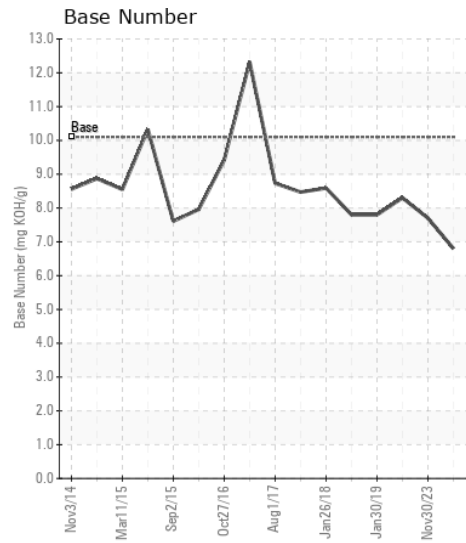
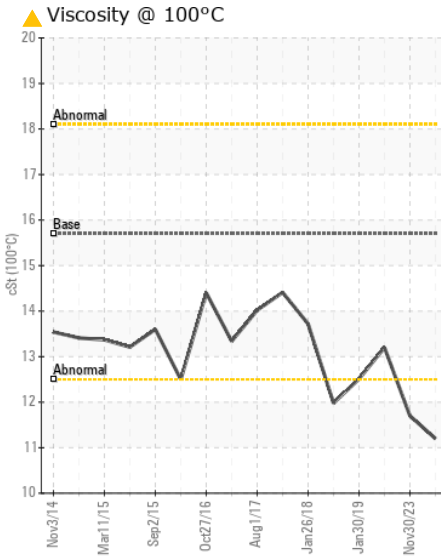
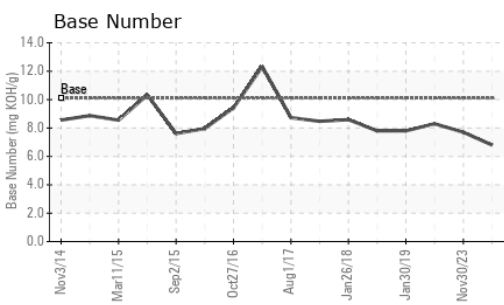
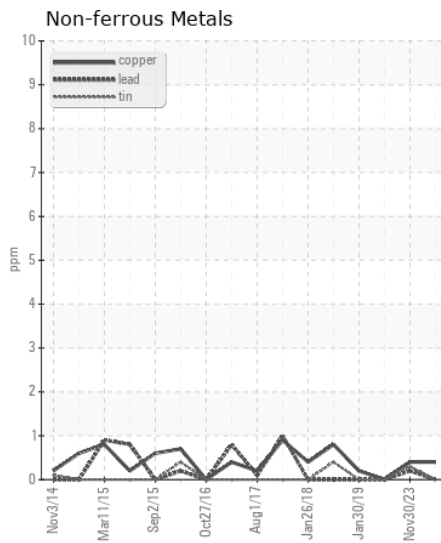
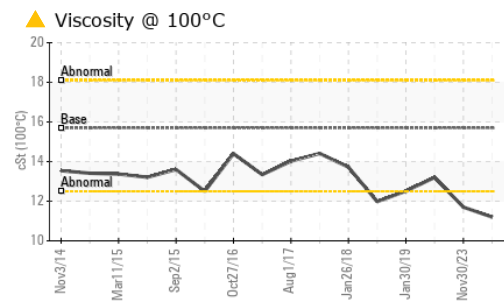
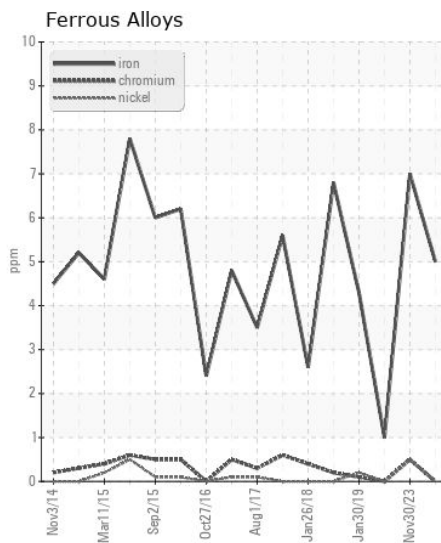
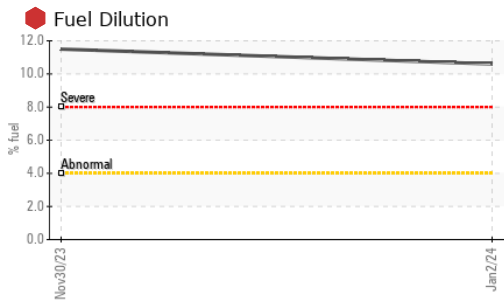
There is a high amount of fuel present in the oil. Tests confirm the presence of fuel in the oil.

Silicon	ppm	ASTM D5185m	>25	4	4	2
Potassium	ppm	ASTM D5185m	>20	6	8	5
Fuel	%	ASTM D3524	>4.0	10.6	11.5	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.2	0.3	0.1
Nitration	Abs/cm	*ASTM D7624	>20	8.9	9.2	6.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.3	20.5	20.1
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

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.

Sodium	ppm	ASTM D5185m		1	0	<1
Boron	ppm	ASTM D5185m	316	151	156	159
Barium	ppm	ASTM D5185m	0.0	0	12	0
Molybdenum	ppm	ASTM D5185m	1.2	10	9	6
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m	24	60	32	31
Calcium	ppm	ASTM D5185m	2292	1988	1989	2038
Phosphorus	ppm	ASTM D5185m	1064	867	905	888
Zinc	ppm	ASTM D5185m	1160	1055	1047	1122
Sulfur	ppm	ASTM D5185m	4996	3077	3334	3335
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.2	18.5	16.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	6.8	7.7	8.3
Visc @ 100°C	cSt	ASTM D445	15.7	11.2	11.7	13.2



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0061658 **Received** : 16 Jan 2024
Lab Number : 06061827 **Diagnosed** : 18 Jan 2024
Unique Number : 10833209 **Diagnostician** : Wes Davis
Test Package : MAR 2 (Additional Tests: PercentFuel)

INGRAM BARGE
 900 S 3RD ST
 PADUCAH, KY
 US 42003
 Contact: KIM PRATER
 kim.prater@ingrambarga.com
 T: (270)415-4467
 F: (615)695-3697

Certificate L2367
 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)